

PROJECT DESCRIPTION:

30xSILFAB SLA-M 300 MODULES
 GROUND MOUNTED SOLAR PHOTOVOLTAIC MODULES
 SYSTEM SIZE: 9.0 kW DC STC
 ARRAY AREA: ARRAY #1 :527.4 SQ FT

EQUIPMENT SUMMARY

30 SILFAB SLA-M 300 MODULES
 30 SOLAREEDGE POWER OPTIMIZER P320
 01 SOLAREEDGE SE7600H-US INVERTER

AUTHORITIES HAVING JURISDICTION

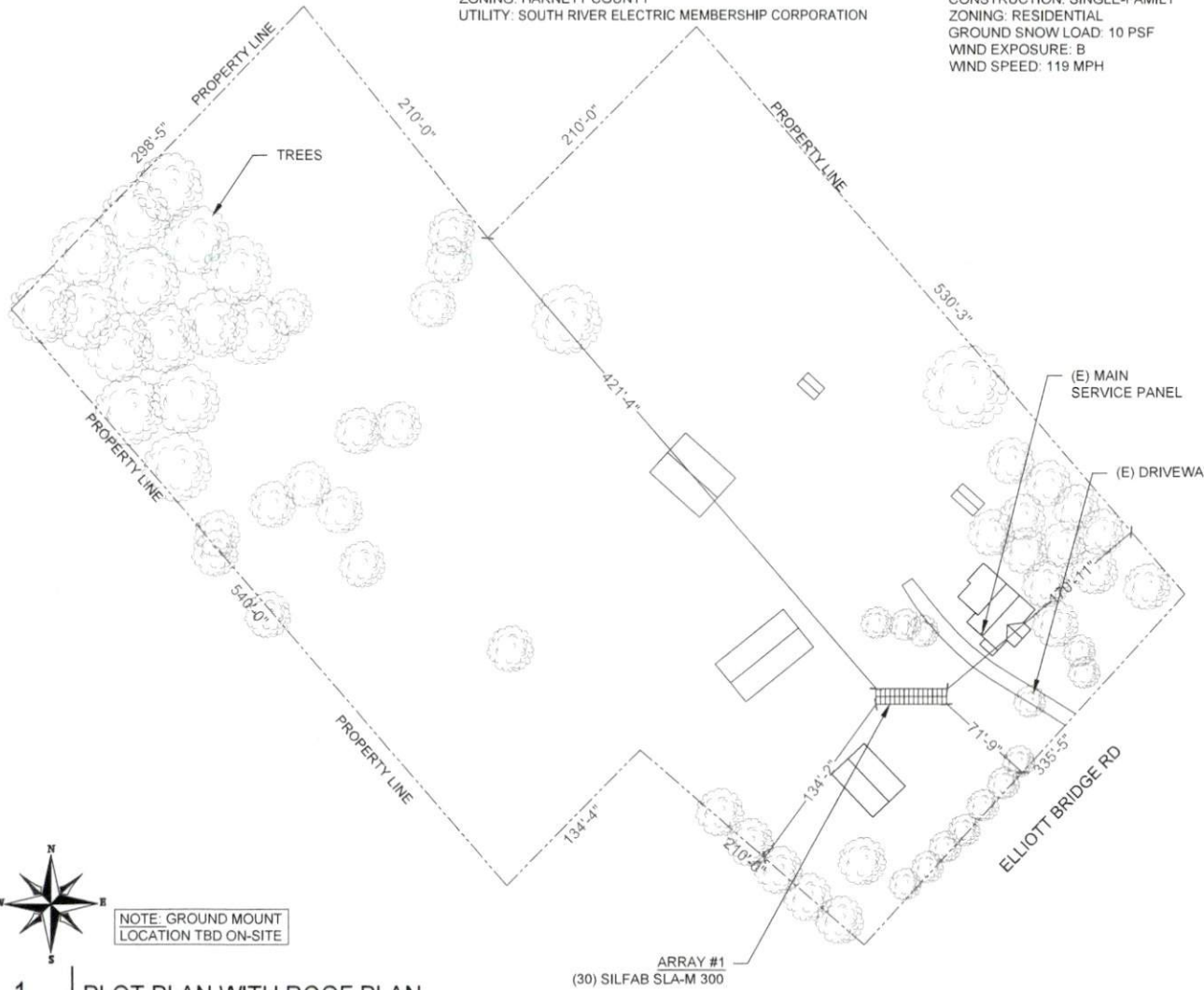
BUILDING: HARNETT COUNTY
 ZONING: HARNETT COUNTY
 UTILITY: SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION

APPLICABLE CODES & STANDARDS

BUILDING: NCBC 2018
 ELECTRICAL: NEC 2017

DESIGN SPECIFICATIONS

OCCUPANCY: II
 CONSTRUCTION: SINGLE-FAMILY
 ZONING: RESIDENTIAL
 GROUND SNOW LOAD: 10 PSF
 WIND EXPOSURE: B
 WIND SPEED: 119 MPH



NOTE: GROUND MOUNT
 LOCATION TBD ON-SITE

1 PLOT PLAN WITH ROOF PLAN

PV-1 SCALE: 1"=80'-0"



2 HOUSE PHOTO

PV-1 SCALE: NTS



3 VICINITY MAP

PV-1 SCALE: NTS

SHEET INDEX

PV-1	PLOT PLAN & VICINITY MAP
PV-2	ROOF PLAN & MODULES
PV-2A	STRING LAYOUT
PV-3	GROUNDING DETAILS
PV-3A	GROUNDING DETAILS
PV-4	ELECTRICAL LINE DIAGRAM
PV-5	WIRING CALCULATIONS
PV-6	SOLAREEDGE OPTIMIZER CHART
PV-7 to 10	EQUIPMENT SPECIFICATIONS

POWERHOME SOLAR & ROOFING
 POWER HOME SOLAR, LLC
 "POWER YOUR FUTURE"
 919 N. MAIN ST.
 MOORESVILLE, NC 28115
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REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE: 09/09/2019

PROJECT NAME & ADDRESS

LISA M HOUGHTON RESIDENCE
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 SPRING LAKE, NC 28390

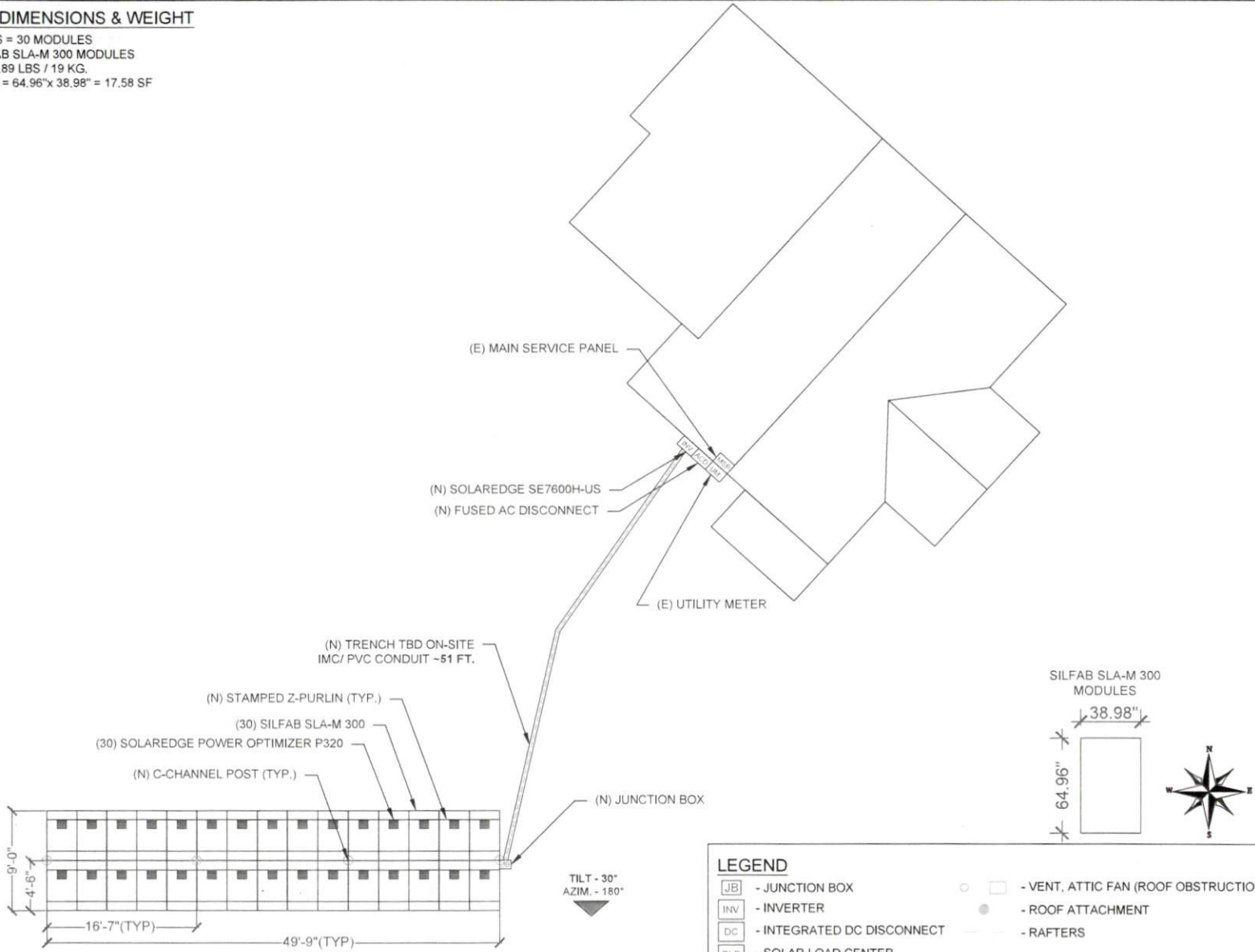
SHEET NAME
PLOT PLAN & VICINITY MAP

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-1

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 30 MODULES
 MODULE TYPE = SILFAB SLA-M 300 MODULES
 MODULE WEIGHT = 41.89 LBS / 19 KG.
 MODULE DIMENSIONS = 64.96"x 38.98" = 17.58 SF



LEGEND

[JB]	- JUNCTION BOX	○ □	- VENT, ATTIC FAN (ROOF OBSTRUCTION)
[INV]	- INVERTER	●	- ROOF ATTACHMENT
[DC]	- INTEGRATED DC DISCONNECT	---	- RAFTERS
[SLD]	- SOLAR LOAD CENTER	---	- CONDUIT
[PVM]	- PRODUCTION METER	[CB]	- COMBINER BOX
[MSP]	- MAIN SERVICE PANEL		

1 ROOF PLAN & MODULES
 PV-2 SCALE: 3/32" = 1'-0"

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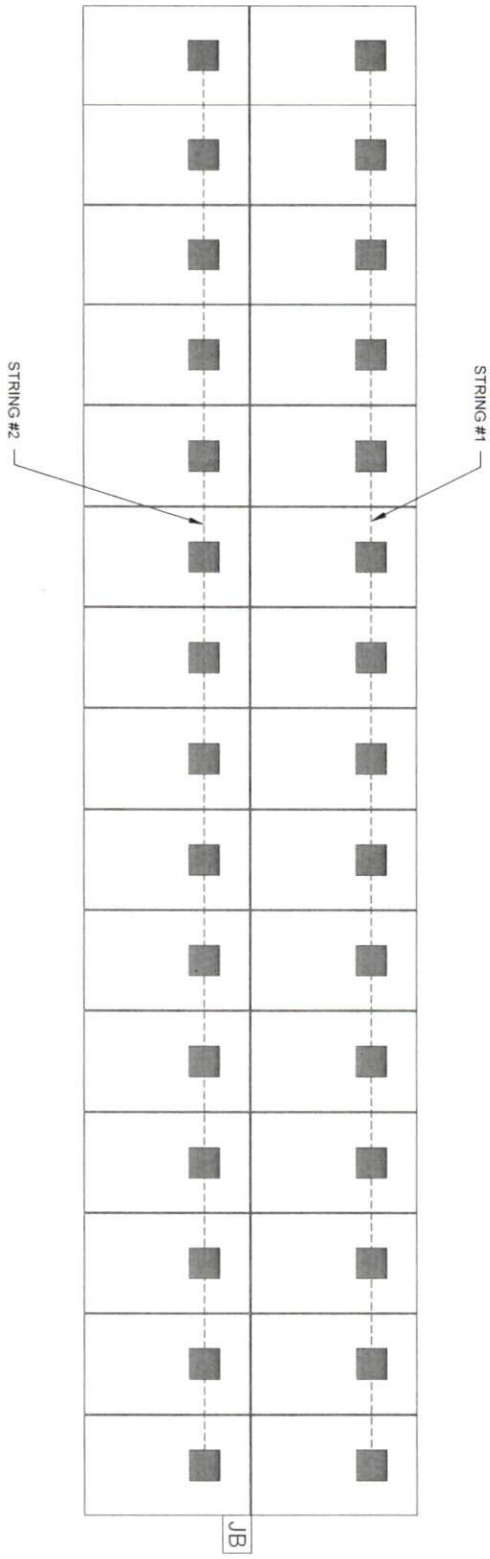
PROJECT NAME & ADDRESS

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SHEET NAME
 ROOF PLAN & MODULES

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-2



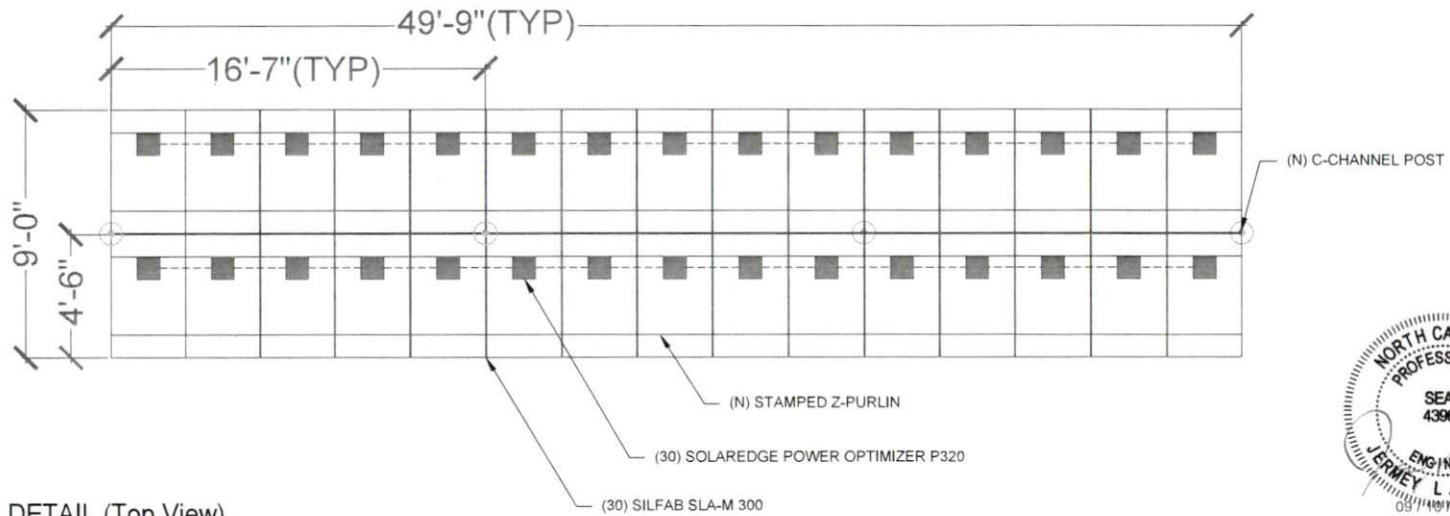
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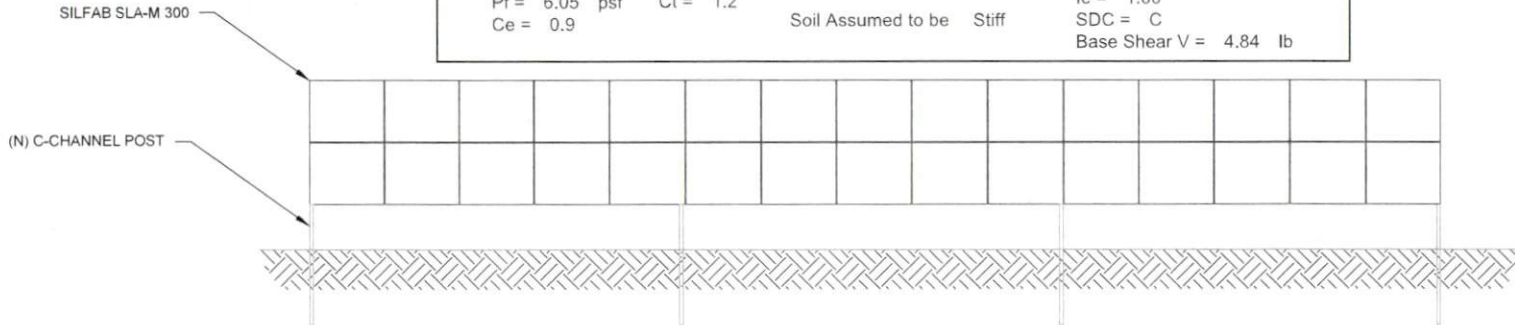
SHEET NAME
 STRING LAYOUT
 SHEET SIZE
 ANSI B
 11" X 17"
 SHEET NUMBER
 PV-2A



1 GROUNDING DETAIL (Top View)

PV-3 SCALE: 3/16"=1'-0"

IBC 2015			1603.1.4	Wind Load	1603.1.5	Earthquake Design Data
1603.1.1	Floor Live Load	N/A		V = 115 MPH	SDs = 0.213	
1603.1.2	Roof Live Load	20 psf		lw = 1.00	SD1 = 0.146	
1603.1.3	Roof Snow Load			Exposure = C	Site Class = D	
	Pg = 10 psf	IS = 0.80			le = 1.00	
	Pf = 6.05 psf	Ct = 1.2		Soil Assumed to be Stiff	SDC = C	
	Ce = 0.9				Base Shear V = 4.84 lb	



2 GROUNDING DETAIL (Front View)

PV-3 SCALE: 3/16"=1'-0"

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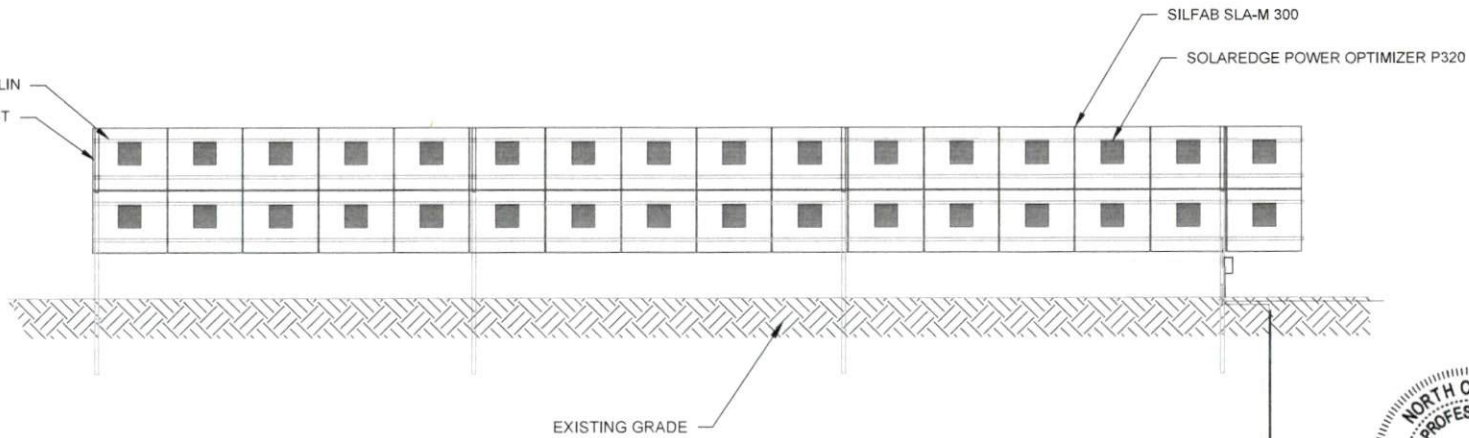
PROJECT NAME & ADDRESS
LISA M HOUGHTON RESIDENCE
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 SPRING LAKE, NC 28390

SHEET NAME
GROUNDING DETAIL

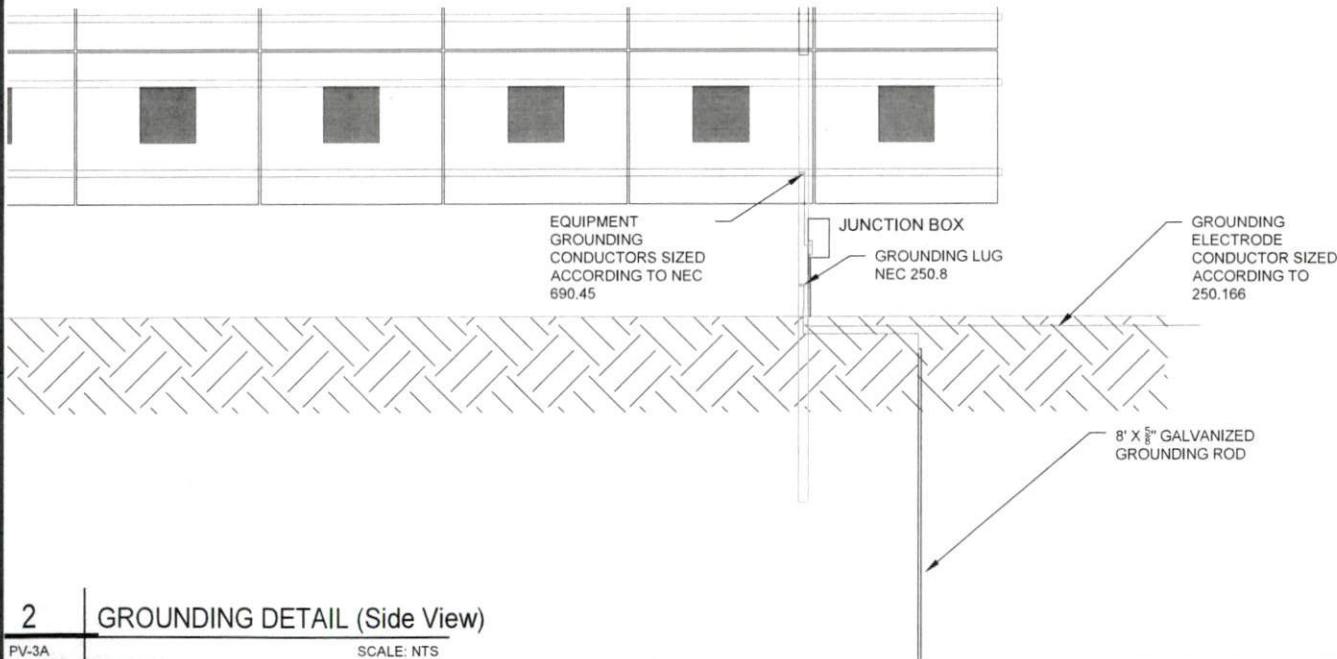
SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-3

(N) STAMPED Z-PURLIN
(N) C-CHANNEL POST



1 GROUNDING DETAIL (Rear View)
PV-3A (2) SCALE: 3/16"=1'-0"



REF NEC 690.47 (D)
NEC 250.52
NEC 250.54



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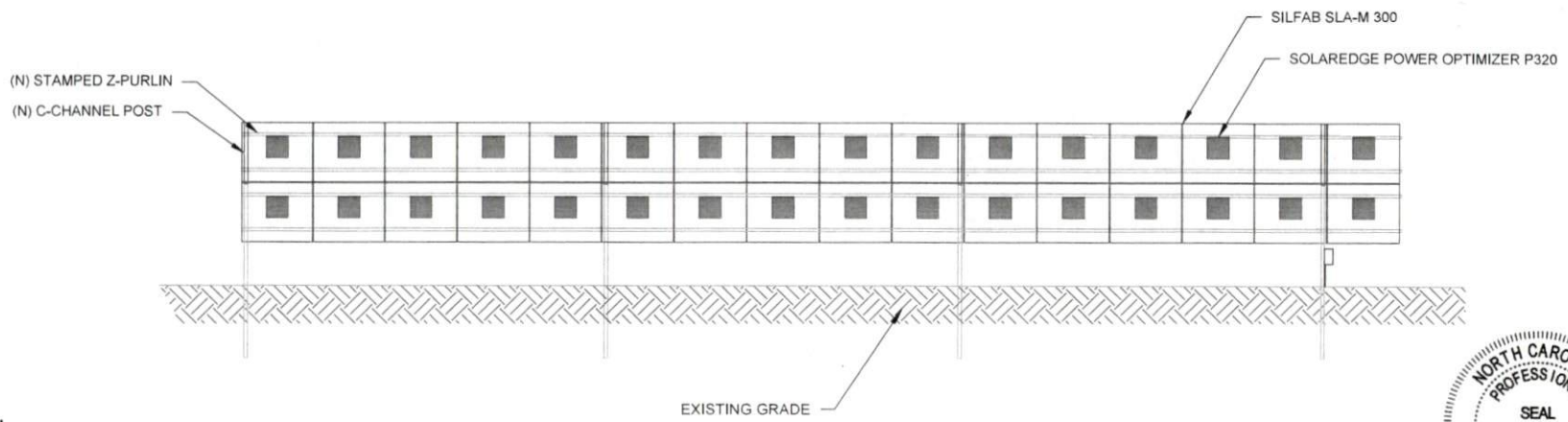
LISA M HOUGHTON
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SPRING LAKE, NC 28390

SHEET NAME
GROUNDING DETAIL

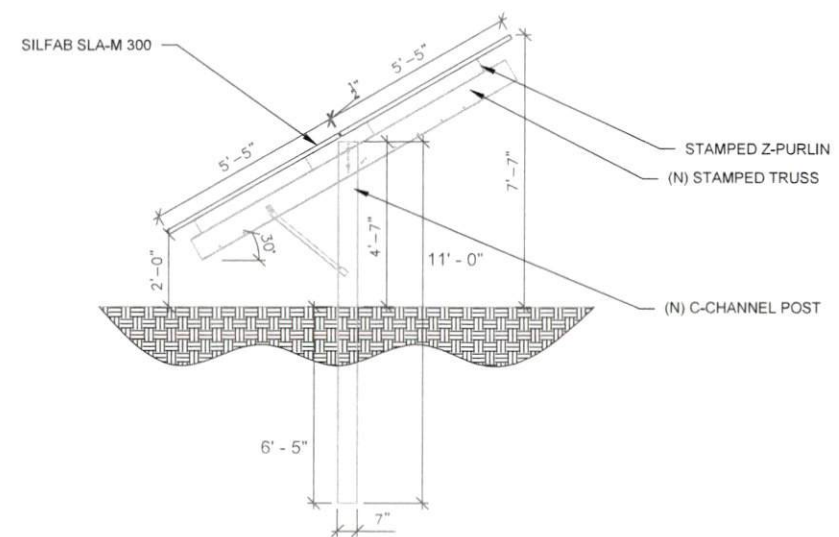
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3A (2)

2 GROUNDING DETAIL (Side View)
PV-3A (2) SCALE: NTS



1 | GROUNDING DETAIL (Rear View)
 PV-3A | SCALE: 3/16"=1'-0"



2 | GROUNDING DETAIL (Side View)
 PV-3A | SCALE: NTS

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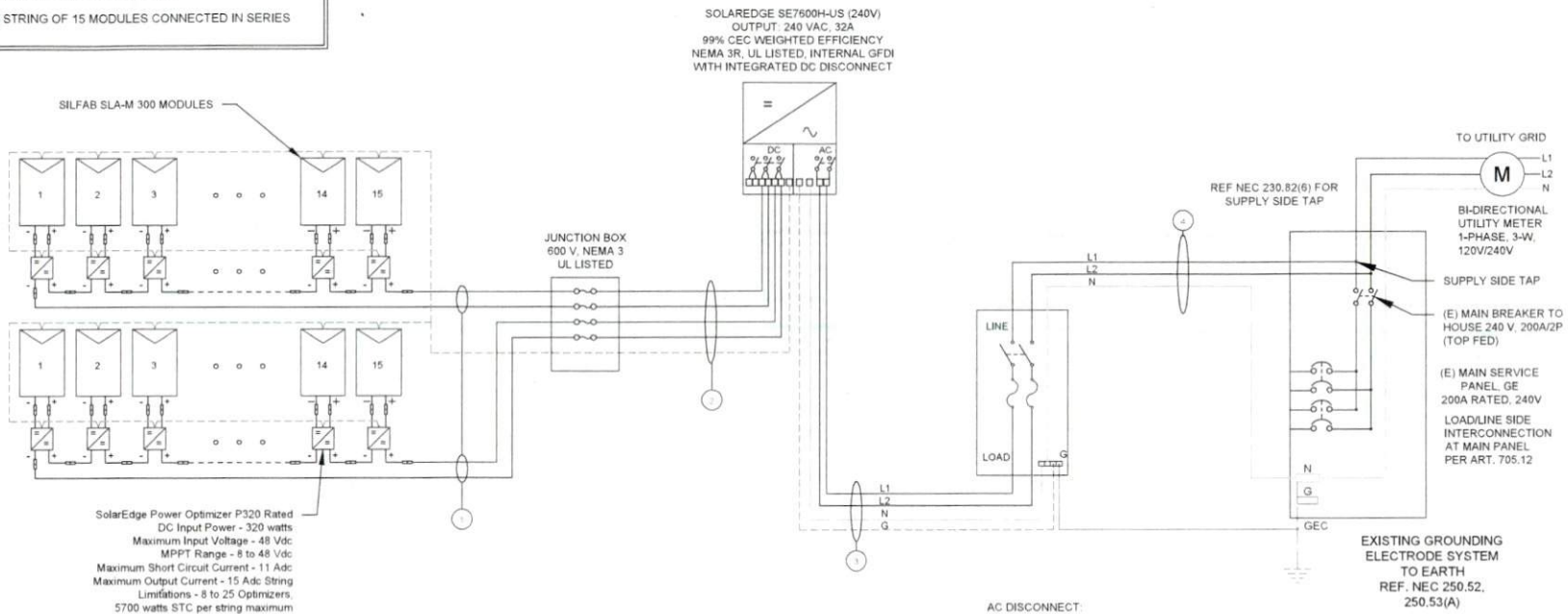


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PROJECT NAME & ADDRESS
 LISA M HOUGHTON
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SHEET NAME
GROUNDING DETAIL
 SHEET SIZE
 ANSI B
 11" X 17"
 SHEET NUMBER
PV-3A

(30) SILFAB SLA-M 300 MODULES
 (2) STRING OF 15 MODULES CONNECTED IN SERIES



WARNING:
 PHOTOVOLTAIC POWER SOURCE
LABEL 1
 ON ALL CONDUITS SPACED AT MAX 10FT

CAUTION!
 SOLAR ELECTRIC SYSTEM CONNECTED AND ENERGIZED
LABEL 2
 AT INVERTER
CAUTION!
 SYSTEM EQUIPPED WITH RAPID SHUTDOWN
LABEL 3
 AT INVERTER
 PHOTOVOLTAIC DC DISCONNECT
LABEL 4
 AT DC DISCONNECT

AC DISCONNECT:
 60A FUSED, (2) 40A FUSES,
 240V NEMA 3R, UL LISTED

WARNING!
 DUAL POWER SOURCES SECOND SOURCE IS PV SYSTEM
LABEL 5
 AT EACH AC DISCONNECT
 PHOTOVOLTAIC AC DISCONNECT
LABEL 6
 AT EACH AC DISCONNECT

WARNING!
 DUAL POWER SOURCES INTERCONNECTION
LABEL 7
 AT METER
WARNING!
 PULSED VOLTAGE CONNECTED AND ENERGIZED
LABEL 8
 AT METER

CAUTION!
 SOLAR POINT OF INTERCONNECTION
LABEL 9
 AT UTILITY METER
WARNING!
 THE SERVICE METER IS LISTED SEPARATELY FROM THIS SYSTEM
LABEL 10
 AT UTILITY METER

QTY	CONDUCTOR INFORMATION	CONDUIT TYPE	CONDUIT SIZE
(4)	#10AWG - PV WIRE/USE-2	N/A	N/A
(1)	#6AWG - BARE COPPER IN FREE AIR		
(4)	#10AWG - THWN-2	IMC OR PVC IN TRENCH / LFNC	3/4"
(1)	#6AWG - THWN-2 GND		
(3)	#6AWG - THWN-2	PVC, LFNC OR LFMC	3/4"
(1)	#6AWG - THWN-2 GND		
(3)	#6AWG - THWN-2	PVC, LFNC OR LFMC	3/4"

SERVICE INFO	
UTILITY PROVIDER:	SOUTH RIVER ELECTRIC
MAIN SERVICE VOLTAGE:	240V
MAIN SERVICE PANEL:	GE
MAIN SERVICE BREAKER RATING:	200A
MAIN SERVICE LOCATION:	SOUTH-WEST
SERVICE FEED SOURCE:	OVER HEAD

1 ELECTRICAL LINE DIAGRAM

PV-4 SCALE: NTS

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SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-4

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	SILFAB SLA-M 300
VMP	32.8 V
IMP	9.16 A
VOC	39.85 V
ISC	9.71 A
TEMP. COEFF. VOC	-0.30%/°C
MODULE DIMENSION	64.96"L x 38.98"W x 1.50"D (In Inch)

INVERTER #1 SPECIFICATIONS	
MANUFACTURER / MODEL #	SOLAREDGE SE7600H-US
NOMINAL AC POWER	7.6 KW
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	32A

POWER OPTIMIZER (OPTIMIZER P320-2NM4ARS)	
MAXIMUM INPUT POWER	320W
MINIMUM INPUT VOLTAGE	8 VDC
MAXIMUM INPUT VOLTAGE	48VDC
MAXIMUM MODULE ISC	11 ADC
MAXIMUM OUTPUT CURRENT	15 ADC

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
80	4-6
70	7-9
50	10-20

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-22°
AMBIENT TEMP (HIGH TEMP 2%)	32°
CONDUIT HEIGHT	0.5°
ROOF TOP TEMP	54°
CONDUCTOR TEMPERATURE RATE	90°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.318%/°K

ELECTRICAL NOTES

- 1.) ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- 2.) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- 3.) WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- 4.) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- 5.) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS, CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- 6.) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- 7.) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- 8.) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- 9.) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- 10.) THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE

DC CONDUCTOR AMPACITY CALCULATIONS: ARRAY TO JUNCTION BOX:

EXPECTED WIRE TEMP (In Celsius)	32°
TEMP. CORRECTION PER TABLE (310.16)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	4
CONDUIT FILL CORRECTION PER NEC 310.15(B)(2)(a)	.80
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	18.75A
MAX CONTINUOUS OUTPUT CURRENT OF ARRAY	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16	
TEMP. CORRECTION PER TABLE (310.16) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(2)(a) X CIRCUIT CONDUCTOR AMPACITY	30.72A
Result should be greater than (18.75A) otherwise less the entry for circuit conductor size and ampacity	

DC CONDUCTOR AMPACITY CALCULATIONS: FROM JUNCTION BOX TO INVERTER:

AMBIENT TEMPERATURE ADJUSTMENT FOR EXPOSED CONDUIT PER NEC 310.15(B)(2)(c)	+22°
EXPECTED WIRE TEMP (In Celsius)	32°
TEMP. CORRECTION PER TABLE (310.16)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	4
CONDUIT FILL CORRECTION PER NEC 310.15(B)(2)(a)	.80
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	18.75A
MAX CONTINUOUS OUTPUT CURRENT OF ARRAY	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16	
TEMP. CORRECTION PER TABLE (310.16) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(2)(a) X CIRCUIT CONDUCTOR AMPACITY	30.72A
Result should be greater than (18.75A) otherwise less the entry for circuit conductor size and ampacity	

AC CONDUCTOR AMPACITY CALCULATIONS:

No. OF INVERTER	1
EXPECTED WIRE TEMP (In Celsius)	32°
TEMP. CORRECTION PER TABLE (310.16)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	3
CONDUIT FILL CORRECTION PER NEC 310.15(B)(2)(a)	1
CIRCUIT CONDUCTOR SIZE	6 AWG
CIRCUIT CONDUCTOR AMPACITY	75A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(B)	40A
1.25 X MAX INVERTER OUTPUT CURRENT	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16	
TEMP. CORRECTION PER TABLE (310.16) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(2)(a) X CIRCUIT CONDUCTOR AMPACITY	72A
Result should be greater than (40A) otherwise less the entry for circuit conductor size and ampacity	

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SPRING LAKE, NC 28390

SHEET NAME
**WIRING
CALCULATIONS**

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-5



SLA-M Monocrystalline

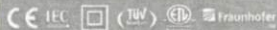


**300 Wp
60 Cell
Monocrystalline
PV Module**

100% MAXIMUM POWER DENSITY
Silfab's SLA-M 300 ultra-high-efficiency modules are optimized for both Residential and Commercial projects where maximum power density is preferred.

100% NORTH AMERICAN QUALITY MATTERS
Silfab's fully-automated manufacturing facility ensures precision engineering is applied at every stage. Superior reliability and performance combine to produce one of the highest quality modules with the lowest defect rate in the industry.

NORTH AMERICAN CUSTOMIZED SERVICE
Silfab's 100% North American based team leverages just-in-time manufacturing to deliver unparalleled service, on-time delivery and flexible project solutions.



ENSURES MAXIMUM EFFICIENCY
60 of the highest efficiency, premium quality monocrystalline cells result in a maximum power rating of 300Wp.

ADVANCED PERFORMANCE WARRANTY
25-year linear power performance guarantee to 82%.

ENHANCED PRODUCT WARRANTY
12-year product/workmanship warranty.

BUILT BY INDUSTRY EXPERTS
With over 35 years of industry experience, Silfab's technical team are pioneers in PV technology and are dedicated to an innovative approach that provides superior manufacturing processes including: infra-red cell sorting, glass washing, automated soldering and meticulous cell alignment.

POSITIVE TOLERANCE
(+0/+5W) All positive module sorting ensures maximum performance.

44 PPM DEFECT RATE*
Total automation ensures strict quality control during each step of the process at our certified ISO manufacturing facility.
*As of December 31, 2016.

LIGHT AND DURABLE
Over-engineered to weather low load bearing structures up to 5400 Pa. Light-weight frame exclusively designed with wide-ranging racking compatibility and durability.

PID RESISTANT
Proven in accordance to IEC 62804-1.

AVAILABLE IN
All Black



Electrical Specifications		SILFAB SLA Monocrystalline	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	300	227
Maximum power voltage (Vpmax)	V	32.8	29.5
Maximum power current (Ipmax)	A	9.16	7.69
Open circuit voltage (Voc)	V	39.65	36.9
Short circuit current (Isc)	A	9.71	7.95
Module efficiency	%	18.4	17.3
Maximum system voltage (VDC)	V	1000	
Series fuse rating	A	15	
Power Tolerance	Wp	+/- 1	

Temperature Ratings		SILFAB SLA Monocrystalline	
Temperature Coefficient Isc	%/K	0.03	
Temperature Coefficient Voc	%/K	-0.30	
Temperature Coefficient Pmax	%/K	-0.38	
NOCT (+2°C)	°C	45	
Operating temperature	°C	-40/-85	

Mechanical Properties and Components		SILFAB SLA Monocrystalline	
Module weight (± 1 kg)	kg	19	
Dimensions (H x L x D: ± 1mm)	mm	1650 x 990 x 38	
Maximum surface load (wind/snow)*	N/m ²	5400	
Hail impact resistance		ø 25 mm at 83 km/h	
Cells		60 - Si monocrystalline - 4 or 5 busbar - 156.75 x 156.75 mm	
Glass		3.2 mm high transmittance, tempered, antireflective coating	
Backsheet		Multilayer polyester-based	
Frame		Anodized Al	
Bypass diodes		3 diodes-45W/12A, IP67/IP68	
Cables and connectors (See installation manual)		1200 mm ø 5.7 mm (4 mm ²), MC4 compatible	

Warranties		SILFAB SLA Monocrystalline	
Module product warranty		12 years	
		25 years	
		≥ 97% end of 1 st year	
		≥ 90% end of 12 th year	
		≥ 82% end of 25 th year	

Certifications		SILFAB SLA Monocrystalline	
Product		ULC ORD C1703, UL 1703, IEC 61215, IEC 61730, IEC 61701, CEC listed	
Factory		UL Fire Rating: Type 2 (Type 1 on request)	
		ISO 9001:2008	

Warning: Read the installation and User Manual before handling, installing and operating modules.

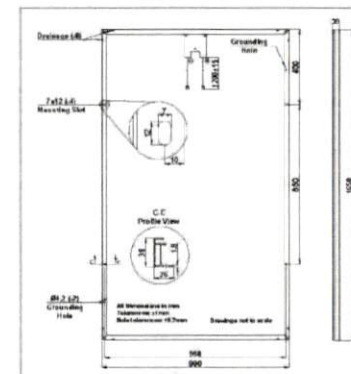
Third-party generated pan files from PV Evolution Labs available for download at:
www.silfab.ca/downloads



Pallet Count: 26
Container Count: 936



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SHEET NAME
EQUIPMENT SPECIFICATION

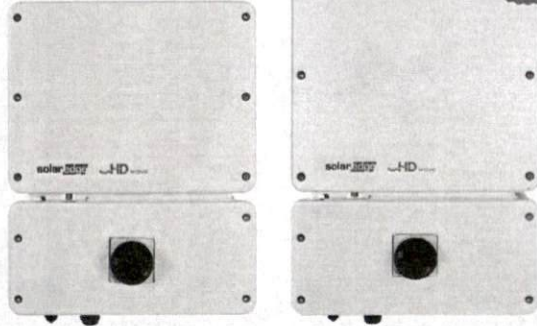
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

Single Phase Inverter with HD-Wave Technology

for North America

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



12-25
YEAR
WARRANTY

INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

solaredge.com



Single Phase Inverter with HD-Wave Technology for North America

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

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER SE0000-XXXXXX								
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3700 @ 208V	5000	6000 @ 240V 5000 @ 208V	7500	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3700 @ 208V	5000	6000 @ 240V 5000 @ 208V	7500	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (V) - 240 - 264	✓	✓	✓	✓	✓	✓	✓	VAC
AC Output Voltage Min.-Nom.-Max. (V) - 208 - 228	-	✓	-	✓	-	-	✓	VAC
AC Frequency (Nominal)	59.9 - 60 - 60.5 ^{Hz}							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							
GFCI Threshold	1							
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	6650	9360	7750	9300	11800	15500	17550	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							
Nominal DC Input Voltage	380							
Maximum Input Current @240V ^{dc}	8.5	10.3	18.5	19.5	27	27	26.5	Adc
Maximum Input Current @208V ^{dc}	-	9	-	17.5	-	-	27	Adc
Max. Input Short Circuit Current	45							
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600mA Sensitivity							
Maximum Inverter Efficiency	99			99.2				%
CEC Weighted Efficiency			99				99 @ 240V 98.5 @ 208V	%
Night-time Power Consumption	< 2.5							
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional ¹							
Inverter Commissioning	with the SetApp mobile application using built-in Wi-Fi station for local connection							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1998, CSA C22.2, Canadian ATC1 according to ETL, M-DP							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (H)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG				3/4" minimum / 14-4 AWG			
DC Input Conduit Size / # of Strings / AWG Range	1/2" minimum / 1-2 strings / 14-6 AWG				1/2" minimum / 1-3 strings / 14-6 AWG			
Dimensions with Safety Switch (HxWxD)	12.7 x 15.6 x 6.8 / 496 x 370 x 174				21.2 x 15.6 x 7.3 / 540 x 370 x 195			
Weight with Safety Switch	22 / 10		25.1 / 11.4		25.2 / 11.9		38.8 / 17.6	
Note	< 25							
Coiling	Natural Connection							
Operating Temperature Range	-10 to +60 / -10 to +150 ^{°F}							
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

POWERHOME SOLAR & ROOFING
 POWER HOME SOLAR, LLC
 "POWER YOUR FUTURE"
 919 N. MAIN ST.
 MCCOESVILLE, NC 28115
 Phone: 704-800-6591 (OFFICE)
 704-800-6591 (HOME)
 Web: www.Powerhome.com

REVISIONS		
DESCRIPTION	DATE	REV

Signature with Seal

DATE: 09/09/2019

PROJECT NAME & ADDRESS

LISA M HOUGHTON
 RESIDENCE
 7512 ELLIOTT BRIDGE RD.,
 SPRING LAKE, NC 28390

SHEET NAME
EQUIPMENT SPECIFICATION

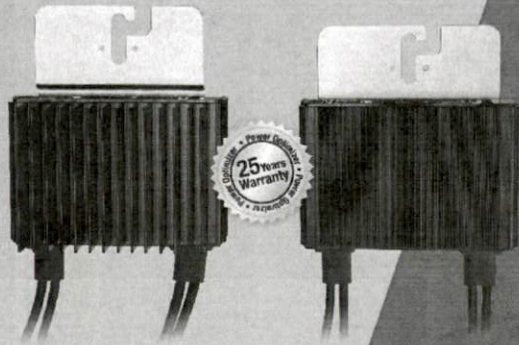
SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-8

solaredge

Power Optimizer

P320 / P370 / P400 / P405 / P505



POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Compliant with arc fault protection and rapid shutdown NEC requirements (when installed as part of the SolarEdge system)
- Module-level voltage shutdown for installer and firefighter safety

www.solaredge.us

solaredge

Power Optimizer

P320 / P370 / P400 / P405 / P505

OPTIMIZER MODEL (typical module compatibility)	P320 (for high-power 60-watt modules)	P370 (for higher-power 60 and 72-watt modules)	P400 (for 72 & 96-watt modules)	P405 (for thin film modules)	P505 (for higher- current modules)	
INPUT						
Rated Input DC Power ¹	320	370	400	405	505	W
Absolute Maximum Input Voltage	48	60	80	125	85	Vdc
V _{oc} at Lowest Temperature	8-48	8-60	8-80	12.5-125	12.5-85	Vdc
MPPT Operating Range	8-48	8-60	8-80	12.5-125	12.5-85	Vdc
Maximum Short-Circuit Current (I _{sc})	11		10.1		14	Adc
Maximum DC Input Current	13.75		12.63		17.5	Adc
Maximum Efficiency			99.5			%
Weighted Efficiency			99.5		98.5	%
Overvoltage Category			II		III	
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)						
Maximum Output Current			15			Adc
Maximum Output Voltage			60		85	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)						
Safety Output Voltage per Power			1 ± 0.1			Vdc
Disturbance						
STANDARD COMPLIANCE						
EMC			IEC Part 15 Class B, IEC61000-6-2, IEC61000-6-3			
Safety			IEC61009-1 (class II safety), UL1741			
RoHS			Yes			
INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage			1000			Vdc
Compatible Inverters			All SolarEdge Single Phase and Three Phase Inverters			
Dimensions (W x L x H)	126 x 152 x 28 / 5 x 5.97 x 1.1		126 x 152 x 28 / 5 x 5.97 x 1.1	126 x 152 x 28 / 5 x 5.97 x 1.1	126 x 152 x 28 / 5 x 5.97 x 1.1	mm / in
Weight (including cables)	630 / 1.4		750 / 1.7	845 / 1.9	1064 / 2.3	g / lb
Input Connector			MAG ²			
Output Wire Type / Connector			Double Insulated, MGA			
Output Wire Length	0.95 / 1.0		1.2 / 1.9			m / ft
Operating Temperature Range			-40 ~ +85 / -40 ~ +175			°C / °F
Protection Rating			IP68 / NEMA9P			
Relative Humidity			0 ~ 100			%
¹ Based IEC standard of the module. Module of up to 40% power tolerance is allowed.						
² For other connector type please contact SolarEdge.						
PV SYSTEM DESIGN USING A SOLAREGE INVERTER³						
	SINGLE PHASE HD-WAVE	SINGLE PHASE	THREE PHASE 208V	THREE PHASE 480V		
Minimum String Length (Power Optimizers)	P320, P370, P400 P405 / P505	6	10	18		
Maximum String Length (Power Optimizers)		6	8	14		
Maximum Power per String	5700 (6000 with SE7400-05 ~ SE11400- 05)	5250	6000	17750	W	
Parallel Strings of Different Lengths or Orientations			Yes			

³ For detailed design information refer to: http://www.solaredge.com/sites/default/files/string_design_m.pdf
⁴ It is not allowed to mix HD-WAVE with P320/P370/P400/P405/P505 in one string.
⁵ A string with more than 10 optimizers must not exceed IEC 61000-6-2/6-3 (class II safety) safety voltage & IEC standard for the PV equipment.



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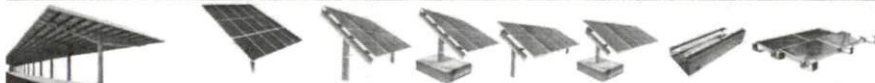
SHEET NUMBER
PV-9



Sinclair Designs & Engineering

Your One-Stop-Shop for Solar Racking Solutions

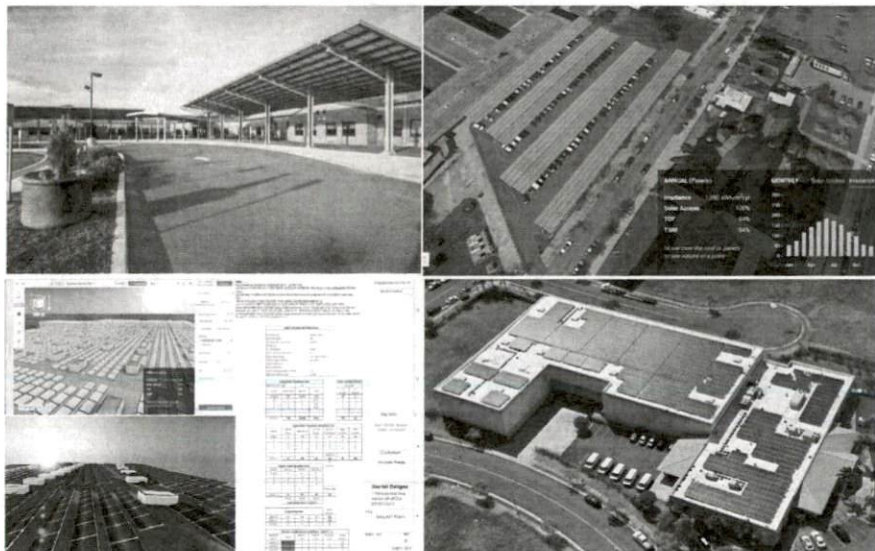
Carport Systems Pole Mount Trackers Ground Mount Systems Commercial Roof Mount Systems



T-Y-I-A Carports Fixed, Single, Dual Axis Sun Trackers 5-45 Degree GroPost/Ballast Mount Systems 5-7-10 Degree Roof Mounts

SDE: Project Development Support (Using Aurora PV Software & Solid-Works)

Our NABCEP certified PV designers and Engineers can support you through every phase of your project. Preliminary Designs for Quick Proposals: 3D Modeling, PV Production, Shade Analysis, & Site Drawings. Ballast Calculations with PSF Analysis. Accurate Component Pricing & Project Bill of Materials

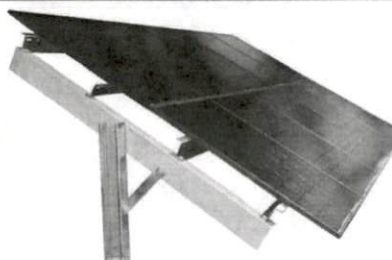


Need Installation Support? Our new business partners can provide geotechnical support and offer installation pricing for all of our racking systems. Together, we are on track to install over 80 Megawatts of power throughout the USA in 2019.

Sinclair Designs & Engineering

Integrated Project Development & System Manufacturing

Sky Rack 2.0 Ground Mount System



Introducing the New Sky Rack 2.0 Ground Mount. The new design increases the overall structural integrity of the assembly and provides more efficient installation techniques.

Based on your module choice and the size of the project, this system can offer a direct hardware to module solution; eliminating the need to purchase expensive panel clamp kits (10% Savings).

APPLICATION	OPEN FIELD		
Tilt Angle	5-45 Degrees	Terrain	5 Degree E/W
Module Orientation	2 High Portrait	Wire Management	Included
Wind Load	115 MPH	Warranty	25 Years
Snow Load	60 PSF	Material	11GA G90 CHEM TREAT Steel
Ground Clearance	24in Standard (Customer Req)	Manufacturing	Made in Michigan, USA

4 Main Components for Efficient Installation	Additional Components Available to Increase Spec Requirements	Minimal Hardware Requirements for Efficient Installation
1. 4 x 7 IN C-CHANNEL POST Optional Lengths = 8 - 17 Feet 2. SLR-STRUT-50 Reinforcement Brace 3. TRUSS - 120 5-40 Degree Angle Adjustment 4. Z-PURLIN-(2-5 Panel Lengths Available) Wire Tie Management Holes Additional Slots for direct module tie-in	Z-PURLIN BRACE For high wind/heavy snow areas SLR-DBL L STRUT - 50 For high wind/heavy snow areas SLR-STRONGBACK For high wind/heavy snow areas Z-PURLIN CANTILEVER-44 Allows additional modules to be installed at the beginning and end of each array.	ALL HDW & CLAMP KITS ARE STORED IN HIGH VOLUMES 2x 5/8-11 x 1 3/4 Serrated Flanged Heads 7x 1/2-13 x 1 1/2 Serrated Flanged Heads AK Solar UL-467 55 MID CLAMP KITS AK Solar UL-467 55 END CLAMP KITS

PRODUCT AVAILABILITY: All racking systems are manufactured "IN HOUSE" from "Prime" 11 Gage Grade 50 USA Steel. This allows us to control 100% of the production schedule and deploy your system ahead of the installation date. We inventory 1-2 Megawatts of racking product to maintain an average lead time of 7-10 days.



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PV-10