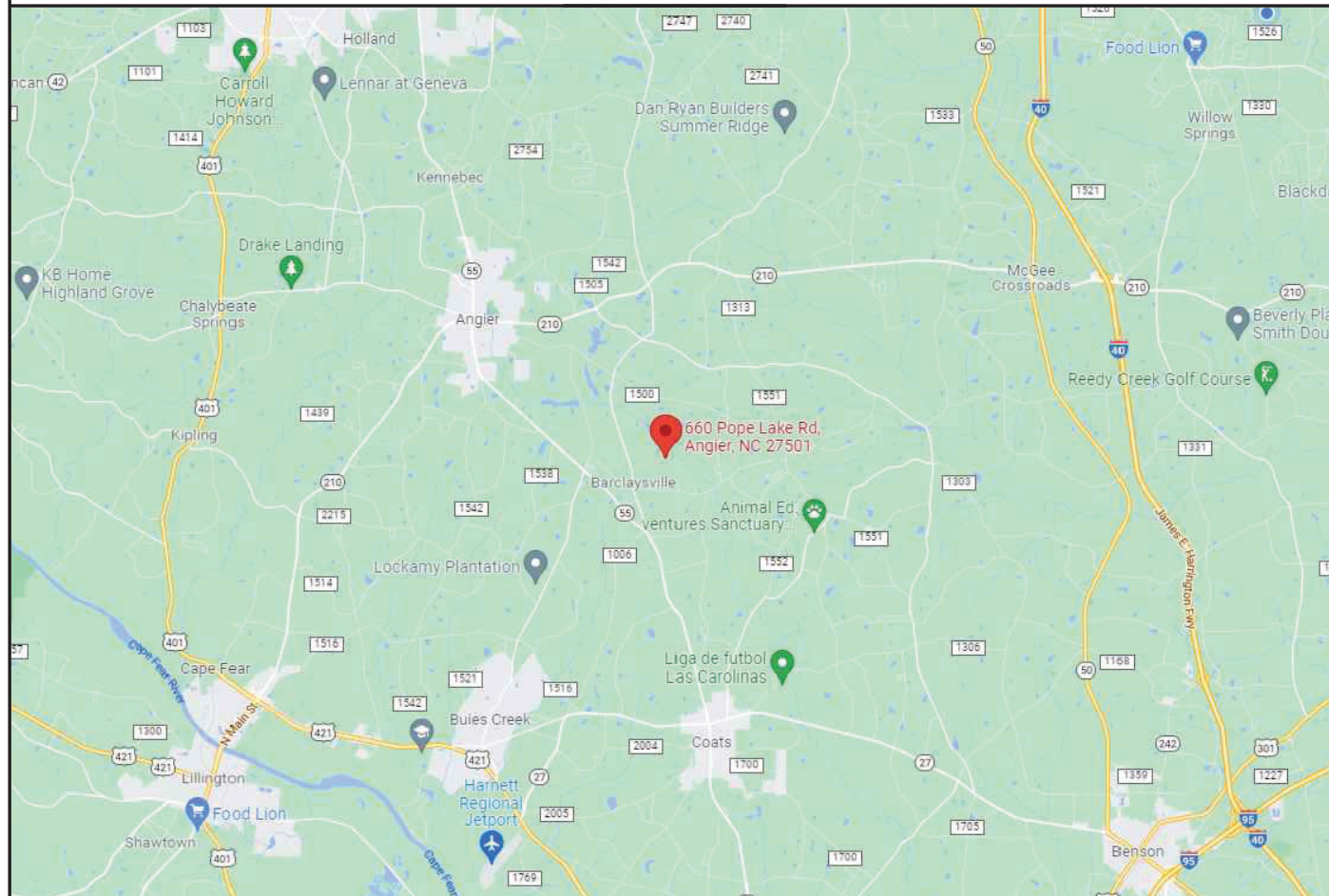
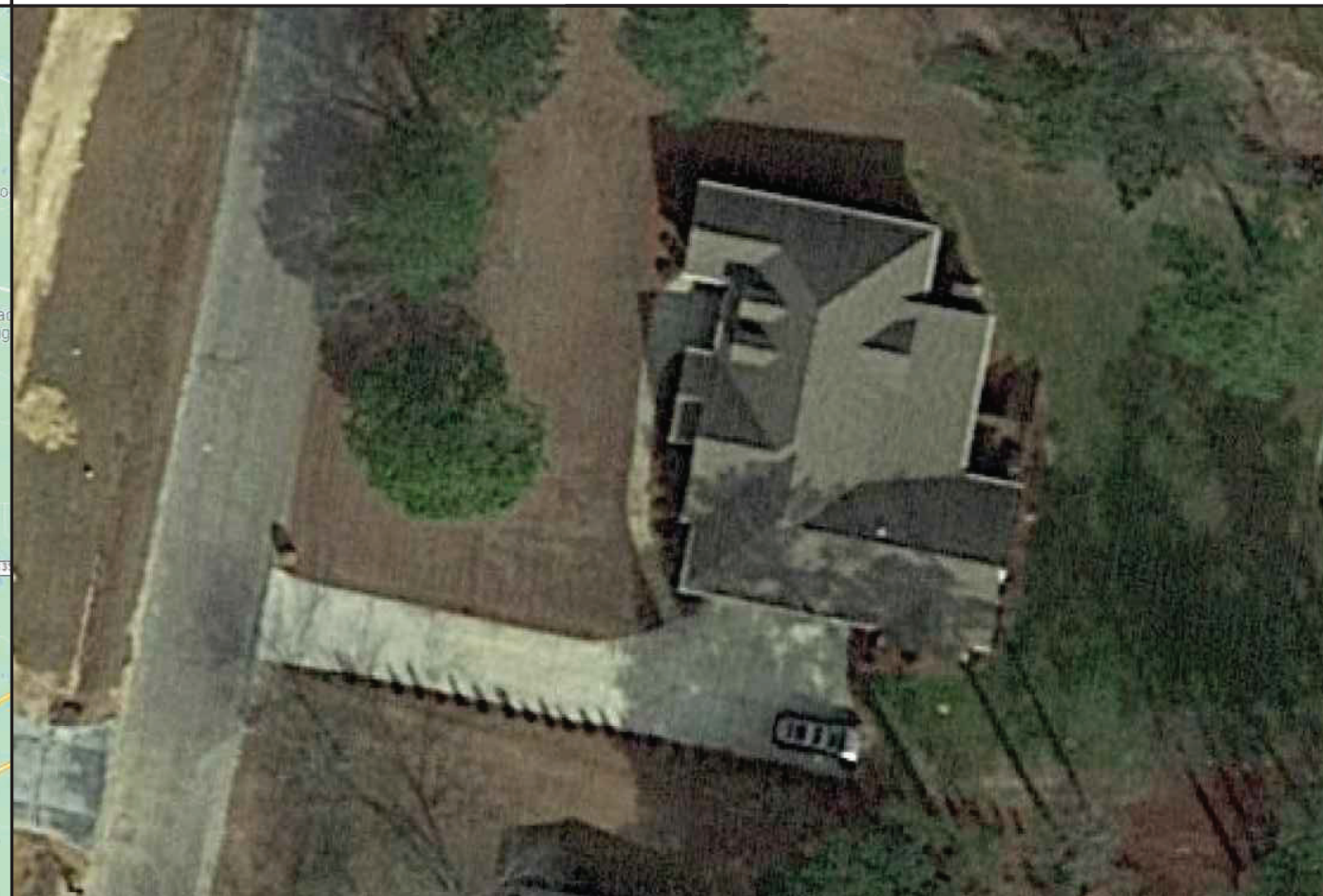


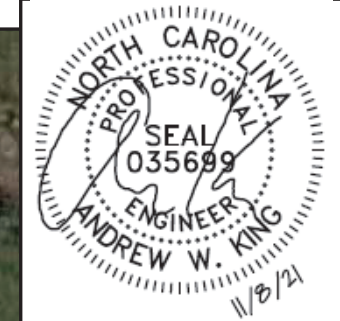
VICINITY MAP



PROPERTY MAP



ENGINEER:



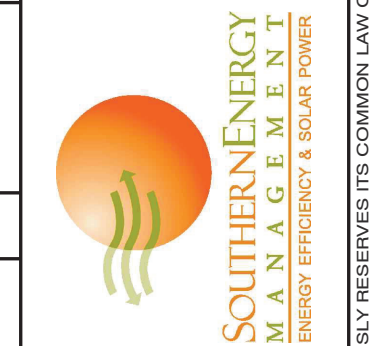
MODEL ENERGY

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

JOB TITLE:

NEW SOLAR PV SYSTEM
22.04 kW DC INPUT
19.00 kW AC EXPORT
Halbert H Mckinnon Jr
660 POPE LAKE ROAD
ANGIER, NC 27501

CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

PROJECT INFORMATION

PV1.1

CONSTRUCTION NOTES

- ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES
- FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS
- WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS
- THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS
- 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
- WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE
- 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.
- PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
- EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
- 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
- A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS
- 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.
- 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.
- ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRICAL METAL TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
I	CURRENT
IMP	CURRENT AT MAXIMUM POWER
ISC	SHORT-CIRCUIT CURRENT
KVA	KILOVOLT AMPERE
KW	KILOWATT
MAX	MAXIMUM
MIN	MINIMUM
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
NOM	NOMINAL
NTS	NOT TO SCALE
PNOM	NOMINAL POWER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SN	SOLAR NOON
STC	STANDARD TEST CONDITIONS
TYP	TYPICAL
V	VOLT
VMP	VOLTAGE AT MAXIMUM POWER
Voc	OPEN-CIRCUIT VOLTAGE
W	WATT



CODE REFERENCES

2017 NATIONAL ELECTRIC CODE
2018 NORTH CAROLINA BUILDING CODE
2018 NORTH CAROLINA RESIDENTIAL CODE
2018 NORTH CAROLINA FIRE CODE

SHEET INDEX

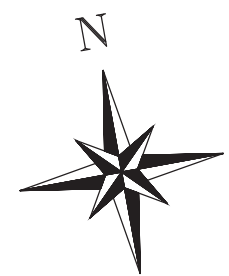
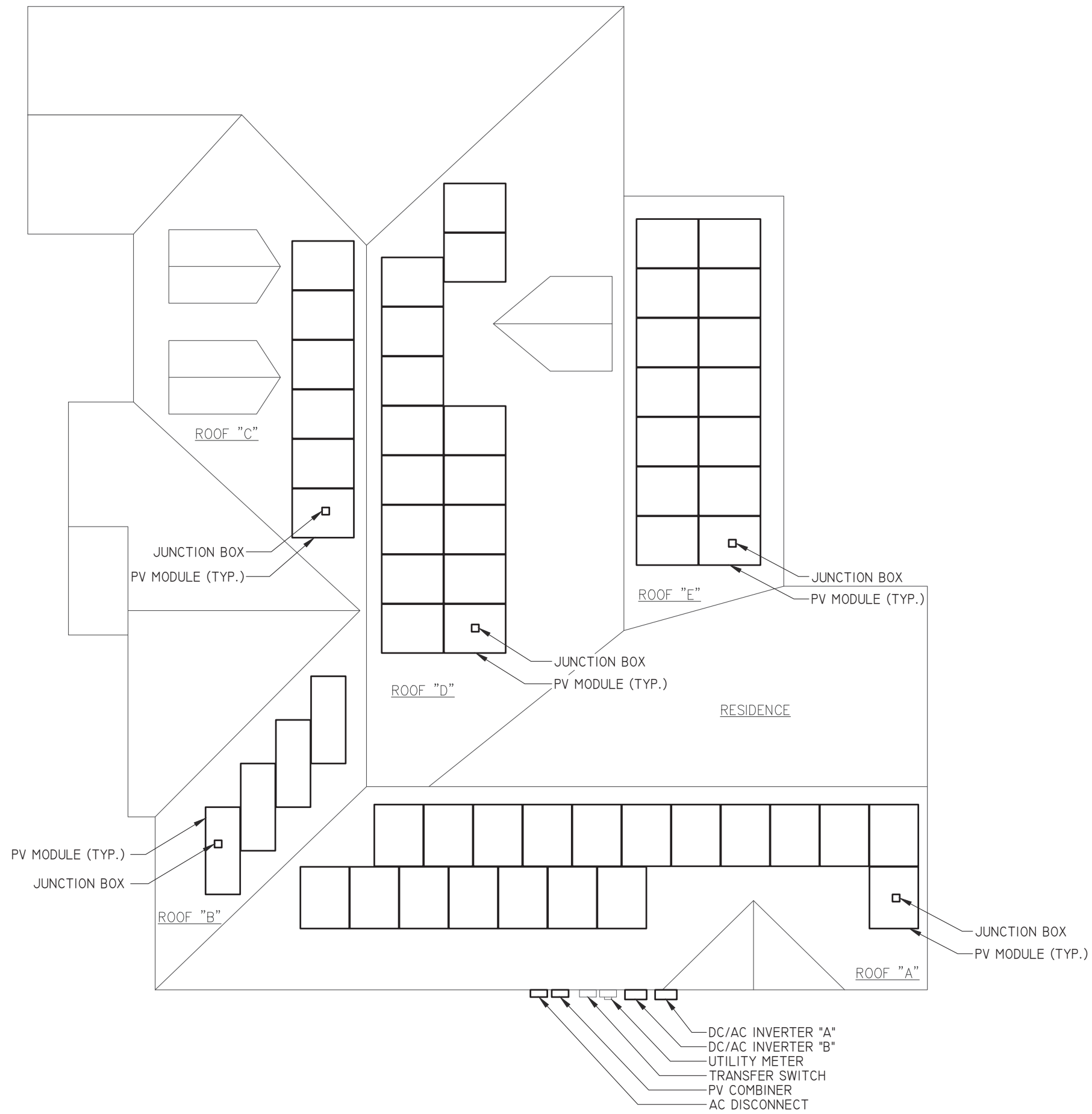
PV1.1 - PROJECT INFORMATION
PV2.1 - SITE INFORMATION
PV3.1 - PV3.5 - STRUCTURAL INFORMATION
PV4.1 - PV4.2 - ELECTRICAL INFORMATION
PV5.1 - EQUIPMENT LABELS

SITE CONDITIONS

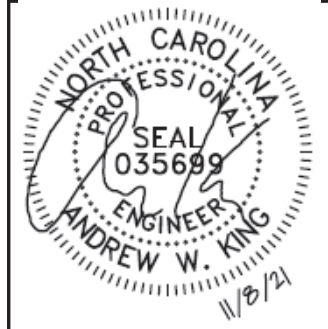
ASCE 7-10 WIND SPEED - 116 MPH
EXPOSURE CATEGORY - B
RISK CATEGORY - II

LEGEND

	DISCONNECT SWITCH
	FUSE
	CIRCUIT BREAKER
	EQUIP. GROUND



ENGINEER:



MODEL ENERGY

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

JOB TITLE:

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22.04 kW DC INPUT
19.00 kW AC EXPORT
Halbert H Mckinnon Jr
660 POPE LAKE ROAD
ANGIER, NC 27501

CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

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	2.4 LBS./SQFT.
TOTAL	6.3 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	-396 LBS.
UPLIFT ZONE 2	-350 LBS.
UPLIFT ZONE 3	-117 LBS.
DOWNWARD	370 LBS.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SNAPNRACK
MODEL	SPEEDSEAL FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16"-18 X 4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 BS.

ARRAY SUMMARY	
# MODULES	19
# ROOF MOUNTS	43
RAIL LENGTH	130 FT.
ARRAY AREA	388 SQFT.
ARRAY WEIGHT	915 LBS.
AZIMUTH @ SN	100°
TILT ANGLE	45°

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	14'-0"
PITCH	12 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.


PV MODULES	
MAKE	Q CELL
MODEL	Q.PEAK DUO BLK-ML-G9 380
WIDTH	40.6"
LENGTH	72.4"
THICKNESS	1.26"
WEIGHT	43.0 LBS

MOUNTING RAILS	
MAKE	SNAPNRACK
MODEL	RES. MOUNTING SYSTEM
MATERIAL	ALUMINUM
WEIGHT	0.42 LBS./FT.
SPACING	36 IN.

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER

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.


SIGNED: 

NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:	
ALL ZONES	MAX. RAIL OVERHANG = 12"
☐ ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
▨ ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
▩ ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"

ENGINEER:



MODEL ENERGY


300 FAYETTEVILLE ST.
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RALEIGH, NC 27602
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JOB TITLE:

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660 POPE LAKE ROAD
ANGIER, NC 27501

CLIENT:

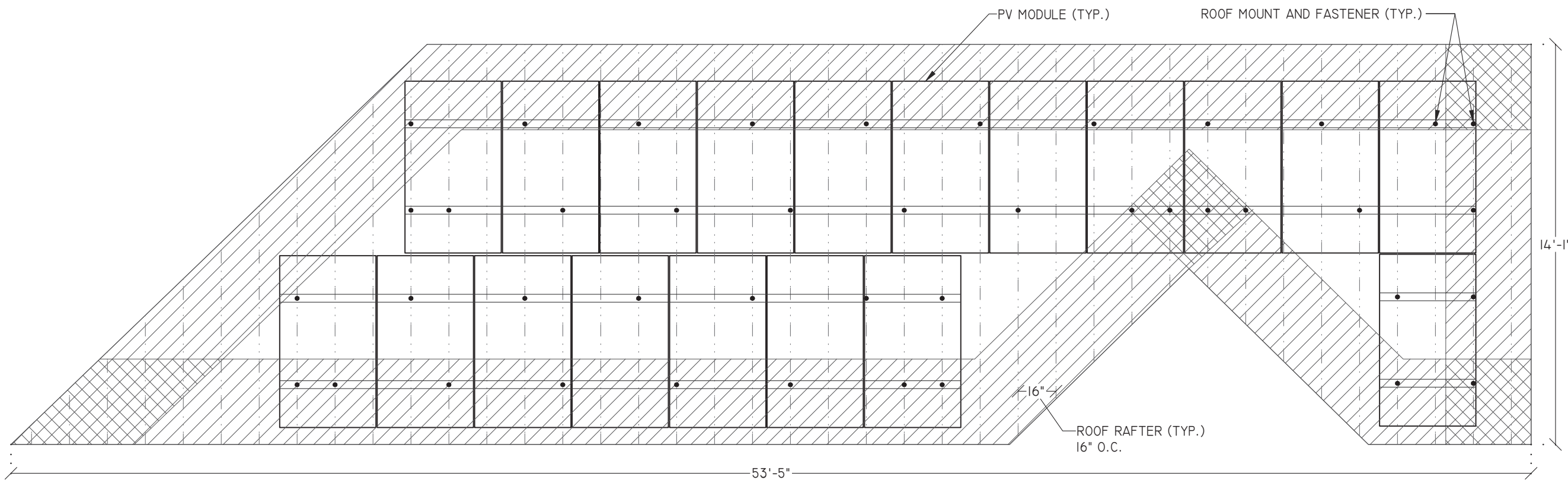


SOUTHERN ENERGY MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

STRUCTURAL INFORMATION

PV3.1



1 MODULE, RACKING, AND FASTENER LAYOUT – ROOF PLANAR VIEW

SCALE: 1/4" = 1'-0"

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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	-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	-222 LBS.
UPLIFT ZONE 2	-196 LBS.
UPLIFT ZONE 3	-65 LBS.
DOWNWARD	208 LBS.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SNAPNRACK
MODEL	SPEEDSEAL FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16"-18 X 4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 BS.

ARRAY SUMMARY	
# MODULES	4
# ROOF MOUNTS	24
RAIL LENGTH	49 FT.
ARRAY AREA	82 SQFT.
ARRAY WEIGHT	217 LBS.
AZIMUTH @ SN	100°
TILT ANGLE	45°

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	14'-0"
PITCH	12 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.


PV MODULES	
MAKE	Q CELL
MODEL	Q.PEAK DUO BLK-ML-G9 380
WIDTH	40.6"
LENGTH	72.4"
THICKNESS	1.26"
WEIGHT	43.0 LBS

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER

MOUNTING RAILS	
MAKE	SNAPNRACK
MODEL	RES. MOUNTING SYSTEM
MATERIAL	ALUMINUM
WEIGHT	0.42 LBS./FT.
SPACING	20 IN.

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.

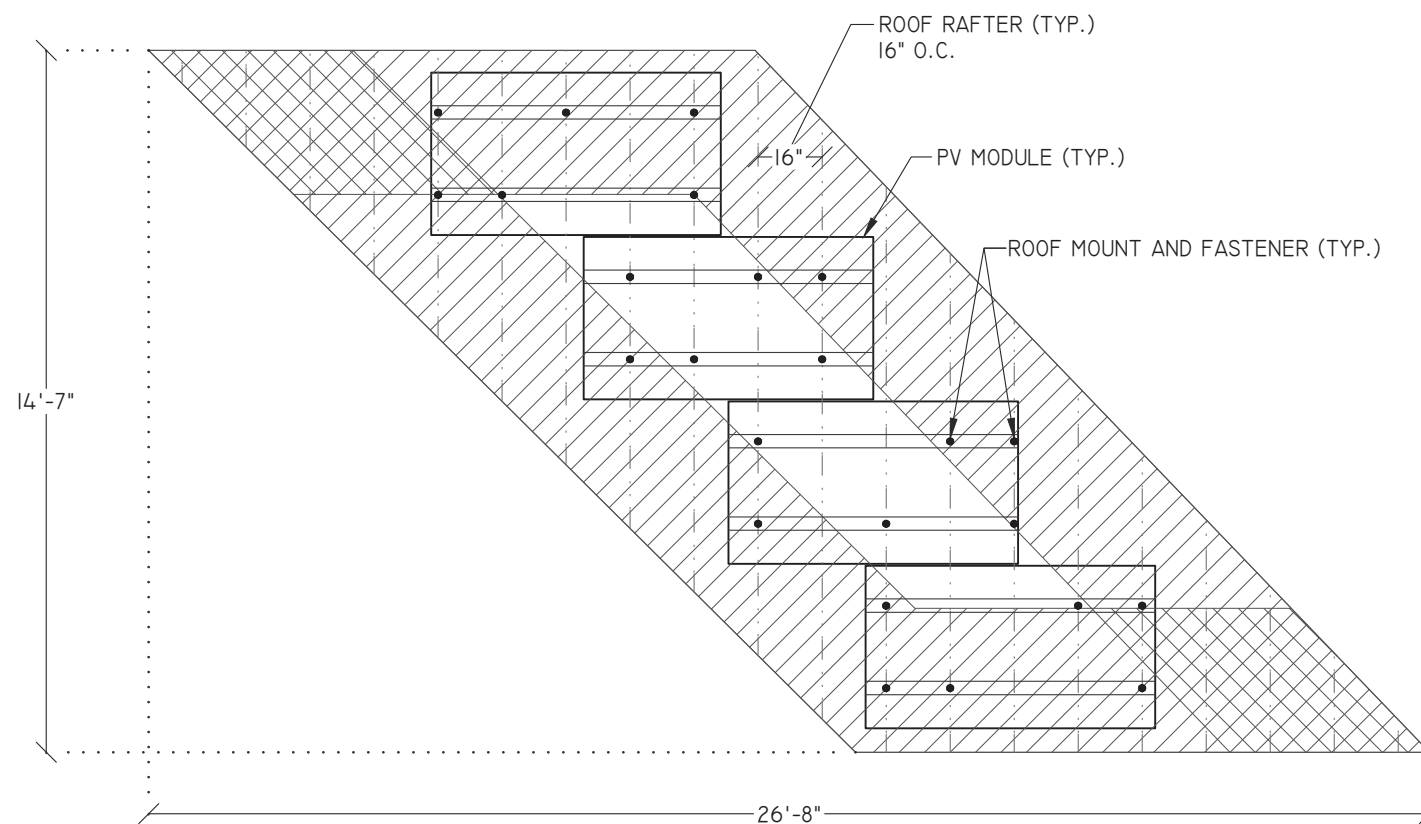
SIGNED: 

NAME: ANDREW W. KING, PE

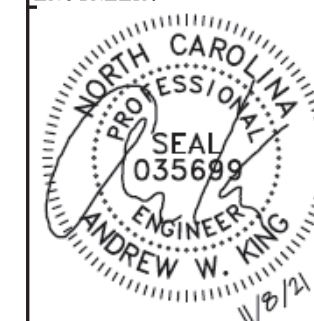
TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES	MAX. RAIL OVERHANG = 12"
☐ ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
▨ ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
▩ ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"



ENGINEER:



MODEL ENERGY

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

JOB TITLE:

NEW SOLAR PV SYSTEM
22.04 kW DC INPUT
19.00 kW AC EXPORT
Halbert H Mckinnon Jr
660 POPE LAKE ROAD
ANGIER, NC 27501

CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

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	2.4 LBS./SQFT.
TOTAL	6.3 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	-297 LBS.
UPLIFT ZONE 2	-350 LBS.
UPLIFT ZONE 3	-175 LBS.
DOWNWARD	278 LBS.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SNAPNRACK
MODEL	SPEEDSEAL FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16"-18 X 4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 BS.

ARRAY SUMMARY	
# MODULES	6
# ROOF MOUNTS	13
RAIL LENGTH	41 FT.
ARRAY AREA	122 SQFT.
ARRAY WEIGHT	289 LBS.
AZIMUTH @ SN	100°
TILT ANGLE	45°

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	14'-0"
PITCH	12 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.

PV MODULES	
MAKE	Q CELL
MODEL	Q.PEAK DUO BLK-ML-G9 380
WIDTH	40.6"
LENGTH	72.4"
THICKNESS	1.26"
WEIGHT	43.0 LBS

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER

MOUNTING RAILS	
MAKE	SNAPNRACK
MODEL	RES. MOUNTING SYSTEM
MATERIAL	ALUMINUM
WEIGHT	0.42 LBS./FT.
SPACING	36 IN.

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.

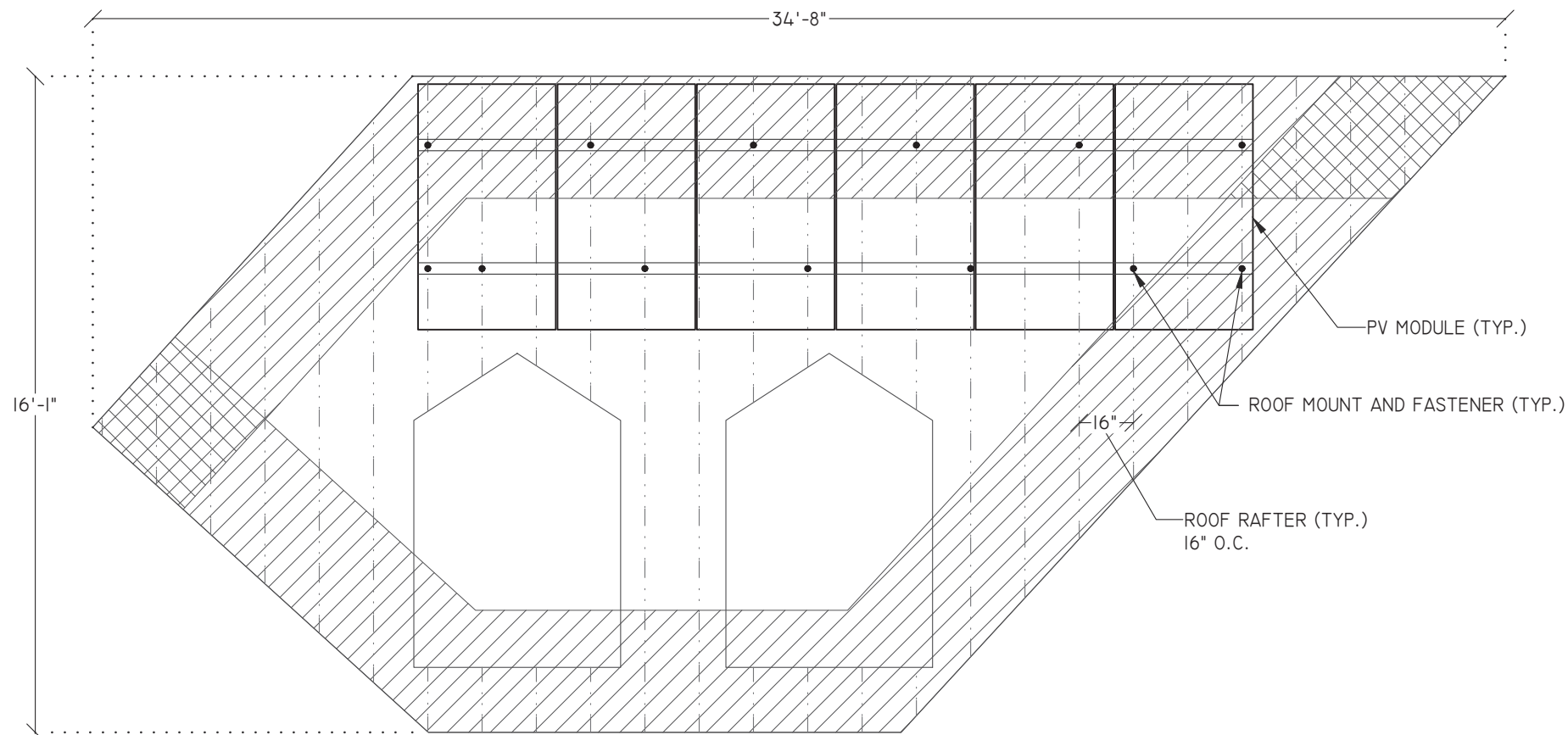
SIGNED: 

NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES	MAX. RAIL OVERHANG = 12"
☐ ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
▨ ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
▩ ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"



ENGINEER:



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STRUCTURAL INFORMATION

PV3.3

ROOF LOADING	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.4 LBS./SQFT.
TOTAL	6.3 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	-396 LBS.
UPLIFT ZONE 2	-350 LBS.
UPLIFT ZONE 3	-117 LBS.
DOWNWARD	370 LBS.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SNAPNRACK
MODEL	SPEEDSEAL FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16"-18 X 4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 BS.

ARRAY SUMMARY	
# MODULES	15
# ROOF MOUNTS	34
RAIL LENGTH	103 FT.
ARRAY AREA	306 SQFT.
ARRAY WEIGHT	723 LBS.
AZIMUTH @ SN	100°
TILT ANGLE	45°

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	14'-0"
PITCH	12 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.


PV MODULES	
MAKE	Q CELL
MODEL	Q.PEAK DUO BLK-ML-G9 380
WIDTH	40.6"
LENGTH	72.4"
THICKNESS	1.26"
WEIGHT	43.0 LBS

MOUNTING RAILS	
MAKE	SNAPNRACK
MODEL	RES. MOUNTING SYSTEM
MATERIAL	ALUMINUM
WEIGHT	0.42 LBS./FT.
SPACING	36 IN.

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER

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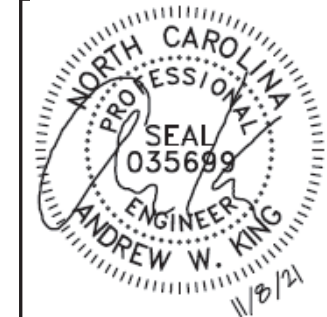
NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES	MAX. RAIL OVERHANG = 12"
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ENGINEER:



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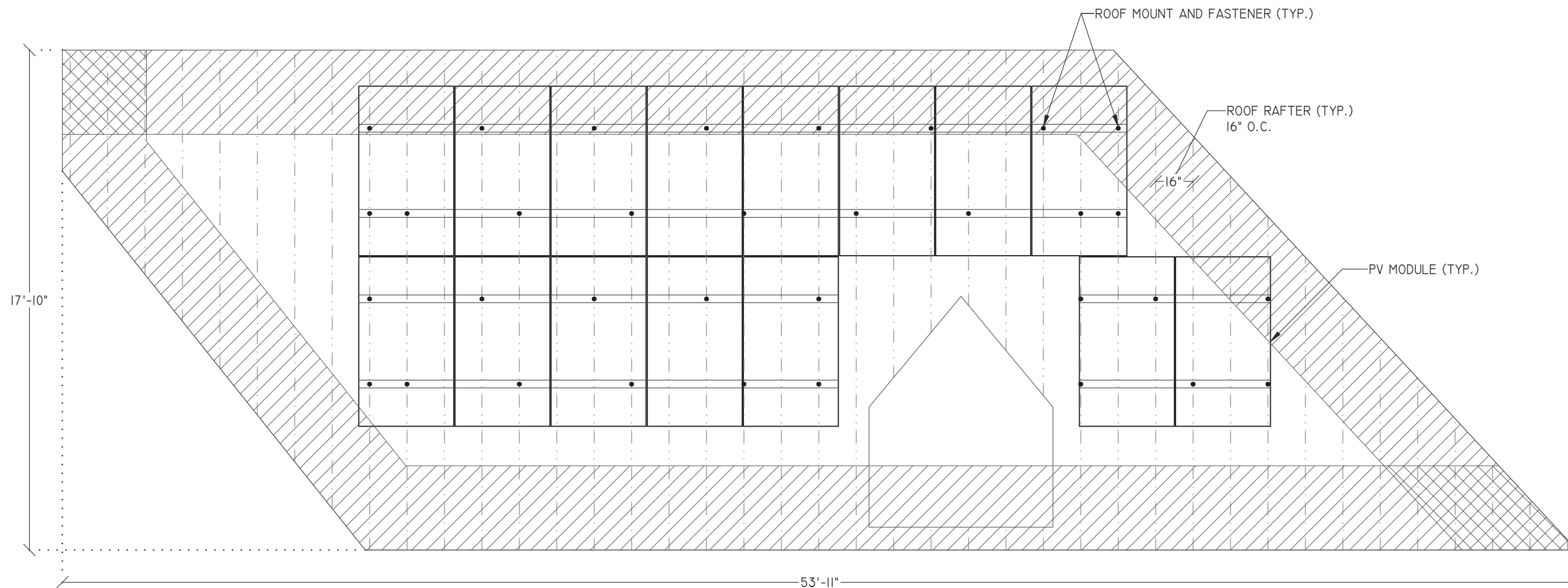
CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

STRUCTURAL INFORMATION

PV3.4



1 MODULE, RACKING, AND FASTENER LAYOUT – ROOF PLANAR VIEW

SCALE: 1/4" = 1'-0"

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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	2.4 LBS./SQFT.
TOTAL	6.3 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	-396 LBS.
UPLIFT ZONE 2	-350 LBS.
UPLIFT ZONE 3	-117 LBS.
DOWNWARD	370 LBS.

MOUNTING RAILS	
MAKE	SNAPNRACK
MODEL	RES. MOUNTING SYSTEM
MATERIAL	ALUMINUM
WEIGHT	0.42 LBS./FT.
SPACING	36 IN.

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SNAPNRACK
MODEL	SPEEDSEAL FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16"-18 X 4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 BS.

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER


ARRAY SUMMARY	
# MODULES	14
# ROOF MOUNTS	31
RAIL LENGTH	96 FT.
ARRAY AREA	286 SQFT.
ARRAY WEIGHT	674 LBS.
AZIMUTH @ SN	100°
TILT ANGLE	45°

PV MODULES	
MAKE	Q CELL
MODEL	Q.PEAK DUO BLK-ML-G9 380
WIDTH	40.6"
LENGTH	72.4"
THICKNESS	1.26"
WEIGHT	43.0 LBS

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" O.C.
EFF. SPAN	14'-0"
PITCH	12 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
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.

SIGNED: 

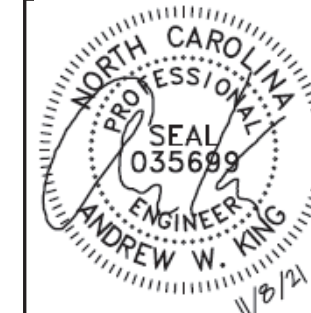
NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ROOF ZONES:

ALL ZONES	MAX. RAIL OVERHANG = 12"
☐ ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
▨ ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
▩ ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"

ENGINEER:



MODEL ENERGY

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

JOB TITLE:

NEW SOLAR PV SYSTEM
22.04 kW DC INPUT
19.00 kW AC EXPORT
Halbert H Mckinnon Jr
660 POPE LAKE ROAD
ANGIER, NC 27501

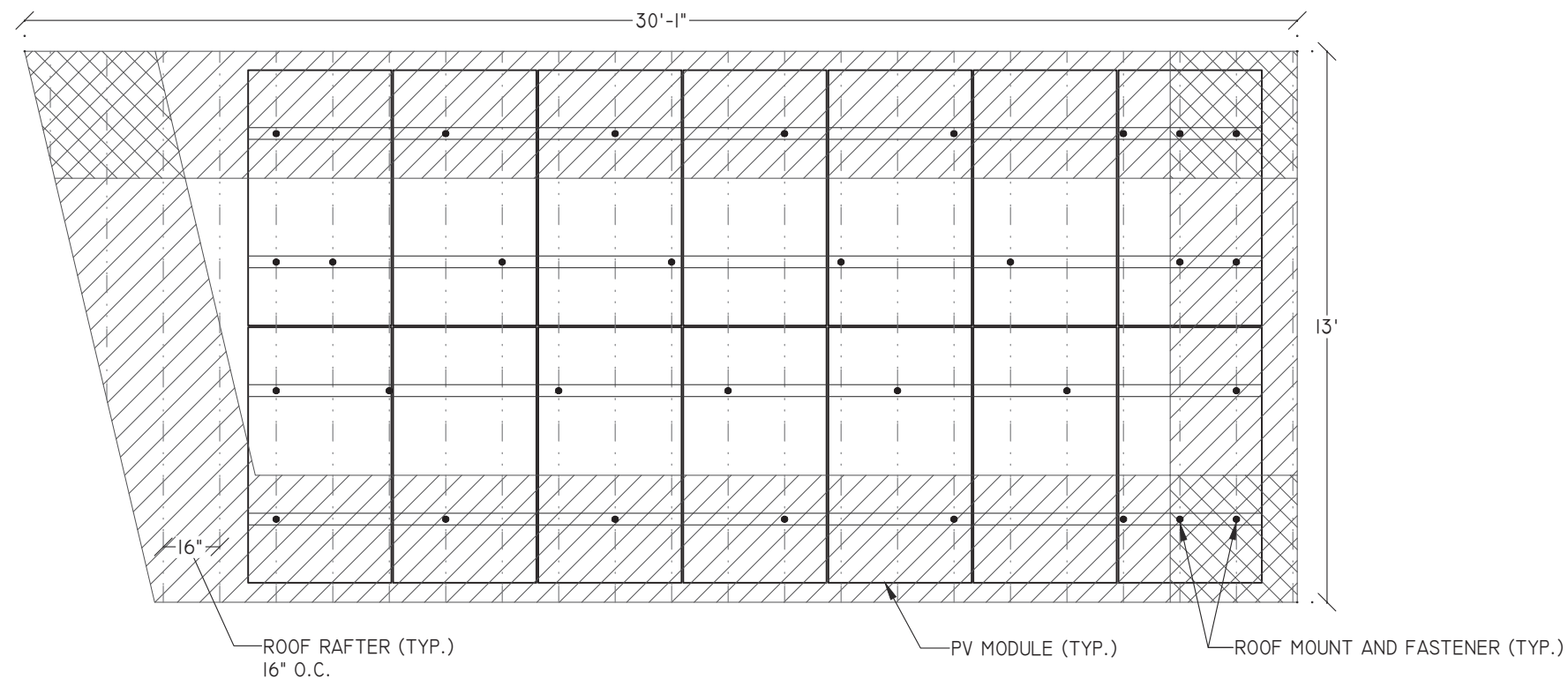
CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

STRUCTURAL INFORMATION

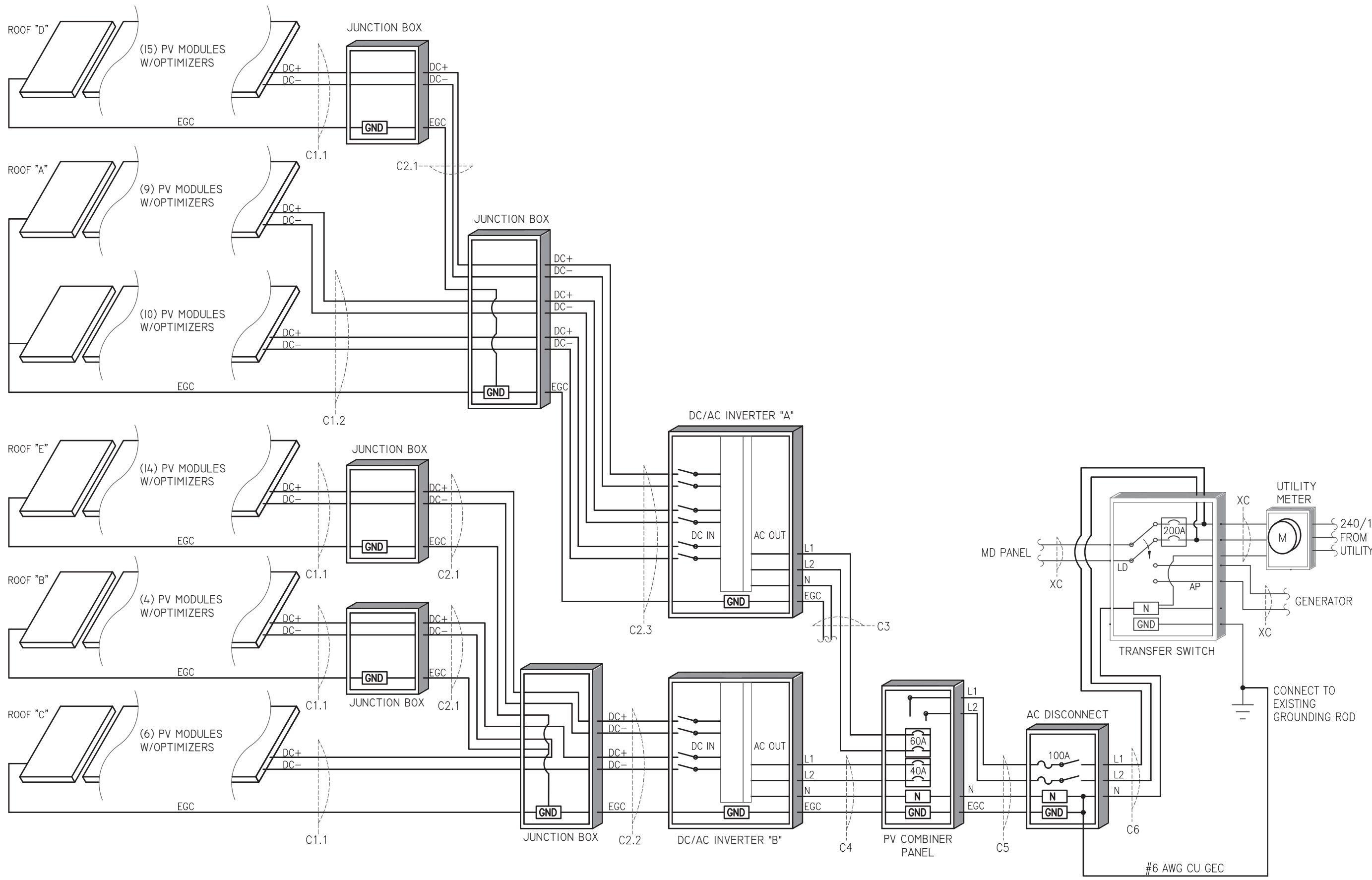
PV3.5



1 MODULE, RACKING, AND FASTENER LAYOUT – ROOF PLANAR VIEW

SCALE: 1/4" = 1'-0"

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ENGINEER:

NORTH CAROLINA PROFESSIONAL SEAL
 SEAL 035699
 ENGINEER
 ANDREW W. KING
 11/8/21

MODEL ENERGY
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 RALEIGH, NC 27602
 919-274-9905
 MODELENERGY.COM
 P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM
 22.04 kW DC INPUT
 19.00 kW AC EXPORT

Halbert H Mckinnon Jr
 660 POPE LAKE ROAD
 ANGIER, NC 27501

CLIENT:

SOUTHERN ENERGY MANAGEMENT
 ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	11/04/21

ELECTRICAL INFORMATION

PV4.1

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PV MODULES	
MAKE	Q CELL
MODEL	Q.PEAK DUO BLK-ML-G9 380
TECHNOLOGY	MONO-CRYST.
NOM. POWER (Pnom)	380 WATTS
NOM. VOLT. (Vmp)	37.85 VOLTS
O.C. VOLT. (Voc)	45.04 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (Vtc)	-0.27 %/°C
NOM. CURR. (Imp)	10.04 AMPS
S.C. CURR. (Isc)	10.50 AMPS
MAX. SERIES FUSE	20 AMPS

MODULE OPTIMIZER	
MAKE	SOLAREEDGE
MODEL	P401
DC INPUT:	
RATED POWER	400 WATTS
VOLT. RANGE	8 - 60
MAX. SCC	11.75 AMPS
MAX. DC INPUT CURRENT	11.75 AMPS
DC OUTPUT:	
MAX. CURRENT	15 AMPS
MAX. VOLT.	60 VOLTS
MAX. SYSTEM VOLT.	1000 VOLTS
MIN. STRING	8 OPTIMIZERS
MAX. STRING	25 OPTIMIZERS
MAX. POWER	
INVERTERS: SE3000H-SE6000H	5700 WATTS
INVERTERS: SE7600H-SE11400H	6000 WATTS

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

DC/AC INVERTER "A"	
MAKE	SOLAREEDGE
MODEL	SE11400H-US
TECHNOLOGY	TRANS-LESS
DC INPUT:	
MAX. POWER	17650 WATTS
MAX. VOLT	480 VOLTS
NOM. VOLT.	400 VOLTS
MAX. CURRENT	30.5 AMPS
MAX. SCC	45 AMPS
STRINGS INPUTS	3 STRINGS
AC OUTPUT:	
RATED POWER	11400 WATTS
MAX. POWER	11400 WATTS
NOM. VOLT.	240 VOLTS
MAX. CURR.	47.5 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
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 4X

DC/AC INVERTER "B"	
MAKE	SOLAREEDGE
MODEL	SE7600H-US
TECHNOLOGY	TRANS-LESS
DC INPUT:	
MAX. POWER	11800 WATTS
MAX. VOLT	480 VOLTS
NOM. VOLT.	400 VOLTS
MAX. CURRENT	20 AMPS
MAX. SCC	45 AMPS
STRINGS INPUTS	2 STRINGS
AC OUTPUT:	
RATED POWER	7600 WATTS
MAX. POWER	7600 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
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 4X

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

NOTES:

- MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
- CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED.
- EXISTING CONDUCTORS, FIELD VERIFY
- EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR
- PVC, EMT, ROMEX, LFNMC & FMC ARE ACCEPTABLE WHEN USED IN ACCORDANCE WITH ARTICLES 330, 334, 348, 350, 352, 356, & 358 OF THE 2017 NEC
- SERVICE CONDUCTORS SHALL NOT BE LONGER THAN 5' AND SHALL TERMINATE AT THE FIRST POINT OF DISCONNECT.

AC DISCONNECT	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	100 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	YES
FUSE RATING	100 AMPS

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
- SERVICE RATED
- PROVIDE NEUTRAL/GROUND BONDING JUMPER

PV COMBINER PANEL	
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:

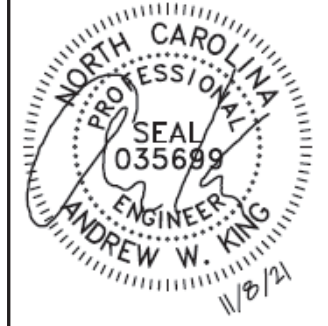
- BACK-FEED SOLAR OUTPUT VIA (1) 60 BREAKER FOR INVERTER "A" & (1) 40 AMP BREAKER FOR INVERTER "B" AT THE OPPOSITE END OF THE BUS BAR FROM THE INCOMING FEEDERS
- PROVIDE WITH PERMANENT LABEL THAT READS, "PV COMBINER PANEL. DO NOT ADD ADDITIONAL LOADS."

TRANSFER SWITCH (EXISTING)	
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:

- BACK-FEED PV COMBINER OUTPUT VIA SUPPLY SIDE TAP IN TRANSFER SWITCH

ENGINEER:



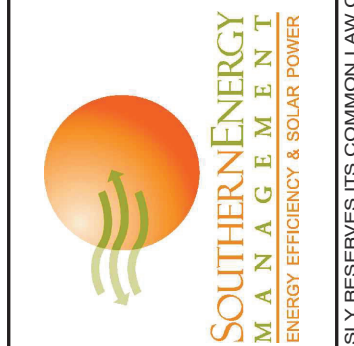
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300 FAYETTEVILLE ST.
#1430
RALEIGH, NC 27602
919-274-9905
MODELENERGY.COM
P-1194

JOB TITLE:

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22.04 kW DC INPUT
19.00 kW AC EXPORT
Halbert H Mckinnon Jr
660 POPE LAKE ROAD
ANGIER, NC 27501

CLIENT:



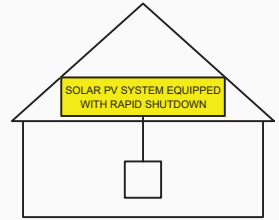
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ELECTRICAL INFORMATION

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*

PV SYSTEM DISCONNECT

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

WARNING DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

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

WARNING POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

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

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

1. LABELS SHOWN ARE 1/2 THEIR ACTUAL REQUIRED SIZE.
2. LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT.
3. 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.

DIRECT CURRENT PHOTOVOLTAIC POWER SOURCE

MAXIMUM VOLTAGE 600 VDC
MAX CIR. CURRENT 45.0 AMPS

NEC 690.53
PLACE ON INVERTER "A" DC DISCONNECTING MEANS

DIRECT CURRENT PHOTOVOLTAIC POWER SOURCE

MAXIMUM VOLTAGE 600 VDC
MAX CIR. CURRENT 30.0 AMPS

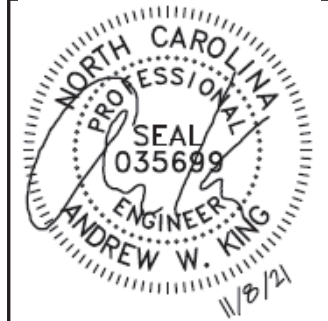
NEC 690.53
PLACE ON INVERTER "B" DC DISCONNECTING MEANS

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLT. 240 VAC
MAXIMUM OPERATING AC OUTPUT CURRENT 79.5 AMPS

NEC 690.54
PLACE ON INTERCONNECTION DISCONNECTING MEANS

ENGINEER:



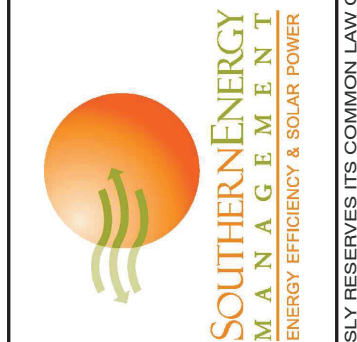
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RALEIGH, NC 27602
919-274-9905
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660 POPE LAKE ROAD
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EQUIPMENT LABELS

PV5.1

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Q.PEAK DUO BLK ML-G9

365-385

ENDURING HIGH
PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.6%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.



ENDURING HIGH PERFORMANCE

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



EXTREME WEATHER RATING

High-tech aluminium alloy frame, certified for high snow (6000 Pa) and wind loads (4000 Pa).



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty².



STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

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

² See data sheet on rear for further information.

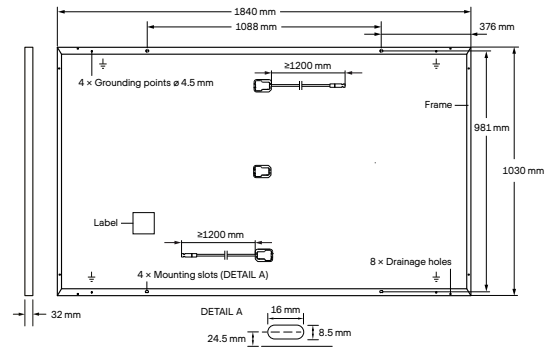
THE IDEAL SOLUTION FOR:



Rooftop arrays on
residential buildings

MECHANICAL SPECIFICATION

Format	1840 mm × 1030 mm × 32 mm (including frame)
Weight	19.5 kg
Front Cover	2.8 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction box	53-101 mm × 32-60 mm × 15-18 mm Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 1200 mm, (-) ≥ 1200 mm
Connector	Stäubli MC4, Hanwha Q CELLS HQC4; IP68

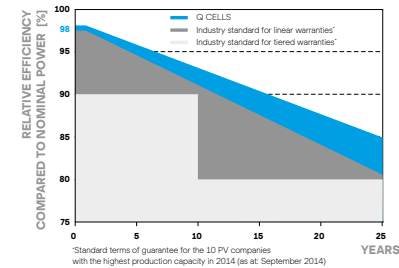


ELECTRICAL CHARACTERISTICS

POWER CLASS			365	370	375	380	385
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP ¹	P_{MPP} [W]	365	370	375	380	385
	Short Circuit Current ¹	I_{SC} [A]	10.40	10.44	10.47	10.50	10.53
	Open Circuit Voltage ¹	V_{OC} [V]	44.93	44.97	45.01	45.04	45.08
	Current at MPP	I_{MPP} [A]	9.87	9.92	9.98	10.04	10.10
	Voltage at MPP	V_{MPP} [V]	36.99	37.28	37.57	37.85	38.13
	Efficiency ¹	η [%]	≥ 19.3	≥ 19.5	≥ 19.8	≥ 20.1	≥ 20.3
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P_{MPP} [W]	273.3	277.1	280.8	284.6	288.3
	Short Circuit Current	I_{SC} [A]	8.38	8.41	8.43	8.46	8.48
	Open Circuit Voltage	V_{OC} [V]	42.37	42.41	42.44	42.48	42.51
	Current at MPP	I_{MPP} [A]	7.76	7.81	7.86	7.91	7.96
	Voltage at MPP	V_{MPP} [V]	35.23	35.48	35.72	35.96	36.20

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

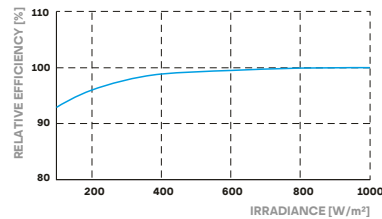
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α [%/K]	+0.04	Temperature Coefficient of V_{OC}	β [%/K]	-0.27
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.35	Nominal Module Operating Temperature	NMOT [°C]	43 ± 3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{SYS} [V]	1000	PV module classification	Class II
Maximum Reverse Current	I_R [A]	20	Fire Rating based on ANSI / UL 61730	C / TYPE 2
Max. Design Load, Push / Pull	[Pa]	4000 / 2660	Permitted Module Temperature on Continuous Duty	-40°C - +85°C
Max. Test Load, Push / Pull	[Pa]	6000 / 4000		

QUALIFICATIONS AND CERTIFICATES

IEC 61215:2016;
IEC 61730:2016.
This data sheet complies with DIN EN 50380.



PACKAGING INFORMATION

Horizontal packaging	1890mm	1080mm	1208mm	661kg	28 pallets	24 pallets	32 modules
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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 GmbH

Sonnenallee 17-21, 06766 Bitterfeld-Wolfen, Germany | TEL +49 (0)3494 66 99-23444 | FAX +49 (0)3494 66 99-23000 | EMAIL sales@q-cells.com | WEB www.q-cells.com

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US



Optimized installation with HD-Wave technology

- / Specifically designed to work with power optimizers
- / Record-breaking efficiency
- / Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- / Fixed voltage inverter for longer strings
- / Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- / UL1741 SA certified, for CPUC Rule 21 grid compliance
- / Extremely small
- / Built-in module-level monitoring
- / Outdoor and indoor installation
- / Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 ⁽¹⁾							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, adjustable -0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V ⁽²⁾	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V ⁽²⁾	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k Ω Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

⁽¹⁾ For other regional settings please contact SolarEdge support

⁽²⁾ A higher current source may be used; the inverter will limit its input current to the values stated

/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

SE3000H-US SE3800H-US SE5000H-US SE6000H-US SE7600H-US SE10000H-US SE11400H-US

ADDITIONAL FEATURES

Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)
Revenue Grade Data, ANSI C12.20	Optional ⁽³⁾
Inverter Commissioning	with the SetApp mobile application using built-in Wi-Fi station for local connection
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect

STANDARD COMPLIANCE

Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)
Emissions	FCC Part 15 Class B

INSTALLATION SPECIFICATIONS

AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG			3/4" minimum /14-4 AWG	
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG			3/4" minimum / 1-3 strings / 14-6 AWG	
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			21.3 x 14.6 x 7.3 / 540 x 370 x 185	in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6	lb / kg
Noise	< 25			<50	dBA
Cooling	Natural Convection				
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁴⁾				
Protection Rating	NEMA 4X (Inverter with Safety Switch)				

⁽³⁾ Revenue grade inverter P/N: SExxxxH-US000BNC4

⁽⁴⁾ Full power up to at least 50°C / 122°F; for power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505

POWER OPTIMIZER



PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

/ Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)	
INPUT							
Rated Input DC Power ⁽¹⁾	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125 ⁽²⁾		Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105		Vdc
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc
Maximum DC Input Current	13.75			12.63		17.5	Adc
Maximum Efficiency	99.5						%
Weighted Efficiency	98.8					98.6	%
Oversoltage Category	II						
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)							
Maximum Output Current	15						Adc
Maximum Output Voltage	60			85			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)							
Safety Output Voltage per Power Optimizer	1 ± 0.1						Vdc
STANDARD COMPLIANCE							
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3						
Safety	IEC62109-1 (class II safety), UL1741						
RoHS	Yes						
INSTALLATION SPECIFICATIONS							
Maximum Allowed System Voltage	1000						Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters						
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1			129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4			750 / 1.7	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4 ⁽³⁾						
Output Wire Type / Connector	Double Insulated; MC4						
Output Wire Length	0.95 / 3.0		1.2 / 3.9				m / ft
Input Wire Length	0.16 / 0.52						m / ft
Operating Temperature Range	-40 - +85 / -40 - +185						°C / °F
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						%

⁽¹⁾ Rated STC power of the module. Module of up to +5% power tolerance allowed

⁽²⁾ NEC 2017 requires max input voltage be not more than 80V

⁽³⁾ For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter ⁽⁴⁾⁽⁵⁾	Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400 P405 / P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
Maximum String Length (Power Optimizers)		25	25	50 ⁽⁶⁾	
Maximum Power per String	5700 (6000 with SE7600-US - SE11400-US)	5250	6000 ⁽⁷⁾	12750 ⁽⁸⁾	W
Parallel Strings of Different Lengths or Orientations	Yes				

⁽⁴⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf

⁽⁵⁾ It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string

⁽⁶⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement

⁽⁷⁾ For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W

⁽⁸⁾ For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W