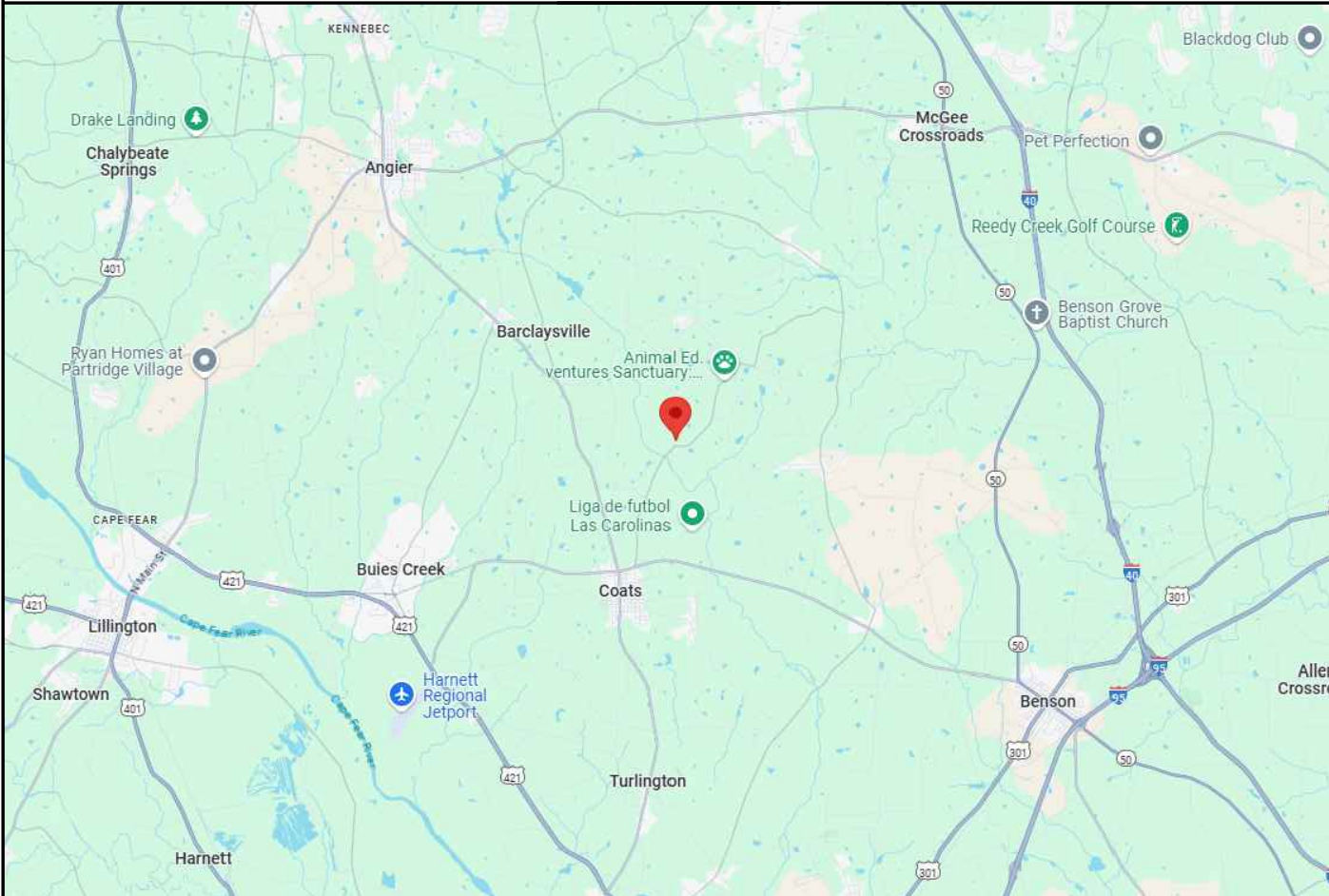


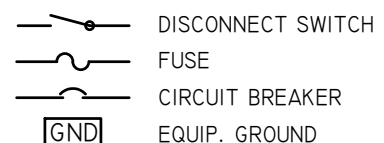
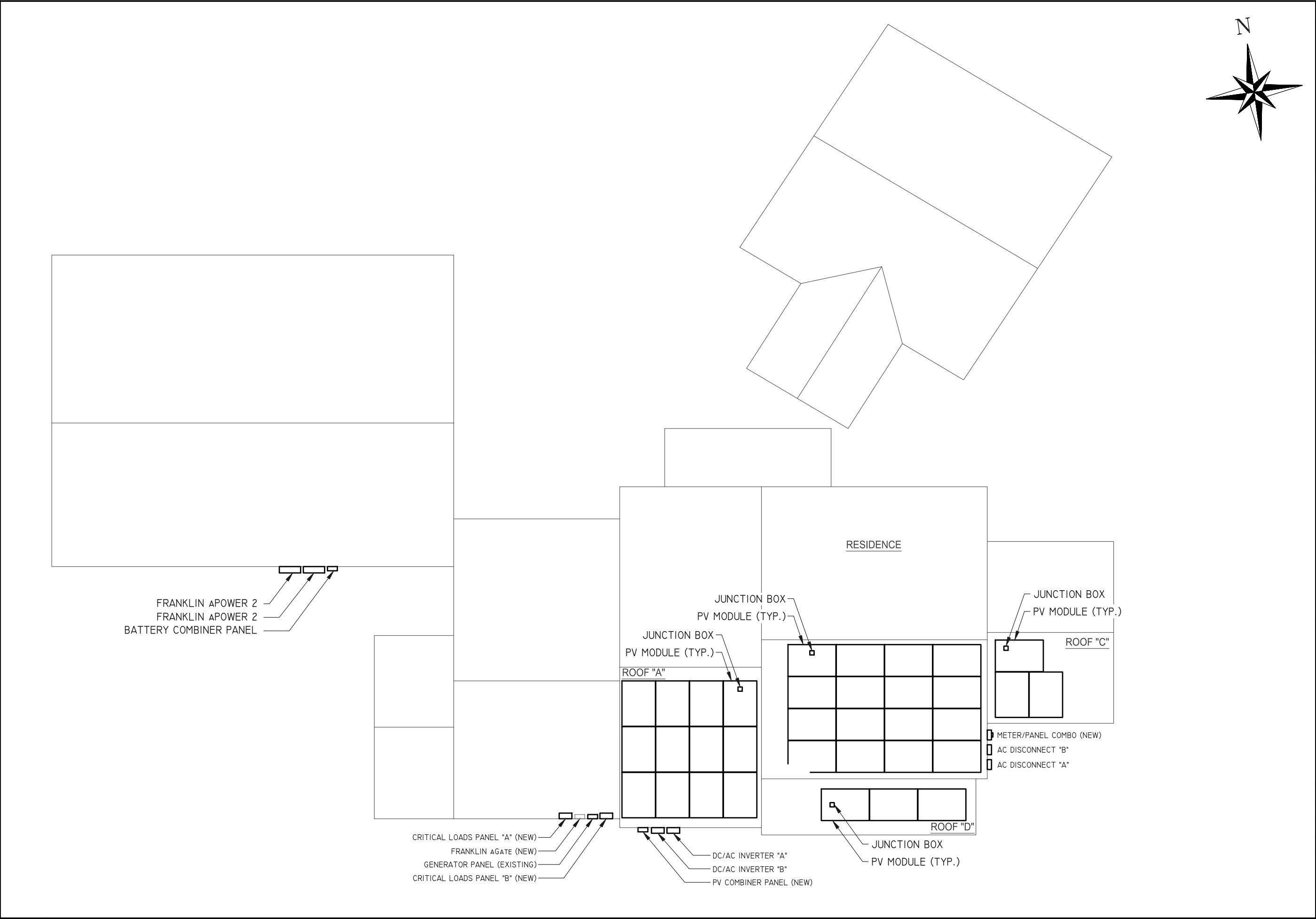



VICINITY MAP		PROPERTY MAP		SEAL:	
					
				ENGINEER:	
				MODEL ENERGY	
				300 FAYETTEVILLE ST. #1430 RALEIGH, NC 27602 919-274-9905 MODELENERGY.COM	
				P-1194	
CONSTRUCTION NOTES		ABBREVIATIONS		JOB TITLE:	
				NEW SOLAR PV SYSTEM 15.300 kW DC INPUT 15.200 kW AC EXPORT TYLER HEISHMAN 2603 ABATTOIR ROAD COATS, NC 27521	
				CODE REFERENCES	
				2017 NATIONAL ELECTRIC CODE 2018 NORTH CAROLINA BUILDING CODE 2018 NORTH CAROLINA RESIDENTIAL CODE 2018 NORTH CAROLINA FIRE CODE	
				SHEET INDEX	
1. ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES 2. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS 3. WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS 4. THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS 5. EACH ELECTRICAL APPLIANCE SHALL BE PROVIDED WITH A NAMEPLATE GIVING THE IDENTIFYING NAME AND THE RATING IN VOLTS AND AMPERES, OR VOLTS AND WATTS. IF THE APPLIANCE IS TO BE USED ON A SPECIFIC FREQUENCY OR FREQUENCIES, IT SHALL BE SO MARKED. WHERE MOTOR OVERLOAD PROTECTION EXTERNAL TO THE APPLIANCES IS REQUIRED, THE APPLIANCE SHALL BE SO MARKED 6. WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE 7. IN ONE- AND TWO-FAMILY DWELLINGS, LIVE PARTS IN PHOTOVOLTAIC SOURCE CIRCUITS AND PHOTOVOLTAIC OUTPUT CIRCUITS OVER 150 VOLTS TO GROUND, SHALL ONLY BE ACCESSIBLE TO QUALIFIED PERSONS WHILE ENERGIZED. 8. PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT. 9. EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT 10. WHERE ALL TERMINALS OF A DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A WARNING SIGN SHALL BE MOUNTED ON OR ADJACENT TO THE DISCONNECT 11. A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS 12. A PERMANENT PLAQUE OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES SERVING THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL POWER PRODUCTION SOURCES. 13. A PERMANENT PLAQUE OR DIRECTORY SHALL BE PROVIDED DENOTING THE LOCATIONS OF THE SERVICE DISCONNECT MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECT MEANS IF THEY ARE NOT LOCATED AT THE SAME LOCATION. 14. ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)	A AC DC EGC EMT GALV GEC GND I IMP ISC KVA KW MAX MIN MCB MLO NOM NTS PNOM PV PVC SN STC TYP V VMP Voc W	AMPERE ALTERNATING CURRENT DIRECT CURRENT EQUIPMENT GROUNDING CONDUCTOR ELECTRICAL METAL TUBING GALVANIZED GROUNDING ELECTRODE CONDUCTOR GROUND CURRENT CURRENT AT MAXIMUM POWER SHORT-CIRCUIT CURRENT KILOVOLT AMPERE KILOWATT MAXIMUM MINIMUM MAIN CIRCUIT BREAKER MAIN LUG ONLY NOMINAL NOT TO SCALE NOMINAL POWER PHOTOVOLTAIC POLYVINYL CHLORIDE SOLAR NOON STANDARD TEST CONDITIONS TYPICAL VOLT VOLTAGE AT MAXIMUM POWER OPEN-CIRCUIT VOLTAGE WATT	PV1.1 - PROJECT INFORMATION PV2.1 - SITE INFORMATION PV3.1 - PV3.4 - STRUCTURAL INFORMATION PV4.1 - PV4.2 - ELECTRICAL INFORMATION PV5.1 - EQUIPMENT LABELS		
			SITE CONDITIONS		
			ASCE 7-10 WIND SPEED - 115 MPH EXPOSURE CATEGORY - B RISK CATEGORY - II		
			LEGEND		
					
PROJECT INFORMATION					
PV1.1					

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SEAL:



ENGINEER:

MODEL ENERGY

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

P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM

15.300 kW DC INPUT


15.200 kW AC EXPORT

TYLER HEISHMAN

2603 ABATTOIR ROAD

COATS, NC 27521

CLIENT:



SOUTHERN
ENERGY
MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	05/27/25

SITE INFORMATION

PV2.1

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ROOF LOADING	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.7 LBS./SQFT.
TOTAL	6.6 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-23.0 LBS./SQFT.
UPLIFT ZONE 2	-38.0 LBS./SQFT.
UPLIFT ZONE 3	-57.1 LBS./SQFT.
DOWNWARD	13.6 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-147 LBS.
UPLIFT ZONE 2	-162 LBS.
UPLIFT ZONE 3	-121 LBS.
DOWNWARD	87 LBS.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	S-5!
MODEL	SOLARFOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	S-5!
MODEL	TYPE 17-AB MILLED
MATERIAL	ZINC/STEEL
SIZE	1/4"-14 X 1 1/2"
GENERAL	
WEIGHT	0.5 LBS
FASTENERS PER MOUNT	4 PER MOUNT
MAX. PULL-OUT FORCE	356 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	178 LBS.

- FASTENERS EMBEDDED FULLY INTO 1/2" OF OSB SHEATHING

ARRAY SUMMARY	
# MODULES	12
# ROOF MOUNTS	67
RAIL LENGTH	96 FT.
ARRAY AREA	269 SQFT.
ARRAY WEIGHT	727 LBS.
AZIMUTH @ SN	187°
TILT ANGLE	19°

PV MODULES	
MAKE	REC
MODEL	REC450AA PURE-RX
WIDTH	47.44"
LENGTH	68.03"
THICKNESS	1.18"
WEIGHT	51.6 LBS

ROOF SUMMARY	
STRUCTURE:	
TYPE	TRUSSES
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 4"
SPACING	24" O.C.
EFF. SPAN	12'-0"
PITCH	4 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	3/8"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	CORRUGATED
MATERIAL	METAL
WEIGHT	2.3 LBS./SQFT.

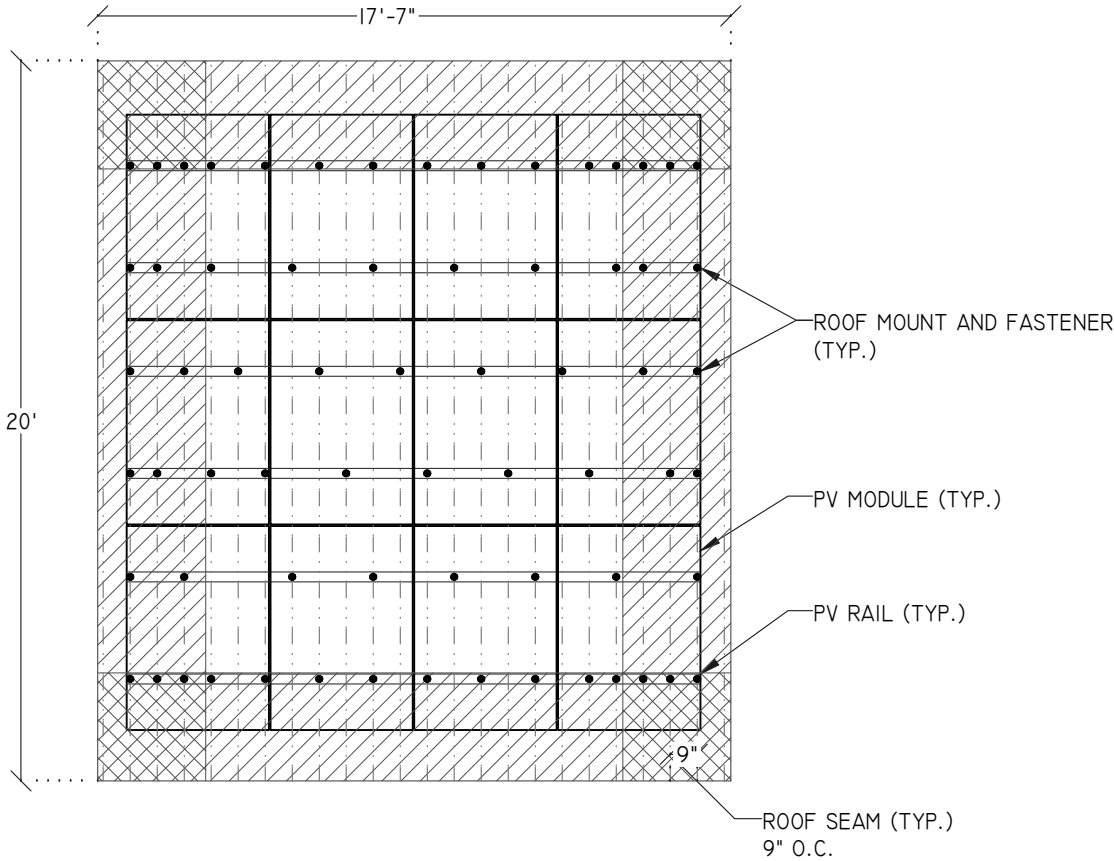
STATEMENT OF STRUCTURAL COMPLIANCE

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

NAME: ANDREW W. KING, PE
TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES MAX. RAIL OVERHANG = 6"
☐ ZONE 1 MAX. FASTENER SPAN ZONE 1 = 27"
▨ ZONE 2 MAX. FASTENER SPAN ZONE 2 = 18"
▩ ZONE 3 MAX. FASTENER SPAN ZONE 3 = 9"



SEAL:

ENGINEER:

MODEL ENERGY

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

P1194

JOB TITLE:

NEW SOLAR PV SYSTEM
15.300 kW DC INPUT
15.200 kW AC EXPORT
TYLER HEISHMAN
2603 ABATTOIR ROAD
COATS, NC 27521

CLIENT:

SOUTHERN ENERGY
MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	05/27/25

STRUCTURAL
INFORMATION

PV3.1

ROOF LOADING	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.8 LBS./SQFT.
TOTAL	6.7 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-23.0 LBS./SQFT.
UPLIFT ZONE 2	-38.0 LBS./SQFT.
UPLIFT ZONE 3	-57.1 LBS./SQFT.
DOWNWARD	13.6 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-170 LBS.
UPLIFT ZONE 2	-113 LBS.
UPLIFT ZONE 3	-85 LBS.
DOWNWARD	101 LBS.

- FASTENERS EMBEDDED FULLY INTO 1/2" OF OSB SHEATHING

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	S-5!
MODEL	SOLARFOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	S-5!
MODEL	TYPE 17-AB MILLED
MATERIAL	ZINC/STEEL
SIZE	1/4"-14 X 1 1/2"
GENERAL	
WEIGHT	0.5 LBS
FASTENERS PER MOUNT	4 PER MOUNT
MAX. PULL-OUT FORCE	356 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	178 LBS.

ARRAY SUMMARY	
# MODULES	16
# ROOF MOUNTS	92
RAIL LENGTH	183 FT.
ARRAY AREA	359 SQFT.
ARRAY WEIGHT	995 LBS.
AZIMUTH @ SN	187°
TILT ANGLE	19°

PV MODULES	
MAKE	REC
MODEL	REC450AA PURE-RX
WIDTH	47.44"
LENGTH	68.03"
THICKNESS	1.18"
WEIGHT	51.6 LBS

ROOF SUMMARY	
STRUCTURE:	
TYPE	TRUSSES
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 4"
SPACING	24" O.C.
EFF. SPAN	12'-0"
PITCH	4 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	3/8"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	CORRUGATED
MATERIAL	METAL
WEIGHT	2.3 LBS./SQFT.

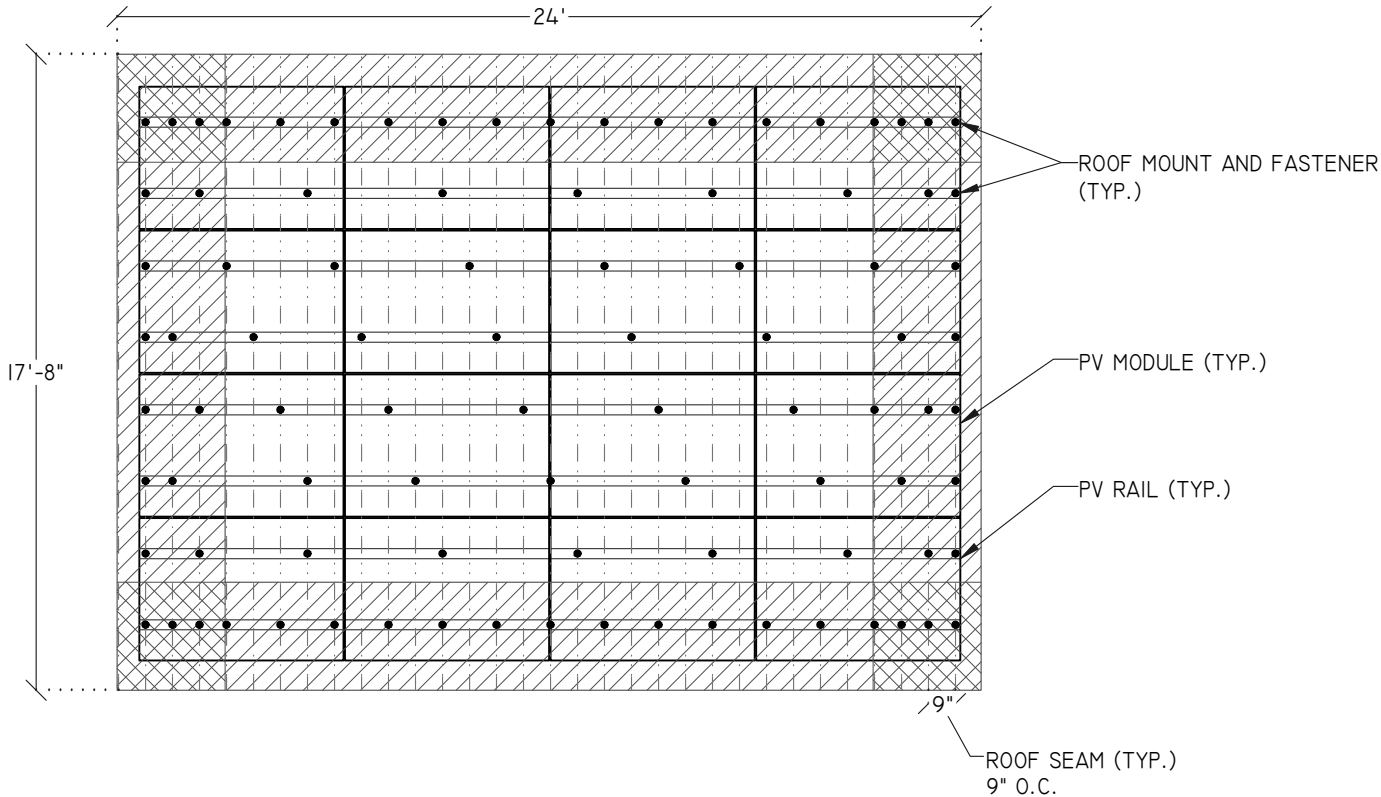
STATEMENT OF STRUCTURAL COMPLIANCE

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NAME: ANDREW W. KING, PE
TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES MAX. RAIL OVERHANG = 6"
☐ ZONE 1 MAX. FASTENER SPAN ZONE 1 = 45"
▨ ZONE 2 MAX. FASTENER SPAN ZONE 2 = 18"
▩ ZONE 3 MAX. FASTENER SPAN ZONE 3 = 9"



SEAL:

ENGINEER:

MODEL ENERGY

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

P1194

JOB TITLE:

NEW SOLAR PV SYSTEM
15.300 kW DC INPUT
15.200 kW AC EXPORT
TYLER HEISHMAN
2603 ABATTOIR ROAD
COATS, NC 27521

CLIENT:

SOUTHERN
ENERGY
MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	05/27/25

STRUCTURAL
INFORMATION

PV3.2

ROOF LOADING	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.8 LBS./SQFT.
TOTAL	6.7 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-23.0 LBS./SQFT.
UPLIFT ZONE 2	-38.0 LBS./SQFT.
UPLIFT ZONE 3	-57.1 LBS./SQFT.
DOWNWARD	13.6 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-147 LBS.
UPLIFT ZONE 2	-162 LBS.
UPLIFT ZONE 3	-121 LBS.
DOWNWARD	87 LBS.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	S-5!
MODEL	SOLARFOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	S-5!
MODEL	TYPE 17-AB MILLED
MATERIAL	ZINC/STEEL
SIZE	1/4"-14 X 1 1/2"
GENERAL	
WEIGHT	0.5 LBS
FASTENERS PER MOUNT	4 PER MOUNT
MAX. PULL-OUT FORCE	356 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	178 LBS.

- FASTENERS EMBEDDED FULLY INTO 1/2" OF OSB SHEATHING

ARRAY SUMMARY	
# MODULES	3
# ROOF MOUNTS	24
RAIL LENGTH	28 FT.
ARRAY AREA	67 SQFT.
ARRAY WEIGHT	189 LBS.
AZIMUTH @ SN	187°
TILT ANGLE	19°

PV MODULES	
MAKE	REC
MODEL	REC450AA PURE-RX
WIDTH	47.44"
LENGTH	68.03"
THICKNESS	1.18"
WEIGHT	51.6 LBS

ROOF SUMMARY	
STRUCTURE:	
TYPE	TRUSSES
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 4"
SPACING	24" O.C.
EFF. SPAN	9'-0"
PITCH	4 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	3/8"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	CORRUGATED
MATERIAL	METAL
WEIGHT	2.3 LBS./SQFT.

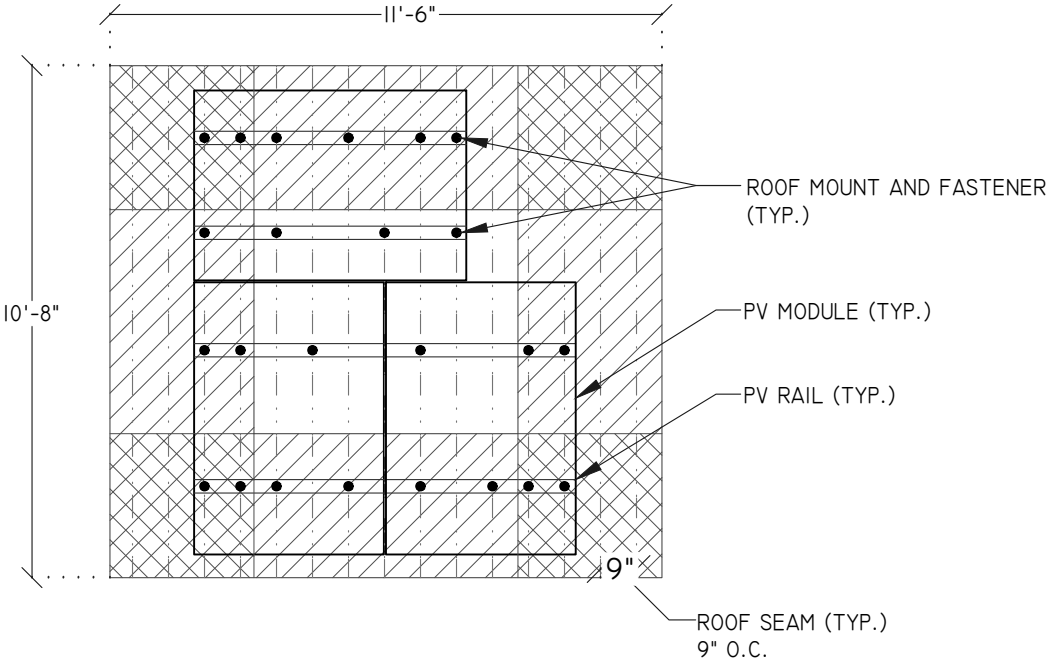
STATEMENT OF STRUCTURAL COMPLIANCE

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

NAME: ANDREW W. KING, PE
TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES	MAX. RAIL OVERHANG = 6"
□ ZONE 1	MAX. FASTENER SPAN ZONE 1 = 27"
▨ ZONE 2	MAX. FASTENER SPAN ZONE 2 = 18"
▩ ZONE 3	MAX. FASTENER SPAN ZONE 3 = 9"



SEAL:



ENGINEER:

MODEL ENERGY

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

JOB TITLE:

NEW SOLAR PV SYSTEM
15.300 kW DC INPUT
15.200 kW AC EXPORT
TYLER HEISHMAN
2603 ABATTOIR ROAD
COATS, NC 27521

CLIENT:



ISSUED FOR: CONSTRUCTION
DATE: 05/27/25

STRUCTURAL INFORMATION

PV3.3

PV MODULES	
MAKE	REC
MODEL	REC450AA PURE-RX
TECHNOLOGY	BIFACIAL
NOM. POWER (Pnom)	450 WATTS
NOM. VOLT. (Vmp)	54.30 VOLTS
O.C. VOLT. (Voc)	65.10 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (Vtc)	-0.24 %/°C
NOM. CURR. (Imp)	8.29 AMPS
S.C. CURR. (Isc)	8.81 AMPS
MAX. SERIES FUSE	25 AMPS

MID-CIRCUIT INTERRUPTER (NEW)	
MAKE	TESLA
MODEL	MCI-2
NOMINAL DC INPUT CURRENT	13 AMPS
MAX DC INPUT Isc	17 AMPS
MAX DC VOLTAGE	1000 VOLTS
MAX DEVICES PER STRING	5
CONNECTOR	MC4
ENCLOSURE RATING	NEMA 4

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

JUNCTION BOX "B" (NEW)	
MAKE	GENERIC
MODEL	N/A
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

CRITICAL LOADS PANEL "A" (NEW)	
MAKE	N/A
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:

- PROVIDE (1) 100 AMP BREAKER FOR CRITICAL LOADS PANEL "B" CIRCUIT
- PROVIDE WITH PERMANENT LABEL THAT READS, "FED BY MULTIPLE POWER SOURCES".

DC/AC INVERTER "A" & "B" (NEW)	
MAKE	TESLA
MODEL	I538000-XX-Y
TECHNOLOGY	TRANS-LESS
DC INPUT:	
MAX. POWER	12920 WATTS
MAX. VOLT	600 VOLTS
NOM. VOLT.	400 VOLTS
MAX. CURRENT	13 AMPS
MAX. SCC	17 AMPS
STRINGS INPUTS	4 STRINGS
AC OUTPUT:	
RATED POWER	7600 WATTS
MAX. POWER	7680 WATTS
NOM. VOLT.	240 VOLTS
MAX. CURR.	32 AMPS
GFP (Y/N)	YES
RPP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	AUTOMATIC
PROTECT. RATING	NEMA 4X

FRANKLIN aPOWER (NEW)	
MAKE	FRANKLIN WH
MODEL #	aPOWER 2
NOMINAL BATTERY ENERGY	15.0 KWH
AC OUTPUT:	
NOMINAL VOLTAGE	240 VOLTS
NOMINAL OUTPUT CURRENT	42 AMPS
MAX CONT. OUTPUT CURRENT	48 AMPS
AC INPUT:	
NOMINAL AC INPUT CURRENT	34 AMPS
MAX CONT. INPUT CURRENT	38 AMPS
MAX OCP CIRCUIT BREAKER	60 AMPS
GFP (Y/N)	YES
RPP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	AUTOMATIC
PROTECT. RATING	NEMA 4X

CRITICAL LOADS PANEL "B" (NEW)	
MAKE	N/A
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

CONDUCTOR SCHEDULE													
TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	LOCATION	
CI.1	2	10 AWG	COPPER	THWN	1	6 AWG	COPPER	BARE	-	-	-	FREE AIR	2,4,5
CI.2	6	10 AWG	COPPER	THWN	1	6 AWG	COPPER	BARE	-	-	-	FREE AIR	2,4,5
C2.1	2	10 AWG	COPPER	THHN	1	10 AWG	COPPER	THHN	1	3/4"	FMC	INT	2,4,5
C2.2	4	10 AWG	COPPER	THHN	1	10 AWG	COPPER	THHN	1	3/4"	FMC	INT	2,4,5
C2.3	6	10 AWG	COPPER	THHN	1	10 AWG	COPPER	THHN	1	3/4"	FMC	INT	2,4,5
C3	3	8 AWG	COPPER	THHN	1	10 AWG	COPPER	THHN	1	8/3	NMC	INT/EXT	2,4,5
C4	3	2 AWG	COPPER	THWN	1	4 AWG	COPPER	THWN	1	1"	NOTE 5	INT/EXT	2,4,5
C5	2	10 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	10/2	NMC	INT	2,4,5
C6	3	4 AWG	ALUMINUM	THHN	1	4 AWG	ALUMINUM	THHN	1	4/4/4	SEU	EXT	2,4,5
C7	3	1 AWG	COPPER	THWN	1	6 AWG	COPPER	THWN	1	1-1/4"	NOTE 5	INT/EXT	-
C8	3	2/0	ALUMINUM	THHN	1	1 AWG	ALUMINUM	THHN	1	%,%,%1	SER	INT/EXT	2,4,5
C9	3	3/0	COPPER	THWN	1	6 AWG	COPPER	THWN	1	2"	NOTE 5	INT/EXT	2,4,5
C10	3	1 AWG	ALUMINUM	THHN	1	3 AWG	ALUMINUM	THHN	1	1,1,1,3	SER	INT/EXT	2,4,5
C11	3	4/0	ALUMINUM	THHN	1	-	-	-	1	%,%,%4	SER	INT/EXT	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

FRANKLIN aGATE (NEW)	
MAKE	FRANKLIN WH
MODEL #	AGATE
GRID TERMINAL AC OUTPUT:	
MAX CONT. AC OUTPUT:	38.4 KWATTS
NOM. VOLT.	240 VOLTS
MAX OCP CIRCUIT BREAKER	200 AMPS
GENERATOR/NON-BACKUP/ BACK-UP TERMINALS RATINGS	
NOM. AC INPUT CURRENT (A)	160 AMPS
NOM. AC INPUT POWER (kW)	38.4 kW
PV INVERTER INPUT:	
NOM. AC INPUT CURRENT (A)	64 AMPS
NOM. AC INPUT POWER (kW)	15.36 kW
MAX OCP CIRCUIT BREAKER	80 AMPS
SMART CIRCUIT 1 & 2	
MAX OCP CIRCUIT BREAKER	
SINGLE POLE	40 AMPS
DOUBLE POLE	50 AMPS
BUSBAR MAX AC CURRENT (A)	280 AMPS
GFP (Y/N)	YES
PROTECT. RATING	NEMA 3R

NOTES:

- CONNECT CRITICAL LOADS PANEL VIA FRANKLIN OUTPUTS.
- PROVIDE (1) 200A MAIN BREAKER.
- BACK-FEED PV COMBINER OUTPUT VIA 70A BREAKER IN FRANKLIN aGATE PANEL.
- PROVIDE (1) 125 AMP BREAKER FOR aPOWER
- PROVIDE (1) 60 AMP BREAKER FOR FURNACE
- PROVIDE (1) 30 AMP BREAKER FOR A/C
- PCS IN AGATE SET TO NO EXPORT OF BATTERY POWER.

AC DISCONNECT "A" (NEW)	
MAKE	EATON
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	100 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

PV COMBINER PANEL (NEW)	
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:

- BACK-FEED INVERTER "A" & "B" OUTPUT VIA (2) 40 AMP BREAKERS AT THE OPPOSITE END OF THE BUS BAR FROM THE INCOMING FEEDERS.
- PROVIDE WITH PERMANENT LABEL THAT READS, "FED BY MULTIPLE POWER SOURCES".

AC DISCONNECT "B" (NEW)	
MAKE	EATON
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	200 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

BATTERY COMBINER PANEL (NEW)	
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

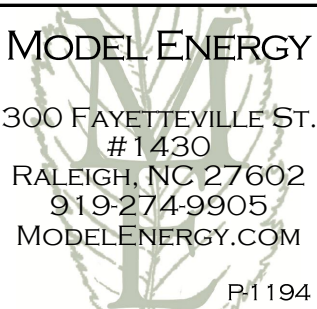
NOTES:

- BACK-FEED BATTERY OUTPUT VIA (2) 60 AMP BREAKER AT THE OPPOSITE END OF THE BUS BAR FROM THE INCOMING FEEDERS.
- PROVIDE WITH PERMANENT LABEL THAT READS, "FED BY MULTIPLE POWER SOURCES".

SEAL:



ENGINEER:



MODEL ENERGY
300 FAYETTEVILLE ST.
#1430
RALEIGH, NC 27602
919-274-9905
MODELENERGY.COM
P1194

JOB TITLE:

NEW SOLAR PV SYSTEM
15.300 kW DC INPUT
15.200 kW AC EXPORT

TYLER HEISHMAN
2603 ABATTOIR ROAD
COATS, NC 27521

CLIENT:



SOUTHERN
ENERGY
MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	05/27/25

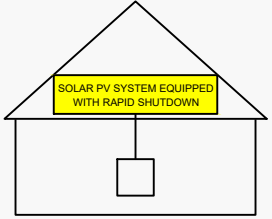
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ELECTRICAL
INFORMATION

PV4.2

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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



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

WARNING: PHOTOVOLTAIC POWER SOURCE

NEC 690.31 (G)(3)&(4)
PLACE ON ALL JUNCTION BOXES, EXPOSED RACEWAYS, AND OTHER WIRING METHODS EVERY 10' AND ON EVERY SECTION SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

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

WARNING

MULTIPLE POWER SOURCES ONSITE
UTILITY SERVICE DISCONNECT LOCATED

NEC 705.10
PLACE AT SERVICE EQUIPMENT AND PV SYSTEM DISCONNECT MEANS

PV SYSTEM DISCONNECT

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

WARNING

THREE POWER SUPPLY SOURCES: UTILITY GRID, BATTERY, AND PV SOLAR ELECTRIC SYSTEM

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

PCS CONTROLLED CURRENT SETTING: 200 AMPS

THE MAXIMUM OUTPUT CURRENT FROM THIS SYSTEM TOWARDS THE MAIN PANEL IS CONTROLLED ELECTRICALLY. REFER TO THE MANUFACTURER'S INSTRUCTIONS FOR MORE INFORMATION.

NEC 705.13
PLACE ON PANELS CONNECTED TO GATEWAY

WARNING

FED BY MULTIPLE POWER SOURCES

TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING UTILITY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR

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

EQUIPMENT LABEL NOTES

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

WARNING

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

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

WARNING

POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

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

DIRECT CURRENT PHOTOVOLTAIC POWER SOURCE

MAXIMUM VOLTAGE 600 VDC
MAX CIR. CURRENT 26.5 AMPS

NEC 690.53
PLACE ON ALL DC DISCONNECTING MEANS

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLT. 240 VAC
MAXIMUM OPERATING AC OUTPUT CURRENT 64.0 AMPS

NEC 690.54
PLACE ON INTERCONNECTION DISCONNECTING MEANS

SEAL:



ENGINEER:

MODEL ENERGY

300 FAYETTEVILLE ST.
#1430
RALEIGH, NC 27602
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05/27/25

EQUIPMENT LABELS

PV5.1