

May 6, 2021

Town of North Castle
17 Bedford Road
Armonk, NY 10504

Re: 120 Lafayette Avenue, White Plains, NY 10603-1602

To Whom It May Concern,

This is to authorize Janet E. Glover to act on my behalf with respect to filling of an application for a Planning Board, ARB, permit approval for a solar system on the roof of 120 Lafayette Avenue, White Plains, NY 10603.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael Bellantoni". The signature is written in a cursive style with a large, sweeping flourish at the end.

Michael, Bellantoni



GREEN HYBRID ENERGY SOLUTIONS

Inexhaustible Energy Solutions for the 21st Century

May 7, 2021

Town of North Castle
Planning Board
17 Bedford Road
Armonk, NY 10504 Redding, CT 06875

Re: Michael Bellantoni, Inc.
120 Lafayette Avenue
White Plains, NY 10603-1602

To Whom It May Concern,

Per the attached plans, a 107.07 Kw AC (86.5 Kw AC) is proposed to be installed on the steel roof of a commercial warehouse located at the above captioned address. The system will consist of 249 Hanwhat Q-Peak 430W solar panels and 5 Solar Edge 17.3Kw AC inverters. The warehouse has a flat roof and the panels will not be visible from the street.

Very truly yours,

Janet E. Glover, Owner/COO
Green Hybrid Energy Solutions, Inc.

11 Washington Place East White Plains, New York 10603
(844) SOLAR-NOW

iglover@ghesolar.com
914-539-5984

eglover@ghesolar.com
914-299-9552

Office 914-949-4900
FAX 914-949-4904

Westchester HIC #WC-24683-H11
Yonkers HIC #5821

Putnam HIC #6431
CT HIC # 0649178

NJ HIC #13VH06558700

Rockland HIC #H12055
NYC HIC #2070625-DCA

I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES

Name of Property Owner: <u>Michael Bellantoni, Inc</u>		
Mailing Address: <u>120 Lafayette Ave White Plains, NY 10603-1602</u>		
Telephone: <u>914-948-6468</u>	Fax: _____	e-mail: <u>michael.b@mblandoni.com</u>
Name of Applicant (if different): <u>Janet E. Glover</u>		
Address of Applicant: <u>11 Washington Place East, White Plains, NY 10603</u>		
Telephone: <u>914-299-9552</u>	Fax: <u>914-761-4674</u>	e-mail: <u>eglover@ghessolar.com</u>
Interest of Applicant, if other than Property Owner: <u>Representative of Property Owner</u>		
Is the Applicant (if different from the property owner) a Contract Vendee?		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
If yes, please submit affidavit stating such. If no, application cannot be reviewed by Planning Board		
Name of Professional Preparing Site Plan: <u>Sunil SAIGAL, PE</u>		
Address: <u>1266 Rahway Avenue, Westfield, NJ 07090</u>		
Telephone: <u>646-632-7734</u>	Fax: _____	e-mail: <u>enthinkllc@gmail.com</u>
Name of Other Professional: <u>Green Hybrid Energy Solutions, Inc.</u>		
Address: <u>11 Washington Place East, White Plains, NY 10603</u>		
Telephone: <u>914-299-9552</u>	Fax: <u>914-761-4674</u>	e-mail: <u>eglover@ghessolar.com</u>
Name of Attorney (if any): _____		
Address: _____		
Telephone: _____	Fax: _____	e-mail: _____

Applicant Acknowledgement

By making this application, the undersigned Applicant agrees to permit Town officials and their designated representatives to conduct on-site inspections in connection with the review of this application.

The Applicant also agrees to pay all expenses for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the professional review services shall be mailed to the Applicant, unless the Town is notified in writing by the Applicant at the time of initial submission of the application that such mailings should be sent to a designated representative instead.

Signature of Applicant: Jane E. Glover Date: 3/6/21
Signature of Property Owner: Michael O'Brien Date: 3/6/21

MUST HAVE BOTH SIGNATURES

II. IDENTIFICATION OF SUBJECT PROPERTY

Street Address: 120 Lafayette Avenue White Plains, NY

Location (in relation to nearest intersecting street):
10603-1602
_____ feet (north, south, east or west) of _____

Abutting Street(s): _____

Tax Map Designation (NEW): Section 122.12 Block 1 Lot 2

Tax Map Designation (OLD): Section _____ Block _____ Lot _____

Zoning District: _____ Total Land Area _____

Land Area in North Castle Only (if different) _____

Fire District(s) _____ School District(s) _____

Is any portion of subject property abutting or located within five hundred (500) feet of the following:

The boundary of any city, town or village?
No Yes (adjacent) _____ Yes (within 500 feet) _____
If yes, please identify name(s): _____

The boundary of any existing or proposed County or State park or any other recreation area?
No Yes (adjacent) _____ Yes (within 500 feet) _____

The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?
No Yes (adjacent) _____ Yes (within 500 feet) _____

The existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel lines?
No Yes (adjacent) _____ Yes (within 500 feet) _____

The existing or proposed boundary of any county or State owned land on which a public building or institution is situated?
No Yes (adjacent) _____ Yes (within 500 feet) _____

The boundary of a farm operation located in an agricultural district?
No Yes (adjacent) _____ Yes (within 500 feet) _____

Does the Property Owner or Applicant have an interest in any abutting property?
No Yes

If yes, please identify the tax map designation of that property:
SD 122.12 - 1 - 39

III. DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed Use: No Change

Gross Floor Area: Existing _____ S.F. Proposed _____ S.F.

Proposed Floor Area Breakdown:

Retail _____ S.F.; Office _____ S.F.;

Industrial _____ S.F.; Institutional _____ S.F.;

Other Nonresidential _____ S.F.; Residential _____ S.F.;

Number of Dwelling Units: _____

Number of Parking Spaces: Existing _____ Required _____ Proposed _____

Number of Loading Spaces: Existing _____ Required _____ Proposed _____

Earthwork Balance: Cut _____ C.Y. Fill _____ C.Y.

Will Development on the subject property involve any of the following:

Areas of special flood hazard? No Yes

(If yes, application for a Development Permit pursuant to Chapter 177 of the North Castle Town Code may also be required)

Trees with a diameter at breast height (DBH) of 8" or greater?

No Yes

(If yes, application for a Tree Removal Permit pursuant to Chapter 308 of the North Castle Town Code may also be required.)

Town-regulated wetlands? No Yes

(If yes, application for a Town Wetlands Permit pursuant to Chapter 340 of the North Castle Town Code may also be required.)

State-regulated wetlands? No Yes

(If yes, application for a State Wetlands Permit may also be required.)

Short Environmental Assessment Form

Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information			
Michael Bellantoni, Inc.			
Name of Action or Project: 120 Lafayette Avenue, White Plains, NY 10603-1602			
Project Location (describe, and attach a location map): Section 122.12 Block 1 Lot 2			
Brief Description of Proposed Action: Installation of a 107.07 Kw DC (86.5 kw AC) solar photovoltaic system on the roof of 120 Lafayette Avenue, White Plains, NY 10603. The system will consist of 249 430W solar panels and 5 17.3 Kw inverters on a racking system			
Name of Applicant or Sponsor: Michael Bellantoni, Inc		Telephone: 914-948-6468	
		E-Mail: michael.b@mblandscape.com	
Address: 120 Lafayette Avenue			
City/PO: White Plains		State: NY	Zip Code: 10603-1602
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.		NO	YES
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: Town of North Castle		NO	YES
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. a. Total acreage of the site of the proposed action?		NA acres	
b. Total acreage to be physically disturbed?		NA acres	
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?		NA acres	
4. Check all land uses that occur on, are adjoining or near the proposed action:			
<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Residential (suburban)			
<input type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input type="checkbox"/> Aquatic <input type="checkbox"/> Other(Specify):			
<input type="checkbox"/> Parkland			

5. Is the proposed action,	NO	YES	N/A
a. A permitted use under the zoning regulations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Consistent with the adopted comprehensive plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
b. Are public transportation services available at or near the site of the proposed action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____ _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____ _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____ _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	NO <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	YES <input type="checkbox"/> <input type="checkbox"/>	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency? b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____	NO <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	YES <input type="checkbox"/> <input type="checkbox"/>	

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

Shoreline
 Forest
 Agricultural/grasslands
 Early mid-successional
 Wetland
 Urban
 Suburban

15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16. Is the project site located in the 100-year flood plan?	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a. Will storm water discharges flow to adjacent properties?	<input type="checkbox"/>	<input type="checkbox"/>
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	<input type="checkbox"/>	<input type="checkbox"/>
If Yes, briefly describe: _____ _____		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment: _____ _____	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____ _____	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____ _____	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: Michael Bellantoni, Inc. Date: 5/6/21

Signature: *Michael Bellantoni* Title: GM

Enthink Engineering LLC

1266 Rahway Avenue, Westfield, NJ 07090

enthinkllc@gmail.com (646) 632-7738

May 7, 2021

Town of North Castle
Building Department
17 Bedford Road
Armonk, NY 10504

Re: Michael Bellantoni, Inc.
120 Lafayette Avenue
White Plains, NY 10603

To Whom It May Concern,

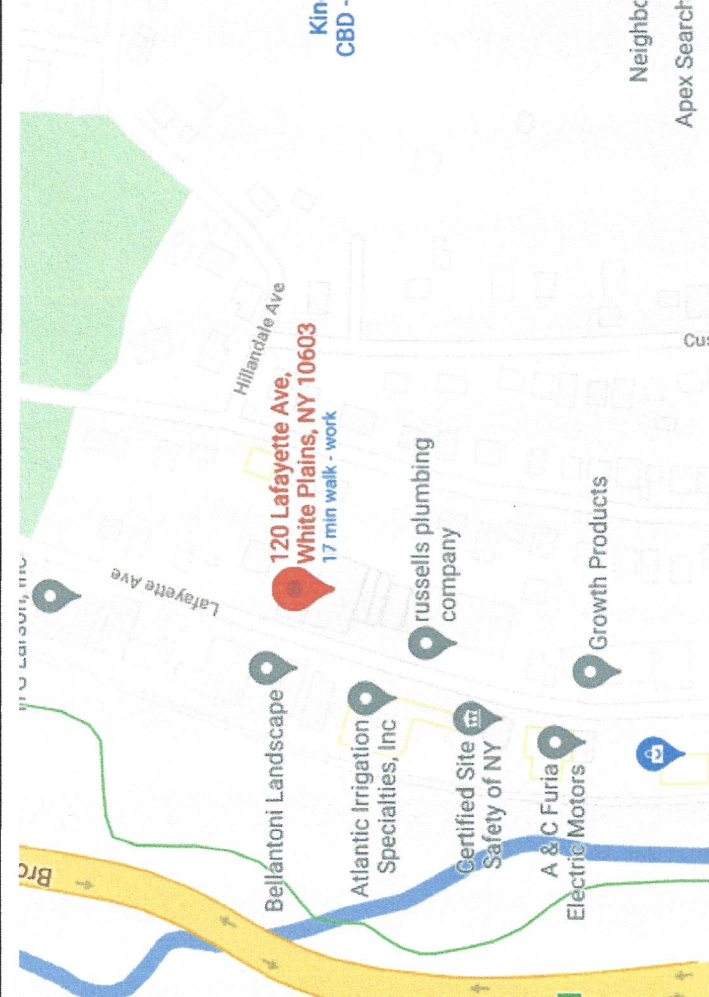
The existing roof structure of the above captioned property is made of EPDM membrane with insulation board, q-decking, 24" steel i-beam w/truss spaced 10" oc. will support the additional load of the solar panels of 3.98 PSF under the required loads of 125 MPH wind speed, and 30 PSF ground snow load without additional structural supports.

I have determined that the installation will meet the requirements of the 2020 IECC, 2020 NYS Uniform Code Supplement, NYS Energy Construction Code 2020, NEC 2018, IBC 2018 and Town of North Castle building codes, when installed in accordance with the manufacturer's instructions.

If you have any further questions or require addition information, feel free to contact me.

Very truly yours,





Location Map

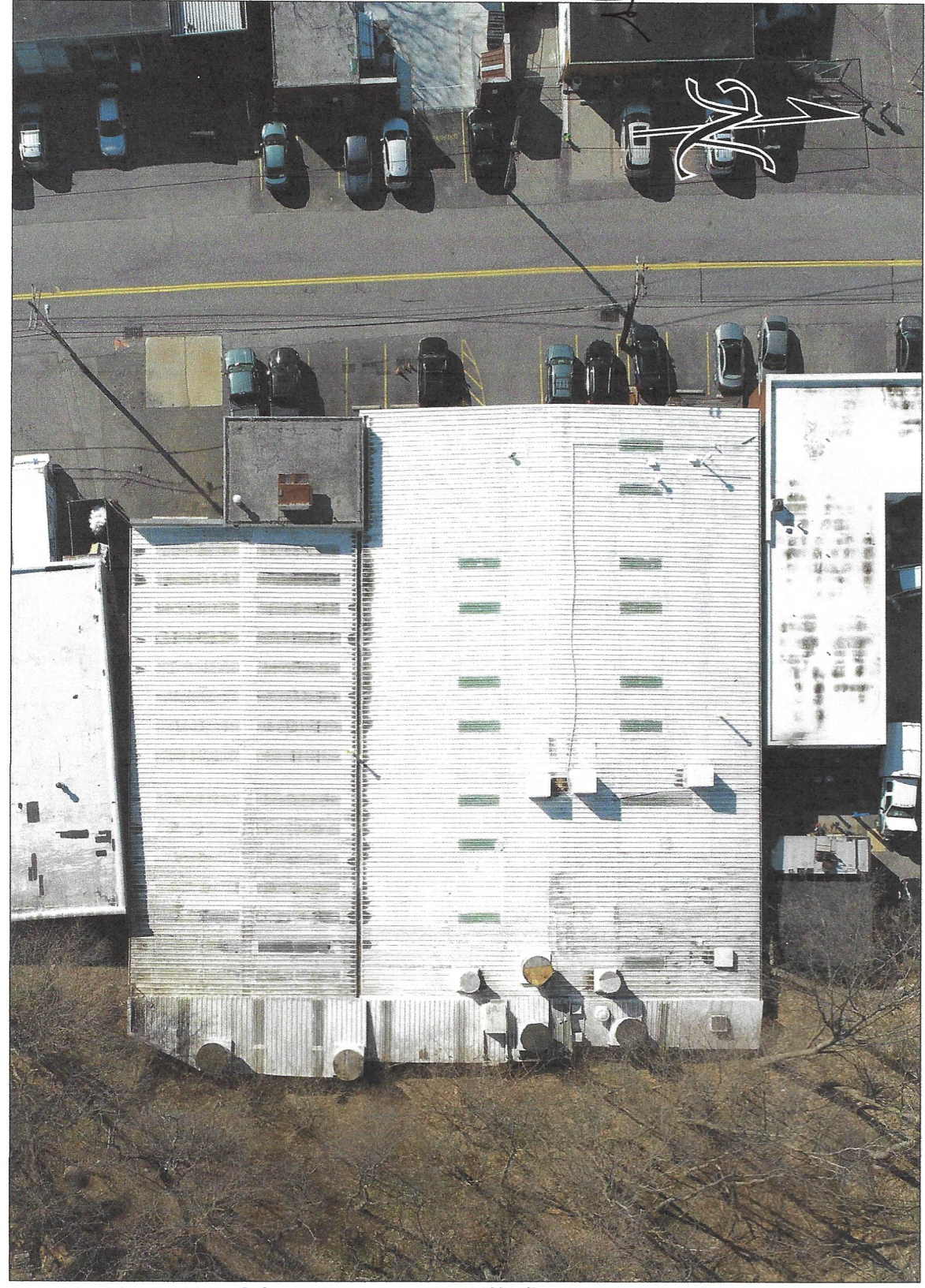
Sheet Index

- A1.1 - Project Overview
- A1.2 - Installation Plan
- A1.3 - Ballast Diagram
- B1.1 - Three Line Diagram
- B1.2 - Equipment Labels
- B1.3 - PV Stringing
- B1.4 - PV Labels
- C1.1 - SolarEdge Optimizer Data Sheet
- C1.2 - SolarEdge Inverter Data Sheet
- C1.3 - Module Data Sheet
- C1.4 - Unirac RM5 Data Sheet
- C1.5 - Unirac RM5 Data Sheet

- (Array 1)
 - 200 Degree Orientation
 - 5 Degree tilt
 - Unirac RM5
 - 171 Modules
- (Array 2)
 - 200 Degree Orientation
 - 5 Degree tilt
 - Unirac RM5
 - 64 Modules
- (Array 3)
 - 200 Degree Orientation
 - 5 Degree tilt
 - Unirac RM5
 - 14 Modules

Project Data

Applicable Codes:	IECC - 2020 Uniform Code Supplement - 2020 NYS Energy Construction Code - 2020 NEC - 2018 IBC - 2018
Building Use:	Commercial Warehouse (steel construction)
Module:	Hanwha Q-Cell Q.PEAK Duo L-G8 430w module (249)
Racking:	Unirac RM5 Ballasted
Inverter(s):	SolarEdge 17.3kw Inverter (5)
Optimizers:	SolarEdge p850w Optimizer (125)
System Rating:	107.07 kw DC - STC



Building Information Use Group: S-1 Construction Class: II-B Roof Height: 15' Number of Stories: 1 Roof Area: 14,600 sqf	Roof Loads Ground Snow Load (psf) 30 Wind Load (mph) 125 Solar Array (psf) 3.98 psf	Proposed Design Value Maintain existing roof integrity with integration of 107.07kw photovoltaic installation and supporting equipment coinciding with all national and local regulatory requirements set forth by the concerned AHJ.	Prescriptive Value/Citation Supporting Documentation -Unirac RM5 ballasted trays -EPDM slipsheet -32lb concrete block ballast -Windscreen on leading edge of array
		Item Description Installation 249 430w modules mounted on Unirac RM5 ballasted trays. Supporting equipment to be mounted on northwest interior wall of building with local disconnect located on roof.	C-100 Datasheets
		No new construction has been proposed. PV system is to be mounted on existing roof structure. The existing roof is structurally sound and stable and will support the proposed solar array with no modification necessary.	Any commercial or residential activity of this structure will remain uninterrupted during construction. No work shall be performed that affects egress fire safety, rated assemblies, occupant health, excessive noise or structural integrity.

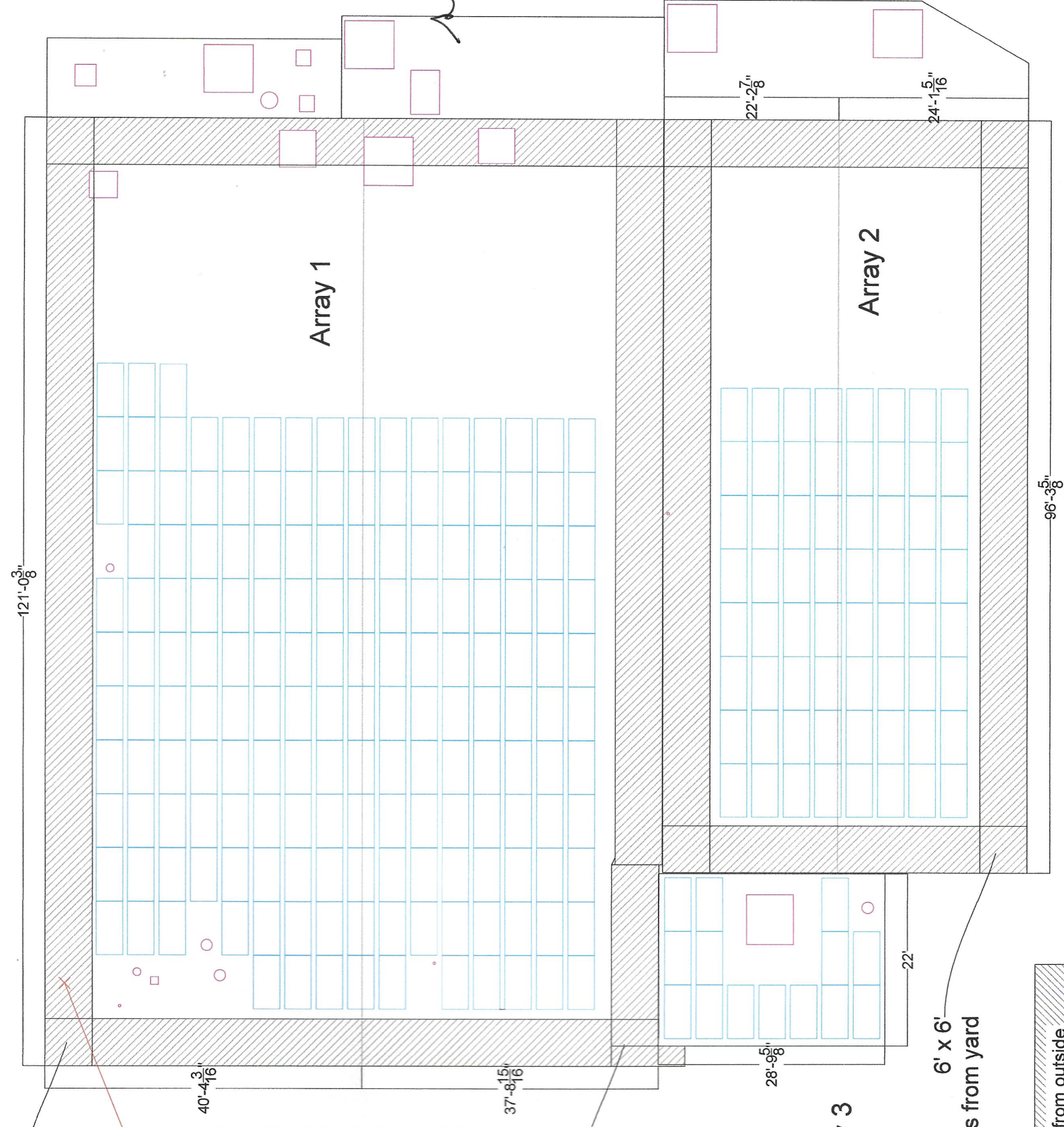
Michael Bellantoni, Inc.

The existing roof structure has been evaluated for the proposed solar load requirements and was determined to be of sufficient structural capacity for the following method of installation.

- Rolled asphalt roof, insulation board, q-decking, 24" steel i-beam w/ truss spaced 10' oc
- Unirac RM5 Ballasted trays w/ EPDM slipsheets

It is a violation of the law for any person unless they are acting under the direction of a licensed professional engineer to alter any item in any way. If an item bearing the seal of an engineer is altered, the altering engineer shall affix to the item their seal and the notation "altered by" followed by their signature and specific description of the alteration.

	Contractor: Green Hybrid Energy Solutions 11 Washington Place East, White Plains, New York, 10603	Project: 120 Lafayette Avenue, White Plains, New York 10603		D.O.B. Stamp
Sheet Title: Installation Overview		Sheet Size: Arch D		
Drawn: GMJ		Approved:		
Date: Apr 10, 2021		Sheet Number: A1.1		
Sheet 1 of 12				













6' x 6'
ladder access from yard

6' x 6'
ladder access from yard

6' x 6'
ladder access from yard

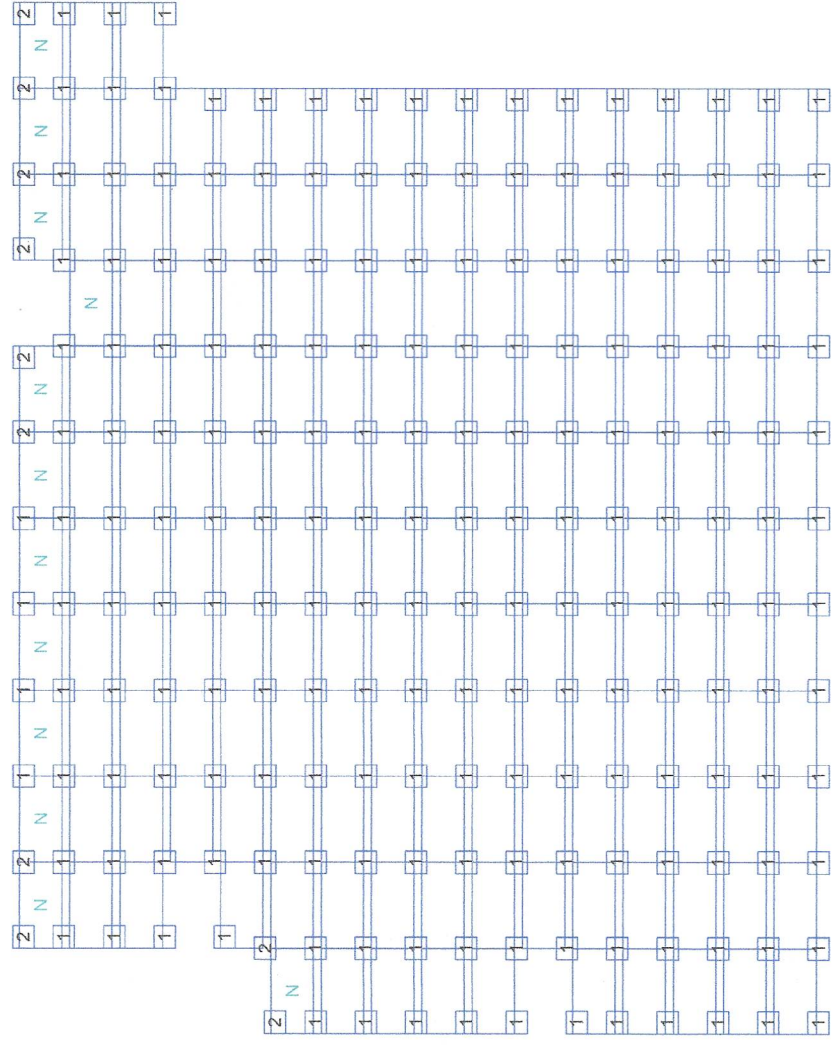
6' perimeter fire access from outside parapet and roof access locations

-  17.3kW SolarEdge Inverter (northwest interior of bldg)
-  17.3kW SolarEdge Inverter (northwest interior of bldg)
-  17.3kW SolarEdge Inverter (northwest interior of bldg)
-  17.3kW SolarEdge Inverter (northwest interior of bldg)
-  17.3kW SolarEdge Inverter (northwest interior of bldg)
-  Local AC Disconnect Non-Fusible (on roof)
-  Solar Production Meter (northwest interior of bldg)
-  400a AC Disconnect Fusible (northwest interior of bldg)
-  600a House Panel (northwest interior of bldg)
-  Existing Utility Meter (northwest exterior of bldg)



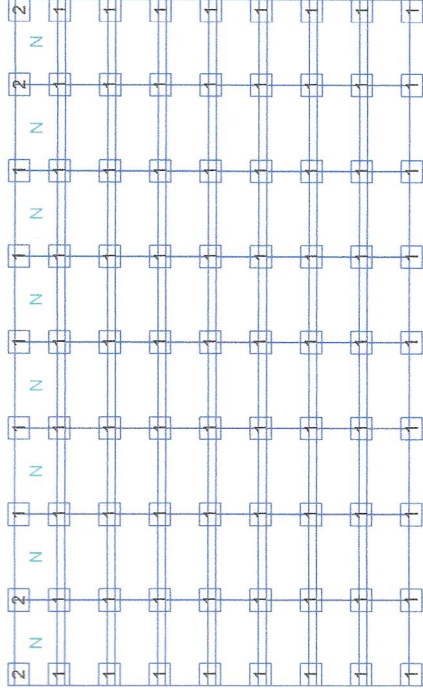
Array 1

ENGINEERING REPORT	
Plan review	
AVERAGE PSF	3.82 psf
TOTAL NUMBER OF MODULES	171
TOTAL KW	75.53 KW
TOTAL AREA	~4700 ft ²
TOTAL WEIGHT ON ROOF	17972 lbs
RACKING WEIGHT	1729 lbs
MODULE WEIGHT	9427 lbs
BALLAST WEIGHT	6816 lbs
MAX BAY LOAD (DEAD)	116 lbs



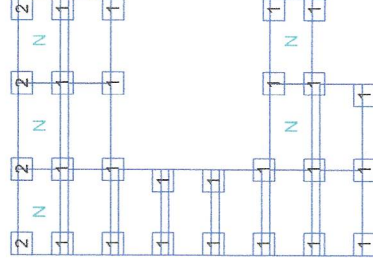
Array 2


ENGINEERING REPORT	
Plan review	
AVERAGE PSF	3.94 psf
TOTAL NUMBER OF MODULES	64
TOTAL KW	27.52 KW
TOTAL AREA	~1767 ft ²
TOTAL WEIGHT ON ROOF	6956 lbs
RACKING WEIGHT	708 lbs
MODULE WEIGHT	3528 lbs
BALLAST WEIGHT	2720 lbs
MAX BAY LOAD (DEAD)	105 lbs



Array 3

ENGINEERING REPORT	
Plan review	
AVERAGE PSF	5.04 psf
TOTAL NUMBER OF MODULES	14
TOTAL KW	6.02 KW
TOTAL AREA	~399 ft ²
TOTAL WEIGHT ON ROOF	2011 lbs
RACKING WEIGHT	247 lbs
MODULE WEIGHT	772 lbs
BALLAST WEIGHT	992 lbs
MAX BAY LOAD (DEAD)	105 lbs




Green Hybrid Energy Solutions
 11 Washington Place
 East, White Plains, New York, 10603

Project: 120 Lafayette Avenue, White Plains, New York 10603
 Owner/Applicant:

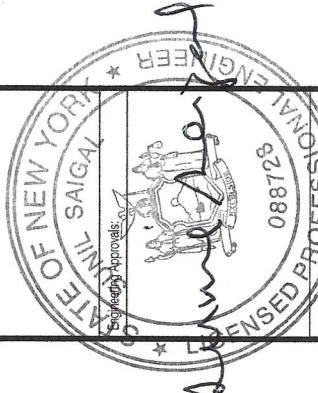
Section: 122.12
 Block: 1
 Lot: 8

D.O.B. Stamp

Sheet Title: **Ballast Layout**
Solar Engineering

Sheet Size: Arch D
 Drawn: GMJ
 Date: Apr 10, 2021
 Sheet Number: **A1.3**

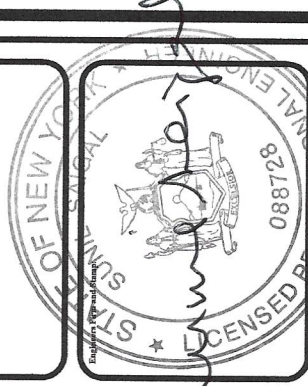
Sheet 3 of 12



TAG	EQUIPMENT MANUFACTURE	EQUIPMENT DESCRIPTION	MODEL
1	QCELLS	430W 72 CELL SOLAR MODULE	Q.PEAK DUO L-C8, 2 430
2	SOLAR EDGE	17.3KW INVERTER AFCI W/ DISCO	SE17.3K-US
3	SOLAR EDGE	860W DUAL OPTIMIZER	P860
4	EXISTING	600AS/550AF FUSIBLE DISCO 88L	EXISTING
5	(N) Sq D	400A AC COMBINER	208/120V 3Ø 4W 400A 3Ø CIR LOAD CENTER
6			
7			

EQUIPMENT SCHEDULE

General Notes
 ELECTRICAL INFORMATION
 UTILITY COMPANY: CONEDISON
 UTILITY INTERACTIVE SYSTEM
 UNGROUNDING
 SYSTEM SIZE: 107.07KW DC
 MODULES:
 QCELLS 430W QTY: 249 MODULES
 INVERTERS:
 SOLAR EDGE SE17.3K-US (208 VOLTS) QTY:5
 MOUNTING SYSTEM: BALLASTED RACKING
 ARRAY TILT: 5 DEG AZIMUTH: 240 DEG
 SERVICE VOLTAGE: 208/120 VOLTS, 3Ø, 4W
 MAIN SERVICE AMPERAGE: 600 AMP



GHES GREEN HYBRID ENERGY SOLUTIONS
 156 Woodbrook Road
 White Plains, NY 10605
 Jamie Glover
 State License # _____
 Date _____

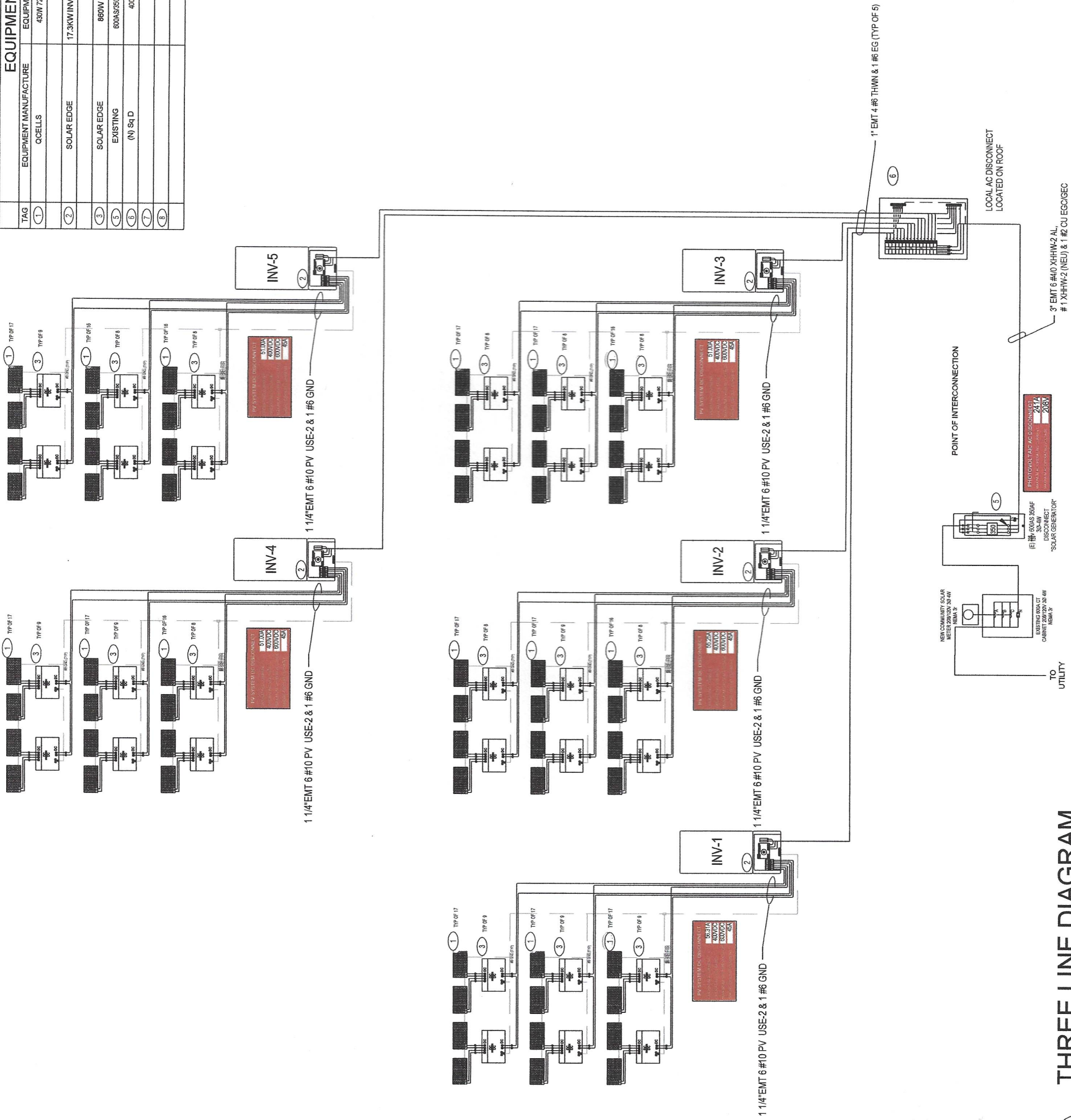
No.	Revision/Issue	Date
△		

THREE LINE DIAGRAM

Project Name and Location:
 107.07 KW DC STC 86.5 KW AC
 COMMERCIAL SOLAR FOR
 Michael Bellantoni, Inc.
 120 Lafayette Ave
 White Plains, NY

Project No. 2021-0302-1
 Date 5/11/2021
 Sheet **PV-1.0**
 Scale **R-0**
 AS NOTED

ORIGINAL DWG SIZE



THREE LINE DIAGRAM
 SCALE: NTS

Module Specifications

Module Manufacturer:	QCELLS	STC Watts	430	VOC Temp Coefficient	-0.270% / C
Module Model:	Q-PEAK DUO L-68.2 430	VOC	49.33 Vdc	Coldest Day VOC	56.12 Vdc
Mounting Type	Roof	VMP	37.6 Vdc	Warmest Day VMP	32.73 Vdc
Correction Factor	Mfg Listed	Imp	10.83 A	OPTIMIZER NORMAL VOLTAGE	400 Vdc
Temperature Scale	Celsius	isc	10.31 A		
Local Temperature Range	-26 THRU 38				

String	P860 mds/STRING	Current Per String	VMAX	Wire Size	Ohms/M	Wire Length One Way	Total Ohms	Est'dr. VD	%VD
String 1-1	17	18.28	400	#10	1.24	150	0.372	6.798	1.700%
String 1-2	17	18.28	400	#10	1.24	120	0.2976	5.439	1.360%
String 1-3	16	17.20	400	#10	1.24	120	0.2976	5.119	1.280%
	50	53.75							
String 2-1	17	18.28	400	#10	1.24	120	0.2976	5.439	1.360%
String 2-2	17	18.28	400	#10	1.24	140	0.3472	6.345	1.586%
String 2-3	16	17.20	400	#10	1.24	140	0.3472	5.972	1.493%
	50	53.75							
String 3-1	17	18.28	400	#10	1.24	120	0.2976	5.439	1.360%
String 3-2	17	18.28	400	#10	1.24	140	0.3472	6.345	1.586%
String 3-3	16	17.20	400	#10	1.24	140	0.3472	5.972	1.493%
	50	53.75							
String 4-1	17	18.28	400	#10	1.24	120	0.2976	5.439	1.360%
String 4-2	17	18.28	400	#10	1.24	140	0.3472	6.345	1.586%
String 4-3	16	17.20	400	#10	1.24	140	0.3472	5.972	1.493%
	50	53.75							
String 5-1	17	18.28	400	#10	1.24	120	0.2976	5.439	1.360%
String 5-2	16	17.20	400	#10	1.24	140	0.3472	5.972	1.493%
String 5-3	16	17.20	400	#10	1.24	140	0.3472	5.972	1.493%
	49	52.68							
Total Modules	249								
		107.07	kw						

AC Voltage Drop Calculations

Length one way (L)	Current (I)	K	Wire Size & Typw		CM	Vd=1.73KxLxI/CM	Voltage	%Vd	FEEDER
			SIZE	# SETS					
10	241.25	21.2	#500	1	500000	0.1770	208	0.085%	LOCAL DISCO-POC
40	241.25	21.2	#4/0	2	211600	1.6726	208	0.804%	AC COMBINER-DISCO
10	48.25	12.9	#6	1	26240	0.4104	208	0.197%	INVERTER #1
10	48.25	12.9	#6	1	26240	0.4104	208	0.197%	INVERTER #2
10	48.25	12.9	#6	1	26240	0.4104	208	0.197%	INVERTER #1
40	48.25	12.9	#6	1	26240	1.6415	208	0.789%	INVERTER #2
50	48.25	12.9	#6	1	26240	2.0518	208	0.986%	INVERTER #2

DC VOLTAGE

PV MODULE Vmp 49.33 VDC STC
 PV MODULE Voc 41.7 VDC STC
 MAXIMUM PV MODULES PER STRING = 1
 CORRECTION FACTOR PER NEC 690.7 (A) FOR 26°C = 1.1377%
 1.1377 X (PV MODULE Voc AT 25°C) = 56.12 VDC
 MAXIMUM DC VOLTAGE = 1 X (56.12) = 56.12 VDC

PV SOURCE CIRCUIT (DC COMBINER) NOT USED

TOTAL DC CURRENT = 18.3A TIMES 1.25 X 1.25 28.6 A
 TEMPERATURE CORRECTION FACTOR FOR 55°C AMBIENT = 0.87
 CORRECTED AMPACITY (FOR #10 AWG) = 40 A X 0.87 = 34.8 A > 28.6 A

AC COMBINER OUTPUT CIRCUIT

MAX CONTINUOUS CURRENT = 241.25 A
 AC COMBINER CIRCUIT OVER CURRENT PROTECTION = 350 A FUSE
 80% OF OVER CURRENT PROTECTION RATING = 280 A
 OUTPUT CIRCUIT CONTINUOUS CURRENT = 241.25 A < 280 A
 COMBINED INVERTER OUTPUT TO DISCONNECT = 2 SETS #4/0 THWN-2,
 90°C RATED
 TEMPERATURE CORRECTION FACTOR FOR 41°C AMBIENT = 0.87
 CORRECTED AMPACITY = 410 X 0.87 X 1 = 356.7 A > 241.25 A

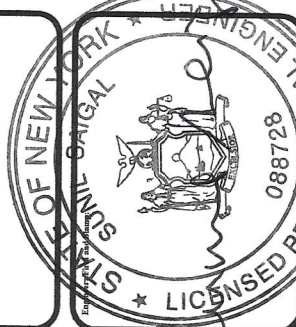
PV SOURCE CIRCUIT (OPTIMIZER STRINGS)

PV MODULE I_{sc} = 10.31 A
 PV MODULE I_{mp} = 10.83A
 # OF MODULES IN LARGEST OPTIMIZER STRING = 17
 MAX I_{sc} = (17 X 430 W)/400v X (1.25 X 1.25) = 28.5 A
 DUAL COATED PV WIRE, 105°/90°C RATED
 TEMPERATURE CORRECTION FACTOR FOR 55°C AMBIENT = 0.87
 CORRECTED AMPACITY (FOR #10 AWG) = 40A X 0.87 = 34.8 A > 28.5 A
 INVERTER #1-5 OUTPUT CIRCUIT

MAX CONTINUOUS CURRENT = 48.25 A
 INVERTER OUTPUT CIRCUIT OVER CURRENT PROTECTION = 70 A CB
 80% OF OVER CURRENT PROTECTION RATING = 56 A
 OUTPUT CIRCUIT CONTINUOUS CURRENT = 48.25 A < 56 A
 INVERTER OUTPUT WIRING TO AC COMBINER PANEL = #6 THWN-2, 90°C RATED
 TEMPERATURE CORRECTION FACTOR FOR 41°C AMBIENT = 0.87
 CORRECTED AMPACITY = 75 X 0.87 X 1 = 65.25 A > 48.25 A

General Notes

General Notes



156 Widdbrook Road
 White Plains, NY 10605

Jamie Glover
 State License # _____
 Date _____

No.	Revision/Issue	Date
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

SINGLE LINE CALCULATIONS

Project Name and Location:
 107.07 KW DC STC 86.5 KW AC
 COMMERCIAL SOLAR FOR
 Michael Bellantoni, Inc.
 120 Lafayette Ave
 White Plains, NY

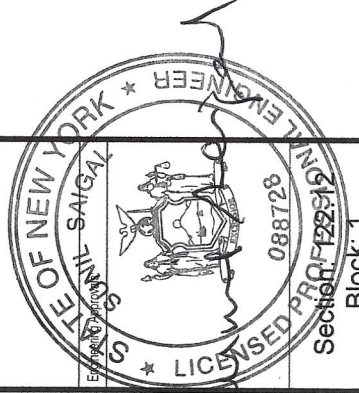
Project No. 2021-0425-2
 Date 5/11/2021
 Sheet AS NOTED
PV-1.1
R-0



Contractor:
Green Hybrid Energy Solutions
 11 Washington Place
 East, White Plains,
 New York, 10603

Project:
 120 Lafayette
 Avenue, White
 Plains, New York
 10603

Owner/Applicant



Section: F22-12
 Block: 1
 Lot: 8

D.O.B. Stamp

Sheet Title:

PV Stringing

**Solar
 Engineering**

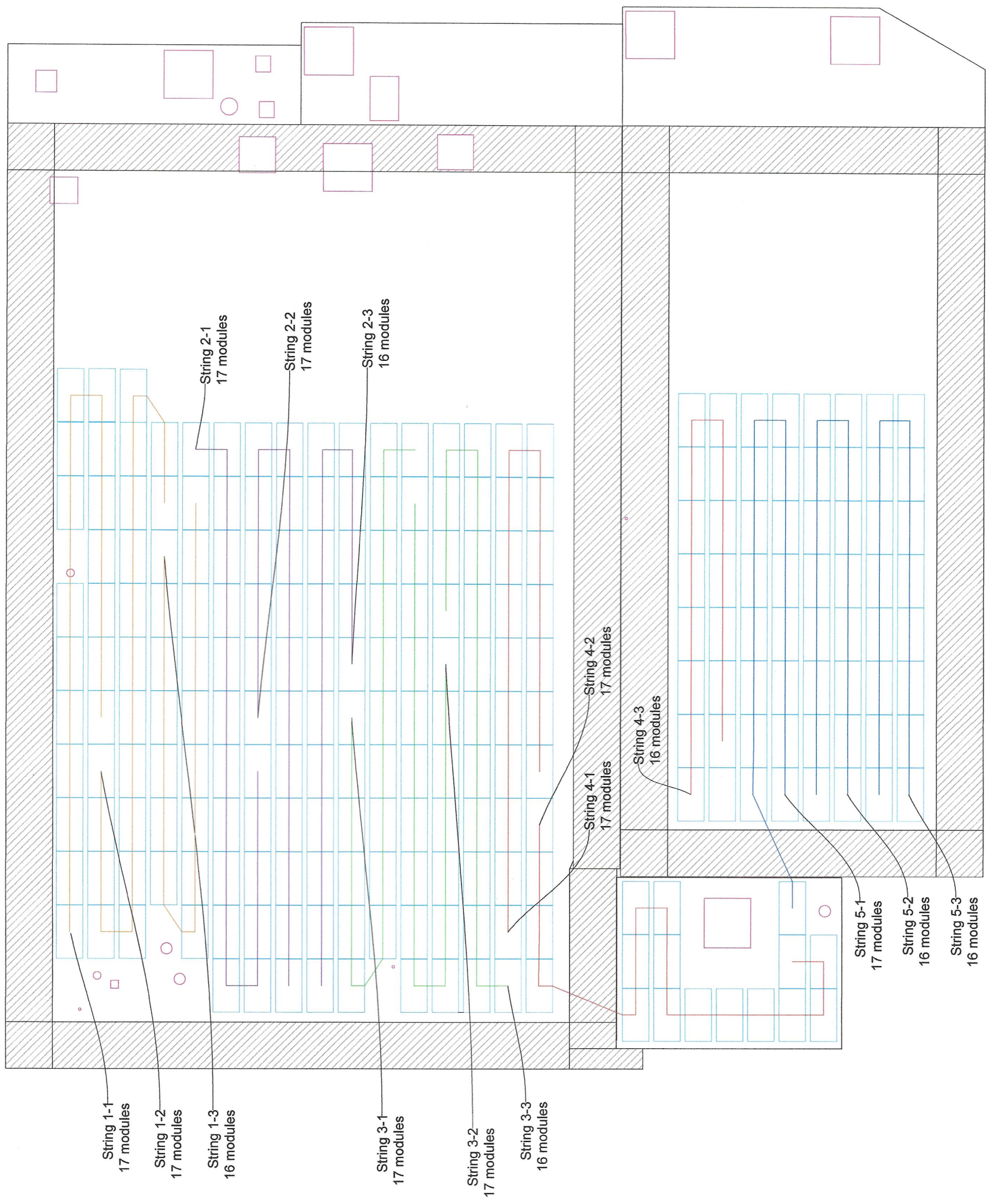
Sheet Size: Arch D

Drawn: GMJ | Approved: -

Date: Apr 10, 2021

Sheet Number: **B1.3**

Sheet 6 of 12



A

**WARNING: PHOTOVOLTAIC
POWER SOURCE**
5 3/4" X 1 1/8"

D

WARNING
**TURN OFF PHOTOVOLTAIC
AC DISCONNECT PRIOR TO
WORKING INSIDE PANEL**
4" X 2"

E

PV SOLAR BREAKER
**DO NOT RELOCATE
THIS OVERCURRENT
DEVICE**
2" X 1"

G

WARNING
ELECTRIC SHOCK HAZARD
**DO NOT TOUCH TERMINALS
ON BOTH THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION**
**PHOTOVOLTAIC MODULES PRODUCE DC VOLTAGE
WHENEVER THEY ARE EXPOSED TO SUNLIGHT**
4" X 3"

B

**PHOTOVOLTAIC SYSTEM
EQUIPPED WITH
RAPID SHUTDOWN**
5.25" X 1.8"

H

WARNING
DUAL POWER SUPPLY
**SOURCES: UTILITY GRID AND
PV SOLAR ELECTRIC SYSTEM**
4" X 2"

F

WARNING
ELECTRIC SHOCK HAZARD
**IF GROUND FAULT IS INDICATED
ALL NORMALLY GROUNDED
CONDUCTORS MAY BE
UNGROUND AND ENERGIZED**
4" X 3"

C

**PHOTOVOLTAIC SYSTEM
DC DISCONNECT**

OPERATING VOLTAGE	VDC
OPERATING CURRENT	AMPS
MAX SYSTEM VOLTAGE	VDC
SHORT CIRCUIT CURRENT	AMPS
CHARGE CONTROLLER MAX	AMPS

4" X 3"

I


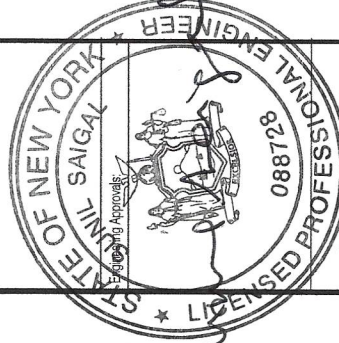
**PHOTOVOLTAIC SYSTEM
AC DISCONNECT**

OPERATING VOLTAGE	VOLTS
OPERATING CURRENT	AMPS

4" X 2"

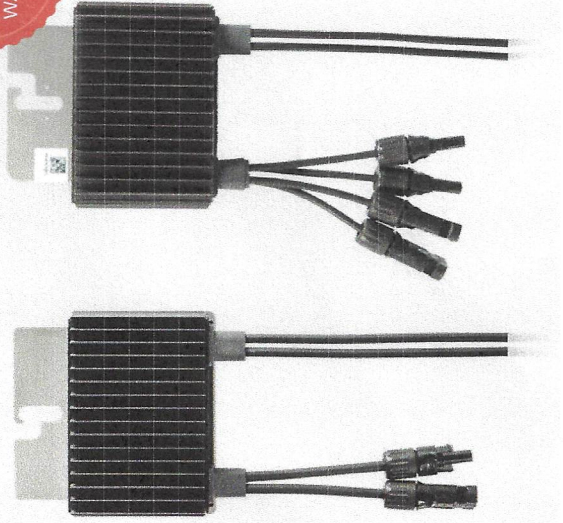
J

CAUTION: AC SOLAR VOLTAGE
5 3/4" X 1 1/8"

 Green Hybrid Energy Solutions 11 Washington Place East, White Plains, New York, 10603		Project: 120 Lafayette Avenue, White Plains, New York 10603		Section: 122.12 Block: 1 Lot: 8	D.O.B. Stamp	Sheet Title: PV Labels	Sheet Size: Arch D Drawn: GMJ Date: Apr 10, 2021 Sheet Number: B1.4
Contractor: Green Hybrid Energy Solutions 11 Washington Place East, White Plains, New York, 10603		Owner/Applicant:		Solar Engineering	Sheet 7 of 12		

Power Optimizer For North America

P730 / P801 / P850 / P950 / P800p



PV power optimization at the module-level The most cost effective solution for commercial and large field installations

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Balance of System cost reduction; 50% less cables, fuses and combiner boxes, over 2x longer string lengths possible
- Fast installation with a single bolt
- Advanced maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Use with two PV modules connected in series or in parallel

solaredge.com



Power Optimizer For North America P730 / P801 / P850 / P950 / P800p

Optimizer Model (Typical Module Compatibility)	P730 (for 2 x 72-cell PV modules)	P801 (for 2 x 72-cell PV modules)	P850 (for 2x high power or bi-facial modules)	P950 (for 2x high power or bi-facial modules)	P800p (for 2x 36-cell 5 PV modules)
---------------------------------------------------	--------------------------------------	--------------------------------------	--------------------------------------------------	--------------------------------------------------	----------------------------------------

INPUT	730	800	850	950	800p
Rated Input DC Power ⁽¹⁾	730	800	850	950	800
Connection Method	Single input for series connected modules				
Absolute Maximum Input Voltage (Vdc at lowest temperature)	125				
MPPT Operating Range	12.5 - 105				
Maximum Short Circuit Current per input (IsC)	11	11.75	12.5	12.5	7
Maximum DC Input Current per input	13.75	14.65	15.6	15.6	8.75
Maximum Efficiency	99.5				
Weighted Efficiency	98.6				
Overtolerance Category	II				

OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)	15	18
Maximum Output Current	15	18
Maximum Output Voltage	85	85

OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)	1 ± 0.1
Safety Output Voltage per Power Optimizer	1 ± 0.1

STANDARD COMPLIANCE	Yes
Photovoltaic Rapid Shutdown System	Yes
EMC	NEC 2014 & NEC2020
Safety	FCC Part 15 Class A, IEC61000-6-2, IEC61000-6-3, IEC62109-1 (Class II safety), UL1741
Material	UL94 V-0, UV Resistant
RoHS	Yes

INSTALLATION SPECIFICATIONS	Three phase inverters
Compatible SolarEdge Inverters	1000
Maximum Allowed System Voltage	129 x 153 x 49.5 / 51 x 6 x 1.9
Dimensions (W x L x H)	129 x 168 x 59 / 51 x 6.4 x 2.3
Weight	933 / 2.05
Input Connector	MC4 ⁽⁴⁾
Input Wire Length	0.16 / 0.52, 1.3 / 4.27
Output Wire Type / Connector	0.16 / 0.52, 1.6 / 5.24 ⁽⁵⁾ Double insulated / MC4
Output Wire Length	2.1 / 6.9 ⁽⁶⁾
Operating Temperature Range ⁽⁷⁾	2.2 / 7.22
Protection Rating	-40 to +85 / -40 to +85 IP68 / NEMA4P
Relative Humidity	0 - 100

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed.
 (2) In a case of odd number of PV modules in one string it is allowed to install one P730/P801/P850/P950 power optimizer connected to one PV module. When connecting a single module to the P800p requires main combined input voltage be not more than 80V.
 (3) For other PV modules, please refer to the SolarEdge website for compatibility.
 (4) For other PV modules, please refer to the SolarEdge website for compatibility.
 (5) Longer wire length is available for use with split junction box modules. For 1.6m/5.24ft order P801-xxxxxx. For 1.3m/4.27ft order P801-xxxxxx.
 (6) When using the P850 with longer input option (1.6m/5.24ft), the output wire length is 2.2m/7.2ft.
 (7) For ambient temperature above +70°C / +158°F, power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter ⁽⁸⁾	Three Phase for 208V Grid	Three Phase for 277/480V Grid
Compatible Power Optimizers	P730/P801 ⁽⁹⁾	P730/P801 / P850/P800p / P950
Power Optimizers	8	14
PV Modules	16	27
Power Optimizers	30	30
PV Modules	60	60
Maximum Power per String	6000 ⁽¹⁰⁾	12750 ⁽¹¹⁾
Parallel Strings of Different Lengths or Orientations	Yes	Yes

(8) P730/P801 can be mixed in one string, and P850/P800p/P950 can also be mixed in one string. It is not allowed to mix P730/P801 with P850/P800p/P950, nor is it allowed to mix P730/P801 with P950-P505 in one string.
 (9) P730/P801/P850/P800p/P950 are not allowed to be mixed in one string. For verification of string configurations, please refer to the SolarEdge website for compatibility.
 (10) For 208V grid, with P730/P801 it is allowed to install up to 2,000W per string and with P850/P800p up to 8,400W per string when the maximum power difference between each string is 1,000W each string is 2,000W.
 (11) For the 277/480V grid, with P730/P801 up to 15,000W per string may be installed, with P850/P800p up to 17,550W and with P950 up to 20,300W per string may be installed when the maximum power difference between each string is 2,000W.
 For the P850, minimum three strings are required for SE33.3K and SE40K Inverters.

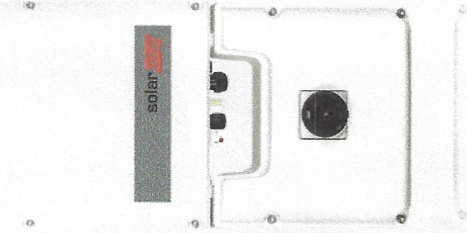
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Sheet Title: SolarEdge Optimizer Data Sheet					
Sheet Size: Arch D					
Drawn: GMJ					
Date: Apr 10, 2021					
Sheet Number: C1.1					
Sheet 8 of 12					

Three Phase Inverters for the 120/208V Grid

SE14.4KUS / SE17.3KUS



The best choice for SolarEdge enabled systems

- Specifically designed to work with power optimizers
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for superior efficiency (97.5%) and longer strings
- Built-in type 2 DC and AC Surge Protection, to better withstand lightning events
- Small, lightest in its class, and easy to install outdoors or indoors on provided bracket
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- Built-in module-level monitoring with Ethernet, wireless or cellular communication for full system visibility
- Integrated Safety Switch
- UL1741 SA certified, for CPUC Rule 21 grid compliance

solaredge.com



Three Phase Inverters for the 120/208V Grid⁽¹⁾ for North America SE14.4KUS / SE17.3KUS

MODEL NUMBER SE14.4KUS SE17.3KUS
APPLICABLE TO INVERTERS WITH PART NUMBER SEXXK-USX2IXXXX

OUTPUT	
Rated AC Power Output	14400 W
Maximum apparent AC output power	14400 VA
AC Output Line Connections	3W + PE, 4W + PE
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-N)	105-120-132.5 V _{ac}
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-L)	183-208-229 V _{ac}
AC Frequency Min-Nom-Max ⁽³⁾	59.3 - 60 - 60.5 Hz
Continuous Output Current (per Phase)	40 A _{ac}
GFDL Threshold	1 A
Utility Monitoring, Islanding Protection, Country Configurable Set Points	Yes
THD	≤ 3 %
Power Factor Range	+/- 0.85 to 1

INPUT	
Maximum DC Power (Module STC)	21600 W
Transformer-less, Ungrounded	Yes
Maximum Input Voltage DC+ to DC-	600 V _{dc}
Nominal Input Voltage DC+ to DC-	400 V _{dc}
Maximum Input Current	40 A _{dc}
Maximum Input Short Circuit Current	48.25 A _{dc}
Reverse-Polarity Protection	Yes
Ground-Fault Isolation Detection	167kΩ Sensitivity ⁽⁴⁾
CEC Weighted Efficiency	97.5 %
Night-time Power Consumption	< 4 W

ADDITIONAL FEATURES	
Supported Communication Interfaces	2 x RS485, Ethernet, Cellular (optional)
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi access point for local connection
Rapid Shutdown	NEC2014, NEC2017 and NEC2020 compliant/certified
RS485 Surge Protection Plug-in	Supplied with the inverter, Built-in
AC, DC Surge Protection	Type II, field replaceable, Built-in
DC Fuses (Single Pole)	25A, Built-in
Smart Energy Management	Export Limitation

DC SAFETY SWITCH	
DC Disconnect	Integrated

STANDARD COMPLIANCE	
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCT according to TILL M-07
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HF)
Emissions	FCC part15 class A

INSTALLATION SPECIFICATIONS	
AC output conduit size /AWG range	3/4" or 1" / 6 - 10 AWG
DC input conduit size / AWG range	3/4" or 1" / 6 - 12 AWG
Number of DC inputs pairs	4
Dimensions with Safety Switch (H x W x D)	31.8 x 12.5 x 11.8 / 808 x 317 x 300 in / mm
Weight with Safety Switch	78.2 / 35.5 lb / kg
Cooling	Fans (user replaceable)
Noise	< 62 dBA
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁴⁾ °F / °C
Protection Rating	NEMA 3R
Mounting	Bracket provided

(1) For 277/480V inverters refer to: <https://www.solaredge.com/sites/default/files/se-three-phase-us-inverter-277-480v-setapp-datasheet.pdf>
 (2) For other regional settings please contact SolarEdge support
 (3) Where permitted by local regulations
 (4) For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-de-rating-note-na.pdf>

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Contractor: Green Hybrid Energy Solutions
 11 Washington Place East, White Plains, New York, 10603

Project: 120 Lafayette Avenue, White Plains, New York 10603

Owner/Applicant: [Redacted]

Engineer: [Redacted]

Section: 122-12
 Block: 1
 Lot: 8

D.O.B. Stamp

Sheet Title: SolarEdge Inverter Data Sheet
 Solar Engineering

Sheet Size: Arch D
 Drawn: GMJ
 Approved: [Redacted]

Date: Apr 10, 2021

Sheet Number: C1.2

Sheet 9 of 12



powered by
Q. ANTUM DUO

Q. PEAK DUO L-G8 415-430

ENDURING HIGH PERFORMANCE



Q. ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.3%.

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminium alloy frame, certified for high snow (5400Pa) and wind loads (2400Pa).

A RELIABLE INVESTMENT
Inclusive 12-year product warranty and 25-year linear performance warranty².

STATE OF THE ART MODULE TECHNOLOGY
Q. ANTUM DUO combines cutting edge cell separation and innovative 1.2-busbar design with Q. ANTUM Technology.

¹ IFT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)
² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



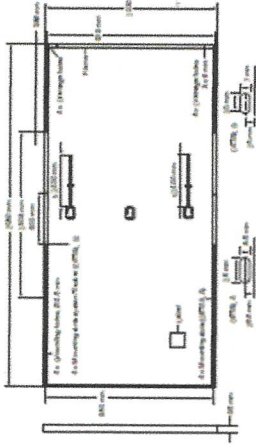
Rooftop arrays on commercial/industrial buildings
Ground-mounted solar power plants

Engineered in Germany



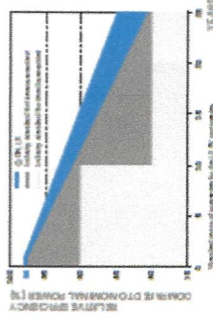
MECHANICAL SPECIFICATION

Format	2080mm × 1030mm × 35mm (including frame)
Weight	24.5kg
Front Cover	3.2mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodised aluminium
Cell	6 × 24 monocrystalline Q. ANTUM solar half cells
Junction box	53-101mm × 32-60mm × 15-18mm Protection class IP67, with bypass diodes
Cable	4mm ² Solar cable; (+) ≥ 1400mm, (-) ≥ 1400mm
Connector	Sikahi MC4, Hanwha Q CELLS HQ4, Amphion LTX, Renhe 05-6, Tongfang T-Cable QS, JMTRY AM60, IP68 or friends PV2a, IP67



ELECTRICAL CHARACTERISTICS

POWER CLASS	415	420	425	430
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC (POWER TOLERANCE ±5W / -0W)				
Power at MPP	P_{MPP} [W]	415	420	425
Short Circuit Current ¹	I_{sc} [A]	10.89	10.74	10.78
Open Circuit Voltage ¹	V_{oc} [V]	48.59	48.84	49.09
Current at MPP	I_{MPP} [A]	10.18	10.22	10.27
Voltage at MPP	V_{MPP} [V]	40.77	41.08	41.39
Efficiency ¹	η [%]	≥ 19.4	≥ 19.8	≥ 20.1
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²				
Power at MPP	P_{MPP} [W]	310.8	314.5	318.3
Short Circuit Current	I_{sc} [A]	8.61	8.65	8.69
Open Circuit Voltage	V_{oc} [V]	45.82	46.05	46.29
Current at MPP	I_{MPP} [A]	8.01	8.05	8.08
Voltage at MPP	V_{MPP} [V]	38.79	39.09	39.38
Q CELLS PERFORMANCE WARRANTY				
¹ Measurement tolerances $P_{MPP} \pm 3\%$; $I_{sc} \pm 5\%$; $V_{oc} \pm 5\%$ at STC: 1000W/m ² , 25±2 °C, AM 1.5 according to IEC 60894-3 + 800W/m ² , NMOT, spectrum AM 1.5				
PERFORMANCE AT LOW IRRADIANCE				
Power at MPP	P_{MPP} [W]	420	425	430
Short Circuit Current ¹	I_{sc} [A]	10.89	10.78	10.89
Open Circuit Voltage ¹	V_{oc} [V]	48.59	49.09	49.33
Current at MPP	I_{MPP} [A]	10.18	10.27	10.31
Voltage at MPP	V_{MPP} [V]	40.77	41.39	41.70
Efficiency ¹	η [%]	≥ 19.4	≥ 19.8	≥ 20.1



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 89.1% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000W/m²).

TEMPERATURE COEFFICIENTS	α [%/K]	β [%/K]	γ [%/K]
Temperature Coefficient of I_{sc}	+0.04	Temperature Coefficient of V_{oc}	-0.77
Temperature Coefficient of P_{MPP}	-0.35	Nominal Module Operating Temperature NMOT [°C]	43.2.3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{sys} [V]	1000 (IEC)/1000 (UL)	PV module classification	Class B
Maximum Reverse Current	I_r [A]	20	Fire Rating based on ANSI / UL 1703	C/TYPF 2
Max. Design Load, Push/Pull	[Pa]	3600/1600	Permitted Module Temperature on Continuous Duty	-40 °C - +85 °C
Max. Test Load, Push/Pull	[Pa]	5400/2400		

QUALIFICATIONS AND CERTIFICATES

IEC 61215-2016; IEC 61730-2016	
This data sheet complies with DIN EN 50380.	
Number of Modules per Pallet	30
Number of Pallets per Trailer (24t)	24
Number of Pallets per 40' HC-Container (26t)	22
Pallet Dimensions (L × W × H)	2131 × 1130 × 1200mm
Pallet Weight	768kg

Note: Installation instructions must be followed. See the installation and operating manuals or contact our technical service department for further information on approved installation and use of this product.

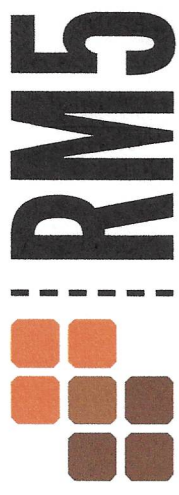
Hanwha Q CELLS GmbH
Sommerstraße 17-21, 100160 Bitterfeld-Wolfen, Germany | TEL: +49 (0)3494 66 99 234-44 | FAX: +49 (0)3494 66 99 230000 | EMAIL: sales@q-cells.com | WEB: www.q-cells.com

Engineered in Germany



	Green Hybrid Energy Solutions 11 Washington Place East, White Plains, New York, 10603
Project: 120 Lafayette Avenue, White Plains, New York 10603	Owner/Applicant:
Engineering Approvals: 	Section: 122.12 Block: 1 Lot: 8 D.O.B. Stamp
Sheet Title:	Module Data Sheet
Sheet Size:	Solar Engineering
Drawn: GMU Approved: Arch D	Date: Apr 10, 2021 Sheet Number: C1.3
Sheet 10 of 12	

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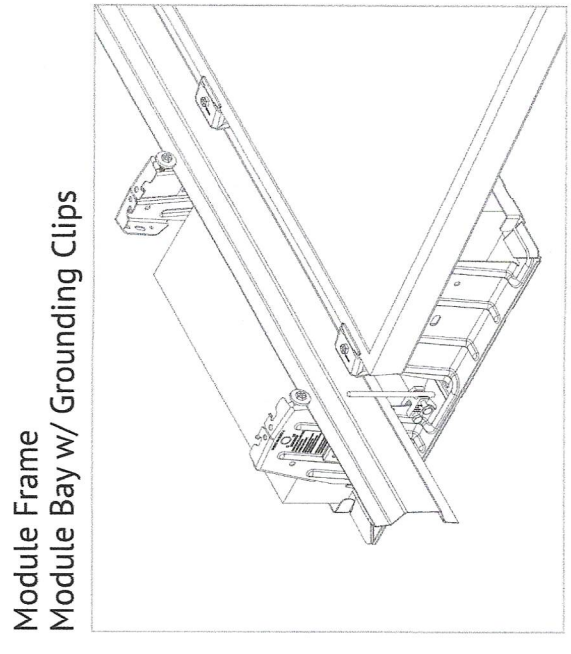
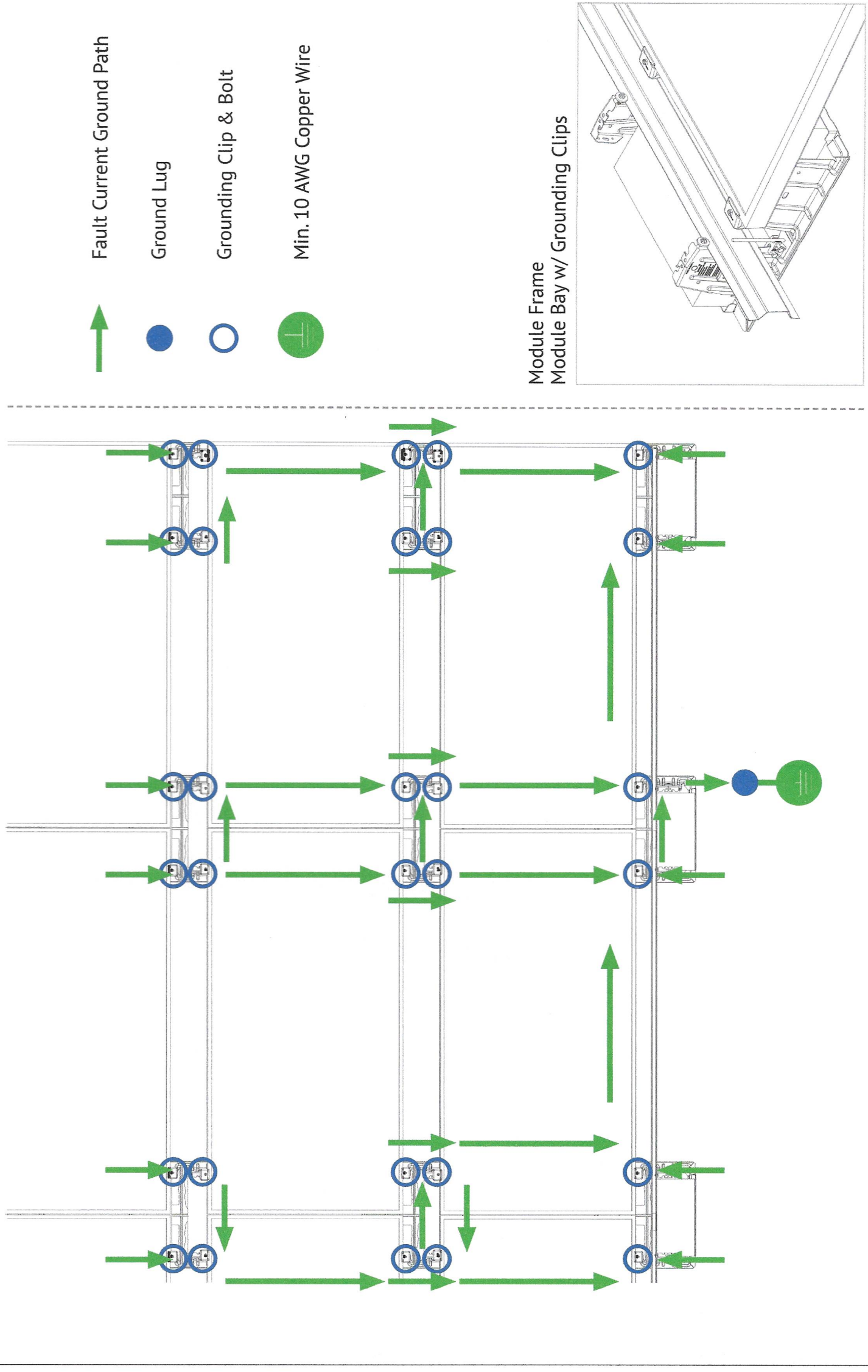
BONDING & ELECTRICAL DIAGRAM

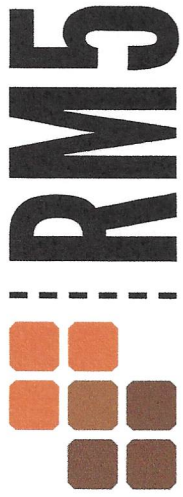
INSTALLATION GUIDE

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PAGE

	Green Hybrid Energy Solutions 11 Washington Place East, White Plains, New York, 10603	Project: 120 Lafayette Avenue, White Plains, New York 10603		Section: 122.12 Block: 1 Lot: 8	D.O.B. Stamp	Sheet Title: RM5 Data Sheet	Solar Engineering	Sheet Size: Arch D Drawn: GMJ Approved: .	Date: Apr 10, 2021 Sheet Number: C1.4
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TOOLS & SPECIFICATIONS

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TECHNICAL DATA SHEET

PAGE

TECHNICAL SPECIFICATIONS:

Material Types: 16G ASTM A653 GR50 Steel
G235 Galvanization

Hardware: Stainless Steel

Bonding and Grounding: UL2703 Listed Continuous Bonding Path.

TOOLS REQUIRED OR RECOMMENDED FOR LAYOUT, ATTACHMENTS & INSTALLATION:

- Drill (**Do Not Use An Impact Driver**)
- 7/16" Socket
- Torque Wrench
- Tape Measure
- Chalk Reel
- Optional Spacers (See Diagram - Page Right)

GENERAL HARDWARE:

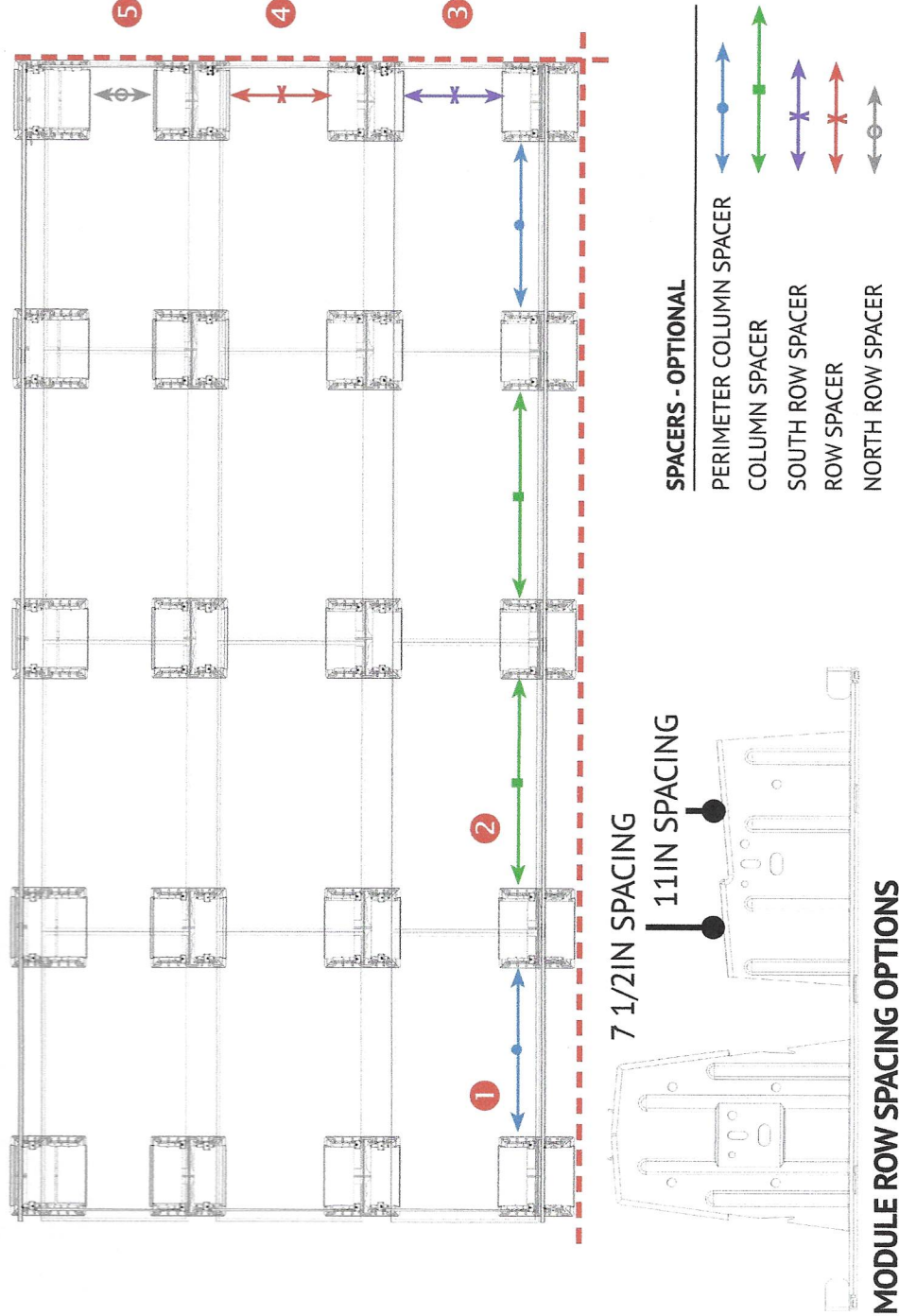
- 1/4-20 X 2 1/2" Hex Head Bolt - Module Clamps
- 1/4-20 X 1" Hex Head Bolt - Wind Deflectors
- 1/4-20 Stainless Steel U-Nuts
- 1/4" Flat Washer 1 1/2" O.D.

SAFETY:

All applicable OSHA safety guidelines should be observed when working on a PV installation job site. The installation and handling of PV solar modules, electrical installation and PV racking systems involves handling components with potentially sharp metal edges. Rules regarding the use of gloves and other personal protective equipment should be observed.

LAYOUT ASSISTANCE TOOL:

Module Dimensions:	RM5	Module location:	Spacing Equations (in Inches):
Module Length (ML) =	1	Perimeter Column Spacing =	For 7.5" inter-row option: $ML + (G/2) - 32.04"$
Module Width (MW) =	2	Interior Column Spacing =	$ML + G - 21.36"$
Preferred module gap? (1/4" - 1" is permissible)	3	South Row Spacing =	$(MW \times 0.996) - 12.79"$
East/West Module Gap (G) =	4	Row Spacing =	$(MW \times 0.996) - 9.25"$
	5	North Row Spacing =	$(MW \times 0.996) - 18.46"$



Contractor:
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Data Sheet
Solar Engineering

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Approved: -

Arch D

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