# PROJECT DESCRIPTION:

37 x 405 REC405AA PURE BLACK (405W) MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES

DC SYSTEM SIZE: 14.98 kW DC STC
AC SYSTEM SIZE: 23.00 kW AC

EQUIPMENT SUMMARY
37 REC405AA PURE BLACK (405W) MODULES
02 TESLA POWERWALL 3 1707000-XX-Y INVERTER/ BATTERY
13 TESLA MCI-1 RAPID SHUTDOWN

GOVERNING CODES :
FLORIDA RESIDENTIAL CODE, 8TH EDITION 2023 (FRC)
FLORIDA PLUMBING CODE, 8TH EDITION 2023 (FPC)
FLORIDA BUILDING CODE, 8TH EDITION 2023 EDITION (FBC)
FLORIDA MECHANICAL CODE, 8TH EDITION 2023 (FMC)
2020 NATIONAL ELECTRICAL CODE
FLORIDA FIRE PREVENTION CODE, 8TH EDITION (FFPC)

SHEET INDEX

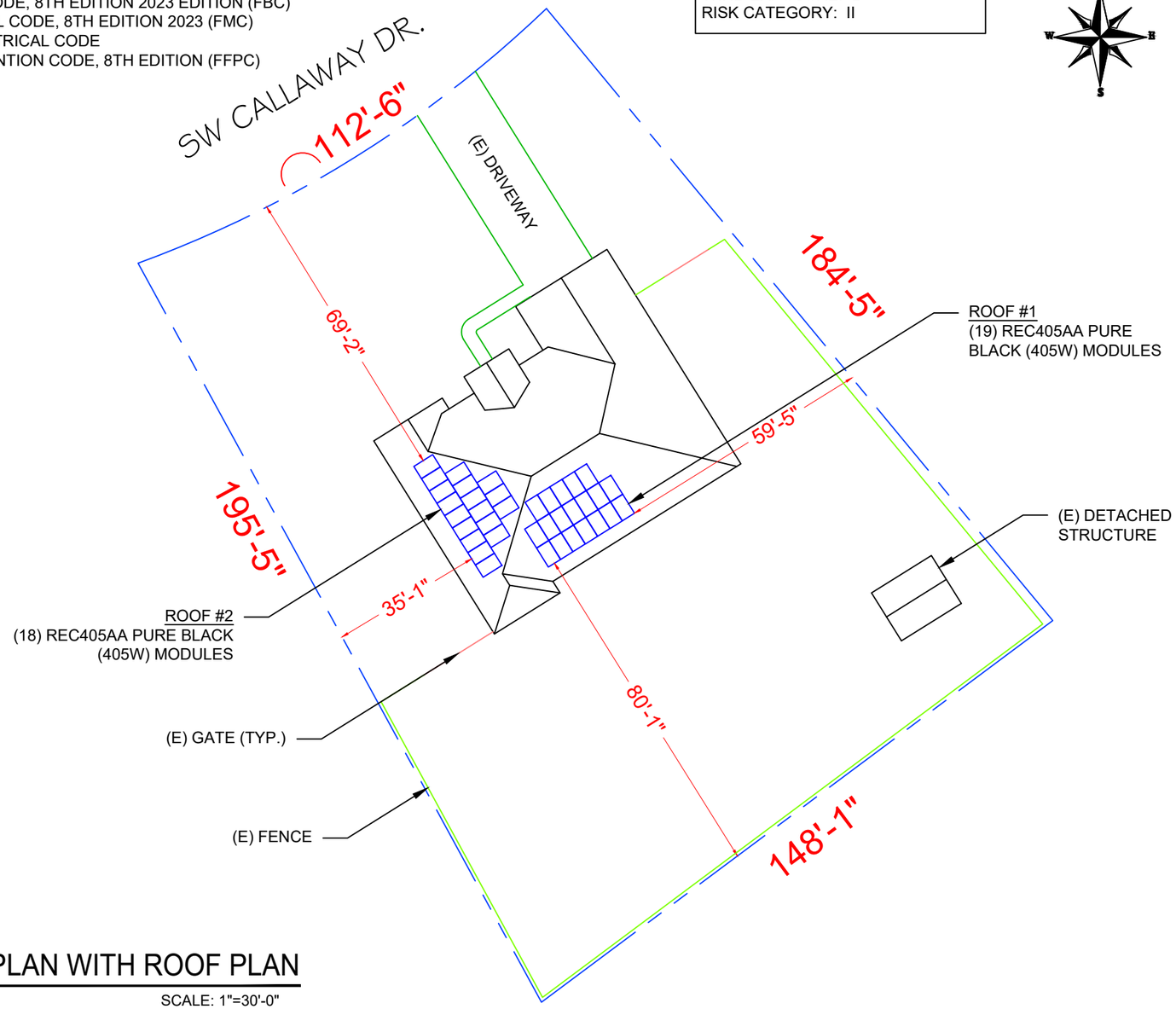

| | |
|---|---|
| A-00 | PLOT PLAN & VICINITY MAP |
| S-01 | ROOF PLAN & MODULES |
| S-02 | ATTACHMENT DETAILS |
| E-01 | ELECTRICAL SITE PLAN |
| E-02 | ELECTRICAL LINE DIAGRAM |
| E-03 | WIRING CALCULATIONS |
| E-04 | SYSTEM LABELING |
| DS-01 | MODULE DATA SHEET |
| DS-02 | POWERWALL3 DATA SHEET |
| DS-03 | RAPID SHUTDOWN DATA SHEET |
| DS-04 | GATEWAY 2 DATA SHEET |
| DS-05 | RAIL DATA SHEET |
| DS-06 | ATTACHMENT DATA SHEET |



DISCLAIMER :
THE SET OF PLANS FOR THIS PROJECT IS FOR DESIGNING THE PROJECT FOR BUILDING CODE COMPLIANCE. THIS DOSE NOT EXPRESS OR IMPLY A PERFORMANCE GUARANTEE OF ANY KIND. CONTRACTOR RESPONSIBLE TO REVIEW AND APPROVE THE LAYOUT WITH THE END USER PRIOR TO INSTALLATION.

ALL DIMENSION AND CONDITION SHOWN ON THE SET OF PLANS IS BASED ON THE INFORMATION GIVEN. CONTRACTOR RESPONSIBLE TO FIELD VERIFY ALL CONDITION IN THE FIELD PRIOR TO INSTALLATION OR ACCEPTS FULL RESPONSIBILITY.


ASCE 7-22 WIND DESIGN CRITERIA
ULTIMATE WIND SPEED: 130 MPH
NOMINAL WIND SPEED: 101 MPH
WIND EXPOSURE: B
RISK CATEGORY: II




1 PLOT PLAN WITH ROOF PLAN
A-00 SCALE: 1"=30'-0"

2 HOUSE PHOTO
A-00 SCALE: NTS

3 VICINITY MAP
A-00 SCALE: NTS

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:05:39 -04'00


POWER PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME
JEFF THOMPSON
270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
PLOT PLAN & VICINITY MAP

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
A-00

Signature with Seal

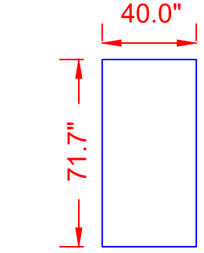

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

## MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 37 MODULES
MODULE TYPE = REC405AA PURE BLACK (405W) MODULES
WEIGHT = 45.0 LBS / 20.5 KG.
MODULE DIMENSIONS = 71.7" x 40.0" = 19.92 SF

TOTAL ARRAY AREA = 736.92 SQ. FT.
TOTAL ROOF FACE AREA = 3710.28 SQ. FT.
736.92 / 3710.28= 19.86% OF ROOF
FACE AREA COVERED BY ARRAY

**NOTE :**THE TRUSS LOCATIONS AND ATTACHMENT POINTS SHOWN ON SHEET S-01 IS ONLY SHOWS AN ILLUSTRATIVE REPRESENTATION OF A TYPICAL 2"X4"TRUSS LAYOUT SPACED 24" ON CENTER WITH ATTACHMENT POINTS TO THE TRUSS. IT DOES NOT REPRESENT THE EXACT LOCATIONS AND THE CONTRACTOR IS RESPONSIBLE TO VERIFY THAT IN THE FIELD. AS LONG AS THE SPACING OF THE ROOF ATTACHMENTS AND THE RAIL CANTILEVER ARE WITHIN THE PARAMETERS ALLOWED AS STATED IN THE GENERAL STRUCTURAL NOTES SECTION ON SHEET S-01, IT COMPLIES WITH THE REQUIREMENTS OF MY DRAWINGS AND PER THE 2023 FLORIDA BUILDING CODE (8TH EDITION).

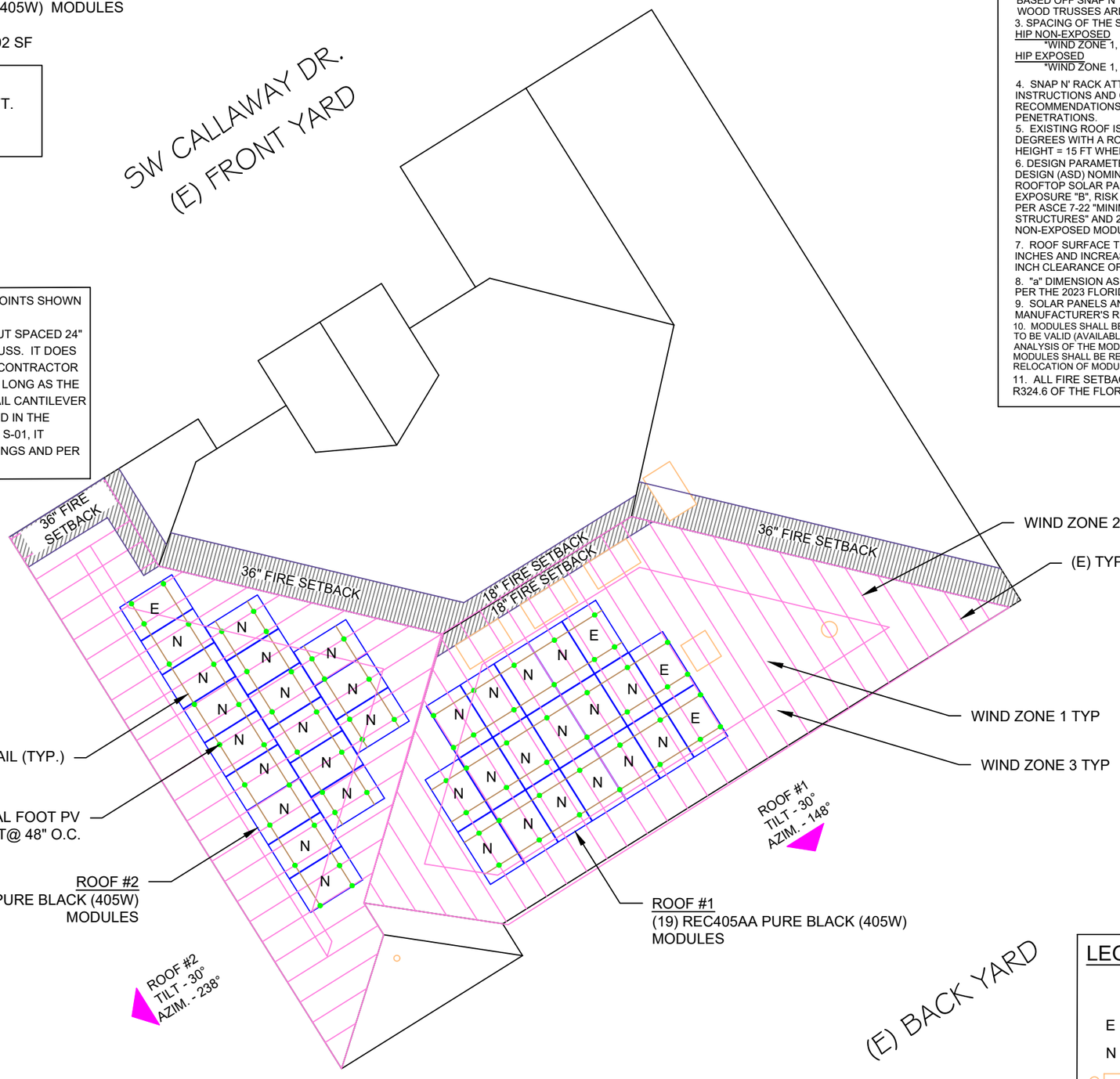



REC405AA PURE BLACK
(405W) MODULES

(N) SNAP N RACK UR40 RAIL (TYP.)

(N) SNAPNRACK SPEEDSEAL FOOT PV
ROOF ATTACHMENT@ 48" O.C.

ROOF #2
(18) REC405AA PURE BLACK (405W)
MODULES




ROOF #1
(19) REC405AA PURE BLACK (405W)
MODULES

1. APPLICABLE CODE: 2023 FLORIDA RESIDENTIAL CODE (8TH EDITION) & ASCE 7-22 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.
2. ATTACHMENT STRENGTH OF SNAP N' RACK ATTACHMENTS ARE BASED OFF SNAP N' RACK TESTING DATA AND IT IS ASSUMED THE EXISTING WOOD TRUSSES ARE SOUTHERN YELLOW PINE.
3. SPACING OF THE SPEEDFOOT ATTACHMENTS SHALL BE AS FOLLOWS:
HIP NON-EXPOSED
*WIND ZONE 1, 2, 3 = 4'-0" ON CENTER, 1'-7" CANTILEVER
HIP EXPOSED
*WIND ZONE 1, 2, 3 = 4'-0" ON CENTER, 1'-7" CANTILEVER
4. SNAP N' RACK ATTACHMENT SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS TO WEATHER PROOF AND SEAL ALL ROOF PENETRATIONS.
5. EXISTING ROOF IS A TYPICAL HIP ROOF FROM 27 DEGREES TO 45 DEGREES WITH A ROOF COVERING OF ASPHALT SHINGLES. MEAN ROOF HEIGHT = 15 FT WHERE THE MODULES ARE.
6. DESIGN PARAMETERS SHOWN ARE BASED ON ALLOWABLE STRESS DESIGN (ASD) NOMINAL WIND SPEED PRESSURES PER SECTION 29.4.4 FOR ROOFTOP SOLAR PANELS PARALLEL TO THE ROOF SURFACE WITH EXPOSURE "B", RISK CATEGORY II, ENCLOSED BUILDING AND h < 60'-0" PER ASCE 7-22 "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES" AND 2023 F.B.C. (8TH EDITION). EXPOSED AND NON-EXPOSED MODULES ARE LABELED AS SHOWN.
7. ROOF SURFACE TO UNDERSIDE OF PANEL HEIGHT IS APPROXIMATELY 5 INCHES AND INCREASED UPLIFT ON THE PORTION OF MODULES WITHIN A 10 INCH CLEARANCE OF THE ROOF EDGES HAS BEEN CONSIDERED.
8. "a" DIMENSION AS DEFINED PER ASCE 7-22 SHALL BE 4 FT REGARDLESS PER THE 2023 FLORIDA RESIDENTIAL CODE (8TH EDITION).
9. SOLAR PANELS AND MOUNTING SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
10. MODULES SHALL BE LOCATED AS SHOWN FOR THE WIND LOAD CALCULATIONS TO BE VALID (AVAILABLE UPON REQUEST). THIS IS BASED ON A PARTIAL PRESSURE ANALYSIS OF THE MODULES IN A SPECIFIED LOCATION. ANY RELOCATION OF MODULES SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO RELOCATION OF MODULES.
11. ALL FIRE SETBACKS COMPLY WITH THE REQUIREMENTS OF SECTION R324.6 OF THE FLORIDA RESIDENTIAL CODE.

I CERTIFY THAT THE INSTALLATION OF THE MODULES IS IN COMPLIANCE WITH FBC: RESIDENTIAL CHAPTER 3. THE ADDITION OF THE SOLAR MODULES AND ALL ACCESSORIES TO THE EXISTING BUILDING WILL NOT ADVERSELY AFFECT THE STRUCTURAL INTEGRITY OF THE BUILDING AND CAN SAFELY ACCOMODATE THE NEW IMPOSED LOADS OF THE SOLAR SYSTEM.

## LEGEND

E - EXPOSED MODULE
N - NON-EXPOSED MODULE
- ROOF OBSTRUCTION
- PV ROOF ATTACHMENT
- RAFTERS

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:05:49 -04'00

1 ROOF PLAN & MODULES
S-01 SCALE: 1"=10'-0"

POWER PRODUCTION MANAGEMENT

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON
270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

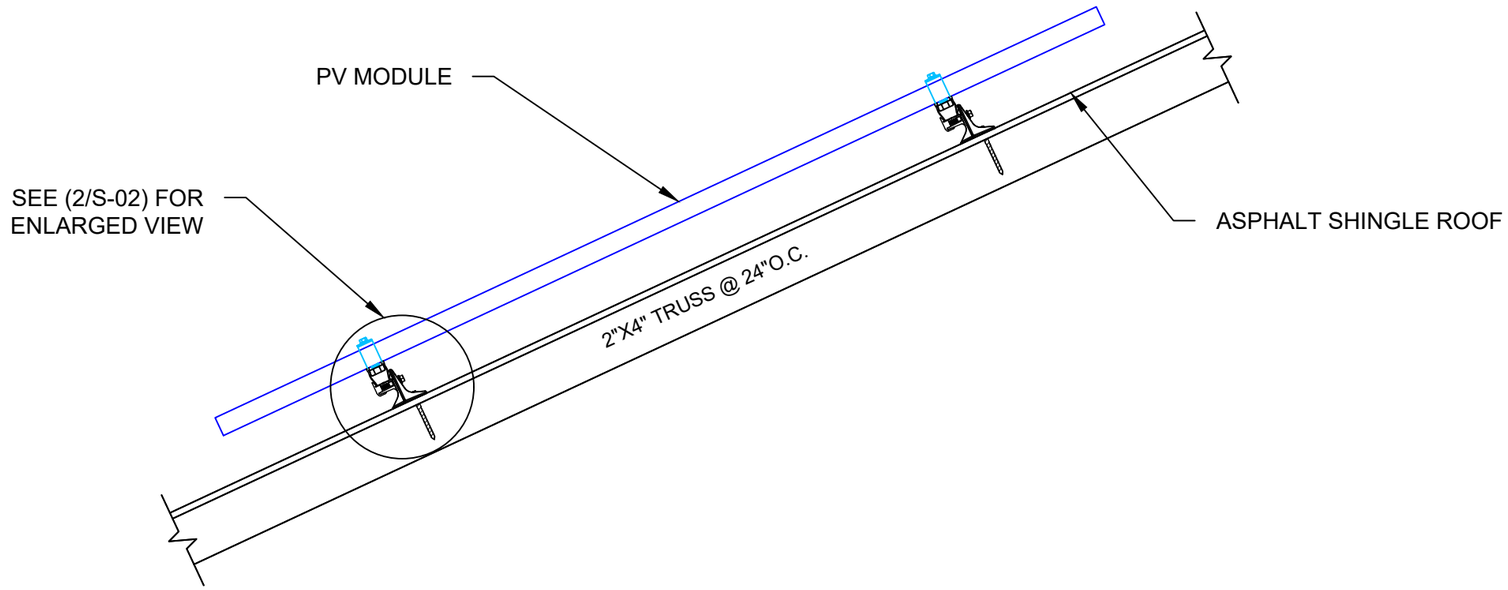
SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-01

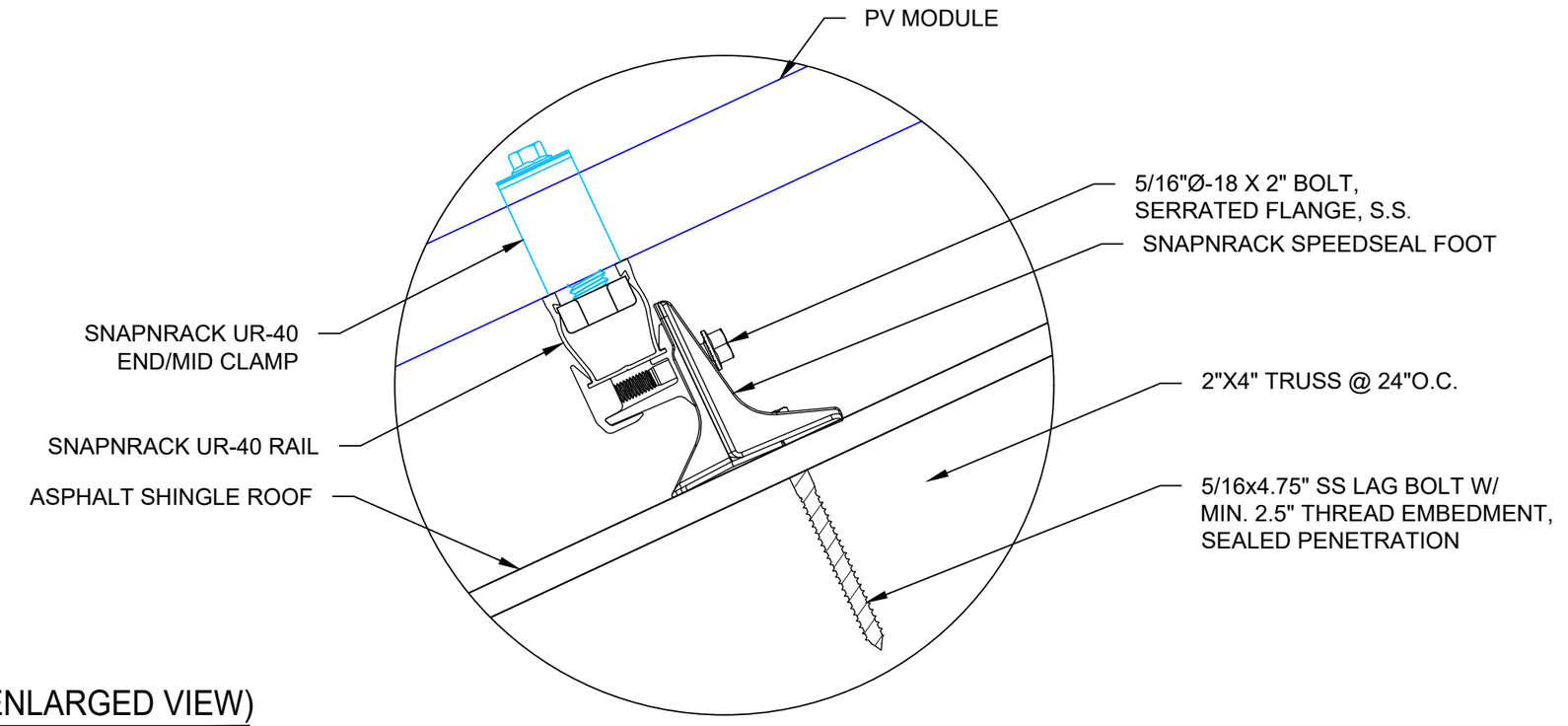
Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147




1 ATTACHMENT DETAIL

S-02 SCALE: NTS




2 ATTACHMENT DETAIL (ENLARGED VIEW)

S-02 SCALE: NTS

POWER PRODUCTION MANAGEMENT INC
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-02

Signature with Seal

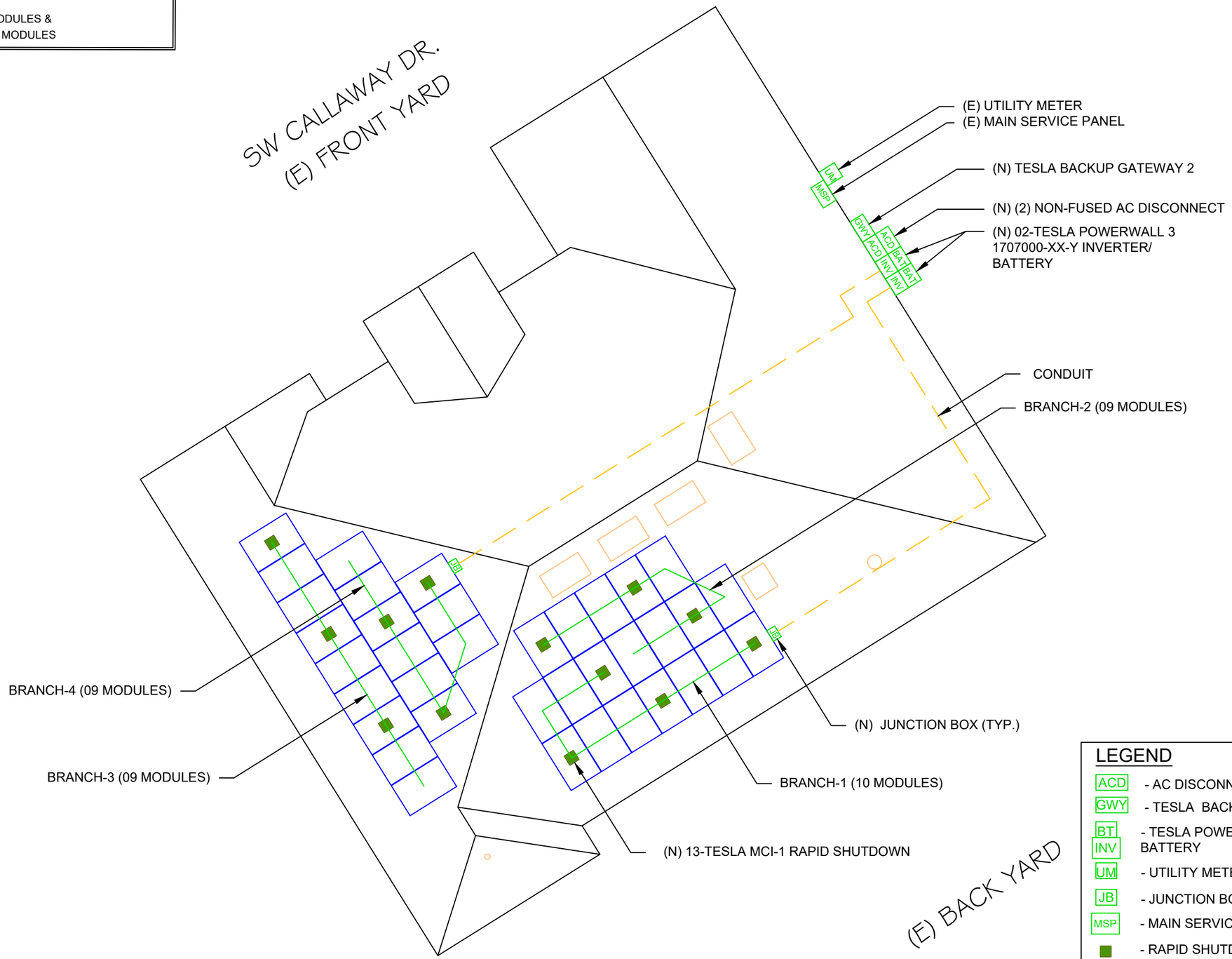
Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:05:56 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

DC SYSTEM SIZE: 14.98 kW DC STC
AC SYSTEM SIZE: 23.00 kW AC

(37) REC405AA PURE BLACK (405W) MODULES

(01) BRANCH OF 10 MODULES &
(03) BRANCHES OF 09 MODULES




## LEGEND

- ACD - AC DISCONNECT
- GWY - TESLA BACKUP GATEWAY 2
- BT / INV - TESLA POWERWALL 3 INVERTER/ BATTERY
- UM - UTILITY METER
- JB - JUNCTION BOX
- MSP - MAIN SERVICE PANEL
- RAPID SHUTDOWN
- ROOF OBSTRUCTION
- CONDUIT

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:06:04 -04'00

1 ELECTRICAL SITE PLAN
E-01 SCALE: 1"=10'-0"


POWER PRODUCTION MANAGEMENT INC
625 NW 8TH AVE.,
GAINESVILLE, FL 32601


| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON
270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

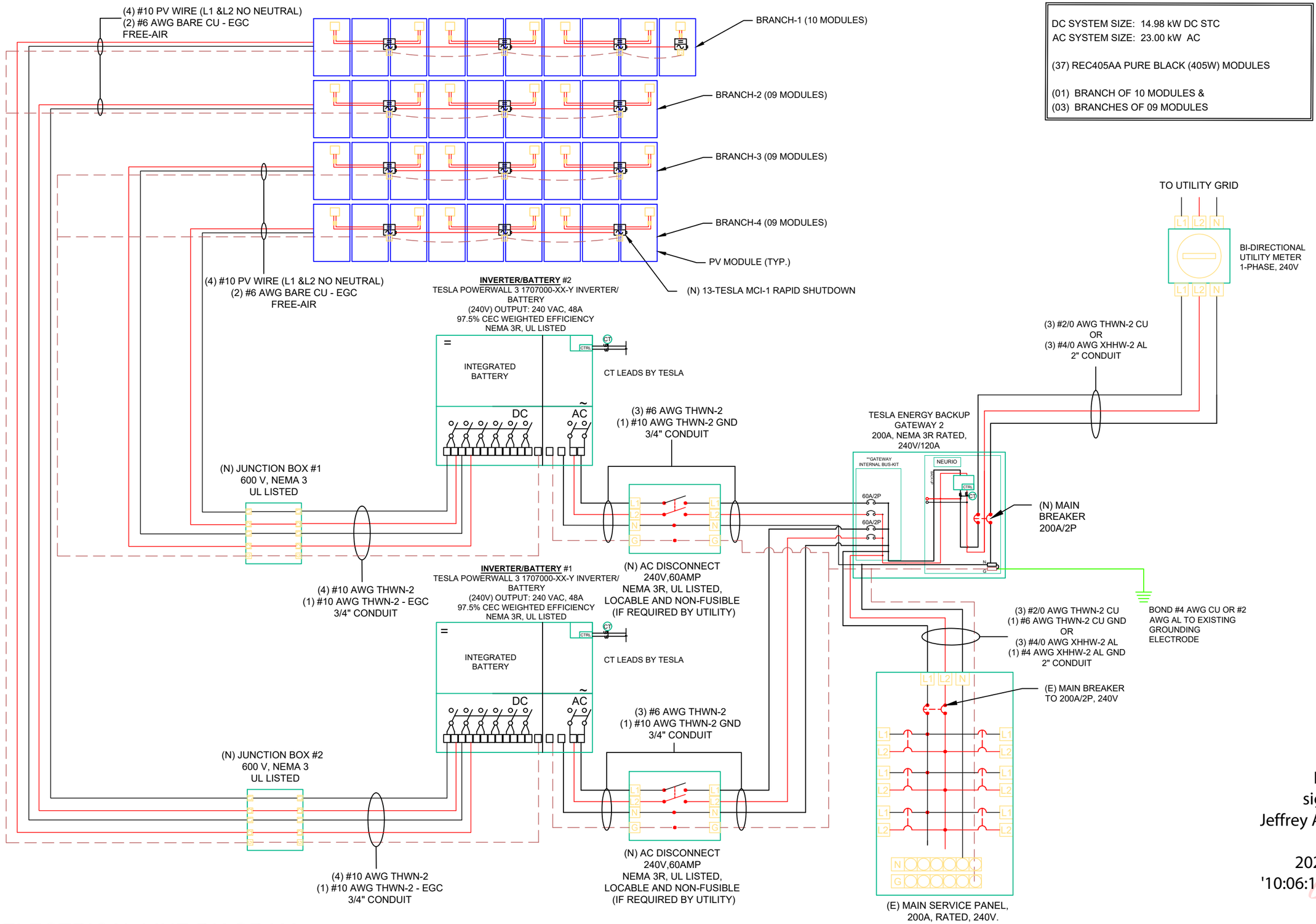
SHEET NAME
ELECTRICAL SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-01

Signature with Seal


JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147




DC SYSTEM SIZE: 14.98 kW DC STC
AC SYSTEM SIZE: 23.00 kW AC

(37) REC405AA PURE BLACK (405W) MODULES

(01) BRANCH OF 10 MODULES &
(03) BRANCHES OF 09 MODULES

1 ELECTRICAL LINE DIAGRAM

E-02 SCALE: NTS


POWER PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON
270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-02

Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:06:10 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

| SOLAR MODULE SPECIFICATIONS | |
|---|---|
| MANUFACTURER / MODEL # | REC405AA PURE BLACK (405W) MODULES |
| VMP | 42.40V |
| IMP | 9.56A |
| VOC | 48.90V |
| ISC | 10.30A |
| MODULE DIMENSION | 71.7"L x 40.0"W x 1.20"D (In Inch) |

| INVERTER #1 & #2 SPECIFICATIONS | |
|---|---|
| MANUFACTURER / MODEL # | TESLA POWERWALL 3 1707000-XX-Y INVERTER/ BATTERY |
| NOMINAL AC POWER | 11500W |
| NOMINAL OUTPUT VOLTAGE | 240VAC |
| NOMINAL OUTPUT CURRENT | 48A |

| AMBIENT TEMPERATURE SPECS | |
|---|---|
| RECORD LOW TEMP | -5° |
| AMBIENT TEMP (HIGH TEMP 2%) | 34° |
| CONDUIT MINIMUM HEIGHT FROM ROOF | 0.5" |
| CONDUCTOR TEMPERATURE RATING | 90° |
| MODULE TEMPERATURE COEFFICIENT OF Voc | -0.24%/°C |

## DC CONDUCTOR AMPACITY CALCULATIONS: ARRAY TO JUNCTION BOX #1 & #2 :

| | |
|---|---|
| EXPECTED WIRE TEMP (In Celsius) | 34° |
| TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) | 0.96 |
| NO. OF CURRENT CARRYING CONDUCTORS | 4 |
| CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) | 0.80 |
| CIRCUIT CONDUCTOR SIZE | 10 AWG |
| CIRCUIT CONDUCTOR AMPACITY | 40A |

| | |
|---|---|
| REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B) 1.56 X ISC OF MODULE | 16.07A |
| DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a) TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY | 30.72A |
| Result should be greater than (16.07A) otherwise less the entry for circuit conductor size and ampacity | |

## DC CONDUCTOR AMPACITY CALCULATIONS: FROM JUNCTION BOX #1 & #2 TO INVERTER #1 & #2:

| | |
|---|---|
| EXPECTED WIRE TEMP (In Celsius) | 34° |
| TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) | 0.96 |
| NO. OF CURRENT CARRYING CONDUCTORS | 4 |
| CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) | 0.80 |
| CIRCUIT CONDUCTOR SIZE | 10AWG |
| CIRCUIT CONDUCTOR AMPACITY | 40A |

| | |
|---|---|
| REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B) 1.56 X ISC OF MODULE | 16.07A |
| DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a) TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY | 30.72A |
| Result should be greater than (16.07A) otherwise less the entry for circuit conductor size and ampacity | |

## AC CONDUCTOR AMPACITY CALCULATIONS: FROM INVERTER #1 & #2 TO ACD #1 & #2 TO TESLA ENERGY BACKUP GATEWAY 2

| | |
|---|---|
| No. OF INVERTER | 2 |
| EXPECTED WIRE TEMP (In Celsius) | 34° |
| TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) | 0.96 |
| NO. OF CURRENT CARRYING CONDUCTORS | 3 |
| CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) | 1 |
| CIRCUIT CONDUCTOR SIZE | 6AWG |
| CIRCUIT CONDUCTOR AMPACITY | 65A |

| | |
|---|---|
| REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(B) 1.25 X MAX INVERTER OUTPUT CURRENT | 60.00A |
| DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a) TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY | 72.00 |
| Result should be greater than (60.00A) otherwise less the entry for circuit conductor size and ampacity | |

## AC CONDUCTOR AMPACITY CALCULATIONS: FROM TESLA ENERGY BACKUP GATEWAY 2 TO MAIN SERVICE PANEL

| | |
|---|---|
| EXPECTED WIRE TEMP (In Celsius) | 34° |
| TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) | 0.96 |
| NO. OF CURRENT CARRYING CONDUCTORS | 3 |
| CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) | 1 |
| CIRCUIT CONDUCTOR SIZE | 3/0 AWG |
| CIRCUIT CONDUCTOR AMPACITY | 200A |

| | |
|---|---|
| REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(B) MAX OUTPUT CURRENT | 200 |
| DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a) TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY | 216.00 |
| Result should be greater than (200.00A) otherwise less the entry for circuit conductor size and ampacity | |

## AC CONDUCTOR AMPACITY CALCULATIONS: FROM TESLA ENERGY BACKUP GATEWAY 2 TO POI

| | |
|---|---|
| EXPECTED WIRE TEMP (In Celsius) | 34° |
| TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) | 0.96 |
| NO. OF CURRENT CARRYING CONDUCTORS | 3 |
| CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) | 1 |
| CIRCUIT CONDUCTOR SIZE | 3/0 AWG |
| CIRCUIT CONDUCTOR AMPACITY | 200A |

| | |
|---|---|
| REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(B) MAX OUTPUT CURRENT | 200 |
| DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a) TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY | 216.00 |
| Result should be greater than (200.00A) otherwise less the entry for circuit conductor size and ampacity | |

## ELECTRICAL NOTES

1.) ALL EQUIPMENT SHALL BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2.) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90°C WET ENVIRONMENT.
3.) WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
4.) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5.) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEM. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS , AND ACCESSORIES TO MEET APPLICABLE CODES AND STANDARDS.
6.) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7.) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND ACCESSIBLE.
8.) INSTALL MODULE AND RACKING GROUNDING HARDWARE PER MANUFACTURER'S INSTRUCTION.

1 | WIRING CALCULATIONS
E-03 | SCALE: NTS

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:06:17 -04'00

POWER PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON
270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
WIRING CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-03

Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

**PHOTOVOLTAIC AC DISCONNECT**

NOMINAL OPERATING AC VOLATGE **240 V**

RATED AC OUTPUT CURRENT **48.0 A**

LABEL LOCATION:
MAIN SERVICE PANEL
AC DISCONNECT #1 & #2
CODE REF: NEC 690.54

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

LABEL LOCATION:
TESLA GATEWAY - CODE REF:
NEC 690.56(C)

**⚠ WARNING**

**ELECTRIC SHOCK HAZARD**

**THE DC CONDUCTORS OF THE PHOTOVOLTAIC SYSTEM ARE UNDERGROUND AND MAY BE ENERGIZED**

LABEL LOCATION:
DC DISCONNECT ON INVERTER AND
ROOF JUNCTION BOX PER NEC 690.35(F)

**WARNING:PHOTOVOLTAIC POWER SOURCE**

LABEL LOCATION:
CONDUIT, COMBINER BOX
(PER CODE: NEC 690.31(G)(3)(4)

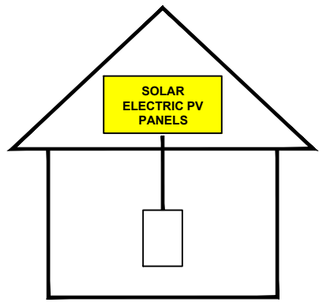
**CAUTION**

MULTIPLE SOURCES OF POWER

LABEL LOCATION:
MAIN SERVICE DISCONNECT / MAIN DISTRIBUTION PANEL, PV DISCONNECT LOCATION NO MORE THAT 1 M (3 FT) FROM THE SERVICE DISCONNECT PER CODE NEC 705.10, NEC 690.56(B), 690.4(D)

**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.**




LABEL LOCATION:
ON OR NO MORE THAT 1 M (3 FT) FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.
PER CODE(S): NEC: 690.56(C)

**ENERGY STORAGE SYSTEM DISCONNECT**

LABEL LOCATION:
TESLA GATEWAY
NEC 706.15(C)

**ENERGY STORAGE SYSTEM**

NOMINAL ESS OUTPUT VOLTAGE: 240 VAC

LABEL LOCATION:
TESLA GATEWAY
PER CODE(S): NEC 2020: 706.15(C)

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:06:35 -04'00


POWER PRODUCTION MANAGEMENT

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
SYSTEM LABELING

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-04

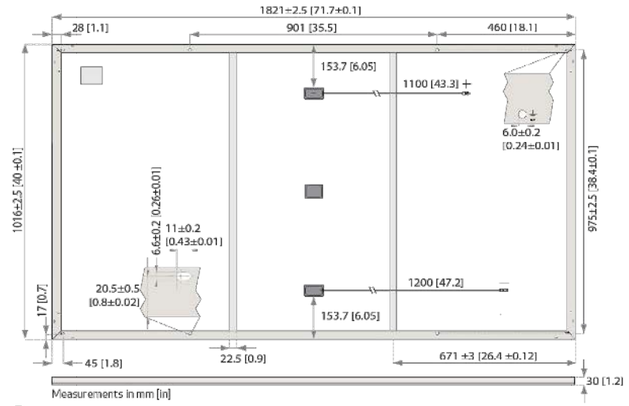
Signature with Seal


JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

REC
SOLAR'S MOST TRUSTED

REC ALPHA PURE SERIES > PRODUCT SPECIFICATIONS

# PRODUCT SPECIFICATIONS




## GENERAL DATA

| | | | |
|---|---|---|---|
| Cell type: | 132 half-cut REC heterojunction cells with lead-free, gapless technology 6 strings of 22 cells in series | Connectors: | Stäubli MC4 PV-KBT4/KST4, 12AWG (4 mm²) in accordance with IEC 62852 IP68 only when connected |
| Glass: | 0.13 in (3.2 mm) solar glass with anti-reflection surface treatment | Cable: | 12 AWG (4 mm²) PV wire, 43+47 in (1.1+1.2 m) accordance with EN 50618 |
| Backsheet: | Highly resistant polymer (black) | Dimensions: | 71.7 x 40 x 1.2 in (1821 x 1016 x 30 mm) |
| Frame: | Anodized aluminum (black) | Weight: | 45 lbs (20.5 kg) |
| Junction box: | 3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790 | Origin: | Made in Singapore |

## ELECTRICAL DATA — Product Code*: RECxxxAA Pure

| | | | | | |
|---|---|---|---|---|---|
| STC | Power Output - $P_{MAX}$ (Wp) | 385 | 390 | 395 | 400 | 405 |
| | Watt Class Sorting - (W) | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 |
| | Nominal Power Voltage - $V_{MPP}$ (V) | 41.2 | 41.5 | 41.8 | 42.1 | 42.4 |
| | Nominal Power Current - $I_{MPP}$ (A) | 9.35 | 9.40 | 9.45 | 9.51 | 9.56 |
| | Open Circuit Voltage - $V_{OC}$ (V) | 48.5 | 48.6 | 48.7 | 48.8 | 48.9 |
| | Short Circuit Current - $I_{SC}$ (A) | 10.18 | 10.19 | 10.20 | 10.25 | 10.30 |
| | Power Density (W/sq ft) | 19.3 | 19.6 | 19.8 | 20.1 | 20.3 |
| | Panel Efficiency (%) | 20.8 | 21.1 | 21.3 | 21.6 | 21.9 |
| NMOT | Power Output - $P_{MAX}$ (Wp) | 293 | 297 | 301 | 305 | 309 |
| | Nominal Power Voltage - $V_{MPP}$ (V) | 38.8 | 39.1 | 39.4 | 39.7 | 40.0 |
| | Nominal Power Current - $I_{MPP}$ (A) | 7.55 | 7.59 | 7.63 | 7.68 | 7.72 |
| | Open Circuit Voltage - $V_{OC}$ (V) | 45.7 | 45.8 | 45.9 | 46.0 | 46.1 |
| | Short Circuit Current - $I_{SC}$ (A) | 8.16 | 8.20 | 8.24 | 8.28 | 8.32 |

Values at standard test conditions (STC: air mass AM1.5, irradiance 1075 W/sq ft (1000 W/m²), temperature 77°F (25°C), based on a production spread with a tolerance of $P_{MPP}$, $V_{OC}$ & $I_{SC}$ ±3% within one watt class. Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 68°F (20°C), windspeed 3.3 ft/s (1 m/s). *Where xxx indicates the nominal power class ($P_{MPP}$) at STC above.

## CERTIFICATIONS

| | |
|---|---|
| IEC 61215:2016, IEC 61730:2016, UL 61730 | |
| IEC 62804 | PID |
| IEC 61701 | Salt Mist |
| IEC 62716 | Ammonia Resistance |
| UL 61730 | Fire Type Class 2 |
| IEC 62782 | Dynamic Mechanical Load |
| IEC 61215-2:2016 | Hailstone (35mm) |
| IEC 62321 | Lead-free acc. to RoHS EU 863/2015 |

ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941

## WARRANTY

| | Standard | REC ProTrust | |
|---|---|---|---|
| Installed by an REC Certified Solar Professional | No | Yes | Yes |
| System Size | All | ≤25 kW | 25-500 kW |
| Product Warranty (yrs) | 20 | 25 | 25 |
| Power Warranty (yrs) | 25 | 25 | 25 |
| Labor Warranty (yrs) | 0 | 25 | 10 |
| Power in Year 1 | 98% | 98% | 98% |
| Annual Degradation | 0.25% | 0.25% | 0.25% |
| Power in Year 25 | 92% | 92% | 92% |

See warranty documents for details. Conditions apply

## MAXIMUM RATINGS

| | |
|---|---|
| Operational temperature: | -40 ... +185°F (-40 ... +85°C) |
| Maximum system voltage: | 1000 V |
| Maximum test load (front): | +7000 Pa (146 lbs/sq ft)* |
| Maximum test load (rear): | -4000 Pa (83.5 lbs/sq ft)* |
| Max series fuse rating: | 25 A |
| Max reverse current: | 25 A |

*See installation manual for mounting instructions. Design load = Test load / 1.5 (safety factor)

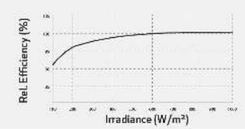
## TEMPERATURE RATINGS*

| | |
|---|---|
| Nominal Module Operating Temperature: | 44°C (±2°C) |
| Temperature coefficient of $P_{MAX}$: | -0.26 %/°C |
| Temperature coefficient of $V_{OC}$: | -0.24 %/°C |
| Temperature coefficient of $I_{SC}$: | 0.04 %/°C |

*The temperature coefficients stated are linear values

## LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:




Specifications subject to change without notice.

Ref: PM-DS-12-01-Rev- C 10.21

Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

REC
www.recgroup.com

POWER
PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
MODULE DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-01

Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 10:16:42 -04'00'

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

# Powerwall 3

## Power Everything

—

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 185 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy system expansion, and simple connection to any electrical service.

# Powerwall 3 Technical Specifications

| | | |
|---|---|---|
| System Technical Specifications | **Model Number** | 1707000-xx-y |
| | **Nominal Grid Voltage (Input & Output)** | 120/240 VAC |
| | **Grid Type** | Split phase |
| | **Frequency** | 60 Hz |
| | **Overcurrent Protection Device** | Configurable up to 60 A |
| | **Solar to Battery to Home/Grid Efficiency** | 89% [1,2] |
| | **Solar to Home/Grid Efficiency** | 97.5% [3] |
| | **Supported Islanding Devices** | Backup Gateway 2, Backup Switch |
| | **Connectivity** | Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G [4]) |
| | **Hardware Interface** | Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters |
| | **AC Metering** | Revenue Grade (+/- 0.5%) |
| | **Protections** | Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters |
| | **Customer Interface** | Tesla Mobile App |
| | **Warranty** | 10 years |

| | | |
|---|---|---|
| Solar Technical Specifications | **Maximum Solar STC Input** | 20 kW |
| | **Withstand Voltage** | 600 V DC |
| | **PV DC Input Voltage Range** | 60 — 550 V DC |
| | **PV DC MPPT Voltage Range** | 150 — 480 V DC |
| | **MPPTs** | 6 |
| | **Maximum Current per MPPT ($I_{mp}$)** | 13 A [5] |
| | **Maximum Short Circuit Current per MPPT ($I_{sc}$)** | 15 A [5] |

| | | |
|---|---|---|
| Battery Technical Specifications | **Nominal Battery Energy** | 13.5 kWh AC [2] |
| | **Maximum Continuous Discharge Power** | 11.5 kW AC |
| | **Maximum Continuous Charge Power** | 5 kW AC |
| | **Output Power Factor Rating** | 0 - 1 (Grid Code configurable) |
| | **Maximum Continuous Current** | 48 A |
| | **Maximum Output Fault Current** | 10 kA |
| | **Load Start Capability (1 s)** | 185 A LRA |
| | **Power Scalability** | Up to 4 Powerwall 3 units supported |

[1] Typical solar shifting use case.
[2] Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.
[3] Tested using CEC weighted efficiency methodology.
[4] Cellular connectivity subject to network service coverage and signal strength.
[5] Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A $I_{MP}$ / 30 A $I_{SC}$.



Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:06:56 -04'00

POWER PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON
270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
POWERWALL3 DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-02

Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

# Powerwall 3 Technical Specifications

## Environmental Specifications

| | |
|---|---|
| **Operating Temperature** | -20°C to 50°C (-4°F to 122°F) [6] |
| **Operating Humidity (RH)** | Up to 100%, condensing |
| **Storage Temperature** | -20°C to 30°C (-4°F to 86°F), up to 95% RH, non-condensing, State of Energy (SOE): 25% initial |
| **Maximum Elevation** | 3000 m (9843 ft) |
| **Environment** | Indoor and outdoor rated |
| **Enclosure Rating** | NEMA 3R |
| **Ingress Rating** | IP67 (Battery & Power Electronics)<br>IP45 (Wiring Compartment) |
| **Pollution Rating** | PD3 |
| **Operating Noise @ 1 m** | < 50 db(A) typical<br><62 db(A) maximum |

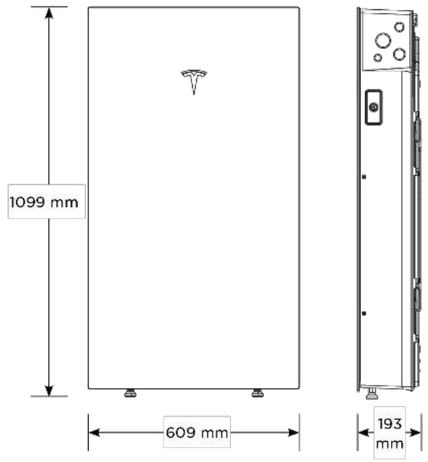
[6] Performance may be de-rated at operating temperatures above 40°C (104°F).

## Compliance Information

| | |
|---|---|
| **Certifications** | UL 1642, UL 1699B, UL 1741, UL 1741 SA, UL 1741 SB, UL 1741 PCS, UL 3741, UL 1973, UL 1998, UL 9540, IEEE 1547-2018, IEEE 1547.1, UN 38.3 |
| **Grid Connection** | United States |
| **Emissions** | FCC Part 15 Class B |
| **Environmental** | RoHS Directive 2011/65/EU |
| **Seismic** | AC156, IEEE 693-2005 (high) |
| **Fire Testing** | Meets the unit level performance criteria of UL 9540A |

## Mechanical Specifications

| | |
|---|---|
| **Dimensions** | 1099 x 609 x 193 mm (43.25 x 24 x 7.6 in) |
| **Weight** | 130 kg (287 lb) |
| **Mounting Options** | Floor or wall mount |






# Solar Shutdown Device Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Powerwall 3, solar array shutdown is initiated by any loss of AC power.

## Electrical Specifications

| **Model** | **MCI-1** | **MCI-2** |
|---|---|---|
| **Nominal Input DC Current Rating ($I_{MP}$)** | 13 A | 13 A |
| **Maximum Input Short Circuit Current ($I_{SC}$)** | 19 A | 17 A |
| **Maximum System Voltage (PVHCS)** | 600 V DC | 1000 V DC [7] |

[7] Maximum System Voltage is limited by Powerwall to 600 V DC.

## RSD Module Performance

| | | |
|---|---|---|
| **Maximum Number of Devices per String** | 5 | 5 |
| **Control** | Power Line Excitation | Power Line Excitation |
| **Passive State** | Normally Open | Normally Open |
| **Maximum Power Consumption** | 7 W | 7 W |
| **Warranty** | 25 years | 25 years |

## Environmental Specifications

| | | |
|---|---|---|
| **Operating Temperature** | -40°C to 50°C<br>(-40°F to 122°F) | -45°C to 70°C<br>(-49°F to 158°F) |
| **Storage Temperature** | -30°C to 70°C<br>(-22°F to 158°F) | -30°C to 70°C<br>(-22°F to 158°F) |
| **Enclosure Rating** | NEMA 4X / IP65 | NEMA 4X / IP65 |

## Mechanical Specifications

| | | |
|---|---|---|
| **Electrical Connections** | MC4 Connector | MC4 Connector |
| **Housing** | Plastic | Plastic |
| **Dimensions** | 125 x 150 x 22 mm<br>(5 x 6 x 1 in) | 173 x 45 x 22 mm<br>(6.8 x 1.8 x 1 in) |
| **Weight** | 350 g (0.77 lb) | 120 g (0.26 lb) |
| **Mounting Options** | ZEP Home Run Clip<br>M4 Screw (#10)<br>M8 Bolt (5/16")<br>Nail / Wood screw | Wire Clip |

## Compliance Information

| | |
|---|---|
| **Certifications** | UL 1741 PVRSE, UL 3741,<br>PVRSA (Photovoltaic Rapid Shutdown Array) |
| **RSD Initiation Method** | External System Shutdown Switch or<br>Powerwall 3 Enable Switch |

## UL 3741 PV Hazard Control (and PVRSA) Compatibility

See Powerwall 3 Installation Manual



POWER PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
RAPID SHUTDOWN DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-03

Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:07:03 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

# Backup Gateway 2

Backup Gateway 2 controls connection to the grid when paired with Powerwall 3, automatically detecting outages and providing seamless transition to backup power. Backup Gateway 2 also provides energy metering for solar self-consumption, time-based control, and backup operation.

In this system configuration, Powerwall 3 acts as the Site Controller, with the Backup Gateway 2 Site Controller disabled.

## Performance Specifications

| | |
|---|---|
| Model Number | 1232100-xx-y |
| AC Voltage (Nominal) | 120/240 V |
| Feed-in Type | Split phase |
| Grid Frequency | 60 Hz |
| Current Rating | 200 A |
| Maximum Supply Short Circuit Current | 10 kA [8] |
| Overcurrent Protection Device | 100 - 200 A, Service entrance rated [9] |
| Overvoltage Category | Category IV |
| Internal Primary AC Meter | Revenue accurate (+/- 0.2%) |
| Internal Auxiliary AC Meter | Revenue accurate (+/- 2%) |
| Primary Connectivity | Ethernet, Wi-Fi |
| Secondary Connectivity | Cellular (3G, LTE/4G) [10] |
| User Interface | Tesla App |
| Operating Modes | Support for solar self-consumption, time-based control, and backup |
| Backup Transition | Automatic disconnect for seamless backup |
| Modularity | Supports up to 10 AC-coupled Powerwalls |
| Optional Internal Panelboard | 200 A 6-space / 12 circuit breakers Siemens QP or Square D HOM breakers rated 10 - 80A or Eaton BR breakers rated 10 - 125A |
| Warranty | 10 years |

[10] When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.

[11] The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

## Environmental Specifications

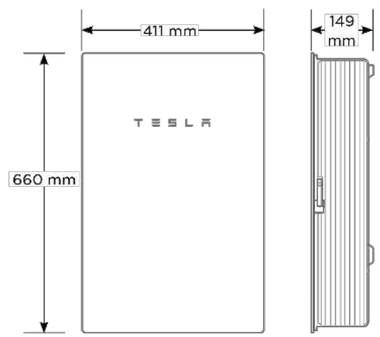
| | |
|---|---|
| Operating Temperature | -20°C to 50°C (-4°F to 122°F) |
| Operating Humidity (RH) | Up to 100%, condensing |
| Maximum Elevation | 3000 m (9843 ft) |
| Environment | Indoor and outdoor rated |
| Enclosure Type | NEMA 3R |

## Compliance Information

| | |
|---|---|
| Certifications | UL 67, UL 869A, UL 916, UL 1741 PCS, CSA 22.2 0.19, CSA 22.2 205 |
| Emissions | FCC Part 15, ICES 003 |

## Mechanical Specifications

| | |
|---|---|
| Dimensions | 660 x 411 x 149 mm (26 x 16 x 6 in) |
| Weight | 20.4 kg (45 lb) |
| Mounting options | Wall mount, Semi-flush mount |

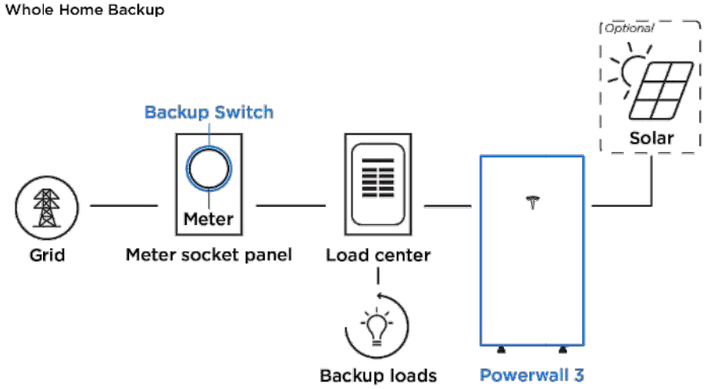





# Powerwall 3 Example System Configurations

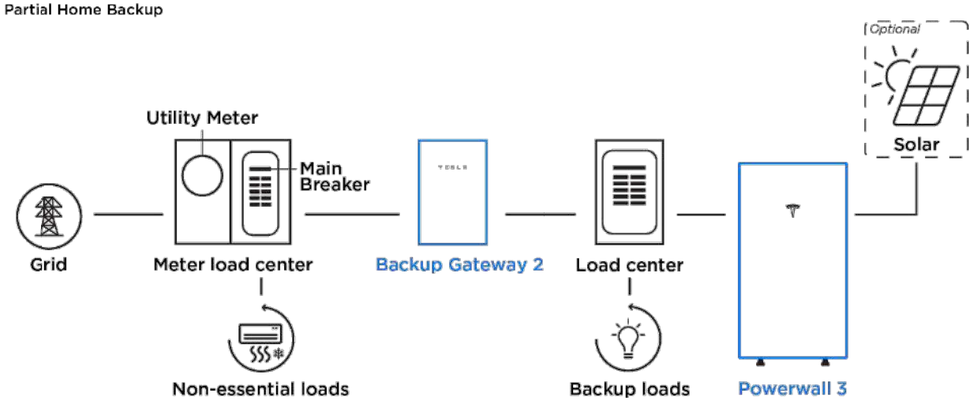
## Powerwall 3 with Backup Switch

**Whole Home Backup**




## Powerwall 3 with Backup Gateway 2

**Partial Home Backup**






Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:07:10 -04'00

POWER PRODUCTION MANAGEMENT, INC.

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
GATEWAY 2 DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-04

Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

DESCRIPTION:
SNAPNRACK, TDS, UR-40 RAIL

PART NUMBER(S):
232-02536, 232-02537, 232-02538

UNITS: IN, LB, DEG [MM, KG, DEG] | SHEET: 1:1

DOC NUMBER:
SNR-DC-01352

DRAWN BY:
H.WULFEKOETTER

| REV: | DATE: |
|---|---|
| D | 1/23/2023 |

SnapNrack®

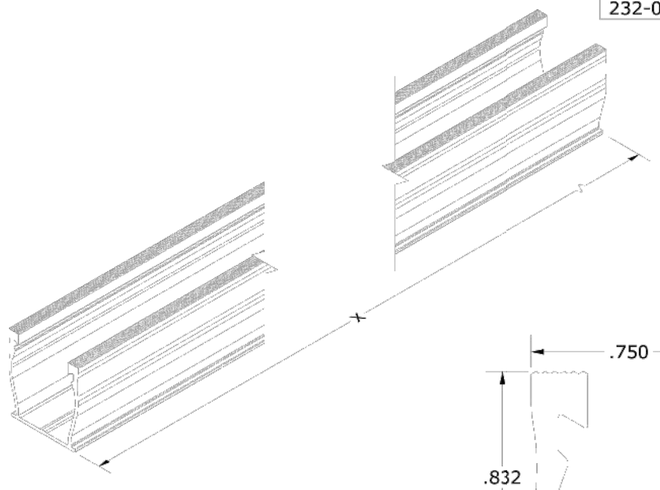
SUNRUN INSTALLATION SERVICES INC.

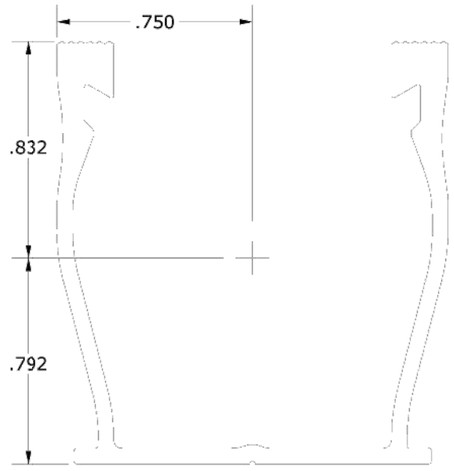
225 BUSH STREET, SUITE 1400 • SAN FRANCISCO, CA 94104 USA
PHONE (877) 732-2860 • CONTACT@SNAPNRACK.COM

THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.

UR-40 RAIL PROPERTIES

| SKU | FINISH | RAIL LENGTH |
|---|---|---|
| 232-02536 | MILL | 172 in |
| 232-02537 | SILVER | 172 in |
| 232-02538 | BLACK | 172 in |






SECTION PROPERTIES

| | |
|---|---|
| A | 0.357 in² |
| Ixx | 0.125 in⁴ |
| Iyy | 0.132 in⁴ |
| Sx (TOP) | 0.150 in³ |
| Sx (BOT) | 0.158 in³ |
| Sy (LEFT) | 0.175 in³ |
| Sy (RIGHT) | 0.175 in³ |

| | |
|---|---|
| MATERIALS: | 6000 SERIES ALUMINUM |
| DESIGN LOAD (LBS): | N/A |
| ULTIMATE LOAD (LBS): | N/A |
| TORQUE SPECIFICATION: | N/A FT-LBS |
| CERTIFICATION: | UL 2703, FILE E359313 |
| WEIGHT (LBS): | 5.85 - 5.99 |

POWER PRODUCTION MANAGEMENT

**POWER PRODUCTION MANAGEMENT INC**
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

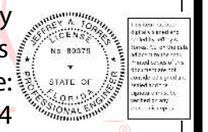
SHEET NAME
RAIL
DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-05

Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:07:26-04'00




JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147

DESCRIPTION:

SNAPNRACK, ULTRA RAIL SPEEDSEAL™ FOOT

DRAWN BY: mwatkins

REVISION: A

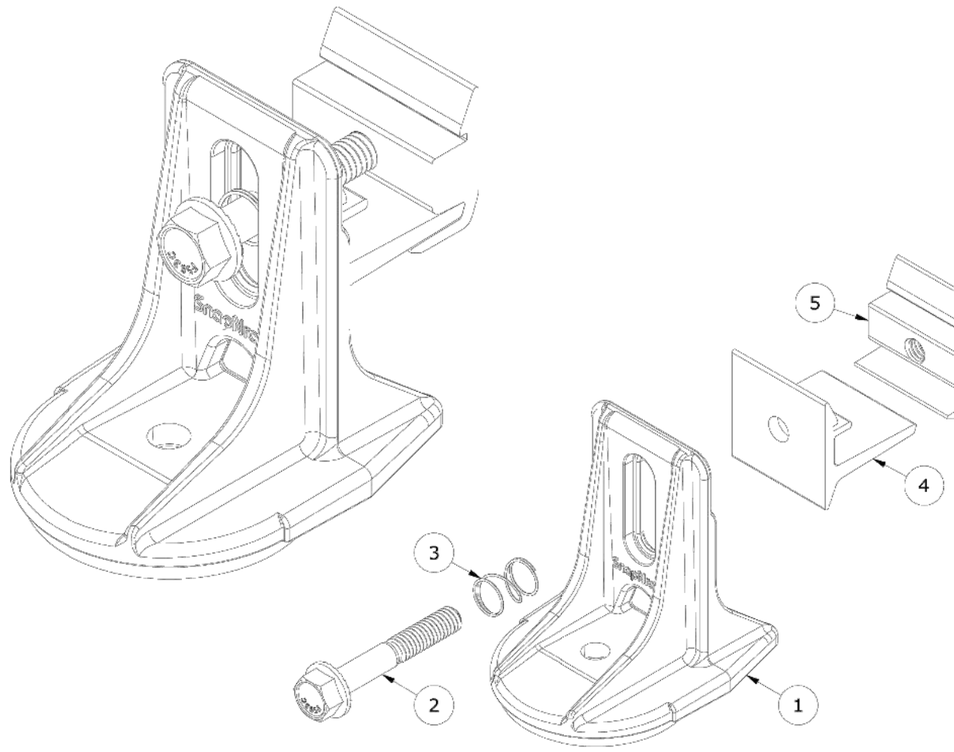
PART NUMBER(S):

242-02163, 242-02167

SnapNrack™ Solar Mounting Solutions

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902

THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.




| PARTS LIST | | |
|---|---|---|
| ITEM | QTY | DESCRIPTION |
| 1 | 1 | SNAPNRACK, SPEEDSEAL FOOT, BASE, SEALING, SILVER / BLACK |
| 2 | 1 | BOLT, FLANGE, SERRATED, 5/16IN-18 X 2IN, SS |
| 3 | 1 | SNAPNRACK, RL UNIVERSAL, MOUNT SPRING, SS |
| 4 | 1 | SNAPNRACK, ULTRA RAIL MOUNT THRU PRC, CLEAR / BLACK |
| 5 | 1 | SNAPNRACK, ULTRA RAIL MOUNT TAPPED PRC, CLEAR / BLACK |

| | | | |
|---|---|---|---|
| MATERIALS: | DIE CAST A380 ALUMINUM, 6000 SERIES ALUMINUM, STAINLESS STEEL | | |
| DESIGN LOAD (LBS): | 802 UP, 1333 DOWN, 357 SIDE | OPTIONS: | |
| ULTIMATE LOAD (LBS): | 2118 UP, 4006 DOWN, 1331 SIDE | CLEAR / BLACK | |
| TORQUE SPECIFICATION: | 12 LB-FT | | |
| CERTIFICATION: | UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM SUBJECT UL 2582 | | |
| WEIGHT (LBS): | 0.45 | | |

DESCRIPTION:

SNAPNRACK, ULTRA RAIL SPEEDSEAL™ FOOT

DRAWN BY: mwatkins

REVISION: A

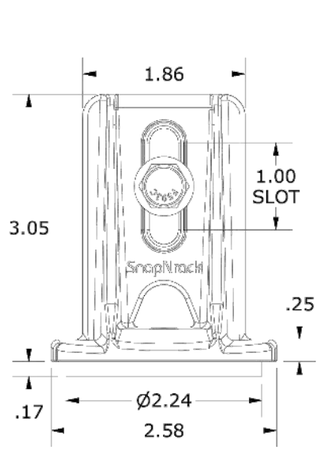
PART NUMBER(S):

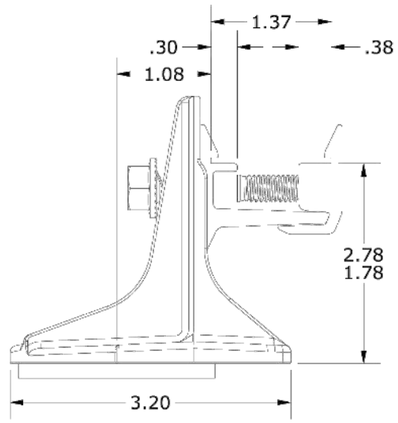
242-02163, 242-02167

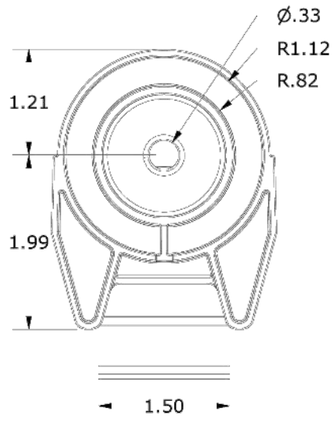
SnapNrack™ Solar Mounting Solutions

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902

THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.




ALL DIMENSIONS IN INCHES

Digitally signed by Jeffrey A Torres
Date: 2024.06.14 '10:08:02 -04'00

POWER PRODUCTION MANAGEMENT, INC.

POWER PRODUCTION MANAGEMENT INC
625 NW 8TH AVE.,
GAINESVILLE, FL 32601

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| | | |
| | | |
| | | |

DATE: 05/29/2024

PROJECT NAME

JEFF THOMPSON

270 SW CALLAWAY DR.,
LAKE CITY, FL 32024

SHEET NAME
ATTACHMENT DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-06

Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
925 SUNSHINE LANE, STE 1010
ALTAMONTE SPRINGS, FL 32714
(407) 710-1147