CENTRAL ELECTRIC MEMBERSHIP CORPORATION
SANFORD, NORTH CAROLINA

RIDER SCOG
SMALL CONSUMER-OWNED GENERATOR RIDER

Availability – This Rider is available in conjunction with the Cooperative's General Service, Residential All-Electric Service, Small Commercial Service, and Medium General Service rate schedules where consumer-owned Renewable Generation is connected on the consumer-side of the meter, in parallel with the Cooperative's electric system, and is designed to offset a portion or all of the consumer's electrical requirements normally supplied by the Cooperative. The Renewable Generation system must be located and used at the consumer's primary residence or legal business where a part or all of the electrical requirements of the consumer can be supplied from the consumer's Renewable Generation System. The nameplate rating of the Renewable Generation must be the lesser of the consumer's historical maximum 15-minute integrated demand or 10 kW. Renewable Generation connected in parallel with the Cooperative's facilities must have safety, system protection, and power quality equipment installed and operated in accordance with rules of the Cooperative.

Consumers receiving service under this Rider must: 1) have their Renewable Generation registered with the North Carolina Utilities Commission and 2) agree to assign all Renewable Energy Certificates (RECs) and all environmental attributes associated with the Renewable Generation to the Cooperative. Consumers receiving service under this Rider shall not be eligible to participate in NC GreenPower's renewable generation program.

Service under this Rider shall be available in all territory served by the Cooperative only under written contract and shall be subject to the Cooperative's established Service Rules and Regulations as filed with the North Carolina Utilities Commission. The provisions of the Schedule with which this Rider is used are modified only as shown herein.

Character of Service – The types of service available under this Rider are single-phase or three-phase, 60 Hz alternating current, at one of the Cooperative's standard secondary voltages.

Monthly Rate – In addition to all other charges stated in the Monthly Rate of the Schedule with which this Rider is used, the following charge shall also apply:

Administrative Charge: $ 3.75 per month

Energy Charges:
Consumers generating power from a renewable resource, as defined in this Rider, shall be billed for all energy and kW demand, if applicable, that is delivered by the Cooperative under the rate schedule the consumer receives service, plus any applicable riders, during the billing month.

The consumer will receive credits for all excess energy delivered to the Cooperative's system during the billing month based upon the Cooperative's current avoided cost as shown in Rider PP – Small Purchased Power Rider.

Safety, Interconnection, And Inspection Requirements – This Rider is only applicable for Renewable Generation that complies with the Cooperative's interconnection requirements, along with any UL 1741, IEEE, NESC, and NEC standards related to interconnecting to public utilities. In order to ensure protection of the Cooperative's system, the Cooperative reserves the right, at its discretion, to inspect the consumer's Renewable Generation at any time upon reasonable notice to the consumer in an effort to ensure compliance with the Interconnection Standards. For Renewable Generators operating in parallel with the Cooperative's system, the Cooperative reserves the right to disconnect electric service to any premises if the Cooperative determines that the Renewable Generation is not in compliance with the Interconnection Standards.

The consumer must enter into a specific contract with the Cooperative prior to interconnecting with the Cooperative's system. Under the terms of the contract, the consumer shall be responsible for providing suitable control and protective devices on its equipment to assure that the Renewable Generator does not cause any disturbance to other consumers of the Cooperative or the Cooperative. Such control and protective devices shall also be designed to protect both the consumer's and Cooperative's facilities from all loss or damage that could result from the Renewable Generator operating in parallel with the Cooperative's system.

The consumer shall be responsible for any costs incurred by the Cooperative pursuant to the Interconnection Standard. The Cooperative reserves the right to require additional interconnection facilities, furnished, installed, owned and maintained by the Cooperative, at the consumer's expense, if the consumer's Renewable Generation, despite compliance with the Interconnection Standard, causes safety, reliability or power quality problems.

Residential consumers shall obtain and retain, for as long as the consumer's Renewable Generation is interconnected with the Cooperative's system, comprehensive general liability insurance with limits of at least $100,000 per occurrence which protects the consumer from claims for bodily injury and/or property damage. This insurance shall be primary for all purposes. The consumer shall provide certificates evidencing this coverage as required by the Cooperative. If such insurance is not in effect, the Cooperative reserves the right to refuse the interconnection of the consumer's Renewable Generation with the Cooperative's system. For non-residential consumers the insurance limits will be determined on a case-by-case basis depending upon the size of the renewable generator and the interconnection requirements.

Metering Requirements – The Cooperative will furnish, install, own, and maintain metering to measure the kilowatt-hours delivered by the Cooperative to the consumer, and if applicable, the kilowatt demand. The Cooperative will also furnish, install, own, and maintain additional metering equipment to measure the kilowatt-hours delivered from the consumer to the Cooperative. Prior to the connection of the Renewable Generation to the Cooperative's system, the consumer shall pay the Cooperative a contribution-in-aid of construction for all additional metering costs the Cooperative incurs as a result of the Renewable Generation. The consumer's service may be metered with: (a) a single, bi-directional meter, which records independently the flow of electricity in each direction through the meter; or (b) at the Cooperative's option, two meters, equipped to prevent reverse registration, one which will measure the energy delivered by the Cooperative to the consumer, and the other which will measure the energy delivered by the consumer to the Cooperative. The Cooperative shall have the right to install special metering and load research devices on the consumer's equipment and the right to use the consumer's telephone line for communication with the Cooperative's and the consumer's equipment.

Definitions –
Renewable Generation – For purposes of this Rider, Renewable Generation shall be defined as small-scale, environmentally friendly technologies – such as photovoltaic (PV), micro-turbines, biomass-fueled, or small wind turbines – that are installed on and designed to serve a single-user's site.

Excess Energy – Excess Energy shall be defined as any energy delivered to the Cooperative's system at any given time during the billing month. The Cooperative will only pay for excess energy if the consumer's Renewable Generator is registered with the North Carolina Utilities Commission using NC-RETS and the consumer agrees to assign all Renewable Energy Certificates (RECs) and all environmental attributes associated with the Renewable Generation to the Cooperative.

Excess Facilities – Excess Facilities are defined as those facilities that are in addition to those necessary for delivery of service at one point, through one meter, at one voltage, in accordance with the normally applicable rate schedule that the Cooperative must furnish, install, own, and maintain, in order to serve the Renewable Generation.

Contract Period – Each consumer shall enter into a contract for a minimum original term of one (1) year and thereafter either party may terminate the contract by giving at least sixty (60) days notice of such termination in writing. The Cooperative reserves the right to offer a contract for a longer original term of years as specified in the individual contract with the consumer. The Cooperative further reserves the right to terminate the consumer's contract under this Rider at any time upon written notice to the consumer in the event that the consumer violates any of the terms or conditions of this Rider, or operates the Renewable Generation system in a manner which is detrimental to the Cooperative or any of its consumers. In the event of early termination of a contract under this Rider, the consumer will be required to pay the Cooperative for any costs it incurs due to such early cancellation.

Applicable Taxes – The total charges under the Rider will be increased by any applicable sales taxes imposed by any governmental authority.

Small Consumer-Owned Generator Rider Contract

I, the consumer, have read and understand the Cooperative's Small Consumer-Owned Generator Rider and agree to comply with the requirements therein.

Name: Robley Russel Jr

Address: 16360 NC 27 W. Sanford, NC 27332

Telephone: (919) 775-8898

Signature: Robley Russel Jr

Date: 07/31/20

CEMC Representative: Jody Albright

Representative's signature: Jody Albright

Date: 8/4/2020

DOCKET NO. SP -26005, **SUB** 0

Filing Fee Tendered $50.00

Report of Proposed Construction (RPC) – Commission Rule R8-65

Pursuant to G.S. 62-110.1(g), any person who seeks to construct an electric generating facility in North Carolina, and is exempt from the requirement to obtain a certificate of public convenience and necessity, is required to file this form and a notice of completion of the construction of the facility. This form may be accompanied by any exhibits or additional responses incorporated by reference thereto and attached to this form. This form must be accompanied by the required filing fee of $50.00.

This form may be electronically filed. Please see www.ncuc.net for instructions.

If this form is filed by hard copy, the original plus 6 copies must be presented at or transmitted to the office of the Chief Clerk. Regardless of the method of delivery, this form is not deemed filed until it is received by the Chief Clerk, along with the required filing fee.

The mailing address is:

Chief Clerk
NC Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

Exhibits required by Rule R8-65(g)		**Applicant's Response**
(1)(i)	Full and correct name of the owner of the facility	Robley Russel Jr
	Facility name	
	Business address	16360 NC 27 W Sanford, NC 27332
	E-mail address	rrussel3155@aol.com
	Telephone number	(919) 775-8898
(ii)	The owner is (check one)	☑ Individual ☐ Partnership ☐ Corporation
	If a partnership, the name and business address of each general partner	
	If a corporation, the state and date of incorporation	
	If a partnership, the name and address of each general partner (add additional sheets if necessary)	

	Owner's agent for purposes of this report, if applicable:	Brett Mahan
	Agent's business address	919 N. Main St. Mooresville, NC 28115
	Agent's e-mail address	ncscva.icr@powerhome.com
	Agent's telephone number	(843) 277-6960
(iii)	The full and correct name of the site owner and, if the site owner is other than the applicant, the applicant's legal interest in the site	Robley Russel Jr
(2)(i)	Attach a color map or aerial photo showing the location of the generating facility site in relation to local highways, streets, rivers, streams, and other generally known local landmarks with the proposed location of major equipment indicated on the map or photo, including: the generator, fuel handling equipment, plant distribution system, startup equipment, the site boundary, planned and existing pipelines, planned and existing roads, planned and existing water supplies, and planned and existing electric facilities~~;~~. A U.S. Geological Survey map or an aerial photo map prepared via the State's geographic information system (found at www.gis.ncdcr.gov/hpoweb/) is preferred.	
(ii)	E911 street address of the proposed facility	16360 NC 27 W Sanford, NC 27332
	County in which the proposed facility will be physically located	Harnett
	GPS coordinates of the approximate center of the proposed facility site to the nearest second or one thousandth of a degree	Lat: 35.320826000000000 Long: -79.074709000000000
(3)(i)	The nature of the facility, including its technology, and the source of its power and fuel(s)	This ROPC is for a 6.40 kw-DC Solar Photovoltaic array, ground-mounted and grid-tied. The source facility power is solar energy
(ii)	A description of the buildings, structures and equipment comprising the generating facility and the manner of its operation	The system will be a ground-mounted solar PV array at the above mentioned address. The system will be grid-tied and has a battery back-up.
(iii)	The gross and net projected maximum dependable capacity of the facility in megawatts – Alternating Current	System losses include DC to AC conversion, wiring and other factors. Due to intermittent solar availability, the maximum dependable capacity is 0 megawatts.

	The facility's nameplate capacity in megawatts – Alternating Current	
(iv)	The projected date on which the facility will come on line	
(v)	The applicant's general plan for sale of the electricity to be generated, including the name of utility to which the applicant plans to sell the electricity	The applicant plans on operating under the Central EMC rider. The Central EMC will retain any excess Renewable Energy Credit.
(vi)	Any provisions for wheeling of the electricity, if applicable	
(vii)	Arrangements for firm, non-firm, or emergency generation, if applicable	
(viii)	The service life of the project	The projected lifetime of the equipment is 25 years.
(ix)	The projected annual sales in kilowatt-hours	Annual production credit is expected to be 0 KWh/yr.
(x)	Whether the applicant intends to produce renewable energy certificates that are eligible for compliance with the State's renewable energy and energy efficiency portfolio standard ☐ Yes ☑ No	
(4)	The expected cost of the proposed facility	$ 63,240.00

Confidentiality

If an applicant considers certain of the required information above to be confidential and entitled to protection from public disclosure, it may designate said information as confidential and file it under seal. Documents marked as confidential will be treated pursuant to applicable Commission rules, procedures, and orders dealing with filings made under seal and with nondisclosure agreements.

All reports shall be signed and verified (notarized) by the applicant or by an individual duly authorized to act on behalf of the applicant for the purpose of the report. A blank verification page is attached below:

VERIFICATION

STATE OF North Carolina COUNTY OF Iredell

Signature of Owner's Representative or Agent

Interconnection Coordinator
Title of Representative or Agent

Brett Mahan
Typed or Printed Name of Representative or Agent

The above named person personally appeared before me this day and, being first duly sworn, says that the facts stated in the foregoing report and any exhibits, documents, and statements thereto attached are true as he or she believes.

WITNESS my hand and notarial seal, this 10 day of July, 2022.

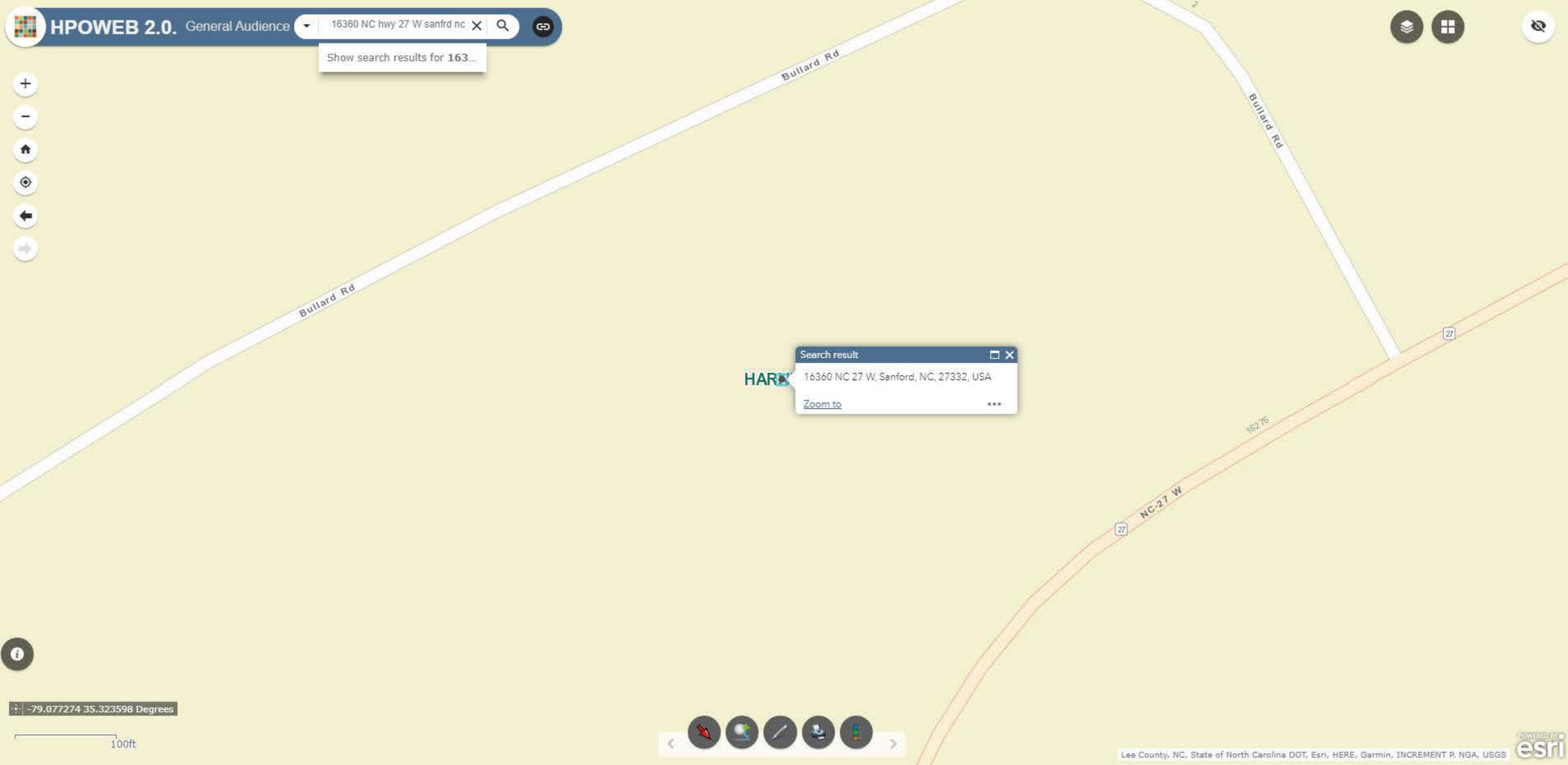
My Commission Expires: 3/8/2025

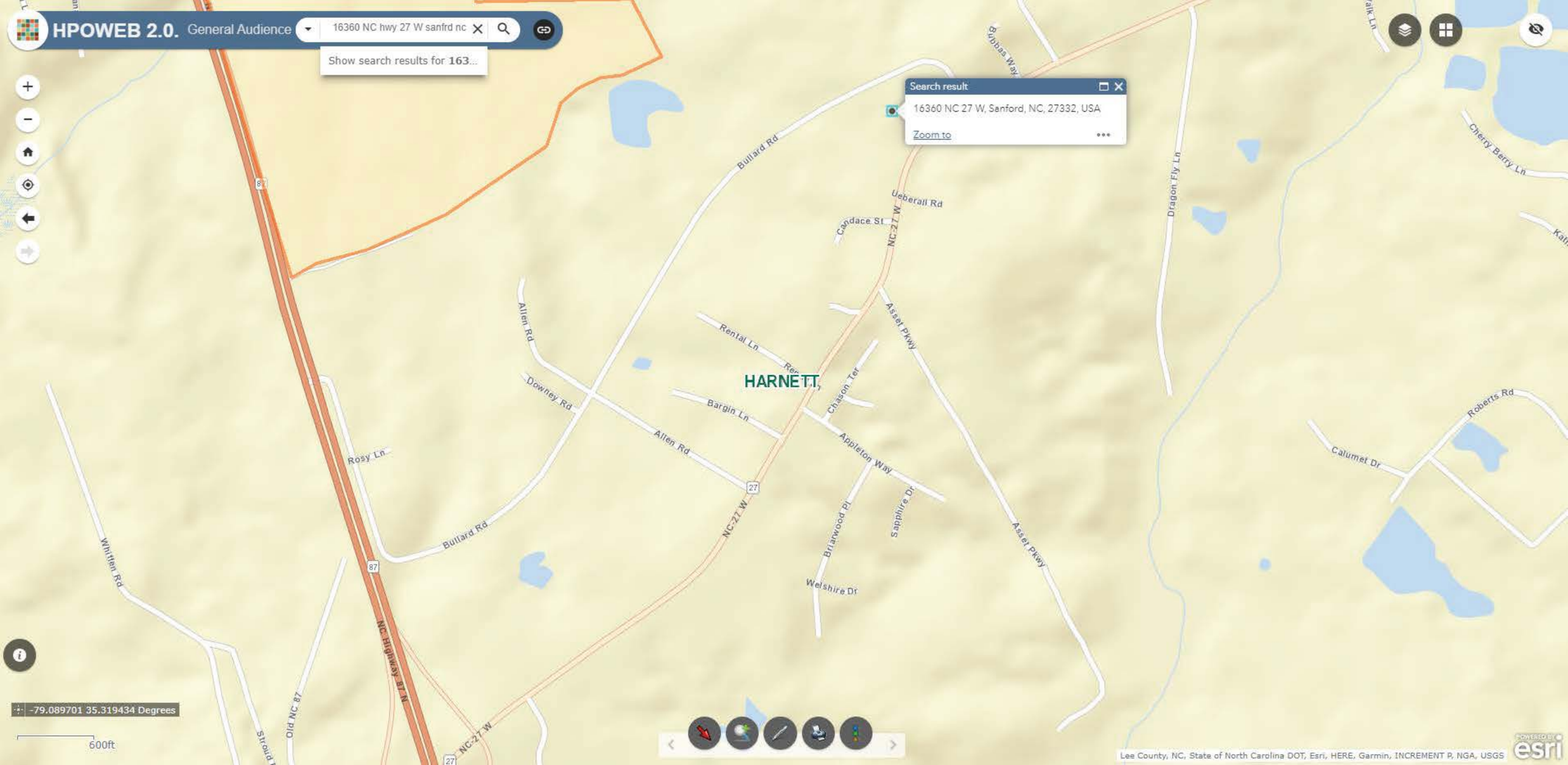
Signature of Notary Public

SUSAN LYNAUGH NOTARY PUBLIC IREDELL COUNTY, N.C. MY COMMISSION EXPIRES 3/8/2025

Susan Lynaugh
Name of Notary Public – Typed or Printed

This original verification must be affixed to the original report, and a copy of this verification must be affixed to each of the copies that are also submitted to the Commission.


HPOWEB 2.0.
General Audience
16360 NC hwy 27 W sanfrd nc
Show search results for 163...
Bullard Rd
Bullard Rd
Bullard Rd
Search result
16360 NC 27 W, Sanford, NC, 27332, USA
Zoom to
27
27
NC-27 W
-79.077274 35.323598 Degrees
100ft
Lee County, NC, State of North Carolina DOT, Esri, HERE, Garmin, INCREMENT P, NGA, USGS


HPOWEB 2.0.
General Audience
16360 NC hwy 27 W sanfrd nc
Show search results for 163...
Search result
16360 NC 27 W, Sanford, NC, 27332, USA
Zoom to
HARNETT
Bullard Rd
Ueberall Rd
Candace St
NC-27 W
Dragon Fly Ln
Cherry Berry Ln
Allen Rd
Rental Ln
Asset Pkwy
Downey Rd
Chason Ter
Bargin Ln
Appleton Way
Rosy Ln
Briarwood Pl
Sapphire Dr
Roberts Rd
Calumet Dr
Whitten Rd
Welshire Dr
NC Highway 87 N
Old NC 87
-79.089701 35.319434 Degrees
600ft
Lee County, NC, State of North Carolina DOT, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

Renewal Deluxe Homeowners Policy Declarations

Allstate. You're in good hands.

Your policy effective date is June 13, 2020

Total Premium for the Premium Period (Your bill will be mailed separately)

Premium for property insured	$1,798.00
Total	**$1,798.00**

Your bill will be mailed separately. Before making a payment, please refer to your latest bill, which includes payment options and installment fee information. If you do not pay in full, you will be charged an installment fee(s).

Discounts (included in your total premium)

Multiple Policy	**20%**	Allstate eSmart®	**3%**
Protective Device	**2%**	Claim Free	**10%**

Location of residence premises

16360 Hwy 27 West, Sanford, NC 27332

Rating Information

The dwelling is of frame construction and is occupied by 1 family

Mortgagee

BANK OF AMERICA NA ITS SCRS &/OR ASSIGNS ATIMA
P O Box 961291, Fort Worth, TX 76161-0291

Information as of April 28, 2020

Summary

Named Insured(s)
Robley Q Russell, Lila Russell

Mailing address
PO Box 10
Olivia NC 28368-0010

Policy number
935 868 352

Your policy provided by
Allstate Indemnity Company

Policy period
Begins on **June 13, 2020** at 12:01 A.M. standard time, with no fixed date of expiration

Premium period
Beginning **June 13, 2020** through **June 13, 2021** at 12:01 A.M. standard time

Your Allstate agency is
Charlotte Holt
2817 S Horner Blvd
Sanford NC 27330
(919) 774-3400
CharlotteHolt@allstate.com

Other Structures Protection	$34,920	• $1,000 All peril
Personal Property Protection Replacement Cost	$244,440	• $1,000 All peril
Loss of Use	$69,840	
Personal Liability	$300,000 each occurrence	
Medical Payments To Others	$1,000 each person	

▶ ***Other Coverages Not Purchased:***

- Additional Liability for Watercraft*
- Additional Limited Water Back-up and Sump Discharge or Overflow Coverage*
- Additional Residence Premises Rented to Others*
- Business Pursuits*
- Extended Coverage on Jewelry, Watches and Furs*
- Home Day Care*
- Identity Theft Expenses*
- Incidental Office Occupancy - Off Premises*
- Incidental Office Occupancy - On Premises*
- Increased Coverage for Credit Card and Depositor's Forgery*
- Increased Coverage on Money*
- Increased Coverage on Securities*
- Increased Limits of Coverage for Firearms Theft*
- Increased Limits on Business Property*
- Increased Limits On Portable Electronic Equipment*
- Other Structures on the Residence Premises Increased Limits*
- Refrigerated Property*
- Special Computer Coverage*
- Supplemental Loss Assessment*

**** This coverage can provide you with valuable protection. To help you stay current with***

PROJECT DESCRIPTION:

20 X 320 HANWHA QCELL Q.PEAK DUO-G5 320 MODULES
GROUND MOUNTED SOLAR PHOTOVOLTAIC MODULES

SYSTEM SIZE:6.40 kW DC STC
ARRAY AREA: #1 - 362.80 SQ FT

EQUIPMENT SUMMARY

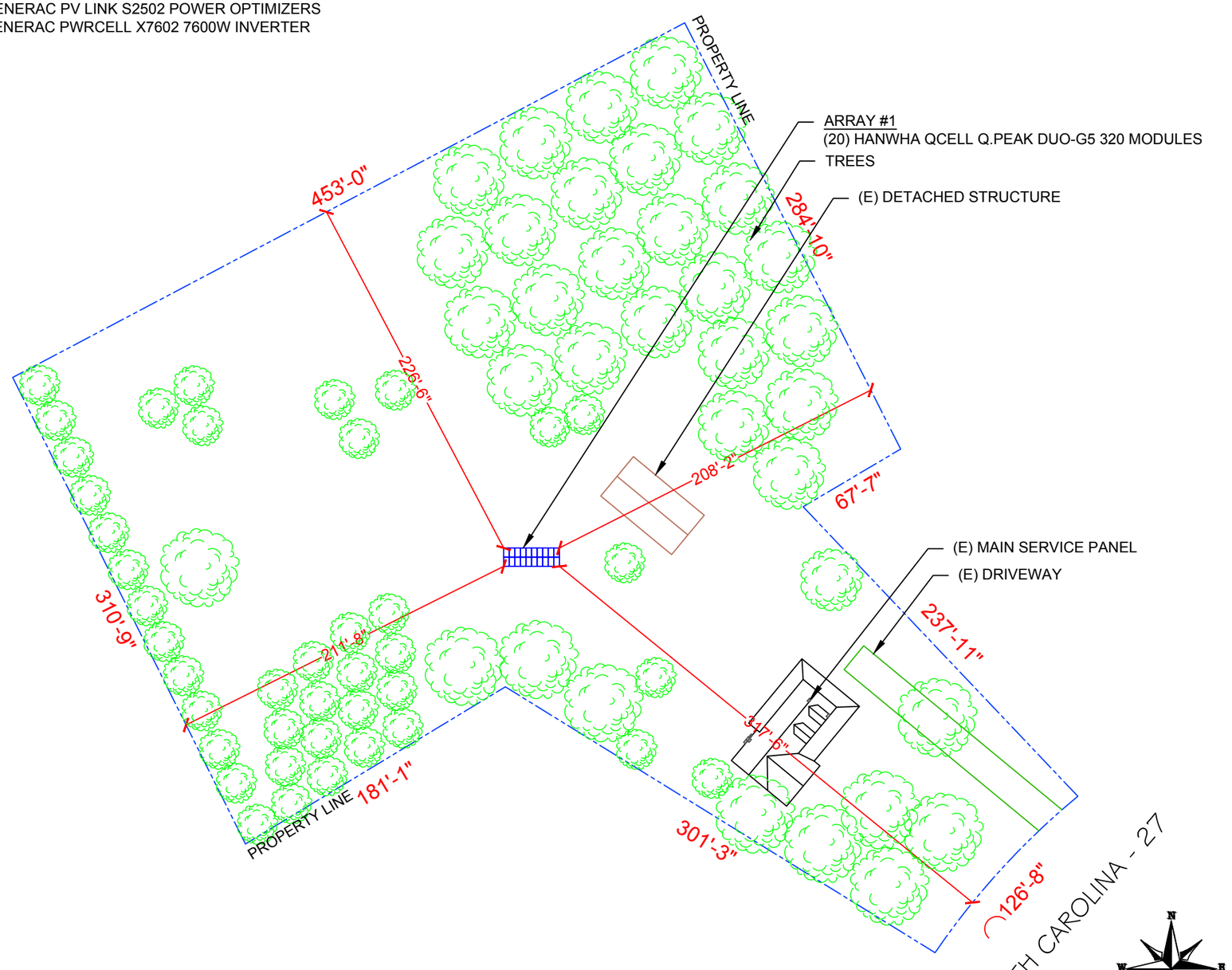
20 HANWHA QCELL Q.PEAK DUO-G5 320 MODULES
03 GENERAC PV LINK S2502 POWER OPTIMIZERS
01 GENERAC PWRCELL X7602 7600W INVERTER

AUTHORITIES HAVING JURISDICTION
BUILDING : HARNETT COUNTY
ZONING : HARNETT COUNTY
UTILITY : CENTRAL EMC

APPLICABLE CODES & STANDARDS
NCBC 2018
NEC 2017

DESIGN SPECIFICATIONS

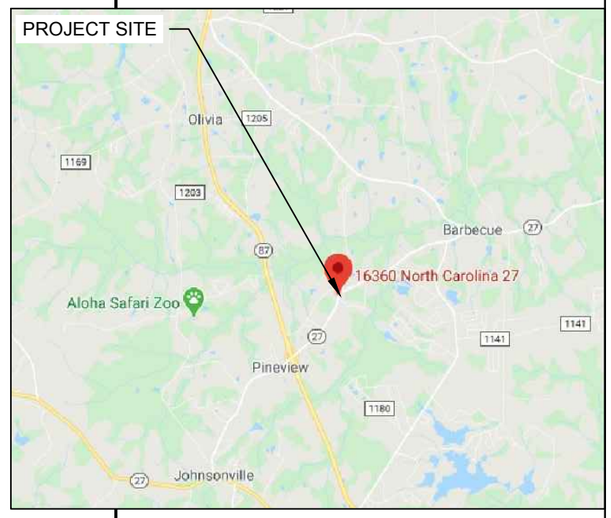
OCCUPANCY	: II
CONSTRUCTION	: SINGLE-FAMILY
ZONING	: RESIDENTIAL
GROUND SNOW LOAD	: 10 PSF
WIND EXPOSURE	: B
WIND SPEED	: 117 MPH



NOTE: GROUNDMOUNT LOCATION TBD ON-SITE

1 PLOT PLAN WITH ROOF PLAN
PV-1 SCALE: 1/72"='1-0"

2 HOUSE PHOTO
PV-1 SCALE: NTS



3 VICINITY MAP
PV-1 SCALE: NTS

SHEET INDEX

POWERHOME
POWER HOME SOLAR, LLC
"POWER YOUR FUTURE"
919 N. MAIN ST.
MOORESVILLE, NC 28115
Phone: 704-800-6591 (OFFICE)
Email: info@powerhome.com
Web: www.powerhome.com

REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE:7/29/2020

PROJECT NAME & ADDRESS

ROBLEY Q RUSSELL JR.
RESIDENCE
16360 NORTH CAROLINA - 27,
SANFORD, NC 27332

Type text here

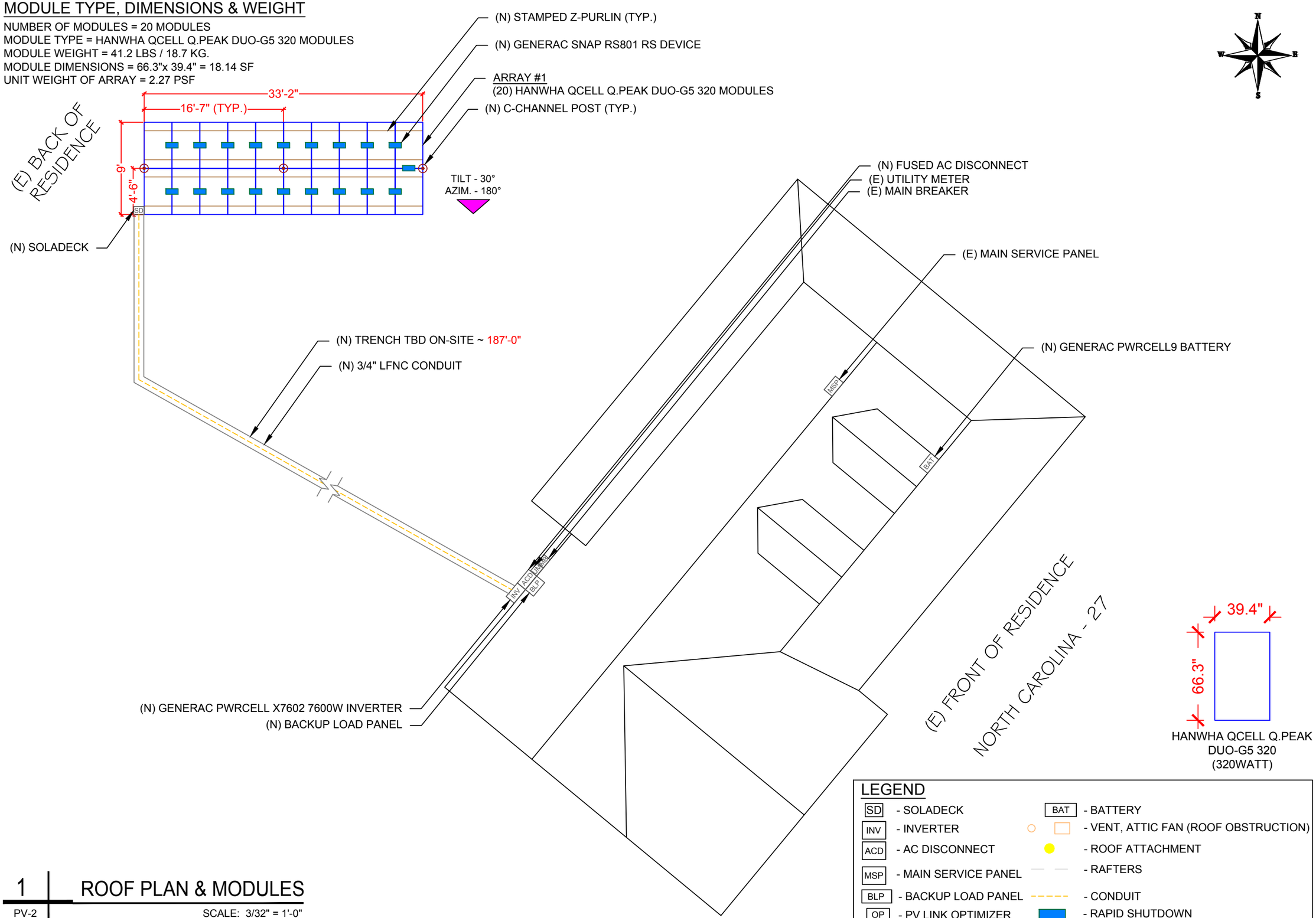
SHEET NAME
PLOT PLAN & VICINITY MAP

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 20 MODULES
MODULE TYPE = HANWHA QCELL Q.PEAK DUO-G5 320 MODULES
MODULE WEIGHT = 41.2 LBS / 18.7 KG.
MODULE DIMENSIONS = 66.3"x 39.4" = 18.14 SF
UNIT WEIGHT OF ARRAY = 2.27 PSF



HANWHA QCELL Q.PEAK
DUO-G5 320
(320WATT)

LEGEND

SD	- SOLADECK	BAT	- BATTERY
INV	- INVERTER		- VENT, ATTIC FAN (ROOF OBSTRUCTION)
ACD	- AC DISCONNECT		- ROOF ATTACHMENT
MSP	- MAIN SERVICE PANEL		- RAFTERS
BLP	- BACKUP LOAD PANEL		- CONDUIT
OP	- PV LINK OPTIMIZER		- RAPID SHUTDOWN

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

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REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE:7/29/2020

PROJECT NAME & ADDRESS

ROBLEY Q RUSSELL JR.
RESIDENCE
16360 NORTH CAROLINA - 27,
SANFORD, NC 27332

SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE
ANSI B
11" X 17"

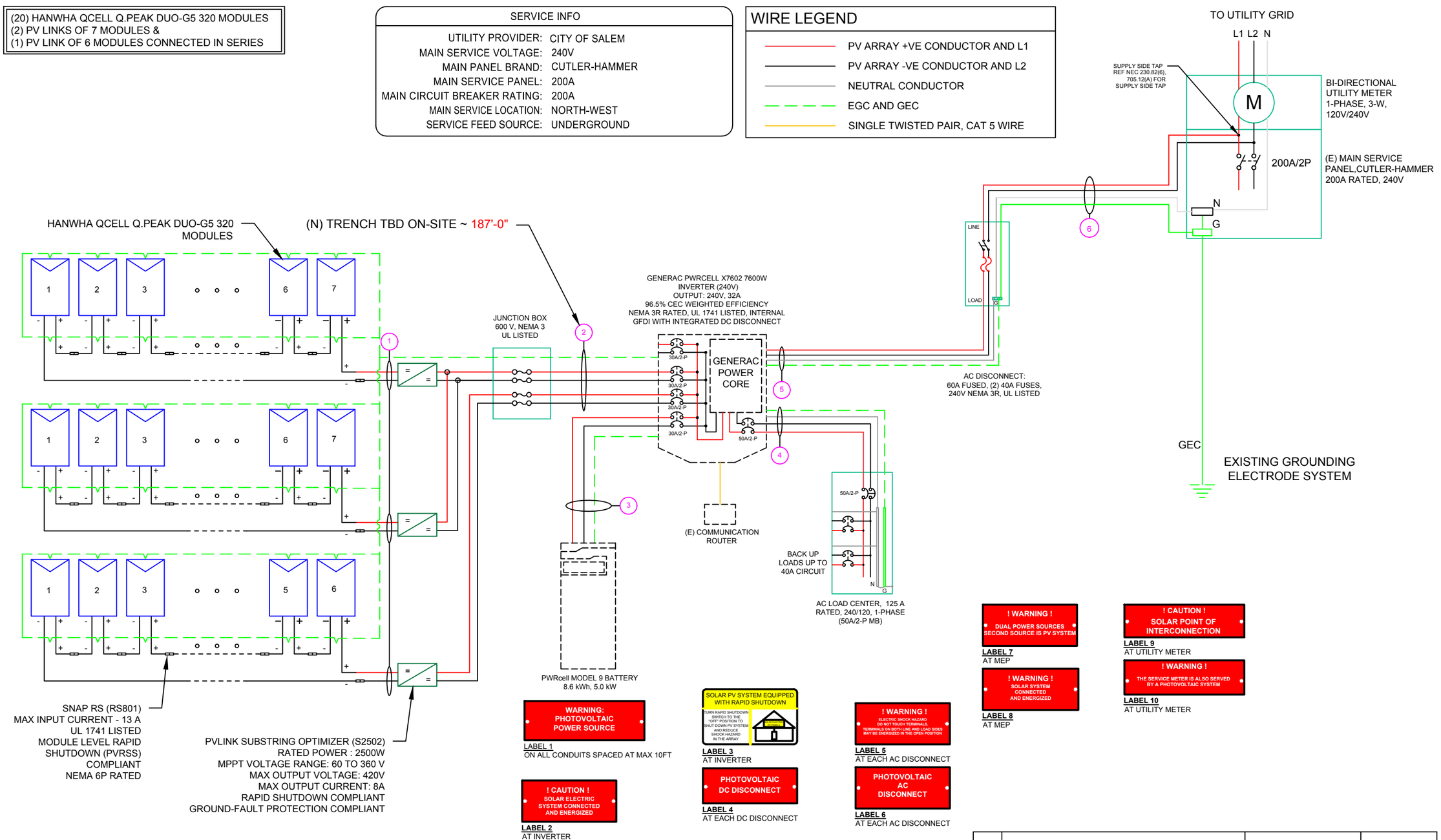
SHEET NUMBER
PV-2

(20) HANWHA QCELL Q.PEAK DUO-G5 320 MODULES
(2) PV LINKS OF 7 MODULES &
(1) PV LINK OF 6 MODULES CONNECTED IN SERIES

SERVICE INFO	
UTILITY PROVIDER:	CITY OF SALEM
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	CUTLER-HAMMER
MAIN SERVICE PANEL:	200A
MAIN CIRCUIT BREAKER RATING:	200A
MAIN SERVICE LOCATION:	NORTH-WEST
SERVICE FEED SOURCE:	UNDERGROUND

WIRE LEGEND

- PV ARRAY +VE CONDUCTOR AND L1
- PV ARRAY -VE CONDUCTOR AND L2
- NEUTRAL CONDUCTOR
- EGC AND GEC
- SINGLE TWISTED PAIR, CAT 5 WIRE



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

! CAUTION ! SOLAR ELECTRIC SYSTEM CONNECTED AND ENERGIZED
LABEL 2
AT INVERTER

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 3
AT INVERTER

PHOTOVOLTAIC DC DISCONNECT
LABEL 4
AT EACH DC DISCONNECT

! WARNING ! ELECTRIC SHOCK HAZARD DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
LABEL 5
AT EACH AC DISCONNECT

PHOTOVOLTAIC AC DISCONNECT
LABEL 6
AT EACH AC DISCONNECT

! WARNING ! DUAL POWER SOURCES SECOND SOURCE IS PV SYSTEM
LABEL 7
AT MEP

! WARNING ! SOLAR SYSTEM CONNECTED AND ENERGIZED
LABEL 8
AT MEP

! CAUTION ! SOLAR POINT OF INTERCONNECTION
LABEL 9
AT UTILITY METER

! WARNING ! THE SERVICE METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM
LABEL 10
AT UTILITY METER

	QTY	CONDUCTOR INFORMATION		CONDUIT TYPE	CONDUIT SIZE
1	(6)	#10AWG -	PV WIRE/USE-2	N/A	N/A
	(1)	#6AWG -	BARE COPPER IN FREE AIR		
2	(4)	#10AWG -	THWN-2	IMC OR PVC IN TRENCH/ LFNC	3/4"
	(1)	#6AWG -	THWN-2 GND		
3	(2)	#10AWG -	THWN-2	EMT OR FLEX	3/4"
	(1)	#10AWG -	THWN-2 GND		
4	(3)	#6AWG -	THWN-2	EMT OR FLEX	3/4"
	(1)	#6AWG -	THWN-2 GND		
5	(3)	#6AWG -	THWN-2	EMT OR FLEX	3/4"
	(1)	#6AWG -	THWN-2 GND		
6	(3)	#6AWG -	THWN-2	EMT OR FLEX	3/4"

1 ELECTRICAL LINE DIAGRAM
PV-4 SCALE: NTS

POWERHOME
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919 N. MAIN ST.
MOORESVILLE, NC 28115
Phone: 704-800-6591 (OFFICE)
Email: info@powerhome.com
Web: www.powerhome.com

REVISIONS		
DESCRIPTION	DATE	REV

Signature with Seal

DATE:7/29/2020

PROJECT NAME & ADDRESS

ROBLEY Q RUSSELL JR.
RESIDENCE
16360 NORTH CAROLINA - 27,
SANFORD, NC 27332

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	HANWHA QCELL Q.PEAK DUO-G5 320 MODULES
VMP	33.32V
IMP	9.60A
VOC	40.13V
ISC	10.09A
TEMP. COEFF. VOC	-0.28%/°C
PTC RATING	297W
MODULE DIMENSION	66.3"L x 39.4"W x 1.26"D (In Inch)

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	GENERAC PWRCELL X7602
AC POWER OUTPUT (LOADS/GRID)	7600VA
AC POWER OUTPUT (BACKUP)	8000VA
NOMINAL OUTPUT VOLTAGE	240 VAC
MAX OUTPUT CURRENT @240V (LOADS/GRID)	32A
MAX OUTPUT CURRENT @240V (BACKUP)	50A
NOMINAL DC INPUT VOLTAGE	380Vdc
MAX DC INPUT VOLTAGE	420Vdc
CEC WEIGHTED EFFICIENCY	96.5%
MAX DC POWER (PV)	10000W
MAX INPUT CURRENT (PV)	20Adc
CONT. PEAK POWER (BATTERY)	8000W

SERIES SUB STRING OPTIMIZER SPECIFICATIONS	
MANUFACTURER / MODEL #	PV LINK S2502
RATED POWER	2500W
MPPT VOLTAGE RANGE	60-360 Vmp
MAXIMUM INPUT VOLTAGE	420Voc
MAXIMUM OUTPUT	420 Adc
NOMINAL OUTPUT	380 Vdc
MAXIMUM OUTPUT CURRENT	8 A
MAXIMUM SHORT CIRCUIT CURRENT	18 A

BATTERY SPECIFICATIONS	
MANUFACTURER / MODEL #	GENERAC PWRCELL9 BATTERY
USABLE ENERGY	8.6kW
RATED CONTINUOUS POWER	3.4Kw
POWER: 60 MINUTES	4.2kW
POWER: 2 MINUTES	5.0kW
REBUS VOLTAGE: INPUT/ OUTPUT	360-420Vdc
MODULE VOLTAGE	46.8Vdc
ROUND-TRIP EFFICIENCY	96.5%

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-13°
AMBIENT TEMP (HIGH TEMP 2%)	34°
CONDUIT HEIGHT	0.5"
ROOF TOP TEMP	56°

DC CONDUCTOR AMPACITY CALCULATIONS:
ARRAY TO JUNCTION BOX:

EXPECTED WIRE TEMP (In Celsius)	56•
TEMP. CORRECTION PER NEC TABLE 310.15 (B)(2)(a)	0.71
NO. OF CURRENT CARRYING CONDUCTORS	6
CONDUIT FILL CORRECTION PER NEC TABLE 310.15(B)(3)(a)	0.8
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY PER NEC TABLE 310.15(B)(16)	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	10A
1.25 X Imax	
DERATED AMPACITY OF CIRCUIT CONDUCTOR	22.72A
TEMP. CORRECTION PER TABLE 310.15 (B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY 310.15 (B)(16)	
Result should be greater than (10A) otherwise less the entry for circuit conductor size and ampacity	

FROM JUNCTION BOX TO INVERTER:

EXPECTED WIRE TEMP (In Celsius)	56•
TEMP. CORRECTION PER NEC TABLE 310.15 (B)(2)(a)	0.71
NO. OF CURRENT CARRYING CONDUCTORS	4
CONDUIT FILL CORRECTION PER NEC TABLE 310.15(B)(3)(a)	0.8
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY PER NEC TABLE 310.15(B)(16)	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	20A
1.25 X Imax X # of PV LINKS	
DERATED AMPACITY OF CIRCUIT CONDUCTOR	22.72A
TEMP. CORRECTION PER TABLE 310.15 (B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY 310.15 (B)(16)	
Result should be greater than (20A) otherwise less the entry for circuit conductor size and ampacity	

FROM BATTERY TO INVERTER:

EXPECTED WIRE TEMP (In Celsius)	34•
TEMP. CORRECTION PER NEC TABLE 310.15 (B)(2)(a)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	2
CONDUIT FILL CORRECTION PER NEC TABLE 310.15(B)(3)(a)	1
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY PER NEC TABLE310.15(B)(16)	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	26.25A
1.25 X Imax	
DERATED AMPACITY OF CIRCUIT CONDUCTOR	38.40A
TEMP. CORRECTION PER TABLE 310.15 (B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY 310.15 (B)(16)	
Result should be greater than (26.25A) otherwise less the entry for circuit conductor size and ampacity	

AC CONDUCTOR AMPACITY CALCULATIONS:
FROM INVERTER TO BACK-UP PANEL:

No. OF INVERTER	1
EXPECTED WIRE TEMP (In Celsius)	34•
TEMP. CORRECTION PER NEC TABLE 310.15(B)(2)(a)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	3
CONDUIT FILL CORRECTION PER NEC TABLE 310.15(B)(3)(a)	1
CIRCUIT CONDUCTOR SIZE	6 AWG
CIRCUIT CONDUCTOR AMPACITY PER NEC TABLE 310.15(B)(16)	75A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	42.5A
1.25 X INVERTER OUTPUT CURRENT (BACKUP POWER)	
DERATED AMPACITY OF CIRCUIT CONDUCTOR	72A
TEMP. CORRECTION PER TABLE 310.15 (B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY 310.15 (B)(16)	
Result should be greater than (42.5A) otherwise less the entry for circuit conductor size and ampacity	

AC CONDUCTOR AMPACITY CALCULATIONS:
FROM INVERTER TO MEP:

No. OF INVERTER	1
EXPECTED WIRE TEMP (In Celsius)	34•
TEMP. CORRECTION PER NEC TABLE 310.15(B)(2)(a)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	3
CONDUIT FILL CORRECTION PER NEC TABLE 310.15(B)(3)(a)	1
CIRCUIT CONDUCTOR SIZE	6 AWG
CIRCUIT CONDUCTOR AMPACITY PER NEC TABLE 310.15(B)(16)	75A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	40A
1.25 X MAX INVERTER OUTPUT CURRENT (LOADS/GRID)	
DERATED AMPACITY OF CIRCUIT CONDUCTOR	72A
TEMP. CORRECTION PER TABLE 310.15 (B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY 310.15 (B)(16)	
Result should be greater than (40A) otherwise less the entry for circuit conductor size and ampacity	

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 ACESSORIES 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

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Web: www.powerhome.com

REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE:7/29/2020

PROJECT NAME & ADDRESS

ROBLEY Q RUSSELL JR.
RESIDENCE
16360 NORTH CAROLINA - 27,
SANFORD, NC 27332

SHEET NAME
WIRING CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-5

Q.PEAK DUO-G5 315-330

Q.ANTUM SOLAR MODULE

The new Q.PEAK DUO-G5 solar module from Q CELLS impresses thanks to innovative Q.ANTUM DUO Technology, which enables particularly high performance on a small surface. Q.ANTUM's world-record-holding cell concept has now been combined with state-of-the-art circuitry half cells and a six-busbar design, thus achieving outstanding performance under real conditions - both with low-intensity solar radiation as well as on hot, clear summer days.

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 19.9%.

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 Technology[1], Hot-Spot Protect and Traceable Quality Tra.Q™.

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

A RELIABLE INVESTMENT
Inclusive 12-year product warranty and 25-year linear performance guarantee[2].

STATE OF THE ART MODULE TECHNOLOGY
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

THE IDEAL SOLUTION FOR:

Rooftop arrays on residential buildings

Rooftop arrays on commercial/industrial buildings

Engineered in Germany

SOLAR RESEARCH TOP BRAND PV MODULES 2018

Q CELLS YIELD SECURITY – ANTI LID TECHNOLOGY, HOT-SPOT PROTECT, TRACEABLE QUALITY TRA.Q™, ANTI PID TECHNOLOGY

VDE Quality Tested – high reliability, low degradation, the highest product performance – ID. 40032587

PV MAGAZINE AWARD 2017 – top innovation

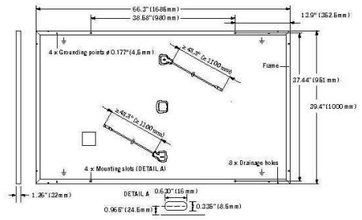
[1] APT test conditions according to IEC/TS 62804-1:2015, method B (–1500 V, 168 h)

[2] See data sheet on rear for further information.

Q CELLS

MECHANICAL SPECIFICATION

Format	66.3 in × 39.4 in × 1.26 in (including frame) (1685 mm × 1000 mm × 32 mm)
Weight	41.2 lbs (18.7 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	2.76-3.35 in × 1.97-2.76 in × 0.51-0.83 in (70-85 mm × 50-70 mm × 13-21 mm), decentralized, IP67
Cable	4 mm² Solar cable; (+) ≥ 43.3 in (1100 mm), (–) ≥ 43.3 in (1100 mm)
Connector	Multi-Contact MC4, IP68

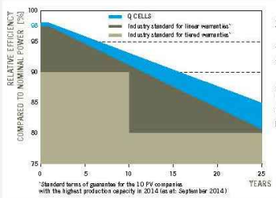


ELECTRICAL CHARACTERISTICS

POWER CLASS				315	320	325	330
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / –0 W)							
Minimum	Power at MPP[1]	P_{MPP}	[W]	315	320	325	330
	Short Circuit Current[1]	I_{SC}	[A]	10.04	10.09	10.14	10.20
	Open Circuit Voltage[1]	V_{OC}	[V]	39.87	40.13	40.40	40.66
	Current at MPP[1]	I_{MPP}	[A]	9.55	9.60	9.66	9.71
	Voltage at MPP	V_{MPP}	[V]	32.98	33.32	33.65	33.98
	Efficiency[1]	η	[%]	≥18.7	≥19.0	≥19.3	≥19.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]							
Minimum	Power at MPP	P_{MPP}	[W]	235.3	239.0	242.8	246.5
	Short Circuit Current	I_{SC}	[A]	8.09	8.13	8.17	8.22
	Open Circuit Voltage	V_{OC}	[V]	37.52	37.77	38.02	38.27
	Current at MPP	I_{MPP}	[A]	7.52	7.56	7.60	7.64
	Voltage at MPP	V_{MPP}	[V]	31.30	31.62	31.94	32.25

[1] Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 G according to IEC 60904-3 · [2] 800 W/m², NMOT, spectrum AM 1.5 G

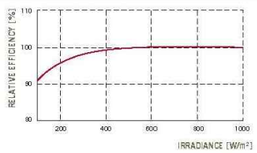
Q CELLS PERFORMANCE WARRANTY



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]	–0.28
Temperature Coefficient of P_{MPP}	γ	[%/K]	–0.37	Normal 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)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Max. Design Load, push[2]	[lbs/ft²]	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[2]	[lbs/ft²]	113 (5400 Pa) / 84 (4000 Pa)	[2] see installation manual	

QUALIFICATIONS AND CERTIFICATES

UL 1703; VDE Quality Tested; CE-compliant;
IEC 61215:2016; IEC 61730:201, application class A

PACKAGING INFORMATION

Number of Modules per Pallet	32
Number of Pallets per 53' Trailer	30
Number of Pallets per 40' High Cube Container	26
Pallet Dimensions (L × W × H)	69.3 in × 45.3 in × 46.9 in (1760 mm × 1150 mm × 1190 mm)
Pallet Weight	1415 lbs (642 kg)

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.

Hanwha Q CELLS America Inc.
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA I TEL +1 949 748 59 96 I EMAIL inquiry@us.q-cells.com I WEB www.q-cells.us

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REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE:7/29/2020

PROJECT NAME & ADDRESS

ROBLEY Q RUSSELL JR.
RESIDENCE
16360 NORTH CAROLINA - 27,
SANFORD, NC 27332

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

GENERAC

PWRCELL

7.6kW 1Ø, 11.4kW 3Ø PWRcell Inverter with CTs
Model: APKE00014, APKE00013
Certification Model Reference: X7602, X11402

Intertek

Solar + storage is simple with the Generac PWRcell™ Inverter. This bi-directional, REbus™-powered inverter offers a simple, efficient design for integrating smart batteries with solar. Ideal for self-supply, backup power, zero-export and energy cost management, the PWRcell Inverter is the industry's most feature-rich line of inverters, available in single-phase and three-phase models.

FEATURES & BENEFITS

- Single inverter for grid-tied solar with smart battery integration
- Simplified system design: No autotransformer or battery inverter needed
- User-selectable modes for backup power, self-supply, time-of-use and zero-export
- Free system monitoring included via PWRview™ Web Portal and Mobile App

AC OUTPUT/GRID-TIE	MODEL APKE00014	MODEL APKE00013
RATED AC POWER OUTPUT:	7600W	11400W
AC OUTPUT VOLTAGE:	120/240, 1Ø VAC	120/208, 3Ø VAC
AC FREQUENCY:	60 Hz	60 Hz
MAXIMUM CONTINUOUS OUTPUT CURRENT:	32 A, RMS	32 A, RMS
GROUND-FAULT ISOLATION DETECTION:	Included	Included
CHARGE BATTERY FROM AC:	Yes	Yes
THD (CURRENT):	< 2%	< 2%
TYPICAL NIGHTTIME POWER CONSUMPTION:	< 7W	< 7W

DC INPUT	MODEL APKE00014	MODEL APKE00013
DC INPUT VOLTAGE RANGE:	360-420 VDC	360-420 VDC
NOMINAL DC BUS VOLTAGE:	380 VDC	380 VDC
MAX IMPORT CURRENT[1]:	20 A	30 A
MAX INPUT CURRENT[2]:	30 A	30 A
REVERSE-POLARITY PROTECTION:	Yes	Yes
GROUND-FAULT ISOLATION DETECTION:	Yes	Yes
TRANSFORMERLESS, UNGROUNDED:	Yes	Yes
TYPICAL NIGHTTIME POWER CONSUMPTION:	< 7W	< 7W

AC OUTPUT/BACKUP	MODEL APKE00014	MODEL APKE00013
RATED AC BACKUP POWER OUTPUT (ISLANDED):	8000W	8000W
MAXIMUM AC BACKUP POWER OUTPUT:	10000W	10000W
AC BACKUP OUTPUT VOLTAGE:	120/240, 1Ø VAC	120/240, 1Ø VAC
AC FREQUENCY:	60 Hz	60 Hz
AC CIRCUIT BREAKER:	50 A	50 A
THD (VOLTAGE):	< 2%	< 2%
AUTOMATIC SWITCHOVER TIME:	< 1 Seconds	< 1 Seconds
TYPICAL NIGHTTIME POWER CONSUMPTION:	30W	30W

DC INPUT/ BATTERY	MODEL APKE00014	MODEL APKE00013
MAXIMUM CONTINUOUS POWER:	8000W	8000W
INTERNAL DC DISTRIBUTION BREAKERS:	4x 2p30A	4x 2p30A
DC FUSES ON PLUS AND MINUS:	40 A	40 A
2-POLE DISCONNECTION:	Yes	Yes

EFFICIENCY	MODEL APKE00014	MODEL APKE00013
PEAK EFFICIENCY:	97%	98%
CEC WEIGHTED EFFICIENCY:	96.50%	97.50%

[1]Inverter limits DC current import to AC power rating. Total DC current from multiple DC inputs may safely exceed this value up to Max. Input Current. The inverter safely limits the amount utilized
[2]Per input, four DC inputs total

Specifications

FEATURES AND MODES	
ISLANDING[3]:	Yes
GRID SELL:	Yes
SELF CONSUMPTION:	Yes
PRIORITIZED CHARGING FROM RENEWABLES:	Yes
GRID SUPPORT - ZERO EXPORT:	Yes

ADDITIONAL FEATURES	
SUPPORTED COMMUNICATION INTERFACES:	REbus™, CANbus, RS485[4], Ethernet
SYSTEM MONITORING:	PWRview™ Web Portal and Mobile App
BACKUP LOADS DISCONNECT[3]:	Yes
MANUAL INVERTER BYPASS SWITCH:	Automatic
WARRANTY:	10 Years

STANDARDS COMPLIANCE	
SAFETY:	UL1741 SA, CSA 22.2
GRID CONNECTION STANDARDS:	IEEE1547, Rule 21, Rule 14H, CSIP
EMISSIONS:	FCC Part 15 Class B

DIMENSIONS AND INSTALLATION SPECIFICATIONS	
ENCLOSURE KNOCKOUTS - QTY, SIZE - IN (MM):	6 x Combo 3/4" x 1" (19 x 25.4) 7 x Combo 1/2" x 3/4" (12.7 x 19)
DIMENSIONS L x W x H - IN (MM):	24.5" x 19.25" x 8" (622.3 x 488.9 x 203.2)
WEIGHT - LB (KG):	62.7 (28.4)
COOLING:	Forced convection
NOISE:	< 40 dBA
OPERATING TEMPERATURE - FAHRENHEIT (CELSIUS):	-4 to 122 °F (-20 to 50 °C)[5]
PROTECTION RATING:	NEMA 3R

INSTALLATION GUIDELINES	
BATTERY TYPES SUPPORTED:	PWRcell™ Battery
MODULE STRING SIZE PER PV LINK OPTIMIZER:	Varies, refer to PV Link Installation Manual
MAXIMUM RECOMMENDED DC POWER FROM PV:	15kW

[3]3Ø inverters offer islanding for 1Ø loads
[4]Modbus
[5]Reduced power at extreme temperatures

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S45 W29290 Hwy. 59, Waukesha, WI 53189
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GENERAC

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SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

GENERAC

SnapRS™

Inline Disconnect Switch
Model: APKE00011
Certification Model Reference: RS801

Generac SnapRS are a simple way to satisfy rapid shutdown compliance for solar + storage systems. Generac SnapRS are 2017/2020 NEC 690.12 compliant, don't require any extra hardware to mount, and need no pairing or fussy digital communications.

FEATURES & BENEFITS

- Fast, easy, and simple to install
- One SnapRS device per PV module
- Achieves PVRSS Compliance
- Low cost, high efficiency solution

SYSTEM DESIGN

Snap a Generac SnapRS disconnect device (RS) to the negative lead (-) of each module in the solar array for simple module-level rapid shutdown compliance. SnapRS devices isolate array voltage when a rapid shutdown is initiated at a PWRcell™ Inverter. When rapid shutdown is initiated, SnapRS units isolate each PV module in the array, reducing array voltage to <80V in seconds.

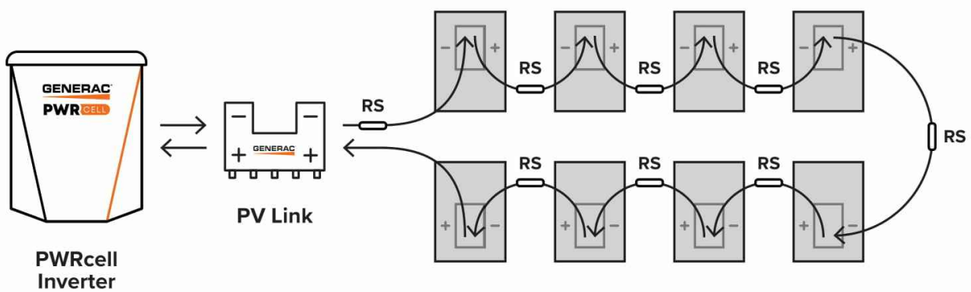

Diagram is applicable for most 60 cell PV modules. Modules with higher cell count may require a different arrangement. Contact Generac for more details.

Specifications

SnapRS™ (APKE00011)	
PV MODULE MAX VOC:	75 V
EFFICIENCY:	99.8%*
MAX INPUT CURRENT:	13 A
SHUTDOWN TIME:	< 10 Seconds
ENCLOSURE RATING:	NEMA 6P
OPERATING TEMPERATURE - FAHRENHEIT (CELSIUS):	-40 to 158 °F (-40 to 70 °C)
CERTIFICATIONS:	UL1741
PROTECTIONS:	PVRSE
WEIGHT - LB (KG):	0.17 (0.08)
DIMENSIONS, L x W x H - IN (MM):	7" x 1" x 1" (177.8 x 25.4 x 25.4)
WARRANTY:	25 Years

**When used with a 50V panel*

Connect one SnapRS device to the negative lead of each PV module in the PV Link controlled array for complete PV Rapid shutdown performance

Generac Power Systems, Inc.
S45 W29290 Hwy. 59, Waukesha, WI 53189
www.Generac.com | 888-GENERAC (436-3722)

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GENERAC

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SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

GENERAC®

PWRcell

Model APKE00007, PWRcell Battery Cabinet
Model A0000391219, 2.85kWh PWRcell Battery Module
Certification Model Reference: BJ-DCB05ZKAX
Model APKE00008, PWRcell Spacer Kit
Model APKE00009, PWRcell Upgrade Kit
Certification Model Reference for Battery Configurations:
PWRcell 9, PWRcell 12, PWRcell 15, PWRcell 17

The PWRcell™ Battery Cabinet is a modular smart battery platform that allows for a range of configurations to suit any need, small or large. No other smart battery offers the power and flexibility of PWRcell. Whether for backup power or smart energy management, PWRcell has power and capacity options for every need, without sacrificing flexibility or function.

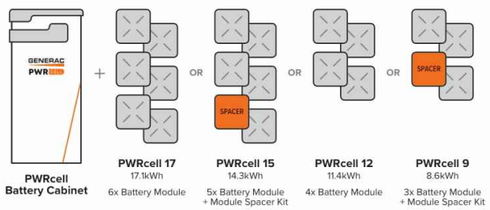
PWRcell BATTERY CABINET DESIGN

The PWRcell Battery Cabinet allows system owners the flexibility to scale from the economical 8.6kWh PWRcell 9 to the massive 17.1kWh PWRcell 17 by installing additional battery modules to the PWRcell Battery Cabinet. When needs change, an existing PWRcell Battery Cabinet can be upgraded with additional modules. Use the graphic below and the chart on the back of this sheet to understand what components you need for your chosen PWRcell configuration.

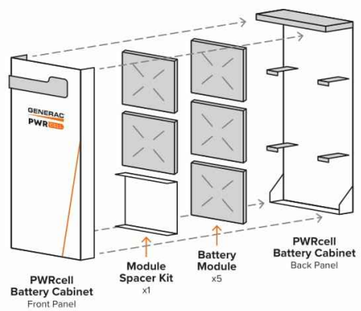
FEATURES & BENEFITS

- Connect 2 PWRcell Battery Cabinets to a single PWRcell Inverter for 34.2kWh of storage
- Best-in-class battery backup power
- Plug-and-play with PWRcell Inverter and PV Link™
- Time-of-use (TOU) and zero-export ready
- Residential and commercial application ready

BATTERY CONFIGURATION GUIDE



BATTERY CABINET ASSEMBLY



Specifications

PWRcell™ BATTERY CONFIGURATIONS	9	12	15	17
BATTERY MODULES:	3	4	5	6
USABLE ENERGY:	8.6kWh	11.4kWh	14.3kWh	17.1kWh
POWER - RATED CONTINUOUS:	3.4kW	4.5kW	5.6kW	6.7kW
POWER - 60 MINUTES:	4.2kW	5.6kW	7.0kW	8.4kW
POWER - 2 MINUTES:	5.0kW	6.7kW	8.4kW	10.0kW
REbus™ VOLTAGE - INPUT/OUTPUT:	360-420 VDC			
MODULE VOLTAGE:	46.8 VDC			
ROUND-TRIP EFFICIENCY:	96.50%			
OPERATING TEMPERATURE - FAHRENHEIT (CELSIUS):	41 to 113 °F (5 to 45 °C)			
RECOMMENDED AMBIENT TEMPERATURE - FAHRENHEIT (CELSIUS):	55 to 86 °F (13 to 30 °C)			
MAXIMUM INSTALLATION ALTITUDE - FT (M):	9834 (3000)			
DIMENSIONS, L x W x H - IN (MM):	22" x 10" x 68" (559 x 254 x 1727)			
WEIGHT, ENCLOSURE - LB (KG):	115 (52)			
WEIGHT, INSTALLED - LB (KG):	280 (127)	335 (152)	390 (178)	445 (202)
WARRANTY - LI-ION MODULES:	10 Years, (7.56MWh)			
WARRANTY - ELECTRONICS AND ENCLOSURE:	10 Years			
COMMUNICATION PROTOCOL:	REbus™ DC Nanogrid™			
COMPLIANCE:	UL 9540, UL 1973, UL 1642, CSA 22.2			

UPGRADING PWRcell

Inside of the PWRcell Battery Cabinet, battery modules are stacked two deep on three levels, allowing for up to six modules to be connected in series. You can upgrade an existing PWRcell Battery Cabinet by adding Battery Modules and a Module Spacer (APKE00008) if required. PWRcell 9 and PWRcell 15 require a module spacer.

Generac offers a convenient PWRcell Battery Upgrade Kit (APKE00009) to help replace lost or misplaced hardware. A PWRcell Battery Upgrade Kit may be purchased from your Generac distributor.

Refer to the table to the right for material requirements related to upgrading the PWRcell Battery Cabinet.

UPGRADE MATERIAL REQUIREMENTS

STARTING CONFIGURATION \ ENDING CONFIGURATION	PWRcell 17	PWRcell 15	PWRcell 12
PWRcell 9	+ 3 x PWRCell Mod + 2 x APKE00009*	+ 2 x PWRCell Mod + 1 x APKE00009*	+ 1 x PWRCell Mod + 1 x APKE00009*
PWRcell 12	+ 2 x PWRCell Mod + 1 x APKE00009*	+ 1 x PWRCell Mod + 1 x APKE00008	
PWRcell 15	+ 1 x PWRCell Mod + 1 x APKE00009*		

**APKE00009 (Upgrade kit) only required if original hardware is unavailable*

Generac Power Systems, Inc.
S45 W29290 Hwy. 59, Waukesha, WI 53189
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GENERAC®

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POWER HOME SOLAR, LLC
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919 N. MAIN ST.
MOORESVILLE, NC 28115
Phone: 704-800-6591 (OFFICE)
Email: info@powerhome.com
Web: www.powerhome.com

REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE:7/29/2020

PROJECT NAME & ADDRESS

ROBLEY Q RUSSELL JR.
RESIDENCE
16360 NORTH CAROLINA - 27,
SANFORD, NC 27332

SHEET NAME
EQUIPMENT SPECIFICATION

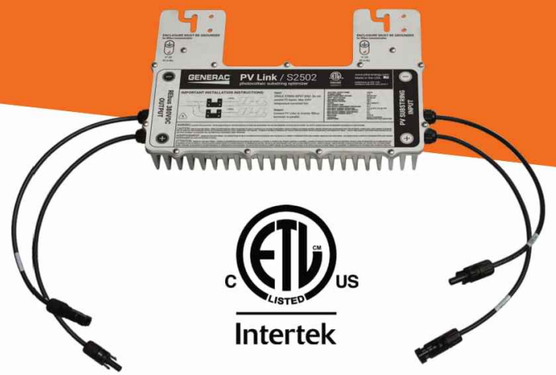
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-9

GENERAC

PV Link™

2500W MPPT Substring Optimizer
Model: APKE00010
Certification Model Reference: S2502



PV Link is the simple solar optimizer for quick installation and long-lasting performance. Connect PV modules to each PV Link to overcome shading and challenging roof lines.

FEATURES & BENEFITS

- Fast, simple installation
- Lower failure risk than module-level optimizers
- 2017/2020 NEC rapid shutdown compliant with SnapRS™
- Quick connections with MC4 connectors
- Exports up to 2500W
- Compatible with PWRcell™ Inverters
- Cost-effective solution for high-performance PV
- Ground-fault protection

SINGLE-STRING PV ARRAY WITH SnapRS DEVICES

Where PV module-level rapid shutdown is required (NEC 690.12), a SnapRS device (RS) is installed to negative (-) lead of each PV module.

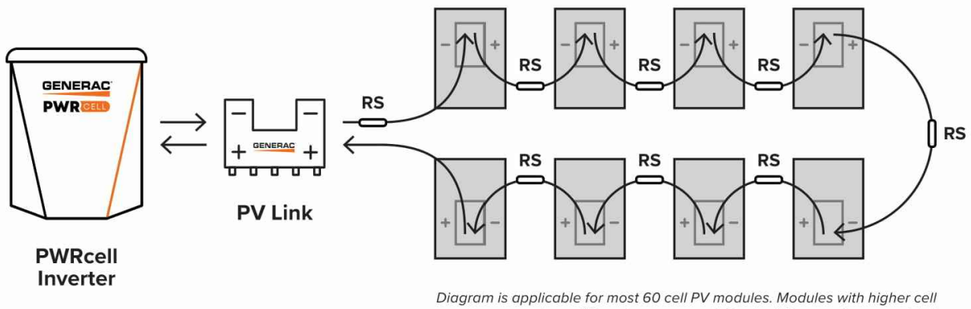


Diagram is applicable for most 60 cell PV modules. Modules with higher cell count may require a different arrangement. Contact Generac for more details.

Specifications

PV Link™ (APKE00010)	
RATED POWER*:	2500W
PEAK EFFICIENCY:	99%
MPPT VOLTAGE RANGE:	60-360 VMP
MAX INPUT VOLTAGE:	420 VOC; max when cold
MAX OUTPUT:	420 VOC
NOMINAL OUTPUT (REbus™):	380 VDC
MAX OUTPUT CURRENT (CONTINUOUS):	8 A
MAX OUTPUT CURRENT (FAULT):	10 A
MAX INPUT CURRENT (CONTINUOUS):	13 A @ 50°C, 10 A @ 70°C
MAX INPUT SHORT CIRCUIT CURRENT (ISC):	18 A
STANDBY POWER:	< 1 W
PROTECTIONS:	Ground-fault, Arc-fault (Arc-fault Type 1 AFCI, Integrated), PVRSE
MAX OPERATING TEMP: FAHRENHEIT (CELSIUS)	158 °F (70 °C)
SYSTEM MONITORING:	PWRview™ Web Portal and Mobile App
ENCLOSURE:	Type 3R
WEIGHT - LB (KG):	7.3 lb (3.3 kg)
DIMENSIONS, L x W x H - IN (MM):	15.4" x 2" x 9.6" (391.2 x 50.8 x 243.8)
COMPLIANCE:	UL 1741, CSA 22.2
WARRANTY:	25 Years

**PV Link can tolerate higher than rated power at its input if Max Input Voltage and Short Circuit Current specifications are not exceeded*

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SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10