

**SCOPE OF WORK**

- SYSTEM SIZE: 7150W DC, 6000W AC
- MODULES: (22) JA SOLAR JAM60S17-325MR
- INVERTERS: (1) SOLAREGE TECHNOLOGIES SE600H-US5N
- RACKING: SUNRACK RLU RL UNIVERSAL SPEEDSEAL TRACK ON COMP, SEE DETAIL SNR-DC-00436

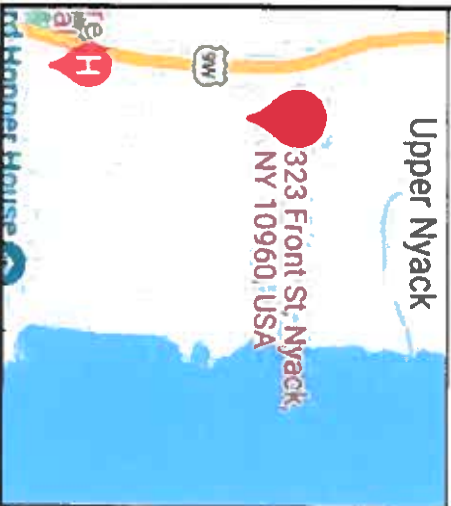
**GENERAL NOTES**

- ALL WORK SHALL COMPLY WITH 2020 NEW YORK STATE RESIDENTIAL CODE WITH 2018 IRC/IBC/IBC MUNICIPAL CODE AND ALL MANUFACTURERS LISTINGS AND INSTALLATION INSTRUCTIONS.
- PHOTOVOLTAIC SYSTEM WILL COMPLY WITH NEC 2017
- ELECTRICAL SYSTEM GROUNDING WILL COMPLY WITH NEC 2017
- PHOTOVOLTAIC SYSTEM IS UNGROUNDED NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER. SYSTEM COMPLIES WITH 690.35
- MODULES CONFORM TO AND ARE LISTED UNDER UL 1703
- INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741
- RACKING CONFORMS TO AND IS LISTED UNDER UL 2703
- SUNRACK RACKING SYSTEMS, IN COMBINATION WITH TYPE I OR TYPE II MODULES, ARE CLASS A FIRE RATED
- RAPID SHUTDOWN REQUIREMENTS MET WHEN INVERTERS AND ALL CONDUCTORS ARE WITHIN ARRAY BOUNDARIES PER NEC 690.12(I).
- CONSTRUCTION FOREMAN TO PLACE CONDUIT RUN PER 690.31(G).
- ARRAY DC CONDUCTORS ARE SIZED FOR DERATED CURRENT
- 10.23 AMPS MODULE SHORT CIRCUIT CURRENT
- 15.98 AMPS DERATED SHORT CIRCUIT CURRENT [690.8 (a) & 690.8 (b)]

**SNOW LOAD: 30 PSF  
WIND SPEED: 114 MPH 3-SEC GUST**



**VICINITY MAP**



**LEGEND AND ABBREVIATIONS**

	SERVICE ENTRANCE		SOLAR MODULES
	MAIN PANEL		SNR MOUNT SHR MOUNT & SMRT
	SUB-PANEL		CHIMNEY
	PV LOAD CENTER		ATTIC VENT
	SUNRUN METER		FLUSH ATTIC VENT
	DEDICATED PV METER		PVC PIPE VENT
	INVERTER(S)		METAL PIPE VENT
	AC DISCONNECT(S)		T-VENT
	DC DISCONNECT(S)		SATELLITE DISH
	IO COMBINER BOX		FIRE SETBACKS
	INTERIOR EQUIPMENT		HARDSCAPE
	PROPERTY LINE		SCALE: NTS
	SHOWN AS DASHED		

REV	NAME	DATE	COMMENTS
B1	REBECCA ZEIGER	9/26/2022	WIND SPEED

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PAGE #	DESCRIPTION
PV-1.0	COVER SHEET
PV-2.0	SITE PLAN
PV-2.1	ELEVATION VIEW
PV-3.0	LAYOUT
PV-4.0	ELECTRICAL
PV-5.0	SIGNAGE



For Structural Only

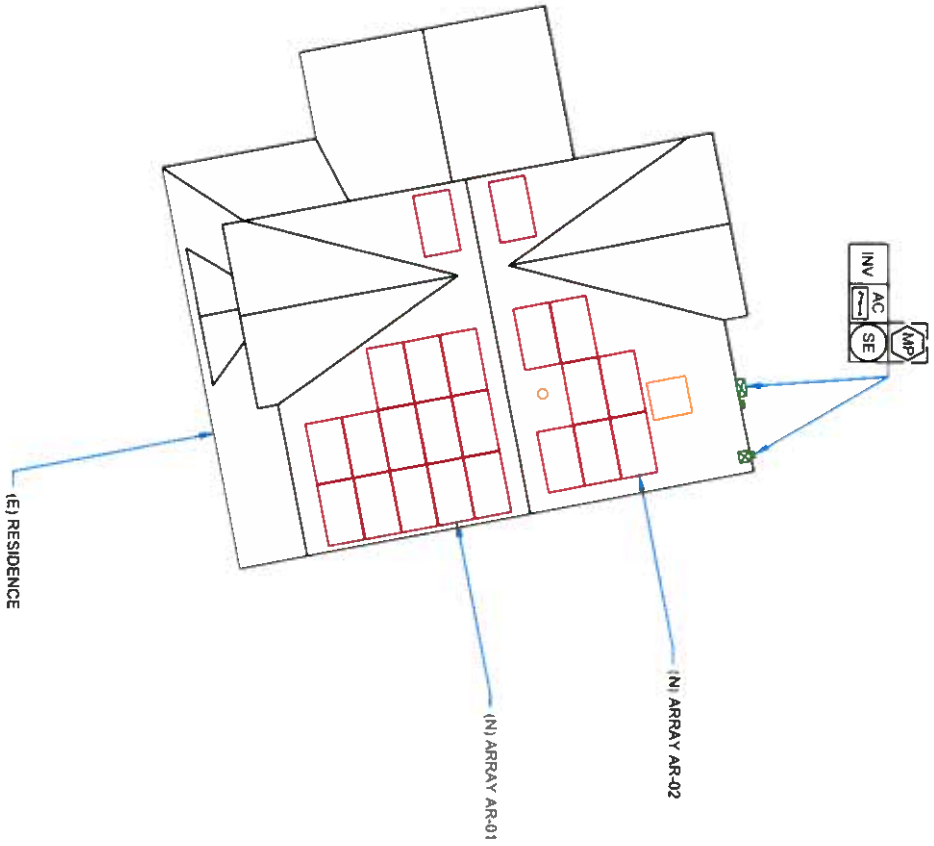


**CUSTOMER RESIDENCE**  
THOMAS PLACE  
323 FRONT ST NYACK NY  
10960  
TE: (845) 323 9597  
APN: 332001-060-017-0001-000-000-0000  
PROJECT NUMBER: 212R-323PLAC

**DESIGNER**  
PRASAMMA MURTI

**SHEET**  
**COVER SHEET**

RE. E. 3-5-2022  
PAGE PV-1.0



ARRAY	TRUE PITCH	TRUE AZIM	MAG AZIM	PV AREA (SQ-FT)
AR-01	27°	169°	191°	253.5
AR-02	2°	349°	361°	1.44.9



For Structural Only

**SUNRUN**

CUSTOMER RESIDENCE  
THOMAS PLACE  
323 FRONT ST. NYACK, NY  
10960

APN: 392001-090-017-0001-006-000-0000

PROJECT NUMBER: 212R-323PLAC

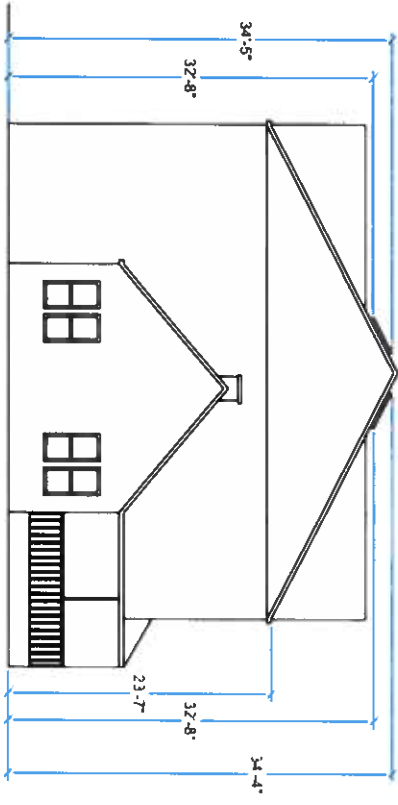
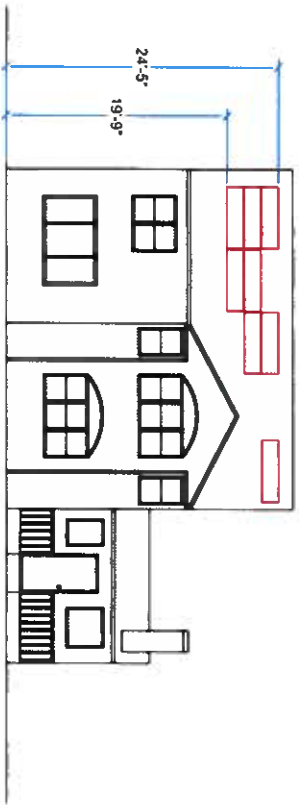
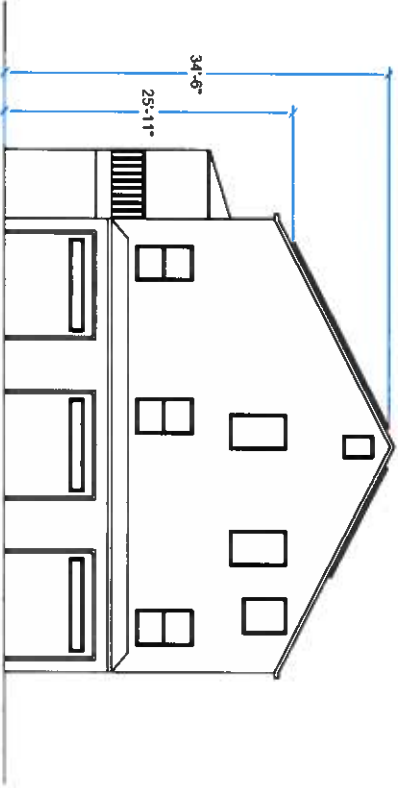
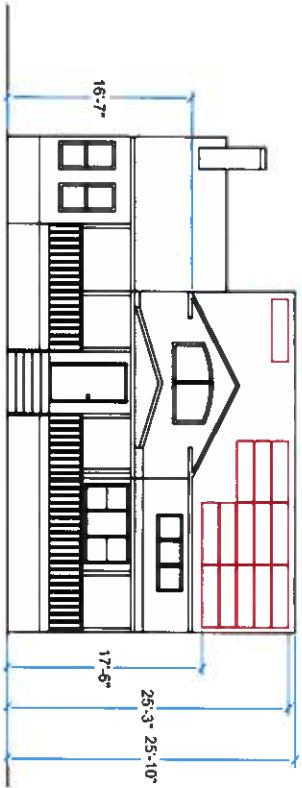
DESIGNER: PRASANNIA KURTI

SHEET: SITE PLAN

RE. E. PV-2.0

PAGE PV-2.0

SITE PLAN DETAIL - SCALE = NTS



For Structural Only

**SUNRUN**

CUSTOMER RESIDENCE  
THOMAS PLACE  
323 FRONT ST NYACK NY  
10960

TE: 845 323 5967

APN: 392001-060-017-0001-008-000-0000

PROJECT NUMBER

212R-323PLAC

DESIGNER

PRASANNA MURTI

SHEET ELEVATION

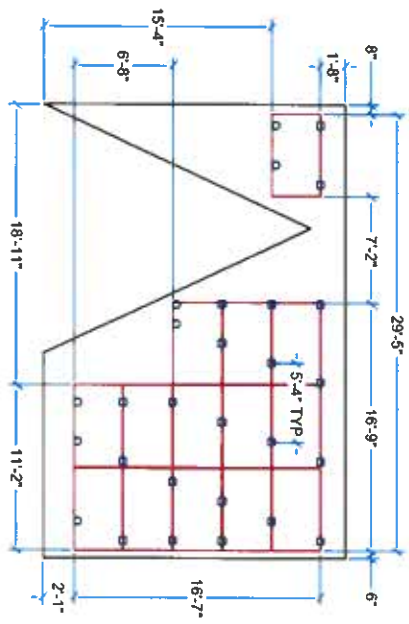
VIEW

RE. E.

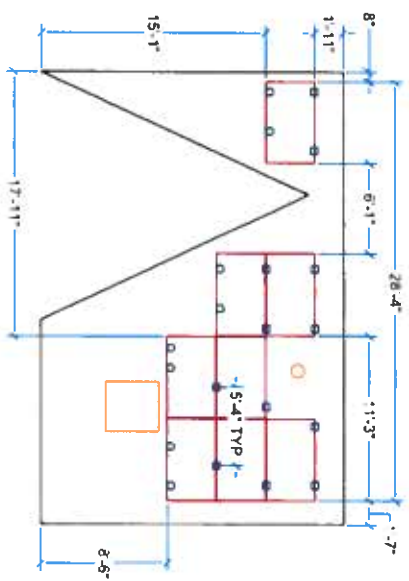
PAGE PV-2.0

ROOF INFO			FRAMING INFO			ATTACHMENT INFORMATION					
Name	Type	Height	Type	Max Span	OC Spacing	Detail	Max Landscape OC Spacing	Max Landscape Overhang	Max Porfall OC Spacing	Max Porfall Overhang	Configuration
AR-01	COMP SHINGLE - RLU	3-Story	2X10 RAFTERS	17' - 8"	16"	RL UNIVERSAL SPEEDSEAL TRACK ON COMP SEE DETAIL SNR-DC-00436	5' - 4"	2' - 1"	4' - 0"	2' - 0"	STAGGERED
AR-02	COMP SHINGLE - RLU	3-Story	2X10 RAFTERS	17' - 9"	16"	RL UNIVERSAL SPEEDSEAL TRACK ON COMP SEE DETAIL SNR-DC-00436	5' - 4"	2' - 1"	4' - 0"	2' - 0"	STAGGERED

D1 - AR-01 - SCALE: 1/8" = 1'-0"  
 AZIM: 169°  
 PITCH: 27°



D2 - AR-02 - SCALE: 1/8" = 1'-0"  
 AZIM: 349°  
 PITCH: 27°



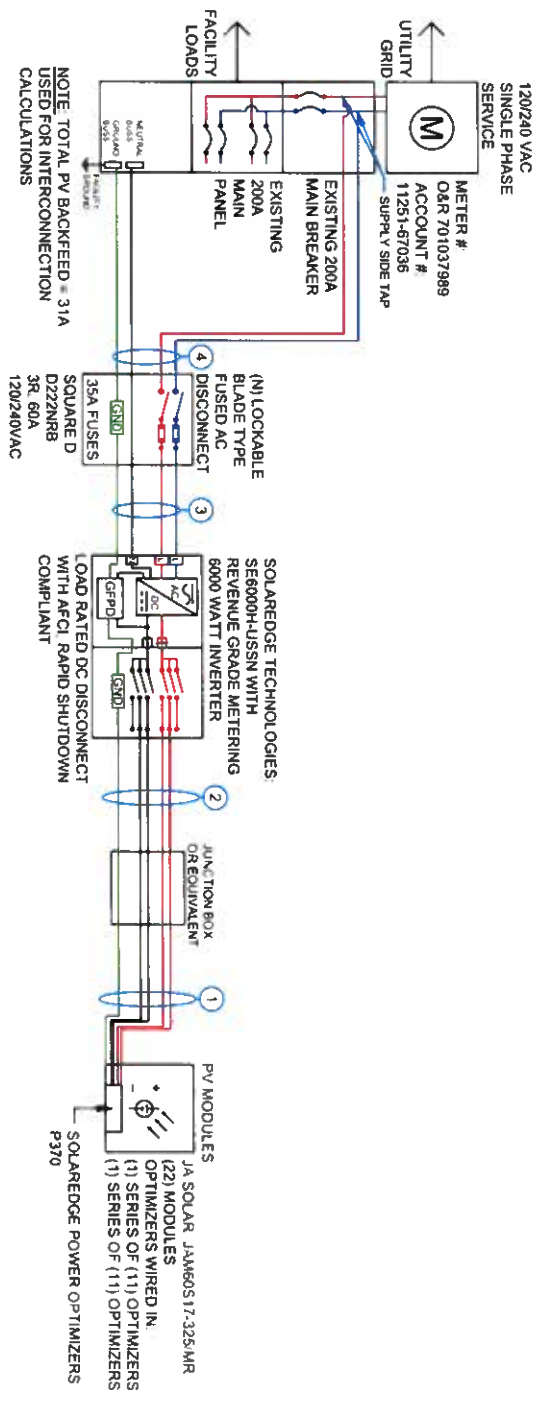
DESIGN CRITERIA	
MAX DISTRIBUTED LOAD: 1 PSF	
WIND SPEED: 114 MPH 3-SEC GUST	
5.5 LAG SCREWS	
5/16" 2.5" MIN EMBEDMENT	
STRUCTURAL NOTES	
INSTALLERS SHALL NOTIFY ENGINEER OF ANY POTENTIAL STRUCTURAL ISSUES OBSERVED PRIOR TO PROCEEDING w/ INSTALLATION	
IF ARRAY (EXCLUDING SKIRT) IS WITHIN 12" BOUNDARY REGION OF ANY ROOF PLANE EDGES (EXCEPT VALLEYS), THEN ATTACHMENTS NEED TO BE ADDED AND OVERHANG REDUCED WITHIN THE 12" BOUNDARY REGION ONLY AS FOLLOWS	
•• ALLOWABLE ATTACHMENT SPACING INDICATED ON PLANS TO BE REDUCED BY 50%	
•• ALL OWABLE OVERHANG INDICATED ON PLANS TO BE 1.5TH OF ALLOWABLE ATTACHMENT SPACING INDICATED ON PLANS	



CUSTOMER RESIDENCE  
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 10950  
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 AON  
 392001-090-011-0001-006-000-0000  
 PROJECT NUMBER  
 212R-223PLA02  
 DESIGNER  
 PRASAMMA MURTI  
 SHEET  
 LAYOUT  
 REVISIONS  
 PV-3.0  
 PAGE



SEE SITE PLAN FOR NORTH ARROW



#	CONDUIT	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(4) 10 AWG PV WIRE	NONE	(1) 6 AWG BARE COPPER
2	3/4" EMT OR EQUIV.	(4) 10 AWG THHN/THWN-2	NONE	(1) 10 AWG THHN/THWN-2
3	3/4" EMT OR EQUIV.	(2) 8 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2
4	3/4" EMT OR EQUIV.	(2) 8 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2

**MODULE CHARACTERISTICS**  
JA SOLAR JAM60S17-32S/MR:  
OPEN CIRCUIT VOLTAGE 40.87 V  
MAX POWER VOLTAGE 33.97 V  
SHORT CIRCUIT CURRENT 10.23 A

**SYSTEM CHARACTERISTICS:**  
325 W  
MIN INPUT VOLTAGE 8 VDC  
MAX INPUT VOLTAGE 60 VDC  
MAX INPUT ISC 11 ADC  
MAX OUTPUT CURRENT 15 ADC

**SYSTEM CHARACTERISTICS - INVERTER 1**  
SYSTEM SIZE 7150 W  
SYSTEM OPEN CIRCUIT VOLTAGE 11 V  
SYSTEM OPERATING VOLTAGE 380 V  
MAX ALLOWABLE DC VOLTAGE 480 V  
SYSTEM OPERATING CURRENT 18.82 A  
SYSTEM SHORT CIRCUIT CURRENT 30 A

CUSTOMER RESIDENCE  
 THOMAS PLACE  
 323 FRONT ST. NYACK, NY  
 10960  
 TEL: (845) 323-5567  
 APN: 39001-060-017-0001-006-000-0000  
 PROJECT NUMBER:  
 212R-323PLAC  
 DESIGNER: PRASANNIA MURTI  
 SHEET: ELECTRICAL  
 REV: PV.4.0  
 PAGE: PV.4.0

**WARNING**  
ELECTRICAL SHOCK HAZARD  
TERMINALS ON LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

**WARNING**  
PHOTOVOLTAIC SYSTEM COMBINER PANEL  
DO NOT ADD LOADS

**WARNING**  
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

**WARNING**  
DO NOT RELOCATE THIS OVERCURRENT DEVICE

**WARNING**  
PHOTOVOLTAIC AC DISCONNECT

**WARNING**  
MAXIMUM SYSTEM VOLTAGE  
MAXIMUM CIRCUIT CURRENT  
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)

480	VDC
30	ADC
15	ADC

**WARNING**  
DO NOT RELOCATE THIS OVERCURRENT DEVICE

**WARNING**  
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

**WARNING**  
PHOTOVOLTAIC AC DISCONNECT

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

**WARNING: PHOTOVOLTAIC POWER SOURCE**

**PHOTOVOLTAIC AC DISCONNECT**  
MAXIMUM AC OPERATING CURRENT 25.00 AMPS  
NOMINAL OPERATING AC VOLTAGE 210 VAC

**WARNING**  
DO NOT RELOCATE THIS OVERCURRENT DEVICE

**WARNING**  
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

**WARNING**  
PHOTOVOLTAIC AC DISCONNECT

**WARNING**  
DO NOT RELOCATE THIS OVERCURRENT DEVICE

**WARNING**  
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

**WARNING**  
PHOTOVOLTAIC AC DISCONNECT

**WARNING**  
DO NOT RELOCATE THIS OVERCURRENT DEVICE

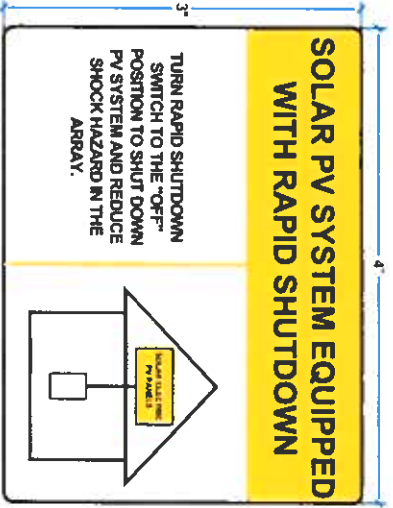
**WARNING**  
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

**WARNING**  
PHOTOVOLTAIC AC DISCONNECT

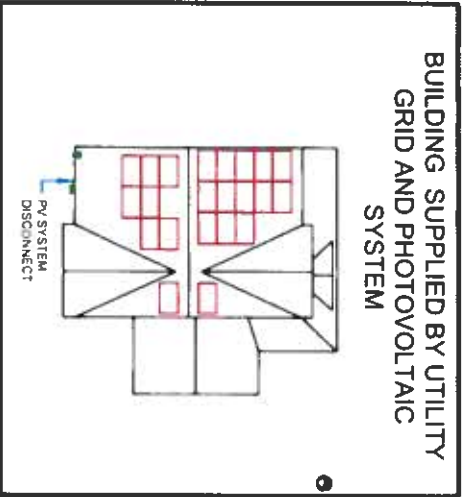
**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

**WARNING: PHOTOVOLTAIC POWER SOURCE**

**PHOTOVOLTAIC AC DISCONNECT**  
MAXIMUM AC OPERATING CURRENT 25.00 AMPS  
NOMINAL OPERATING AC VOLTAGE 210 VAC



LABEL LOCATION:  
ON OR TOGGLE THAT IS 1.413 FT. FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.  
PER CODE(S): NEC 2017-690.56(C)(1)(a) NEC 2017-690.56(C)(1)(a)



LABEL LOCATION:  
POINT OF INTERCONNECTION  
PER CODE NEC 690.56(B) NEC 705.10 235.31 230.2(E)

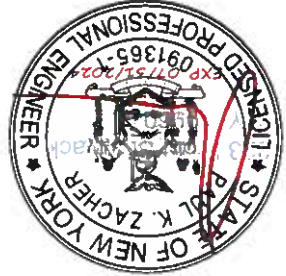
**NOTES AND SPECIFICATIONS:**

- SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF THE NEC 2017 ARTICLE 110.21(B), UNLESS SPECIFIC INSTRUCTIONS ARE REQUIRED BY SECTION 690.56(C) IF REQUESTED BY THE LOCAL AHJ
- SIGNS AND LABELS SHALL ADEQUATELY WARN OF HAZARDS USING EFFECTIVE WORDS, COLORS AND SYMBOLS
- LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WORKING METHOD AND SHALL NOT BE HAND WRITTEN
- LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED
- SIGNS AND LABELS SHALL COMPLY WITH ANSI Z39.4-2011 (PRODUCT SAFETY)
- SIGNS AND LABELS UNLESS OTHERWISE SPECIFIED
- DO NOT COVER EXISTING MANUFACTURER LABELS

CUSTOMER RESIDENCE	THOMAS PLACE 323 FRONT ST. NYACK, NY 10960
TELEPHONE	(945) 373-3567
APN	392001-000-017-0001-006-000-000
PROJECT NUMBER	212R-323PLAC
DESIGNER	PRASANNA MURTI
SHEET	SIGNAGE
REV.	5.2.2018
PAGE	PV-5.0

Paul Zacher, P.E.  
 Professional Engineer  
 T: 916.961.3960 x101  
 E-mail: paul@pzse.com

1478 Stone Point Dr, Suite 190, Roseville, CA, 95661 | P (916)961-3960



Results Summary (Hardware Check Includes Uplift Check on Attachments/Fastener, Structure Check Considers Main Structure)			
AR-01	Orientation Attachment Spacing/Cantilever Configuration Max DCR Result	64 / 25 Staggered Staggered 50% Pass	
	Roofing Material Pitch Structure Check	48 / 24 Staggered 60% Pass	
	AR-02	Orientation Attachment Spacing/Cantilever Configuration Max DCR Result	64 / 25 Staggered Staggered 50% Pass
		Roofing Material Pitch Structure Check	48 / 24 Staggered 60% Pass
Comp Shingle		27° Pass	

A field observation of the existing structure at the address indicated above was performed by a site survey team from Sunrun. Structural evaluation of the loading was based on the site observations and the design criteria listed below.

**Design Criteria:**

- 2020 NEW YORK STATE RESIDENTIAL CODE WITH 2018 IRC/IBC/IEBC, 7-16 ASCE & 2018 NDS
- Basic Wind Speed V = 114 mph, Exposure B
- Ground Snow Load = 30 psf

Based on this evaluation, I certify that the alteration to the existing structure by the installation of the PV system meets the requirements of the applicable existing and/or new building code provisions referenced above.

Additionally, I certify that the PV module assembly including all attachments supporting it have been reviewed to be in accordance with the manufacturer's specifications.

Attn: To Whom It May Concern

Subject: Structural Certification for Proposed Residential Solar Installation  
 Job Number: 212R-323PLAC, Rav A  
 Client: THOMAS PLACE  
 Address: 323 Front St, Nyack, NY, 10960

September 29, 2022





NORTH VIEW



EAST VIEW



SOUTH VIEW



WEST VIEW

**SUNRUN**

CUSTOMER RESIDENCE  
 THOMAS PLACE  
 323 FRONT ST. HARRIS PA  
 15030

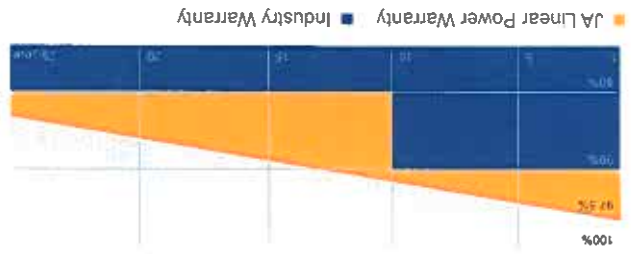
PROJECT NUMBER  
 27-29-323PLAC





- IEC 61215, IEC 61730, UL61215, UL61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001:2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval

### Comprehensive Certificates



- 12-year product warranty
- 25-year linear power output warranty

### Superior Warranty



Higher output power



Lower LCOE



Less shading and lower resistive loss

Better mechanical loading tolerance

### Introduction

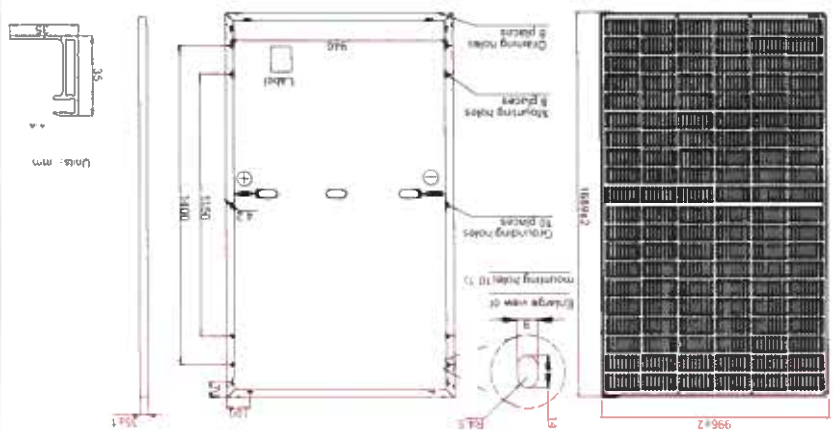
**340W Multi-busbar Half-Cell Black Module**  
JAM60S17 320-340/MR Series



Assembled with multi-busbar PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, better temperature-dependent performance, reduced shading effect on the energy generation, lower risk of hot spot, as well as enhanced tolerance for mechanical loading.

Harvest the Sunshine

**MECHANICAL DIAGRAMS**



**SPECIFICATIONS**

Cell	Mono
Weight	17.0kg±3%
Dimensions	1689±2mm×996±2mm×35±1mm
Cable Cross Section Size	4mm <sup>2</sup> (12AWG)
No. of cells	120(6×20)
Junction Box	IP68, 3 diodes
Connector	MCA(1000V) MCA-EV02(1500V)
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); Landscape: 1000mm(+)/1000mm(-)
Front Glass	2.8mm
Packaging Configuration	31pcs/Pallet 806pcs/40ft Container

**ELECTRICAL PARAMETERS AT STC**

TYPE	JAM60S17	JAM60S17	JAM60S17	JAM60S17	JAM60S17
Rated Maximum Power [W]	320	320	325	330	335
Open Circuit Voltage [V]	40.60	40.87	40.87	41.08	41.32
Maximum Power Voltage [V]	33.73	33.97	33.97	34.24	34.48
Short Circuit Current [A]	10.16	10.23	9.57	9.64	9.72
Maximum Power Current [A]	9.49	9.57	9.57	9.64	9.72
Module Efficiency [%]	19.0	19.3	19.3	19.6	19.9
Power Tolerance	0~+5W				
Temperature Coefficient of Isc (α <sub>Isc</sub> )	+0.044%/°C				
Temperature Coefficient of Voc (β <sub>Voc</sub> )	-0.272%/°C				
Temperature Coefficient of Pmax (γ <sub>Pmax</sub> )	-0.350%/°C				

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

**ELECTRICAL PARAMETERS AT NOCT**

TYPE	JAM60S17	JAM60S17	JAM60S17	JAM60S17	JAM60S17
Rated Max Power [W]	241	245	249	253	257
Open Circuit Voltage [V]	38.05	38.26	38.46	38.68	38.90
Max Power Voltage [V]	31.58	31.80	32.02	32.21	32.40
Short Circuit Current [A]	8.07	8.14	8.21	8.28	8.35
Max Power Current [A]	7.63	7.70	7.78	7.85	7.93

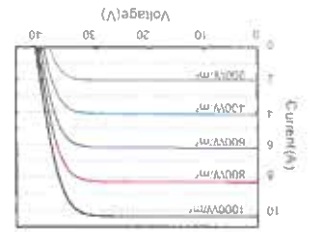
Remark: Irradiance 800W/m<sup>2</sup>, ambient temperature 20°C, wind speed 1m/s, AM1.5G

**OPERATING CONDITIONS**

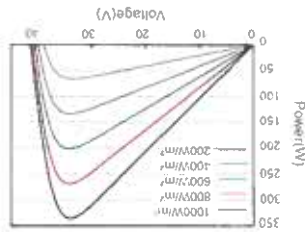
TYPE	JAM60S17
Maximum System Voltage	1000V (1500V DC(U.L))
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	20A
Maximum Static Load Front	5400Pa (112 lb/ft <sup>2</sup> )
Maximum Static Load Back	2400Pa (50 lb/ft <sup>2</sup> )
NOCT	45±2°C

**CHARACTERISTICS**

Current-Voltage Curve JAM60S17-335/MR



Power-Voltage Curve JAM60S17-335/MR



Current-Voltage Curve JAM60S17-335/MR

