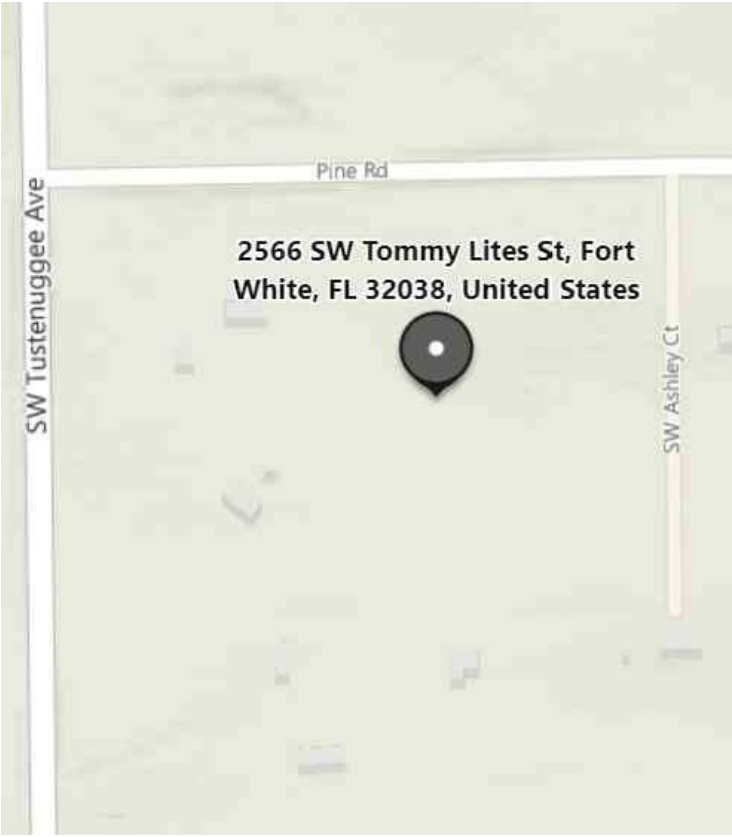


PV PROJECT - 16.59kWdc



1 PROPERTY ASSESSOR MAP - PROJECT LOCATION NTS



2 AERIAL MAP - PROJECT LOCATION NTS

SCOPE OF WORK

THESE PLANS ARE FOR THE INSTALLATION OF A ROOF MOUNTED PHOTOVOLTAIC (PV) SYSTEM. THE PV SYSTEM WILL BE INTERCONNECTED WITH THE CEC UTILITY GRID THROUGH EXISTING ELECTRICAL EQUIPMENT AND WILL OPERATE IN PARALLEL VIA SUPPLY(LST) SIDE CONNECTION WITH NET ENERGY METER.

GOVERNING BUILDING CODES

- 2020 FLORIDA BUILDING CODE, 7TH EDITION
- 2020 FLORIDA RESIDENTIAL CODE, 7TH EDITION
- 2017 NATIONAL ELECTRICAL CODE, NEC
- 2020 FLORIDA FIRE PREVENTION CODE 7TH EDITION.
- UL STANDARDS
  - RACKING - UL 2703
  - PV MODULE - UL 1703
  - INVERTER - UL 1741

DESIGN SPECIFICATIONS

- AHJ - Columbia County
- UTILITY - CEC
- BUILDING RISK CATEGORY II
- DESIGN WIND SPEED (ULT) - 120MPH
- DESIGN SNOW LOAD - 0PSF
- EXPOSURE CATEGORY - C
- MEAN ROOF HEIGHT - 15FT
- ROOF SLOPE - 22.62°

PV SYSTEM SPECIFICATIONS

- PV MODULE: 42 x CS3W-395; 16.59kWdc
- INVERTER: IQ7+-72-2-US
- RACKING: Ecofasten Rock-it
- ROOF TYPE:METAL PANEL
- AZIMUTH:150°, 330°

PV INSTALLATION OVERVIEW

ELECTRICAL

- POINT OF CONNECTION: SUPPLY(LST)
- MAX INV OUTPUT CURRENT: 1.21A Ea.
- PV AC DEDICATED OCP DEVICE RATING:  $(42 * 1.21A) * 125\% = 63.525A$ , 70A OCP
- UTILITY AC DISCONNECT REQ'D: YES

STRUCTURAL

- MAX ALLOWABLE SPACING BETWEEN ATTACH POINTS: 44 Inches
- MIN. NUMBER OF ATTACHMENT POINTS: 87
- WEIGHT PER ATTACHMENT POINT: 31.8LBS/ATTACH
- PV DEAD LOAD: 2.77PSF
- LENGTH OF RAIL REQUIRED: 294FT

Sheet List Table

| Sheet Number | Sheet Title        |
|--------------|--------------------|
| PV01         | COVER              |
| PV02         | NOTES              |
| PV03         | E_PV SITE PLAN     |
| PV04         | ELEVATION          |
| PV05         | LINE DIAGRAM       |
| PV06         | S_PV SITE LAYOUT   |
| PV07         | PV ATTACH PLAN     |
| R01          | MODULE DATASHEET   |
| R02          | INVERTER DATASHEET |
| R03          | IQ COMBINER        |
| R04          | RACKING DATASHEET  |



**BAPS**  
Engineering & Permitting

Project Type - Photovoltaic

Project Location:

2566 Tommy Lites St,  
Fort White, FL 32038

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Parcel Number: 17-6S-17-09690-107  
Assessor Phone # (386) 758-1083

PV SYSTEM SPECIFICATIONS

- PV MODULE: 42 x CS3W-395; 16.59kWdc
- INVERTER: IQ7+-72-2-US
- RACKING: Ecofasten Rock-it
- ROOF TYPE:METAL PANEL
- AZIMUTH:150°, 330°
- ROOF SLOPE:22.62°

File Name:

01\_BUFORD KYLE\_COVER.DWG

Sheet Number and Title:

PV01 - COVER

Sheet Size:

ANSI full bleed B (17.00 x 11.00 Inches)

Drawing history

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Permit manager

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Chad E Widup  
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PV01

A

B









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|--|---|---|
| 1  | 2 | 3 |
| INSTALLATION NOTES   |   |   |
| 1. THE EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS.   |   |   |
| 2. THE ACTUAL LOCATION OF THE ARRAY AND PLACEMENT OF THE MECHANICAL ANCHORS ARE SUBJECT TO VARIANCES DEPENDING ON SITE CONDITIONS AND/OR ROOF OBSTRUCTIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SPECIFICATIONS BEFORE COMMENCING. |   |   |
| 3. ALL OUTDOOR EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA3-R RATING.  |   |   |
| 4. ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.   |   |   |
| 5. ALL WORK SHALL COMPLY WITH THE BUILDING CODES SET FORTH BY THE GOVERNING JURISDICTION.  |   |   |
| 6. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY THE NATIONAL FIRE CODE, NFC AND THE NATIONAL ELECTRICAL CODE, NEC.   |   |   |
| GENERAL PV SITE NOTES  |   |   |
| 1. PV ARRAY NOT TO DIRUPT ATTIC VENTS OR PLUMBING VENTS. ARRAY TO SPAN OR EXTEND TERMINATION PLUMBING VENTS WITHOUT ANY IMPACT ON THEIR FUNCTIONALITY.   |   |   |
| 2. PANELS WILL NOT EXCEED THE OVERALL HEIGHT OR ROOF PITCH OF THE EXISTING STRUCTURE.  |   |   |
| ABBREVIATIONS  |   |   |
| (E) - EXISTING   |   |   |
| (N) - NEW  |   |   |
| TYP - TYPICAL  |   |   |
| NTS - NOT TO SCALE   |   |   |
| MIN - MINIMUM  |   |   |
| MAX - MAXIMUM  |   |   |
| AC - ALTERNATING CURRENT   |   |   |
| DC - DIRECT CURRENT  |   |   |
| PV - PHOTOVOLTAIC  |   |   |
| MOD - PV MODULE  |   |   |
| INV - DC/AC PV INVERTER  |   |   |
| POC - POINT OF CONNECTION(PV)  |   |   |
| RSB - RAPID SHUTDOWN BOX   |   |   |
| CB - CIRCUIT BREAKER (EX. 20A/2P CB - 20AMP 2-POLE CIRCUIT BREAKER)  |   |   |
| C - CONDUIT  |   |   |
| OCP - OVERCURRENT PROTECTION   |   |   |
| OCPD- OVERCURRENT PROTECTION DEVICE  |   |   |
| MSD - MAIN SERVICE DISCONNECT  |   |   |
| DISC - DISCONNECT  |   |   |
| MSP - MAIN SERVICE PANEL   |   |   |
| SP - SUB PANEL   |   |   |
| PLP - PROTECTED LOADS PANEL  |   |   |
| MLO - MAIN LUG ONLY  |   |   |
| MB - MAIN BREAKER  |   |   |
| EGC - EQUIPMENT GROUNDING CONDUCTOR  |   |   |
| GEC - GROUNDING ELECTRODE CODUCTOR   |   |   |
| GES - GROUNDING ELECTRODE SYSTEM   |   |   |
| SYMBOLS  |   |   |
|  UTILITY METER   |   |   |
|  PV MODULE   |   |   |
|  DC/AC UTILITY INTERACTIVE INVERTER  |   |   |
|  DISCONNECT  |   |   |
|  CB DOUBLE POLE  |   |   |
|  CB SINGLE POLE  |   |   |
|  FUSE  |   |   |
|  FUSED DISCONNECT  |   |   |

|  |   |   |
|--|---|---|
| 4  | 5 | 6 |
| ELECTRICAL NOTES   |   |   |
| 1. INSTALLATION TO BE COMPLIANT WITH NFPA 1 & NFPA70 (NATIONAL ELECTRICAL CODE)  |   |   |
| 2. THE PV SYSTEM IS AN UNGROUNDED PV ARRAY AND HAS A GROUND-FAULT PROTECTION DEVICE THAT MEETS THE REQUIREMENTS OF 690.41(B)(1) AND (2)  |   |   |
| 3. THE EXACT LOCATION OF NEW ELECTRICAL EQUIPMENT AND CONDUIT RUN RELATING TO THIS PROJECT IS SUBJECT TO CHANGE AND WILL BE DETERMINED ON SITE BY THE CONTRACTOR.  |   |   |
| 4. ALL CLEARANCES AND WORK SPACE AS REQUIRED PER NEC 110.26 SHALL BE FOLLOWED  |   |   |
| 5. THE INVERTER(S) SHALL MEET ALL CURRENT CODE REQUIREMENTS FOR RAPID SHUTDOWN AS DEFINED IN NEC 690.12.   |   |   |
| 6. ALL EQUIPMENT TO BE LISTED OR LABELED FOR ITS APPLICATION(UL OR OTHER APPROVED LISTINGS)  |   |   |
| 6.1. PV MODULE - UL1703  |   |   |
| 6.2. INVERTER - UL1741   |   |   |
| 6.3. RACKING SYSTEM - UL2703   |   |   |
| 7. GROUNDING   |   |   |
| 7.1. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ARTICLES 250 & 690   |   |   |
| 7.2. MODULE BONDING METHOD SHALL BE INTEGRATED GROUNDING MID CLAPS. REFER TO MANUFACTURES SPECIFIC INSTRUCTIONS FOR PROPER BONDING TECHNIQUES.   |   |   |
| 7.3. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES SHALL BE RATED FOR DIRECT BURIAL   |   |   |
| 7.4. EGC SHALL BE SIZED IN ACCORDAGE WITH 250.122 AND ARRAY EGC'S SMALLER THAN 6AWG SHALL COMPLY WITH 250.120(C)   |   |   |
| 8. ALL CONDUCTORS ARE COPPER, UNLESS SPECIFIED OTHERWISE   |   |   |
| 9. ALL CONDUIT, RACEWAYS, AND JUNCTION BOXES SHALL BE SIZED ACCORDING TO THE APPLICABLE CODE IF THE SIZE IS NOT SPECIFIED.   |   |   |
| 10. SIGNAGE SHALL BE APPLIED ACCORDING TO GOVERNING BUILDING CODES AND LOCAL JURISDICTIONS SPECIFIC REQUIREMENTS.  |   |   |
| 11. EQUIPMENT INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC.   |   |   |
| 12. CALCULATION OF MAXIMUM CIRCUIT CURRENT FOR THE SPECIFIC CIRCUIT SHALL BE CALCULATED IN ACCORDANCE WITH 690.8(A)(1) THROUGH (A)(6). CONDUCTOR AMPACITY SHALL BE SIZED TO NOT CARRY LESS THAN THE LARGER OF 690.8(B)(1) OR (2)   |   |   |
| 13. DC PV SOURCE AND DC OUTPUT CURRENT CIRCUITS ON OR INSIDE A BUILDING SHALL BE CONTAINED IN METAL RACEWAYS, TYPE MC METAL-CLAD CABLE THAT COMPLIES WITH 250.118(10), OR METAL ENCLOSURES FROM THE POINT OF PENETRATION OF THE SURFACE OF THE BUILDING OR STRUCTURE TO THE FIRST READILY ACCESSIBLE DISCONNECTING MEANS.(690.31(G))   |   |   |
| 14. ACCESS TO BOXES; JUNCTION, PULL, AND OUTLET BOXES LOCATED BEHIND MODULES OR PANELS SHALL BE SO INSTALLED THAT THE WIRING CONTAINED IN THEM CAN BE RENDERED ACCESSIBLE DIRECTLY OR BY DISPLACEMENT OF A MODULE(S) SECURED BY REMOVABLE FASTENERS AND CONNECTED BY FLEXIBLE WIRING SYSTEM.(690.34)   |   |   |
| 15. PV POINT OF CONNECTION. THE OUTPUT OF AN INTERCONNECTED ELECTRIC POWER SOURCE SHALL BE CONNECTED AS SPECIFIED IN 705.12(A) or (B).   |   |   |
| FIRE OFFSETS - SYSTEM WILL BE INSTALLED PER 2018 NFPA 1, CH 11.12  |   |   |
| NFPA 11.12.2.2.2.1 - PATHWAYS  |   |   |
| NOT LESS THAN TWO 36IN WIDE PATHWAYSON SEPARATE ROOF PLANES, FROM GUTTER TO RIDGE, SHALL BE PROVIDED ON ALL BUILDINGS. ONE PATHWAY SHALL BE PROVIDED ON THE STREET OR DRIVEWAY SIDE OF THE ROOF. FOR EACH ROOF PLANS WITH A PV ARRAY, A 36IN WIDE PATHWAY FROM GUTTER TO RIDGE SHALL BE PROVIDED ON THE SAME PLAN AS THE PV ARRAY, ON AN ADJACENT ROOF PLANE OR STRADDLING THE SAME AND ADJACENT ROOF PLANES. PATHWAYS SHALL BE LOCATED IN AREAS WITH MINIMAL OBSTRUCTIONS SUCH AS VENT PIPES, CONDUIT, OR MECHANICAL EQUIPMENT. |   |   |
| 11.12.2.2.2.2  |   |   |
| FOR PV ARRAYS OCCUPYING UP TO 33 PERCENT OF THE PLAN VIEW ROOF AREA, A MIN. 18IN PATHWAY SHALL BE PROVIDED ON EITHER SIDE OF A HORIZONTAL RIDGE, FOR PV ARRAYS OCCUPYING MORE THAN 33 PERCENT OF THE PLAN VIEW ROOF AREA, A MIN 36IN PATHWAY SHALL BE PROVIDED ON EITHER SIDE OF A HORIZONTAL RIDGE.   |   |   |
| THE ACCESS PATHWAY SHALL BE LOCATED AT A STRUCTURALLY STRONG LOCATION OF THE BUILDING, SUCH AS A BEARING WALL.   |   |   |

|   |   |   |
|---|---|---|
| 7   | 8 | 9 |
| STRUCTURAL NOTES  |   |   |
| 1. PV SYSTEM CONSIST OF THE PV MODULES, RAILING, AND CONNECTION HARDWARE  |   |   |
| 2. RACKING SYSTEM & PV ARRAY SHALL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL   |   |   |
| 3. MAXIMUM SPACING BETWEEN CONNECTION POINTS 44 Inches  |   |   |
| 8. THE ATTACHMENTS SHOULD BE STAGGERED, WHERE POSSIBLE, TO ALLOW DISTRIBUTION OF THE DESIGN LOADS EVENLY TO THE STRUCTURE.                                      |   |   |
| 9. ALL ROOF PENETRATIONS SHALL BE FLASHED AND SEALED BY APPROVED METHOD PER ROOF TYPE MANUFACTURE.  |   |   |
| 10. TYP. ROOF SUPPORT STRUCTURE; 2" X 4", 24"O.C.   |   |   |
| 11. REFER TO TABLE 1.1 FOR MAX OVERHANG FROM LAST ATTACHMENT.   |   |   |
| 12. PV ARRAY SHALL BE A MINIMUM 3" ABOVE THE ROOFING MATERIAL.  |   |   |
| LOAD INFORMATION  |   |   |
| 1. THE COMBINED LOADS WITH THE PV ROOF EQUIPMENT INSTALLED ARE NOT LARGER THAN THE COMBINED LOADS AS REQUIRED BY THE BUILDING CODE FOR THE ROOF WITHOUT PANELS. |   |   |
| 2. NUMBER OF ATTACHMENT POINTS: 87  |   |   |
| 3. WEIGHT PER ATTACHMENT POINT: 31.8LBS/ATTACH  |   |   |
| 4. PV DEAD LOAD: 2.77PSF  |   |   |
| 5. DESIGN SNOW LOAD   |   |   |
| 5.1. GROUND SNOW LOAD - 0PSF  |   |   |
| 6. ALLOWABLE DESIGN LOADS FOR PV MODULE:  |   |   |
| 6.1. WIND = 62PSF   |   |   |
| 6.2. SNOW = 125PSF  |   |   |



Project Type - Photovoltaic

Project Location:

2566 Tommy Lites St,  
Fort White, FL 32038

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---

Parcel Number: 17-6S-17-09690-107  
Assessor Phone # (386) 758-1083

PV SYSTEM SPECIFICATIONS

1. PV MODULE: 42 x CS3W-395; 16.59kWdc  
2. INVERTER: IQ7+-72-2-US  
3. RACKING: Ecofasten Rock-it  
4. ROOF TYPE:METAL PANEL  
5. AZIMUTH:150°, 330°  
6. ROOF SLOPE:22.62°

File Name:  
02\_BUFORD KYLE\_NOTES.DWG

Sheet Number and Title:  
PV02 - NOTES

Sheet Size:  
ANSI full bleed B (17.00 x 11.00 Inches)

Drawing history


| no. | drawn by | revision | date    |
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| 01  | DCG      | ----     | 4/16/22 |
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Permit manager

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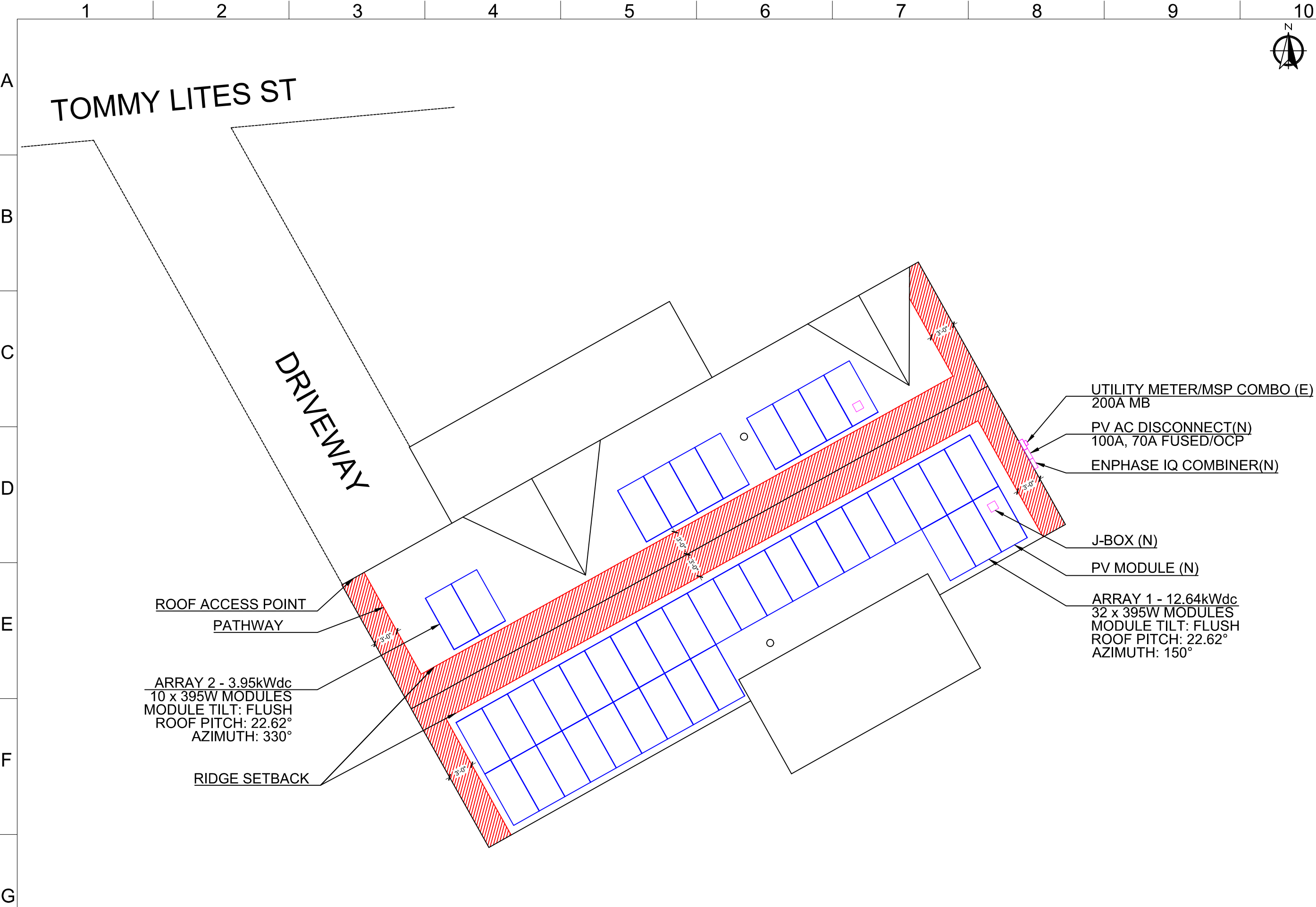



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PV02





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Project Type - Photovoltaic

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Parcel Number: 17-6S-17-09690-107  
Assessor Phone # (386) 758-1083

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4. ROOF TYPE:METAL PANEL
5. AZIMUTH:150°, 330°
6. ROOF SLOPE:22.62°

File Name:  
03\_2017NEC\_E\_PV SITE LAYOUT.DWG

Sheet Number and Title:  
PV03 - E\_PV SITE PLAN

Sheet Size:  
ANSI full bleed B (17.00 x 11.00 Inches)

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4

PV SITE PLAN W/ MODULE LAYOUT

Scale: 3/32" = 1'-0"

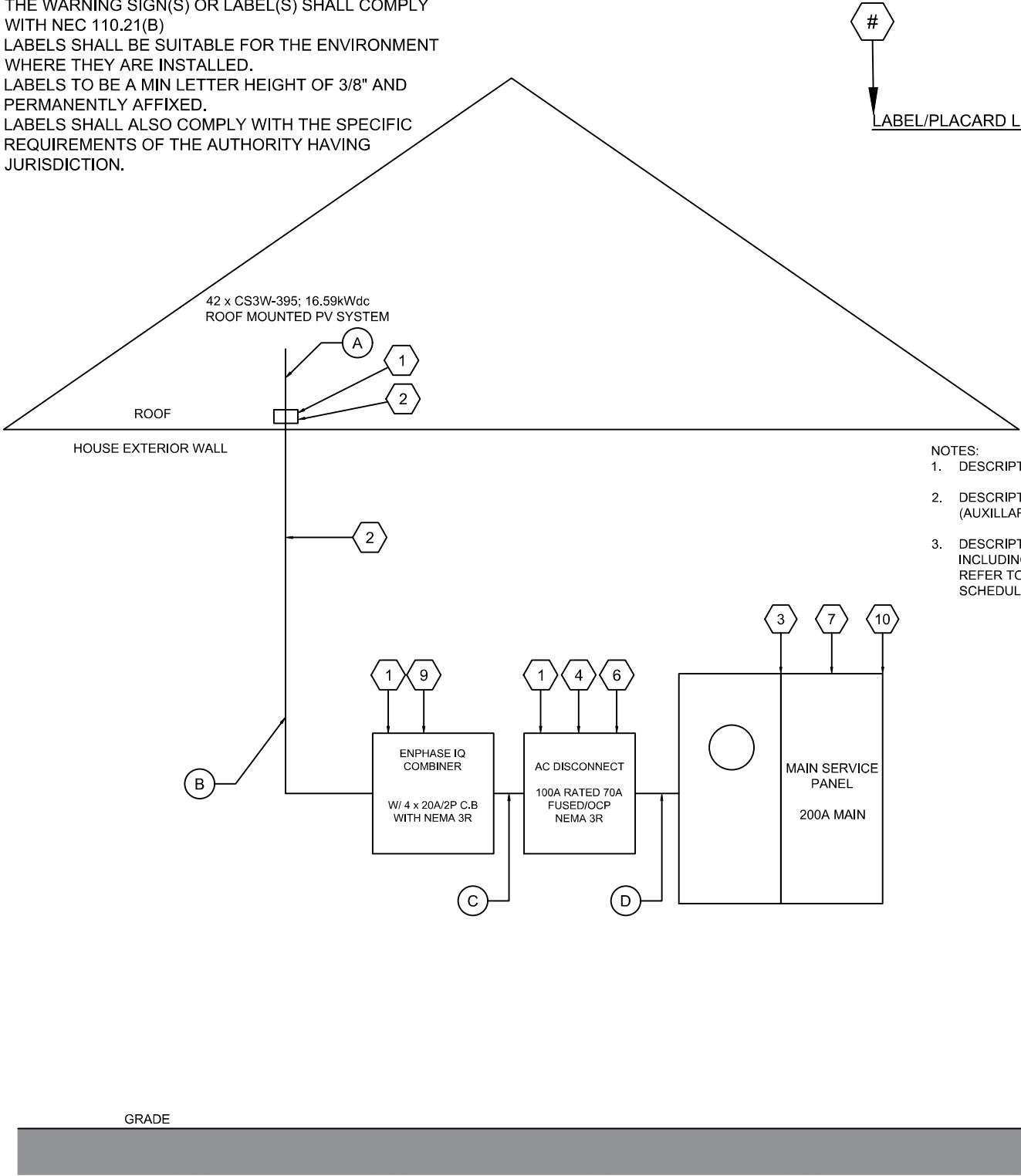
PV03



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NEC LABEL NOTES:

1. THE WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH NEC 110.21(B)
2. LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE THEY ARE INSTALLED.
3. LABELS TO BE A MIN LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.
4. LABELS SHALL ALSO COMPLY WITH THE SPECIFIC REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.



- NOTES:
1. DESCRIPTION OF COMBINER BOX.
  2. DESCRIPTION OF NON-FUSED DISCONNECT (AUXILLARY GENERATION DISCONNECT)
  3. DESCRIPTION OF CONDUIT BEING USED, INCLUDING DIAMETER OF CONDUIT TYPE. REFER TO CONDUIT AND CONDUCTOR SCHEDULE ON LINE DIAGRAM

LABEL 1 - NEC 690.13(B)  
APPLY TO DISCONNECTING MEANS WHERE THE LINE AND LOAD TERMINALS MAY BE ENERGIZED IN THE OPEN POSITION

LABEL 2 - NEC 690.31(G)(4)  
APPLY TO EXPOSED RACEWAYS, CABLE TRAYS, OTHER WIRING METHODS, COVERS, ENCLOSURES OF PULL BOXES, AND J-BOXES. SPACING BETWEEN LABELS OR MARKINGS SHALL NOT BE MORE THAN 10FT APART.

LABEL 3 - NEC 690.56(C)(1)(a)  
APPLY TO LABEL ON OR NO MORE THAN 3FT FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION

LABEL 4 - NEC 690.56(B) & NFPA 11.12.2.1.1.6  
APPLY TO RAPID SHUTDOWN SWITCH  
PV SYSTEM COMMENCES RAPID SHUTDOWN SEQUENCE UPON DISCONNECT FROM AC SOURCE - COMPLIES WITH NEC 690.12

INITIATION DEVICE SHALL BE LOCATED AT A READILY ACCESSIBLE LOCATION OUTSIDE THE BUILDING(LABEL SHALL BE WITHIN 3FT OF SWITCH)

LABEL 5 - 690.53(IF APPLICABLE)  
APPLY TO DC DISCONNECT/INVERTER

LABEL 6 - NEC 690.54  
APPLY TO MAIN PV AC DISCONNECT

LABEL 7 - NEC 705.12(B)(3)  
APPLY TO MSP

LABEL 8 - NEC 705.12(B)(2)(3)(b)  
APPLY TO BACK-FED BREAKER, IF APPLICABLE

LABEL 9 - NEC 705.12(B)(2)(3)(c)  
PROVIDE AT PV COMBINER OR MSP IF APPLICABLE

LABEL 10 - NFPA 1, 11.12.2.1.5  
INSTALLER INFORMATION LOCATED ADJACENT TO THE MAIN DISCONNECT, INDICATING THE NAME AND EMERGENCY TELEPHONE NUMBER OF THE COMPANY

**! WARNING !**

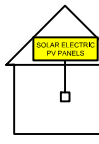
**ELECTRIC SHOCK HAZARD**

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

**WARNING: PHOTOVOLTAIC POWER SOURCE**

**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.



**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

**PHOTOVOLTAIC SYSTEM ! DC DISCONNECT !**

MAX SYSTEM VOLTAGE: 480VDC  
MAX CIRCUIT CURRENT: 12A  
MAX OUT CURRENT(DC TO DC CONV.): 15A

**PHOTOVOLTAIC SYSTEM ! AC DISCONNECT !**

RATED AC OUTPUT CURRENT: 42 x 1.21A = 50.82A  
NOMINAL OPERATING VOLTAGE: 240VAC

**! WARNING !**

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

**! WARNING !**

POWER SOURCE OUTPUT CONNECTION: DO NOT RELOCATE THIS OVERCURRENT DEVICE

**! WARNING !**

DEDICATED SOLAR PANEL DO NOT CONNECT ANY OTHER LOADS

**IN CASE OF EMERGENCY CALL AT BAY AREA PROJECT SOLUTION LLC**



**BAPS**  
Engineering & Permitting

**Project Type - Photovoltaic**

**Project Location:**

2566 Tommy Lites St,  
Fort White, FL 32038

---

---

Parcel Number: 17-6S-17-09690-107  
Assessor Phone # (386) 758-1083

**PV SYSTEM SPECIFICATIONS**

1. PV MODULE: 42 x CS3W-395; 16.59kWdc
2. INVERTER: IQ7+-72-2-US
3. RACKING: Ecofasten Rock-it
4. ROOF TYPE:METAL PANEL
5. AZIMUTH:150°, 330°
6. ROOF SLOPE:22.62°

**File Name:**

03\_BUFORD KYLE- E\_ELEVATIONS.DWG

**Sheet Number and Title:**

PV04 - ELEVATION

**Sheet Size:**

ANSI full bleed B (17.00 x 11.00 Inches)

**Drawing history**

| no. | drawn by | revision | date    |
|-----|----------|----------|---------|
| 01  | DCG      | ----     | 4/16/22 |

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**Chad E**

**Widup**

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Chad E Widup

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PV04



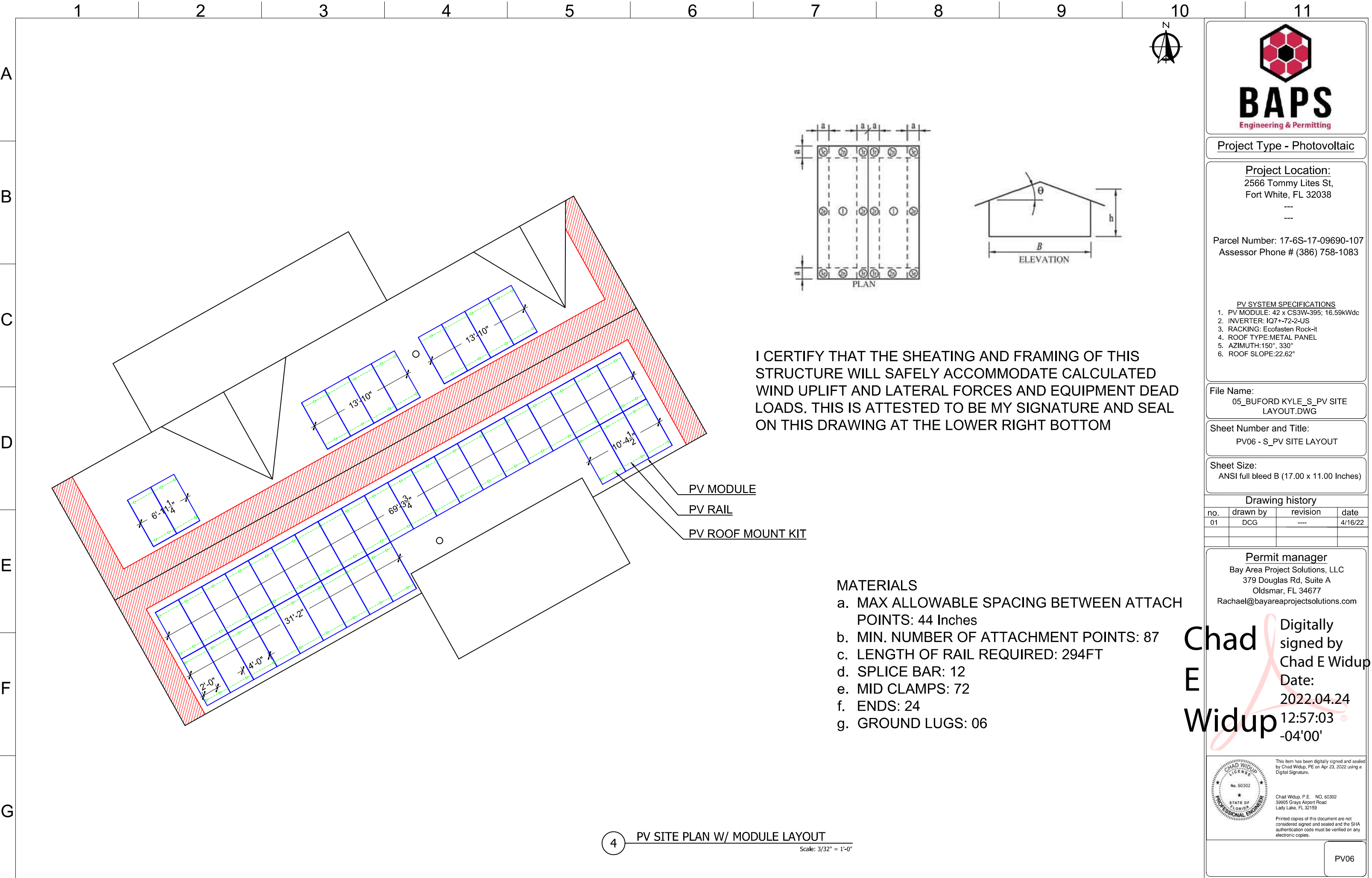




TABLE 1

| ASCE 7-16 CHAPTER 29 WIND LOADS - Rooftop Solar Panels Minimum Design Loads - Part 1: Enclosed(Gable,Hip,Flat h<60ft, 0°<0<45°) |            |                         |  |  |
|---|------------|-------------------------|--|--|
| Wind Load Parameters - Inputs   |            |                         |  |  |
| Risk Category   | II         | Table 1.5-1             |  |  |
| Basic Wind Speed (Ult)  | 120 mph    | Figure 26.5-1B          |  |  |
| Roof Angle  | 21° to 27° |                         |  |  |
| Roof Type   | Gable      |                         |  |  |
| Exposure Cat.   | B,C, or D  | Section 26.7            |  |  |
| Mean Roof Height  | h          | 15.00 ft                |  |  |
| Roof attachment   |            | 5/16" x 4.75" Lag Screw |  |  |
| Rafter/Truss Spacing  |            | 24 in O.C.              |  |  |
| No. of Rails  |            | 2                       |  |  |
| No. of Modules - Portrait   |            | 42                      |  |  |
| No. of Modules - Landscape  |            | 0                       |  |  |
| Module Model Number   |            | CS3W-395                |  |  |
| bldg. least horizontal dim (typ.)   |            | 360 in                  |  |  |
| Elevation   |            | <1000 ft                |  |  |
| Est. # of attachment points   |            | 87                      |  |  |

| PV Dead Load      |                      |        |                 | Module and Racking Specs         |                    |                 |           |
|-------------------|----------------------|--------|-----------------|----------------------------------|--------------------|-----------------|-----------|
| # of Modules      | 42                   |        |                 | Dimensions, LxWxH (in)           | 83.0 x 41.3 x 1.57 |                 |           |
| Module            | W <sub>mod</sub>     | 55     | lbs             | Width                            | 3.44               | ft              |           |
| Array             | W <sub>mod</sub>     | 2306   | lbs             | Length                           | 6.92               | ft              |           |
| Micro/optimizer   | W <sub>mic</sub>     | 168    | lbs             | Module Area                      | 23.78              | ft <sup>2</sup> |           |
| PV Rail           | W <sub>pv rail</sub> | 294    | lbs             | Dead Load - Rail, Clamps, Mounts | 1                  | lb/ft           |           |
| Total Weight      | W <sub>total</sub>   | 2768   | lbs             | Total Rail Length                | 294                | ft              |           |
| Total Area        | A <sub>f</sub>       | 998.74 | ft <sup>2</sup> | Module load ratings              |                    | Ultimate        | Allowable |
| Dead Load         | D <sub>sv</sub>      | 2.77   | psf             | Load Rating - Snow(psf)          | 113.4              | 75.6            |           |
| Weight/attachment |                      | 31.8   | lbs             | Load Rating - Wind(psf)          | -50.4              | -33.6           |           |

| PV Attachment - Results   |       |       |       |       |       |       |                     |
|---|-------|-------|-------|-------|-------|-------|---------------------|
| Roof Zones - Gable 21° to 27°   |       |       |       |       |       |       |                     |
|   | 1     | 2e    | 2r    | 2n    | 3e    | 3r    |                     |
| GC <sub>g</sub> - Uplift  | -1.5  | -1.5  | -2.1  | -2.1  | -2.1  | -2.3  |                     |
| GC <sub>p</sub> - Down  | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   |                     |
| p = q <sub>s</sub> (GC <sub>g</sub> )(γ <sub>e</sub> )(γ <sub>s</sub> ) | -20.6 | -20.6 | -29.9 | -29.9 | -29.9 | -33.0 | psf 29.4-7          |
| p = q <sub>s</sub> (GC <sub>p</sub> )(γ <sub>e</sub> )(γ <sub>s</sub> ) | 7.8   | 7.8   | 7.8   | 7.8   | 7.8   | 7.8   | psf 29.4-7          |
| Max Allowable Span  | 6     | 6     | 6     | 6     | 6     | 6     | ft *notes           |
| Max Cantilever (in)   | 24    | 24    | 24    | 24    | 24    | 24    | Max span * 33% (in) |

Notes

Eq.1 Point Load = Roof Zone psf \* TA

Eq.2 TA = (Module Length/2) \* Max Span

Eq.3 \*Max span Equation, SF = Allowable pullout / Point Load

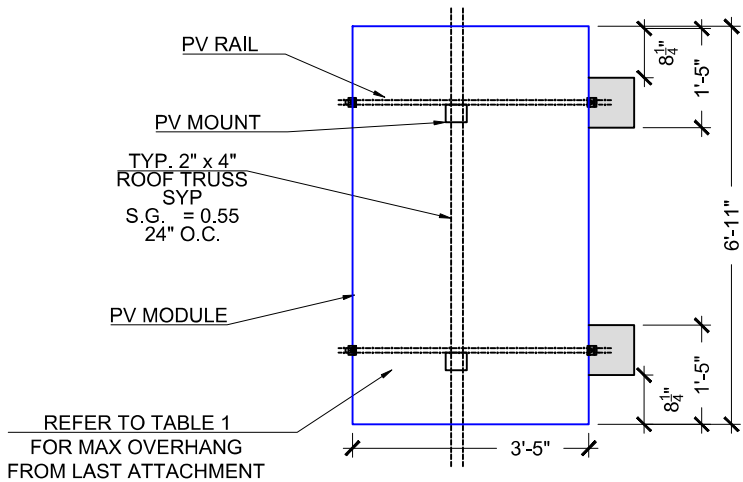
Eq.4 Max Span = Allowable Pullout / (SF \* Roof Zone psf \* L/2)

a) The Max span between attachment points must not exceed the rail spans provided by racking manufacture.

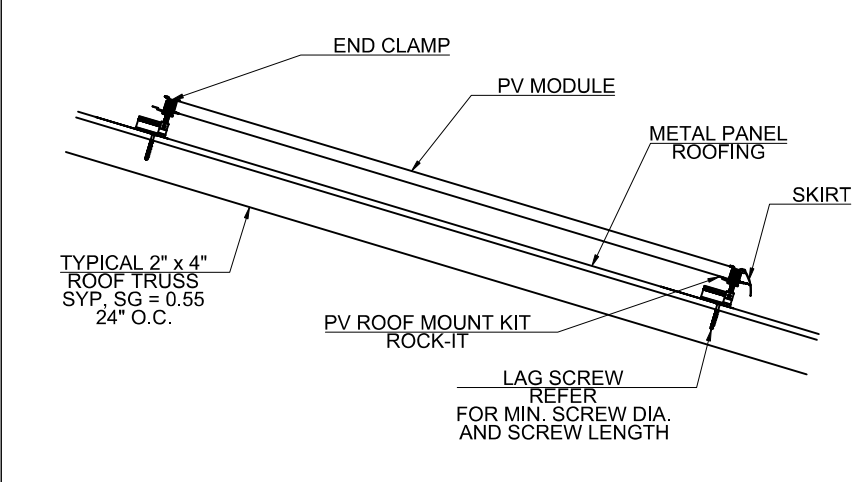
b) Allowable Module load ratings are determined by SF = 1.5

| Wind Load Parameters            |                 |                 |                |  |
|---------------------------------|-----------------|-----------------|----------------|--|
| Wind Speed (asf)                | 93              | mph             | FRC R301.2.1.3 |  |
| Effective Wind Area             | 23.78           | ft <sup>2</sup> | 26.20          |  |
| Wind Directionality             | K <sub>d</sub>  | 0.85            | Table 26.6-1   |  |
| Topographic factor              | K <sub>zt</sub> | 1.00            | 26.8 or 26.8.2 |  |
| Ground Elevation Factor         | K <sub>e</sub>  | 1.00            | Table 26.9-1   |  |
| Velocity Exposure Coefficient   | K <sub>z</sub>  | 0.85            | Table 26.10-1  |  |
| Array Edge Factor               | γ <sub>e</sub>  | 1.50            | 29.4.4         | *Modules are considered Exposed  |
| Solar Panel Equalization Factor | γ <sub>s</sub>  | 0.65            | Fig. 29.4-8    |  |
| Velocity Pressure               | q <sub>h</sub>  | 15.98           | psf            | q <sub>h</sub> = 0.00256 K <sub>d</sub> K <sub>zt</sub> K <sub>e</sub> K <sub>z</sub> V <sup>2</sup>                       |
| Added Safety Factor             |                 | 1.2             |                |  |
| Allowable Pullout per mount     |                 | 859.2           | lbs            |  |
| 0.4h or 0.6h                    |                 | 6.00            | ft             | Flat - 0.6h, Gable, Hip - 0.4h   |
| 10% of least horizontal dim     |                 | 3.00            | ft             | 10% of least hor. Dim. Or 0.4h, whichever is smaller, but not less than either 4% of least hor. Or 3ft. (Flat roof - 0.6h) |
| Roof Zone Set Back              | a               | 3.00            | ft             |  |
|                                 | h <sub>2</sub>  | 5               | in             | Not > 10 in (panel height above roof)  |
|                                 | 2h <sub>2</sub> | 10              | in             | *min distance array shall be from the roof edge, Gable Ridge, or hip ridge   |
|                                 |                 | 0.25            | in             | min gap between all panels but not > 6.7ft   |
|                                 | d1              | 1.00            | ft             | Horizontal distance orthogonal to panel edge   |
|                                 | d2              | 0.25            | ft             | Horizontal distance from edge of one panel to the nearest edge in the next row   |
|                                 | 0.5h            | 7.50            | ft             | *modules are considered exposed that are within 1.5Lp from roof edge   |

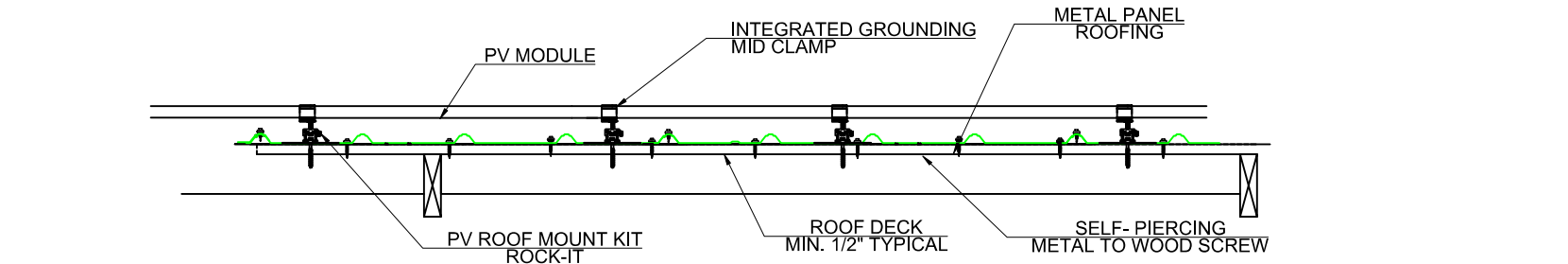
\*\* No Exposed or Edge Conditions Allowed



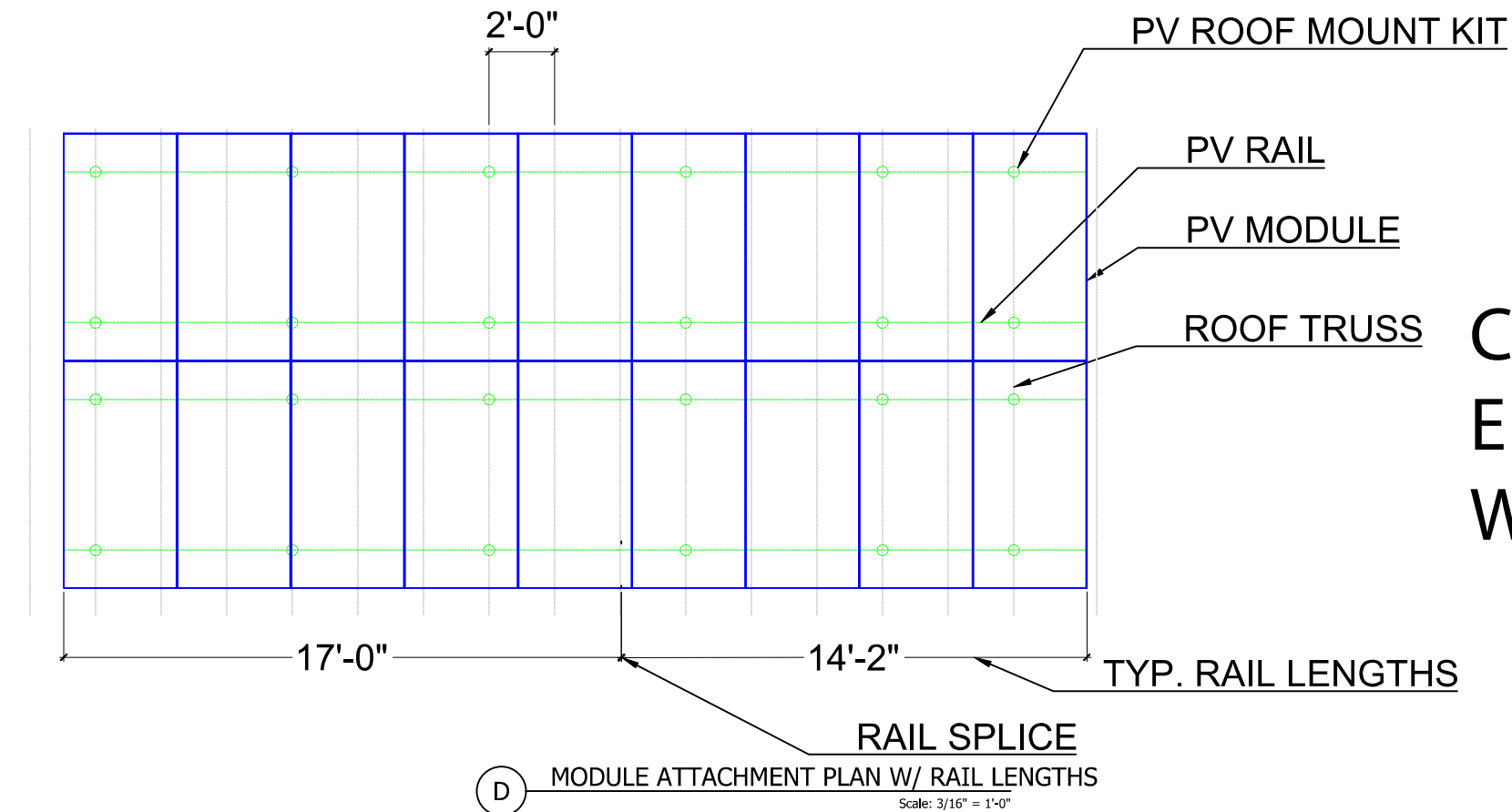
A ALLOW. CLAMPING AREA - TOP DOWN  
Scale: 3/8" = 1'-0"



B CONNECTION DETAIL - SIDE VIEW  
Scale: 1:16



C CONNECTION DETAIL - FRONT VIEW  
Scale: 3/4" = 1'



D MODULE ATTACHMENT PLAN W/ RAIL LENGTHS  
Scale: 3/16" = 1'-0"



Project Type - Photovoltaic

Project Location:  
2566 Tommy Lites St,  
Fort White, FL 32038  
---  
---  
Parcel Number: 17-6S-17-09690-107  
Assessor Phone # (386) 758-1083

PV SYSTEM SPECIFICATIONS

1. PV MODULE: 42 x CS3W-395; 16.59kWdc
2. INVERTER: IQ7+-72-2-US
3. RACKING: Ecofasten Rock-it
4. ROOF TYPE: METAL PANEL
5. AZIMUTH: 150°, 330°
6. ROOF SLOPE: 22.62°

File Name:  
06\_BUFORD KYLE\_SHINGLE\_H-Q.PEAK  
G5.DWG

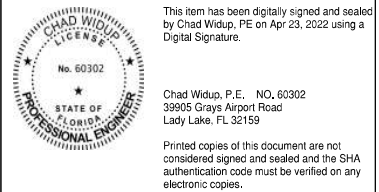
Sheet Number and Title:  
PV07 - PV ATTACH PLAN

Sheet Size:  
ANSI full bleed B (17.00 x 11.00 Inches)

| Drawing history |          |          |         |
|-----------------|----------|----------|---------|
| no.             | drawn by | revision | date    |
| 01              | DCG      | ---      | 4/16/22 |

Permit manager  
Bay Area Project Solutions, LLC  
379 Douglas Rd, Suite A  
Oldsmar, FL 34677  
Rachael@bayareaprojectsolutions.com

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Chad E Widup  
Date:  
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## HiKu

### SUPER HIGH POWER POLY PERC MODULE 395 W ~ 420 W

CS3W-395 | 400 | 405 | 410 | 415 | 420P (IEC1000 V)

CS3W-395 | 400 | 405 | 410 | 415 | 420P (IEC1500 V)

#### MORE POWER



24 % higher power than  
conventional modules



Up to 4.5 % lower LCOE  
Up to 2.7 % lower system cost



Low NMOT:  $42 \pm 3$  °C  
Low temperature coefficient (Pmax):  
-0.37 % / °C



Better shading tolerance

#### MORE RELIABLE



Lower internal current,  
lower hot spot temperature



Minimizes micro-crack impacts



Heavy snow load up to 5400 Pa,  
wind load up to 3600 Pa\*

25  
years

linear power output warranty\*

12  
years

enhanced product warranty on materials  
and workmanship\*

\*According to the applicable Canadian Solar Limited Warranty Statement.

#### MANAGEMENT SYSTEM CERTIFICATES\*

ISO 9001:2015 / Quality management system  
ISO 14001:2015 / Standards for environmental management system  
OHSAS 18001:2007 / International standards for occupational health & safety

#### PRODUCT CERTIFICATES\*

IEC 61215 / IEC 61730: VDE / CE / MCS / KS / INMETRO  
UL 1703 / IEC 61215 performance: CEC listed (US)  
UL 1703: CSA / IEC 61701 ED2: VDE / IEC 62716: VDE / IEC 60068-2-68: SGS  
UNI 9177 Reaction to Fire: Class 1 / Take-e-way  
Canadian Solar recycles panels at the end of life cycle



\* As there are different certification requirements in different markets, please contact  
your local Canadian Solar sales representative for the specific certificates applicable to the  
products in the region in which the products are to be used.

**CANADIAN SOLAR INC.** is committed to providing high quality  
solar products, solar system solutions and services to cus-  
tomers around the world. No. 1 module supplier for quality  
and performance/price ratio in IHS Module Customer Insight  
Survey. As a leading PV project developer and manufacturer  
of solar modules with over 38 GW deployed around the world  
since 2001.

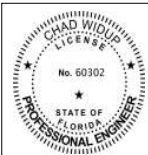
\* For detail information, please refer to Installation Manual.

#### CANADIAN SOLAR INC.

Canadian Solar MSS (Australia) Pty Ltd., 44 Stephenson St, Cremorne VIC 3121, Australia  
sales.au@canadiansolar.com, www.canadiansolar.com/au

# Chad E Widup

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Date: 2022.04.24 12:58:43 -04'00'



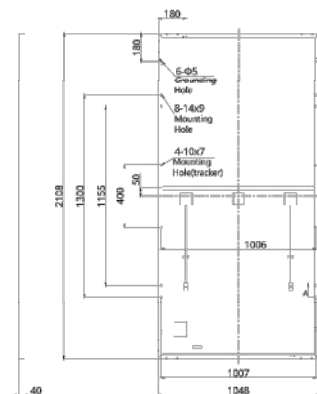
This item has been digitally signed and sealed  
by Chad Widup, PE on Apr 23, 2022 using a  
Digital Signature.

Chad Widup, P.E. NO. 60302  
39905 Grays Airport Road  
Lady Lake, FL 32159

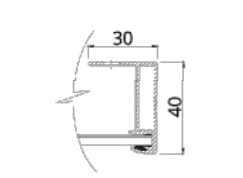
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#### ENGINEERING DRAWING (mm)

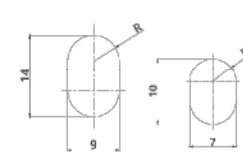
##### Rear View



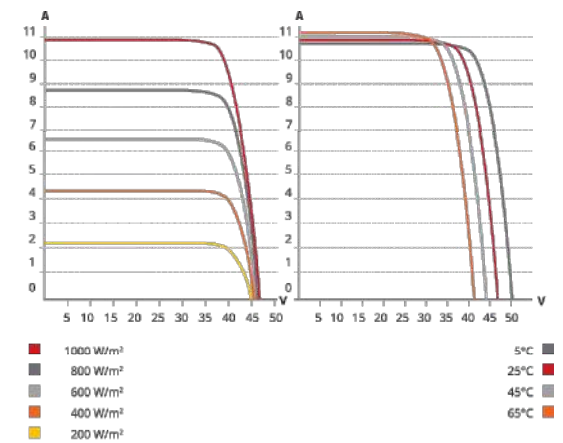
##### Frame Cross Section A-A



##### Mounting Hole



#### CS3W-400P / I-V CURVES



#### ELECTRICAL DATA | STC\*

| CS3W                         | 395P                                       | 400P    | 405P    | 410P    | 415P    | 420P    |
|------------------------------|--|---------|---------|---------|---------|---------|
| Nominal Max. Power (Pmax)    | 395 W                                      | 400 W   | 405 W   | 410 W   | 415 W   | 420 W   |
| Opt. Operating Voltage (Vmp) | 38.5 V                                     | 38.7 V  | 38.9 V  | 39.1 V  | 39.3 V  | 39.5 V  |
| Opt. Operating Current (Imp) | 10.26 A                                    | 10.34 A | 10.42 A | 10.49 A | 10.56 A | 10.64 A |
| Open Circuit Voltage (Voc)   | 47.0 V                                     | 47.2 V  | 47.4 V  | 47.6 V  | 47.8 V  | 48.0 V  |
| Short Circuit Current (Isc)  | 10.82 A                                    | 10.90 A | 10.98 A | 11.06 A | 11.14 A | 11.26 A |
| Module Efficiency            | 17.88%                                     | 18.11%  | 18.33%  | 18.56%  | 18.79%  | 19.01%  |
| Operating Temperature        | -40°C ~ +85°C                              |         |         |         |         |         |
| Max. System Voltage          | 1500V (IEC/UL) or 1000V (IEC/UL)           |         |         |         |         |         |
| Module Fire Performance      | TYPE 1 (UL 1703) or<br>CLASS C (IEC 61730) |         |         |         |         |         |
| Max. Series Fuse Rating      | 20 A                                       |         |         |         |         |         |
| Application Classification   | Class A                                    |         |         |         |         |         |
| Power Tolerance              | 0 ~ + 5 W                                  |         |         |         |         |         |

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell tempera-  
ture of 25°C. Measurement uncertainty: ±3 % (Pmax).

#### MECHANICAL DATA

| Specification                         | Data  |
|---------------------------------------|---|
| Cell Type                             | Poly-crystalline  |
| Cell Arrangement                      | 144 [2 X (12 X 6)]  |
| Dimensions                            | 2108 X 1048 X 40 mm<br>(83.0 X 41.3 X 1.57 in)  |
| Weight                                | 24.9 kg (54.9 lbs)  |
| Front Cover                           | 3.2 mm tempered glass   |
| Frame                                 | Anodized aluminium alloy,<br>crossbar enhanced  |
| J-Box                                 | IP68, 3 bypass diodes   |
| Cable                                 | 4 mm² (IEC), 12 AWG (UL)  |
| Cable Length<br>(Including Connector) | Portrait: 500 mm (19.7 in) (+) / 350 mm<br>(13.8 in) (-); landscape: 1400 mm (55.1<br>in); leap-frog connection: 1670 mm (65.7<br>in)*  |
| Connector                             | T4-PC-1 (IEC 1000 V) or PV-KST4/xy-UR,<br>PV-KBT4/xy-UR (IEC 1000 V) or T4-PC-1<br>(IEC 1500 V) or T4-PPE-1 (IEC 1500 V) or<br>PV-KST4-EVO2/XY, PV-KBT4-EVO2/XY (IEC<br>1500 V) or UTXCFA4AM, UTXCMA4AM<br>(IEC 1500 V) |
| Per Pallet                            | 27 pieces   |
| Per Container (40' HQ)                | 594 pieces  |

\* For detailed information, please contact your local Canadian Solar sales and tech-  
nical representatives.

#### ELECTRICAL DATA | NMOT\*

| CS3W                         | 395P   | 400P   | 405P   | 410P   | 415P   | 420P   |
|------------------------------|--------|--------|--------|--------|--------|--------|
| Nominal Max. Power (Pmax)    | 294 W  | 297 W  | 301 W  | 305 W  | 308 W  | 312 W  |
| Opt. Operating Voltage (Vmp) | 35.8 V | 36.0 V | 36.1 V | 36.3 V | 36.5 V | 36.7 V |
| Opt. Operating Current (Imp) | 8.21 A | 8.27 A | 8.33 A | 8.39 A | 8.45 A | 8.51 A |
| Open Circuit Voltage (Voc)   | 44.1 V | 44.3 V | 44.4 V | 44.6 V | 44.8 V | 45.0 V |
| Short Circuit Current (Isc)  | 8.73 A | 8.79 A | 8.86 A | 8.92 A | 8.99 A | 9.08 A |

\* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5,  
ambient temperature 20°C, wind speed 1 m/s.

#### TEMPERATURE CHARACTERISTICS

| Specification                        | Data         |
|--------------------------------------|--------------|
| Temperature Coefficient (Pmax)       | -0.37 % / °C |
| Temperature Coefficient (Voc)        | -0.29 % / °C |
| Temperature Coefficient (Isc)        | 0.05 % / °C  |
| Nominal Module Operating Temperature | 42 ± 3°C     |

#### PARTNER SECTION



\* The specifications and key features contained in this datasheet may deviate slightly from our actual  
products due to the on-going innovation and product enhancement. Canadian Solar Inc. reserves the  
right to make necessary adjustment to the information described herein at any time without further  
notice.  
Please be kindly advised that PV modules should be handled and installed by qualified people who have  
professional skills and please carefully read the safety and installation instructions before using our PV  
modules.

#### CANADIAN SOLAR INC.

Canadian Solar MSS (Australia) Pty Ltd., 44 Stephenson St, Cremorne VIC 3121, Australia  
sales.au@canadiansolar.com, www.canadiansolar.com/au

March 2020. All rights reserved. PV Module Product Datasheet V5.59\_AU  
\* Manufactured and assembled in China, Thailand and Vietnam.



Data Sheet  
Enphase Microinverters  
Region: AMERICAS

# Enphase IQ 7 and IQ 7+ Microinverters

The high-powered smart grid-ready **Enphase IQ 7 Micro™** and **Enphase IQ 7+ Micro™** dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.



## Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014 & 2017)

## Productive and Reliable

- Optimized for high powered 60-cell and 72-cell\* modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

## Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA)

\* The IQ 7+ Micro is required to support 72-cell modules.



To learn more about Enphase offerings, visit [enphase.com](https://enphase.com)



## Enphase IQ 7 and IQ 7+ Microinverters

| INPUT DATA (DC)  | IQ7-60-2-US / IQ7-60-B-US   |                   | IQ7PLUS-72-2-US / IQ7PLUS-72-B-US |                   |
|--|---|-------------------|-----------------------------------|-------------------|
| Commonly used module pairings <sup>1</sup>               | 235 W - 350 W +   |                   | 235 W - 440 W +                   |                   |
| Module compatibility                                     | 60-cell PV modules only   |                   | 60-cell and 72-cell PV modules    |                   |
| Maximum input DC voltage                                 | 48 V  |                   | 60 V                              |                   |
| Peak power tracking voltage                              | 27 V - 37 V   |                   | 27 V - 45 V                       |                   |
| Operating range  | 16 V / 48 V   |                   | 16 V - 60 V                       |                   |
| Min/Max start voltage                                    | 22 V / 48 V   |                   | 22 V / 60 V                       |                   |
| Max DC short circuit current (module Isc)                | 15 A  |                   | 15 A                              |                   |
| Overvoltage class DC port                                | II  |                   | II                                |                   |
| DC port backfeed current                                 | 0 A   |                   | 0 A                               |                   |
| PV array configuration                                   | 1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit   |                   |                                   |                   |
| OUTPUT DATA (AC)   | IQ 7 Microinverter  |                   | IQ 7+ Microinverter               |                   |
| Peak output power  | 250 VA  |                   | 295 VA                            |                   |
| Maximum continuous output power                          | 240 VA  |                   | 290 VA                            |                   |
| Nominal (L-L) voltage/range <sup>2</sup>                 | 240 V / 211-264 V   | 208 V / 183-229 V | 240 V / 211-264 V                 | 208 V / 183-229 V |
| Maximum continuous output current                        | 1.0 A (240 V)   | 1.15 A (208 V)    | 1.21 A (240 V)                    | 1.39 A (208 V)    |
| Nominal frequency  | 60 Hz   |                   | 60 Hz                             |                   |
| Extended frequency range                                 | 47 - 68 Hz  |                   | 47 - 68 Hz                        |                   |
| AC short circuit fault current over 3 cycles             | 5.8 Arms  |                   | 5.8 Arms                          |                   |
| Maximum units per 20 A (L-L) branch circuit <sup>3</sup> | 16 (240 VAC)  | 13 (208 VAC)      | 13 (240 VAC)                      | 11 (208 VAC)      |
| Overvoltage class AC port                                | III   |                   | III                               |                   |
| AC port backfeed current                                 | 0 A   |                   | 0 A                               |                   |
| Power factor setting                                     | 1.0   |                   | 1.0                               |                   |
| Power factor (adjustable)                                | 0.7 leading ... 0.7 lagging   |                   | 0.7 leading ... 0.7 lagging       |                   |
| EFFICIENCY   | @240 V  | @208 V            | @240 V                            | @208 V            |
| Peak CEC efficiency                                      | 97.6 %  | 97.6 %            | 97.5 %                            | 97.3 %            |
| CEC weighted efficiency                                  | 97.0 %  | 97.0 %            | 97.0 %                            | 97.0 %            |
| MECHANICAL DATA  |   |                   |                                   |                   |
| Ambient temperature range                                | -40°C to +65°C  |                   |                                   |                   |
| Relative humidity range                                  | 4% to 100% (condensing)   |                   |                                   |                   |
| Connector type (IQ7-60-2-US & IQ7PLUS-72-2-US)           | MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)  |                   |                                   |                   |
| Connector type (IQ7-60-B-US & IQ7PLUS-72-B-US)           | Friends PV2 (MC4 intermateable).<br>Adaptors for modules with MC4 or UTX connectors:<br>• PV2 to MC4: order ECA-S20-S22<br>• PV2 to UTX: order ECA-S20-S25  |                   |                                   |                   |
| Dimensions (WxHxD)                                       | 212 mm x 175 mm x 30.2 mm (without bracket)   |                   |                                   |                   |
| Weight   | 1.08 kg (2.38 lbs)  |                   |                                   |                   |
| Cooling  | Natural convection - No fans  |                   |                                   |                   |
| Approved for wet locations                               | Yes   |                   |                                   |                   |
| Pollution degree   | PD3   |                   |                                   |                   |
| Enclosure  | Class II double-insulated, corrosion resistant polymeric enclosure  |                   |                                   |                   |
| Environmental category / UV exposure rating              | NEMA Type 6 / outdoor   |                   |                                   |                   |
| FEATURES   |   |                   |                                   |                   |
| Communication  | Power Line Communication (PLC)  |                   |                                   |                   |
| Monitoring   | Enlighten Manager and MyEnlighten monitoring options.<br>Both options require installation of an Enphase IQ Envoy.  |                   |                                   |                   |
| Disconnecting means                                      | The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.   |                   |                                   |                   |
| Compliance   | CA Rule 21 (UL 1741-SA)<br>UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B,<br>CAN/CSA-C22.2 NO. 1071-01<br>This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions. |                   |                                   |                   |

1. No enforced DC/AC ratio. See the compatibility calculator at <https://enphase.com/en-us/support/module-compatibility>.  
2. Nominal voltage range can be extended beyond nominal if required by the utility.  
3. Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

To learn more about Enphase offerings, visit [enphase.com](https://enphase.com)

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2018-05-24









**ROCKIT**

## COMPLETE RAIL-LESS RACKING SYSTEM

The RockIt system is the industry's premier rail-less PV racking system for composition shingle, tile, and metal roofs. Designed in conjunction with the needs of installers, RockIt quickly & easily installs with a single tool. Featuring an easy-to-position alignment slide and a top-down leveling system, RockIt is logistically intelligent with no need to ship or transport long rails. Components are available in a black finish that complements both commercial and residential applications. Conforms to UL 2703.

## FEATURES & BENEFITS

- Patented watertight technology
- Fully integrated bonding
- Top-down leveling system
- North-South adjustability
- Single tool install

## STREAMLINED INSTALLATION WITH MINIMAL ROOF PENETRATIONS



Composition Shingle,  
Tile, Metal



Rail-Less



Structural-Attach  
Direct-Attach



ECOFASTENSOLAR.COM

**ROCKIT**

## COUPLING

The fast installing RockIt Coupling easily attaches to the module frame to bridge the gaps between modules.

## SKIRT

The sleek black Skirt installs first and acts as an alignment guide for the entire array. The Skirt End Cap does double duty as a skirt coupling device and an aesthetically-pleasing finishing touch.

## ROCKIT MOUNT

Featuring integrated bonding pins, the RockIt Mount connects to the Slide and can easily be positioned for fast installation. Features top-down leveling.

## ROCKIT SLIDE

Available in three variations, the RockIt Slide allows installation on composition shingle, tile, and metal roofs.

## FRAME MLPE MOUNT

Attaches and fully bonds MLPE's (Module Level Power Electronics) to the module frame with a single bolt clip.

