

Initial Application Date: \_\_\_\_\_

Application # \_\_\_\_\_

CU# \_\_\_\_\_

**COUNTY OF HARNETT RESIDENTIAL LAND USE APPLICATION**

Central Permitting 108 E. Front Street, Lillington, NC 27546 Phone: (910) 893-7525 ext:2 Fax: (910) 893-2793 www.harnett.org/permits

**\*\*A RECORDED SURVEY MAP, RECORDED DEED (OR OFFER TO PURCHASE) & SITE PLAN ARE REQUIRED WHEN SUBMITTING A LAND USE APPLICATION\*\***

**LANDOWNER:** \_\_\_\_\_ Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Contact No: \_\_\_\_\_ Email: \_\_\_\_\_

**APPLICANT\*:** \_\_\_\_\_ Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Contact No: \_\_\_\_\_ Email: \_\_\_\_\_

\*Please fill out applicant information if different than landowner

**CONTACT NAME APPLYING IN OFFICE:** \_\_\_\_\_ Phone # \_\_\_\_\_

**PROPERTY LOCATION:** Subdivision: \_\_\_\_\_ Lot #: \_\_\_\_\_ Lot Size: \_\_\_\_\_

State Road # \_\_\_\_\_ State Road Name: \_\_\_\_\_ Map Book & Page: \_\_\_\_\_ / \_\_\_\_\_

Parcel: \_\_\_\_\_ PIN: \_\_\_\_\_

Zoning: \_\_\_\_\_ Flood Zone: \_\_\_\_\_ Watershed: \_\_\_\_\_ Deed Book & Page: \_\_\_\_\_ / \_\_\_\_\_ Power Company\*: \_\_\_\_\_

\*New structures with Progress Energy as service provider need to supply premise number \_\_\_\_\_ from Progress Energy.

**PROPOSED USE:**

SFD: (Size \_\_\_\_\_x\_\_\_\_\_) # Bedrooms:\_\_\_ # Baths:\_\_\_ Basement(w/wo bath):\_\_\_ Garage:\_\_\_ Deck:\_\_\_ Crawl Space:\_\_\_ Slab:\_\_\_ Slab:\_\_\_  
(Is the bonus room finished? ( ) yes ( ) no w/ a closet? ( ) yes ( ) no (if yes add in with # bedrooms) Monolithic

Mod: (Size \_\_\_\_\_x\_\_\_\_\_) # Bedrooms\_\_\_ # Baths\_\_\_ Basement (w/wo bath)\_\_\_ Garage:\_\_\_ Site Built Deck:\_\_\_ On Frame\_\_\_ Off Frame\_\_\_  
(Is the second floor finished? ( ) yes ( ) no Any other site built additions? ( ) yes ( ) no

Manufactured Home: \_\_\_SW \_\_\_DW \_\_\_TW (Size \_\_\_\_\_x\_\_\_\_\_) # Bedrooms: \_\_\_ Garage:\_\_\_(site built?\_\_\_) Deck:\_\_\_(site built?\_\_\_)

Duplex: (Size \_\_\_\_\_x\_\_\_\_\_) No. Buildings:\_\_\_\_\_ No. Bedrooms Per Unit:\_\_\_\_\_

Home Occupation: # Rooms:\_\_\_\_\_ Use:\_\_\_\_\_ Hours of Operation:\_\_\_\_\_ #Employees:\_\_\_\_\_

Addition/Accessory/Other: (Size \_\_\_\_\_x\_\_\_\_\_) Use:\_\_\_\_\_ Closets in addition? ( ) yes ( ) no

Water Supply: \_\_\_\_\_ County \_\_\_\_\_ Existing Well \_\_\_\_\_ New Well (# of dwellings using well \_\_\_\_\_) **\*Must have operable water before final**

Sewage Supply: \_\_\_\_\_ New Septic Tank (Complete Checklist) \_\_\_\_\_ Existing Septic Tank (Complete Checklist) \_\_\_\_\_ County Sewer

Does owner of this tract of land, own land that contains a manufactured home within five hundred feet (500') of tract listed above? ( ) yes ( ) no

Does the property contain any easements whether underground or overhead ( ) yes ( ) no

Structures (existing or proposed): Single family dwellings:\_\_\_\_\_ Manufactured Homes:\_\_\_\_\_ Other (specify):\_\_\_\_\_

**Required Residential Property Line Setbacks:**

**Comments:** \_\_\_\_\_

Front **Minimum** \_\_\_\_\_ **Actual** \_\_\_\_\_

Rear \_\_\_\_\_

Closest Side \_\_\_\_\_

Sidestreet/corner lot \_\_\_\_\_

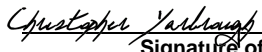
Nearest Building on same lot \_\_\_\_\_

SPECIFIC DIRECTIONS TO THE PROPERTY FROM LILLINGTON: \_\_\_\_\_

Attached Separately

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If permits are granted I agree to conform to all ordinances and laws of the State of North Carolina regulating such work and the specifications of plans submitted. I hereby state that foregoing statements are accurate and correct to the best of my knowledge. Permit subject to revocation if false information is provided.

DeSigned by  
  
\_\_\_\_\_  
7CE289D454F8441... **Signature of Owner or Owner's Agent** \_\_\_\_\_ **Date** \_\_\_\_\_

**\*\*\*It is the owner/applicants responsibility to provide the county with any applicable information about the subject property, including but not limited to: boundary information, house location, underground or overhead easements, etc. The county or its employees are not responsible for any incorrect or missing information that is contained within these applications.\*\*\***

**\*\*This application expires 6 months from the initial date if permits have not been issued\*\***

Application # \_\_\_\_\_

### Harnett County Central Permitting

PO Box 65 Lillington, NC 27546 - Ph: 910-893-7525 - Fx: 910-893-2793 - www.harnett.org/permits  
Certification of Work Performed By Owner/Contractor  
(Individual Trade Application)

Owner (s) of Structure: Ida Cameron Phone: 919-623-1091

Owner (s) Mailing Address: 241 Happy Lane. SANFORD, NC 27332

Land Owner Name (s): Ida Cameron Phone: 919-498-3705

Construction or Site Address: 241 Happy Lane. SANFORD, NC 27332

PIN # \_\_\_\_\_ Parcel # \_\_\_\_\_

Job Cost: \$1000 Description of Work to be done Installation of a roof-mounted solar pv array

Mechanical: New Unit With Ductwork  New Unit Without Ductwork  Gas Piping  Other

Electrical\*: 200 Amp  <200 Amp  Service Change  Service Reconnect  Other

\* For Progress Energy customers we need the premise number

Plumbing: Water/Sewer Tap  Number of Baths  Water Heater

Specific Directions to Job from Lillington:

Attached seperately


Subdivision: \_\_\_\_\_ Lot #: \_\_\_\_\_

I Karl Stupka will provide the Electrical labor on this structure.  
(Contractors Name) (Trade)

I am the building owner or my NC state license number is 31533-L, which entitles me to perform such work on the above structure legally. All work shall comply with the State Building Code and all other applicable State and local laws, ordinances and regulations.

NC SOLAR NOW  
Contractor's Company Name  
3401-101 Atlantic Ave Raleigh NC 27604  
Address  
31533-L  
License # \_\_\_\_\_

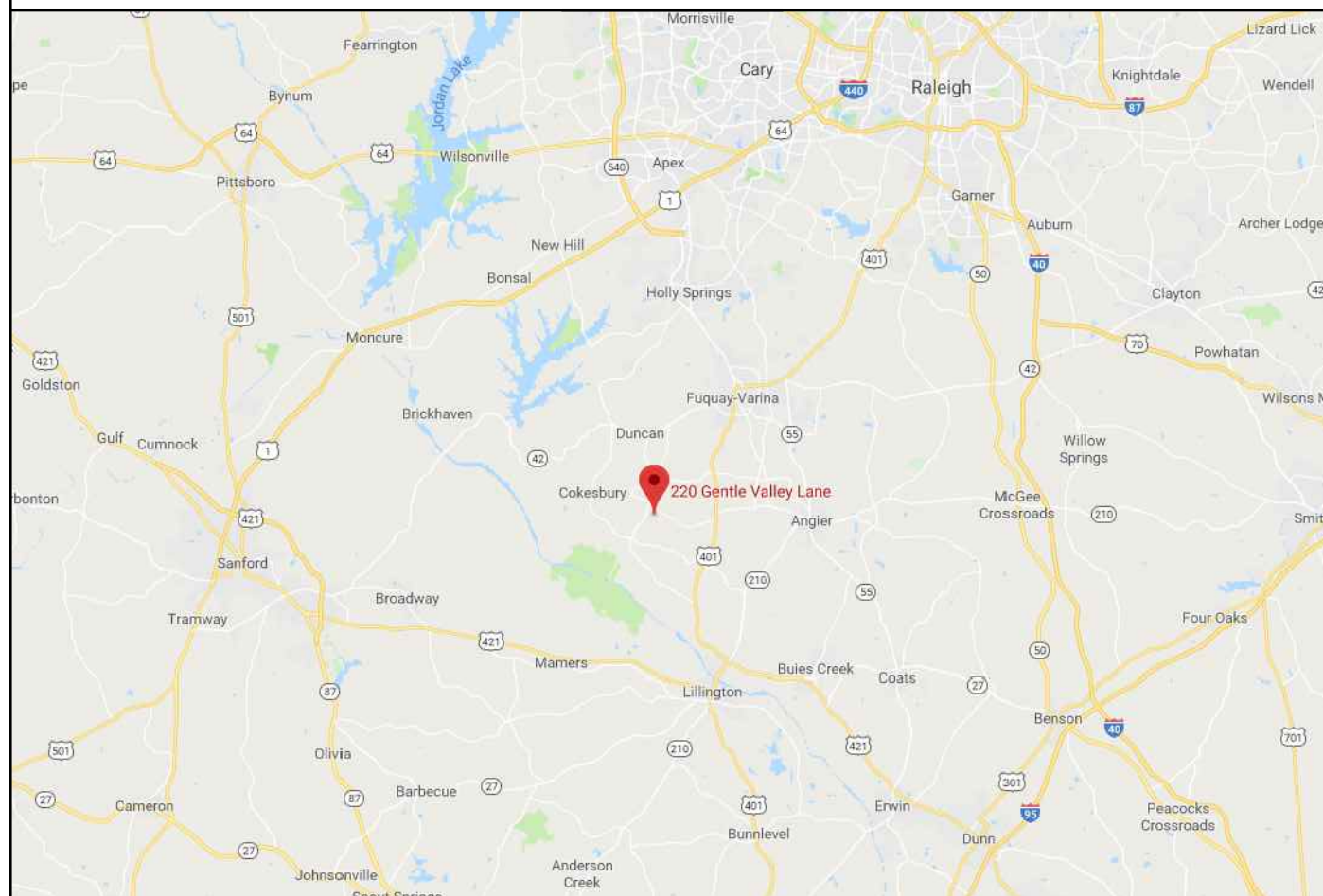
919-833-9096  
Telephone  
Karl@ncsolarnow.com  
Email Address

Structure Owner / Contractor Signature:  Date: 5/29/18

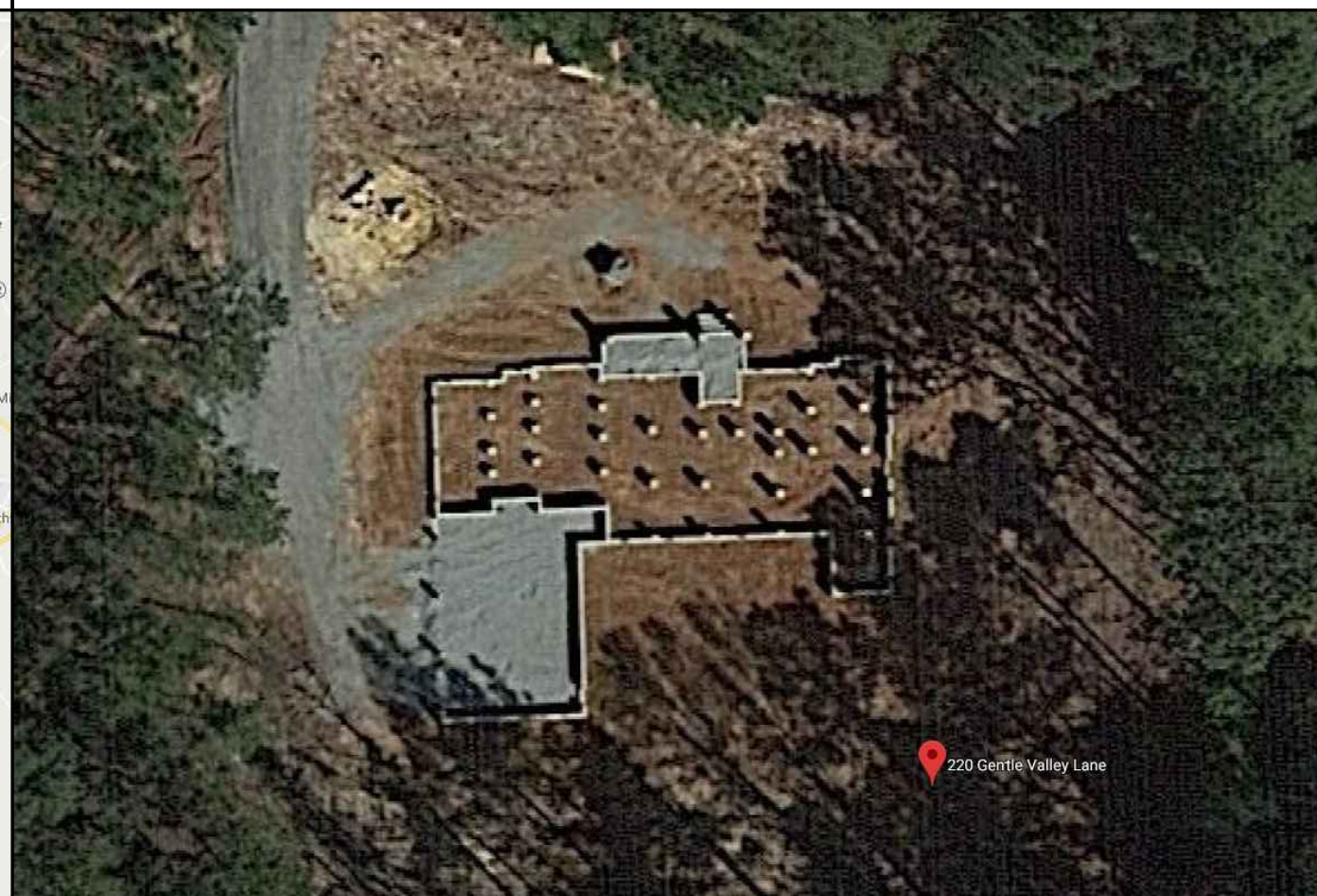
By signing this application you affirm that you have obtained permission from the above listed license holder to purchase permits on their behalf. If doing the work as owner you understand that you cannot rent, lease or sell the listed property for 12 months after completion of the listed work.

**\*Company name, address, & phone must match information on license**

## VICINITY MAP



## PROPERTY MAP



ENGINEER:



**MODEL ENERGY**

300 FAYETTEVILLE ST.  
#1430  
RALEIGH, NC 27602  
919-274-9905  
MODELENERGY.COM

P-1194

JOB TITLE:

**NEW SOLAR PV SYSTEM**  
12.3 kW DC INPUT  
11.4 kW AC EXPORT

**Michael Altier**  
220 Gentle Valley Ln  
Fuquay-Varina, NC 27526

## CONSTRUCTION NOTES

- ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES
- FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS
- WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS
- THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS
- EACH ELECTRICAL APPLIANCE SHALL BE PROVIDED WITH A NAMEPLATE GIVING THE IDENTIFYING NAME AND THE RATING IN VOLTS AND AMPERES, OR VOLTS AND WATTS. IF THE APPLIANCE IS TO BE USED ON A SPECIFIC FREQUENCY OR FREQUENCIES, IT SHALL BE SO MARKED. WHERE MOTOR OVERLOAD PROTECTION EXTERNAL TO THE APPLIANCES IS REQUIRED, THE APPLIANCE SHALL BE SO MARKED
- WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE
- GROUNDING DC PHOTOVOLTAIC ARRAYS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION THAT MEETS THE REQUIREMENTS OF NEC SECTION 690.5. UNGROUNDED DC PHOTOVOLTAIC ARRAYS SHALL COMPLY WITH NEC SECTION 690.35
- IN ONE- AND TWO-FAMILY DWELLINGS, LIVE PARTS IN PHOTOVOLTAIC SOURCE CIRCUITS AND PHOTOVOLTAIC OUTPUT CIRCUITS OVER 150 VOLTS TO GROUND, SHALL ONLY BE ACCESSIBLE TO QUALIFIED PERSONS WHILE ENERGIZED.
- PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
- EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
- WHERE ALL TERMINALS OF A DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A WARNING SIGN SHALL BE MOUNTED ON OR ADJACENT TO THE DISCONNECT
- A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS
- A PERMANENT PLAQUE OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES SERVING THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL POWER PRODUCTION SOURCES.
- A PERMANENT PLAQUE OR DIRECTORY SHALL BE PROVIDED DENOTING THE LOCATIONS OF THE SERVICE DISCONNECT MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECT MEANS IF THEY ARE NOT LOCATED AT THE SAME LOCATION.
- ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

## ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRICAL METAL TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
I	CURRENT
IMP	CURRENT AT MAXIMUM POWER
ISC	SHORT-CIRCUIT CURRENT
KVA	KILOVOLT AMPERE
KW	KILOWATT
MAX	MAXIMUM
MIN	MINIMUM
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
NOM	NOMINAL
NTS	NOT TO SCALE
P <sub>NOM</sub>	NOMINAL POWER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SN	SOLAR NOON
STC	STANDARD TEST CONDITIONS
TYP	TYPICAL
V	VOLT
VMP	VOLTAGE AT MAXIMUM POWER
Voc	OPEN-CIRCUIT VOLTAGE
W	WATT

## CODE REFERENCES

2017 NATIONAL ELECTRIC CODE  
2018 NORTH CAROLINA BUILDING CODE  
2018 NORTH CAROLINA RESIDENTIAL CODE  
2018 NORTH CAROLINA FIRE CODE

## SHEET INDEX

PV1.1 - PROJECT INFORMATION  
PV2.1 - SITE & STRUCTURAL INFORMATION  
PV3.1 - ELECTRICAL INFORMATION  
PV4.1 - EQUIPMENT LABELS

## SITE CONDITIONS

ASCE 7-10 WIND SPEED - 116 MPH  
EXPOSURE CATEGORY - B  
RISK CATEGORY - II

## LEGEND

	DISCONNECT SWITCH
	FUSE
	CIRCUIT BREAKER
	EQUIP. GROUND

CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	06/06/19

PROJECT INFORMATION

# PV1.1

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SOLAR ROOF HOOK
MODEL	L-FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	SOLAR ROOF HOOK
MODEL	QUICKBOLT
MATERIAL	304 SS
SIZE	5/16-18 X 5.25"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1
MAX. PULL-OUT FORCE	960 LBS. / MOUNT
SAFETY FACTOR	2.0
DESIGN PULL-OUT FORCE	480 LBS. / MOUNT

PV MODULES	
MAKE	HELIENE
MODEL	60M-HBLK 300WP
WIDTH	39"
LENGTH	65"
THICKNESS	1.6"
WEIGHT	43.9 LBS

MOUNTING RAILS	
MAKE	UNIRAC
MODEL	SM STANDARD
MATERIAL	ALUMINUM
WEIGHT	1.25 LBS./FT.
SPACING	34 IN.

ARRAY SUMMARY ROOF 'A'	
# MODULES	19
MOD. ATT. MID	34
MOD. ATT. END	8
ROOF MOUNTS	31
RAIL LENGTH	130 FT.
ARRAY AREA	336 SQFT.
ARRAY WEIGHT	998 LBS.
AZIMUTH @ SN	180°
TILT ANGLE	40°

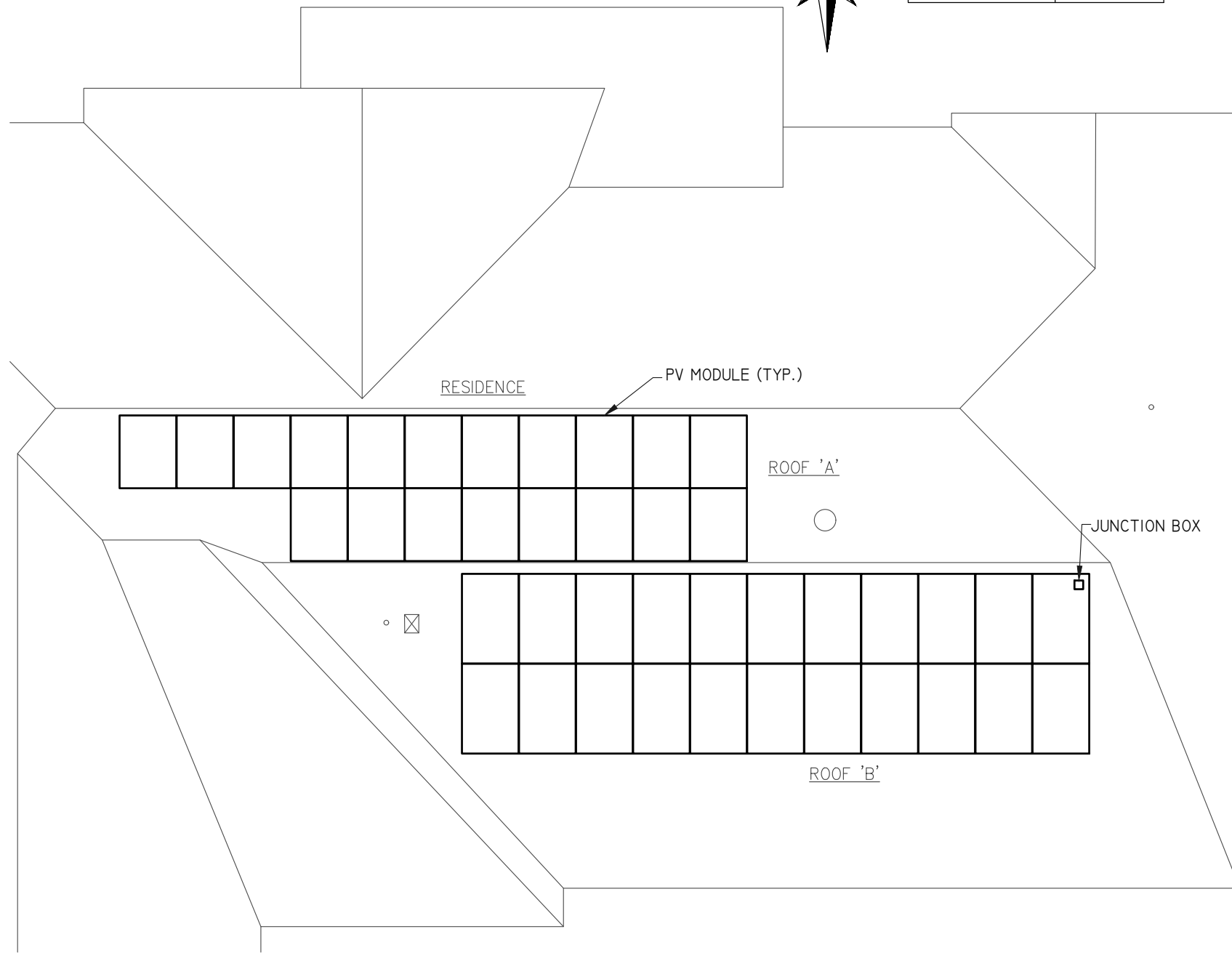
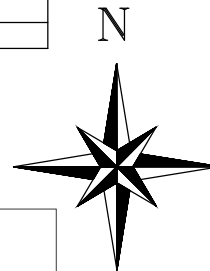
ARRAY SUMMARY ROOF 'B'	
# MODULES	22
MOD. ATT. MID	40
MOD. ATT. END	8
ROOF MOUNTS	34
RAIL LENGTH	150 FT.
ARRAY AREA	389 SQFT.
ARRAY WEIGHT	1155 LBS.
AZIMUTH @ SN	180°
TILT ANGLE	18°

ROOF LOADING ROOF 'A'	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.5 LBS./SQFT.
TOTAL	6.4 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-24.6 LBS./SQFT.
UPLIFT ZONE 2	-29.0 LBS./SQFT.
UPLIFT ZONE 3	-29.0 LBS./SQFT.
DOWNWARD	23.0 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-355 LBS.
UPLIFT ZONE 2	-314 LBS.
UPLIFT ZONE 3	-105 LBS.
DOWNWARD	332 LBS.

ROOF SUMMARY ROOF 'A'	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	8'-10"
PITCH	10 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.

ROOF LOADING ROOF 'B'	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.5 LBS./SQFT.
TOTAL	6.4 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-23.0 LBS./SQFT.
UPLIFT ZONE 2	-38.0 LBS./SQFT.
UPLIFT ZONE 3	-57.1 LBS./SQFT.
DOWNWARD	13.6 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-332 LBS.
UPLIFT ZONE 2	-412 LBS.
UPLIFT ZONE 3	-206 LBS.
DOWNWARD	196 LBS.

ROOF SUMMARY 'B'	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	18'-8"
PITCH	4 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.




ROOF ZONES: ROOF 'A' & 'B'	
ALL ZONES	MAX. OVERHANG = 11"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"

- UTILITY METER
- GENERATOR ATS
- MD PANEL
- AC DISCONNECT
- DC/AC INVERTER

**STATEMENT OF STRUCTURAL COMPLIANCE**


THE EXISTING ROOF STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE ADDITIONAL LOADS OF THE PURPOSED PV SYSTEM. IN ADDITION, THE RACKING AND FASTENING SYSTEM SHALL BE CAPABLE OF SECURING THE SYSTEM TO THE STRUCTURE UNDER DESIGN CONDITIONS WHEN INSTALLED PROPERLY AND IN ACCORDANCE WITH THE RACKING AND FASTENING ARRANGEMENT DETAILED WITHIN THESE DRAWINGS.

SIGNED: 

NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ENGINEER:




**MODEL ENERGY**  
 300 FAYETTEVILLE ST.  
 #1430  
 RALEIGH, NC 27602  
 919-274-9905  
 MODELENERGY.COM  
 P-1194

JOB TITLE:

**NEW SOLAR PV SYSTEM**  
 12.3 kW DC INPUT  
 11.4 kW AC EXPORT

**Michael Altier**  
 220 Gentle Valley Ln  
 Fuquay-Varina, NC 27526

CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	06/06/19

SITE & STRUCTURAL INFORMATION

**PV2.1**

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PV MODULES	
MAKE	HELIENE
MODEL	60M-HBLK 300WP
TECHNOLOGY	MONO-CRYST.
NOM. POWER (P <sub>nom</sub> )	300 WATTS
NOM. VOLT. (V <sub>mp</sub> )	33.139 VOLTS
O.C. VOLT. (V <sub>oc</sub> )	39.83 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (V <sub>tc</sub> )	-0.31 %/°C
NOM. CURR. (I <sub>mp</sub> )	9.127 AMPS
S.C. CURR. (I <sub>sc</sub> )	9.59 AMPS
MAX. SERIES FUSE	15 AMPS

MODULE OPTIMIZER	
MAKE	SOLAREEDGE
MODEL	P320
DC INPUT:	
NOM. POWER	320 WATTS
VOLT. RANGE	8-48
MAX. CURR.	11.0 AMPS
DC OUTPUT:	
NOM. POWER	320 WATTS
MAX. VOLT.	60 VOLTS
MAX. CURR.	15 AMPS
MIN. STRING	8 OPTIMIZERS
MAX. STRING	25 OPTIMIZERS
MAX. POWER	5700 WATTS

JUNCTION BOX	
MAKE	SOLADECK
MODEL	0783-3R
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	LOCATION	
C1	4	10 AWG	COPPER	PV WIRE	1	6 AWG	COPPER	PV WIRE	-	-	-	FREE AIR	1
C2	4	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	FMC/EMT	INT/EXT	2,4
C3	3	6 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	3/4"	EMT	EXTERIOR	2,4
C4	3	6 AWG	COPPER	THWN	-	-	-	-	1	3/4"	EMT	EXTERIOR	2,4
XC	-	-	-	-	-	-	-	-	-	-	-	-	3

NOTES:

1. MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
2. CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED.
3. EXISTING CONDUCTORS, FIELD VERIFY
4. EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR

DC/AC INVERTER	
MAKE	SOLAREEDGE
MODEL	SE11400A-US
TECHNOLOGY	TRANS-LESS
DC INPUT:	
MAX. POWER	15350 WATTS
MAX. VOLT.	500 VOLTS
NOM. VOLT.	350 VOLTS
MAX. CURRENT	34.5 AMPS
MAX. SCC	45 AMPS
STRINGS INPUTS	3 STRINGS
AC OUTPUT:	
RATED POWER	11400 WATTS
MAX. POWER	12000 WATTS
NOM. VOLT.	240 VOLTS
MAX. CURR.	47.5 AMPS
GFP (Y/N)	YES
RPP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	AUTOMATIC
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 3R

AC DISCONNECT	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	60 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	YES
FUSE RATING	60 AMPS

NOTES:

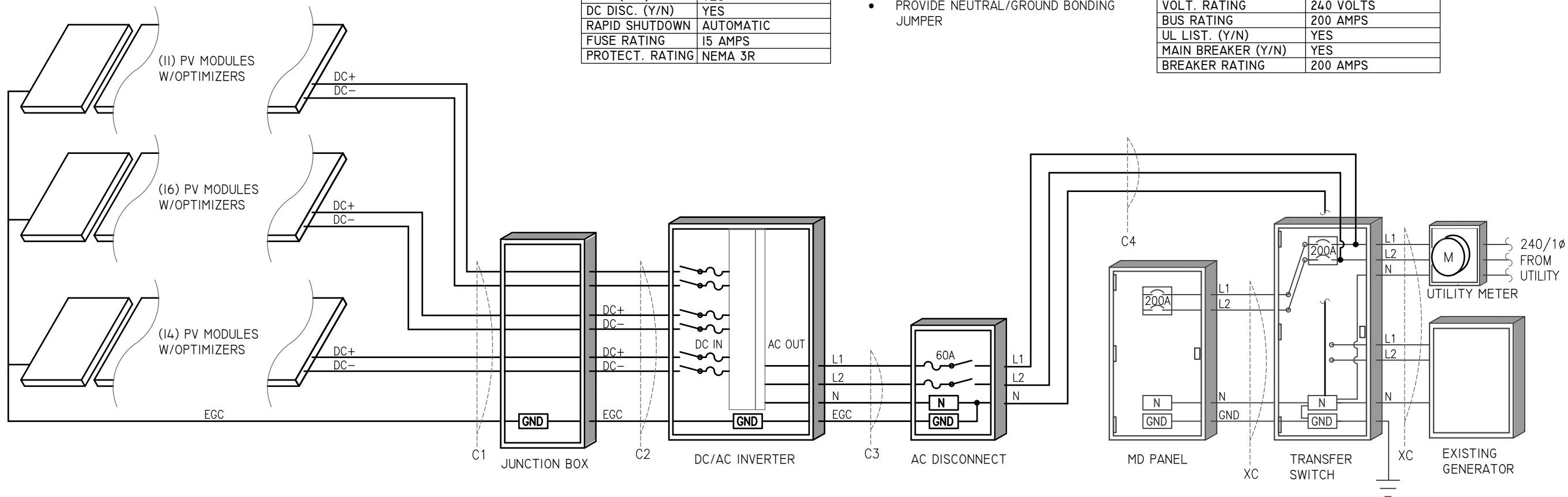
- LOAD-BREAK RATED
- VISIBLE OPEN
- LOCKABLE IN OPEN POSITION
- INSTALL ADJACENT TO METER
- DISCONNECT TO BE READILY ACCESSIBLE TO UTILITY COMPANY PERSONNEL AT ALL TIMES
- SERVICE RATED
- PROVIDE NEUTRAL/GROUND BONDING JUMPER

TRANSFER SWITCH (EXISTING)	
MAKE	GENERAC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
BREAKER RATING	200 AMPS

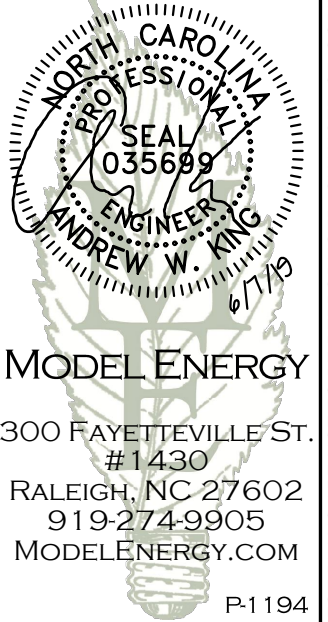
NOTES:

- BACK-FEED SOLAR OUTPUT VIA SUPPLY SIDE TAP INSIDE OF TRANSFER SWITCH

MD PANEL (EXISTING)	
MAKE	EATON
MODEL	PUB26542
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
BREAKER RATING	200 AMPS



ENGINEER:



MODEL ENERGY

300 FAYETTEVILLE ST.  
#1430  
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NEW SOLAR PV SYSTEM  
12.3 kW DC INPUT  
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Michael Altier  
220 Gentle Valley Ln  
Fuquay-Varina, NC 27526

CLIENT:



ISSUED FOR: CONSTRUCTION  
DATE: 06/06/19

ELECTRICAL INFORMATION

PV3.1

**! WARNING**

ELECTRIC SHOCK HAZARD  
TERMINALS ON THE LINE AND  
LOAD SIDES MAY BE ENERGIZED  
IN THE OPEN POSITION

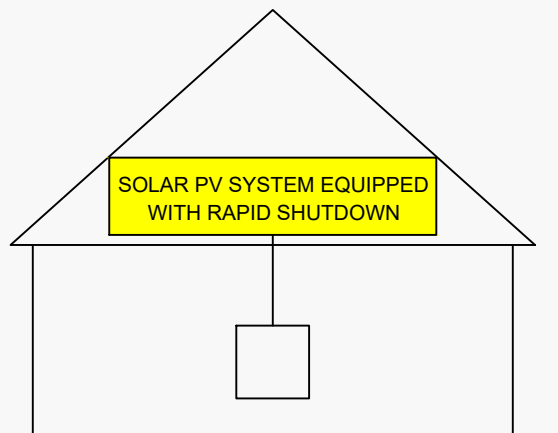
NEC 690.13 (B)  
PLACE ON PV SYSTEM DISCONNECTING MEANS.

**RAPID SHUTDOWN  
SWITCH FOR  
SOLAR PV SYSTEM**

NEC 690.56 (C)(3)  
PLACE ON RAPID SHUTDOWN SWITCH OR EQUIPMENT  
WITH INTEGRATED RAPID SHUTDOWN \*REFLECTIVE\*

**SOLAR PV SYSTEM EQUIPPED  
WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN  
SWITCH TO THE  
"OFF" POSITION TO  
SHUT DOWN PV SYSTEM  
AND REDUCE  
SHOCK HAZARD  
IN THE ARRAY



NEC 690.56 (C)(1)(a)  
PLACE WITHIN 3FT OF SERVICE DISCONNECTING MEANS TO  
WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL  
INDICATE THE LOCATIONS OF RAPID SHUTDOWN SWITCHES

**! WARNING**

POWER SOURCE  
OUTPUT CONNECTION  
DO NOT RELOCATE THIS  
OVERCURRENT DEVICE

NEC 705.12 (B)(2)(3)(b)  
PLACE ADJACENT TO BACK-FED BREAKER

**PHOTOVOLTAIC POWER SOURCE**

OPERATING AC VOLTAGE 240 V

MAXIMUM OPERATING  
AC OUTPUT CURRENT 47.5 A

NEC 690.54  
PLACE ON INTERCONNECTION  
DISCONNECTING MEANS

**WARNING: PHOTOVOLTAIC  
POWER SOURCE**

NEC 690.31 (G)(3)&(4)  
PLACE ON ALL JUNCTION BOXES EXPOSED RACEWAYS  
EVERY 10' AND 1' FROM BENDS AND PENATRATIONS,  
ADJACENT TO THE MAIN SERVICE DISCONNECT \*REFLECTIVE\*

**PV SYSTEM  
DISCONNECT**

NEC 690.13 (B)  
PLACE ON PV SYSTEM DISCONNECTING MEANS.

**! WARNING**

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

NEC 705.12 (B)(3)  
PLACE ON ALL EQUIPMENT THAT IS SUPPLIED  
BY BOTH POWER SOURCES

**DIRECT CURRENT  
PHOTOVOLTAIC POWER SOURCE**

MAXIMUM VOLTAGE 600 VDC  
MAX CIRCUIT CURRENT 45.0 AMPS

NEC 690.53  
PLACE ON ALL DC DISCONNECTING MEANS

EQUIPMENT LABEL NOTES	
1.	LABELS SHOWN ARE THEIR ACTUAL REQUIRED SIZE.
2.	LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT.
3.	CONDUIT SHALL BE MARKED WITH REQUIRED LABEL EVERY 10 FEET.

ENGINEER:

MODEL ENERGY  
300 FAYETTEVILLE ST.  
#1430  
RALEIGH, NC 27602  
919-274-9905  
MODELENERGY.COM  
P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM  
12.3 kW DC INPUT  
11.4 kW AC EXPORT

Michael Altier  
220 Gentle Valley Ln  
Fuquay-Varina, NC 27526

CLIENT:

ISSUED FOR:	DATE:
CONSTRUCTION	06/06/19

EQUIPMENT  
LABELS

**PV4.1**



## Single Phase Inverters

for North America

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



INVERTERS

### Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- 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
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)







# Single Phase Inverters for North America

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

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	
<b>OUTPUT</b>							
Rated AC Power Output	3000	3800	5000	6000	7600	10000	VA
Max. AC Power Output	3000	3800	5000	6000	7600	10000	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 <sup>(1)</sup>						Hz
Maximum Continuous Output Current@240V	12.5	16	21	25	32	42	A
GFDI Threshold	1						A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
<b>INPUT</b>							
Maximum DC Power	4650	5900	7750	9300	11800	15500	W
Transformer-less, Ungrounded	Yes						
Maximum Input Voltage	480						Vdc
Nominal DC Input Voltage	380			400			Vdc
Maximum Input Current@240V	8.5	10.5	13.5	16.5	20	27	Adc
Max. Input Short Circuit Current	45						Adc
Reverse-Polarity Protection	Yes						
Ground-Fault Isolation Detection	600k $\Omega$ Sensitivity						
Maximum Inverter Efficiency	99	99.2					%
CEC Weighted Efficiency	99						%
Nighttime Power Consumption	< 2.5						W
<b>ADDITIONAL FEATURES</b>							
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)						
Revenue Grade Data, ANSI C12.20	Optional <sup>(2)</sup>						
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect						
<b>STANDARD COMPLIANCE</b>							
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07						
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (Hi)						
Emissions	FCC Part 15 Class B						
<b>INSTALLATION SPECIFICATIONS</b>							
AC Output Conduit Size / AWG Range	3/4" minimum / 20-4 AWG						
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG	
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185	in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6			lb / kg
Noise	< 25			< 50			dBA
Cooling	Natural Convection			Natural convection			
Operating Temperature Range	-13 to +140 / -25 to +60 <sup>(3)</sup> (-40°F / -40°C option) <sup>(4)</sup>						°F / °C
Protection Rating	NEMA 3R (Inverter with Safety Switch)						

<sup>(1)</sup> For other regional settings please contact SolarEdge support

<sup>(2)</sup> Revenue grade inverter P/N: SExxxxH-US000NNC2

<sup>(3)</sup> For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

<sup>(4)</sup> -40 version P/N: SExxxxH-US000NNU4



# Single Phase Inverter with HD-Wave Technology

for North America

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



## Optimized installation with HD-Wave technology

- / Specifically designed to work with power optimizers
- / Record-breaking efficiency
- / 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)

# 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

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 <sup>(1)</sup>							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
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 <sup>(2)</sup>	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V <sup>(2)</sup>	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k $\Omega$ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional <sup>(3)</sup>							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							

STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
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	3/4" minimum / 1-2 strings / 14-6 AWG				3/4" minimum / 1-3 strings / 14-6 AWG				
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174				21.3 x 14.6 x 7.3 / 540 x 370 x 185				in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6					lb / kg
Noise	< 25				< 50				dBA
Cooling	Natural Convection								
Operating Temperature Range	-40 to +140 / -25 to +60 <sup>(4)</sup> (-40°F / -40°C option) <sup>(5)</sup>							°F / °C	
Protection Rating	NEMA 4X (Inverter with Safety Switch)								

<sup>(1)</sup> For other regional settings please contact SolarEdge support

<sup>(2)</sup> A higher current source may be used; the inverter will limit its input current to the values stated

<sup>(3)</sup> Revenue grade inverter P/N: SExxxH-US000NNC2

<sup>(4)</sup> For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

<sup>(5)</sup> -40 version P/N: SExxxH-US000NNU4

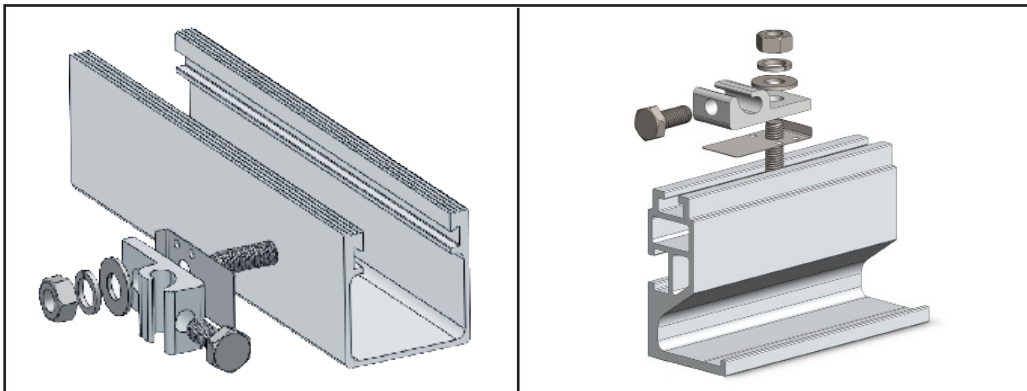
## WEEB-LUG

The WEEB-Lug consists of a WEEB washer, lay-in lug, and hardware. It is used with one solid or stranded copper wire (14AWG to 6AWG), or two copper wires (12AWG to 10AWG) to provide a continuous ground on roof or ground mounted solar systems. Unlike traditional lay-in lugs, the WEEB-Lug does not require surface preparation on rail or module to install. The WEEB Lug is installed using stainless steel mounting hardware. When the hardware is tightened the WEEB's specialized teeth embed into anodized aluminum, galvanized steel, or any electrically conductive metal to establish a gas tight electrical connection. The tin-plated Lug assures minimum contact resistance and protection against corrosion. Copper wire is clamped by a 1/4-28 stainless steel screw, which is horizontal to the tang for easy access when mounted under a PV module. The low profile of the WEEB Lug allows it to be installed in a variety of positions.

Catalog	Item #	L x W x H	Hole	Hardware	Torque
WEEB-LUG-6.7	30020109	1.60" x 0.71" x 0.47"	0.266"	1/4 inch hardware - included unassembled	7 ft. lbs. for terminal screw
WEEB-LUG-6.7AS	30020110	1.60" x 0.71" x 0.47"		1/4 inch hardware - included assembled	
WEEB-LUG-8.0	30020111	1.60" x 0.87" x 0.47"	0.323"	M8 or 5/16 inch hardware - not included	10 ft. lbs. for mounting hardware w/ Penetrox-A on threads
WEEB-LUG-8.0AS	50010335	1.60" x 0.87" x 0.47"		5/16 inch hardware - included assembled	
WEEB-LUG-8.2MS	30020115	1.60" x 0.71" x 0.47"		M8 or 5/16 inch hardware - not included	
WEEB-LUG-15.8	30020112	1.60" x 0.71" x 0.47"		M8 or 5/16 inch hardware - not included	



- Material: 304 stainless steel, tin-plated copper, outdoor rated
- Low profile design
- Multiple equipment ground conductor allowance:  
One 14 AWG to 6 AWG or two 10 AWG, two 12 AWG
- Listed to ANSI/UL 467 by Intertek ETL



### Customer Service Department

7 Aviation Park Drive  
Londonderry NH 03053  
1-800-346-4175  
1-603-647-5299 (International)



Intertek  
4004188

