| SYSTEM INFORMATION |  |  |  |  |  |  |  |  |  |  |
|--------------------|--|--|--|--|--|--|--|--|--|--|
| MODULE             | HANWHA Q.PEAK DUO BLK ML-G10+ 400                                  |  |  |  |  |  |  |  |  |  |
| INVERTER           | ENPHASE IQ8PLUS-72-2-US  |  |  |  |  |  |  |  |  |  |
| RACKING            | ROOFTECH RT-MINI II W/ UNIRAC NXT<br>HORIZON 2-RAIL RACKING SYSTEM |  |  |  |  |  |  |  |  |  |
| SYSTEM SIZE (DC)   | 6 KW   |  |  |  |  |  |  |  |  |  |
| LOCATION           | 30.1456606,-82.6935883   |  |  |  |  |  |  |  |  |  |
|                    |  |  |  |  |  |  |  |  |  |  |
|                    |  |  |  |  |  |  |  |  |  |  |
|                    |  |  |  |  |  |  |  |  |  |  |

THIS PV SYSTEM HAS BEEN DESIGNED TO MEET THE MINIMUM DESIGN STANDARDS FOR BUILDING AND OTHER STRUCTURES OF THE ASCE 7-16, 7TH EDITION 2020 FLORIDA RESIDENTIAL CODE, 7TH EDITION 2020 FLORIDA BUILDING CODE, 7TH EDITION 2020 FLORIDA FIRE PREVENTION CODE, NEC 2017 AND ALL LOCAL CODES &

| CLIMATIC & GEOGRAPHIC DES<br>R301.2(1) | IGN CRITERIA TABLE |
|--|--------------------|
| SPEED (MPH)                            | 120                |
| TOPOGRAPHIC EFFECTS                    | В                  |
| SPECIAL WIND REGION                    | NO                 |
| WIND BORNE DEBRIS ZONE                 | 2                  |
| SEISMIC DESIGN CATEGORY                | С                  |
| CLIMATE ZONE                           | 2A                 |
| WIND EXPOSURE CATETORY                 | В                  |

|            | PLAN KEY          |
|------------|-------------------|
| PV-1       | COVER PAGE        |
| PV-1.1     | ATTACHMENT DETAIL |
| PV-1.1 (2) | ATTACHMENT DETAIL |
| PV-2       | ROOF LAYOUT       |
| PV-3       | ELECTRICAL        |
| PV-3.1     | ELECTRICAL CONT.  |
| PV-3.2     | EQUIPMENT LABELS  |
|            |                   |

### FBC, RESIDENTIAL 2020

|   |  | TABLE R301.2.1.3 |      |      |      |     |     |      |      |     |     |     |  |  |
|---|--|------------------|------|------|------|-----|-----|------|------|-----|-----|-----|--|--|
|   | WIND SPEED CONVERSIONS <sup>a</sup>                          |                  |      |      |      |     |     |      |      |     |     |     |  |  |
|   | V <sub>ult</sub> 110 115 120 130 140 150 160 170 180 190 200 |                  |      |      |      |     |     |      |      |     |     |     |  |  |
|   | $V_{asd}$  | 85               | 89   | 93   | 101  | 108 | 116 | 124  | 132  | 139 | 147 | 155 |  |  |
| F | For S  | SI: I            | 1 mi | le p | er h | our | = 0 | .447 | ' m/ | s.  |     |     |  |  |

a. Linear interpolation is permitted.

HANWHA Q.PEAK DUO BLK ML-G10+ 400 400 WATT MODULE 74" X 41.1" X 1.26" (SEE DATASHEET)

| BILL OF MATERIALS                  |    |
|------------------------------------|----|
| MODULES                            | 15 |
| INVERTERS                          | 15 |
| L-FOOT ATTACHMENT W/<br>RT-MINI    | 29 |
| 171" RAILS                         | 7  |
| SKIRTS                             | 0  |
| ENPHASE COMBINER BOX               | 1  |
| EATON 60A FUSIBLE AC<br>DISCONNECT | 1  |
| 35A FUSES                          | 2  |
| 125A LINE TAPS                     | 2  |
|                                    |    |
|                                    |    |
|                                    |    |
|                                    |    |
|                                    |    |

# ROOF SHALL HAVE NO MORE THAN TWO LAYERS OF COVERING IN ADDITION TO THE INSTALLATION OF SOLAR EQUIPMENT SHALL BE FLUSH MOUNTED, PARALLEL TO AND NO MORE THAN 6-INCHES ABOVE THE SURFACE OF THE ROOF.

ANY PLUMBING VENTS ARE NOT TO BE CUT OR COVERED FOR SOLAR EQUIPMENT INSTALLATION. ANY RELOCATION OR MODIFICATION OF THE VENT REQUIRES A PLUMBING PERMIT AND INSPECTION.

ALL DESIGN, CALCULATIONS ARE PERFORMED BY DANIEL DUNZIK REGISTERED ARCHITECT. FLORIDA STATE STATUTE 471.003(3) PROVIDES THAT LICENSED ARCHITECTS ARE EXEMPTED FROM THE PROVISIONS OF CHAPTER 471 ENGINEERING AND NOT PRECLUDED FROM PERFORMING ENGINEERING SERVICES FOR INTEGRATED SYSTEMS AND SERVICES THAT ARE INCIDENTAL TO BUILDINGS AND STRUCTURES.

## **INVERTER PLACEMENT:**

**GENERAL NOTES:** 

ORDINANCES.

SOLAR EQUIPMENT.

SYSTEM UTILIZES "ENPHASE" MICRO-INVERTERS WITH RAPID SHUTDOWN CONTROL LOCATED ON THE BACK SIDE OF EACH MODULE.

## **STRUCTURAL STATEMENT:**

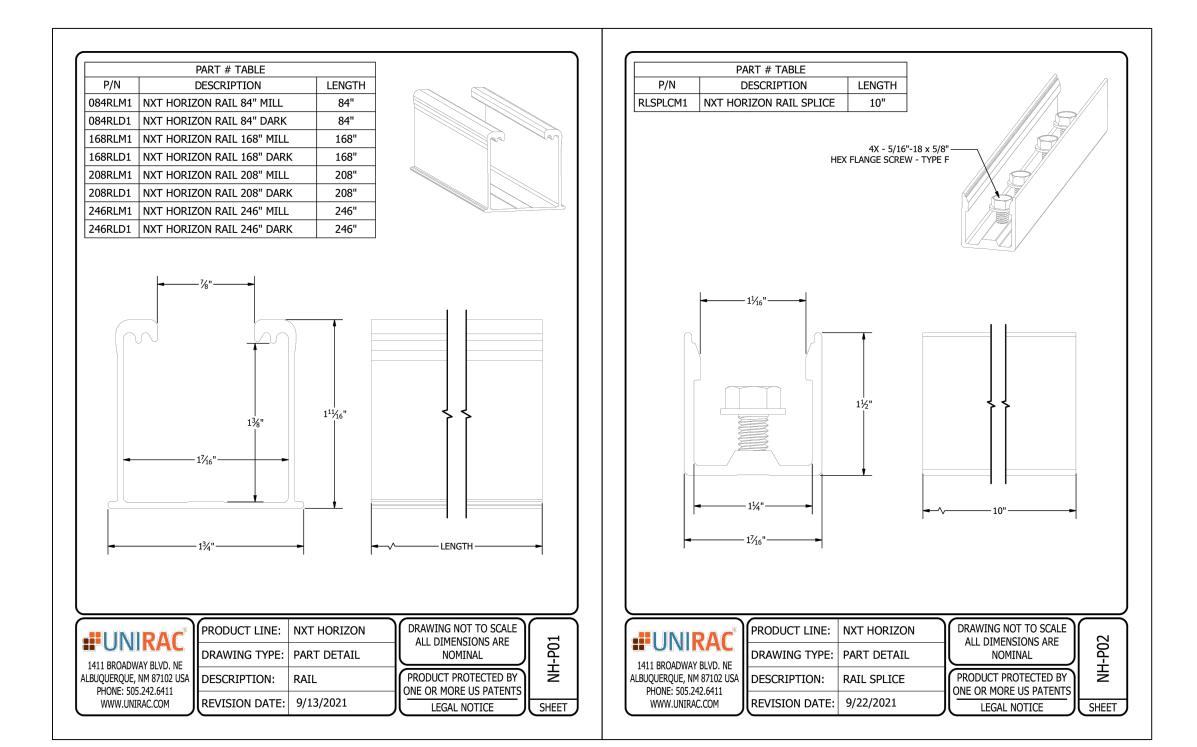
THE EXISTING STRUCTURE IS ADEQUATE TO SUPPORT THE NEW LOADS IMPOSED BY THE PHOTOVOLTAIC MODULE SYSTEM INCLUDING UPLIFT & SHEAR.EXISTING RAFTER SIZES & DIMENSIONS CONFORM TO 7TH EDITION 2020 FLORIDA RESIDENTIAL CODE

MOUNTING BRACKETS AND HARDWARE MEET OR EXCEED FLORIDA CODE REQUIREMENTS FOR THE DESIGN CRITERIA OF THE TOWN.

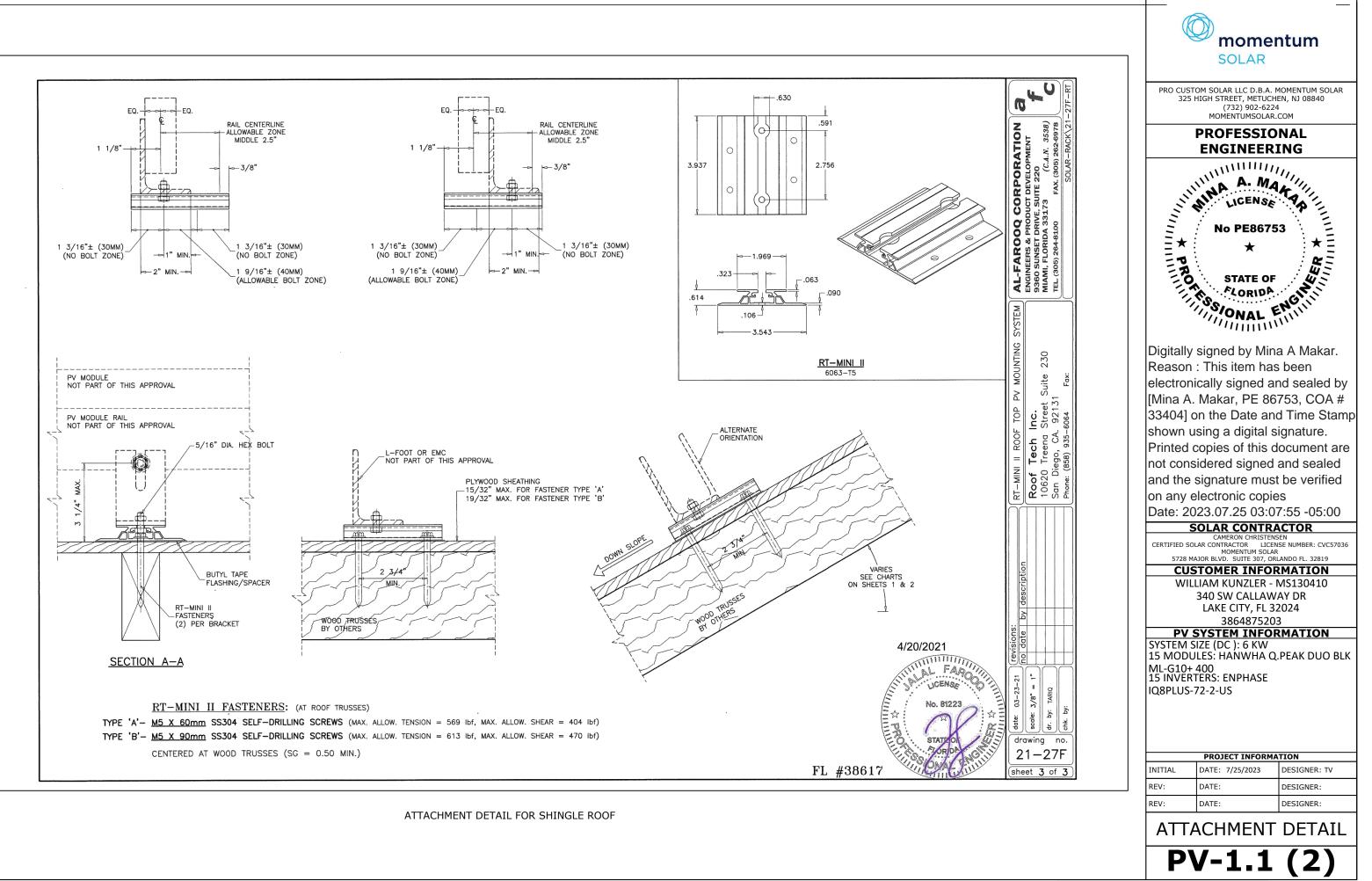
## **FSEC CERTIFICATION STATEMENT:**

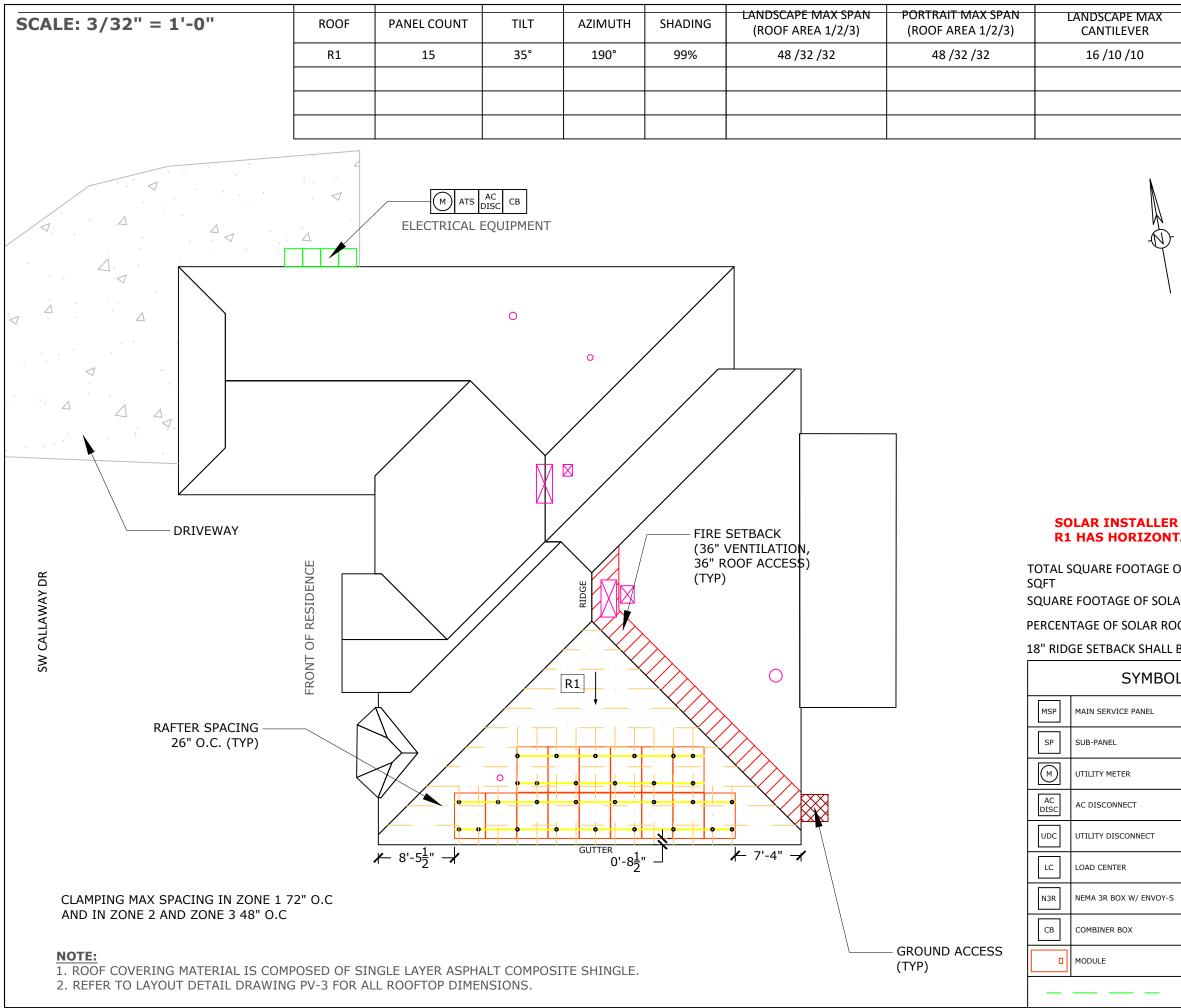
PER FL. STATUE 377.705, I, MINA A. MAKAR PE# 86753, CERTIFICATE OF AUTHORIZATION #33404, AN ENGINEER LICENSED PURSUANT TO CHAPTER 471, CERTIFY THAT THE PV ELECTRICAL SYSTEM AND ELECTRICAL COMPONENTS ARE DESIGNED AND APPROVED USING THE STANDARDS CONTAINED IN THE MOST RECENT VERSION OF THE FLORIDA BUILDING CODE. FBC 2020

| 1  |   |                             |  |  |  |  |  |  |  |  |  |
|--|---|-----------------------------|--|--|--|--|--|--|--|--|--|
| Ø  | mome                                      | ntum                        |  |  |  |  |  |  |  |  |  |
| PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR<br>325 HIGH STREET, METUCHEN, NJ 08840<br>(732) 902-6224<br>MOMENTUMSOLAR.COM |   |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
| PROFESSIONAL<br>ENGINEERING<br>A. MA<br>LICENSE<br>No PE86753  |   |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
| INNA A. MAK  |   |                             |  |  |  |  |  |  |  |  |  |
|  | ALLICENSE                                 | *P 11                       |  |  |  |  |  |  |  |  |  |
| Ē  | No PE8675                                 | 53 =                        |  |  |  |  |  |  |  |  |  |
| ∃★ :   | *   | ★Ξ                          |  |  |  |  |  |  |  |  |  |
| - PR   |   | N =                         |  |  |  |  |  |  |  |  |  |
| 10   |   | VEI                         |  |  |  |  |  |  |  |  |  |
| 11   | Corida                                    | NGHIII                      |  |  |  |  |  |  |  |  |  |
| · ·  | ONAL                                      |                             |  |  |  |  |  |  |  |  |  |
|  | STATE OF<br>STATE OF<br>SONDA<br>SONAL    |                             |  |  |  |  |  |  |  |  |  |
| Digitally  | signed by Min                             | a A Makar.                  |  |  |  |  |  |  |  |  |  |
| Inceason   | . 1113 10-11110                           | 5 00011                     |  |  |  |  |  |  |  |  |  |
|  | cally signed a<br>Makar, PE 86            | •                           |  |  |  |  |  |  |  |  |  |
| 1-   | •   | d Time Stamp                |  |  |  |  |  |  |  |  |  |
| -  | sing a digital s                          |                             |  |  |  |  |  |  |  |  |  |
|  | copies of this c                          | •                           |  |  |  |  |  |  |  |  |  |
| not cons   | idered signed                             | and sealed                  |  |  |  |  |  |  |  |  |  |
|  | signature mus                             |                             |  |  |  |  |  |  |  |  |  |
|  | electronic copie                          |                             |  |  |  |  |  |  |  |  |  |
|  | 23.07.25 03:0                             |                             |  |  |  |  |  |  |  |  |  |
|  | CAMERON CHRISTEN<br>LAR CONTRACTOR LICEI  | SEN<br>NSE NUMBER: CVC57036 |  |  |  |  |  |  |  |  |  |
|  | MOMENTUM SOLAI<br>NOR BLVD. SUITE 307, OR | 2                           |  |  |  |  |  |  |  |  |  |
|  | <b>TOMER INFO</b>                         |                             |  |  |  |  |  |  |  |  |  |
|  | 340 SW CALLAW                             | AY DR                       |  |  |  |  |  |  |  |  |  |
|  | LAKE CITY, FL 3                           |                             |  |  |  |  |  |  |  |  |  |
| PV S   | 386487520<br>SYSTEM INFO                  |                             |  |  |  |  |  |  |  |  |  |
|  | IZE (DC ): 6 KW<br>LES: HANWHA Q          |                             |  |  |  |  |  |  |  |  |  |
| ML-G10+  | 400                                       |                             |  |  |  |  |  |  |  |  |  |
| IQ8PLUS-   | TERS: ENPHASE<br>72-2-US                  |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
|  | PROJECT INFORM                            |                             |  |  |  |  |  |  |  |  |  |
| INITIAL<br>REV:  | DATE: 7/25/2023                           | DESIGNER: TV<br>DESIGNER:   |  |  |  |  |  |  |  |  |  |
| REV:   | DATE:                                     | DESIGNER:                   |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
|  | COVER P                                   | AGE                         |  |  |  |  |  |  |  |  |  |
|  | DV-1                                      |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |
|  |   |                             |  |  |  |  |  |  |  |  |  |









| PORTRAIT MAX<br>CANTILEVER                                       | G          | <i>A</i>   |              |
|--|------------|--|--------------|
| 16 /10 /10   | a          | 🖉 momei  | ntum         |
|  |            | SOLAR  |              |
|  |            | SOLAR  |              |
|  |            | OM SOLAR LLC D.B.A. N  |              |
|  | 325 1      | HIGH STREET, METUCH<br>(732) 902-6224                          |              |
|  |            | MOMENTUMSOLAR.   |              |
|  |            | PROFESSIO<br>ENGINEER  |              |
|  |            |  |              |
|  |            | "" A. MA   | 1111         |
|  | J.         | NIN LICENSA  | A            |
|  |            |  | 70           |
|  | Ξ.         |  | 3            |
|  | =*:        | *  | *=           |
|  | PR         | ·  |              |
|  | 10         |  | X            |
|  | 11         | S  | NCINT        |
|  |            | STATE OF<br>CORIDA<br>SONAL<br>Signed by Mina<br>This item has | TIT.         |
|  | Digitally  | signed by Mina<br>: This item has                              |              |
|  | Incason    | cally signed ar  |              |
|  |            | Makar, PE 86   | •            |
|  | -          | on the Date and  |              |
|  |            | sing a digital s   |              |
| NOTES:   | Printed of | copies of this d   | ocument are  |
| AL RAFTERS   |            | idered signed  |              |
|  |            | signature must   |              |
| OF ROOF: 4679.6201171875   | -          | electronic copie   |              |
| R ARRAY:316.82 SQFT  |            | 23.07.25 03:0  |              |
| OF COVERAGE: 6.78%   |            | CAMERON CHRISTENS  |              |
| BE REQUIRED  |            | MOMENTUM SOLAR<br>AJOR BLVD. SUITE 307, ORI                    |              |
|  |            |  | -            |
| L LEGEND   |            | LIAM KUNZLER - I<br>340 SW CALLAW                              |              |
|  |            | LAKE CITY, FL 32   | 2024         |
| CHIMNEY  | PV 4       | 3864875203<br>SYSTEM INFOR                                     |              |
| SKYLIGHT   | SYSTEM S   | IZE (DC ): 6 KW<br>LES: HANWHA Q                               |              |
| VENT   | ML-G10+    |  |              |
| O PIPE VENT  | IQ8PLUS-7  | 72-2-US  |              |
| FAN  |            |  |              |
| SATELLITE DISH   |            | PROJECT INFORMA  | TION         |
|  | INITIAL    | DATE: 7/25/2023  | DESIGNER: TV |
| FIRE SETBACKS  | REV:       | DATE:  | DESIGNER:    |
| MIN 3'x3' GROUND ACCESS  | REV:       | DATE:  | DESIGNER:    |
| PITCH DIRECTION  | F          | ROOF LAY   | OUT          |
| WIND PRESSURE ZONE LINES. REFER TO<br>PV-2.2 FOR ADDITIONAL INFO |            | PV-2   | 2            |
|  |            |  | _            |

|            | PV MODULE RA                       | TINGS                       |               | INVE                | RTER RATINGS                                  |   |                     |                       |                         | VOLTA   | GE DROP CAL   | CULATIONS   |                       |  |  |  | $\bigcirc$   | —  |
|------------|------------------------------------|-----------------------------|---------------|---------------------|---|---|---------------------|-----------------------|-------------------------|---|---|---|-----------------------|--|--|--|--|--|
| MODU       | LE MAKE                            | HANW                        | НА            | INVERTER M          | 1AKE  | ENPHASE   |                     |                       | FORMULA US              | ED PER NEC  | HANDBOOK 2  | 15.2(A)(4) W  | HERE APPLICAB         | LE   |  | (  | $\bigcirc$   |  |
| MC         | DDEL                               | Q.PEAK DL<br>ML-G10+        |               | MODEL               |   | IQ8PLUS-72-2-<br>US   | WIRE                | RUN                   | V <sub>mp</sub>         | I <sub>mp</sub>   | R   | L (FT)  | Vo                    | % V <sub>o</sub>   | WIRE SIZE  |  | SOLA   | nentum<br>R  |
| MAX        | POWER                              | 400V                        |               | MAX OUTPUT          | POWER   | 290W  | BRANCH T            | O J-BOX               | 240.00                  | 9.68  | 1.98  | 52.67   | 2.019                 | 0.84%  | 12 AWG   |  |  | .B.A. MOMENTUM SOLAR   |
| OPEN CIRCU | UIT VOLTAGE                        | 45.3                        | /             | OPEN DC VOI         | TAGE  | 60V   | J-BOX TO<br>CENT    |                       | 240.00                  | 18.15   | 1.24  | 50.00   | 2.251                 | 0.94%  | 10 AWG   |  | 5 HIGH STREET, ME<br>(732) 902<br>MOMENTUMS  | TUCHEN, NJ 08840   |
|            | OLTAGE                             | 37.13                       |               | NOMINAL AC V        | OLTAGE  | 240V  | LOAD CENT           | ER TO AC              | 240.00                  | 22.6875   | 0.778   | 3.00  | 0.106                 | 0.04%  | 08 AWG   | _  | PROFESS  |  |
|            |                                    | 11.14                       |               | MAX AC CUR          |   | 1.21A   | DISCON<br>AC DISCON |                       |                         |   |   |   |                       |  |  |  | ENGINE   |  |
|            | URRENT                             | 10.77                       | A             | CEC INVERTER EF     |   | 97%   | INTERCON            |                       | 240.00                  | 22.6875   | 0.491   | 10.00   | 0.223                 | 0.09%  | 06 AWG   |  | 11111 A.A.   | MANU   |
| UL1703 C   | OMPLIANT                           | YES                         |               | NUMBER OF IN        |   | 15<br>YES   | -                   |                       |                         |   |   |   |                       |  |  |  | WIN LICEN  | SEAP   |
| 8 MICRO-I  | CIRCUIT A<br>NVERTERS<br>CIRCUIT B | MODULES<br>TO 16<br>15 HANV |               | THIS SOL<br>FLORIDA | BUILDING CC<br>0+ 400 400W N<br>-2-US MICRO-I | VITAIC SYSTEM (<br>DDE AND THE 20<br>MODULES PAIREE<br>NVERTERS | 17 NATIONAL         |                       |                         | NER SI<br>DISCO<br>EATO<br>EATO<br>EAKER<br>JRER<br>FOR 3<br>ER (A) | PER FL.<br>CERTIFI<br>LICENSI<br>ELECTR<br>DESIGN<br>IN THE | STATUE 377.<br>CATE OF AUT<br>ED PURSUANT<br>ICAL SYSTEM<br>ED AND APPF<br>MOST RECENT<br>BC 2020<br>UT<br>ME<br>G<br>ANS<br>AC | T VERSION OF T        | . MAKAR PE#<br>33404, AN E<br>71,CERTIFY<br>AL COMPONE<br>HE STANDAR<br>THE FLORIDA<br>XISTING SIEN<br>SUB PANEI<br>MAIN BREAK | * 86753,<br>NGINEER<br>THAT THE PV<br>ENTS ARE<br>DS CONTAINED<br>MENS 200A<br>L 240 V<br>ER: 200A<br>POWER<br>TOWER<br>TOWER<br>TOWER | Digitall<br>Reaso<br>electro<br>[Mina /<br>33404]<br>shown<br>Printec<br>not cor<br>and the<br>on any<br>Date: 2<br>CERTIFIED<br>5728<br>CL<br>W<br>W<br>SYSTEM<br>15 MOD<br>ML-G10<br>15 INVE | y signed by<br>n : This item<br>nically signed<br>A. Makar, PE<br>on the Date<br>using a digit<br>copies of th<br>sidered sign<br>e signature n<br>electronic c<br>2023.07.25 0<br>SOLAR CONTRACTOR<br>MAJOR BLVD. SUITE 3<br>SOLAR CONTRACTOR<br>MAJOR BLVD. SUITE 3<br>SOLAR CONTRACTOR<br>MAJOR BLVD. SUITE 3<br>STOMER IN<br>ILLIAM KUNZLI<br>340 SW CALL<br>LAKE CITY,<br>386487<br>SIZE (DC ): 6 K<br>DULES: HANWH | oF<br>Nina A Makar.<br>has been<br>d and sealed by<br>86753, COA #<br>and Time Stamp<br>al signature.<br>is document are<br>ned and sealed<br>nust be verified<br>opies<br>3:07:55 -05:00<br>TRACTOR<br>ISTENSEN<br>LICENSE NUMBER: CVC57036<br>SOLAR<br>07, ORLANDO FL. 32819<br>FORMATION<br>FR - MS130410<br>AWAY DR<br>FL 32024<br>5203<br>FORMATION<br>W<br>IA Q.PEAK DUO BLK |
| Wire Tag   | Conduit                            | Wire Qty                    | Wire<br>Gauge | Wire Type           |   | Wire<br>Ampacity (A)  | Derate F            | Conduit<br>ill Derate | Derated<br>Ampacity (A) | Inverter<br>Qty   | NOC (A)   | NEC<br>Correction   | Design<br>Current (A) | Ground<br>Size   | Ground Wire<br>Type  |  |  |  |
| 1          | OPEN AIR                           | 2                           | 12 AWG        | Trunk Cable         | 90°C  | 30  | 0.96                | 1                     | 28.80                   | 8   | 1.21  | 1.25  | 12.10                 | 12 AWG   | Trunk Cable  | INITIAL  | DATE: 7/25/202   |  |
| 2A         | 3/4" PVC                           | 4                           | 10 AWG        | THWN-2              | 75°C  | 35  | 0.96                | 0.8                   | 26.88                   | 8   | 1.21  | 1.25  | 12.10                 | 08 AWG   | THWN-2   | REV:   | DATE:  | DESIGNER:  |
| 2B         | 0/4/1 01/10                        |                             | 10 AWG        | THWN-2              | 75°C  | 35  | 0.96                |                       | 26.88                   | 7   | 1.21  | 1.25  | 10.59                 | 00.000   |  | REV:   | DATE:  | DESIGNER:  |
| 3          | 3/4" PVC                           | 3 + G                       | 08 AWG        | THWN-2              | 75°C  | 50  | 0.96                | 1                     | 48.00                   | 15  | 1.21  | 1.25  | 22.69                 | 08 AWG   | THWN-2   |  | EE LINE  | DIAGRAM  |
| 4          | 3/4" PVC                           | 3                           | 06 AWG        | THWN-2              | 75°C  | 65  | 0.96                | 1                     | 62.40                   | 15  | 1.21  | 1.25  | 22.69                 |  | THWN-2   | L  | PV   | -  |

|     | 1  | OPEN AIR  | 2     | 12 AWG | Trunk Cable | 90°C | 30 | 0.96 | 1   | 28.80 | 8  | 1.21 | 1.25 | 12.10 |
|-----|----|-----------|-------|--------|-------------|------|----|------|-----|-------|----|------|------|-------|
|     | 2A | 3/4" PVC  | Л     | 10 AWG | THWN-2      | 75°C | 35 | 0.96 | 0.8 | 26.88 | 8  | 1.21 | 1.25 | 12.10 |
|     | 2B | - 5/4 FVC | 4     | 10 AWG | THWN-2      | 75°C | 35 | 0.96 | 0.8 | 26.88 | 7  | 1.21 | 1.25 | 10.59 |
|     | 3  | 3/4" PVC  | 3 + G | 08 AWG | THWN-2      | 75°C | 50 | 0.96 | 1   | 48.00 | 15 | 1.21 | 1.25 | 22.69 |
|     | 4  | 3/4" PVC  | 3     | 06 AWG | THWN-2      | 75°C | 65 | 0.96 | 1   | 62.40 | 15 | 1.21 | 1.25 | 22.69 |
| — T |    |           |       |        |             |      |    |      |     |       |    |      |      |       |

#### **ELECTRICAL NOTES:**

- 1. ALL CALCULATIONS FOR VOC, VMAX, IMP AND ISC HAVE BEEN CALCULATED USING THE MANUFACTURED STRING CALCULATOR BASED ON ASHRAE 2% HIGH AND EXTREME MINIMUM TEMPERATURE COEFFICIENTS.
- 2. THE ENTIRE ARRAY IS BONDED ACCORDING TO (NEC 690.46 250.120 PARAGRAPH C). THE GROUND IS CARRIED AWAY FROM THE GROUNDING LUG USING #6 BARE COPPER WIRE OR #8 THWN-2 COPPER WIRE.
- 3. THIS SYSTEM COMPLIES WITH NEC 2017
- 4. BRANCH CIRCUIT CALCULATION FOR WIRE TAG 1 DISPLAYS THE LARGEST BRANCH CIRCUIT IN SYSTEM. OTHER BRANCH CIRCUITS SHALL HAVE LOWER DESIGN CURRENT THAN THE ONE SHOWN. IN ADDITION, VOLTAGE DROP CALCULATIONS FROM PANELS TO THE COMBINER BOX SHALL BE SHOWN IN A SIMILAR FASHION
- 5. ALL CONDUCTORS ARE SIZED BASED ON NEC 2017 ARTICLE 310
- 6. ALL EQUIPMENT INSTALLED IS RATED AT 75°C
- 7. INVERTER NOC (NOMINAL OPEN CURRENT) OBTAINED FROM EQUIPMENT DATASHEET
- 8. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL LOCAL AND NATIONAL CODE REQUIREMENTS.
- 9. EACH MODULE MUST BE GROUNDED ACCORDING TO USER INSTRUCTIONS
- 10. ALL EQUIPMENT SHALL BE LISTED PER NEC 690.4(B)
- 11. PER NEC 690.13, 690.15, PROVIDE A WARNING SIGN AT ALL LOCATIONS WHERE TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION> SIGN SHALL READ \*WARNING -ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS - OR EQUIVALENT.
- 12. PER NEC 705.10, PROVIDE A PERMANENT PLAQUE OR DIRECTORY SHOWING ALL ELECTRIC POWER SOURCES ON THE PREMISES AT SERVICE ENTRANCE.
- 13. INTERCONNECTION METHOD SHALL COMPLY WITH NEC 705.12
- 14. AND OPTION FOR A SINGLE CIRCUIT BRANCH TO BE SPLIT INTO TWO SUB-CIRCUIT BRANCHES IS ACCEPTABLE.
- 15. ALL CONDUCTORS MUST BE COPPER.
- 16. NEUTRAL AND EQUIPMENT GROUNDING CONDUCTOR BONDED AS PER NEC 250.24(C).
- 17. EQUIPMENT GROUNDING CONDUCTOR IS CONNECTED TO A GROUNDING ELECTRODE SYSTEM PER 250.54(D).
- 18. FUSES FOR PV DISCONNECT HAVE AIC RATINGS OF 200KA AC AND 20KA DC.
- 19. SUPPLY SIDE CONNECTION SHALL BE MADE USING ILSCO INSULATION PIERCING CONNECTORS (IPC). MAKE, MODEL, AND RATING OF INTERCONNECTION CAN BE SEEN ON TABLE 1 BELOW.
- 20. METHOD OF INTERCONNECTION CAN BE SEEN IN FIGURE 1.
- 21. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.

- 22. WORKING CLEARANCES AROUND THE EXISTING AND NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC ARTICLE 110.26.
- 23. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C)(1) AND ARTICLE 310.8 (D).
- 24. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).
- 25. TOTAL AREA OF ALL CONDUCTORS, SPLICES, AND TAPS INSTALLED AT ANY CROSS SECTION OF THE WIRING DOES NOT EXCEED 75% OF THE CROSS SECTIONAL AREA OF THE SPACE. NEC 312.8(A)(2).
- 26. SYSTEM IS CONSIDERED AN AC MODULE SYSTEM. NO DC CONDUCTORS ARE PRESENT IN CONDUIT, COMBINER, JUNCTION BOX, DISCONNECT. AND COMPLIES WITH 690.6 NO DC DISCONNECT AND ASSOCIATED DC LABELING ARE REQUIRED.
- 27. SYSTEM COMPLIES WITH 690.12 RAPID SHUTDOWN AND ASSOCIATED LABELING AS PER 690.56(C). AC VOLTAGE AND SYSTEM OPERATING CURRENT SHALL BE PROVIDED 690.52.
- 28. CONDUCTORS IN CONDUIT ARE AC CONDUCTORS BRANCH CIRCUITS AND NOT PV SOURCE CIRCUITS. 690.6.
- 29. ALL GROUNDING SHALL COMPLY WITH 690.47(A) IN THAT THE AC MODULES WILL COMPLY WITH 250.64.
- 30. NO TERMINALS SHALL BE ENERGIZED IN THE OPEN POSITION IN THIS AC MODULE SYSTEM 690.13, 690.15, 690.6.
- 31. WHERE APPLICABLE: INTERCONNECTION SHALL COMPLY WITH 705.12(A) OR 705.12(B)
- 32. ALL WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH 2017 NEC ARTICLE 110.21(B). LABEL WARNINGS SHALL ADEQUATELY WARN OF THE HAZARD. LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT, AND LABELS REQUIRED SHALL BE SUITABLE FOR THE ENVIRONMENT.
- 33. PV POWER CIRCUIT LABELS SHALL APPEAR ON EVERY SECTION OF THE WIRING SYSTEM THAT IS SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

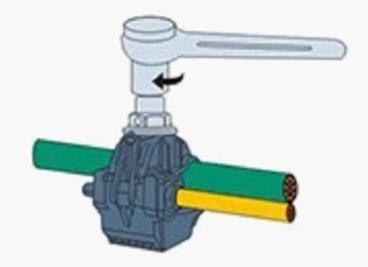
#### TABLE 1:

| MAKE  | MODEL    | VOLTAGE<br>RATING | CONDUCTOR<br>RANGE MAIN | CONDUCTOR<br>RANGE TAP |
|-------|----------|-------------------|-------------------------|------------------------|
| ILSCO | IPC 4006 | 600 V             | 4/0-4 AWG               | 6-14 AWG               |
| ILSCO | IPC 4020 | 600 V             | 4/0-2 AWG               | 2/0-6 AWG              |

#### INSTRUCTIONS FOR LINE TAPS

FIGURE 1:

- 1. ADJUST THE CONNECTOR NUT TO SUITABLE LOCATION
- 2. PUT THE BRANCH WIRE INTO THE CAP SHEATH FULLY
- 3. INSERT THE MAIN WIRE, IF THERE ARE TWO LAYS OF INSULATED LAY IN THE MAIN CABLE, SHOULD STRIP A CERTAIN LENGTH OF THE FIRST INSULATED LAY FROM INSERTED END
- 4. TURN THE NUT BY HAND, AND FIX THE CONNECTOR IN SUITABLE LOCATION.
- 5. SCREW THE NUT WITH THE SLEEVE SPANNER.
- 6. SCREW THE NUT CONTINUALLY UNTIL THE TOP PART IS CRACKED AND DROPPED DOWN





| AL  | L WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH NEC ARTICLE 110.21(B). LABEL WARNINGS SHALL  | ADEQUATELY W | ARN OF THE HAZARD. LABE       | LS SHALL BE PERMANENTLY AFFIXED TO THE  | EQUIPMENT, AND LABELS REQUIRED SHALL BE SUITABLE FOR THE ENVIRONM   | ENT.  |
|-----|--|--------------|-------------------------------|---|---|---|
| TAG | LABEL  | QUANTITY     | LOCATION                      | NOTE  | EXAMPLES  |   |
| A   | AC SOLAR VOLTAGE   | 12           | AC CONDUITS                   | 1 AT EVERY SEPARATION BY<br>ENCLOSURES / WALLS /<br>PARTITIONS / CEILINGS / FLOORS<br>OR NO MORE THAN 10' |   |   |
| B   | WARNING: PHOTOVOLTAIC<br>POWER SOURCE<br>POWER SOURCE  | 1            | COMBINER BOX                  | 1 AT ANY COMBINER BOX   |   |   |
| ©   | ELECTRICAL SHOCK HAZARD<br>TERMINALS ON BOTH LINE AND<br>LOAD SIDES MAY BE ENERGIZED<br>IN THE OPEN POSITION   | 1            | JUNCTION BOX                  | 1 AT ANY JUNCTION BOX   |   | WARNING: PHOTOVOLTA/D<br>POWER SOURCE<br>PHOTOVOLTA/C SYSTEM<br>EQUIPPED WITH<br>RAPID SHUTDOWN |
| D   | PHOTOVOLTAIC SYSTEM   Marchine     A C DISCONNECT   A     Nate of the system   A     NOMINAL OPERATING   240 V     Ac voltage   240 V     Image: A contract of the system   Call of the system     Action of the system   A     Action of the system   Call of the system     Action of the system   Call of the system </td <td>1</td> <td>AC DISCONNECT<br/>(RSD SWITCH)</td> <td>1 OF EACH AT FUSED AC<br/>DISCONNECT<br/>COMPLETE VOLTAGE AND<br/>CURRENT VALUES ON<br/>DISCONNECT LABEL</td> <td></td> <td></td>  | 1            | AC DISCONNECT<br>(RSD SWITCH) | 1 OF EACH AT FUSED AC<br>DISCONNECT<br>COMPLETE VOLTAGE AND<br>CURRENT VALUES ON<br>DISCONNECT LABEL      |   |   |
| E   | AC SYSTEM DISCONNECT S. PLAINFIELD, NJ 07080<br>PHONE NUMBER:732-902-6224  |              |                               |   |   |   |
| Ē   | DUAL POWER SUPPLY<br>SECOND SOURCE IS<br>PHOTOVOLTAIC SYSTEM   REVENUE METER   | 1            | UTILITY METER                 | 1 AT UTILITY METER AND ONE<br>DIRECTORY PLACARD   | CONSTRUCT FEMALASE |   |
| G   | EMERGENCY RESPONDER<br>THIS SOLAR PV SYSTEM EQUIPPED<br>WITH RAPID SHUTDOWN<br>SWITCH TO THE 'OFF'<br>POSITION TO SHUTDOWN<br>NITE<br>MICTORY OF MARKEN AND<br>MICTORY OF MARKEN<br>MICTORY OF MARKEN<br>M | 1            | INTERCONNECTION<br>POINT      | 1 OF EACH AT BUILDING   |   |   |
|     | POWER SOURCE OUTPUT CONNECTION.<br>DO NOT RELOCATE THIS OVERCURRENT<br>DEVICE  | 1            | BACKFEED PANEL                | INTERCONNECTION POINT AND<br>ONE DIRECTORY PLACARD  |   | SOURPY BREAKER<br>BEELAST IS BACKTO<br>DOINT RELOCATE   |
| θ   | NOMINAL OPERATING AC VOLTAGE : 240V<br>NOMINAL OPERATING AC FREQUENCY : 60HZ<br>MAXIMUM AC POWER : VA<br>MAXIMUM AC CURRENT : A<br>MAXIMUM OVERCURRENT DEVICE RATING FOR<br>AC MODULE PROTECTION : 20A   | 1            | AC CURRENT PV<br>MODULES      |   | COULD POWER SUPPLY<br>SOURCE SUPPLY<br>SOURCE SUPPLY<br>VOLUME LEVING SUSSES  | (G) BACKFEED  |





