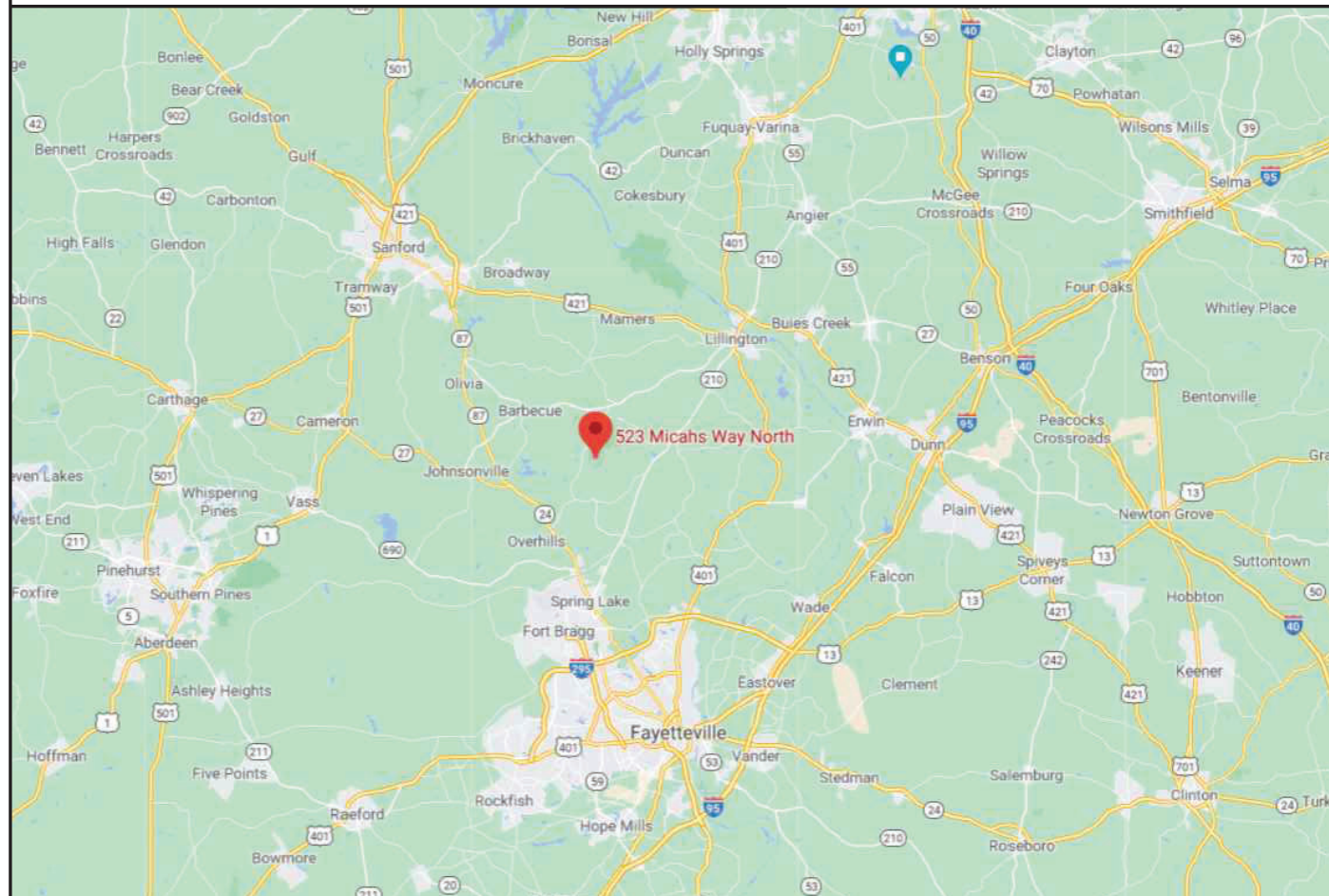
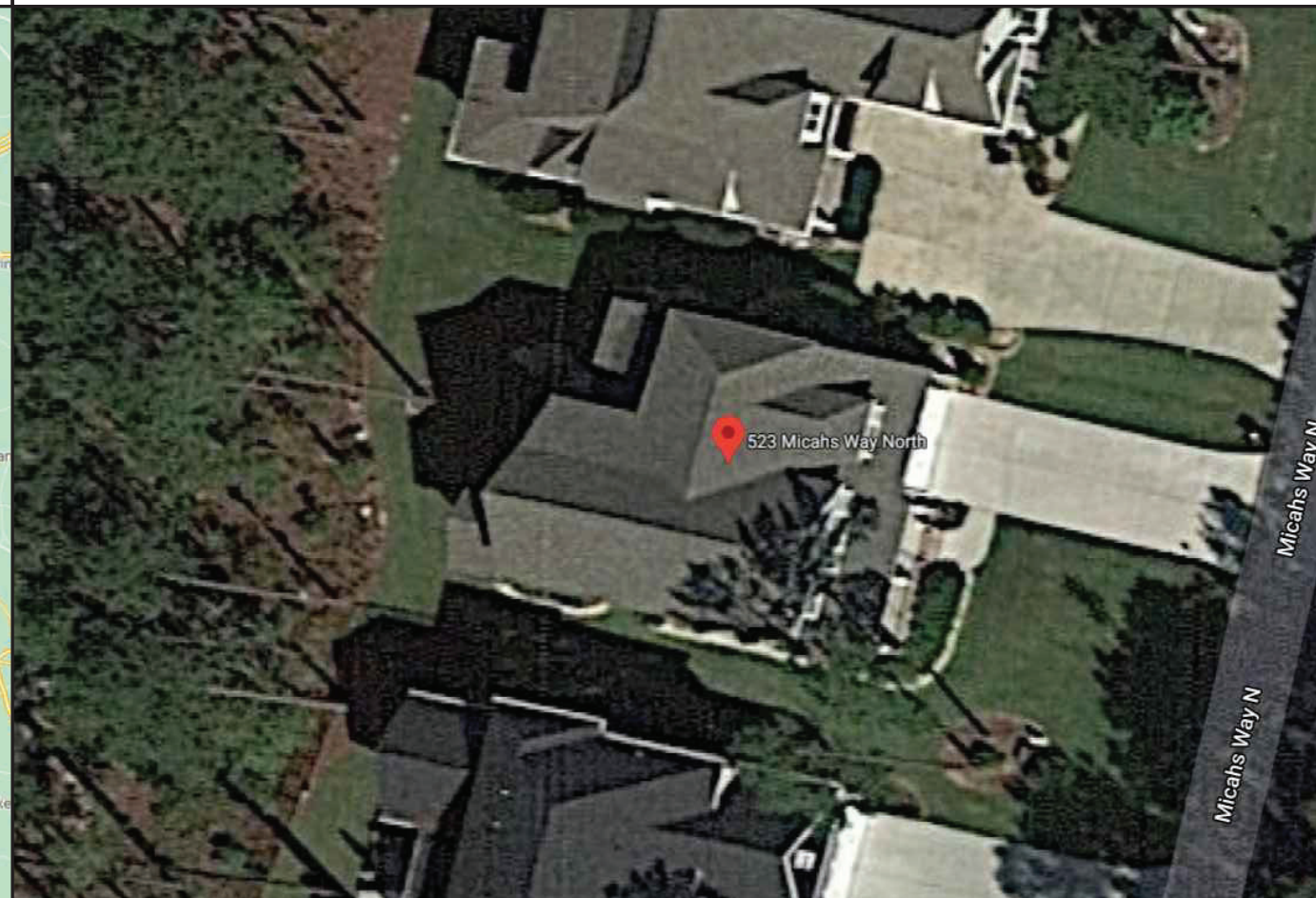


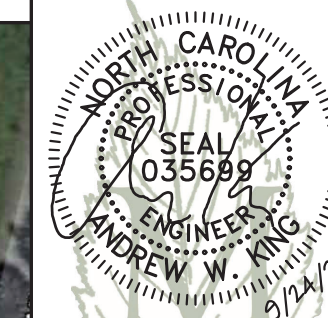
VICINITY MAP



PROPERTY MAP



ENGINEER:



MODEL ENERGY

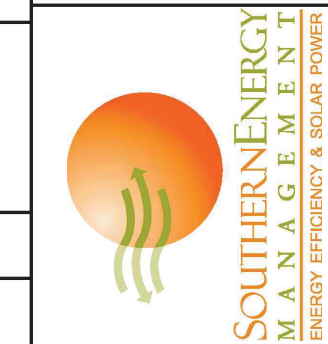
300 FAYETTEVILLE ST.
 #1430
 RALEIGH, NC 27602
 919-274-9905
 MODELENERGY.COM
 P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM
 12.025 kW DC INPUT
 10.000 kW AC EXPORT

Ian Frady
 523 Micahs Way N
 Spring Lake, NC 28390

CLIENT:



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 - STRUCTURAL INFORMATION
 PV3.2 - STRUCTURAL INFORMATION
 PV4.1 - ELECTRICAL INFORMATION
 PV5.1 - EQUIPMENT LABELS

SITE CONDITIONS

ASCE 7-10 WIND SPEED - 118 MPH
 EXPOSURE CATEGORY - B
 RISK CATEGORY - II

LEGEND

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

CONSTRUCTION NOTES

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. GROUNDED DC PHOTOVOLTAIC ARRAYS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION THAT MEETS THE REQUIREMENTS OF NEC SECTION 690.5. UNGROUNDED DC PHOTOVOLTAIC ARRAYS SHALL COMPLY WITH NEC SECTION 690.35
8. 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.
9. PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
10. EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
11. 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
12. A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS
13. 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.
14. 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.
15. ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

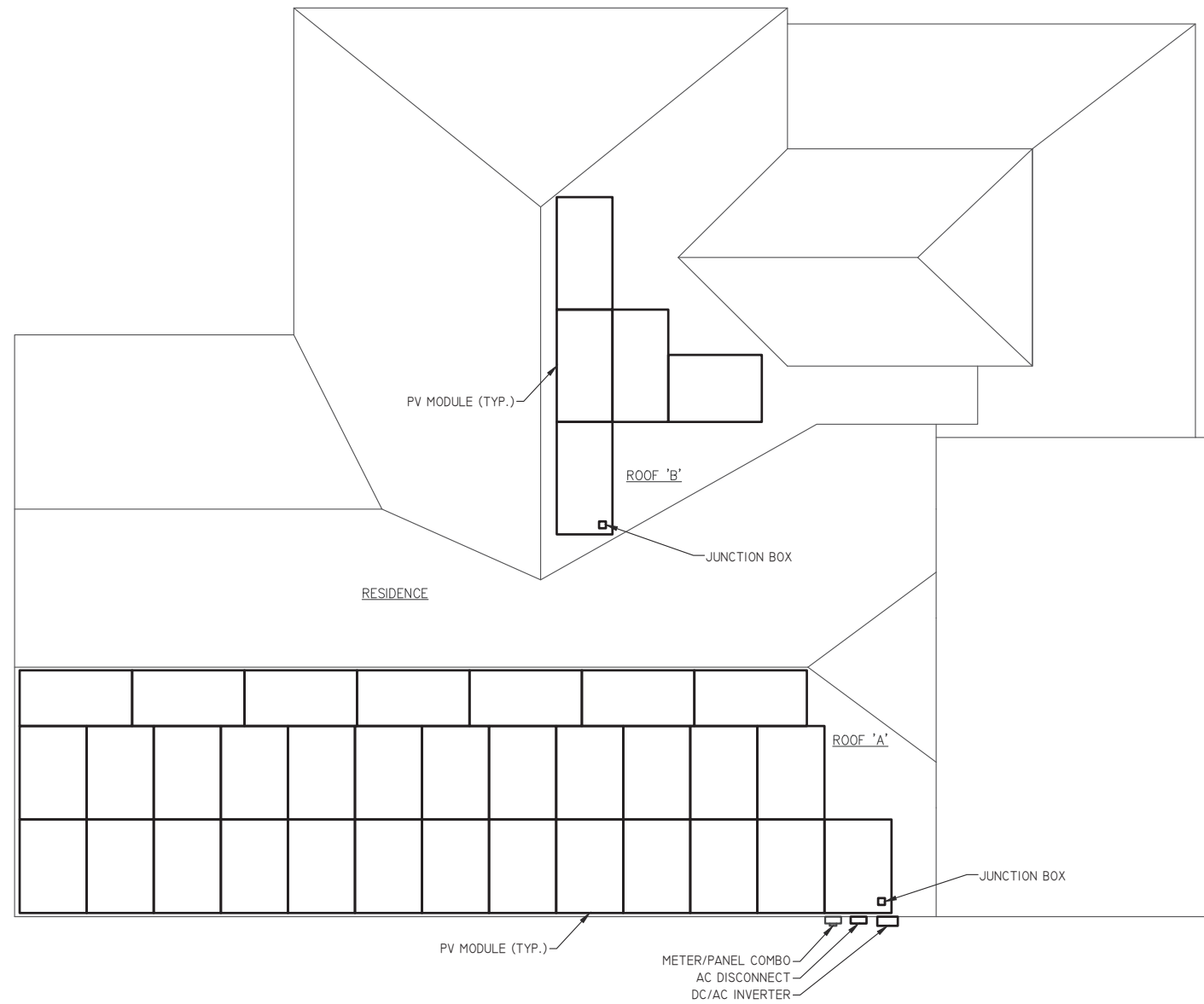
ABBREVIATIONS

- 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

ISSUED FOR: CONSTRUCTION
 DATE: 09/25/20

PROJECT INFORMATION

PV1.1



1 | SITE PLAN

SCALE: 1/8" = 1'-0"

ENGINEER:

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

JOB TITLE:

NEW SOLAR PV SYSTEM
 12.025 kW DC INPUT
 10.000 kW AC EXPORT

Ian Frady
 523 Micahs Way N
 Spring Lake, NC 28390

CLIENT:

SOUTHERN ENERGY MANAGEMENT
 ENERGY EFFICIENCY & SOLAR POWER

| | |
|--------------|----------|
| ISSUED FOR: | DATE: |
| CONSTRUCTION | 09/25/20 |
| | |

SITE INFORMATION

PV2.1

© 2019 MODEL ENERGY, PLLC EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF MODEL ENERGY, PLLC.

| ROOF MOUNT & FASTENERS | |
|------------------------|-----------------|
| ROOF MOUNT: | |
| MAKE | ECOLIBRIUM |
| TYPE | ECOX |
| MATERIAL | ALUMINUM |
| FASTENER: | |
| MAKE | GENERIC |
| MODEL | LAG BOLT |
| MATERIAL | 304 SS |
| SIZE | 5/16" X 4" |
| GENERAL: | |
| WEIGHT | 0.1 LBS. |
| FASTENERS PER MOUNT | 1 |
| MAXIMUM PULL-OUT FORCE | 800 LBS / MOUNT |
| SAFETY FACTOR | 2 |
| DESIGN PULL-OUT FORCE | 400 LBS / MOUNT |

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

| ROOF LOADING (PORTRAIT MODULES) | |
|---------------------------------|------------------|
| 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 | -356 LBS. |
| UPLIFT ZONE 2 | -210 LBS. |
| UPLIFT ZONE 3 | -210 LBS. |
| DOWNWARD | 332 LBS. |

| ROOF LOADING (LANDSCAPE MODULES) | |
|----------------------------------|------------------|
| 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 | -161 LBS. |
| UPLIFT ZONE 2 | -190 LBS. |
| UPLIFT ZONE 3 | -95 LBS. |
| DOWNWARD | 151 LBS. |


| ARRAY SUMMARY | |
|---------------|-----------|
| # MODULES | 32 |
| # ROOF MOUNTS | 57 |
| RAIL LENGTH | N/A |
| ARRAY AREA | 589 SQFT. |
| ARRAY WEIGHT | 1321 LBS. |
| AZIMUTH @ SN | 191° |
| TILT ANGLE | 33.75° |

| PV MODULES | |
|------------|----------|
| MAKE | REC |
| MODEL | REC325NP |
| WIDTH | 39.3" |
| LENGTH | 65.9" |
| THICKNESS | 1.1" |
| WEIGHT | 39.7 LBS |

| ROOF SUMMARY | |
|--------------|------------------|
| STRUCTURE: | |
| TYPE | RAFTERS |
| MATERIAL | SOUTHERN PINE #2 |
| SIZE | 2" X 6" |
| SPACING | 24" o.c. |
| EFF. SPAN | 10'-0" |
| PITCH | 8 / 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 PURPOSED 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: PORTRAIT MODULES

ALL ZONES MAX. RAIL OVERHANG = 16"

ZONE 1 MAX. FASTENER SPAN ZONE 1 = 48"

ZONE 2 MAX. FASTENER SPAN ZONE 2 = 24"

ZONE 3 MAX. FASTENER SPAN ZONE 3 = 24"

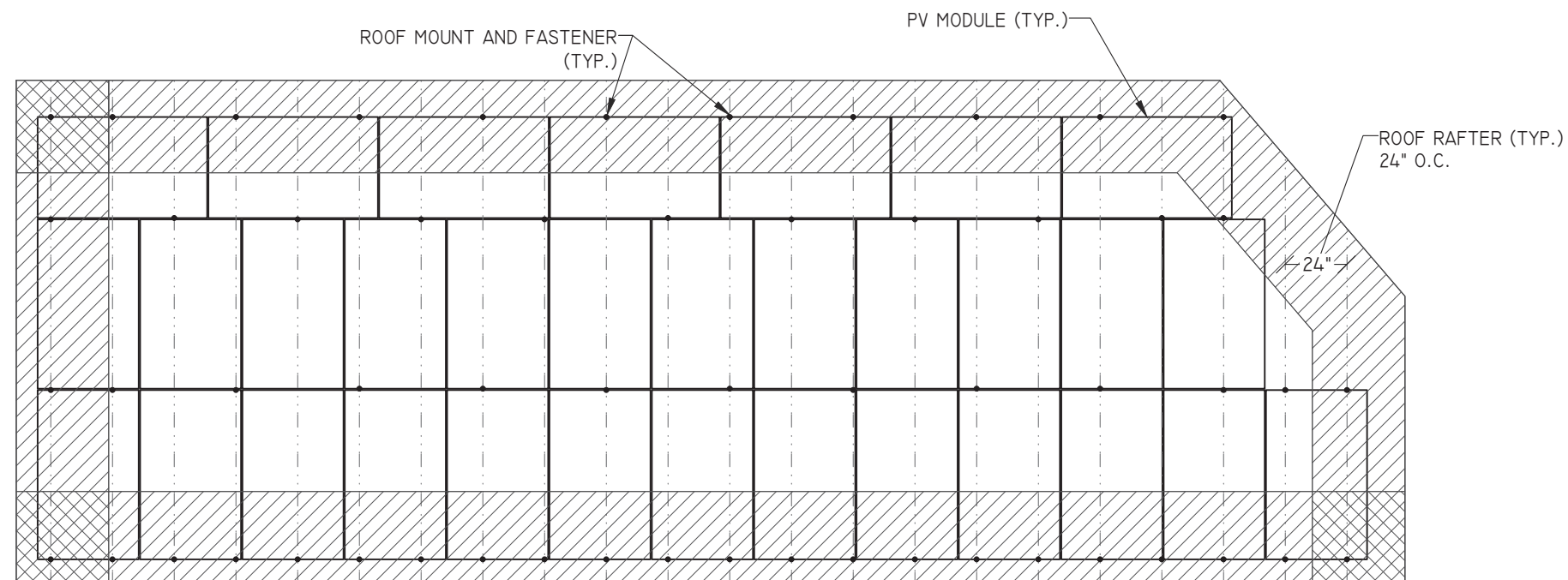
ROOF ZONES: LANDSCAPE MODULES

ALL ZONES MAX. RAIL OVERHANG = 16"


ZONE 1 MAX. FASTENER SPAN ZONE 1 = 48"

ZONE 2 MAX. FASTENER SPAN ZONE 2 = 48"

ZONE 3 MAX. FASTENER SPAN ZONE 3 = 24"



ENGINEER:



MODEL ENERGY


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

JOB TITLE:

NEW SOLAR PV SYSTEM
12.025 kW DC INPUT
10.000 kW AC EXPORT

Ian Frady
523 Micahs Way N
Spring Lake, NC 28390

CLIENT:



SOUTHERN ENERGY MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

| | |
|--------------|----------|
| ISSUED FOR: | DATE: |
| CONSTRUCTION | 09/25/20 |

STRUCTURAL INFORMATION

PV3.1

© 2019 MODEL ENERGY, PLLC EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF MODEL ENERGY, PLLC.

| ROOF MOUNT & FASTENERS | |
|------------------------|-----------------|
| ROOF MOUNT: | |
| MAKE | ECOLIBRIUM |
| TYPE | ECOX |
| MATERIAL | ALUMINUM |
| FASTENER: | |
| MAKE | GENERIC |
| MODEL | LAG BOLT |
| MATERIAL | 304 SS |
| SIZE | 5/16" X 4" |
| GENERAL: | |
| WEIGHT | 0.1 LBS. |
| FASTENERS PER MOUNT | 1 |
| MAXIMUM PULL-OUT FORCE | 800 LBS / MOUNT |
| SAFETY FACTOR | 2 |
| DESIGN PULL-OUT FORCE | 400 LBS / MOUNT |

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

| ROOF LOADING (PORTRAIT MODULES) | |
|---------------------------------|------------------|
| 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 | -270 LBS. |
| UPLIFT ZONE 2 | -319 LBS. |
| UPLIFT ZONE 3 | -159 LBS. |
| DOWNWARD | 253 LBS. |

| ROOF LOADING (LANDSCAPE MODULES) | |
|----------------------------------|------------------|
| 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 | -184 LBS. |
| UPLIFT ZONE 2 | -217 LBS. |
| UPLIFT ZONE 3 | -109 LBS. |
| DOWNWARD | 172 LBS. |


| ARRAY SUMMARY | |
|---------------|----------|
| # MODULES | 5 |
| # ROOF MOUNTS | 16 |
| RAIL LENGTH | N/A |
| ARRAY AREA | 94 SQFT. |
| ARRAY WEIGHT | 208 LBS. |
| AZIMUTH @ SN | 101° |
| TILT ANGLE | 33.75° |

| PV MODULES | |
|------------|----------|
| MAKE | REC |
| MODEL | REC325NP |
| WIDTH | 39.3" |
| LENGTH | 65.9" |
| THICKNESS | 1.1" |
| WEIGHT | 39.7 LBS |

| ROOF SUMMARY | |
|--------------|------------------|
| STRUCTURE: | |
| TYPE | RAFTERS |
| MATERIAL | SOUTHERN PINE #2 |
| SIZE | 2" X 6" |
| SPACING | 24" O.C. |
| EFF. SPAN | 10'-6" |
| PITCH | 8 / 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 PURPOSED 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

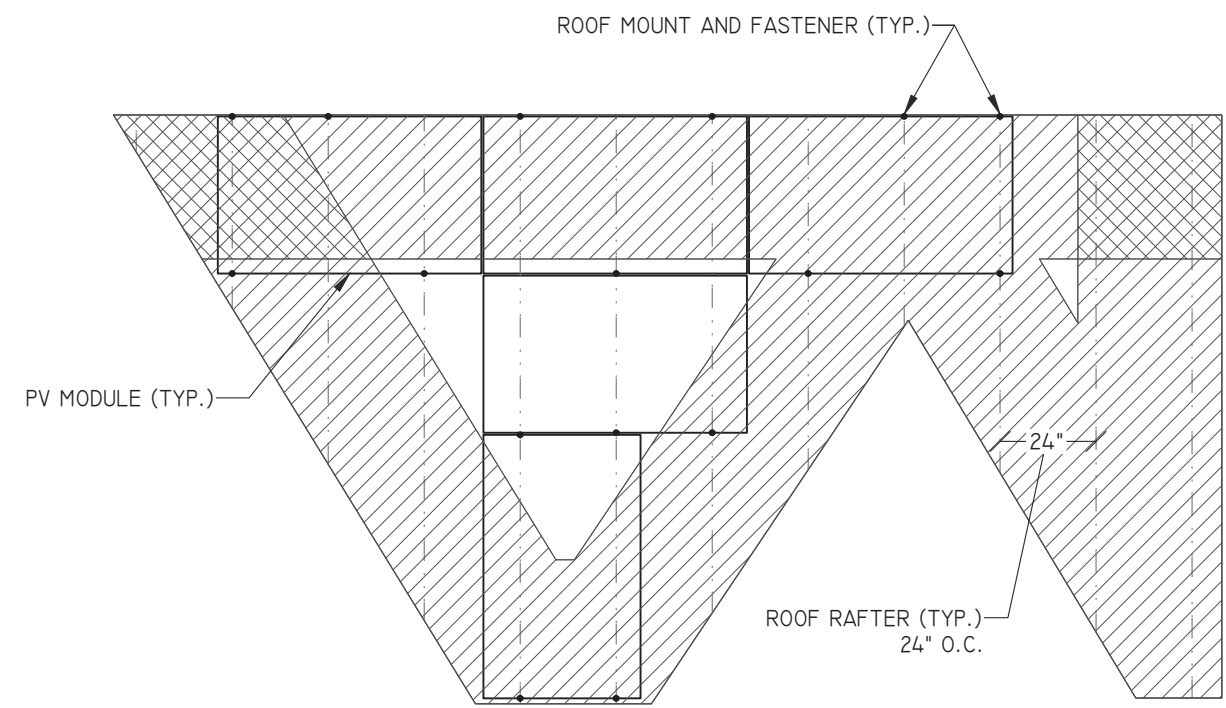
ROOF ZONES:

ALL ZONES MAX. RAIL OVERHANG = 16"


ZONE 1 MAX. FASTENER SPAN ZONE 1 = 48"

ZONE 2 MAX. FASTENER SPAN ZONE 2 = 48"

ZONE 3 MAX. FASTENER SPAN ZONE 3 = 24"



ENGINEER:



MODEL ENERGY


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

JOB TITLE:

NEW SOLAR PV SYSTEM
12.025 kW DC INPUT
10.000 kW AC EXPORT

Ian Frady
523 Micahs Way N
Spring Lake, NC 28390

CLIENT:



SOUTHERN ENERGY MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

| | |
|--------------|----------|
| ISSUED FOR: | DATE: |
| CONSTRUCTION | 09/25/20 |

STRUCTURAL INFORMATION

PV3.2

© 2019 MODEL ENERGY, PLLC EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF MODEL ENERGY, PLLC.

| PV MODULES (NEW) | |
|--------------------------------|-------------|
| MAKE | REC |
| MODEL | REC325NP |
| TECHNOLOGY | MONO-CRYST. |
| NOM. POWER (P _{nom}) | 325 WATTS |
| NOM. VOLT. (V _{mp}) | 34.4 VOLTS |
| O.C. VOLT. (V _{oc}) | 41.0 VOLTS |
| MAX. SYS. VOLT. | 1000 V (UL) |
| TEMP. COEF. (V _{TC}) | -0.27 %/°C |
| NOM. CURR. (I _{mp}) | 9.46 AMPS |
| S.C. CURR. (I _{sc}) | 10.27 AMPS |
| MAX. SERIES FUSE | 25 AMPS |

| DC/AC INVERTER | |
|-----------------|-------------|
| MAKE | SOLAREEDGE |
| MODEL | SEI0000H-US |
| TECHNOLOGY | TRANS-LESS |
| DC INPUT: | |
| MAX. POWER | 15500 WATTS |
| MAX. VOLT | 480 VOLTS |
| NOM. VOLT. | 400 VOLTS |
| MAX. CURRENT | 27 AMPS |
| MAX. SCC | 45 AMPS |
| STRINGS INPUTS | 3 STRINGS |
| AC OUTPUT: | |
| RATED POWER | 10000 WATTS |
| MAX. POWER | 10000 WATTS |
| NOM. VOLT. | 240 VOLTS |
| MAX. CURR. | 42 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 |

| MODULE OPTIMIZER | |
|-----------------------------|---------------|
| MAKE | SOLAREEDGE |
| MODEL | P340 |
| DC INPUT: | |
| RATED POWER | 340 WATTS |
| VOLT. RANGE | 8-48 |
| MAX. SCC | 11.0 AMPS |
| MAX. DC INPUT CURRENT | 13.75 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 |

| CONDUCTOR SCHEDULE | | | | | | | | | | | | | |
|--------------------|-----------------------------|--------|----------|------------|----------------------|--------|----------|------------|-----------------|------|------------|----------|-------|
| TAG | CURRENT CARRYING CONDUCTORS | | | | GROUNDING CONDUCTORS | | | | CONDUIT/RACEWAY | | | | NOTES |
| | QTY. | SIZE | MATERIAL | INSULATION | QTY. | SIZE | MATERIAL | INSULATION | QTY. | SIZE | MATERIAL | LOCATION | |
| C1 | 6 | 10 AWG | COPPER | PV WIRE | 1 | 6 AWG | COPPER | PV WIRE | - | - | - | FREE AIR | 1 |
| C2 | 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 | 14 AWG | COPPER | THWN | 1 | 14 AWG | COPPER | THWN | 1 | 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, LFNMIC & FMC ARE ACCEPTABLE WHEN USED IN ACCORDANCE WITH ARTICLES 330, 334, 348, 350, 352, 356, & 358 OF THE 2017 NEC

| MONITORING SYSTEM | |
|----------------------|--------------------|
| MAKE | SOLAREEDGE |
| MODEL | SEI000-ZBGW-K5-NA |
| METER | SE-MTR240-2-200-SI |
| LINE TO LINE VOLTAGE | 211-254 VAC |
| WIRING | L1/L2/N/PE |
| POWER CONSUMPTION | 1.2W |
| COMM. INTERFACE | RS485 |
| RATED RMS CURRENT | 200 AMPS |
| SAFETY | UL1741 |
| ENCLOSURE TYPE | ABS, ABS/PC |
| PROTECTION RATING | UL94V-0, IEC FV-0 |

| AC DISCONNECT | |
|----------------|-----------|
| 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 |

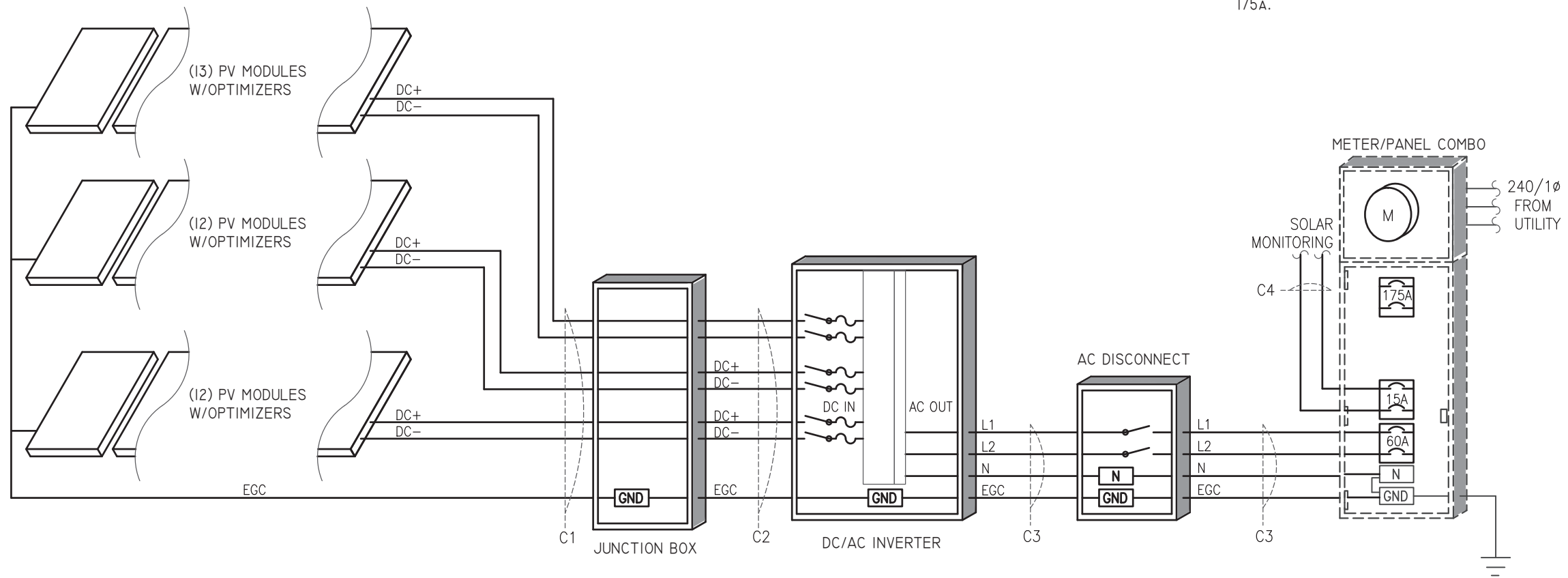
NOTES:

- 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

| METER/PANEL COMBO (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 SOLAR OUTPUT VIA 60A BREAKER AT THE OPPOSITE END OF THE BUS BAR FROM MAIN BREAKER.
- MAIN BREAKER SERVES AS SERVICE DISCONNECT SWITCH.
- PROVIDE 15A BREAKER FOR SOLAR MONITORING CIRCUIT.
- DEREGATE MAIN BREAKER FROM 200A TO 175A.



ENGINEER:



MODEL ENERGY

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

P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM
12.025 kW DC INPUT
10.000 kW AC EXPORT

Ian Frady
523 Micahs Way N
Spring Lake, NC 28390

CLIENT:



ISSUED FOR: CONSTRUCTION
DATE: 09/25/20

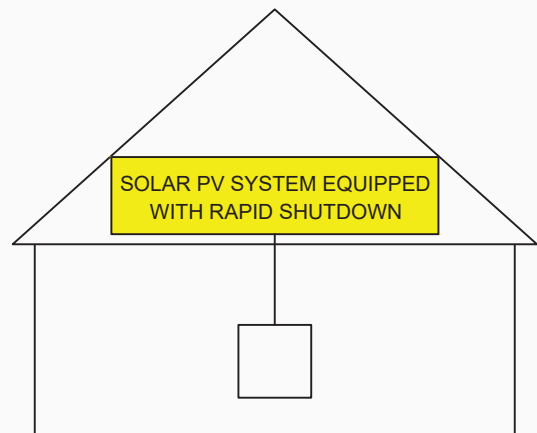
ELECTRICAL INFORMATION

PV4.1

© 2019 MODEL ENERGY, PLLC EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF MODEL ENERGY, PLLC.

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

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 45.0 AMPS

NEC 690.53

PLACE ON ALL DC DISCONNECTING MEANS

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLT. 240 VAC

MAXIMUM OPERATING AC OUTPUT CURRENT 42.0 AMPS

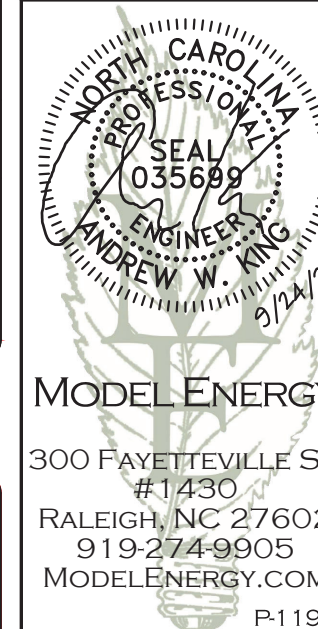
NEC 690.54

PLACE ON INTERCONNECTION DISCONNECTING MEANS

EQUIPMENT LABEL NOTES

1. LABELS SHOWN ARE 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.

ENGINEER:



MODEL ENERGY

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

JOB TITLE:

NEW SOLAR PV SYSTEM
12.025 kW DC INPUT
10.000 kW AC EXPORT

Ian Frady
523 Micahs Way N
Spring Lake, NC 28390

CLIENT:



SOUTHERN ENERGY MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

| | |
|--------------|----------|
| ISSUED FOR: | DATE: |
| CONSTRUCTION | 09/25/20 |

EQUIPMENT LABELS

PV5.1