PV MATERIAL SUMMARY: DISTRIBUTOR

REC400NP3 BLACK	20
IQ7PLUS-72-2-US	20
X2-IQ-AM1-240-4	1
Q-12-17-240	22
Q-SEAL-10	2
Q-TERM-10	2
XR-10-168B	10
XR10-BOSS-01-M1	8
UFO-CL-01-B1	44
UFO-STP-30MM-B1	8
XR-LUG-03-A1	2
4 IN QB1	41
MI-BHW	20
GC66803 Geocel Sealant	3
SOLADECK 0799-5B	1
TESLA POWERWALL 2	2
TESLA BACKUP GATEWAY GEN 2	1

NC SOLAR NOW

CLIENT INFO

ALEXANDER LEHMAN
130 OLD FIELD LOOP
SANFORD,NC 27332

PROJECT INFO

DC INPUT:	8.000 kW
AC EXPORT:	5.800 kW
DOI INSPT. METHOD:	OPTION 2

Model Energy
300 Fayetteville St.
#1430
Raleigh, NC 27602
919-274-9905
ModelEnergy.com
P-1194

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING
7/1/23

CODE REFERENCES

NATION ELECTRICAL CODE v. 2017
NC FIRE PROTECTION CODE v. 2018
NC BUILDING CODE v. 2018
NC RESIDENTIAL CODE v. 2018
ACSE v. 7-10

SITE CONDITIONS

WIND SPEED:	116 MPH
RISK CATEGORY:	II
EXPOSURE:	B
SNOW:	10 PSF

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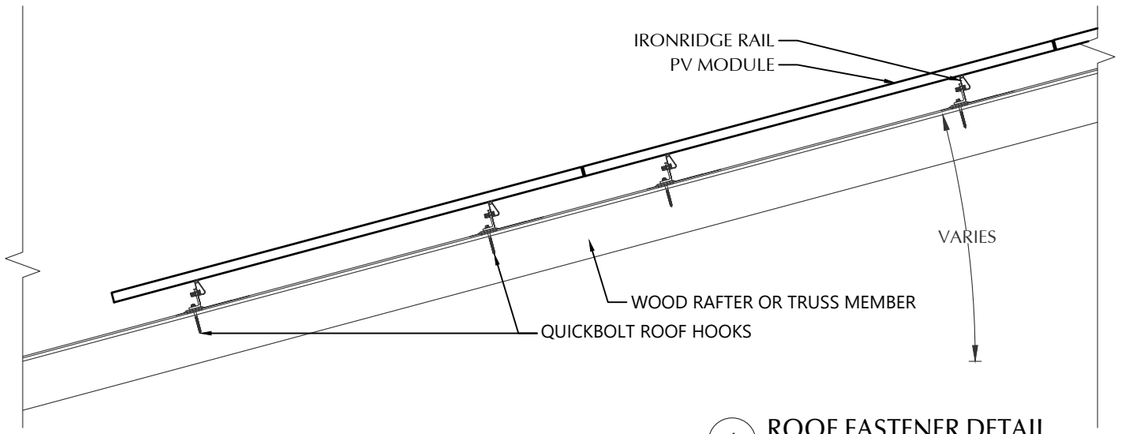
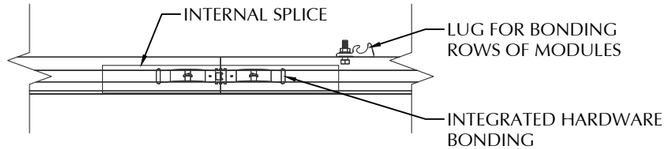
PV SYSTEM COVER PAGE

PV-1.1



1 ROOF FASTENER DETAIL
NOT TO SCALE



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

SIGNED:

PV MODULES

MAKE	REC
MODEL	REC400NP3 BLACK
WIDTH	40.90 IN
LENGTH	74.80 IN
THICKNESS	30 MM
WEIGHT	47.00 LBS.
ARRAY AREA	425 SQFT.
ARRAY WEIGHT	1062 LBS.

ROOF SUMMARY

STRUCTURE:	
TYPE	TRUSSES
MATERIAL	SOUTHERN PINE #2
SIZE	2 X 4
SPACING	24 IN O.C.
ALLOWABLE SPAN	88 IN
PITCH	8/12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	COMPOSITE
THICKNESS	7/16 IN
WEIGHT	1.60 LBS/SQFT
ROOFING:	
TYPE	ASPHALT SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.30 LBS./SQFT.

ROOF MOUNT SUMMARY

MAXIMUM (IN)	MOUNT SPACING	RAIL OVERHANG
WIND ZONE 1	72 IN	19 IN
WIND ZONE 2	48 IN	19 IN
WIND ZONE 3	48 IN	19 IN

ROOF LOADING

GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD	20 LBS./SQFT.
DEAD LOAD	
ROOFING	3.9 LBS/SQFT.
PV ARRAY	2.5 LBS./SQFT.
TOTAL	6.4 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-24.6 LBS./SQFT.
UPLIFT ZONE 2	-29.0 LBS./SQFT.
UPLIFT ZONE 3	-29.0 LBS./SQFT.
DOWNWARD	23.0 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-456 LBS.
UPLIFT ZONE 2	-359 LBS.
UPLIFT ZONE 3	-359 LBS.
DOWNWARD	427 LBS.

ROOF MOUNT & FASTENER

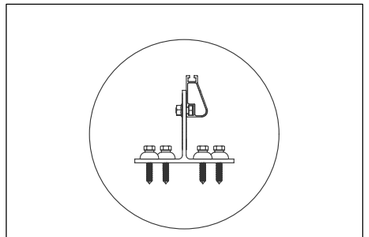
ROOF MOUNT:	
MAKE	QUICKBOLT
MODEL	4 IN QB1
MATERIAL	STAINLESS / EPDM
FASTENER:	
MAKE	QUICK SCREWS
MODEL	HANGER BOLT
MATERIAL	304 SS
SIZE	5/16-18 X 5-1/4"
GENERAL:	
WEIGHT	0.56 LBS.
FASTENERS PER MOUNT	1
MAX. PULL-OUT FORCE	960.0 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	480.0 LBS.

MOUNTING RAILS

MAKE	IRONRIDGE
MODEL	XR10
MATERIAL	ALUMINUM
WEIGHT	0.425 LBS/IN
SPACING	37 IN

ALTERNATIVE ATTACHMENT:

MAY BE USED WHERE STRUCTURAL MEMBERS ARE NOT ACCESSIBLE



ROOF MOUNT & FASTENER

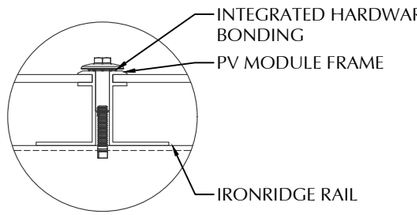
ROOF MOUNT:	
MAKE	QUICKBOLT
MODEL	QB DECK MOUNT 16317
MATERIAL	STAINLESS / EPDM
FASTENER:	
MAKE	QUICK SCREWS
MODEL	HEX LAG PN# 16318
MATERIAL	304 SS
SIZE	5/16" X 1-3/4"
GENERAL:	
WEIGHT	0.8819
FASTENERS PER MOUNT	4
MAX. PULL-OUT FORCE	705.0 LBS.
SAFETY FACTOR	3
DESIGN PULL-OUT FORCE	235.0 LBS.

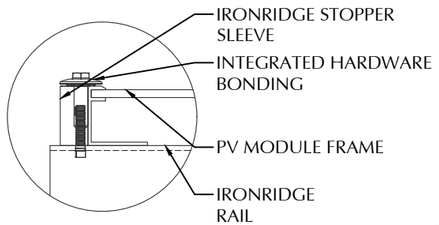
ROOF MOUNT SUMMARY

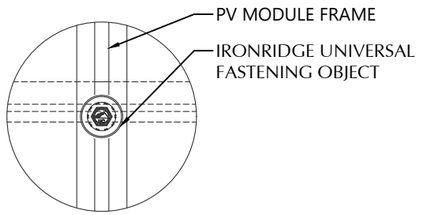
MAXIMUM (IN)	MOUNT SPACING	RAIL OVERHANG
WIND ZONE 1	37 IN	11 IN
WIND ZONE 2	28 IN	11 IN
WIND ZONE 3	26 IN	10 IN

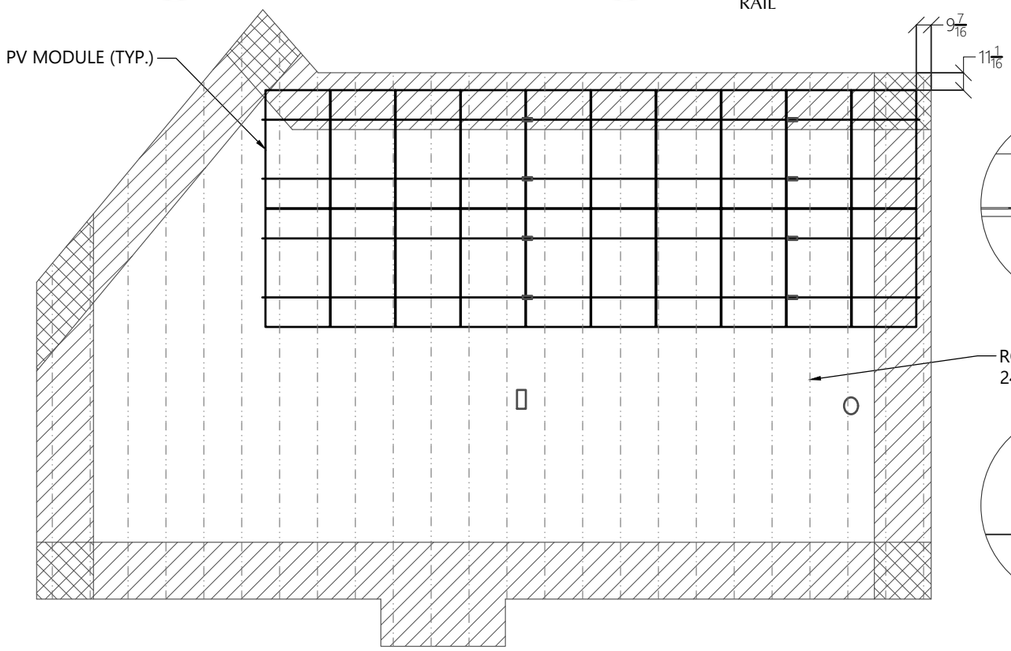
ROOF LOADING

FASTENER LOAD:	
UPLIFT ZONE 1	-234 LBS.
UPLIFT ZONE 2	-209 LBS.
UPLIFT ZONE 3	-194 LBS.
DOWNWARD	219 LBS.

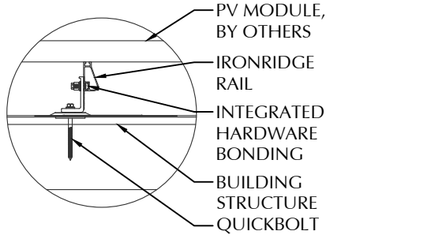


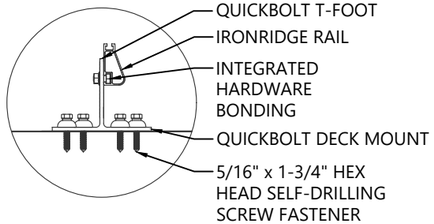






2 ROOF A ARRAY LAYOUT
1/8" = 1'-0"





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PV SYSTEM STRUCTURAL

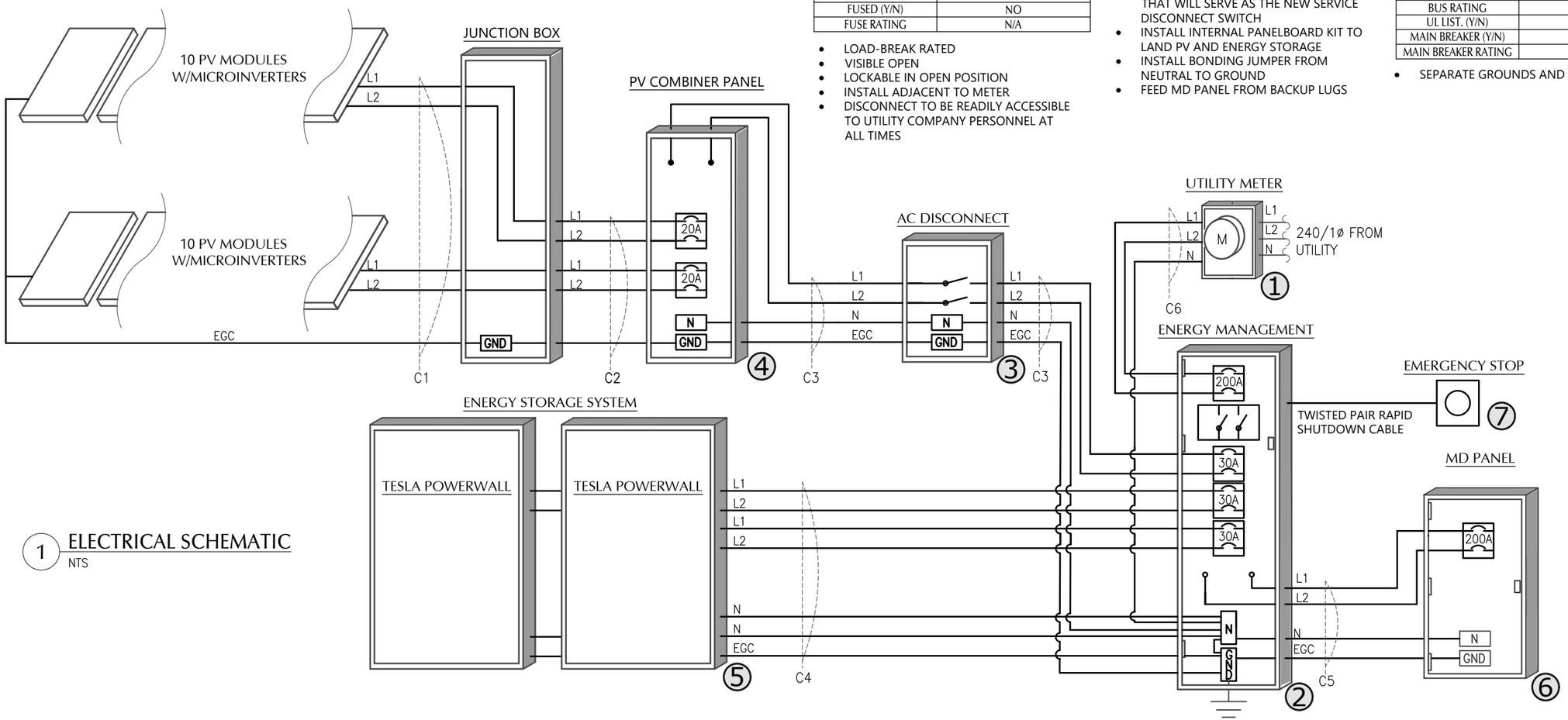
PV-2.1

CONDUCTOR SCHEDULE

TAG	CURRENT CARRYING CONDUCTORS			GROUNDING CONDUCTORS			CONDUIT/RACEWAY			NOTES
	QTY.	SIZE	INSULATION	QTY.	SIZE	INSULATION	QTY.	SIZE	LOCATION	
C1	4	12 AWG	DG CABLE	1	6 AWG	BARE	-	-	FREE AIR	1
C2	4	10 AWG	THWN	1	10 AWG	THWN	1	3/4"	EXT/INT	2,4
C3	3	10 AWG	THWN	1	10 AWG	THWN	1	1"	EXTERIOR	2,4
C4	6	10 AWG	THWN	1	10 AWG	THWN	1	1"	EXT/INT	2,4
C5	3	4/0 AWG ALUMINUM	XHHW	1	3 AWG	THWN-2	1	2"	EXT/INT	2,4
C6	3	4/0 AWG ALUMINUM	XHHW	-	-	-	1	2"	EXT/INT	2,4
XC	-	-	-	-	-	-	-	-	-	3

NOTES:

1. MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
2. CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED.
3. EXISTING CONDUCTORS, FIELD VERIFY
4. EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR
5. PLEASE REFERENCE NOTES ON PV-4.1 FOR ADDITIONAL DETAIL



1 ELECTRICAL SCHEMATIC
NTS

PV MODULE

MAKE	REC
MODEL	REC400NP3 BLACK
NOM. POWER (PNOM)	400 WATTS
NOM. VOLT. (VMPP)	37.6 VOLTS
O.C. VOLT (VOC)	45.0 VOLTS
MAX. SYS. VOLT.	1000 VOLTS
NOM. CURR. (IMPP)	10.6 AMPS
S.C. CURR. (ISC)	11.4 AMPS
TEMP. COEF. (PMPP)	-0.34 %/C
TEMP. COEF. (Voc)	-0.26 %/C
MAX SERIES FUSE	25 AMPS
UL COMPLIANT (Y/N)	YES

ENERGY STORAGE SYSTEM

MAKE	TESLA
MODEL	POWERWALL 2
USABLE ENERGY	13.5 kWh
NOM. VOLT.	240 VOLTS
REAL POWER CONT.	5000 WATTS
UL LIST. (Y/N)	YES
OCPD	30 AMPS
PROTECT RATING	NEMA 3R

AC DISCONNECT

MAKE	GENERIC
MODEL	NA
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	30 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	NO
FUSE RATING	N/A

- 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

MAKE	ENPHASE
MODEL	X2-IQ-AM1-240-4
INPUT:	
MAX BRANCH CIRCUITS	4 TOTAL
BRANCH CIRCUIT OCPD	50 AMPS
OUTPUT:	
MAX POWER	15600 WATTS
NOM. VOLTAGE	240 VOLTS
BUS RATING	125 AMPS
MAIN BREAKER Y/N	NO
ENCL. RATING	NEMA TYPE 3R
UL LIST. (Y/N)	YES

JUNCTION BOX

MAKE	SOLADECK
PROTECT. RATING	NEMA TYPE 3R
UL LIST. (Y/N)	YES

ENERGY MANAGEMENT

MAKE	TESLA
MODEL	BACKUP GATEWAY 2
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
DISCONNECT CURR.	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
MAIN BREAKER RATING	200 AMPS

- TROUGH MAY BE USED IF NECESSARY
- INSTALL 200A EATON MAIN BREAKER THAT WILL SERVE AS THE NEW SERVICE DISCONNECT SWITCH
- INSTALL INTERNAL PANELBOARD KIT TO LAND PV AND ENERGY STORAGE
- INSTALL BONDING JUMPER FROM NEUTRAL TO GROUND
- FEED MD PANEL FROM BACKUP LUGS

DC / AC INVERTER

MAKE	ENPHASE
MODEL	IQ7PLUS-72-2-US
DC INPUT:	
POWER RANGE (WATTS)	235-440
MIN/MAX START VOLT.	22 / 60
OPERATING VOLT. RANGE	16-60
MAX. CURRENT	15 AMPS
MODULE COMPATIBILITY	60 & 72 CELL
AC OUTPUT:	
CEC EFFICIENCY	1 WATTS
NOM. POWER	290 WATTS
NOM. VOLT.	211-240-264
MAX. CURR.	1.21 AMPS
DC DISC. (Y/N)	NO
RAPID SHUTDOWN (Y/N)	YES
PROTECT. RATING	NEMA TYPE 6
UL LIST. (Y/N)	YES
MAX BRANCH CIRCUIT	13

EMERGENCY STOP

MAKE	EATON
MODEL	M22-PVT
ENCL. RATING	NEMA 4X
UL LIST. (Y/N)	YES

MD PANEL (EXISTING)

MAKE	SQUARE D
MODEL	QOC42UF
ENCL. RATING	NEMA 1
VOLT. RATING	240 VOLTS
BUS RATING	225 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
MAIN BREAKER RATING	200 AMPS

- SEPARATE GROUNDS AND NEUTRALS

NC SOLAR NOW

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PV SYSTEM ELECTRICAL

PV-3.1

⚠WARNING

PHOTOVOLTAIC SYSTEM COMBINER PANEL

DO NOT ADD LOADS

④ NEC 705.12 (C)(3)
PLACE ON PV COMBINER PANEL

⚠WARNING

POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

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

⚠WARNING⚠

THREE POWER SOURCES

SOURCES: UTILITY GRID, BATTERY AND PV SOLAR ELECTRIC SYSTEM

① ② ④ ⑥ NEC 705.12 (B)(3)
PLACE ON ALL EQUIPMENT THAT IS SUPPLIED BY BOTH POWER SOURCES

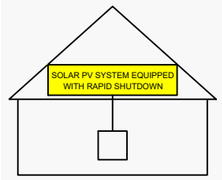
⚠WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR.

②④ NEC 705.12 (B)(2)(3)(c)
PLACE ON PV COMBINER PANEL.

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



② 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

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

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

PV SYSTEM DISCONNECT

③ NEC 690.13 (B)
PLACE ON PV SYSTEM DISCONNECTING MEANS.

BATTERY DISCONNECT

⑦ PLACE ON EMERGENCY STOP SWITCH

⚠WARNING

ELECTRIC SHOCK HAZARD

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

②

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLTAGE	240	V
MAXIMUM OPERATING AC OUTPUT CURRENT	24.2	A

③ NEC 690.54
PLACE ON INTERCONNECTION DISCONNECTING MEANS

WARNING:

IN THE EVENT OF A UTILITY OUTAGE, THIS PANEL IS FED FROM ENERGY STORAGE SYSTEM.

④ ⑥ PLACE ON BACKED UP LOAD PANEL(S).

GENERATION PANEL:

IN THE EVENT OF AN EMERGENCY, TURN OFF ALL BREAKERS TO DISCONNECT BACKUP POWER SOURCE(S).

② PLACE ON BACKUP GATEWAY

SERVICE DISCONNECT LOCATED: EXTERIOR NE WALL OF RESIDENCE

BATTERY DISCONNECT LOCATED: EXTERIOR NE WALL OF RESIDENCE

PV DISCONNECT LOCATED: EXTERIOR NE WALL OF RESIDENCE

②③⑤ NEC 705.10
PLACE AT SERVICE EQUIPMENT AND PV SYSTEM DISCONNECTING MEANS.

LABEL NOTES

1. LABELS SHOWN ARE HALF THEIR ACTUAL REQUIRED SIZE.
2. LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT.
3. DC CONDUIT SHALL BE MARKED WITH REQUIRED LABEL EVERY 10 FEET.
4. LABELS WILL BE APPLIED IN ACCORDANCE WITH THE NEC. SOME LABELS MAY NOT BE NECESSARY.

DC WIRING NOTES

1. CONDUCTORS SHALL BE COPPER, RATED AT NOT LESS THAN 600 VOLTS FOR RESIDENTIAL CONSTRUCTION AND NOT LESS THAN 1000 VOLTS FOR COMMERCIAL CONSTRUCTION.
2. MINIMUM SIZE SHALL BE #10 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. EXPOSED WIRING CONDUCTOR INSULATION SHALL BE TYPE PV WIRE, USE-2, OR RHW-2 WHERE THE OUTER LAYER OF THE INSULATION IS UV, SUNLIGHT, AND MOISTURE RESISTANT.
6. EXTERIOR WIRING CONDUCTOR INSULATION SHALL BE TYPE THWN-2 AND INSTALLED IN ELECTRICAL METALLIC TUBING(EMT) OR RIGID POLYVINYL CHLORIDE CONDUIT(PVC). ALTERNATIVELY, METAL CLAD CABLE(MC) CAN BE USED AS WELL WHEN RATED FOR USE IN WET LOCATIONS.
7. INTERIOR WIRING CONDUCTOR INSULATION SHALL BE TYPE THHN-2 AND INSTALLED IN ELECTRICAL METALLIC TUBING(EMT), FLEXIBLE METAL CONDUIT(FMC), OR METAL CLAD CABLE(MC).
6. USE SCHEDULE 40 PVC OUTDOORS WHERE NOT SUBJECT TO PHYSICAL DAMAGE OR BELOW FLOOR SLAB. USE SCHEDULE 80 PVC OUTDOORS WHERE SUBJECT TO PHYSICAL DAMMAGE
7. MINIMUM CONDUIT SIZE TO BE 1/2".
8. WIRING METHODS TO CONFORM TO ARTICLES 330, 334, 348, 350, 352, 356, AND 358 OF THE 2017 NEC.

AC WIRING NOTES

1. CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS.
2. MINIMUM SIZE SHALL BE #14 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. EXTERIOR WIRING CONDUCTOR INSULATION SHALL BE TYPE THWN AND INSTALLED IN ELECTRICAL METALLIC TUBING(EMT), RIGID POLYVINYL CHLORIDE CONDUIT(PVC), LIQUID-TIGHT FLEXIBLE METAL CONDUIT(LFMC), OR LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT(LFNC) . ALTERNATIVELY, METAL CLAD CABLE(MC) CAN BE USED AS WELL WHEN RATED FOR USE IN WET LOCATIONS.
4. INTERIOR WIRING CONDUCTOR INSULATION SHALL BE TYPE THHN AND INSTALLED IN ELECTRICAL METALLIC TUBING(EMT), FLEXIBLE METAL CONDUIT(FMC), METAL CLAD CABLE(MC), OR ROMEX.
5. USE SCHEDULE 40 PVC OUTDOORS WHERE NOT SUBJECT TO PHYSICAL DAMAGE OR BELOW FLOOR SLAB. USE SCHEDULE 80 PVC OUTDOORS WHERE SUBJECT TO PHYSICAL DAMMAGE
6. MINIMUM CONDUIT SIZE TO BE 1/2".
7. WIRING METHODS TO CONFORM TO ARTICLES 330, 334, 348, 350, 352, 356, AND 358 OF THE 2017 NEC.

CONSTRUCTION NOTES

1. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE NEC, STATE, AND LOCAL APPLICABLE CODES.
2. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS.
3. ENSURE REQUIRED MAINTENANCE ACCESS AND CLEARANCES ARE MAINTAINED.
4. WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS.
5. FUSES 0 - 600 AMPS SHALL BE UL CLASS "RK-1" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSSMANN, UNLESS NOTED OTHERWISE.
6. ALL TERMINALS/LUGS SHALL BE 75° RATED. ALL TERMINALS, SPLICING CONNECTORS, LUGS, ETC SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED.
7. PROVIDE A PULLWIRE IN ALL EMPTY CONDUITS.
8. ALL PENETRATIONS THROUGH EXTERIOR ROOFS SHALL BE FLASHED IN A WATERPROOF MANNER.
9. ALL PENETRATIONS THROUGH ATTIC FIRE BARRIERS SHALL BE SEALED WITH FIRE-BARRIER SEALANT CAULK.
10. SUPPORT ALL CONDUIT AND EQUIPMENT IN ACCORDANCE W/ NEC. ANY SUSPENDED MATERIALS SHALL BE DIRECTLY SUPPORTED BY THE BUILDING STRUCTURE.
11. METAL CONDUIT COUPLINGS CAN BE COMPRESSION TYPE, THREADED, OR BE SET-SCREW TYPE. PLASTIC CONDUIT COUPLINGS TO BE SOCKET GLUED TYPE.
12. A COMPLETE GROUNDING SYSTEM SHALL BE PRESENT OR PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
13. 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.
14. WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE.
15. PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
16. EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT.
17. 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.
18. A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED AT THE DC DISCONNECT MEANS.
19. 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.
20. ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)
21. A NORTH CAROLINA REGISTERED DESIGN PROFESSIONAL WILL BE REQUIRED TO SEAL THE STRUCTURAL DESIGN AT THE TIME OF PERMIT APPLICATION IF ANY OF THE FOLLOWING EXIST AND ARE ATTESTED TO BY THE APPLICANT:
    - I. THE WEIGHT OF THE PV SYSTEM EXCEEDS THREE (3) POUNDS PER SQUARE FOOT(PSF)
    - II. THE ROOF POSSESSES MORE THAN ONE (1) LAYER OF ASPHALT SHINGLES
    - III. THE ROOFING MATERIAL CONSISTS OF A TYPE OTHER THAN ASPHALT SHINGLES OR METAL
    - IV. THE ROOF IS LOCATED IN A 140 MPH OR GREATER WIND ZONE

NC SOLAR NOW

CLIENT INFO

ALEXANDER LEHMAN
130 OLD FIELD LOOP
SANFORD,NC 27332

PROJECT INFO

DC INPUT:	8.000 kW
AC EXPORT:	5.800 kW
DOI INSPT. METHOD:	OPTION 2

Model Energy
300 Fayetteville St.
#1430
Raleigh, NC 27602
919-274-9905
ModelEnergy.com
P-1194

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING
7/7/23

CODE REFERENCES

NATION ELECTRICAL CODE v. 2017
NC FIRE PROTECTION CODE v. 2018
NC BUILDING CODE v. 2018
NC RESIDENTIAL CODE v. 2018
ACSE v. 7-10

SITE CONDITIONS

WIND SPEED:	116 MPH
RISK CATEGORY:	II
EXPOSURE:	B
SNOW:	10 PSF

SHEET INDEX

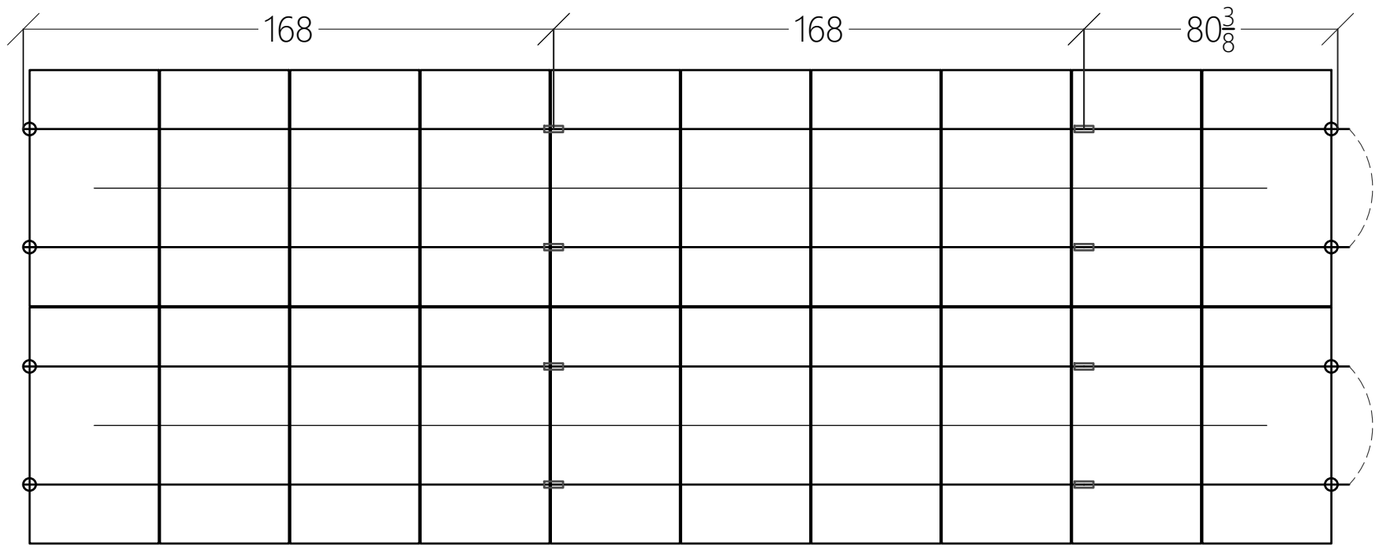
PV-1: COVER SHEET
PV-2: PV STRUCTURAL
PV-3: PV ELECTRICAL
PV-4: PV EQUIPMENT LABELS
PV-5: PV INSTALL GUIDE

VERSIONS

FOR:	DESIGNER	DATE
CONSTRUCTION	CRM	7/5/2023

PV SYSTEM EQUIPMENT LABELS

PV-4.1



1 ARRAY LAYOUT DETAIL
NOT TO SCALE

NC SOLAR NOW

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PV SYSTEM INSTALL GUIDE

PV-5.1