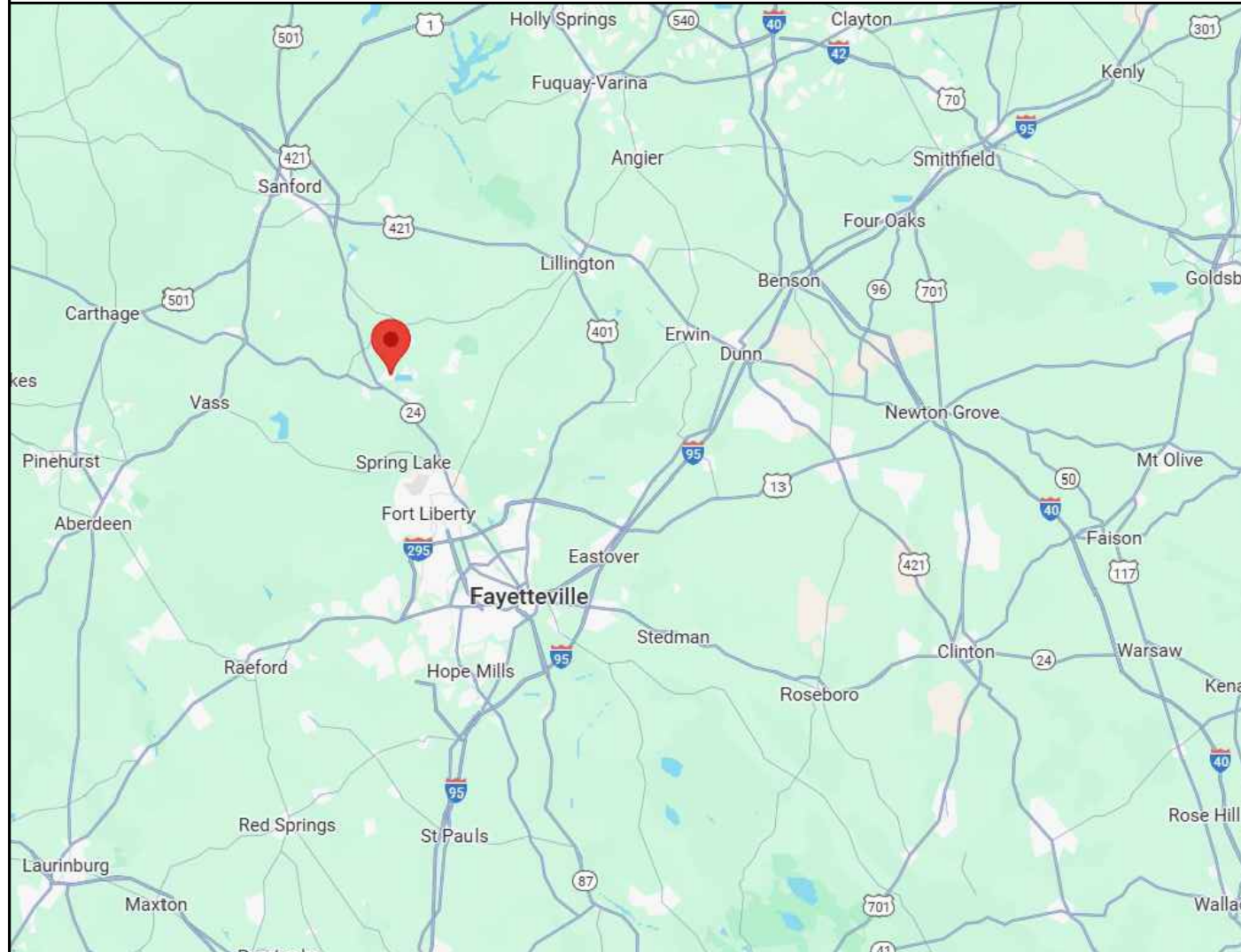


VICINITY MAP



PROPERTY MAP



ENGINEER:



MODEL ENERGY

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

JOB TITLE:

ADD BATTERY

9.920 kW DC INPUT

7.600 kW AC EXPORT

Russell

70 Blue Heron Ct,
Sanford, NC 27332

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CLIENT:



ISSUED FOR:

OLD

DATE:

02/05/25

PROJECT INFORMATION

PV1.1

SCOPE OF WORK

- (31) HANWHA Q.CELLS Q.PEAK DUO BLK-G5 +320
- (1) GENERAC PWRCELL XVT076A03
- (1) GENERAC PWRCELL "M6"
- (1) GENERAC TRANSFER SWITCH

SITE CONDITION

ASCE 7-10 WIND SPEED - 120 MPH
EXPOSURE CATEGORY - B
RISK CATEGORY - II
SNOW LOAD - 15 LBS/SQFT

SHEET INDEX

PV1.1 PROJECT INFORMATION
PV2.1 - 2.2 ELECTRICAL INFORMATION

INTERCONNECTIONS TYPE

BACK FEED BREAKER

CODE REFERENCES

2023 NATIONAL ELECTRIC CODE
2018 NORTH CAROLINA FIRE CODE
2018 NORTH CAROLINA BUILDING CODE
2018 NORTH CAROLINA RESIDENTIAL CODE

UTILITY COMPANY

CENTRAL EMC

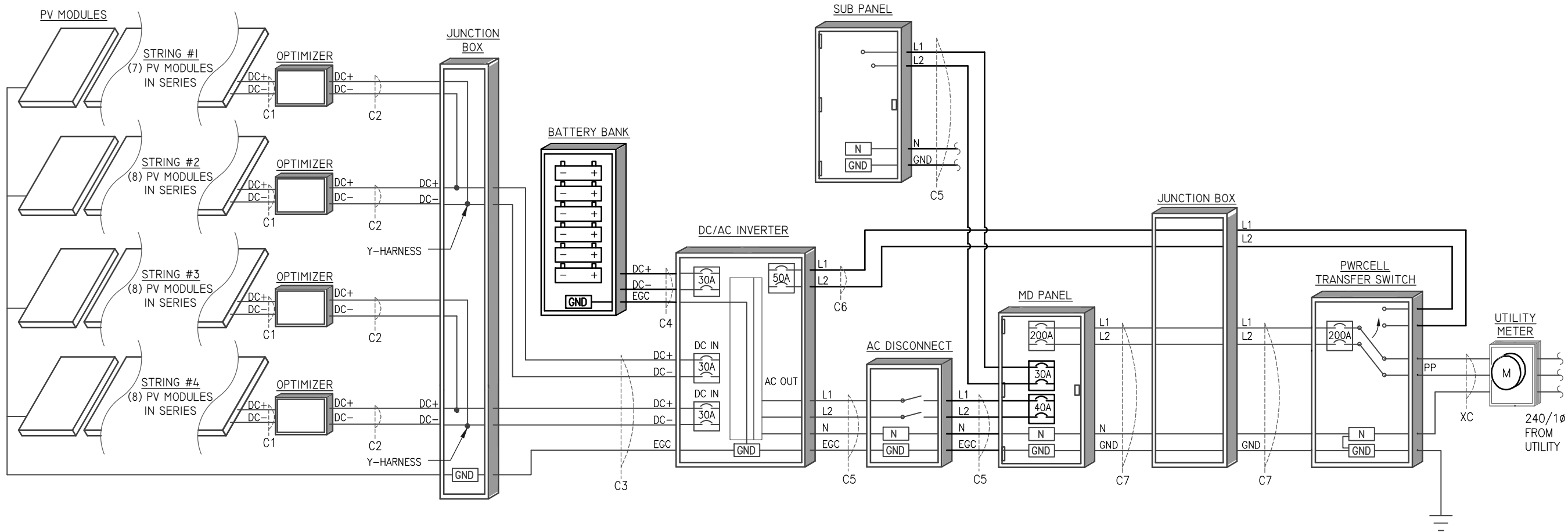
LEGEND

- DISCONNECT SWITCH
- FUSE
- CIRCUIT BREAKER
- EQUIP. GROUND

TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	LOCATION	
C1	2	10 AWG	COPPER	PV WIRE	1	6 AWG	COPPER	PV WIRE	-	-	-	FREE AIR	1
C2	2	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	FMC/EMT/MC	EXT/INT	2,4
C3	4	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	FMC/EMT/MC	EXT/INT	2,4
C4	2	10 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	1/2"	NOTE 5	EXTERIOR	2,4,5
C5	3	8 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	3/4"	NOTE 5	EXTERIOR	2,4,5
C6	3	1/0 AWG	ALUMINUM	SER	1	2 AWG	ALUMINUM	SER	1	1 1/2"	NOTE 5	EXTERIOR	2,4,5
C7	3	4/0 AWG	ALUMINUM	SER	1	2/0 AWG	ALUMINUM	SER	1	2"	NOTE 5	EXTERIOR	2,4,5
XC	-	-	-	-	-	-	-	-	-	-	-	-	3

NOTES:

1. MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
2. CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED.
3. EXISTING CONDUCTORS, FIELD VERIFY
4. EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR
5. PVC, EMT, ROMEX, LFNMC & FMC ARE ACCEPTABLE WHEN USED IN ACCORDANCE WITH ARTICLES 330, 334, 348, 350, 352, 356, & 358 OF THE 2017 NEC



1 PV SYSTEM ELECTRICAL WIRING SCHEMATIC
SCALE: NTS

ENGINEER:



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ELECTRICAL INFORMATION

PV2.1

<i>PV MODULES</i>	
MAKE	HANWHA Q-CELL
MODEL	Q.PEAK DUO BLK-G5 +320
TECHNOLOGY	MONO-CRYST.
NOM. POWER (Pnom)	320 WATTS
NOM. VOLT. (Vmp)	33.80 VOLTS
O.C. VOLT. (Voc)	40.56 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (Vtc)	-0.28 %/°C
NOM. CURR. (Imp)	9.47 AMPS
S.C. CURR. (Isc)	9.94 AMPS
MAX. SERIES FUSE	20 AMPS

<i>MODULE OPTIMIZER (EXISTING)</i>	
MAKE	GENERAC
MODEL	APKE00010
DC INPUT:	
MAX. ISC	18 AMPS
VOLT. RANGE	60-360 VOLTS
MAX. VOLT	420 VOLTS
DC OUTPUT:	
MAX. CURRENT	8 AMPS
MAX. VOLT	420 VOLTS
NOM. VOLT	380 VOLTS
MIN. STRING	2 OPTIMIZERS
MAX. STRING	9 OPTIMIZERS
RATED POWER	2500 WATTS

<i>JUNCTION BOX #1 (EXISTING)</i>	
MAKE	SOLADECK
MODEL	0783-3R
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

<i>JUNCTION BOX #2 (EXISTING)</i>	
MAKE	GENERIC
MODEL	GENERIC
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

<i>DC/AC INVERTER (EXISTING)</i>	
MAKE	GENERAC
MODEL	XVT076A03
TECHNOLOGY	TRANSF-LESS
DC INPUT:	
MAX. POWER	N/A
VOLT. RANGE	360-420 VOLTS
NOM. VOLT.	380 VOLTS
MAX. CURRENT	30 AMPS
STRINGS INPUTS	4 STRINGS
DC OUTPUT:	
NOM. POWER	7600 WATTS
MAX. POWER	9000 WATTS
NOM. VOLT.	240 VOLTS
MAX. CURR.	32.0 AMPS
GFP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	NO
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 3R

NOTES:

- PROVIDE WITH MANUFACTURER RAPID SHUTDOWN KIT

<i>PWRCELL BATTERY CABINET (NEW)</i>	
MAKE	GENERAC
MODEL	PWRCELL "M6"
TOTAL ENERGY (kWh)	18 KWH
BATTERY MODULES	6
VOLTAGE RANGE	360-420 VOLTS

<i>SUB PANEL (MLO) (EXISTING)</i>	
MAKE	N/A
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
BUS RATING	125 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	NO
BREAKER RATING	N/A

NOTES:

- FEED SUB PANEL VIA (I) 30A BREAKER INSIDE OF MD PANEL

<i>PWRCELL TRANSFER SWITCH (EXISTING)</i>	
MAKE	GENERAC
MODEL	PWRCELL RXSW200A3
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
BREAKER RATING	200 AMPS

NOTES:

- BACK-FEED SOLAR OUTPUT VIA LOAD SIDE TAP IN TRANSFER SWITCH
- EXISTING N/G BOND IN TRANSFER SWITCH #1.
- EXISTING SERVICE DISCONNECT STICKER.
- EXISTING CONNECTION TO GROUNDING ELECTRODE SYSTEM .

<i>AC DISCONNECT (EXISTING)</i>	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	60 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	NO
FUSE RATING	N/A

NOTES:

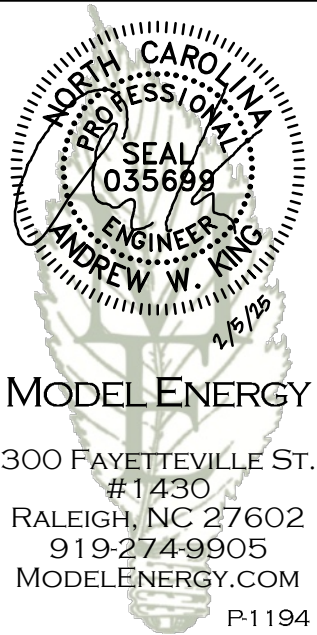
- LOAD-BREAK RATED
- VISIBLE OPEN
- LOCKABLE IN OPEN POSITION
- INSTALL ADJACENT TO METER
- DISCONNECT TO BE READILY ACCESSIBLE TO UTILITY COMPANY PERSONNEL AT ALL TIMES

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

NOTES:

- BACK-FEED SOLAR OUTPUT VIA (I) 40A BREAKER AT THE OPPOSITE END OF THE BUS BAR FROM MAIN BREAKER.
- BACK-FEED SUB PANEL OUTPUT VIA (I) 30A BREAKER AT THE OPPOSITE END OF THE BUS BAR FROM MAIN BREAKER.

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ELECTRICAL INFORMATION

PV2.2