PROJECT DESCRIPTION:

14 x 370 REC SOLAR: REC370TP2SM72 (370W) MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES

DC SYSTEM SIZE: 5.18 kW DC STC
AC SYSTEM SIZE: 11.50 kW AC

EQUIPMENT SUMMARY
14 REC SOLAR: REC370TP2SM72 (370W) MODULES
01 TESLA POWERWALL 3 1707000-XX-Y INVERTER/BATTERY
5 TESLA MCI2 RAPID SHUTDOWN DEVICE

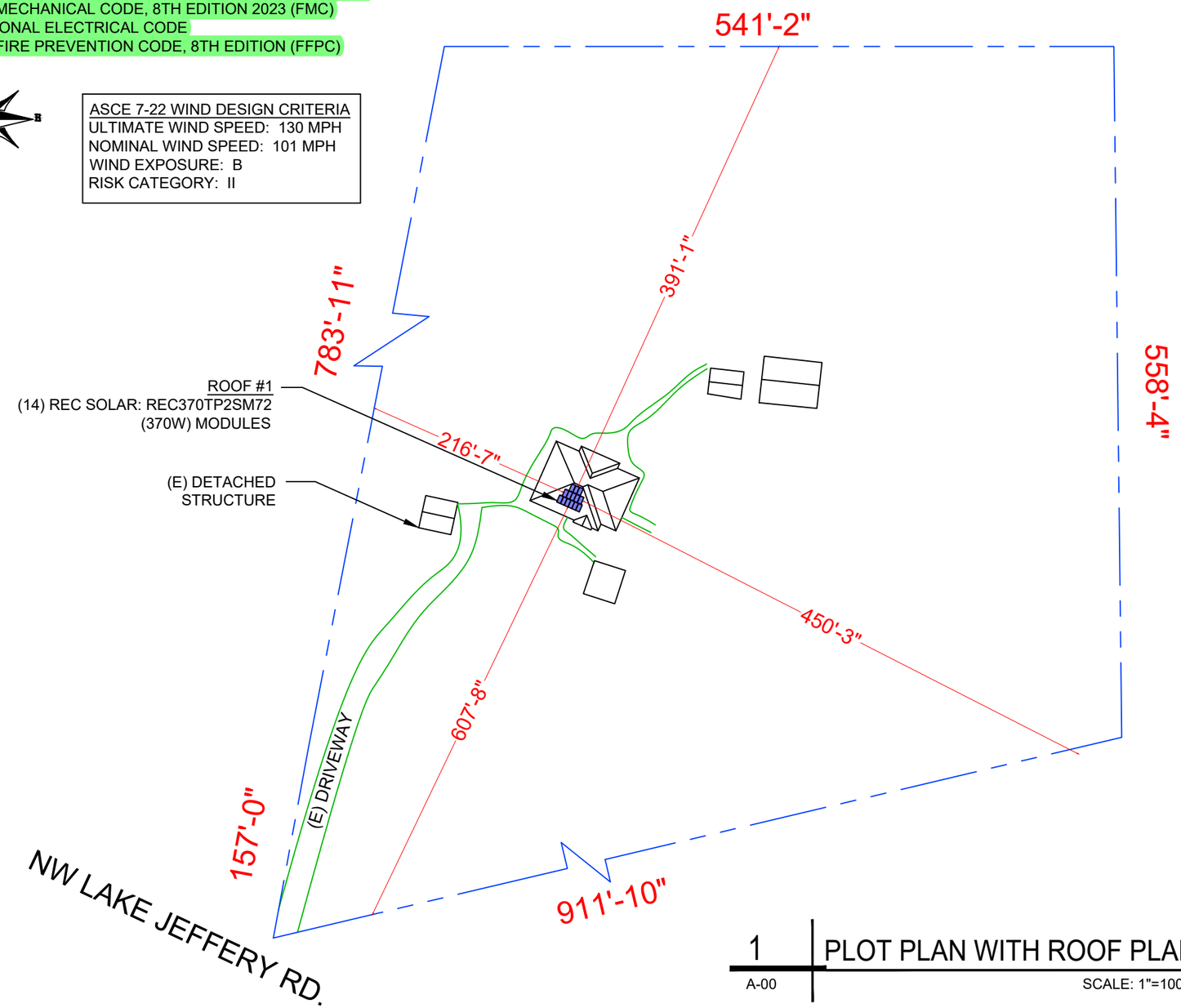
GOVERNING CODES :
FLORIDA RESIDENTIAL CODE, 8TH EDITION 2023 (FRC)
FLORIDA PLUMBING CODE, 8TH EDITION 2023 (FPC)
FLORIDA BUILDING CODE, 8TH EDITION 2023 EDITION (FBC)
FLORIDA MECHANICAL CODE, 8TH EDITION 2023 (FMC)
2020 NATIONAL ELECTRICAL CODE
FLORIDA FIRE PREVENTION CODE, 8TH EDITION (FFPC)

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

SHEET INDEX

DISCLAIMER :
THE SET OF PLANS FOR THIS PROJECT IS FOR DESIGNING THE PROJECT FOR BUILDING CODE COMPLIANCE. THIS DOES 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



1 PLOT PLAN WITH ROOF PLAN
A-00 SCALE: 1"=100'-0"

2 HOUSE PHOTO
A-00 SCALE: NTS

3 VICINITY MAP
A-00 SCALE: NTS

Digitally signed by Jeffrey A Torres
Date: 2024.07.18 '12:15:10 -04'00

POWER PRODUCTION MANAGEMENT, INC.

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

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME
ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
PLOT PLAN & VICINITY MAP

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
A-00

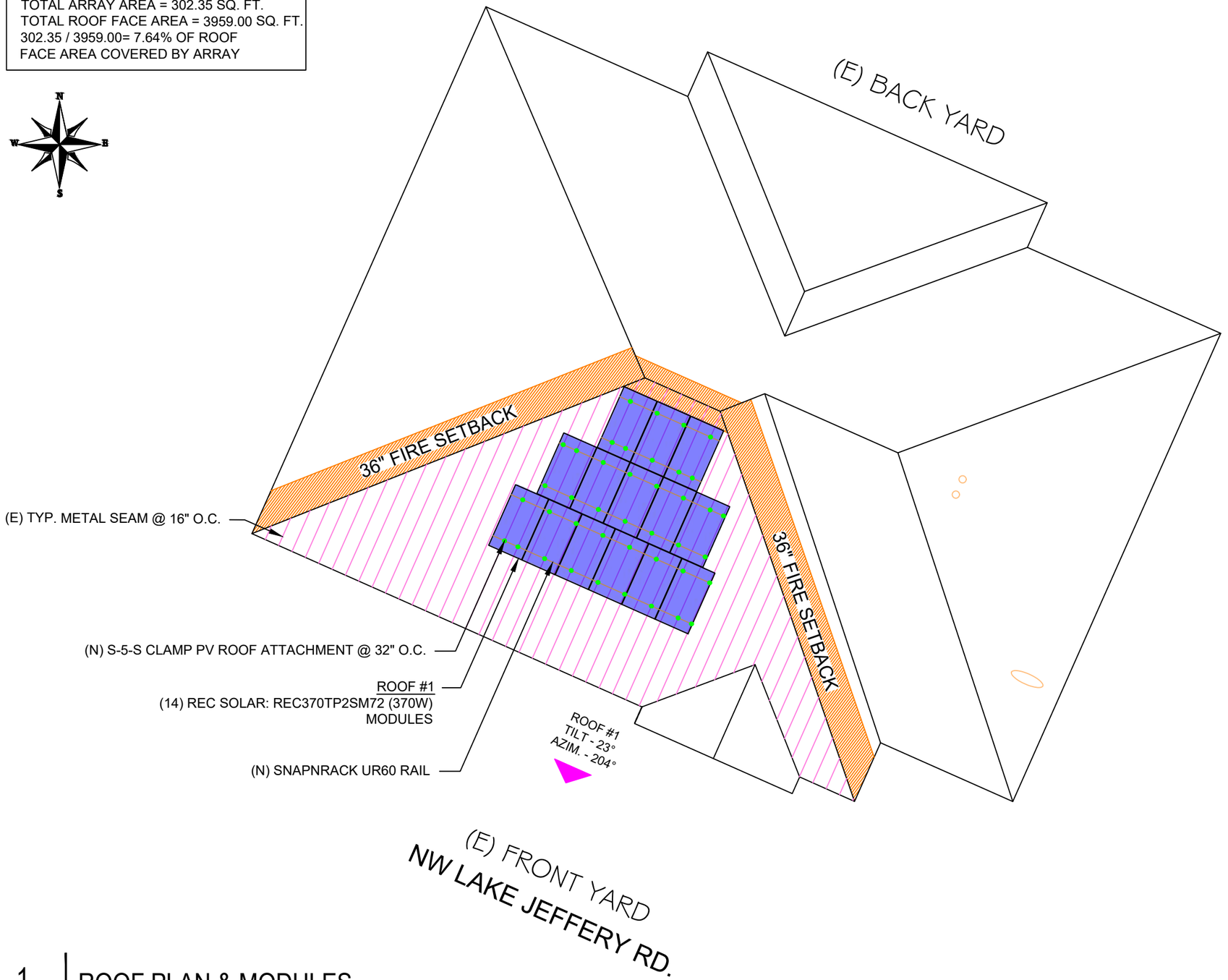
Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(407) 710-1147

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 14 MODULES
MODULE TYPE = REC SOLAR: REC370TP2SM72 (370W) MODULES
WEIGHT = 48.50 LBS / 22.0 KG.
MODULE DIMENSIONS = 78.93" x 39.40" = 21.60 SF

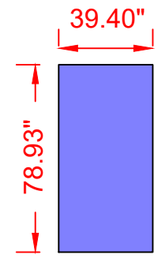
TOTAL ARRAY AREA = 302.35 SQ. FT.
TOTAL ROOF FACE AREA = 3959.00 SQ. FT.
302.35 / 3959.00= 7.64% OF ROOF
FACE AREA COVERED BY ARRAY



ROOF LAYOUT NOTES

ROOF LAYOUT SHOWN MAY BE ADJUSTED IN THE FIELD BY THE INSTALLER TO ACCOUNT FOR ISSUES CAUSED BY ROOF OBSTACLES, TRUSS ALIGNMENT, OR SHADING. SO LONG AS THE MODULES ARE MOUNTED AND SECURED TO THE ROOF AS SHOWN ON S-02 THE LAYOUT MAY BE ALTERED AND ALL ROOF ORIENTATIONS MAY BE UTILIZED.

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.



REC SOLAR:
REC370TP2SM72 (370W)
MODULES

LEGEND

- ROOF OBSTRUCTION
- PV ROOF ATTACHMENT
- SEAM
- RAIL

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

POWER PRODUCTION MANAGEMENT, INC.

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

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
ROOF PLAN & MODULES

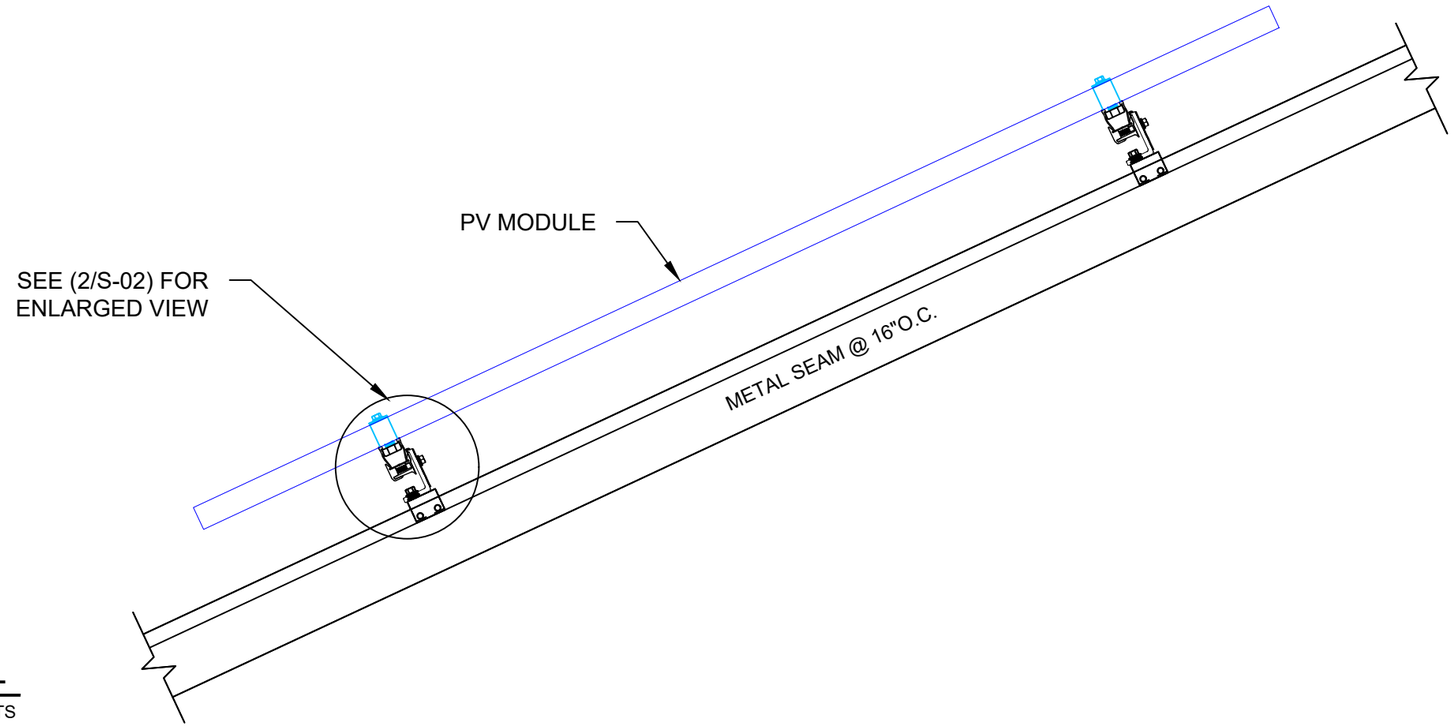
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-01

Signature with Seal

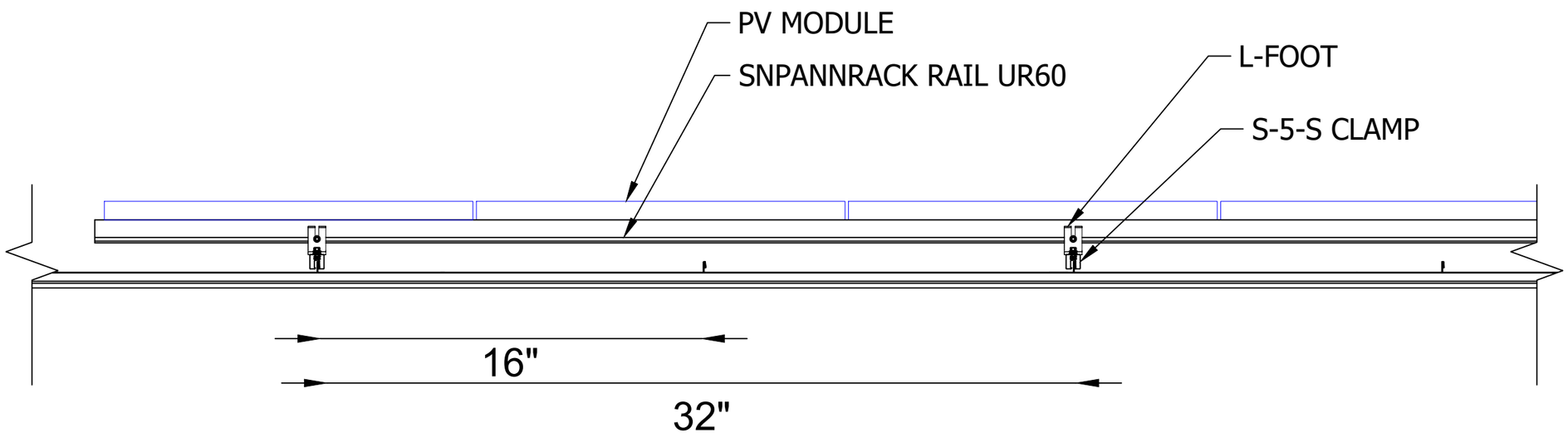
Digitally signed by Jeffrey A Torres
Date: 2024.07.18 '12:15:20 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(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: 07/17/2024

PROJECT NAME

ALEX ADAM'S

5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

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: 2024.07.18 '12:15:27 -04'00

JEFFREY A. TORRES LICENSE No. 80379 STATE OF FLORIDA PROFESSIONAL ENGINEER

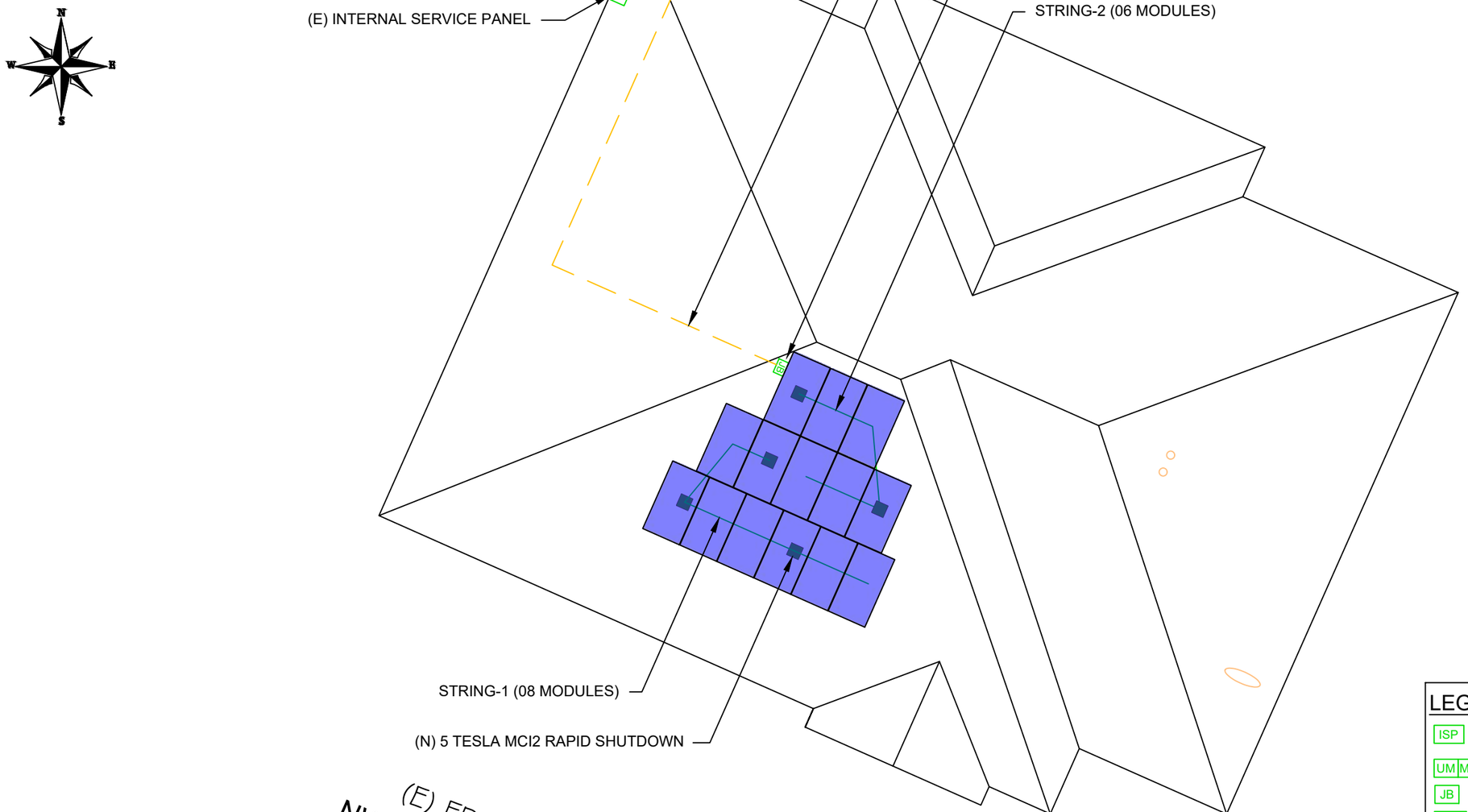
This item has been digitally signed and sealed by Jeffrey A. Torres, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(407) 710-1147

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	14	REC SOLAR: REC370TP2SM72 (370W) MODULES
JUNCTION BOX	1	JUNCTION BOX 600V, NEMA 3R UL LISTED
RAPID SHUTDOWN	5	TESLA MCI2 RAPID SHUTDOWN
INVERTER/BATTERY	01	TESLA POWERWALL 3 1707000-XX-Y INVERTER/BATTERY
BREAKER	1	60A/2P BREAKER
RAIL	8	SNAPNRACK UR-60 RAIL,168 "
SPLICE	4	SPLICE KIT
GROUNDING LUG	6	GROUNDING LUG
ATTACHMENT	41	S-5-S CLAMP PV ROOF ATTACHMENT
MID CLAMPS	22	MID CLAMPS
END CLAMPS	12	END CLAMPS

DC SYSTEM SIZE: 5.18 kW DC STC
AC SYSTEM SIZE: 11.50 kW AC
(14) REC SOLAR: REC370TP2SM72 (370W) MODULES

(01) STRING OF 08 MODULES
(01) STRING OF 06 MODULES



LEGEND	
ISP	- INTERNAL SERVICE PANEL
UM MSP	- UTILITY METER/MAIN
JB	- JUNCTION BOX
GWY	- TESLA GATEWAY
BAT	- TESLA BATTERY
INV	- INVERTER
	- ROOF OBSTRUCTION
	- CONDUIT
	- BRANCH

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

POWER PRODUCTION MANAGEMENT, INC.

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

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
ELECTRICAL SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-01

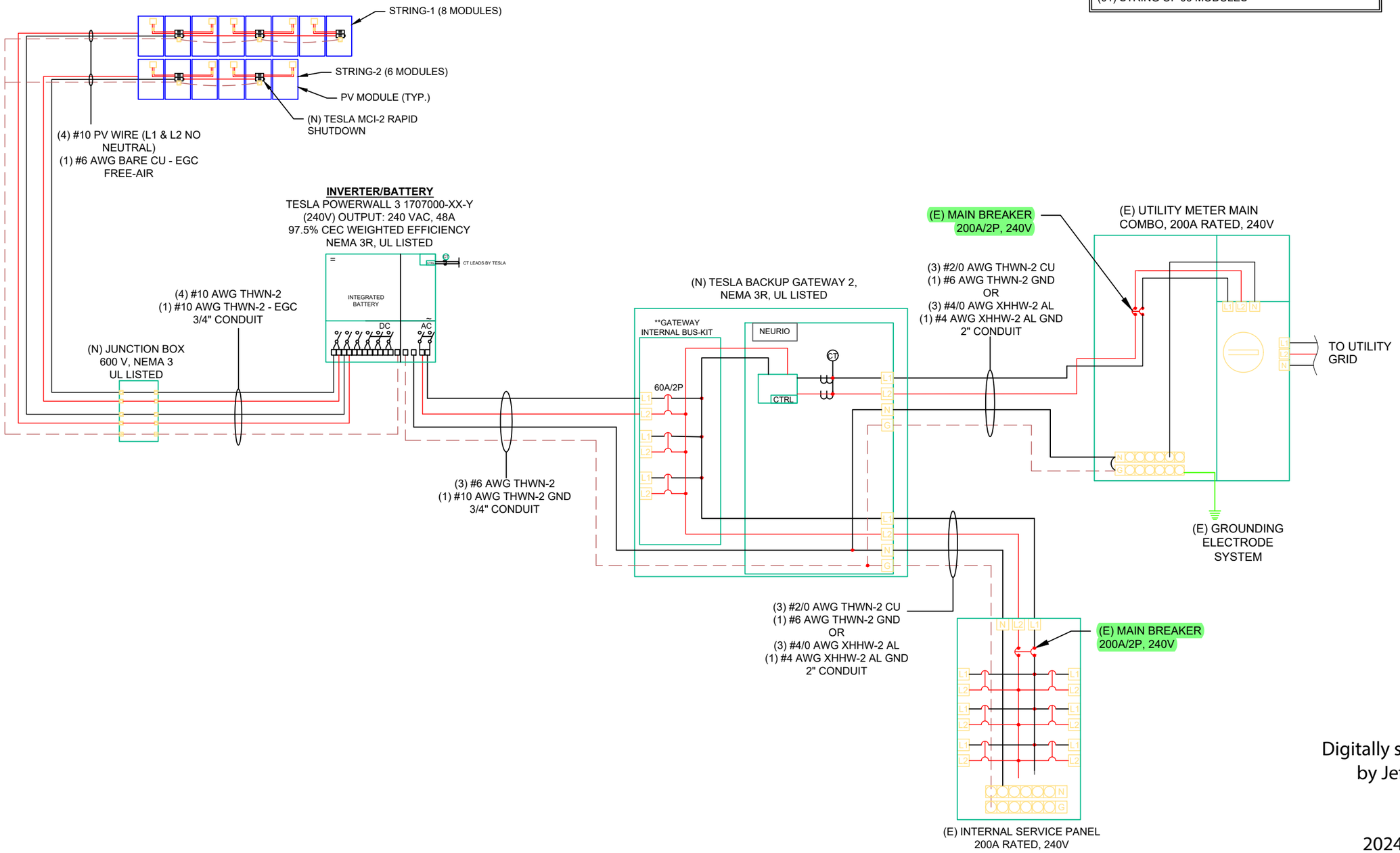
Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.07.18 '12:15:41 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(407) 710-1147

DC SYSTEM SIZE: 5.18 kW DC STC
AC SYSTEM SIZE: 11.50 kW AC
(14) REC SOLAR: REC370TP2SM72 (370W) MODULES

(01) STRING OF 08 MODULES &
(01) STRING OF 06 MODULES



1 ELECTRICAL LINE DIAGRAM
E-02

Digitally signed by Jeffrey A Torres
Date: 2024.07.18 '12:15:50 -04'00

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

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-02

Signature with Seal

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(407) 710-1147

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	REC SOLAR: REC370TP2SM72 (370W) MODULES
VMP	39.8V
IMP	9.30A
VOC	47.8V
ISC	9.85A
MODULE DIMENSION	78.93"L x 39.40"W x 1.18"D (In Inch)

INVERTER/BATTERY 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	-4°
AMBIENT TEMP (HIGH TEMP 2%)	30°
CONDUIT MINIMUM HEIGHT FROM ROOF	0.5"
CONDUCTOR TEMPERATURE RATING	90°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.30%/°C

DC CONDUCTOR AMPACITY CALCULATIONS: ARRAY TO JUNCTION BOX :

EXPECTED WIRE TEMP (In Celsius)	30°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	1.00
NO. OF CURRENT CARRYING CONDUCTORS	N/A
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a)	1.00
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	15.33A
1.56 X ISC OF MODULE	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a)	40.00A
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY	
Result should be greater than (15.33A)	

DC CONDUCTOR AMPACITY CALCULATIONS: FROM JUNCTION BOX TO INVERTER/BATTERY:

EXPECTED WIRE TEMP (In Celsius)	30°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	1.00
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)	15.37A
1.56 X ISC OF MODULE	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a)	32.00A
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY	
Result should be greater than (15.37A)	

AC CONDUCTOR AMPACITY CALCULATIONS: FROM INVERTER/BATTERY TO TESLA GATEWAY

EXPECTED WIRE TEMP (In Celsius)	30°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	1.00
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)	60.00A
1.25 X MAX INVERTER OUTPUT CURRENT	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC (310.15)(B)(2)(a)	75.00
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a) X CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY	
Result should be greater than (60.00A)	

AC CONDUCTOR AMPACITY CALCULATIONS: FROM TESLA GATEWAY TO INTERNAL SERVICE PANEL

EXPECTED WIRE TEMP (In Celsius)	30°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	1.00
# OF CURRENT CARRYING CONDUCTORS	3
# OF C.C. CONDUCTORS CORRECTION PER NEC 310.15(B)(3)(a)	1.00
CIRCUIT CONDUCTOR SIZE	3/0 AWG
CIRCUIT CONDUCTOR AMPACITY	200A
REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A) & (B)	200.00A
MAX OUTPUT CURRENT	
DERATED CIRCUIT CONDUCTOR AMPACITY	225.00A
Result should be greater than (200.00A)	

AC CONDUCTOR AMPACITY CALCULATIONS: FROM TESLA GATEWAY TO POI

EXPECTED WIRE TEMP (In Celsius)	30°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	1.00
# OF CURRENT CARRYING CONDUCTORS	3
# OF C.C. CONDUCTORS CORRECTION PER NEC 310.15(B)(3)(a)	1.00
CIRCUIT CONDUCTOR SIZE	3/0 AWG
CIRCUIT CONDUCTOR AMPACITY	200A
REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A) & (B)	200.00A
MAX OUTPUT CURRENT	
DERATED CIRCUIT CONDUCTOR AMPACITY	225.00A
Result should be greater than (200.00A)	

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

POWER PRODUCTION MANAGEMENT, INC.

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

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
WIRING CALCULATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-03

Signature with Seal

JEFFREY A. TORRES LICENSE No 80379 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Jeffrey A Torres
Date: 2024.07.18 12:15:57 -04'00'

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(407) 710-1147

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL LOCATION:
MAIN SERVICE DISCONNECT
CODE REF: NEC 690.13(B), 690.15, 705.20

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.56(C)

FOR SERVICE CALL
PPM SOLAR
(352) 309-7727

MAXIMUM DC VOLTAGE

600V

OF PV SYSTEM

CODE REF: NEC 690.53

PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
EMT/CONDUIT RACEWAY
SOLADECK/JUNCTION BOX
CODE REF : NEC 690.31 (D) (2)

PHOTOVOLTAIC AC DISCONNECT

NOMINAL OPERATING AC VOLATGE	240 V
RATED AC OUTPUT CURRENT	48 A

LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
AC DISCONNECT
CODE REF: NEC 690.54

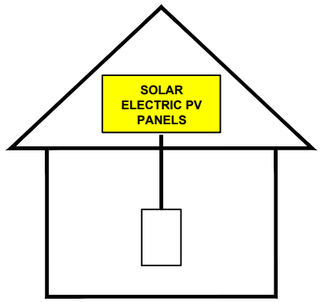
CAUTION

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)

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

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S

5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
SYSTEM LABELING

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-04

Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.07.18 '12:16:16 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
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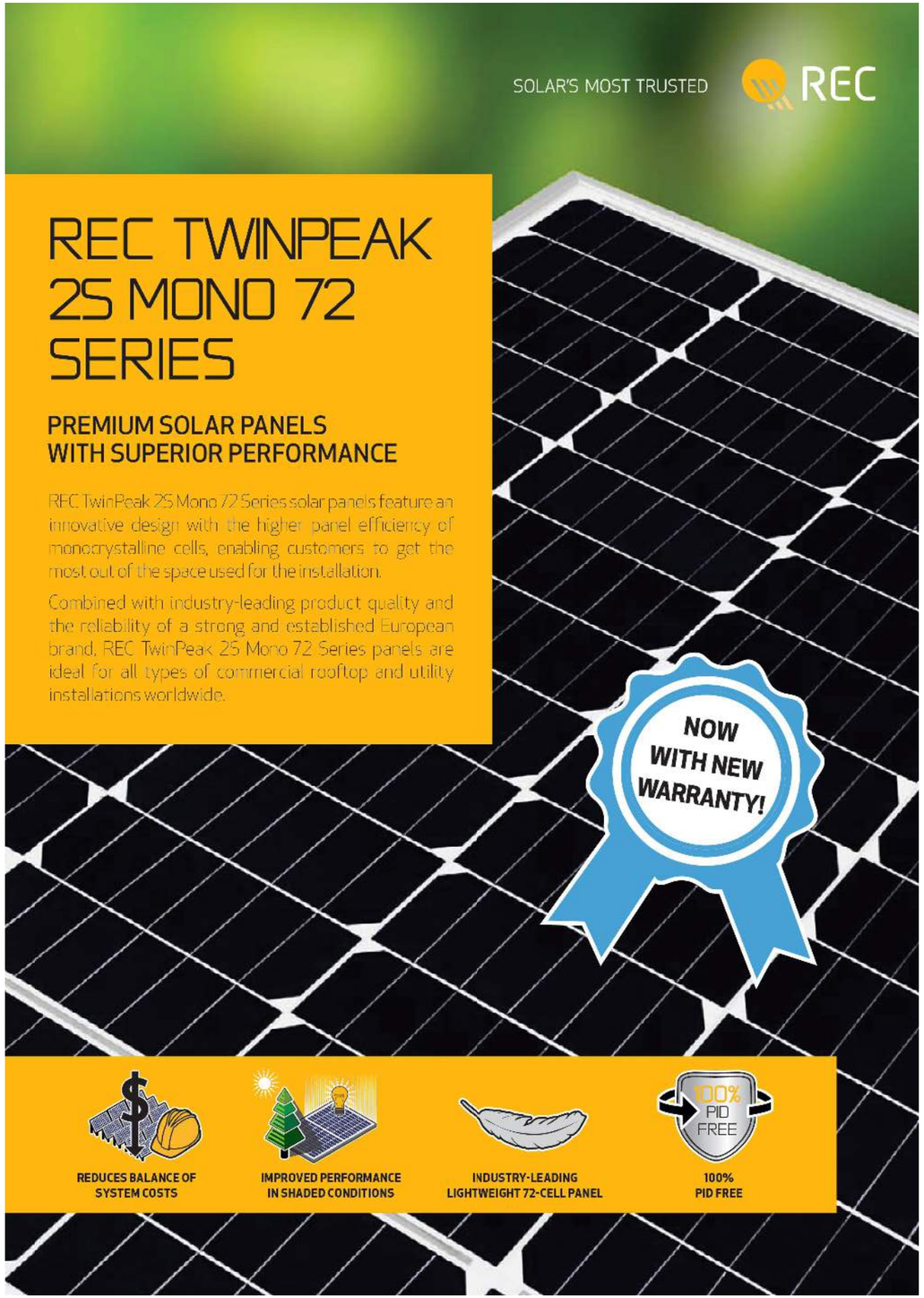
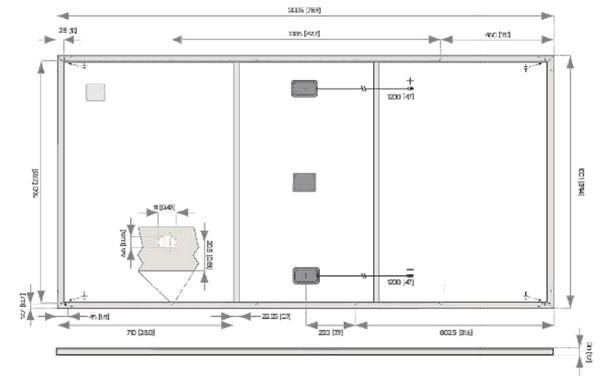


REC TWINPEAK 2S MONO 72 SERIES



Measurements in mm [in]

18.9% EFFICIENCY

20 YEAR PRODUCT WARRANTY

25 YEAR LINEAR POWER OUTPUT WARRANTY

ELECTRICAL DATA @ STC	Product code*: RECxxxTP2SM72				
Nominal Power - P_{MPP} (Wp)	360	365	370	375	380
Watt Class Sorting - (W)	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Nominal Power Voltage - V_{MPP} (V)	39.4	39.6	39.8	40.1	40.3
Nominal Power Current - I_{MPP} (A)	9.14	9.22	9.30	9.36	9.43
Open Circuit Voltage - V_{OC} (V)	47.4	47.6	47.8	48.0	48.2
Short Circuit Current - I_{SC} (A)	9.74	9.82	9.85	9.96	10.05
Panel Efficiency (%)	17.9	18.2	18.4	18.7	18.9

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of V_{OC} & I_{SC} ±3% within one watt class. At low irradiance of 200 W/m² at least 95% of the STC module efficiency will be achieved. *Where xxx indicates the nominal power class (P_{MPP}) at STC indicated above, and can be followed by the suffix XV for 1500 V rated modules.

ELECTRICAL DATA @ NMOT	Product code*: RECxxxTP2SM72				
Nominal Power - P_{MPP} (Wp)	271	274	278	282	286
Nominal Power Voltage - V_{MPP} (V)	36.6	36.8	37.0	37.3	37.5
Nominal Power Current - I_{MPP} (A)	7.39	7.45	7.51	7.56	7.62
Open Circuit Voltage - V_{OC} (V)	44.1	44.3	44.4	44.6	44.8
Short Circuit Current - I_{SC} (A)	7.87	7.93	7.96	8.05	8.12

Nominal module operating temperature (NMOT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). *Where xxx indicates the nominal power class (P_{MPP}) at STC indicated above, and can be followed by the suffix XV for 1500 V rated modules.

GENERAL DATA

Cell type:	144 half-cut monocrystalline PERC cells 6 strings of 24 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction
Frame:	Anodized aluminum
Support bars:	Anodized aluminum
Junction box:	3-part, 3 bypass diodes, IP67 rated In accordance with IEC 62790
Cable:	4 mm² solar cable, 1.2 m + 1.2 m In accordance with EN 50618
Connectors:	Tonglin TL-Cable01S-F (4 mm²) In accordance with IEC 62852, IP68 only when connected
Origin:	Made in Singapore

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V / 1500 V
Design load (+): snow Maximum test load (+):	367 kg/m² (3600 Pa)* 550 kg/m² (5400 Pa)
Design load (-): wind Maximum test load (-):	163 kg/m² (1600 Pa)* 244 kg/m² (2400 Pa)
Max series fuse rating:	25 A
Max reverse current:	25 A

*Safety factor 1.5

TEMPERATURE RATINGS*

Nominal Module Operating Temperature:	44.9°C (±2°C)
Temperature coefficient of P_{MPP}	-0.37 %/°C
Temperature coefficient of V_{OC}	-0.28 %/°C
Temperature coefficient of I_{SC}	0.04 %/°C

*The temperature coefficients stated are linear values

CERTIFICATIONS

IEC 61215, IEC 61730 & UL 1703; IEC 62804 (PID)
IEC 62716 (Ammonia Resistance), IEC 61701 (Salt Mist level 6),
ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

WARRANTY

20 year product warranty
25 year linear power output warranty
Max. performance degression of 0.5% p.a. from 97.5% in year 1
See warranty conditions for further details.

MECHANICAL DATA

Dimensions:	2005 x 1001 x 30 mm
Area:	2.01 m²
Weight:	22 kg

take-e-way WEEE-compliant recycling scheme

Founded in Norway in 1996, REC is a leading vertically integrated solar energy company. Through integrated manufacturing from silicon to wafers, cells, high-quality panels and extending to solar solutions, REC provides the world with a reliable source of clean energy. REC's renowned product quality is supported by the lowest warranty claims rate in the industry. REC is a Bluestar Elkem company with headquarters in Norway and operational headquarters in Singapore. REC employs more than 2,000 people worldwide, producing 1.5 GW of solar panels annually.

REC
www.recgroup.com

Ref: NE-05-07-39 Rev A 11/18 Specifications is subject to change without notice.

POWER PRODUCTION MANAGEMENT, INC.

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

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S

5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

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: 2024.07.18 '12:16:24 -04'00

JEFFREY A. TORRES, PE
FL PE #80379
SUNSMART ENGINEERING LLC
FL COA #35170
255 PRIMERA BLVD, STE 160
LAKE MARY, FL 32746
(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.

2024

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}.

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

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
INVERTER DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-02

Signature with Seal

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(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) IP45 (Wiring Compartment)
Pollution Rating	PD3
Operating Noise @ 1 m	<50 db(A) typical <62 db(A) maximum

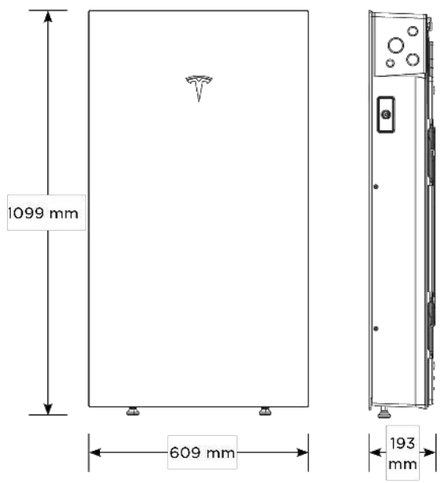
[6] Performance may be de-rated at operating temperatures above 40°C (104°F).

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 (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
Storage Temperature	–30°C to 70°C (–22°F to 158°F)	–30°C to 70°C (–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 (5 x 6 x 1 in)	173 x 45 x 22 mm (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 M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip

Compliance Information

Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
RSD Initiation Method	External System Shutdown Switch or 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: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
RSD
DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-03

Signature with Seal

Digitally signed by Jeffrey A Torres
Date: 2024.07.18 '12:16:40 -04'00

JEFFREY A. TORRES, PE
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(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

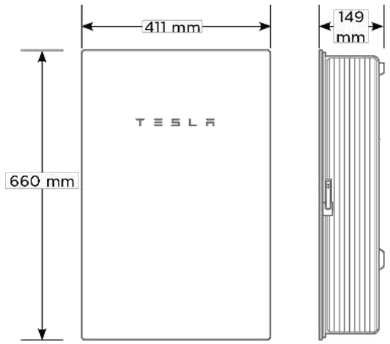
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

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

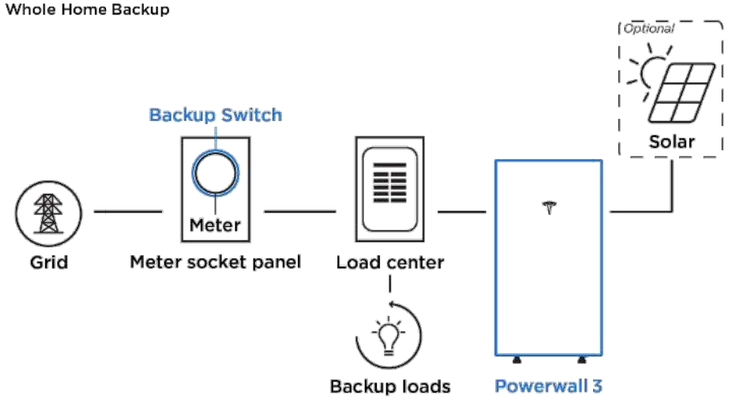
Dimensions	660 x 411 x 149 mm (26 x 16 x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



Powerwall 3 Example System Configurations

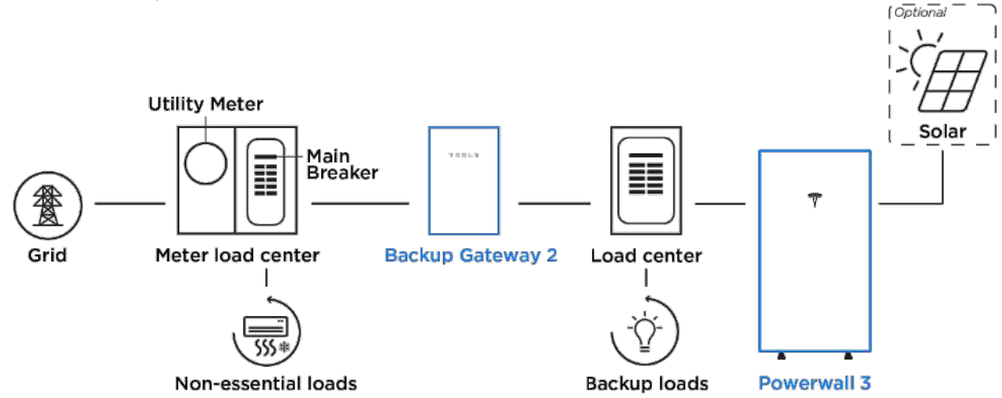
Powerwall 3 with Backup Switch

Whole Home Backup



Powerwall 3 with Backup Gateway 2

Partial Home Backup



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GAINESVILLE, FL 32601

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S
5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
GATEWAY DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-04

Signature with Seal

JEFFREY A. TORRES, PE
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FL COA #35170
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SnapNrack
Solar Mounting Solutions

Ultra Rail

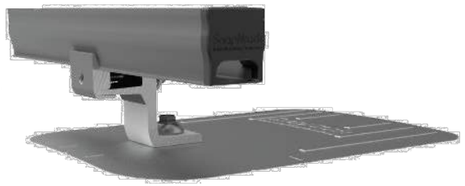
UR-40
UR-60

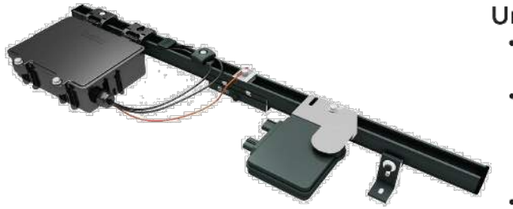
SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge





Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience

The Ultimate Value in Rooftop Solar

- Industry leading Wire Management Solutions
- Mounts available for all roof types
- Single Tool Installation
- All SnapNrack Module Clamps & Accessories are compatible with both rail profiles

Start Installing Ultra Rail Today

RESOURCES	snapnrack.com/resources
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Quality. Innovative. Superior.

SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

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POWER PRODUCTION MANAGEMENT INC
625 NW 8TH AVE.,
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REVISIONS		
DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S

5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

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: 2024.07.18 12:16:59 -04'00'

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(407) 710-1147

S-5!®

The Right Way!®

S-5-S Clamp

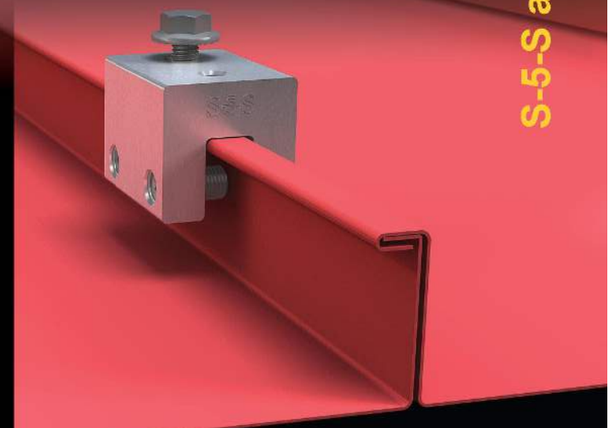
The S-5-S clamp was created specifically for popular snap-together profiles—including residential profiles by Taylor Metals and Easy Lock Standing Seam. For horizontal seams under .540 inches (like the Firestone UC4) the S-5-S or S-5-S Mini can be used to avoid the necessity of crimping the seam.

Its simple design and size make it perfect for use with S-5!® snow retention products and other heavy-duty applications. Installation is as simple as setting the patented round-point setscrews into the clamp, placing the clamp on the seam, and tightening them to the specified tension. Then, affix ancillary items using the bolt provided with the product. Go to www.S-5.com/tools for information and tools available for properly attaching and tensioning S-5! clamps.

S-5-S Mini Clamp

The S-5-S Mini is a bit shorter than the S-5-S and has one setscrew rather than two. The mini is the choice for attaching all kinds of rooftop accessories: signs, walkways, satellite dishes, antennas, rooftop lighting, lightning protection systems, solar arrays, exhaust stack bracing, conduit, condensate lines, mechanical equipment—just about anything!*

*S-5! mini clamps are not compatible with, and should not be used with S-5! SnoRail™/SnoFence™ or ColorGard® snow retention systems.



S-5-S and S-5-S Mini

The right way to attach almost anything to metal roofs!

The S-5-S clamp was created specifically for popular snap-together profiles.

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S-5!® The Right Way!®

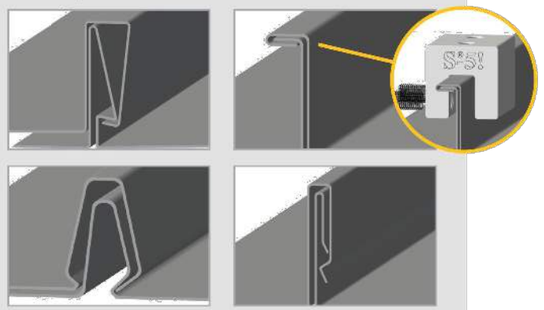
The strength of the S-5-S clamp is in its simple design. The patented setscrews will slightly dimple the metal seam material but not pierce it—leaving roof warranties intact.

The **S-5-S** and **S-5-S Mini** clamps are each furnished with the hardware shown to the right. Each box also includes a bit tip for tightening setscrews using an electric screw gun. A structural aluminum attachment clamp, the S-5-S is compatible with most common metal roofing materials excluding copper. All included hardware is stainless steel. Please visit **www.S-5.com** for more information including CAD details, metallurgical compatibilities and specifications.

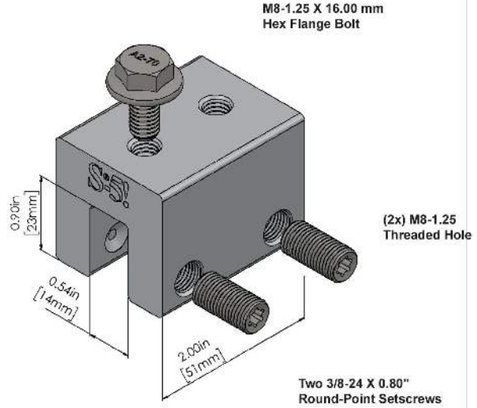
The S-5-S clamp has been tested for load-to-failure results on most major brands and profiles of standing seam roofing. The independent lab test data found at www.S-5.com can be used for load-critical designs and applications. S-5!® holding strength is unmatched in the industry. Profiles that are shaped as illustrated below will work with the S-5-S and S-5-S Mini. In order for the S-5-S or S-5-S Mini to fit these types of seams, the finished seam must:

- Be at least 1.00" high.
- Have a height distance less than or equal to 0.25" between the male portion of the panel and female portion of the panel.

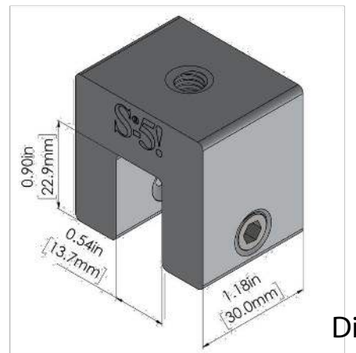
Example Profiles



S-5-S Clamp



S-5-S Mini Clamp



Please note: All measurements are rounded to the second decimal place.

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S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. Visit the website at www.S-5.com for complete information on patents and trademarks. For maximum holding strength, setscrews should be tensioned and re-tensioned as the seam material compresses. Clamp setscrew tension should be verified using a calibrated torque wrench between 160 and 180 inch pounds when used on 22ga steel, and between 130 and 150 inch pounds for all other metals and thinner gauges of steel. Consult the S-5! website at www.S-5.com for published data regarding holding strength.

POWER PRODUCTION MANAGEMENT, INC.

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

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 07/17/2024

PROJECT NAME

ALEX ADAM'S

5811 NW LAKE JEFFERY RD.,
LAKE CITY, FL 32055

SHEET NAME
ATTACHMENT DATA SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
DS-06

Signature with Seal

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Date: 2024.07.18 '12:17:08 -04'00

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