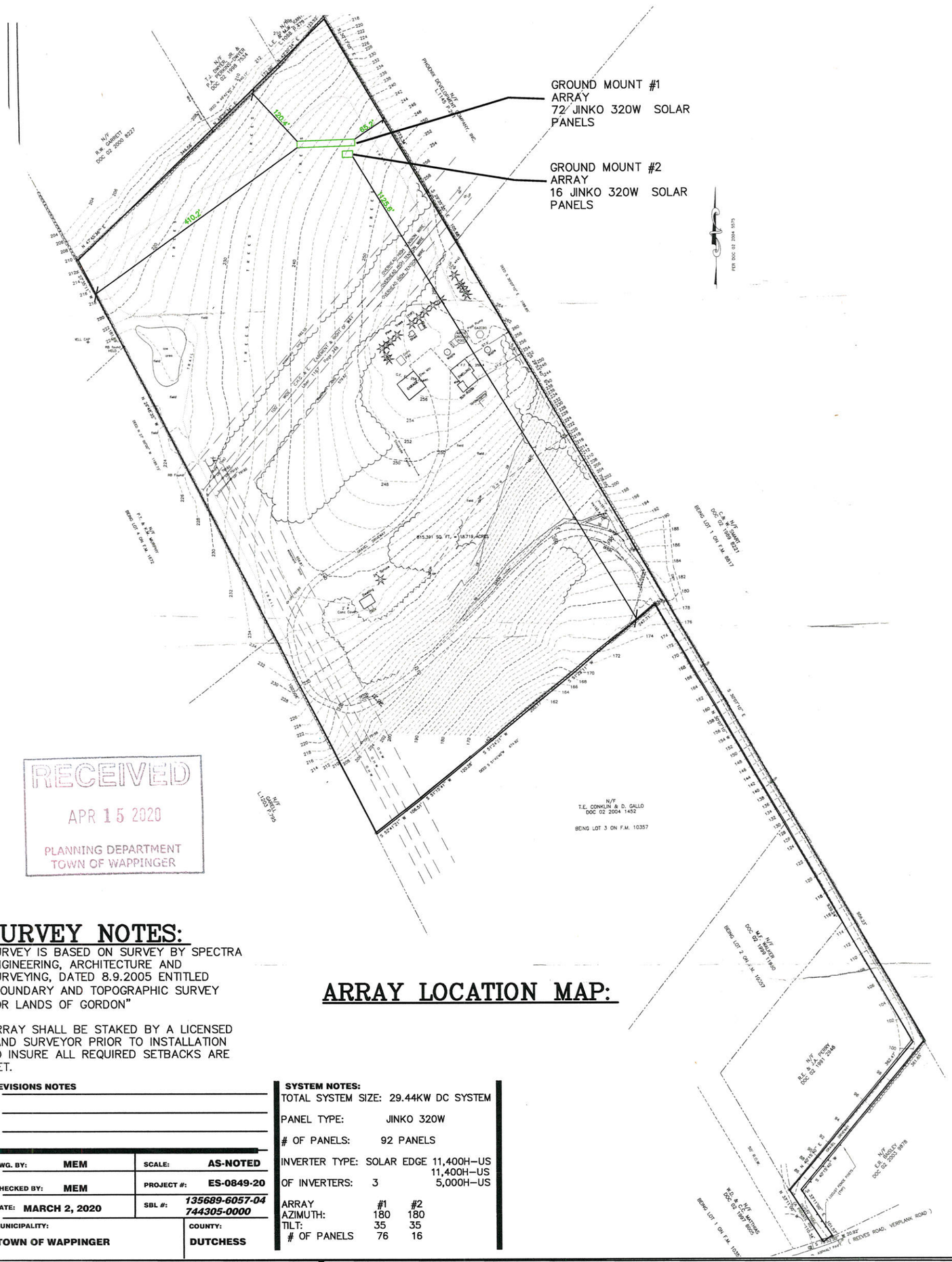
RESIDENTIAL GROUND MOUNT SOLAR PANEL INSTALLATION

LOCATED AT - 116 DUSTY TRAIL, WAPPINGERS FALLS, NY 12590

TOWN OF WAPPINGER, DUTCHESS COUNTY, NEW YORK



RECEIVED
APR 15 2020
PLANNING DEPARTMENT
TOWN OF WAPPINGER

SURVEY NOTES:

SURVEY IS BASED ON SURVEY BY SPECTRA ENGINEERING, ARCHITECTURE AND SURVEYING, DATED 8.9.2005 ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY FOR LANDS OF GORDON"

ARRAY SHALL BE STAKED BY A LICENSED LAND SURVEYOR PRIOR TO INSTALLATION TO INSURE ALL REQUIRED SETBACKS ARE MET.

ARRAY LOCATION MAP:

REVISIONS NOTES

DWG. BY:	MEM	SCALE:	AS-NOTED
CHECKED BY:	MEM	PROJECT #:	ES-0849-20
DATE:	MARCH 2, 2020	SBL #:	135689-6057-04 744305-0000
MUNICIPALITY:	TOWN OF WAPPINGER	COUNTY:	DUTCHESS

SYSTEM NOTES:

TOTAL SYSTEM SIZE:	29.44KW DC SYSTEM	
PANEL TYPE:	JINKO 320W	
# OF PANELS:	92 PANELS	
INVERTER TYPE:	SOLAR EDGE	11,400H-US 11,400H-US
OF INVERTERS:	3	5,000H-US

ARRAY	#1	#2
AZIMUTH:	180	180
TILT:	35	35
# OF PANELS	76	16

EMPIRESOLAR

SOLAR PANEL INSTALLATION

GORDON RESIDENCE

116 DUSTY TRAIL
WAPPINGERS FALLS
NEW YORK 12590

PROFESSIONAL NOTES:

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SEAL & SIGNATURE

STATE OF NEW YORK
MICHAEL EDWARD
079676
LICENSED PROFESSIONAL ENGINEER

DWG#

S-1

PROJECT SURVEY AND NOTES

DWG.

1 OF 1

GIS LOCATION MAP:

NTS

PROJECT DESIGN DATA:

WORK SHALL BE COMPLETED AS PER THE 2015 INTERNATIONAL RESIDENTIAL CODE, 2017 UNIFORM CODE SUPPLEMENT, 2014 NATIONAL ELECTRICAL CODE AND 2001 WOOD FRAME CONSTRUCTION MANUEL
LOAD CRITERIA AS FOLLOWS
EXPOSURE CATEGORY: "B"
GROUND SNOW LOAD: 40.0 PSF
WIND SPEED: 120 MPH

GENERAL NOTES:

1. ALL SOLAR MODULES TO BE JINKO 320W AND SHALL BE INSTALLED AS PER JINKO INSTALLATION MANUAL.
2. ALL INVERTERS TO BE SOLAR EDGE INVERTERS ALL RACKING AS PER DETAILS FOR GROUND MOUNT INSTALLATION

SURVEY NOTES:

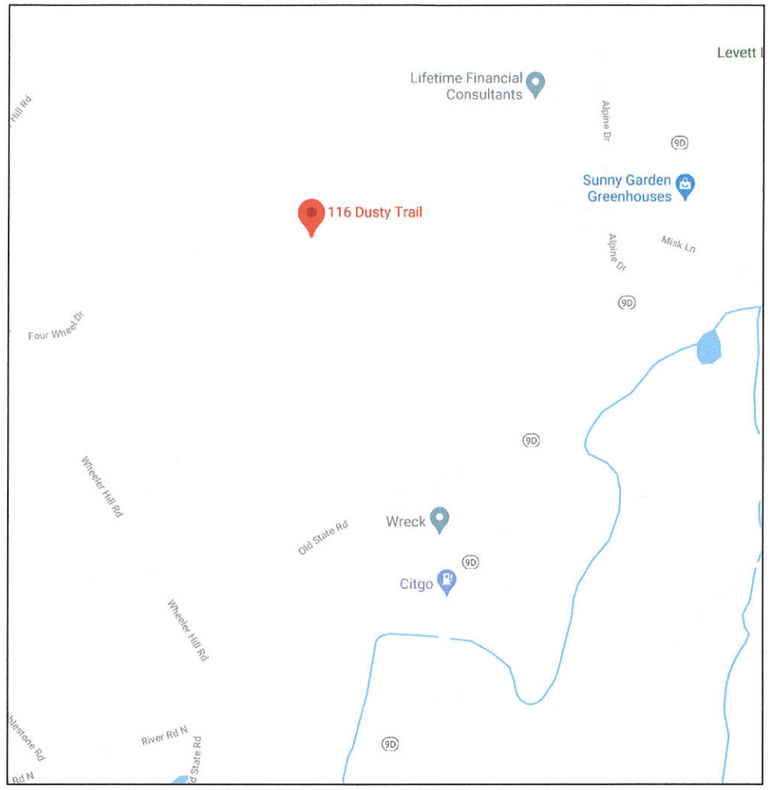
SURVEY IS BASED ON AN DUTCHESS COUNTY G.I.S. DATA

ARRAY SHALL BE STAKED BY A LICENSED LAND SURVEYOR PRIOR TO INSTALLATION TO INSURE ALL REQUIRED SETBACKS ARE MET.

ARRAY NOTES:

1. THERE ARE (2) GROUND MOUNT ARRAY, FOR A TOTAL OF 1775 SQ.FT., THIS IS GREATER THEN 50% OF THE FOOTPRINT OF THE PRIMARY STRUCTURE ON THE PARCEL WHICH IS 1,406 SQ.FT.(BASED ON DATA FROM ASSESSOR'S OFFICE). A VARIANCE FROM THE TOWN OF WAPPINGER ZONING BOARD WILL BE REQUIRED FOR 1,072 SQ.FT. (FOR 1,406 SQ.FT / 2 = 703 SQ.FT., 1775 SQ.FT. – 703 SQ.FT. = 1,072 SQ.FT.)

2. THERE SHALL BE 10–FEET OF BRUSH–FREE AREA AROUND THE GROUND MOUNTED SOLAR ARRAY.



PROJECT LOCATION MAP:

NTS

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LOCATED AT - 116 DUSTY TRAIL, WAPPINGERS FALLS, NY 12590

TOWN OF WAPPINGER, DUTCHESS COUNTY, NEW YORK

EMPIRESOLAR

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GORDON RESIDENCE
116 DUSTY TRAIL
WAPPINGERS FALLS
NEW YORK 12590

REVISIONS NOTES
1 — APRIL 8, 2020

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		11,400H–US	
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# OF PANELS	76	16	

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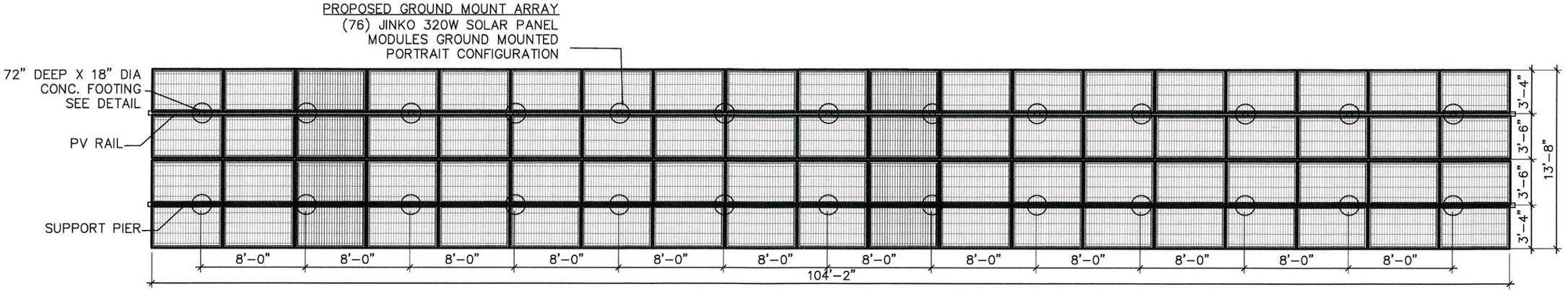
STATE OF NEW YORK · MICHAEL EDWARD MEM · LICENSED PROFESSIONAL ENGINEER · 079676

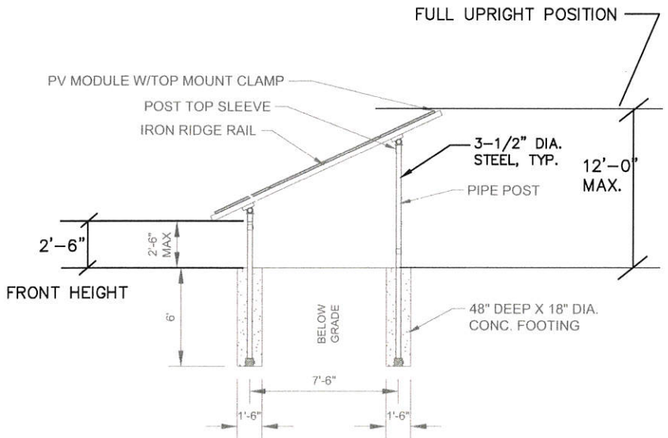
DWG# S-1

PROJECT SITE PLAN AND NOTES

DWG. 1 OF 5

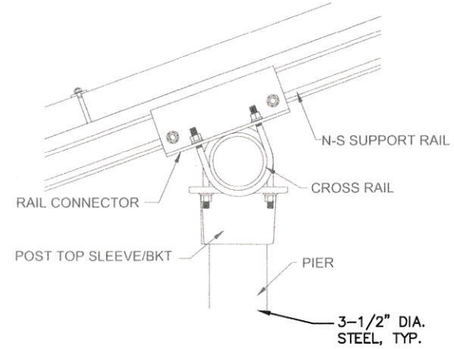


GROUND MOUNT LAYOUT #1:



SOLAR PANEL ASSEMBLY:

NTS



PIER AND RAIL ASSEMBLY:

EMPIRESOLAR

SOLAR PANEL INSTALLATION
GORDON RESIDENCE
116 DUSTY TRAIL
WAPPINGERS FALLS
NEW YORK 12590

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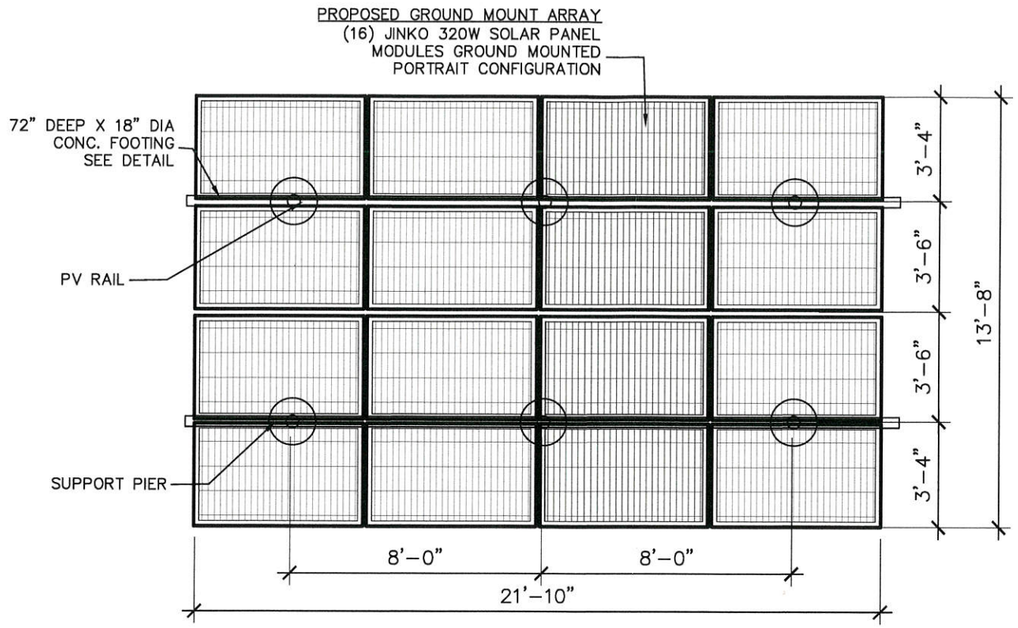
079676
LICENSED PROFESSIONAL ENGINEER

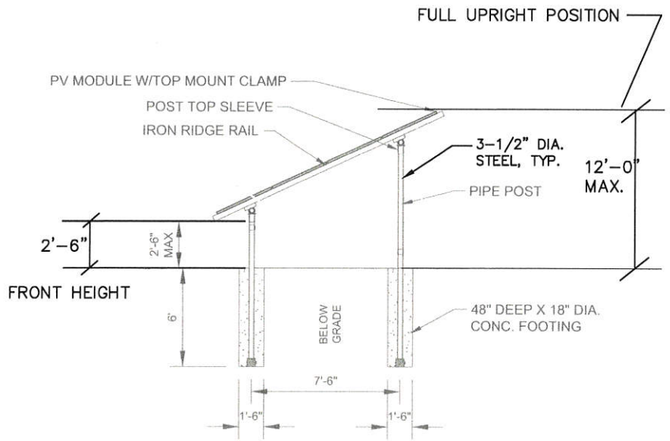
DWG# S-2

SOLAR PANEL LAYOUT PLAN

DWG. 2A OF 5

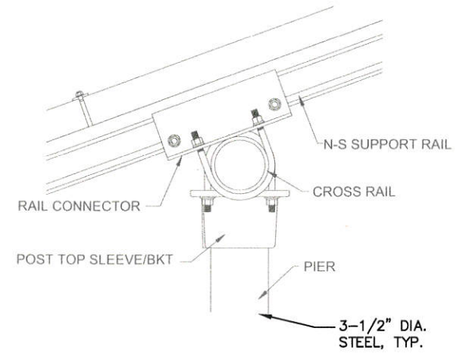


GROUND MOUNT LAYOUT #2:



SOLAR PANEL ASSEMBLY:

NTS



PIER AND RAIL ASSEMBLY:

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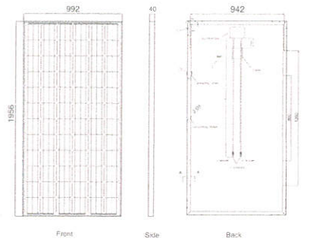
LICENSED PROFESSIONAL ENGINEER
079676

DWG# S-2

SOLAR PANEL LAYOUT PLAN

DWG. 2B OF 5

Engineering Drawings

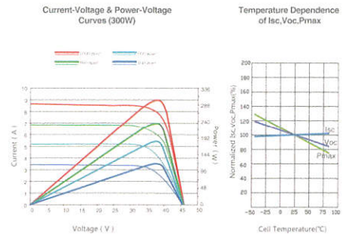


Packaging Configuration

(Two boxes = One pallet)

25pcs/ box, 50pcs/pallet, 600 pcs/40'HQ Container

Electrical Performance & Temperature Dependence



Mechanical Characteristics

Cell Type	Mono-crystalline 156×156mm (6 inch)
No.of cells	72 (6×12)
Dimensions	1956×992×40mm (77.01×39.05×1.57 inch)
Weight	26.5 kg (58.4 lbs.)
Front Glass	4.0mm, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	TÜV 1×4.0mm², Length:900mm

SPECIFICATIONS

Module Type	JKM300M		JKM305M		JKM310M		JKM315M		JKM320M	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	300Wp	222Wp	305Wp	226Wp	310Wp	230Wp	315Wp	234Wp	320Wp	238Wp
Maximum Power Voltage (Vmp)	37.0V	35.1V	37.2V	35.3V	37.4V	35.5V	37.6V	35.8V	37.8V	35.9V
Maximum Power Current (Imp)	8.11A	6.32A	8.20A	6.39A	8.29A	6.47A	8.38A	6.54A	8.47A	6.62A
Open-circuit Voltage (Voc)	45.5V	42.8V	45.7V	43.2V	45.9V	43.5V	46.1V	43.9V	46.4V	44.1V
Short-circuit Current (Isc)	8.64A	6.96A	8.72A	7.01A	8.80A	7.06A	8.87A	7.10A	8.98A	7.15A
Module Efficiency STC (%)	15.46%		15.72%		15.98%		16.23%		16.49%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1000VDC (IEC)									
Maximum series fuse rating	15A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.40%/°C									
Temperature coefficients of Voc	-0.29%/°C									
Temperature coefficients of Isc	0.05%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

STC: Irradiance 1000W/m² Cell Temperature 25°C AM=1.5

NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s

* Power measurement tolerance: ± 3%

Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

[1] For other regional settings please contact SolarEdge support
[2] A higher current source may be used; the inverter will limit its input current to the values stated

EMPIRESOLAR

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GORDON RESIDENCE
116 DUSTY TRAIL
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REVISIONS NOTES

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ARRAY	#1	#2
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EXCELSIOR
079676
LICENSED PROFESSIONAL ENGINEER

DWG# S-3
SOLAR PANEL & INVERTER SPECIFICATIONS
DWG. 3 OF 5

WARNING
ELECTRIC SHOCK HAZARD !
THE DIRECT CURRENT CIRCUIT CONDUCTORS OF THIS PHOTOVOLTAIC POWER SYSTEM ARE UNGROUNDED BUT MAY BE ENERGIZED WITH RESPECT TO GROUND DUE TO LEAKAGE PATHS AND/OR GROUND FAULTS

DC WARNING LABEL

WARNING
INVERTER OUTPUT
CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

UTILITY DISCONNECT LABEL

CAUTION
SOLAR ELECTRIC
SYSTEM CONNECTED

AC PANELS

PHOTOVOLTAIC
INVERTER INPUT
DC DISCONNECT

WARNING
ELECTRIC
SHOCK HAZARD !

DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

INTERACTIVE SOLAR PV SYSTEM RATING

RATED DC CURRENT	AMP
RATED DC VOLTAGE	VDC
MAXIMUM SYSTEM VOLTAGE	VDC
SHORT CIRCUIT CURRENT	AMP

SYSTEM INSTALLER: _____
FOR SERVICE CALL: _____

DC INPUT WARNING LABEL #1
INVERTER 1

PHOTOVOLTAIC SYSTEM
DISCONNECT FOR
UTILITY OPERATION

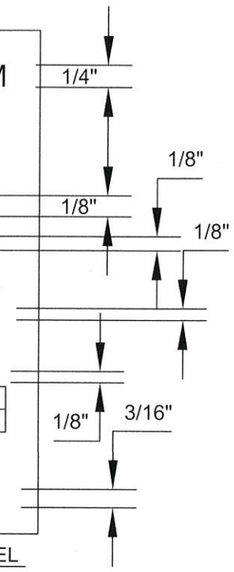
WARNING
ELECTRIC
SHOCK HAZARD !

DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

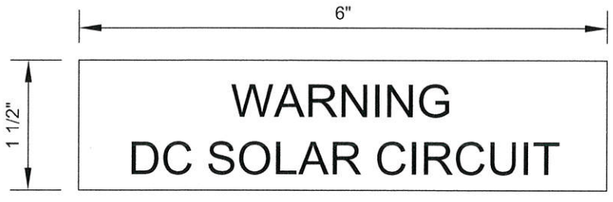
INTERACTIVE SOLAR PV SYSTEM RATING

RATED OPERATING CURRENT	AMP
NORMAL OPERATING VOLTAGE	VAC

SYSTEM INSTALLER: _____
FOR SERVICE CALL: _____



UTILITY DISCONNECT WARNING LABEL



DC CIRCUIT LABEL

WARNING
THIS METER IS ALSO
SERVED BY A
PHOTOVOLTAIC SYSTEM

PV CIRCUITS ONLY
NO OTHER LOADS
SHALL BE APPLIED TO THIS PANEL
OTHER THAN PV COMPONENTS
AS PER
NEC ARTICLE 690

GROUND MOUNT NOTES:

ARRAY RACK ASSEMBLY
SOLAR GROUND MOUNT RACKING SHOWN FOR ARRANGEMENT ONLY

RACKING MANUFACTURER TO PROVIDE SEALED SHOP DRAWINGS OF FINAL RACKING ASSEMBLY.
INSTALL AS PER MANUFACTURER STANDARD INSTALLATION DETAILS.

POST SUPPORTED RACKING FOUNDATION AS SHOWN

18"ØX 48" DEEP CONCRETE FOUNDATION WITH EMBEDDED POST.

INSTALLATION NOTES:
BRACKET TO POST INSTALLATION HEIGHT MAY VARY WITH SITE GRADING. IT IS NOT NECESSARY FOR ALL POST TOP BRACKETS TO ALIGN AT A COMMON ELEVATION FOR EACH ROW (+/–2")

INSTALLATION CONTRACTOR SHALL ENSURE THAT ALL GRADING AND COMPACTION OF SITE IS COMPLETED PRIOR TO INSTALLATION OF THE RACKING SYSTEM TO AVOID POTENTIAL DISTURBANCE OF FOUNDATION AND ALIGNMENT.

SEALED SHOP DRAWINGS SHALL BE PROVIDED BY RACKING MANUFACTURER PRIOR TO THE INSTALLATION OF THE PV ARRAY.

THIS DRAWING IS DIAGRAMMATIC FOR THE MODULE/RACK ARRANGEMENT. FINAL RACKING DETAILS AND ASSEMBLY MAY VARY WITH FINAL INSTALLATION.

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DWG#
S-4
SOLAR PANEL SIGNAGE
DWG. 4 OF 5