



Application # _____

Harnett County Central Permitting
420 McKinney Pkwy Lillington, NC 27546
PO Box 65 Lillington, NC 27546

910-893-7525 ext. 1 Fax 910-893-2793 www.harnett.org/permits

* Must be owner/occupier or licensed contractor. Address, company name & phone must match information on license.

Application for Residential Building and Trades Permit

Owner's Name: Noe Aguilar Date 10/1/21

Site Address: 48 Bo Bo White Lane, Lillington, NC 27546 Phone (919) 440-4616

Subdivision: _____ Lot _____

Description of Proposed Work: 36 solar panels on roof Total Job Cost \$46,298.00

General Contractor Information

Sustainable Energy & Lighting Solutions

843-469-5777

Building Contractor's Company Name

Telephone

8351 Palmetto Commerce Pkwy, Ste 203, Ladson, SC 29456

a.weatherford@theselsco.com

Address

Email Address

84338

HEATED SQ FT

GARAGE SQ FT

License #

Electrical Contractor Information

Description of Work wiring for solar panels on roof Service Size: 200 Amps T-Pole: Yes No

Sustainable Energy & Lighting Solutions

843-469-5777

Electrical Contractor's Company Name

Telephone

8351 Palmetto Commerce Pkwy, Ste 203, Ladson, SC 29456

a.weatherford@theselsco.com

Address

Email Address

34206

License #

Mechanical/HVAC Contractor Information

Description of Work _____

Mechanical Contractor's Company Name

Telephone

Address

Email Address

License #

Plumbing Contractor Information

Description of Work _____ # Baths _____

Plumbing Contractor's Company Name

Telephone

Address

Email Address

License #

Insulation Contractor Information

Insulation Contractor's Company Name & Address

Telephone

***NOTE: General Contractor / owner must fill out and sign the second page of this application.**



I hereby certify that I have the authority to make necessary application, that the application is correct and that the construction will conform to the regulations in the Building, Electrical, Plumbing and Mechanical codes, and the Harnett County Zoning Ordinance. I state the information on the above contractors is correct as known to me and that **by signing below I have obtained all subcontractors permission to obtain these permits** and if **any** changes occur including listed contractors, site plan, number of bedrooms, building and trade plans, Environmental Health permit changes or proposed use changes, I certify it is my responsibility to notify the Harnett County Central Permitting Department of any and all changes.

EXPIRED PERMIT FEES - 6 Months to 2 years permit re-issue fee is \$150.00. After 2 years re-issue fee is as per current fee schedule.

Amanda Weatherford
Signature of Owner/Contractor/Officer(s) of Corporation

10/1/21
Date

Affidavit for Worker's Compensation N.C.G.S. 87-14

The undersigned applicant being the:

General Contractor Owner Officer/Agent of the Contractor or Owner

Do hereby confirm under penalties of perjury that the person(s), firm(s) or corporation(s) performing the work set forth in the permit:

Has three (3) or more employees and has obtained workers' compensation insurance to cover them.

Has one (1) or more subcontractors(s) and has obtained workers' compensation insurance to cover them.

Has one (1) or more subcontractors(s) who has their own policy of workers' compensation insurance covering themselves.

Has no more than two (2) employees and no subcontractors.

While working on the project for which this permit is sought it is understood that the Central Permitting Department issuing the permit may require certificates of coverage of worker's compensation insurance prior to issuance of the permit and at any time during the permitted work from any person, firm or corporation carrying out the work.

Sign w/Title: Amanda Weatherford Project Manager Date: 10/1/21

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: _____ Phone: _____

Owner (s) Mailing Address: _____

Land Owner Name (s): _____ Phone: _____

Construction or Site Address: _____

PIN # _____ Parcel # _____

Job Cost: _____ Description of Work to be done _____

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:

Subdivision: _____ Lot #: _____

I _____ will provide the _____ labor on this structure.
(Contractors Name) (Trade)

I am the building owner or my NC state license number is _____, 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.

Contractor's Company Name _____ Telephone _____

Address _____ Email Address _____

License # _____

Structure Owner / Contractor Signature: Amanda Weatherford Date: _____

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**



Initial Application Date: 10/1/21

Application # _____

CU# _____

COUNTY OF HARNETT RESIDENTIAL LAND USE APPLICATION

Central Permitting 420 McKinney Pkwy, Lillington, NC 27546 Phone: (910) 893-7525 ext:1 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: Noe Aguilar Mailing Address: 48 Bo Bo White Lane
City: Lillington State: NC Zip: 27546 Contact No: (919) 440-4616 Email: asaelamaya2@gmail.com

APPLICANT*: Sustainable Energy & Lighting Solutions Mailing Address: 8351 Palmetto Commerce Pkwy, Ste 203
City: Ladson State: SC Zip: 29456 Contact No: 843-469-5777 Email: a.weatherford@theselsco.com

*Please fill out applicant information if different than landowner

ADDRESS: 48 Bo Bo White Lane PIN: 0517-69-4800.000

Zoning: _____ Flood: _____ Watershed: _____ Deed Book / Page: _____ - 2317 : 0147

Setbacks - Front: _____ Back: _____ Side: _____ Corner: _____

PROPOSED USE:

- Monolithic
SFD: (Size x) # Bedrooms: # Baths: Basement(w/wo bath): Garage: Deck: Crawl Space: Slab: Slab:
TOTAL HTD SQ FT GARAGE SQ FT (Is the bonus room finished? () yes () no w/ a closet? () yes () no (if yes add in with # bedrooms)
Modular: (Size x) # Bedrooms # Baths Basement (w/wo bath) Garage: Site Built Deck: On Frame Off Frame
TOTAL HTD SQ FT (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: TOTAL HTD SQ FT
Home Occupation: # Rooms: Use: Hours of Operation: #Employees:
Addition/Accessory/Other: (Size x) Use: Closets in addition? () yes () no
TOTAL HTD SQ FT GARAGE

Water Supply: County Existing Well New Well (# of dwellings using well) *Must have operable water before final
(Need to Complete New Well Application at the same time as New Tank)

Sewage Supply: New Septic Tank Expansion Relocation Existing Septic Tank County Sewer
(Complete Environmental Health Checklist on other side of application if Septic)

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):

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.

Amanda Weatherford

Signature of Owner or Owner's Agent

10/1/21

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 CONTINUES ON BACK

strong roots • new growth

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

This application to be filled out when applying for a septic system inspection.

County Health Department Application for Improvement Permit and/or Authorization to Construct

IF THE INFORMATION IN THIS APPLICATION IS FALSIFIED, CHANGED, OR THE SITE IS ALTERED, THEN THE IMPROVEMENT PERMIT OR AUTHORIZATION TO CONSTRUCT SHALL BECOME INVALID. The permit is valid for either 60 months or without expiration depending upon documentation submitted. (Complete site plan = 60 months; Complete plat = without expiration)

Environmental Health New Septic System

- **All property irons must be made visible.** Place “pink property flags” on each corner iron of lot. All property lines must be clearly flagged approximately every 50 feet between corners.
- Place “orange house corner flags” at each corner of the proposed structure. Also flag driveways, garages, decks, out buildings, swimming pools, etc. Place flags per site plan developed at/for Central Permitting.
- Place orange Environmental Health card in location that is easily viewed from road to assist in locating property.
- If property is thickly wooded, Environmental Health requires that you clean out the **undergrowth** to allow the soil evaluation to be performed. Inspectors should be able to walk freely around site. **Do not grade property.**
- **All lots to be addressed within 10 business days after confirmation. \$25.00 return trip fee may be incurred for failure to uncover outlet lid, mark house corners and property lines, etc. once lot confirmed ready.**

Environmental Health Existing Tank Inspections

- Follow above instructions for placing flags and card on property.
- Prepare for inspection by removing soil over **outlet end** of tank as diagram indicates, and lift lid straight up (*if possible*) and then **put lid back in place.** (Unless inspection is for a septic tank in a mobile home park)
- **DO NOT LEAVE LIDS OFF OF SEPTIC TANK**

“MORE INFORMATION MAY BE REQUIRED TO COMPLETE ANY INSPECTION”

SEPTIC

If applying for authorization to construct please indicate desired system type(s): can be ranked in order of preference, must choose one.

- {__} Accepted {__} Innovative {__} Conventional {__} Any
 {__} Alternative {__} Other _____

The applicant shall notify the local health department upon submittal of this application if any of the following apply to the property in question. If the answer is “yes”, applicant **MUST ATTACH SUPPORTING DOCUMENTATION**:

- {__} YES {__} NO Does the site contain any Jurisdictional Wetlands?
 {__} YES {__} NO Do you plan to have an irrigation system now or in the future?
 {__} YES {__} NO Does or will the building contain any drains? Please explain. _____
 {__} YES {__} NO Are there any existing wells, springs, waterlines or Wastewater Systems on this property?
 {__} YES {__} NO Is any wastewater going to be generated on the site other than domestic sewage?
 {__} YES {__} NO Is the site subject to approval by any other Public Agency?
 {__} YES {__} NO Are there any Easements or Right of Ways on this property?
 {__} YES {__} NO Does the site contain any existing water, cable, phone or underground electric lines?
 If yes please call No Cuts at 800-632-4949 to locate the lines. This is a free service.

I Have Read This Application And Certify That The Information Provided Herein Is True, Complete And Correct. Authorized County And State Officials Are Granted Right Of Entry To Conduct Necessary Inspections To Determine Compliance With Applicable Laws And Rules. I Understand That I Am Solely Responsible For The Proper Identification And Labeling Of All Property Lines And Corners And Making The Site Accessible So That A Complete Site Evaluation Can Be Performed.

September 28, 2021

RE: Noe Asael Aguilar Amaya – 48 Bo Bo White Ln, Lillington, NC 27546

This letter is approval of the application for Sustainable Energy & Lighting Solutions to install the 10 kW net metered solar array at 48 Bo Bo White Ln, Lillington, NC 27546. South River EMC personnel have inspected the location and area facilities owned by South River EMC to ensure that the interconnection will be completed safely and successfully.

If you have any questions regarding this letter or the system, please contact Eric Gainey at 919.820.4953 or myself at 919.820.7122.

Sincerely,



Catherine O'Dell
VP of Member Services & PR

Benson Design Group
15323 McClure Bridge Rd.
Charlotte, N.C. 28277
Phone # 704-578-8688
Fax # 704-541-4739

September 24, 2021

Ms Lacey Small
The SELSCO
8351 Palmetto Commerce Parkway, STE 203
Ladson, SC 29456

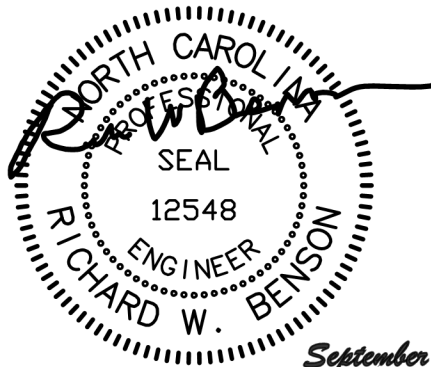
Re: Certification letter for loads, form of attachment (parts and pieces) for 36 solar panels being placed on the roof at 48 Bo Bo White Ln., Lillington, NC 27546

Dear Lacey,

I have completed my review of the proposed installation of solar panels being affixed to the existing standing seam metal roof at the residence mentioned above using the SnapNrack deck mount system (documentation submitted herewith). The existing roof is supported by 2x6@24"o.c. rafters with a maximum span of 9'-6". The deck mount system will consist of (1) 5/16" x 4-1/2" long lag screw per attachment for a total of 84 flashings. All components of the system along with supporting substrate structure was evaluated for a wind speed of 118mph, a ground snow load of 10psf and a seismic design category B and any loads/load combinations resulting and were all found to be within acceptable allowable stresses and deflections and to be in compliance with the 2018 North Carolina Residential Building Code..

If you have any questions concerning the content of what is written above please do not hesitate to contact me.

Best regards,



Richard W. Benson, P.E.

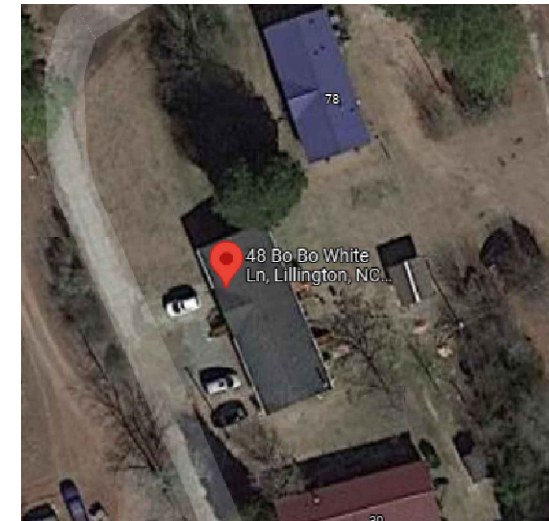
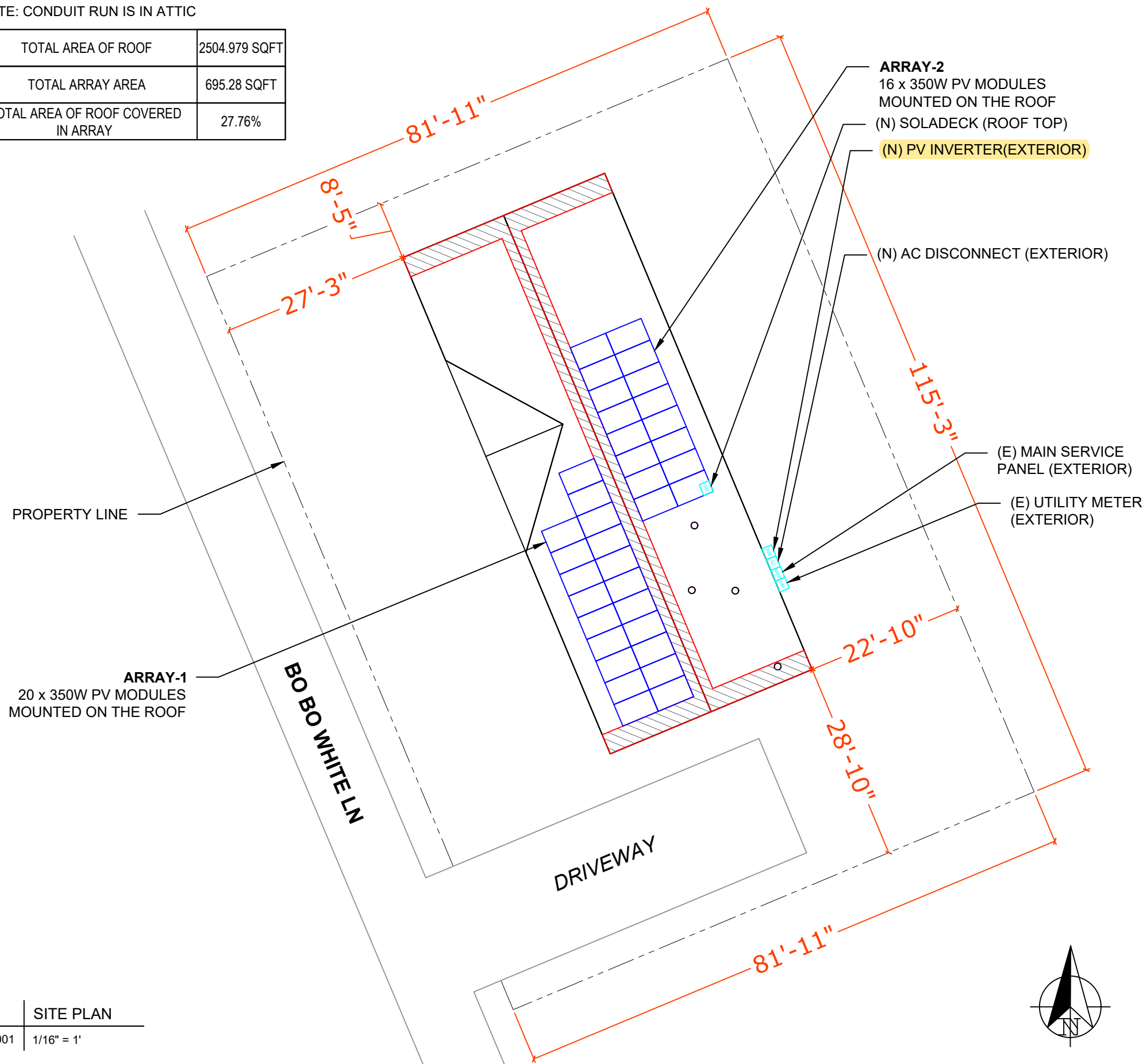
September 24, 2021

NOE ASAEL AGUILAR AMAYA- 12.600kW DC, 10.000kW AC

SITE PLAN

NOTE: CONDUIT RUN IS IN ATTIC

TOTAL AREA OF ROOF	2504.979 SQFT
TOTAL ARRAY AREA	695.28 SQFT
TOTAL AREA OF ROOF COVERED IN ARRAY	27.76%



A1 | AERIAL MAP
S-001 | SCALE NTS

GENERAL INFORMATION	
ELECTRIC CODE	NEC 2017
FIRE CODE	NCFC 2018
RESIDENTIAL CODE	NCRC 2018
BUILDING CODE	NCBC 2018
WIND SPEED	118 MPH
SNOW LOAD	10 PSF

INDEX	
INDEX NO.	DESCRIPTION
S-001	SITE PLAN
G-001	GENERAL NOTES
S-002	MOUNTING DETAILS
S-003	STRUCTURAL DETAILS
E-001	SINGLE LINE DIAGRAM
E-002	WARNING PLACARDS
SS	SPEC SHEET(S)

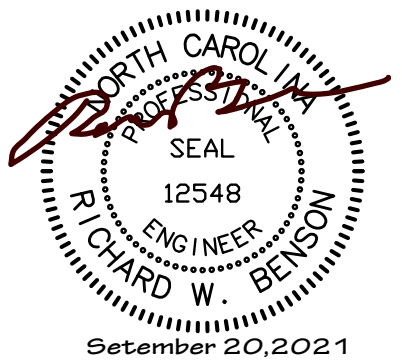


Sustainable Energy & Lighting Solutions
Your future is brighter with us!

SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1) SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD



CUSTOMER INFORMATION

NAME & ADDRESS:
NOE ASAEL AGUILAR AMAYA
48 BO BO WHITE LN, LILLINGTON, NC 27546

GPS: 35.3425154, -78.9448008
APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

SITE PLAN

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

PAPER SIZE: 17"x11"

DATE: 9/17/21

REV:A

S-001

A | SITE PLAN

S-001 | 1/16" = 1'

GENERAL NOTES

GENERAL NOTES

1. MODULES ARE LISTED UNDER UL 1703 AND CONFORM TO THE STANDARDS.
2. INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
3. DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
4. WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC 110.26(A)(1).
5. ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE EQUIPMENT.
6. ALL CONDUCTORS SHALL BE 600V, 75°C STANDARD COPPER UNLESS OTHERWISE NOTED.
7. WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
8. THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
9. ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
10. PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING

EQUIPMENT LOCATION:

11. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26(A)(1).
12. WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31(A),(C) AND NEC TABLES 310.15(B)(2)(A) AND 310.15(B)(3)(C).
13. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
14. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
15. ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
16. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

STRUCTURAL NOTES:

17. RACKING SYSTEM & PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, ACCORDING TO RAIL MANUFACTURER'S INSTRUCTIONS.
18. JUNCTION BOX WILL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.
19. ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED WITH APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.
20. ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.
21. WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

WIRING & CONDUIT NOTES:

22. ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.
23. CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
24. DC WIRING LIMITED TO MODULE FOOTPRINT. MICRO INVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
25. AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK PHASE B OR L2- RED, OR OTHER CONVENTION IF THREE PHASE PHASE C OR L3- BLUE, YELLOW, ORANGE**, OR OTHER CONVENTION NEUTRAL-WHITE OR GREY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH HIGHER VOLTAGE TO BE MARKED ORANGE [NEC 110.15].

INTERCONNECTION NOTES:

26. LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 690.64(B)]
27. THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS INPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC 705.12(D)(2)(3)].
28. WHEN SUM OF THE PV SOURCES EQUALS >100% OF BUSBAR RATING, PV DEDICATED BACKFFED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD [NEC 705.12(D)(2)(3)].
29. AT MULTIPLE PV OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVER CURRENT DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR. HOWEVER, THE COMBINED OVER CURRENT DEVICE MAY BE EXCLUDED ACCORDING TO NEC 705.12(D)(2)(3)(C).
30. FEEDER TAP INTER CONNECTION (LOAD SIDE) ACCORDING TO NEC 705.12(D)(2)(1) SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC 705.12(A) WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.42 BACK FEEDING BREAKER FOR UTILITY-INTERACTIVE INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING [NEC 705.12(D)(5)].

GROUNDING NOTES:

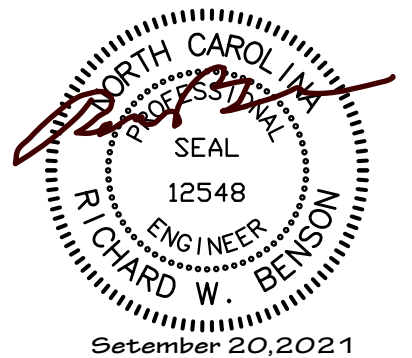
31. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.
32. PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC 250.122.
33. METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).
34. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45 AND MICRO INVERTER MANUFACTURER'S INSTRUCTIONS.
35. EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURERS' INSTALLATION REQUIREMENTS.
36. THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.
37. GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]
38. THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250, NEC 690.47 AND AHJ.
39. GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.5 IN GENERAL AND NEC 690.5(A)(1) SPECIFICALLY.
40. DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:
41. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).
42. DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
43. RAPID SHUTDOWN OF ENERGIZED CONDUCTORS BEYOND 10 FT OF PV ARRAY OR 5 FT INSIDE A BUILDING WITHIN 10 SECONDS. CONTROLLED CONDUCTORS $\leq 30V$ AND $\leq 240VA$ [NEC 690.12]. LOCATION OF LABEL ACCORDING TO AHJ.
44. ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9 AND 240.
45. MICRO INVERTER BRANCHES CONNECTED TO A SINGLE BREAKER OR GROUPED FUSES IN ACCORDANCE WITH NEC 110.3(B). 2.6.7 IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.



SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1) SOLAREEDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD



CUSTOMER INFORMATION

NAME & ADDRESS:
NOE ASAE AGUILAR AMAYA
48 BO BO WHITE LN, LILLINGTON, NC 27546

GPS: 35.3425154, -78.9448008
APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

GENERAL NOTES

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

PAPER SIZE: 17"x11"

DATE: 9/17/21

REV:A

G-001

MODULES DATA

Q CELLS Q.PEAK DUO-G6+ 350	
MODULE DIMS	68.5"x40.6"x1.3"
LAG SCREWS	5/16" X 3.5":2.5"MIN EMBEDMENT
FIRE SETBACK	

MINIMUM FIRE ACCESS PATHWAYS PER NCFC 2018
 RIDGE TO ARRAY: 1'-6"
 EAVE TO ARRAY : 3'-0"
 HIP/VALLEY W/ ADJACENT ARRAY: 1'-6"
 EACH SIDE HIP/VALLEY W/O ADJACENT ARRAY: 0'-0"
NOTE: INSTALLER TO VERIFY RAFTER SIZE, SPACING AND SLOPED SPANS, AND NOTIFY ANY DISCREPANCIES BEFORE PROCEEDING.

SITE INFORMATION

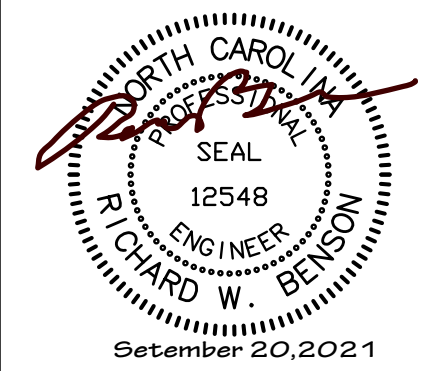
SR.NO	AZIMUTH	PITCH	NO. OF MODULES	ARRAY AREA (SQ. FT.)	ROOF TYPE	ATTACHMENT	ROOF EXPOSURE	FRAME TYPE	FRAME SIZE	FRAME SPACING	MAX RAIL SPAN	OVER HANG
MP-01	255°	14°	20	1027.18	COMPOSITION SHINGLE	SNAPNRACK ULTRA RAIL COMP KIT	ATTIC	RAFTERS	2X6	24"	6'-0"	2'-0"
MP-02	75°	10°	16	1210.13	COMPOSITION SHINGLE	SNAPNRACK ULTRA RAIL COMP KIT	ATTIC	RAFTERS	2X6	24"	6'-0"	2'-0"



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DC SYSTEM SIZE: 12.600 kW
 AC SYSTEM SIZE: 10.000 kW
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 MODULES:
 (36) Q CELLS Q.PEAK DUO-G6+ 350
 INVERTER:
 (1) SOLAREDGE SE10000H-US
 OPTIMIZER DETAILS
 (36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD



CUSTOMER INFORMATION

NAME & ADDRESS:
 NOE ASael AGUILAR AMAYA
 48 BO BO WHITE LN, LILLINGTON, NC 27546
 GPS: 35.3425154, -78.9448008
 APN: 130528 0035

AHJ: NC-HARNETT COUNTY

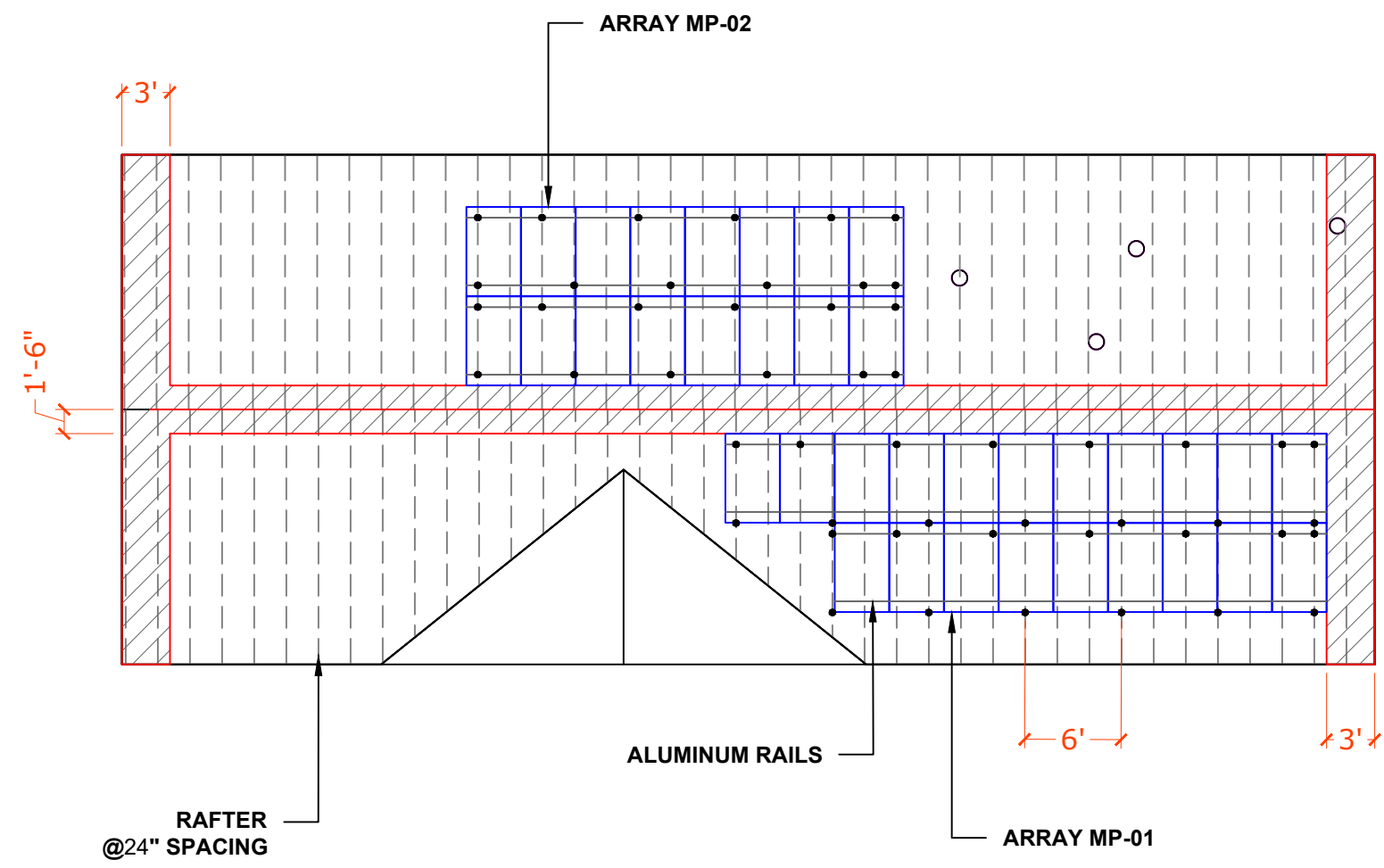
UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

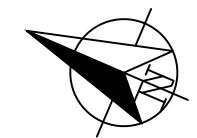
MOUNTING DETAILS

DESIGNER / CHECKED BY:
 J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	S-002

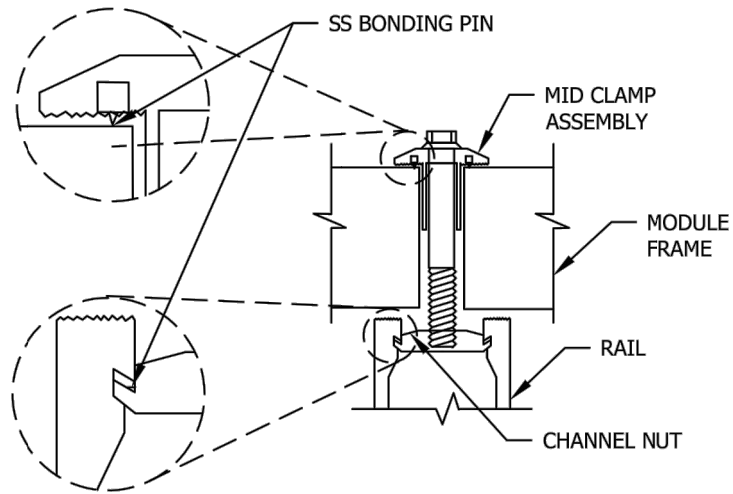


B | MOUNTING DETAILS
 S-002 | 3/32" = 1'



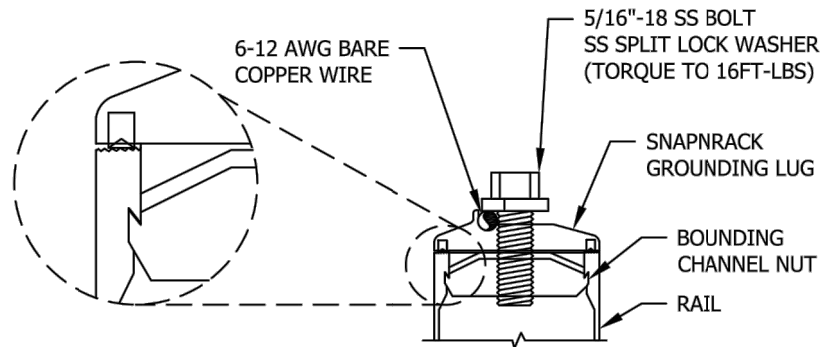
GROUNDING DETAILS

MODULE TO MODULE & MODULE TO RAIL



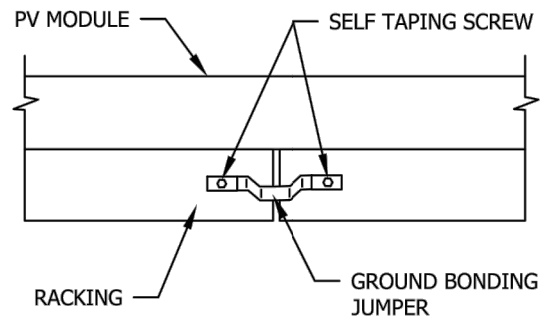
SNAPNRACK GROUNDING MID-CLAMP
SCALE: NTS

SNAPNRACK GROUNDING



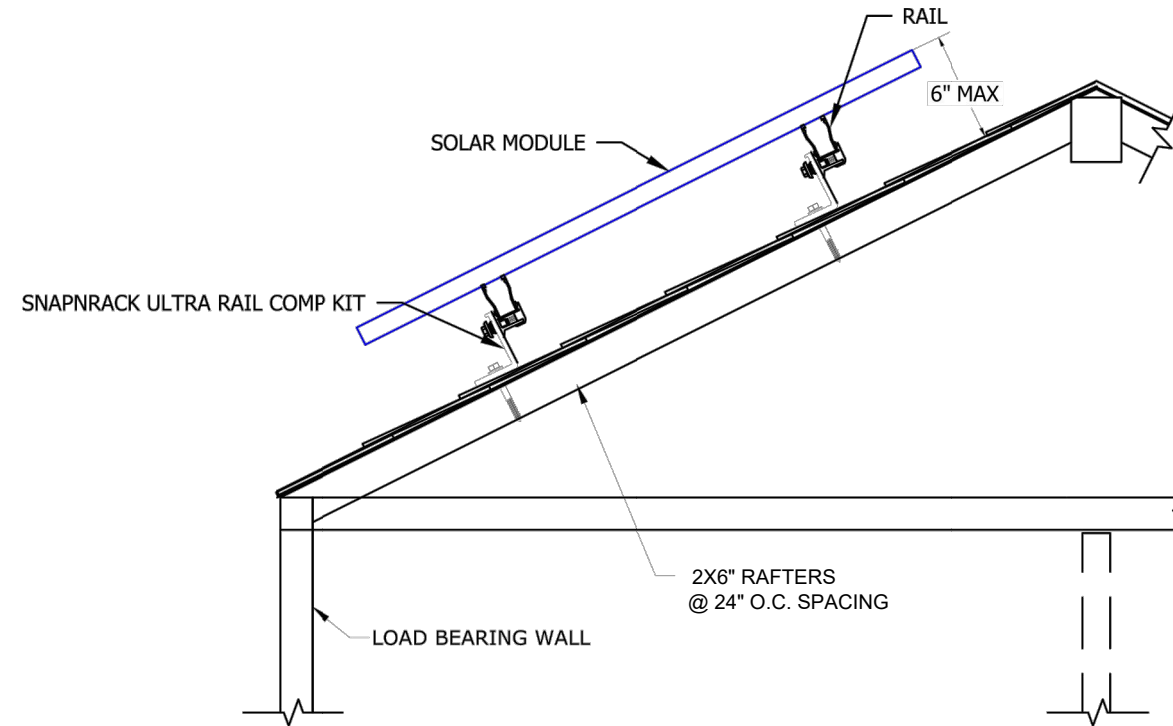
- NOTES:
- ALL HARDWARE IS INCLUDED FROM MANUFACTURER
 - A MINIMUM OF ONE GROUND LUG IS TO BE INSTALLED ON EVERY CONTINUOUS ROW OF MODULES
 - GROUNDING LUG MAY BE INSTALLED IN EITHER RAIL CHANNEL
 - GROUNDING LUG MAY BE INSTALLED SO GROUND WIRE IS PARALLEL OR PERPENDICULAR TO RAIL
 - ENSURE SPLIT LOCK WASHER IS INSTALLED ON TOP OF COPPER WIRE.
- SCALE:NTS

RAIL TO RAIL

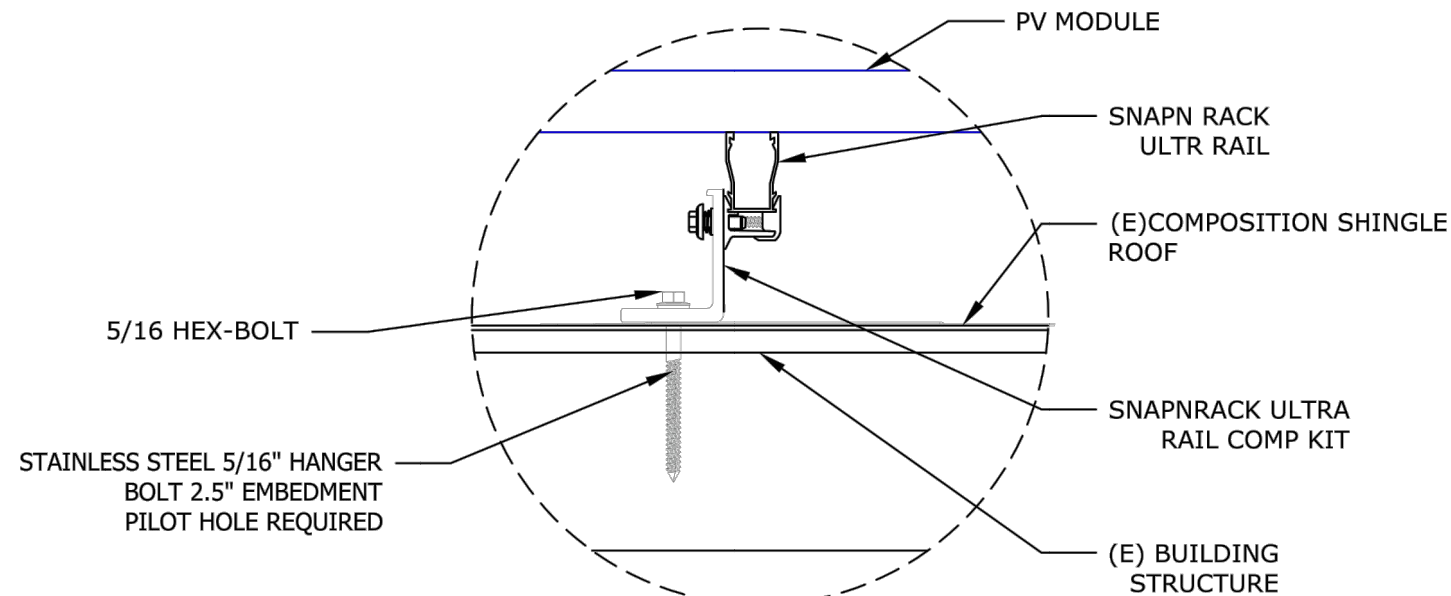


NTS REMOVAL OF ONE PIECE OF EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN ANY OTHER PIECES.
SCALE:NTS

ROOF FRAMING DETAIL

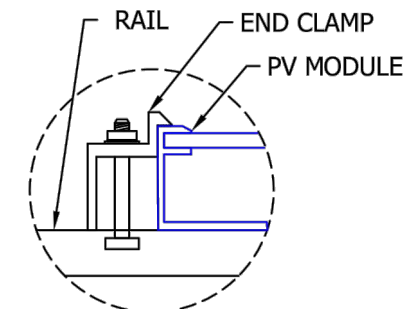
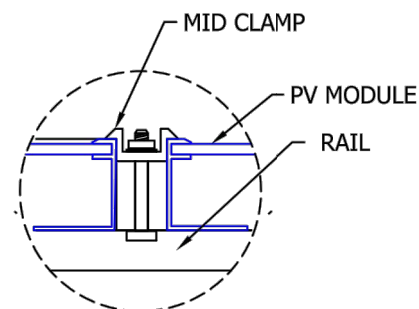


ATTACHMENT DETAIL-SNAPNRACK ULTRA RAIL COMP KIT



SCALE: NTS

MID-CLAMP & END CLAMP DETAIL

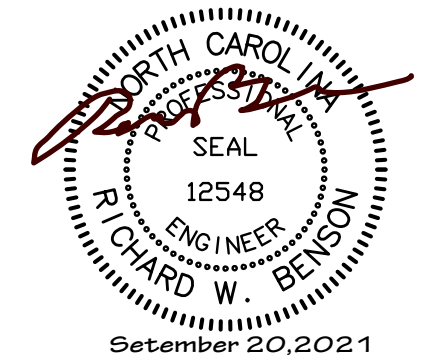


Sustainable Energy & Lighting Solutions
Your future is brighter with us!

SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1) SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD



CUSTOMER INFORMATION

NAME & ADDRESS:
NOE ASAE AGUILAR AMAYA
48 BO BO WHITE LN, LILLINGTON, NC
27546

GPS: 35.3425154, -78.9448008
APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ---

STRUCTURAL DETAILS

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

PAPER SIZE: 17"x11"

DATE: 9/17/21

REV:A

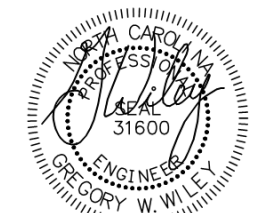
S-003



SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
 AC SYSTEM SIZE: 10.000 kW
 ANNUAL SOLAR OUPUT: 15864kWh/an
 MODULES:
 (36) Q CELLS Q.PEAK DUO-G6+ 350
 INVERTER:
 (1) SOLAREEDGE SE10000H-US
 OPTIMIZER DETAILS
 (36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD



09/30/21

CUSTOMER INFORMATION

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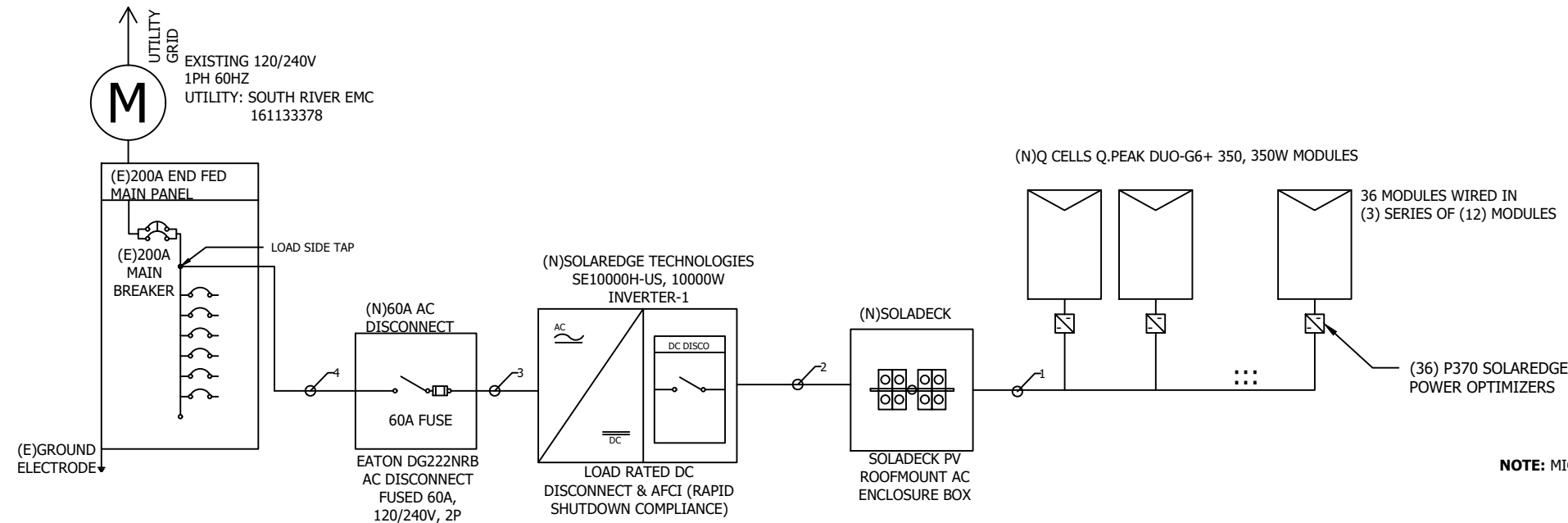
PROJECT NUMBER: ----

SINGLE LINE DIAGRAM

DESIGNER / CHECKED BY:
 J.B. / J.B.

SCALING: AS NOTED PAPER SIZE: 17"x11"

DATE: 9/17/21 REV:A E-001



NOTE: MICRO INVERTERS ARE RAPID SHUTDOWN COMPLIANT

MODULE -1 SPECIFICATION		INVERTER-1 SPECIFICATIONS		SYSTEM CHARACTERISTICS	
MODEL	Q CELLS Q.PEAK DUO-G6+ 350	MODEL	SOLAREEDGE SE10000H-US	DC SYSTEM SIZE	12600 W
MODULE POWER @ STC	350W	POWER RATING	10000W	INVERTER STRING VOLTAGE	400V
OPEN CIRCUIT VOLTAGE:Voc	40.73V	MAX OUPUT CURRENT	42A	MAX INVERTER SYSTEM VOLTAGE	480V
MAX POWER VOLTAGE:Vmp	34.07V	CEC WEIGHTED EFFICIENCY	0.99	MAX SHORT CIRCUIT CURRENT	45A
SHOR CIRCUIT VOLTAGE:Isc	10.79A	MAX INPUT CURRENT	27A	OPERATING CURRENT	31.5A
MAX POWER CURRENT:Imp	10.27A	MAX DC VOLTAGE	480V		

CONDUIT SCHEDULE					OPTIMIZER CHRACTERISTICS	
TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND	MODEL	P370
1	NONE	(6) 10 AWG PV WIRE	NONE	(1) 6 AWG BARE COPPER	MIN INPUT VOLTAGE	8 VDC
2	3/4" EMT OR EQUIV	(6) 10 AWG THHN/THWN-2	NONE	(1) 10 AWG THHN/THWN-2	MAX INPUT VOLTAGE	60 VDC
3	3/4" EMT OR EQUIV	(2) 6 AWG THHN/THWN-2	(1) 6 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2	MAX INPUT CURRENT	11 ADC
4	3/4" EMT OR EQUIV	(2) 6 AWG THHN/THWN-2	(1) 6 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2	MAX OUTPUT CURRENT	15 ADC

ELECTRICAL CALCULATION																						
DC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C																						
TAG ID	REQUIRED CONDUCTOR AMPACITY								CORRECTED AMPACITY CALCULATION				TERMINAL RATING CHECK			DERATED CONDUCTOR AMPACITY CHECK						
1	1	X	15.00	X	1	X	1.25	=	18.75A	40	X	0.71	X	1	=	28.40A	18.75A	<	30A	18.75A	<	28.40A
2	1	X	15.00	X	1	X	1.25	=	18.75A	40	X	0.76	X	0.8	=	24.32A	18.75A	<	30A	18.75A	<	24.32A
AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C																						
TAG ID	REQUIRED CONDUCTOR AMPACITY								CORRECTED AMPACITY CALCULATION				TERMINAL RATING CHECK			DERATED CONDUCTOR AMPACITY CHECK						
3	42	X	1	=	42.00	X	1.25	=	52.5A	75	X	0.91	X	1	=	68.25A	52.5	<	65A	52.5	<	68.25A
4	42	X	1	=	42.00	X	1.25	=	52.5A	75	X	0.91	X	1	=	68.25A	52.5	<	65A	52.5	<	68.25A

OCPD CALCULATIONS:

MAIN PANEL RATING: 200A,
 LOAD SIDE TAP:100% ALLOWABLE BACK FEED IS 200A
 INVERTER OVERCURRENT PROTECTION=
 INVERTER O/P I X CONTINUOUS LOAD(1.25)X
 #OF INVERTERS =42X1.25X1=52.50A =< PV
 BREAKER = 60A

ELECTRICAL NOTES:

- MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
- BREAKER/FUSE SIZES CONFORMS TO NEC 240.6 CODE SECTION.
- AC GROUNDING ELECTRODE CONDUCTOR SIZED PER NEC 250.66.
- AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
- AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2)(C) AND 310.15(B)(2)(B)
- AC SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7(A)
- CONDUCTORS ARE SIZED PER WIRE AMPACITY TABLE NEC 310.15(B)(16).
- CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
- CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).

WARNING PLACARDS

WARNING

ELECTRIC SHOCK HAZARD

THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

LABEL LOCATION
DC DISCONNECT, INVERTER
[PER CODE: NEC 690.41]
[To be used when inverter is ungrounded]

WARNING

ELECTRIC SHOCK HAZARD

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

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

LABEL LOCATION
AC DISCONNECT, POINT OF INTERCONNECTION
[PER CODE: NEC 690.13(B)]

WARNING

ELECTRIC SHOCK HAZARD

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

LABEL LOCATION
AC DISCONNECT, POINT OF INTERCONNECTION
[PER CODE: NEC 690.13(B)]

WARNING-Electric Shock Hazard
No User Serviceable Parts inside
Contact authorized service provide for assistance

LABEL LOCATION
INVERTER, JUNCTION BOXES(ROOF),
AC DISCONNECT
[PER CODE: NEC 690.13]

WARNING:PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION
CONDUIT, COMBINER BOX
[PER CODE: NEC690.31(G)(3)]

WARNING

DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION
POINT OF INTERCONNECTION
[PER CODE: NEC705.12(D)(4)]

PHOTOVOLTAIC SYSTEM DC DISCONNECT

MAXIMUM VOLATAGE 480 VDC
MAXIMUM CIRCUIT CURRENT 45 ADC
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC TO DC CONCERTER (IF INSTALLED) 15 ADC

LABEL LOCATION
DC DISCONNECT SWITCH, INVERTER
REF. CODE: NEC 690.14(C)(2), NEC 690.53

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH

RATED AC OPERATING CURRENT 42.00 AMPS AC
AC NOMINAL OPERATING VOLTAGE 240 VAC

LABEL LOCATION
AC DISCONNECT , POINT OF INTERCONNECTION
[PER CODE: NEC 690.54]

WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVER-CURRENT DEVICE

LABEL LOCATION
POINT OF INTERCONNECTION
(PER CODE: NEC 705.12(2)(b))
[Not Required if Panel board is rated not less than sum of ampere ratings of all overcurrent devices supplying it]

CAUTION: SOLAR CIRCUIT

LABEL LOCATION
MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLES AT LEAST EVERY 10 FT, AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL COMBINER/JUNCTION BOXES.
(PER CODE: IFC605.11.1.4)

SOLAR DISCONNECT

LABEL LOCATION
DISCONNECT, POINT OF INTERCONNECTION
[PER CODE: NEC690.13(B)]

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

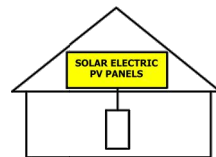
LABEL LOCATION
WEATHER RESISTANT MATERIAL, DURABLE ADHESDIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN 3/8" LETTER HEIGHT ARIAL OR SIMILAR FONT NON-BOLD, PLACED WITHIN THE MAIN SERVICE DISCONNECT, PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERATED WITH THE SERVICE PANEL CLOSED.
(PWER CODE: NEC690.15 ,690.13(B))

RAPID SHUTDOWN SWITCH FOR SOLAR SYSTEM

LABEL LOCATION
INVERTER, POINT OF INTERCONNECTION
[PER CODE: NEC 690.56(C)(3)]

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

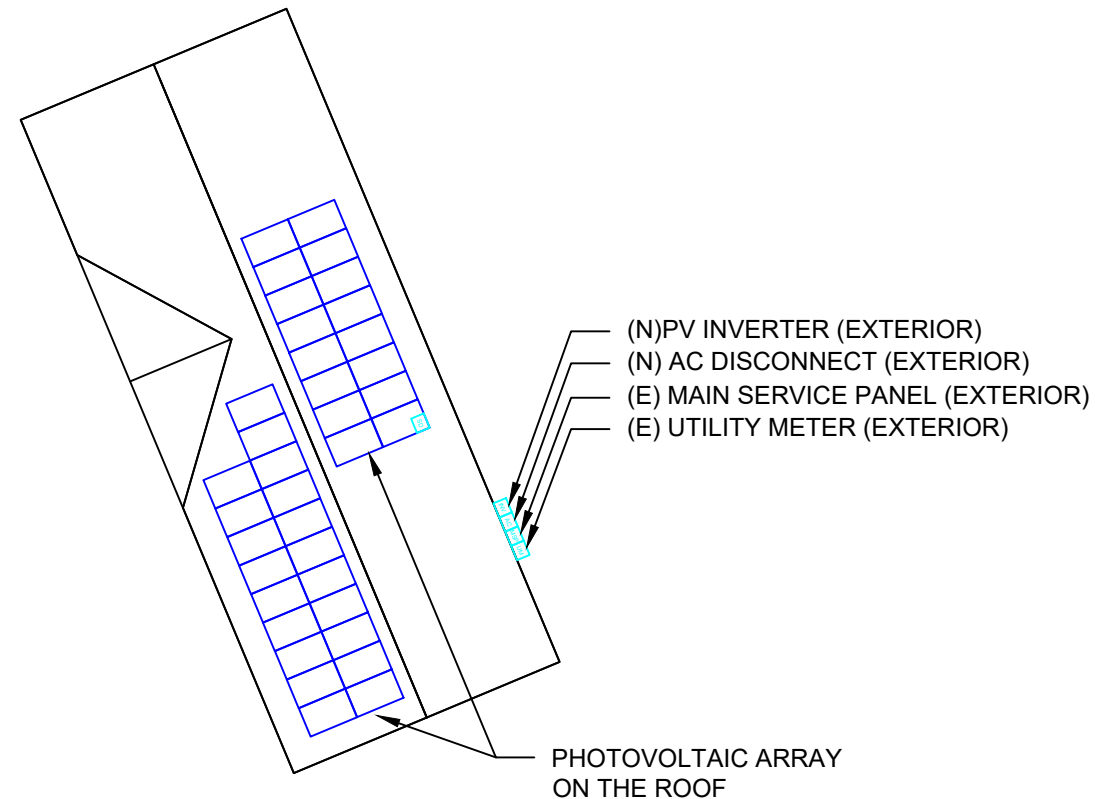


LABEL LOCATION
POINT OF INTERCONNECTION
(PER CODE: NEC690.56(C))

ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N.
PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE.FASTENERS APPROVED BY THE LOCAL JURISDICTION

NOTE:ALL SIGNAGE CANNOT BE HAND WRITTEN NEC 110.21

WARNING 
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN



48 BO BO WHITE LN, LILLINGTON, NC 27546

SYSTEM UTILIZES MICRO-INVERTERS LOCATED UNDER SOLAR MODULE



SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1)SOLAREEDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD



09/30/21

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WARNING PLACARDS

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

PAPER SIZE: 17"x11"

DATE: 9/17/21

REV:A

E-003

powered by
Q.ANTUM DUO

Q.PEAK DUO-G6+ 340-355

ENDURING HIGH PERFORMANCE



Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.1%.



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



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



EXTREME WEATHER RATING
High-tech aluminum alloy frame, certified for high snow (5400Pa) and wind loads (4000Pa).



A RELIABLE INVESTMENT
Inclusive 25-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 wiring with Q.ANTUM Technology.

¹ APT 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 residential buildings



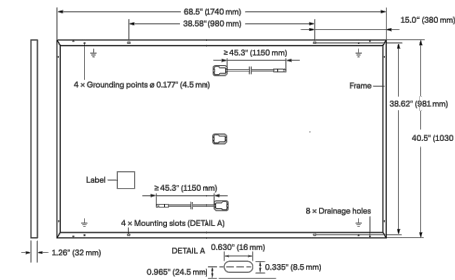
Rooftop arrays on commercial / industrial buildings

Engineered in Germany



MECHANICAL SPECIFICATION

Format	68.5 × 40.6 × 1.26 in (including frame) (1740 × 1030 × 32 mm)
Weight	43.9 lbs (19.9 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 20 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 × 32-60 × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 45.3 in (1150 mm), (-) ≥ 45.3 in (1150 mm)
Connector	Stäubli MC4; IP68

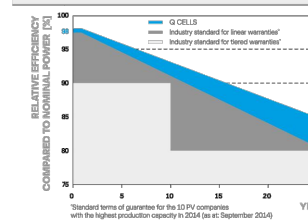


ELECTRICAL CHARACTERISTICS

POWER CLASS		340	345	350	355
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5 W / -0 W)					
Power at MPP ¹	P _{MPP} [W]	340	345	350	355
Short Circuit Current ¹	I _{SC} [A]	10.68	10.73	10.79	10.84
Open Circuit Voltage ¹	V _{OC} [V]	40.24	40.49	40.73	40.98
Current at MPP	I _{MPP} [A]	10.16	10.22	10.27	10.33
Voltage at MPP	V _{MPP} [V]	33.45	33.76	34.07	34.38
Efficiency ¹	η [%]	≥ 19.0	≥ 19.3	≥ 19.5	≥ 19.8
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²					
Power at MPP	P _{MPP} [W]	254.5	258.2	261.9	265.7
Short Circuit Current	I _{SC} [A]	8.60	8.65	8.69	8.74
Open Circuit Voltage	V _{OC} [V]	37.94	38.17	38.41	38.65
Current at MPP	I _{MPP} [A]	8.00	8.04	8.09	8.13
Voltage at MPP	V _{MPP} [V]	31.81	32.10	32.40	32.69

¹ Measurement tolerances P_{MPP} ± 3%; I_{SC}; V_{OC} ± 5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • 2800 W/m², NMOT, spectrum AM 1.5

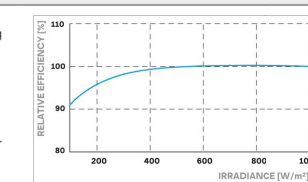
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% 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 organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α [%/K]	+0.04	Temperature Coefficient of V _{OC}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.36	Nominal Module Operating Temperature	NMOT [°F]	109 ± 5.4 (43 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull ³	[lbs / ft ²]	75 (3600 Pa) / 55 (2667 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push / Pull ³	[lbs / ft ²]	113 (5400 Pa) / 84 (4000 Pa)		

³ See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 1703, CE-compliant, VDE Quality Tested IEC 61215-2016, IEC 61780-2016, U.S. Patent No. 9,893,215 (solar cells)



PACKAGING INFORMATION

	Horizontal packaging	Vertical packaging
70.1 in	42.5 in	47.6 in
1780 mm	1080 mm	1208 mm
1485 lbs	674 kg	1505 lbs
28 pallets	28 pallets	24 pallets
26 modules	26 modules	32 modules

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product. Q CELLS supplies solar modules in two different stacking methods, depending on the location of manufacture (modules are packed horizontally or vertically). You can find more detailed information in the document "Packaging and Transport Information", available from Q CELLS.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL Inquiry@us.q-cells.com | WEB www.q-cells.us



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Your future is brighter with us!

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MODULE SPECSHEET

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

PAPER SIZE: 17"x11"

DATE: 9/17/21

REV: A

SS-001

Specifications subject to technical changes © Q CELLS Q.PEAK DUO-G6+ DA_340-355_2020-07_Rev01.NA

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AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

INVERTER SPECSHEET

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

PAPER SIZE: 17"x11"

DATE: 9/17/21

REV:A

SS-002

/ 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	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							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	1600ka 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

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 99% weighted 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, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

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SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1) SOLAREGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD

CUSTOMER INFORMATION

NAME & ADDRESS:
NOE ASAE AGUILAR AMAYA
48 BO BO WHITE LN, LILLINGTON, NC 27546

GPS: 35.3425154, -78.9448008
APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

COMBINER SPECSHEET

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED

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SS-003

Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505

25
YEAR
WARRANTY



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
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT						
Rated Input DC Power ⁽¹⁾	370		400	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125 ⁽²⁾	83 ⁽²⁾	Vdc
MPPT Operating Range	8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	10.1	11.75	11	14	Adc
Maximum Efficiency			99.5			%
Weighted Efficiency			98.8			%
Overvoltage Category			II			
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 Optimizer			1 ± 0.1			Vdc
STANDARD COMPLIANCE						
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 & 2020			NEC 2014, 2017 & 2020	NEC 2014, 2017 & 2020	
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety	IEC62109-1 (class II safety), UL1741					
Material	UL94 V-0, UV Resistant					
RoHS	Yes					
INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage	1000					
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	655 / 1.4	750 / 1.7	655 / 1.4	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4 ⁽³⁾			Single or dual MC4 ⁽³⁾⁽⁴⁾	MC4 ⁽³⁾	
Input Wire Length	0.16 / 0.52, 0.9 / 2.95 ⁽⁴⁾	0.16 / 0.52	0.16 / 0.52, 0.9 / 2.95 ⁽⁴⁾	0.16 / 0.52	0.16 / 0.52	m / ft
Output Wire Type / Connector	Double Insulated / MC4					
Output Wire Length	1.2 / 3.9					
Operating Temperature Range ⁽⁵⁾	-40 to +85 / -40 to +185					
Protection Rating	IP68 / NEMA6P					
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) NEC 2017 requires max input voltage be not more than 80V

(3) For other connector types please contact SolarEdge

(4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals

(5) For ambient temperature above +85°C / +185°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 ⁽⁶⁾⁽⁷⁾	Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P370, P400, P401 P485, P505	8 6	10 8	18 14	
Maximum String Length (Power Optimizers)		25	25	50	
Maximum Nominal Power per String		5700 ⁽⁸⁾ (6000 with SE7600-US - SE11400-US)	5250 ⁽⁸⁾	6000 ⁽⁸⁾	12750 ⁽⁸⁾ W
Parallel Strings of Different Lengths or Orientations	Yes				

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf

(7) It is not allowed to mix P485/P505 with P370/P400/P401 in one string

(8) If the inverters rated AC power < maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power. Refer to: <https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf>

(9) For 208V grid: it is allowed to install up to 7,200W per string when the maximum power difference between each string is 1,000W

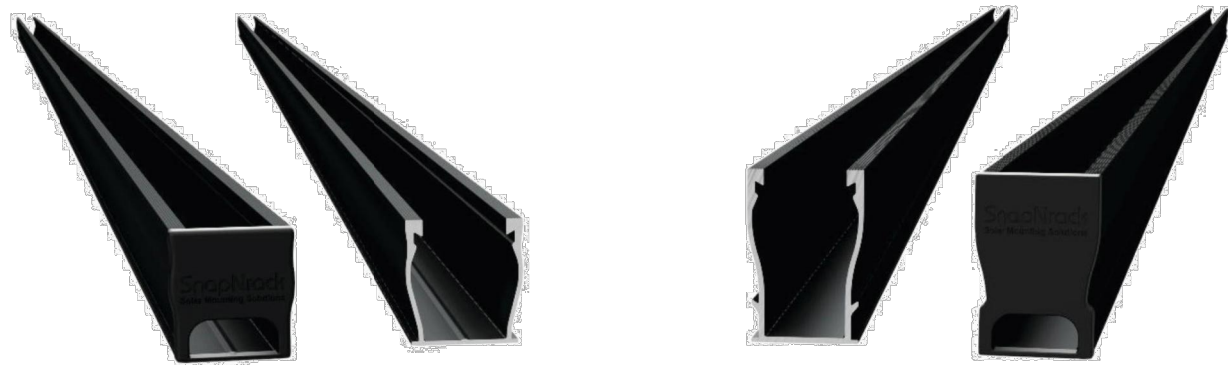
(10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

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Ultra Rail

UR-40
UR-60




The Ultimate Value in Rooftop Solar

 Industry leading Wire Management Solutions

 Mounts available for all roof types

 Single Tool Installation

 All SnapNrack Module Clamps & Accessories are compatible with both rail profiles

Start Installing Ultra Rail Today

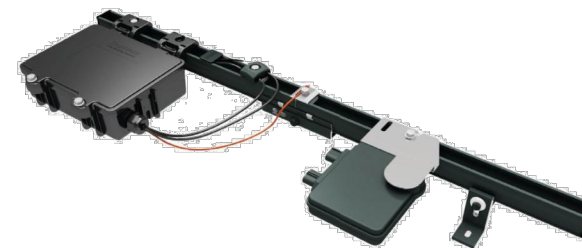
RESOURCES snapnrack.com/resources
DESIGN snapnrack.com/configurator
WHERE TO BUY snapnrack.com/where-to-buy

SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience



Quality. Innovative. Superior.

SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860 www.snapnrack.com contact@snapnrack.com

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