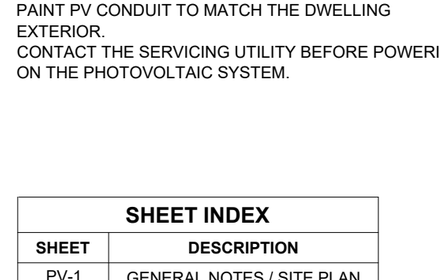
SOLAR PHOTOVOLTAIC SYSTEM NOTES

- ALL MATERIAL(S), EQUIPMENT, INSTALLATION & WORK SHALL COMPLY W/ THE FOLLOWING APPLICABLE CODE(S):
- 2023 FLORIDA RESIDENTIAL CODE (FRC)
- 2023 FLORIDA EXISTING BUILDING CODE (FEBC)
- 2023 FLORIDA FIRE CODE (FFC)
- 2023 FLORIDA MECHANICAL CODE (FMC)
- 2023 FLORIDA PLUMBING CODE (FPC)
- 2020 NATIONAL ELECTRICAL CODE (NEC) ADMINISTRATIVE AMENDMENTS
- 2023 FLORIDA ENERGY CONVERSATION CODE (FECC)
- EXISTING PLUMBING VENTS, SKYLIGHTS, EXHAUST OUTLETS, VENTILATION INTAKE & AIR OPENINGS SHALL NOT BE COVERED BY THE SOLAR PHOTOVOLTAIC SYSTEM.
- ALL EQUIPMENT SHALL BE LISTED & LABELED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY, INSTALLED PER THE LISTING REQUIREMENTS & MANUFACTURE'S INSTRUCTIONS [NEC 690.4(D)].
- ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED, INCLUDING ALL ROOF MOUNTED TRANSITION BOXES & SWITCHES.
- PAINT PV CONDUIT TO MATCH THE DWELLING EXTERIOR.
- CONTACT THE SERVICING UTILITY BEFORE POWERING ON THE PHOTOVOLTAIC SYSTEM.

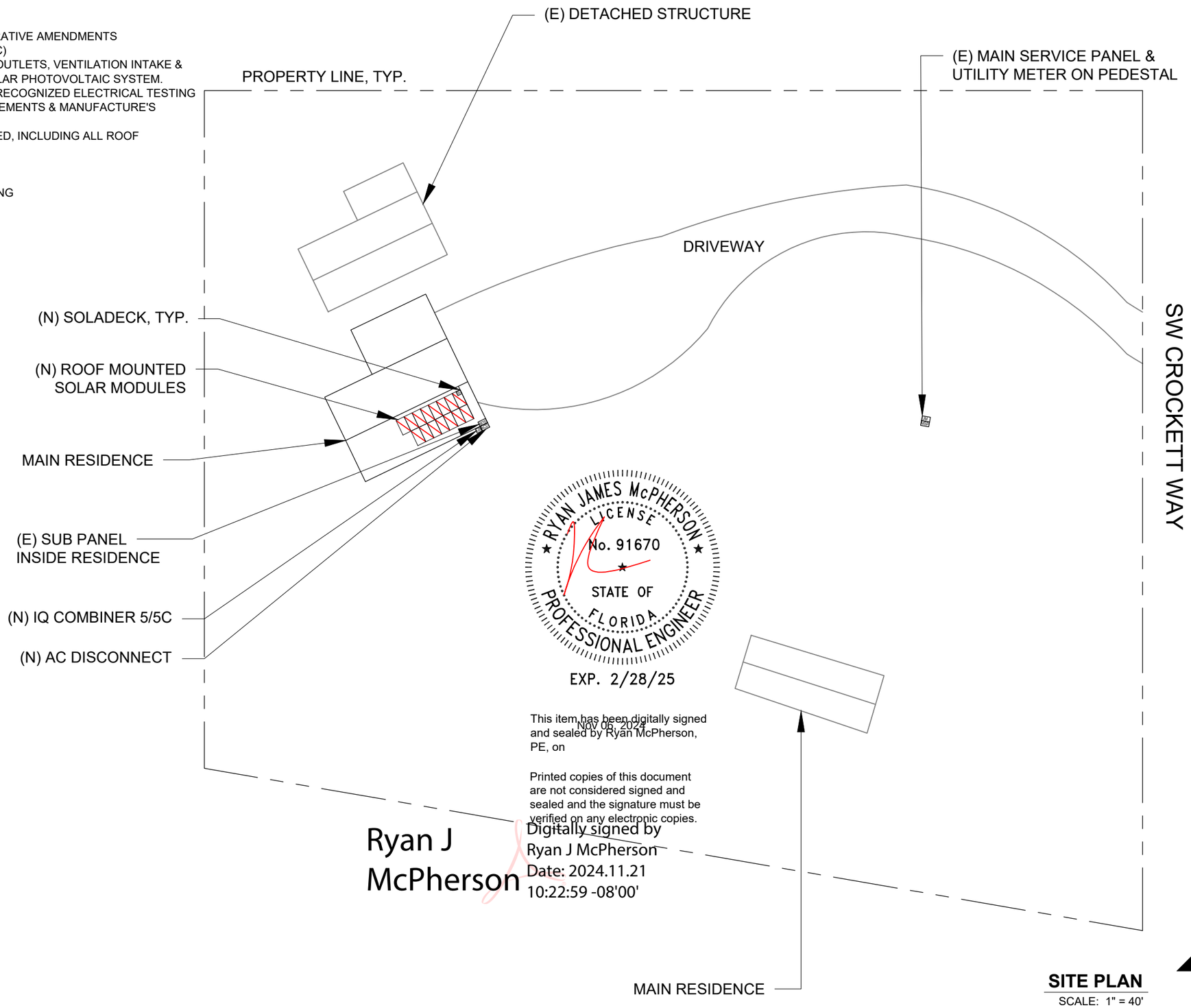
AHJ: COLUMBIA COUNTY
APN: 09-6S-17-09630-025

SHEET INDEX	
SHEET	DESCRIPTION
PV-1	GENERAL NOTES / SITE PLAN
PV-2	ROOF PLAN
PV-3	STRUCTURAL DETAILS
PV-4	ELECTRICAL
PV-5, 5.1	SIGNAGE/ BRANCH PLAN

EQUIPMENT LIST	
QTY / SIZE	DESCRIPTION
15	MODULES
15	MICRO-INVERTERS
200A	(E) MAIN SERVICE PANEL



VICINITY MAP
SCALE: N.T.S



RYAN JAMES McPHERSON
LICENSE
No. 91670
STATE OF FLORIDA
PROFESSIONAL ENGINEER
EXP. 2/28/25

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Ryan J McPherson
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Date: 2024.11.21 10:22:59 -08'00'

SITE PLAN
SCALE: 1" = 40'

N

PVDC - 210211

ROBBINS, STEVEN
LUMINATE FL LLC
8075 SW 107TH AVE#214
MIAMI, FL 33173
LICENCE #EC13013959

PROJECT NUMBER:
240631

SYSTEM SIZE:
6.150 kWDC/ 4.350 kWAC

CUSTOMER INFORMATION:
VICTORIA CARLISLE
246 SW CROCKETT WAY
LAKE CITY, FL 32024
(352) 222-7954

SCOPE OF WORK:
 # OF STORIES: 1
TYPE OF ROOF:
METAL ROOF
 # OF ROOF LAYERS: N/A

INSTALLATION OF A PV SOLAR SYSTEM. ALL CONSTRUCTION TO COMPLY W/ FEDERAL, STATE & LOCAL CODE(S)

DESIGN CRITERIA:
SINGLE FAMILY RESIDENCE
OCCUPANCY: R-3
CONSTRUCTION TYPE: VB
WIND SPEED: 120 MPH
EXPOSURE CATEGORY: C
STANDOFF HEIGHT: 6" MIN.
NON-SPRINKLER
LAT.: 29.984535
LON.: -82.623097
MOBILE HOME: NO
SNOW LOAD: 0 PSF

DATE:
11/5/2024

REV.	DATE/DESIGNER
1	-
2	-
3	-

DESIGNED BY:
PWU

SHEET NAME:
SITE PLAN

SHEET NUMBER:
PV - 1.0

ROOF DATA	
ARRAY	1
TILT	18°
AZIMUTH	130°
MODULE QTY.	15

Ryan J McPherson

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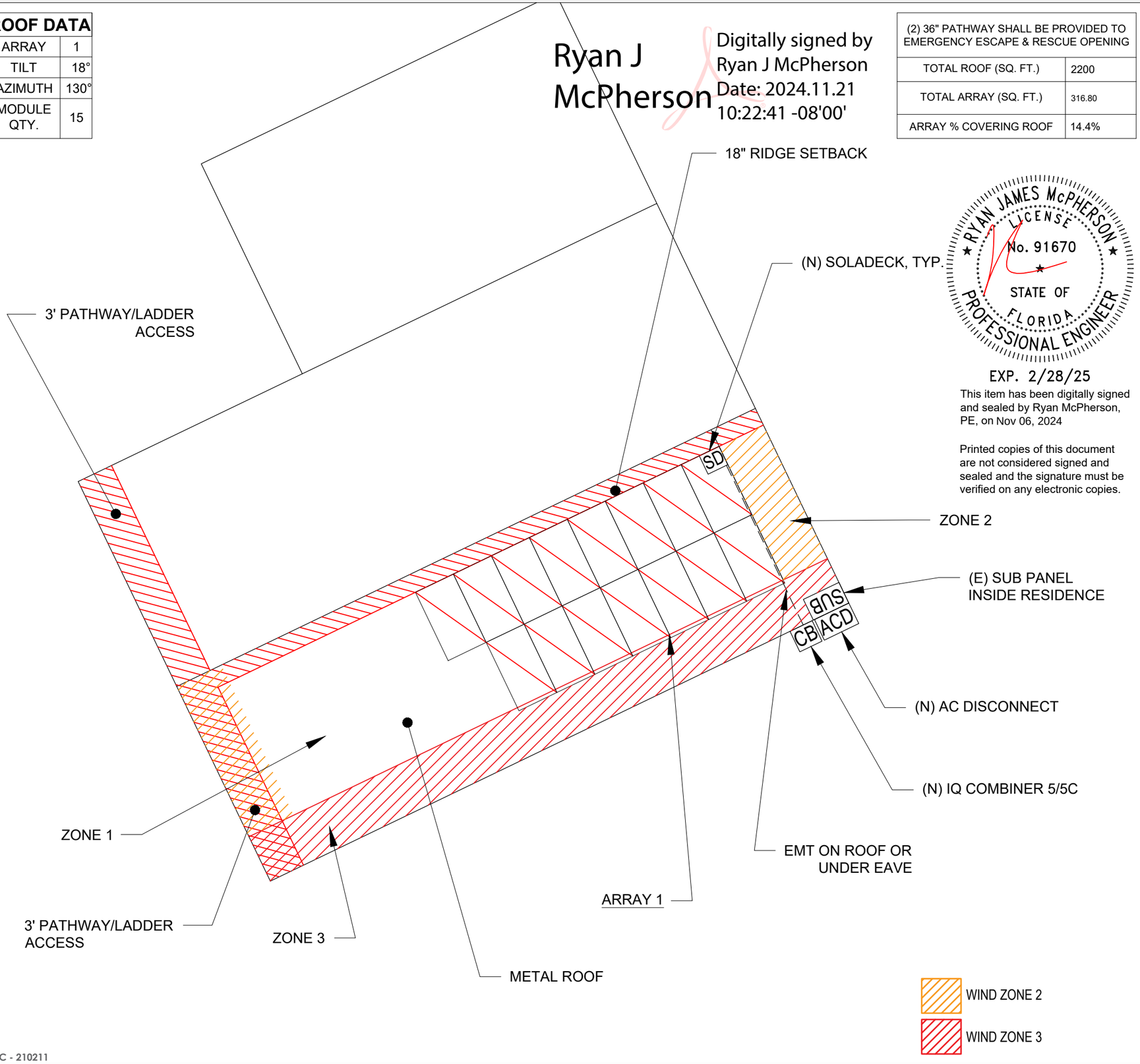
Date: 2024.11.21 10:22:41 -08'00'

(2) 36" PATHWAY SHALL BE PROVIDED TO EMERGENCY ESCAPE & RESCUE OPENING	
TOTAL ROOF (SQ. FT.)	2200
TOTAL ARRAY (SQ. FT.)	316.80
ARRAY % COVERING ROOF	14.4%



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KEY LEGEND

MAIN SERVICE PANEL	=	MSP
(E) GAS METER	=	
(N) INVERTER	=	INV
(N) AC DISCONNECT	=	ACD
(N) DC DISCONNECT	=	DCD
(N) PV ONLY SUB-PANEL	=	SUB
(N) COMBINER BOX	=	CB
(N) JUNCTION BOX	=	JB
(N) PV CONDUIT RUN ON:		
ROOF/UNDER EAVE	=	
THROUGH ATTIC	=	
(N) SOLAR MODULE	=	
(N) FIRE SETBACK	=	

ROOF SYMBOLS

(E) DORMER ATTIC VENT	=	
(E) CHIMNEY	=	
(E) ROOF PVC VENT	=	
(E) ROOF T-VENT	=	
(E) FLAT O'HAGINS VENT	=	
(E) HEAT EXCHANGE VENT	=	
(E) OVERHEAD UTILITY FEED	=	
(E) TURBINE ATTIC VENT	=	
(E) ROUND ATTIC VENT	=	
(E) ROUND SKYLIGHT	=	
(E) RECTANGLE SKYLIGHT	=	
(E) AC UNIT	=	
(E) SATELLITE DISH	=	

WIND ZONE 2

WIND ZONE 3

ROOF PLAN

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

N

ROBBINS, STEVEN
LUMINATE FL LLC
8075 SW 107TH AVE#214
MIAMI, FL 33173
LICENCE #EC13013959

CUSTOMER INFORMATION:
VICTORIA CARLISLE
246 SW CROCKETT WAY
LAKE CITY, FL 32024
(352) 222-7954

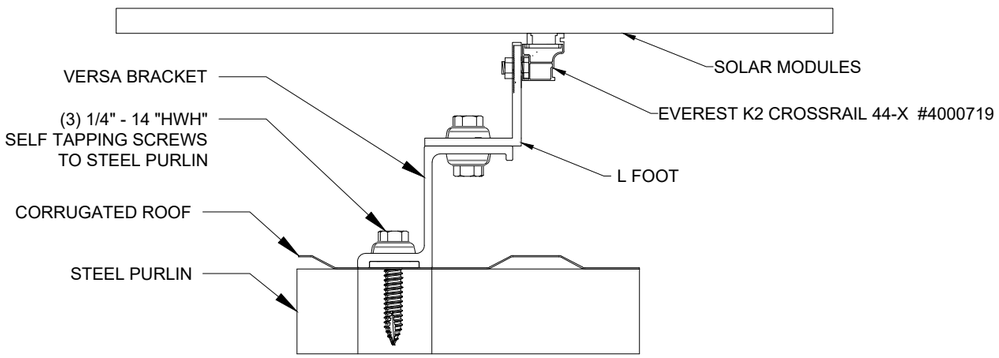
DATE: **11/5/2024**

REV.	DATE/DESIGNER
1	-
2	-
3	-

DESIGNED BY: **PWU**

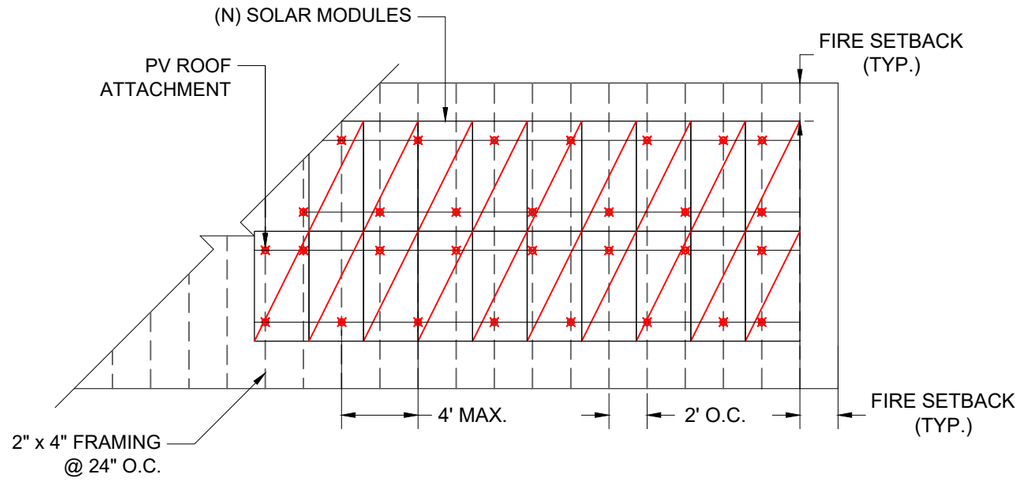
SHEET NAME: **ROOF PLAN**

SHEET NUMBER: **PV - 2.0**



VERSA BRACKET ATTACHMENT

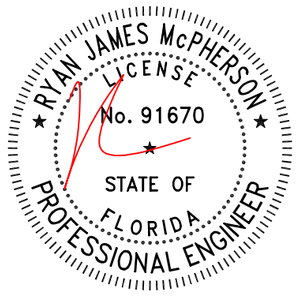
NOT TO SCALE



PARTIAL ROOF FRAMING PLAN

NOT TO SCALE

MODULE INFO	
Module Weight (lbs)	48.50
Module Area (ft²)	21.12
# of Modules	15
Total PV System Weight (lbs)	728
Loading Per Stand-off:	67.90
Total area	316.81
Loading (PSF)	2.8



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ROBBINS, STEVEN
LUMINATE FL LLC
8075 SW 107TH AVE#214
MIAMI, FL 33173
LICENCE #EC13013959

CUSTOMER INFORMATION:
VICTORIA CARLISLE
246 SW CROCKETT WAY
LAKE CITY, FL 32024
(352) 222-7954

DATE: 11/5/2024

REV.	DATE/DESIGNER
1	-
2	-
3	-

DESIGNED BY: PWU

SHEET NAME: STRUCTURAL DETAILS

SHEET NUMBER: PV - 3.0

ELECTRICAL EQUIPMENT LIST

#	ITEM	DESCRIPTION	QTY.
1	(N) PV MODULE	**Q.PEAK DUO BLK ML-G10+ 410W** OPEN CIRCUIT VOLTAGE = 45.37Vdc MAX. POWER VOLTAGE = 37.64Vdc SHORT CIRCUIT CURRENT = 11.20A MAX. POWER CURRENT = 10.89A	15
2	MICRO-INVERTER	**ENPHASE ENERGY:IQ8PLUS-72-2-US** 97.5% CEC EFFICIENCY @ 240 Vac 290 Wac CONTINUOUS MAX. OUTPUT CURRENT 1.21 Aac MAX. INPUT CURRENT 15 Adc EQUIPPED W/ RAPID SHUTDOWN	15
3	(N) SOLADECK	SOLADECK FOR COMP	1
4	ENPHASE: IQ COMBINER 5/5C	ENPHASE AC COMBINER BOX 5 W/ IQ+ CONSOLIDATES INTERCONNECTION INTO A SINGLE ENCLOSED STREAMLINE	1
4A	ENPHASE: IQ COMBINER 5/5C BREAKERS	20A/2P BREAKER FOR SOLAR	2
		15A/2P BREAKER FOR ENVOY MONITORING & REVENUE GRADE METER	1
5	MAIN SERVICE PANEL	(E) 200A MAIN SERVICE PANEL & METER: 200A MAIN BUSBAR W/ 200A TOP-FED MAIN BREAKER	1
6	PV BREAKER	30A-2P, 240V	1
7	AC DISCONNECT	SQUARE D GENERAL USE SWITCH, 30A, 240V, BLADE TYPE VISIBLE LOCKABLE	1
8	SUB PANEL	(E) SUB PANEL : 125A MAIN BUSBAR W/ 100A TOP-FED MAIN BREAKER	1
9	(E) SUB BREAKER	100A-2P, 240V	1

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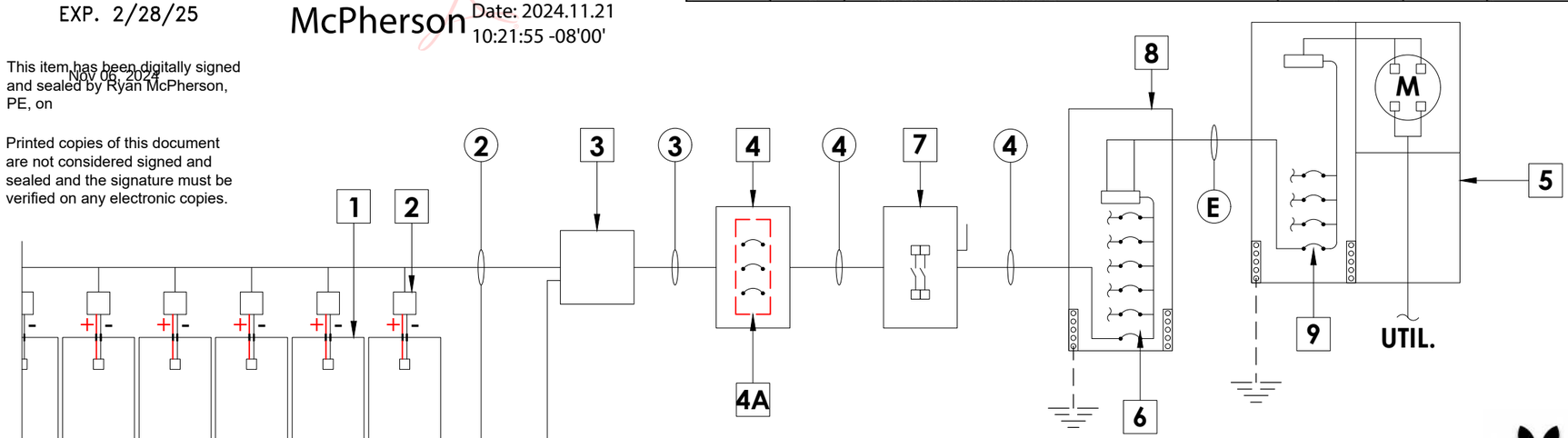
Voltage Drop		
%Vd = (0.2 x distance x Imp x DC OR AC resistance) / Vmp		
WIRE RUN	WORST CASE VDROP	DC/AC
ARRAY TO JBOX	0.48%	AC
JBOX TO SUB/AC COMBINER	0.39%	AC
AC COMBINER TO MSP	0.07%	AC
TOTAL	0.95%	

Conduit & Conductor Schedule

Item #	QTY	Size & Description	Conduit Size	Fill	Fill %
1	2	#12 AWG PV MANUFACTURE WIRE	FREE AIR	NA	NA
2	1	(2) #12 ENPHASE Q CABLE	FREE AIR	NA	NA
	1	#6 AWG SOLID BARE EGC			
3	4	#10 AWG THWN-2	0.75" PVC	0.1210	30%
	1	#8 AWG THWN-2 EGC			
4	3	#10 AWG THWN-2	0.75" PVC	0.0999	24%
	1	#8 AWG THWN-2 EGC			



PER NEC 705.12 (B)(3)(2)
MSP BUS BAR = 200A
200A x 1.2 = 240A
LARGEST OCPD : 240A - 200A = 40A

KEY NOTES

- SOLID BARE E.G.C. (FREE-AIR) MOUNTED UNDER ARRAY PER NEC 250.120(C): WHERE CONDUCTORS & GROUND WIRE ARE RUN EXPOSED ON FROM ARRAY TO J-BOX, CONDUCTORS & BARE GROUND WIRE SHALL BE CONCEALED INSTALL IN CONDUIT
- PER NEC ARTICLE 690.35 INVERTER GROUND FAULT PROTECTION PROVIDED ALL GROUNDS AND NEUTRALS BONDED TO EXISTING GROUNDING CONDUCTOR W/ IRREVERSIBLE CRIMP CONNECTOR
- BACKFED BREAKERS MUST BE LOCATED @ OPPOSITE END OF BUS BAR FROM MAIN BREAKER OR MAIN LUG ON GRID SIDE. WHEN A BACKFED BREAKER IS THE METHOD OF UTILITY INTERCONNECTION, BREAKER SHALL NOT READ 'LINE OR LOAD'.
- PER NEC 250.64(C): CONDUCTOR SPLICES ONLY ALLOWED WITH COMPRESSION CONNECTORS OR EXOTHERMIC WELDING
- ALL GROUNDS AND NEUTRALS BONDED TO EXISTING GROUNDING CONDUCTOR W/ IRREVERSIBLE CRIP CONNECTOR.
- VERIFY (E) UFER GROUND NEAR MSP. IF (E) UFER IS NOT ACCESSIBLE OR VERIFIABLE , INSTALL A NEW 5/8"Ø X 8' LONG GROUNDING ROD AND BOND SOLAR SYSTEM EQUIPMENT GROUNDING ACCORDINGLY.

PVDC - 210211

SYSTEM DC AND AC CALCULATIONS

TOTAL SYSTEM SIZE DC AND AC

Hanwha Q-Cells Q.PEAK DUO BLK ML-G10+ 410	MODULE STC RATING		TOTAL # OF MODULES				TOTAL WATTS
DC SYSTEM SIZE	410	X	15			=	6150
AC SYSTEM SIZE	290	X	15			=	4350

IMAX CURRENT					(AMPS)	W/NEC DERATE	OCPD / BRANCH
BRANCH 1	1.21	X	8	=	9.68	12.10	20
BRANCH 2	1.21	X	7	=	8.47	10.59	20
SYSTEM IMP	4350	/	240V	=	18.13		
INV. IMAX	1.21	X	15	=	18.15	22.69	25
PV BREAKER				=			30

AMPACITY CALCULATIONS

ARRAY TO JBOX

WIRE AMPACITY TABLE 310.15(B)(16) PV-1KV - 90° C		THERMAL DERATE FACTOR TABLE 310.15(B)(2)(a) (ON ROOF)		NUMBER OF CONDUCTORS 310.15 (B)(3)(a) (OPEN AIR)
12 AWG		34		0-3
30 AMPS	X	0.96	X	1
		MAXIMUM ALLOWABLE AMPACITY	=	28.80
		BRANCH 1 IMAX	=	12.10
		BRANCH 2 IMAX	=	10.59

JBOX TO AC COMBINER/SOLAR SUB PANEL

WIRE AMPACITY TABLE 310.15(B)(16) THWN-2 - 90° C		THERMAL DERATE FACTOR TABLE 310.15(B)(2)(a) (ON ROOF) (C°)		NUMBER OF CONDUCTORS 310.15 (B)(3)(a)
10 AWG		34		4-6
40 AMPS	X	0.96	X	0.8
		MAXIMUM ALLOWABLE AMPACITY	=	30.72
		PV DESIGN AMPACITY	=	12.10

AC COMBINER PANEL TO MAIN SERVICE PANEL

WIRE AMPACITY TABLE 310.15(B)(16) THWN-2 - 75° C		THERMAL DERATE FACTOR TABLE 310.15(B)(2)(a)		NUMBER OF CONDUCTORS 310.15 (B)(3)(a)
10 AWG		34		0-3
35 AMPS	X	0.94	X	1
		MAXIMUM ALLOWABLE AMPACITY	=	32.90
		PV DESIGN AMPACITY	=	22.69
		PV BREAKER	=	30.00
		AC DISCONNECT (WHEN APPLICABLE)	=	30.00

ROBBINS, STEVEN
LUMINATE FL LLC
8075 SW 107TH AVE#214
MIAMI, FL 33173
LICENCE #EC13013959

CUSTOMER INFORMATION:
VICTORIA CARLISLE
246 SW CROCKETT WAY
LAKE CITY, FL 32024
(352) 222-7954

DATE: 11/5/2024

REV.	DATE/DESIGNER
1	-
2	-
3	-

DESIGNED BY: PWU

SHEET NAME: SINGLE LINE DIAGRAM

SHEET NUMBER: PV - 4.0

⚠ WARNING

ELECTRICAL SHOCK HAZARD

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

LABEL LOCATION:
INVERTER(S), AC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).
PER CODE(S): NEC 2023: NEC 706.15 (C)(4) & NEC 690.13(B)

PHOTOVOLTAIC

AC DISCONNECT

LABEL LOCATION:
AC DISCONNECT NEC 690.13(B)

⚠ WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION:
POINT OF INTERCONNECTION
PRODUCTION METER
NEC 705.12(B)(3)(3) & NEC 690.59)

⚠ WARNING
POWER SOURCE OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
SERVICE PANEL IF SUM OF BREAKERS EXCEEDS PANEL RATING
NEC 705.12 (B)(3)(2)

⚠ WARNING

THE DISCONNECTION OF THE GROUNDED CONDUCTOR(S) MAY RESULT IN OVERVOLTAGE ON THE EQUIPMENT

LABEL LOCATION:
INVERTER
PER CODE: NEC 690.31(E)

PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OPERATING CURRENT 18.15 AMPS
AC NOMINAL OPERATING VOLTAGE 240 VOLTS

LABEL LOCATION:
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.
PER CODE(S): NEC 2020: 690.54

PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
EMT/CONDUIT RACEWAYS
(PER CODE: NEC690.31(D)(2)

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL LOCATION:
MAIN SERVICE DISCONNECT / UTILITY METER
(PER CODE: NEC 690.13(B))

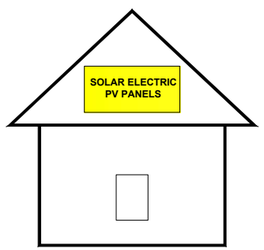
WARNING

⚠ THIS EQUIPMENT FED BY MULTIPLE SOURCES TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN POWER SUPPLY SHALL NOT EXCEED AMPACITY OF BUSBAR

LABEL LOCATION:
POINTS OF CONNECTION/BREAKER
CODE: NEC 705.12(B)(3)(3)

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 2023: IFC 690.56(C)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
UTILITY SERVICE ENTRANCE/METER, INVERTER/DC DISCONNECT IF REQUIRED BY LOCAL AHJ, OR OTHER LOCATIONS AS REQUIRED BY LOCAL AHJ.
PER CODE(S): NEC 2020: 690.56(C)(2)

RYAN JAMES McPHERSON
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STATE OF FLORIDA
PROFESSIONAL ENGINEER
EXP. 2/28/25

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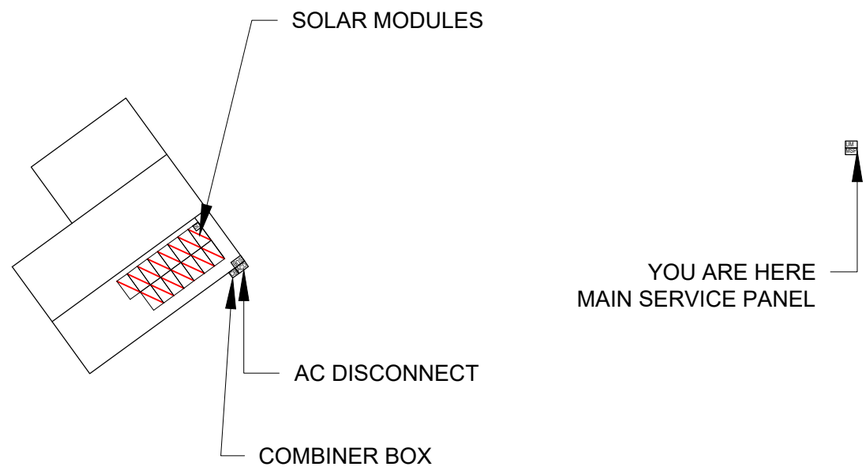
Ryan J McPherson
Digitally signed by Ryan J McPherson
Date: 2024.11.21 10:21:08 -08'00'

NOTES

1. NEC ARTICLES 690 AND 705 MARKINGS SHOWN HEREON
2. ALL MARKINGS SHALL CONSIST OF THE FOLLOWING:
   A. UV RESISTANT SIGN MATERIAL WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PLATING
   B. RED BACKGROUND COLOR WITH WHITE TEXT AND LINE WORK
   C. ARIAL FONT
3. ALL SIGNS SHALL BE SIZED APPROPRIATELY AND PLACED IN THE LOCATIONS SPECIFIED.
4. SIGNS SHALL BE ATTACHED TO THE SERVICE EQUIPMENT USING POP-RIVETS OR SCREWS.
5. THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED.
6. WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD COMPLY WITH ANSI Z535.4 [NEC 110.21(B) FIELD MARKING].
7. ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [IFC 605.11.1.3]

CAUTION:
MULTIPLE SOURCES OF POWER

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECT(S) LOCATED AS SHOWN.
DANGEROUS VOLTAGE MAY BE PRESENT AT ALL TIMES



"WARNING"
PHOTOVOLTAIC ARRAY
DISCONNECTION OF NEUTRAL OR GROUNDED CONDUCTORS MAY RESULT IN OVER-VOLTAGE ON ARRAY OR INVERTER.

N

ROBBINS, STEVEN
LUMINATE FL LLC
8075 SW 107TH AVE#214
MIAMI, FL 33173
LICENCE #EC13013959

CUSTOMER INFORMATION:
VICTORIA CARLISLE
246 SW CROCKETT WAY
LAKE CITY, FL 32024
(352) 222-7954

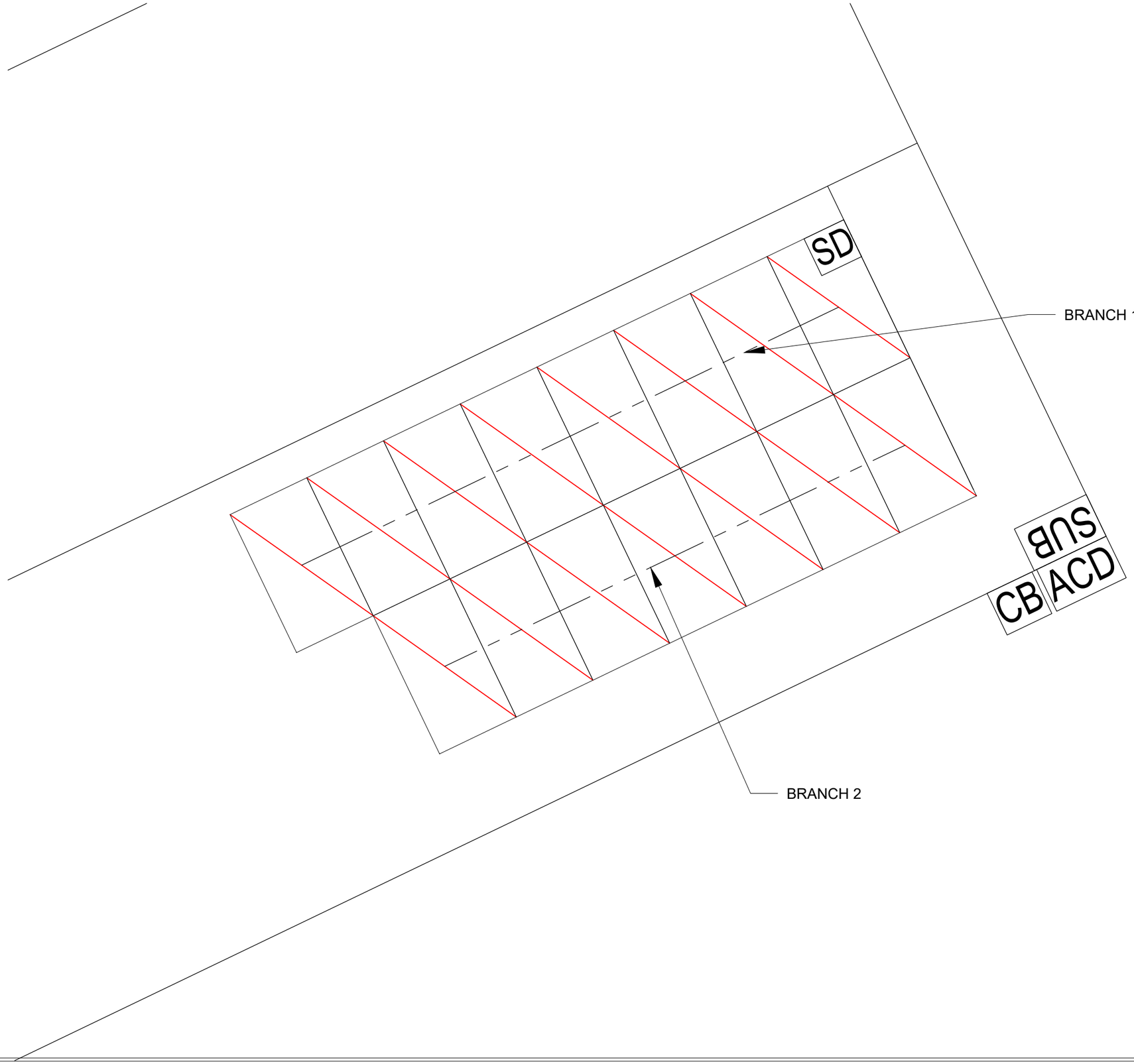
DATE: **11/5/2024**

REV.	DATE/DESIGNER
1	-
2	-
3	-

DESIGNED BY: **PWU**

SHEET NAME: **SIGNAGE**

SHEET NUMBER: **PV - 5.0**



BRANCH PLAN

SCALE: NTS

ROBBINS, STEVEN
LUMINATE FL LLC
8075 SW 107TH AVE#214
MIAMI, FL 33173
LICENCE #EC13013959

CUSTOMER INFORMATION:

VICTORIA CARLISLE
246 SW CROCKETT WAY
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(352) 222-7954

DATE:

11/5/2024

REV.	DATE/DESIGNER
1	-
2	-
3	-

DESIGNED BY:

PWU

SHEET NAME:

BRANCH PLAN

SHEET NUMBER:

PV - 5.1

Q.PEAK DUO BLK ML-G10+ SERIES

385 - 410 Wp | 132 Cells
20.9 % Maximum Module Efficiency

MODEL Q.PEAK DUO BLK ML-G10+

6 busbar
cell technology

12 busbar
cell technology

Breaking the 20 % efficiency barrier

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9 %.

A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2] and Hot-Spot Protect.

Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015, method A (−1500 V, 96 h)

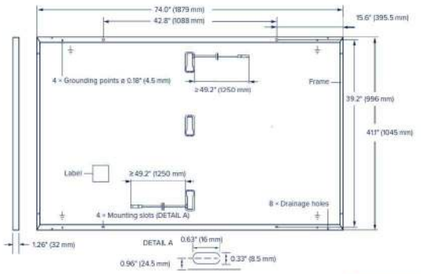
The ideal solution for:

Rooftop arrays on residential buildings

Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 49.2 in (1250 mm), (−) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68

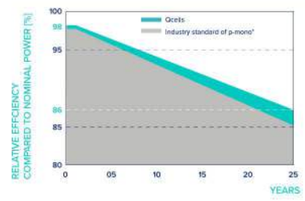


Electrical Characteristics

POWER CLASS			385	390	395	400	405	410
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W/−0 W)								
Minimum	Power at MPP[1]	P_{MPP} [W]	385	390	395	400	405	410
	Short Circuit Current[1]	I_{SC} [A]	11.04	11.07	11.10	11.14	11.17	11.20
	Open Circuit Voltage[1]	V_{OC} [V]	45.19	45.23	45.27	45.30	45.34	45.37
	Current at MPP	I_{MPP} [A]	10.59	10.65	10.71	10.77	10.83	10.89
	Voltage at MPP	V_{MPP} [V]	36.36	36.62	36.88	37.13	37.39	37.64
	Efficiency[1]	η [%]	≥ 19.6	≥ 19.9	≥ 20.1	≥ 20.4	≥ 20.6	≥ 20.9
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]								
Minimum	Power at MPP	P_{MPP} [W]	288.8	292.6	296.3	300.1	303.8	307.6
	Short Circuit Current	I_{SC} [A]	8.90	8.92	8.95	8.97	9.00	9.03
	Open Circuit Voltage	V_{OC} [V]	42.62	42.65	42.69	42.72	42.76	42.79
	Current at MPP	I_{MPP} [A]	8.35	8.41	8.46	8.51	8.57	8.62
	Voltage at MPP	V_{MPP} [V]	34.59	34.81	35.03	35.25	35.46	35.68

[1] Measurement tolerances P_{MPP} ±3 %; I_{SC}; V_{OC} ±5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • [2] 800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

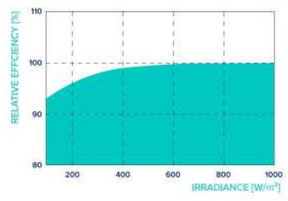


At least 98 % of nominal power during first year. Thereafter max. 0.5 % degradation per year. At least 93.5 % of nominal power up to 10 years. At least 86 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.34	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	20	Fire Rating based on ANSI/UL 61730	TYPE 2
Max. Design Load, Push/Pull[3]		[lbs/ft²]	75 (3600 Pa)/55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push/Pull[3]		[lbs/ft²]	113 (5400 Pa)/84 (4000 Pa)		

[3] See Installation Manual

Qualifications and Certificates

UL 61730, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells),

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

Specifications subject to technical changes © Qcells Q.PEAK_DUO_BLK_ML-G10+_series_385-410_2023-01_Rev03_NA

ENPHASE

DATA SHEET

IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.

Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

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Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Commonly used module pairings[1]	W	235 – 350	235 – 440
Module compatibility		60-cell/120 half-cell	60-cell/120 half-cell and 72-cell/144 half-cell
MPPT voltage range	V	27 – 37	29 – 45
Operating range	V	25 – 48	25 – 58
Min/max start voltage	V	30 / 48	30 / 58
Max input DC voltage	V	50	60
Max DC current[2] [module Isc]	A	15	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	
OUTPUT DATA (AC)		**IQ8-60-2-US**	**IQ8PLUS-72-2-US**
Peak output power	VA	245	300
Max continuous output power	VA	240	290
Nominal (L-L) voltage/range[3]	V	240 / 211 – 264	
Max continuous output current	A	1.0	1.21
Nominal frequency	Hz	60	
Extended frequency range	Hz	50 – 68	
Max units per 20 A (L-L) branch circuit[4]		16	13
Total harmonic distortion		<5%	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging	
Peak efficiency	%	97.5	97.6
CEC weighted efficiency	%	97	97
Night-time power consumption	mW	60	
MECHANICAL DATA			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	
Relative humidity range		4% to 100% (condensing)	
DC Connector type		MC4	
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")	
Weight		1.08 kg (2.38 lbs)	
Cooling		Natural convection – no fans	
Approved for wet locations		Yes	
Acoustic noise at 1 m		<60 dBA	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure	
Environ. category / UV exposure rating		NEMA Type 6 / outdoor	
COMPLIANCE			
Certifications		CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.	

(1) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility (2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

ENPHASE

DATA SHEET

X-IQ-AM1-240-5
X-IQ-AM1-240-5C

IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.

IQ Series Microinverters
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.

IQ System Controller 3/3G
Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.

IQ Battery 5P
Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.

IQ Load Controller
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.

Enphase 5 year limited warranty

NOM

UL CERTIFIED SAFETY US-CA SÛRETÉ US-CA E341166

5-year limited warranty

*For country-specific warranty information, see the https://enphase.com/installers/resources/warranty page.

Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect (CELLMODEM-M1-06-SP-05), only with IQ Combiner 5C
- Supports flexible networking: Wi-Fi, Ethernet, or cellular
- Provides production metering (revenue grade) and consumption monitoring

Easy to install

- Mounts to one stud with centered brackets
- Supports bottom, back, and side conduit entries
- Supports up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV branch circuits
- Bluetooth-based Wi-Fi provisioning for easy Wi-Fi setup

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- 5-year limited warranty
- 2-year labor reimbursement program coverage included for both the IQ Combiner SKUs*
- UL1741 Listed

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IQ Combiner 5/5C

MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%), and IQ Battery monitoring (±2.5%). Includes a silver solar shield to deflect heat.
IQ Combiner 5C (X-IQ-AM1-240-5C)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%), and IQ Battery monitoring (±2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05)[1]. Includes a silver solar shield to deflect heat.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	80 A busbar with support for one IQ Gateway breaker and four 20 A breakers for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to ±0.5%
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to ±2.5%
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to ±2.5%
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-2 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX, and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws)
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-2 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC or 120/208 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box

[1]A plug-and-play industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.

IQC-5-5C-DSH-00007-5.0-EN-US-2024-08-16

CERTIFICATE OF COMPLIANCE

Certificate Number	20211109-E341165
Report Reference	E341165-20210317
Issue Date	2021-11-09

Issued to: Enphase Energy Inc.
1420 N. McDowell Blvd. Petaluma, CA 94954-6515

This is to certify that representative samples of Grid Support, Utility Interactive Supporting Energy Storage, Multimode, Bi-directional Microinverters

Models IQ8-60, IQ8PLUS-72, IQ8M-72, IQ8A-72, IQ8H-208-72, IQ8H-240-72, may be f/b -2, -5, -E, or -M, may be f/b -ACM, f/b -US, may be f/b -NM, may be f/b -RMA, may be f/b -&, where “&” designates additional characters.

Has been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: See Page 2

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

This *Certificate of Compliance* is provided as a courtesy to help our customers communicate product compliance information, as documented in our UL Follow-Up Services procedure. This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark shall be considered as being UL Certified and covered under UL’s Follow-Up Services. Look for the UL Certification Mark on the product.

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Bruce Mahrenholz, Director North American Certification Program

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CERTIFICATE OF COMPLIANCE

Certificate Number	20211109-E341165
Report Reference	E341165-20210317
Issue Date	2021-11-09

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Standards for Safety:

UL 62109-1, STANDARD FOR SAFETY OF POWER CONVERTERS FOR USE IN PHOTOVOLTAIC POWER SYSTEMS - PART 1: GENERAL REQUIREMENTS, Edition 1, Revision Date 04/30/2019

IEC 62109-2, SAFETY OF POWER CONVERTERS FOR USE IN PHOTOVOLTAIC POWER SYSTEMS - PART 2: PARTICULAR REQUIREMENTS FOR INVERTERS, Edition 1, Issue Date 06/2011

UL 1741, Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, Edition 2, Revision Date 06/10/2021, including the requirements in UL 1741 Supplement SA, sections as noted in the Technical considerations.

IEEE 1547, IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems.

IEEE 1547.1, IEEE Standard for Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.

CSA C22.2 No. 62109-1, Safety of Power Converters for Use in Photovoltaic Power Systems - Part 1: General Requirements, Edition 1, Issue Date 07/2016

CSA C22.2 No. 62109-2, Safety of Power Converters for Use in Photovoltaic Power Systems - Part 2: Particular Requirements for Inverters, Edition 1, Issue Date 07/2016

Bruce Mahrenholz, Director North American Certification Program

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S-5!®

The Right Way!

VersaBracket™

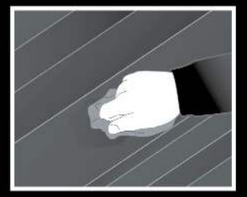
VersaBracket™ can be used to mount almost anything to an exposed-fastened roof system and is compatible with almost any trapezoidal exposed-fastened profile. No messy sealants to apply! No chance for leaks! The VersaBracket comes with factory-applied butyl sealant already in the base, and the S-5!® patented reservoir conceals the sealant from UV exposure, preventing drying and cracks.

Installation is simple! VersaBracket is mounted in the flat of the panel, directly into the supporting structure of the roof, i.e. wood decking, wood or steel purlins or trusses. No surface preparation is necessary; simply wipe away excess oil and debris, peel the release paper from the base, align, and apply. Secure through the pre-punched holes using the appropriate screws for the supporting structure.

VersaBracket is so strong, it will even support heavy-duty applications like snow retention. For exposed-fastened trapezoidal profiles, the VersaBracket is the perfect match for our ColorGard® snow retention systems (for corrugated roofs use CorruBracket™). VersaBracket is extremely economical and facilitates quick and easy installation.

The right way to attach almost anything to metal roofs!

1



2

3

VersaBracket™

S-5!® VersaBracket™ is the right way to attach almost anything to exposed-fastened roof profiles, including PV through rail methods.

888-825-3432 | www.S-5.com | MADE IN USA

S-5!®

The Right Way!

VersaBracket™ can be used for almost any attachment need, including S-5!® ColorGard®, on all types of exposed-fastened metal roofing. No messy sealants to apply. The factory-applied butyl sealant waterproofs and makes installation a snap!

To accommodate various rib heights, **VersaBracket™** comes in two heights—the 2.65" VersaBracket-67™ and the 1.86" VersaBracket-47™. The VersaBracket-67 mounting face has no holes or slots; thus, ancillary items are typically secured using self-tapping screws. The VersaBracket-47 comes with a 1" slot on top as the standard part. Other hole and slot configurations available with minimum purchase requirements (contact your distributor for available configurations). Each VersaBracket comes with factory-applied butyl sealant in the base. A structural aluminum attachment bracket, VersaBracket is compatible with most common metal roofing materials. For design assistance, ask your distributor, or use our web-based calculator at **www.S-5.com** for job-specific system engineering and design of your next snow retention project. Also, please visit our website for more information including CAD details, metallurgical compatibilities, and specifications.

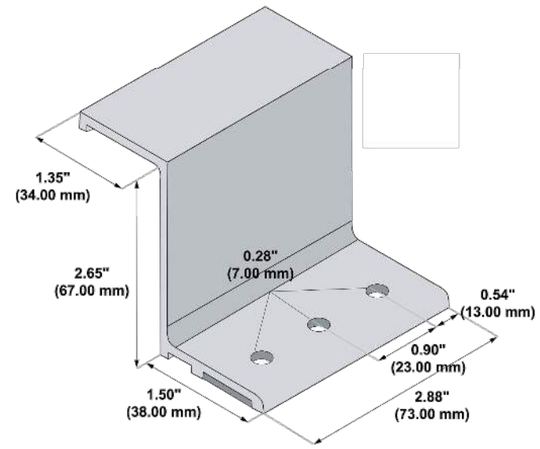
The VersaBracket has been tested for load-to-failure results on wood decking, metal, and wood purlins. The independent lab test data found at www.S-5.com can be used for load-critical designs and applications. S-5!® holding strength is unmatched in the industry.

Example Profile

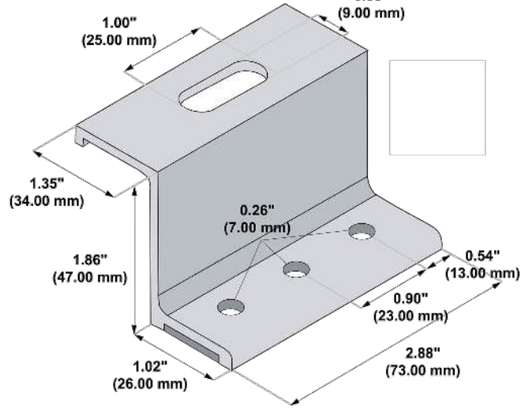
Example Applications

ColorGard

VersaBracket-67™



VersaBracket-47™



3 holes are provided for versatility. Some installations require only 2 fasteners. See the load table on the S-5! website and the installation instructions for more details.

Due to varied applications, mounting hardware is not furnished with part.

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

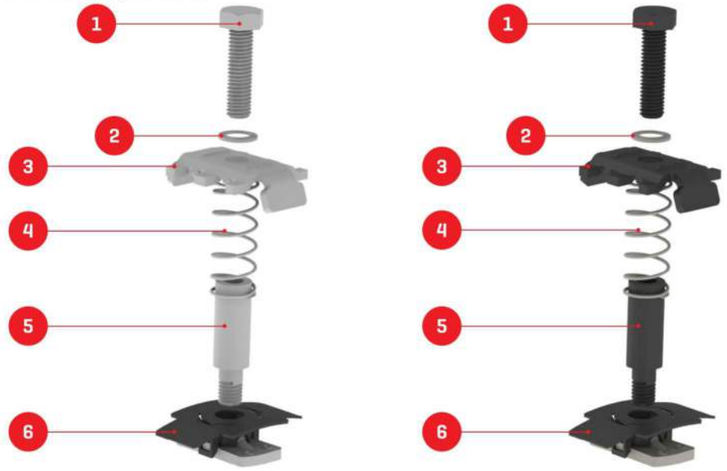
S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. For published data regarding holding strength, bolt torque, patents and trademarks visit the S-5! website at www.S-5.com.

Copyright 2015, Metal Roof Innovations, Ltd. S-5! products are patent protected.
S-5! aggressively protects its patents, trademarks, and copyrights. Version 052115.

Distributed by

We support PV systems
Formerly Everest Solar Systems



CrossRail Mid Clamp

TECHNICAL SHEET

Item Number	Description	Part Number
1	M8 Serrated Flange Hex Head Bolt, 13mm	4000601-H | CR MC Silver 30-47mm, Shared RL 30-37mm, 13mm Hex
2	Lock Washer	
3	Mid Clamp Top	4000602-H | CR MC Dark 30-47mm, Shared RL 30-37mm, 13mm Hex
4	Clamp Spring, 65mm length	4000688-H | CR MC Silver, 38-55mm, Shared RL 28-46mm 13mm Hex
5	Mid Clamp Standoff	
6	MK3 Slot Nut	4000689-H | CR MC Dark, 38-50mm, Shared RL 28-46mm 13mm Hex

Technical Data

	CrossRail Mid Clamp
Compatible module frame size	28-55mm
Material	Stainless steel
Finish	Mill or dark anodized
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80, MiniRail, D-Dome R^2

We support PV systems
Formerly Everest Solar Systems

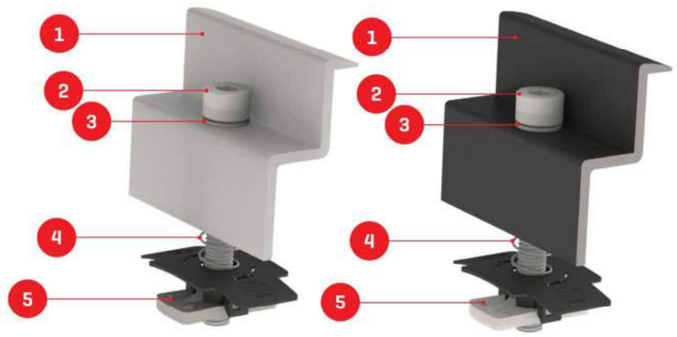
CrossRail End Clamp

TECHNICAL SHEET

Item Number	Description	Part Number
1	Allen Bolt	4000090 | CR EC Silver, 30-40mm 4000091 | CR EC Dark, 30-40mm 4000092 | CR EC Silver, 40-47mm 4000093 | CR EC Dark, 40-47mm
2	Lock Washer	
3	End Clamp	
4	Clamp Spring	
5	MK3 Slot Nut	

Technical Data

	CrossRail End Clamp
Scope of application	Used with all of our CrossRail based systems
Fastening type / Roof fixture	Clamp
Module orientation	Portrait or landscape
Compatible module frame size	30-47mm
Material	Stainless steel



Aluminum End Clamp

TECHNICAL SHEET

Item Number	Description	Part Number
1	End Clamp	4005169 | CrossRail EC Silver, AL 34-36mm 4005170 | CrossRail EC Silver, AL 39-41mm 4005171 | CrossRail EC Silver, AL 45-47mm 4005172 | CrossRail EC Silver, AL 49-50mm 4005269 | CrossRail EC Dark, AL 39-41mm 4005270 | CrossRail EC Dark, AL 45-47mm 4005271 | CrossRail EC Dark, AL 49-50mm 4005290 | CrossRail EC Silver, AL 37-38mm 4005291 | CrossRail EC Silver, AL 42-44mm 4005292 | CrossRail EC Silver, AL 48mm 4005293 | CrossRail EC Dark, AL 37-38mm 4005295 | CrossRail EC Dark, AL 42-44mm 4005296 | CrossRail EC Dark, AL 48mm 4005344 | CrossRail EC Silver, AL 32-33mm 4005346 | CrossRail EC Dark, AL 32-33mm 4005347 | CrossRail EC Dark, AL 30-31mm
2	Allen Bolt	
3	Lock Washer	
4	Spring	
5	MK3 Slot Nut	

Technical Data

	Aluminum End Clamp
Scope of application	D-Dome R2, MiniRail, CrossRail Systems excluding Shared Rail
Fastening type / Roof fixture	Clamp
Module orientation	Portrait or Landscape
Compatible module frame size	30-50mm (Assembly Dependant)
Material	Aluminum

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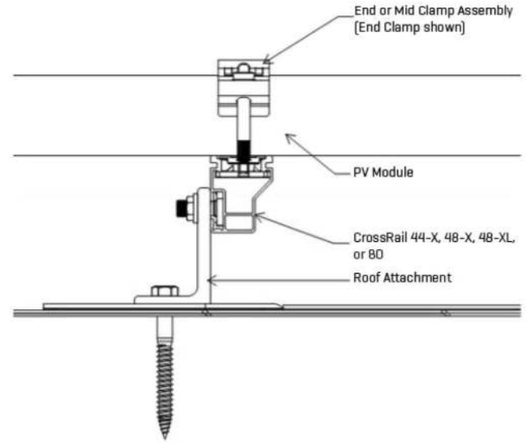
Allowable Loading on Top-Down Mid and End Clamps

Clamp Assemblies

K2 module clamps are composed of three main structural parts:

- MK3 or MK2 Slot Nut
- M8 Bolt
- Stainless Steel Mid or End Clamp Components (Aluminum End Clamp Options Available)



Testing Methodology

Clamp assemblies were mechanically tested for pullout forces using a universal testing machine. The clamps were installed in a CrossRail channel in a similar assembly shown in the image above and torqued down to their appropriate torque specifications, which can be found in our assembly guides located at **www.k2-systems.com.**

With factors of safety considered, the allowable uplift loads for each clamp are as follows:

- CrossRail MC, SS UL2703+ - 900 lbs
- End Clamp UL 2703, SS - 355 lbs
- End Clamp (Aluminum) - 635 lbs

If you have any questions, please contact our technical hotline at **+1 (760) 301-5300**.

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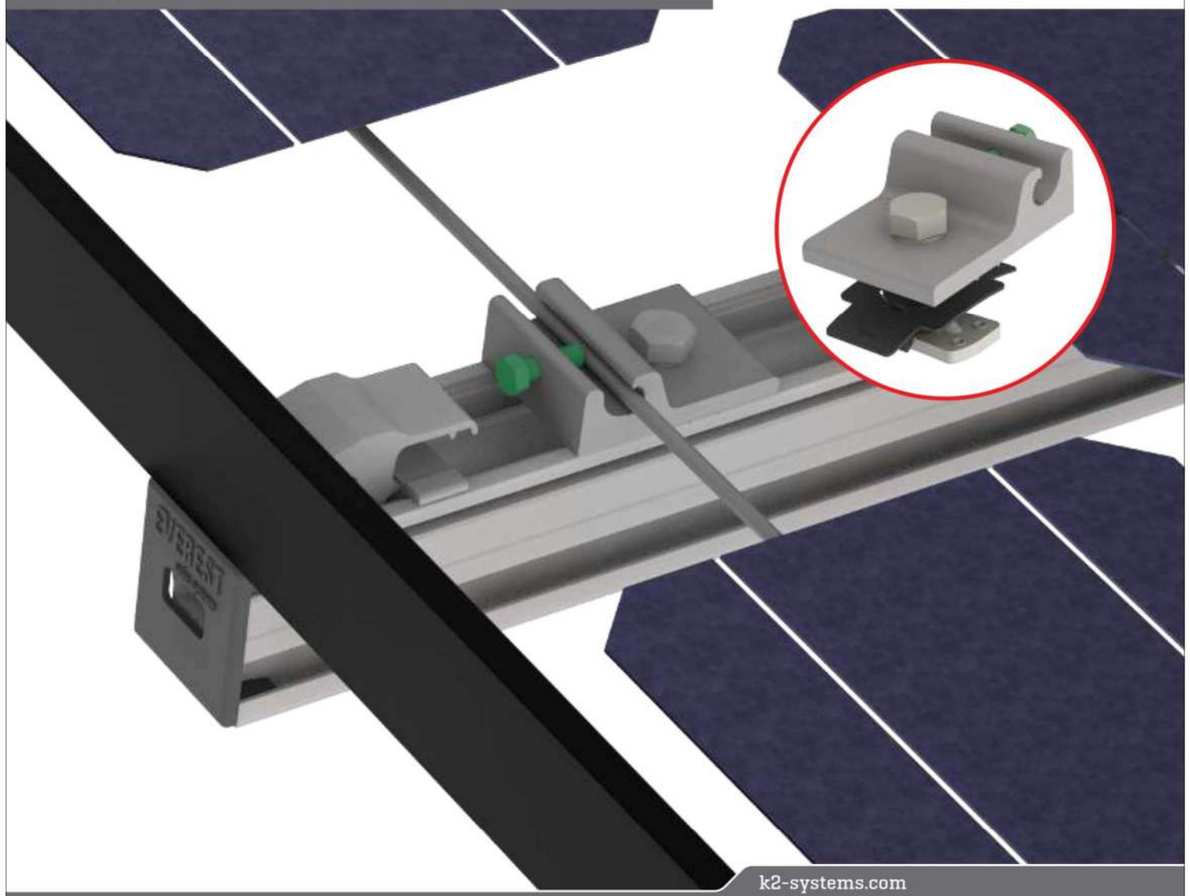
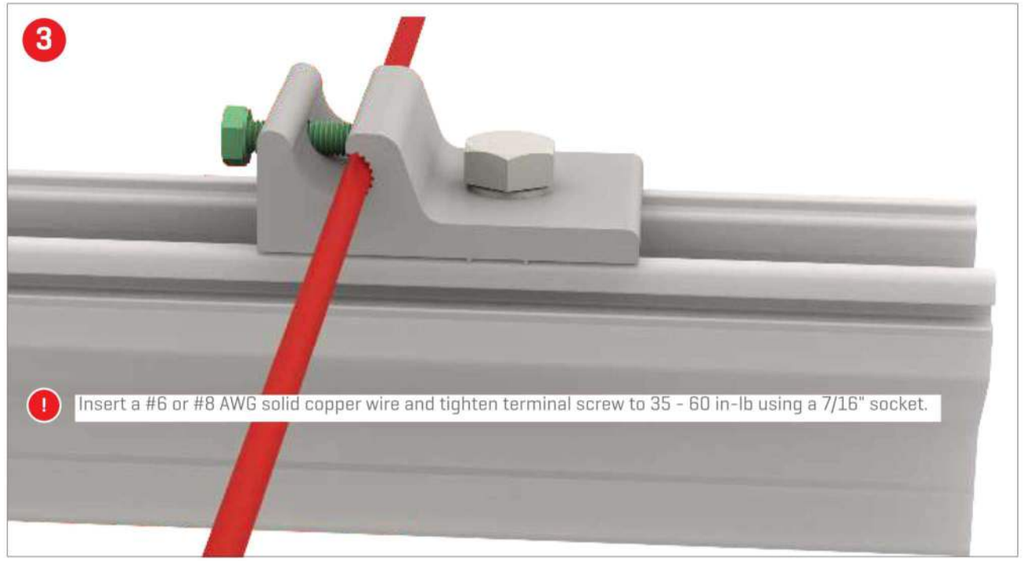
Everest Ground Lug

QUICK GUIDE





Components

Part Number	Description
4000006-H	Everest Ground Lug, 13mm Hex

Tools overview

10-50 ft-lb
(6 - 35 Nm)

13 mm dep socket
- Torque 10 ft-lbs

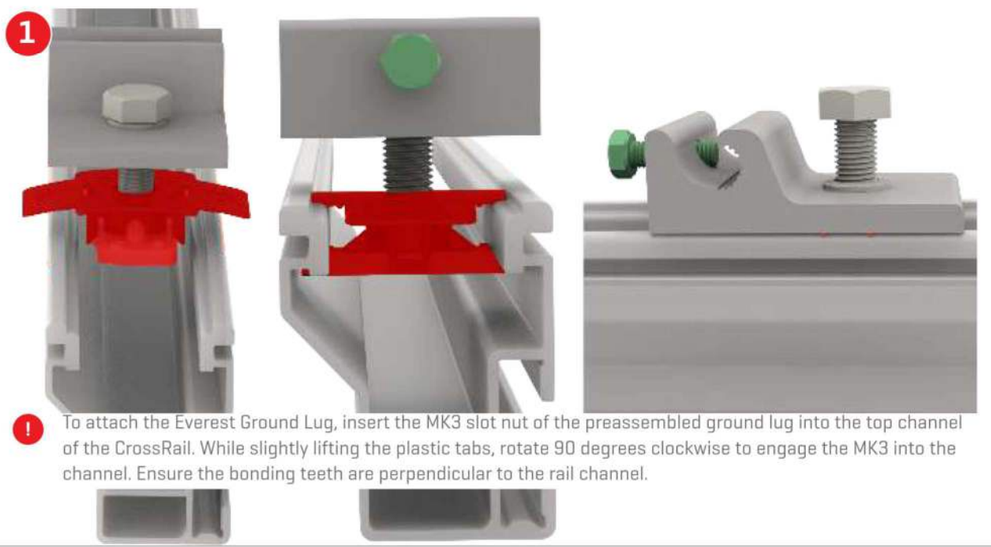
7/16" socket
- Torque 35-60 in-lbs

Important note

! CrossRail components are required to be electrically bonded and grounded via the Everest Ground Lug or Burndy's WEEB Lug 10 and the use of #6 or #8 AWG solid copper wire. A minimum of one lug is required per each independent row of modules. The Everest Ground Lug must be attached to the top channel of CrossRail, as shown.

Assembly

1



! To attach the Everest Ground Lug, insert the MK3 slot nut of the preassembled ground lug into the top channel of the CrossRail. While slightly lifting the plastic tabs, rotate 90 degrees clockwise to engage the MK3 into the channel. Ensure the bonding teeth are perpendicular to the rail channel.

2

! Torque the M8 bolt to 10 ft-lbs using a 13 mm deep socket wrench.