

PROJECT DESCRIPTION:

50 x 370 SILFAB SOLAR SIL-370HC (370W) MODULES
 ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
 SYSTEM SIZE: 18.50 kW DC STC

EQUIPMENT SUMMARY

50 SILFAB SOLAR SIL-370HC MODULES
 50 ENPHASE IQ7PLUS-72-2-US MICROINVERTERS

SHEET INDEX

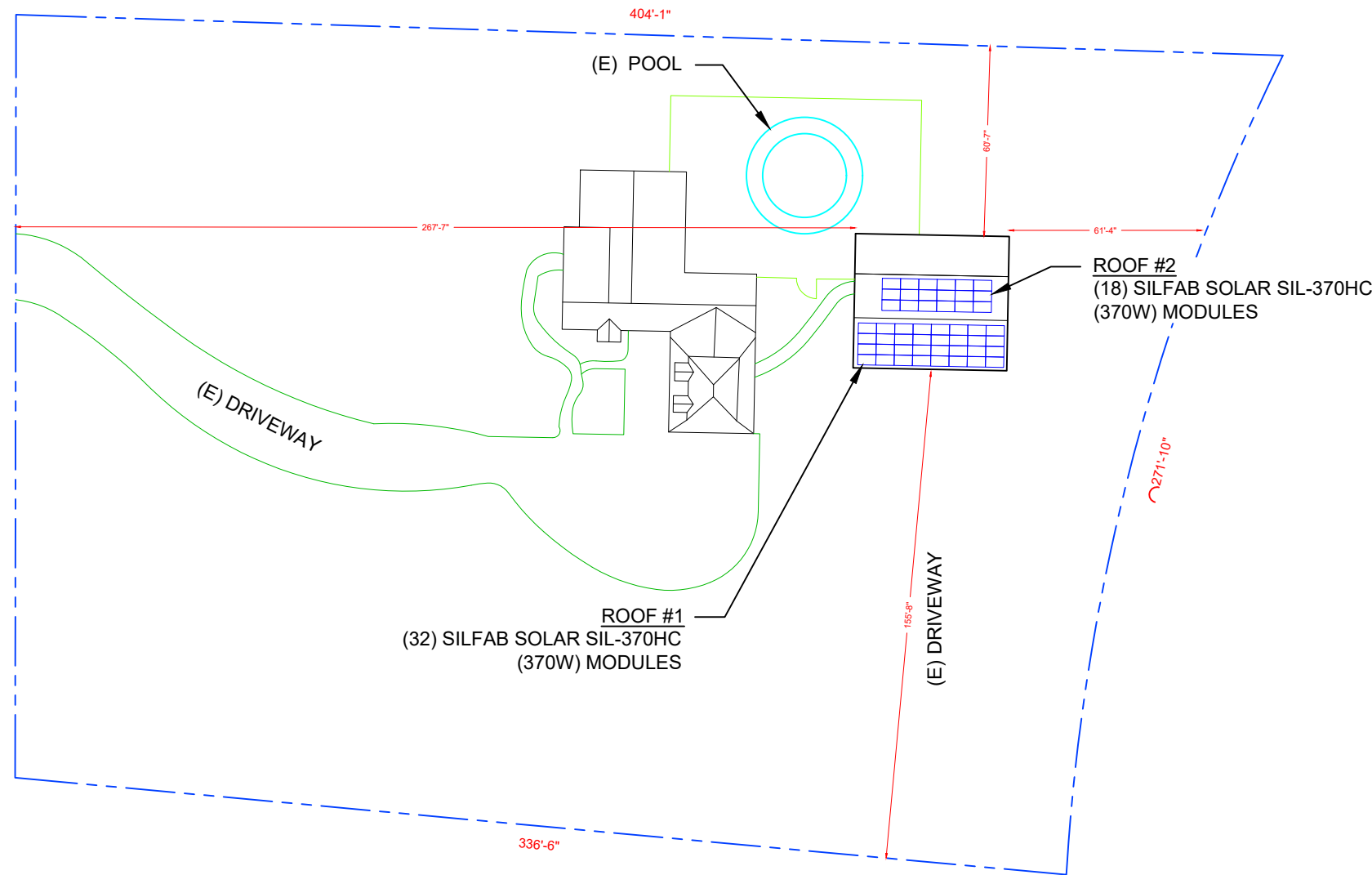
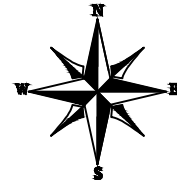
A-00	PLOT PLAN & VICINITY MAP
S-01	ROOF PLAN & MODULES
S-02	ATTACHMENT DETAILS
E-01	ELECTRICAL SITE PLAN
E-02	ELECTRICAL LINE DIAGRAM
E-03	WIRING CALCULATIONS
E-04	SYSTEM LABELING
DS-01	MODULE DATA SHEET
DS-02	MICRO INVERTER DATA SHEET
DS-03	COMBINER BOX DATA SHEET
DS-04	RAIL DATA SHEET
DS-05	ATTACHMENT DATA SHEET

GOVERNING CODES :

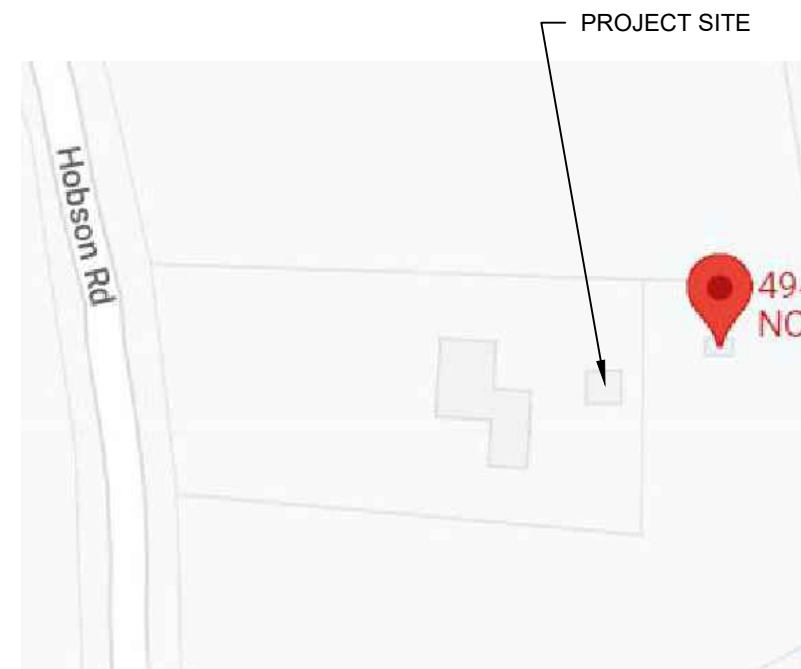
FLORIDA RESIDENTIAL CODE, 7TH EDITION 2020 (FRC)
 FLORIDA PLUMBING CODE, 7TH EDITION 2020 (FPC)
 FLORIDA BUILDING CODE, 7TH EDITION 2020 EDITION (FBC)
 FLORIDA MECHANICAL CODE, 7TH EDITION 2020 (FMC)
 2017 NATIONAL ELECTRICAL CODE
 FLORIDA FIRE PREVENTION CODE, 7TH EDITION (FFPC)

ASCE 7-10 WIND DESIGN CRITERIA

ULTIMATE WIND SPEED: 120 MPH
 NOMINAL WIND SPEED: 93 MPH
 WIND EXPOSURE: C
 RISK CATEGORY: II
 GROUND SNOW LOAD: 15 PSF



2 HOUSE PHOTO
 A-00 SCALE: NTS



3 VICINITY MAP
 A-00 SCALE: NTS

1 PLOT PLAN WITH ROOF PLAN

A-00 SCALE: 1" = 50'-0"

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 4020 W CAYUGA STREET
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REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	05-20-2022	01
UTILITY	06-21-2022	02

PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
 DUNN, NC 28334

SHEET NAME
PLOT PLAN & VICINITY MAP

SHEET SIZE
**ANSI B
 11" X 17"**

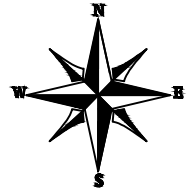
SHEET NUMBER
A-00

Signature with Seal

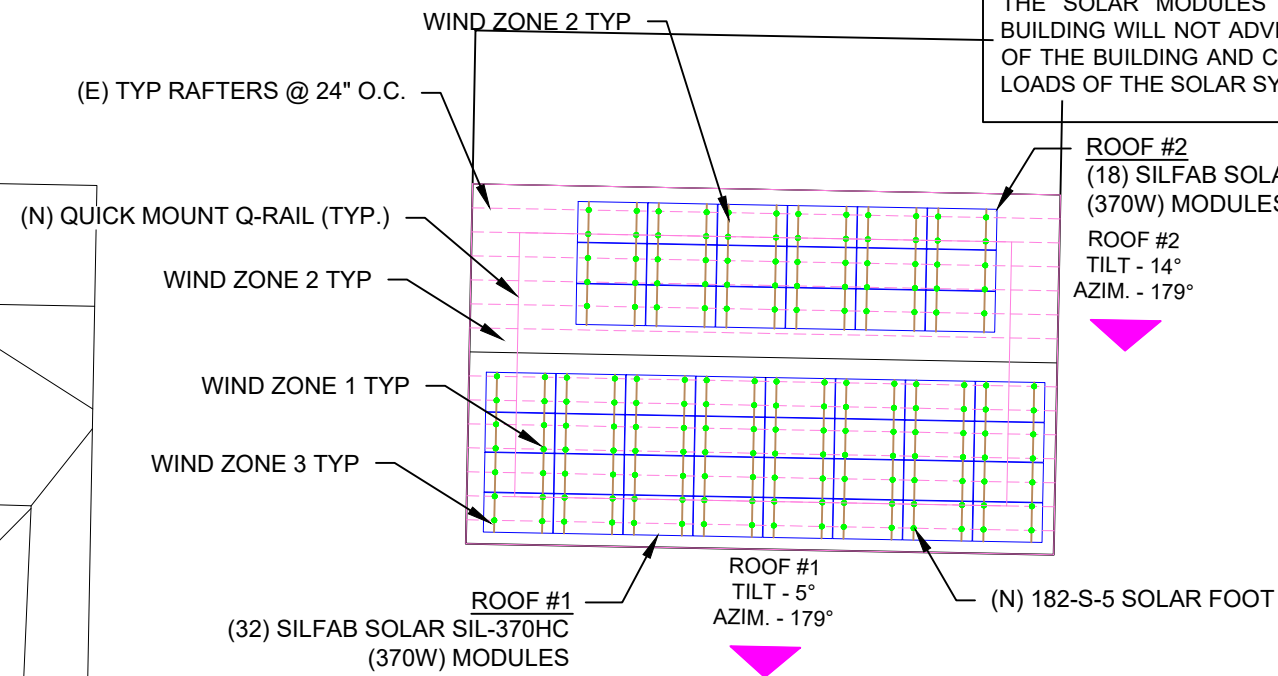
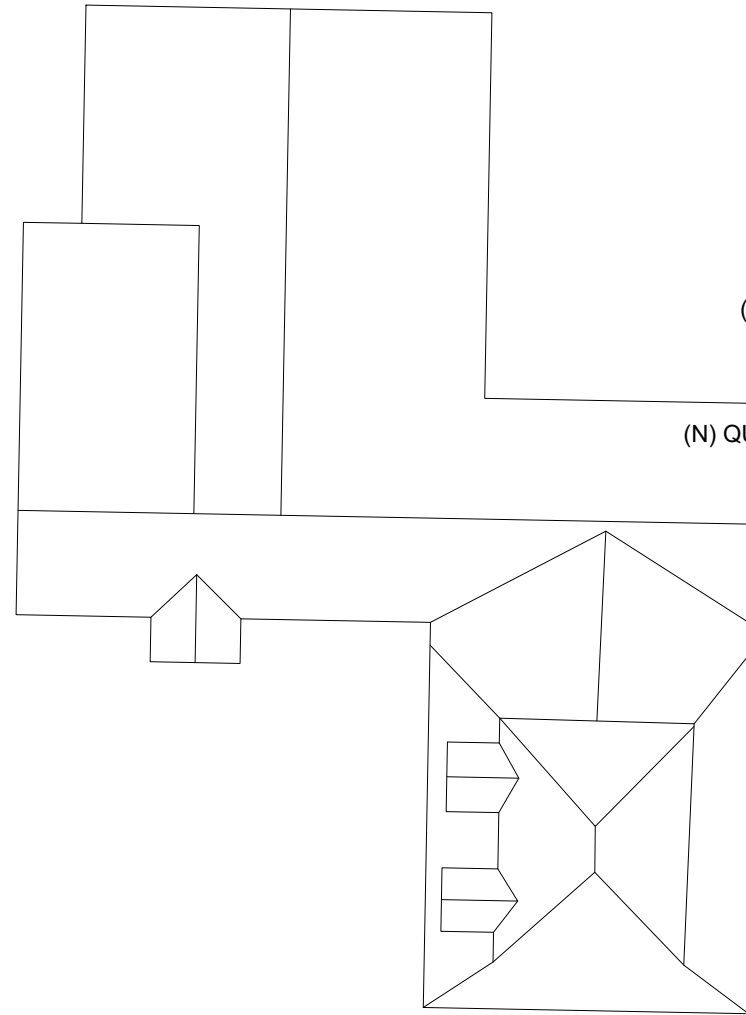
JEFFREY A. TORRES, P.E.
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 JEFF.TORRES@SUNSMARTENGINEERING.COM

MODULE TYPE, DIMENSIONS & WEIGHT

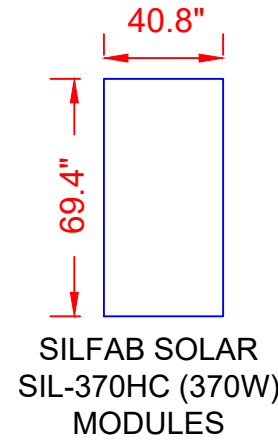
NUMBER OF MODULES = 50 MODULES
 MODULE TYPE = SILFAB SOLAR SIL-370HC (370W) MODULES
 WEIGHT = 43 LBS / 19.5 KG.
 MODULE DIMENSIONS = 69.4" x 40.8" = 19.66 SF
 UNIT WEIGHT OF ARRAY = 2.23 PSF



HOBSON RD.
 (E) FRONT YARD



(E) BACK YARD



GENERAL INSTALLATION PLAN NOTES:

(1) ROOF ATTACHMENTS TO SYP TRUSSES SHALL BE INSTALLED AS SHOWN IN SHEET S-02 AND AS FOLLOWS FOR EACH WIND ZONE:.

WIND ZONE 1: 2'-0" O.C.
 WIND ZONE 2: 2'-0" O.C.
 WIND ZONE 3: 2'-0" O.C

SEE SHEET S-02 FOR ATTACHMENT DETAILS.

2) EXISTING RESIDENTIAL BUILDING IS A 5V METAL ROOF WITH MEAN ROOF HEIGHT 15 FT AND SYP 2X4 WOOD SINGLE SPAN RAFTER 24" O.C. EXISTING ROOF SLOPE FOR SOLAR SYSTEM RETROFIT IS 18 DEGREES. CONTRACTOR TO FIELD VERIFY AND SHALL REPORT TO THE ENGINEER IF ANY DISCREPANCIES EXIST BETWEEN PLANS AND IN FIELD CONDITIONS.

3) DESIGN CRITERIA FOR QUICKMOUNT RACKING AND ALL ROOF CONNECTIONS SHOWN IS BASED ON ALLOWABLE STRESS DESIGN (ASD), COMPONENTS AND CLADDING (C&C) ULTIMATE WIND SPEED UP TO 120 MPH (09 MPH NOMINAL) WITH EXPOSURE "C", RISK CATEGORY II, HIP AND GABLE ROOFS (2/12 TO 6/12 ROOF PITCH). h < 30'-0" PER ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES" AND THE 2018 N.C.B.C.. STRUCTURAL CALCULATIONS AVAILABLE UPON REQUEST.

* I CERTIFY THAT THE INSTALLATION OF THE MODULES IS IN COMPLIANCE WITH NCBC: 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

- □ - ROOF OBSTRUCTION
- - PV ROOF ATTACHMENT
- - RAFTERS

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PROJECT NAME
KASPAR, VIC
 494 HOBSON ROAD
 DUNN, NC 28334

SHEET NAME
ROOF PLAN & MODULES

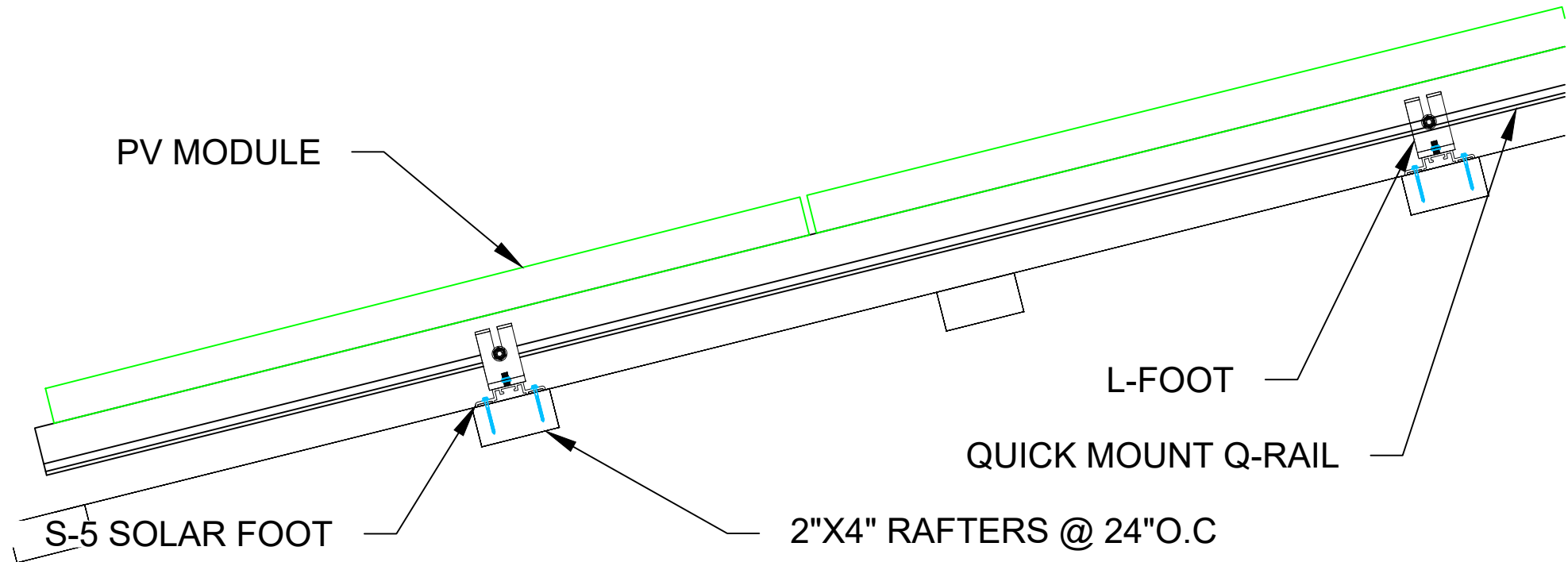
SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
S-01

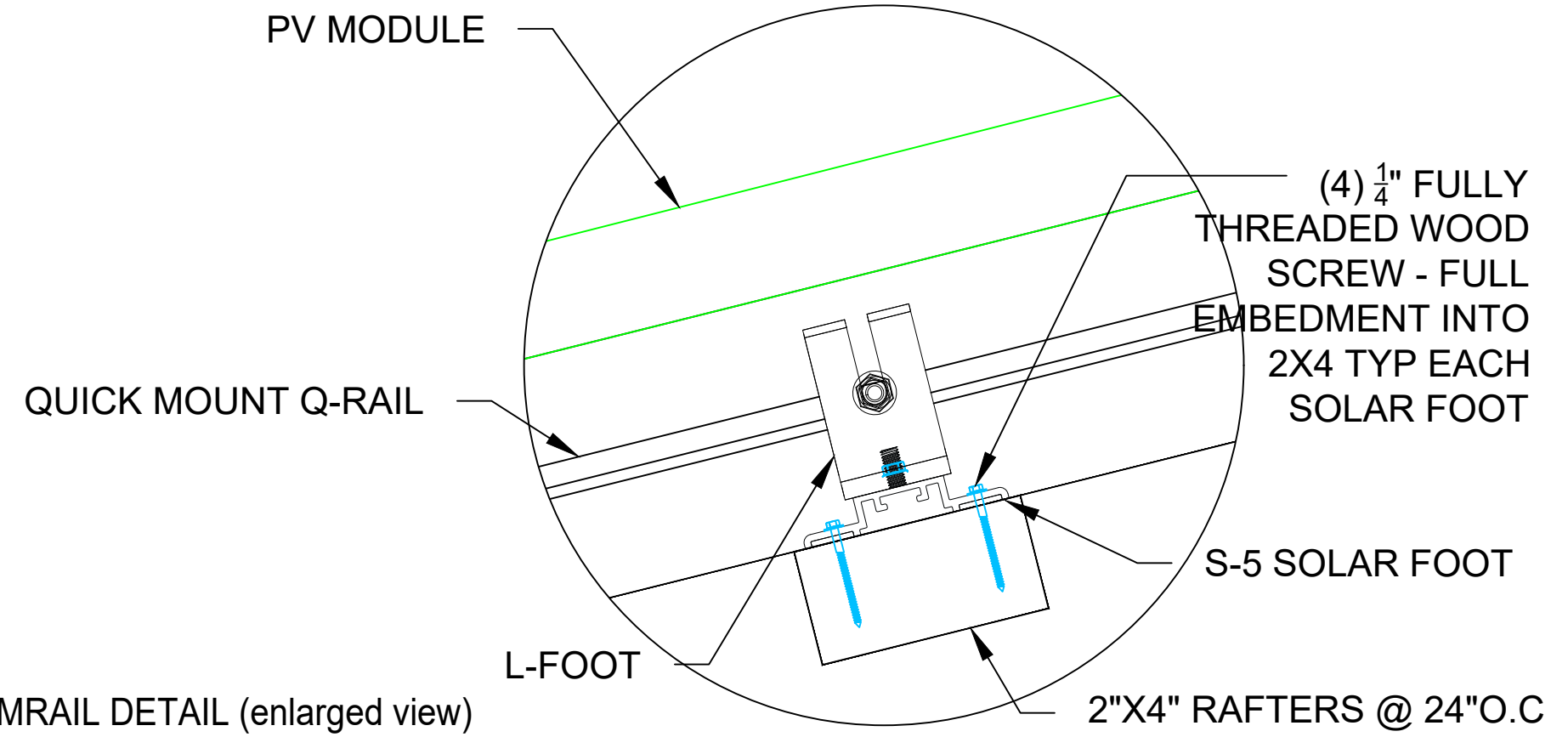
Signature with Seal

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NOTE: 2X4 RAFTERS ASSUMED TO BE NO. 2 SYP AND SHALL BE VERIFIED IN THE FIELD.



1 | ATTACHMENT DETAIL
S-02 | SCALE: NTS



2 | FRONT TRIMRAIL DETAIL (enlarged view)
S-02 | SCALE: NTS

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PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
DUNN, NC 28334

SHEET NAME
ATTACHMENT DETAILS

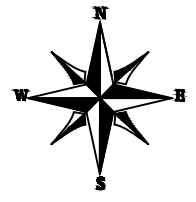
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-02

Signature with Seal

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SOLAR ARRAY 18.5 kW-DC STC
 (50) SILFAB SOLAR SIL-370HC (370W) MODULES
 (03) STRINGS OF 11 MODULES
 (01) STRING OF 10 MODULES
 (01) STRING OF 7 MODULES



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PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
 DUNN, NC 28334

SHEET NAME

ROOF PLAN & MODULES

SHEET SIZE

**ANSI B
 11" X 17"**

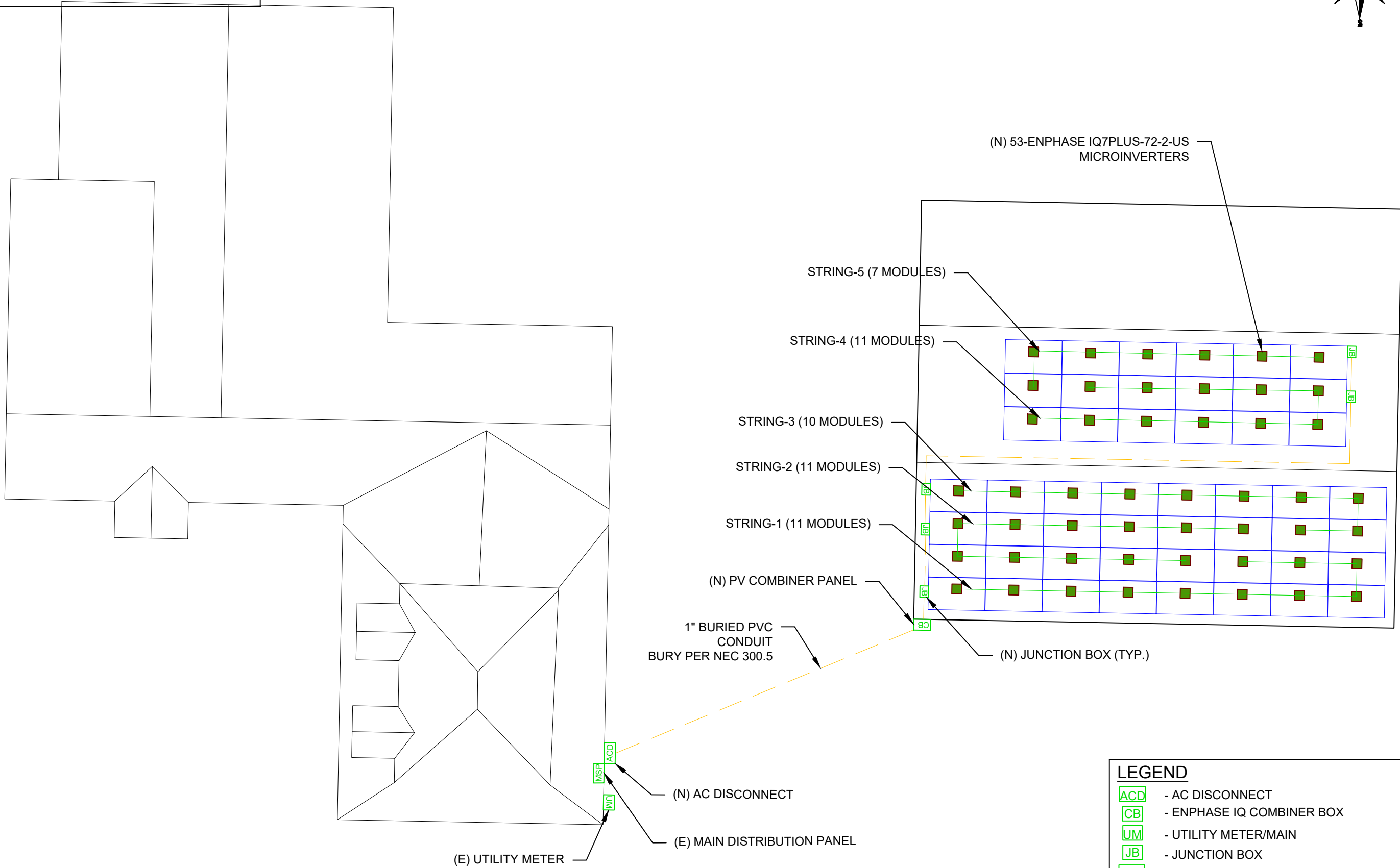
SHEET NUMBER

E-01

Signature with Seal

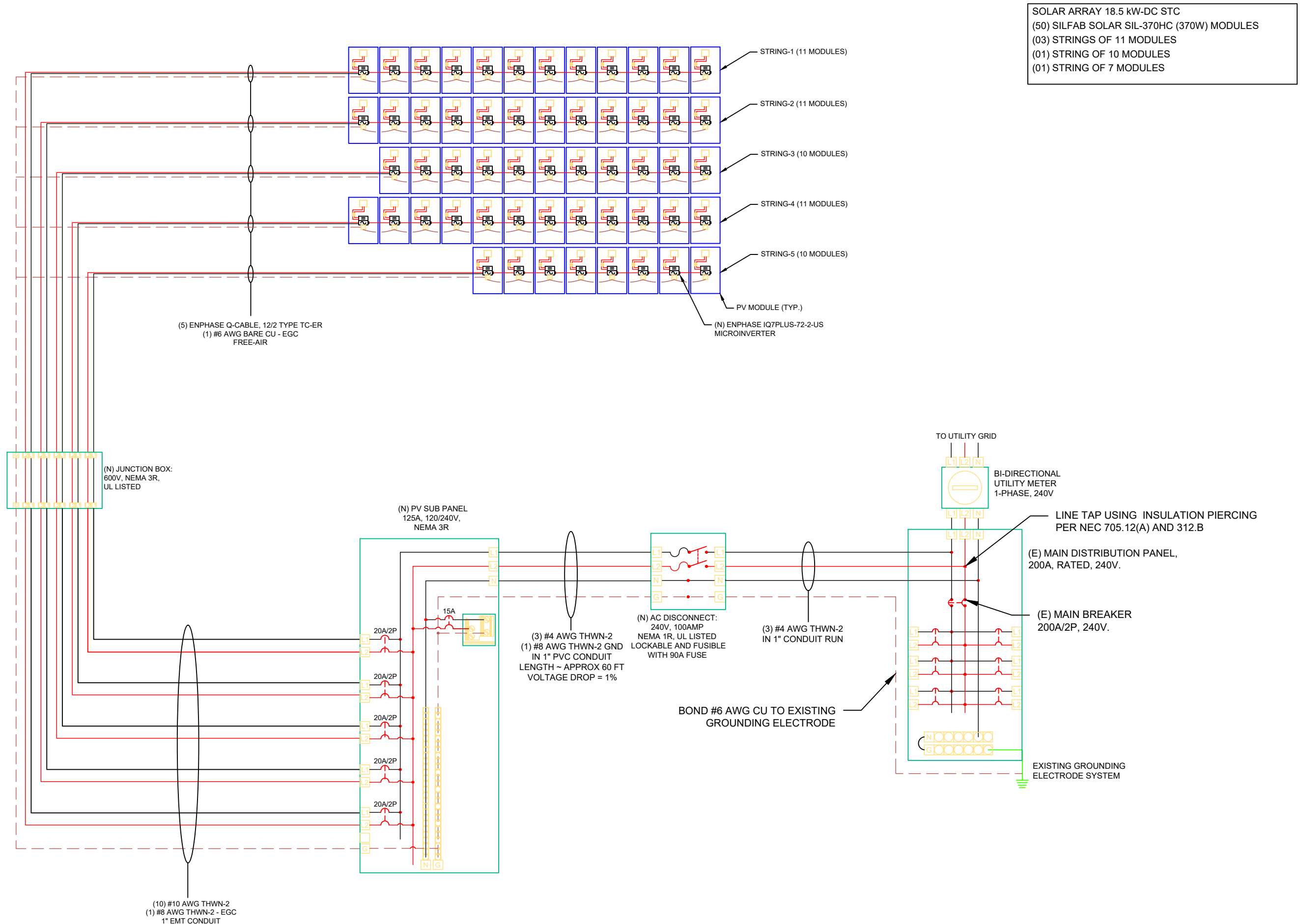
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HOBSON RD.



LEGEND

- ACD - AC DISCONNECT
- CB - ENPHASE IQ COMBINER BOX
- UM - UTILITY METER/MAIN
- JB - JUNCTION BOX
- MSP - MAIN DISTRIBUTION PANEL
- ROOF OBSTRUCTION
- CONDUIT



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PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
 DUNN, NC 28334

SHEET NAME
**ELECTRICAL
 LINE DIAGRAM**

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
E-02

Signature with Seal

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SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	SILFAB SOLAR SIL-370HC (370) MODULES
VMP	37.11V
IMP	9.70A
VOC	45.40V
ISC	10.20A
MODULE DIMENSION	69.4"L x 40.8"W x 1.4"D (In Inch)

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	ENPHASE IQ7PLUS-72-2-US MICRO-INVERTER
MPPT VOLTAGE RANGE	29-45V
MAXIMUM INPUT VOLTAGE	60V
MAXIMUM UNIT PER BRANCH	13
MAXIMUM OUTPUT CURRENT	1.21A
CEC WEIGHTED EFFICIENCY	97%

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	1°
AMBIENT TEMP (HIGH TEMP 2%)	34°
CONDUIT MINIMUM HEIGHT FROM ROOF	0.5"
CONDUCTOR TEMPERATURE RATING	90°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.28%/°C

AC CONDUCTOR AMPACITY CALCULATIONS: ARRAY TO JUNCTION BOX

EXPECTED WIRE TEMP (In Celsius)	34°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	0.96
# OF CURRENT CARRYING CONDUCTORS	N/A
# OF C.C. CONDUCTORS CORRECTION PER NEC 310.15(B)(3)(a)	1.00
CIRCUIT CONDUCTOR SIZE	12 AWG
CIRCUIT CONDUCTOR AMPACITY	30A
REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A) & (B)	
1.25 x MAX AC OUTPUT x MAX # OF MICROINVERTERS/CIRCUIT	16.64A
DERATED CIRCUIT CONDUCTOR AMPACITY	28.80A
Result should be greater than (16.64A)	

AC CONDUCTOR AMPACITY CALCULATIONS: FROM JUNCTION BOX TO IQ COMBINER PANEL

EXPECTED WIRE TEMP (In Celsius)	34°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	0.80
# OF CURRENT CARRYING CONDUCTORS	6
# OF C.C. CONDUCTORS 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)	
1.25 x MAX AC OUTPUT x MAX # OF MICROINVERTERS/CIRCUIT	16.64A
DERATED CIRCUIT CONDUCTOR AMPACITY	30.72A
Result should be greater than (16.64A)	

AC CONDUCTOR AMPACITY CALCULATIONS: FROM IQ COMBINER PANEL TO ACDS

EXPECTED WIRE TEMP (In Celsius)	34°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	0.96
# OF CURRENT CARRYING CONDUCTORS	3
# OF C.C. CONDUCTORS CORRECTION PER NEC 310.15(B)(3)(a)	1.00
CIRCUIT CONDUCTOR SIZE	4 AWG
CIRCUIT CONDUCTOR AMPACITY	95A
REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A) & (B)	
1.25 x MAX AC OUTPUT x TOTAL # OF MICROINVERTERS	80.16A
DERATED CIRCUIT CONDUCTOR AMPACITY	91.20A
Result should be greater than (80.16A)	

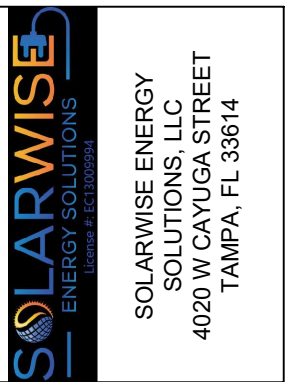
AC CONDUCTOR AMPACITY CALCULATIONS: FROM ACDS TO TAP

EXPECTED WIRE TEMP (In Celsius)	34°
TEMP. CORRECTION PER TABLE (310.15)(B)(2)(a)	0.96
# OF CURRENT CARRYING CONDUCTORS	3
# OF C.C. CONDUCTORS CORRECTION PER NEC 310.15(B)(3)(a)	1.00
CIRCUIT CONDUCTOR SIZE	4 AWG
CIRCUIT CONDUCTOR AMPACITY	95A
REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A) & (B)	
1.25 x MAX AC OUTPUT x TOTAL # OF MICROINVERTERS	80.16A
DERATED CIRCUIT CONDUCTOR AMPACITY	91.20A
Result should be greater than (80.16A)	

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-02 | SCALE: NTS



REVISIONS		
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PROJECT NAME
KASPAR, VIC
494 HOBSON ROAD
DUNN, NC 28334

SHEET NAME
WIRING CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-03

Signature with Seal

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PHOTOVOLTAIC SYSTEM AC DISCONNECT
 MAXIMUM AC OPERATING CURRENT 60.5 AMPS
 MAXIMUM AC OPERATING VOLTAGE 240 VOLTS

LABEL LOCATION:
 AC DISCONNECT(S)
 PER NEC 690.54

**RAPID SHUTDOWN SWITCH
 FOR SOLAR PV SYSTEM**

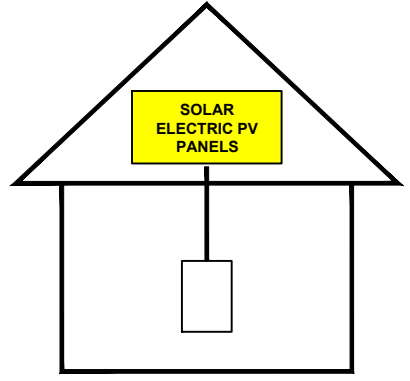
LABEL LOCATION:
 RAPID SHUTDOWN INITIATION DEVICE
 PER NEC 690.56(C)(3)

! WARNING
 POWER SOURCE OUTPUT CONNECTION
**DO NOT RELOCATE THIS
 OVERCURRENT DEVICE**

LABEL LOCATION:
 POINT OF INTERCONNECTION (WHEN APPLICABLE)
 PER NEC 705.12(B)(2)(3)(b)

**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:
 AT SERVICE DISCONNECTING MEANS
 PER NEC 690.56(C)(1)(a)

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INITIAL	05-20-2022	01
UTILITY	06-21-2022	02

PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
 DUNN, NC 28334

SHEET NAME
 SYSTEM LABELING

SHEET SIZE
 ANSI B
 11" X 17"

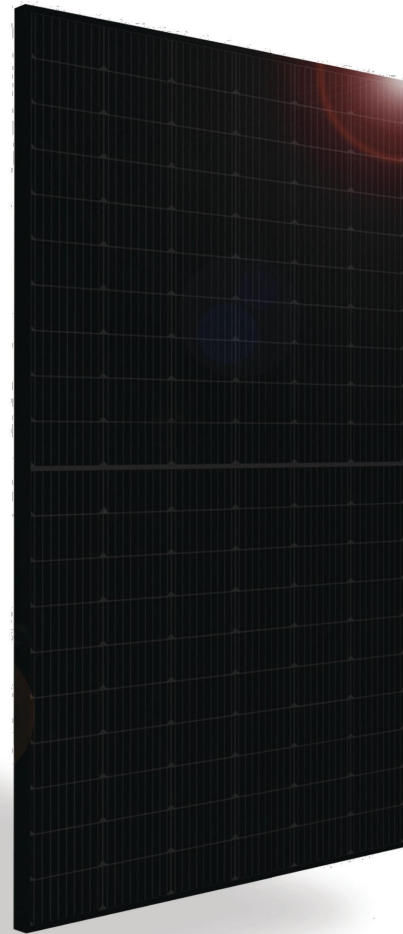
SHEET NUMBER
 E-04

Signature with Seal

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SILFAB PRIME

SIL-370 HC



RELIABLE ENERGY.
DIRECT FROM THE SOURCE.

Introducing Silfab Prime.

Designed to outperform.

Dependable, durable, high-performance solar panels
engineered for North American homeowners.

SILFABSOLAR.COM



ELECTRICAL SPECIFICATIONS		370	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	370	276
Maximum power voltage (Vpmax)	V	34.95	32.48
Maximum power current (Ipmax)	A	10.60	8.50
Open circuit voltage (Voc)	V	41.75	39.16
Short circuit current (Isc)	A	11.25	9.07
Module efficiency	%	20.2%	18.9%
Maximum system voltage (VDC)	V		1000
Series fuse rating	A		20
Power Tolerance	Wp		0 to +10

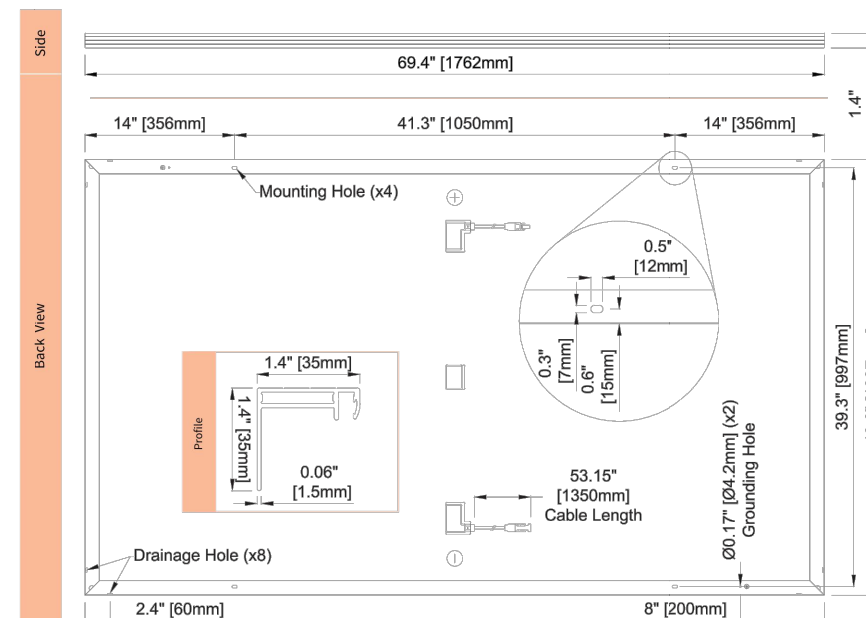
Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%
Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by 0 to +10W.

MECHANICAL PROPERTIES / COMPONENTS	METRIC	IMPERIAL
Module weight	19.5kg ±0.2kg	43lbs ±0.4lbs
Dimensions (H x L x D)	1762 mm x 1037 mm x 35 mm	69.4 in x 40.8 in x 1.37 in
Maximum surface load (wind/snow)*	5400 Pa rear load / 5400 Pa front load	112.8 lb/ft ² rear load / 112.8 lb/ft ² front load
Hail impact resistance	Ø 25 mm at 83 km/h	Ø 1 in at 51.6 mph
Cells	120 Half cells - Si mono PERC 9 busbar - 83 x 166 mm	120 Half cells- Si mono PERC 9 busbar - 3.26 x 6.53 in
Glass	3.2 mm high transmittance, tempered, DSM antireflective coating	0.126 in high transmittance, tempered, DSM antireflective coating
Cables and connectors (refer to installation manual)	1350 mm, Ø 5.7 mm, MC4 from Staubli	53.15 in, Ø 0.22 in (12AWG), MC4 from Staubli
Backsheet	High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet	
Frame	Anodized Aluminum (Black)	
Bypass diodes	3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)	
Junction Box	UL 3730 Certified, IEC 62790 Certified, IP68 rated	

TEMPERATURE RATINGS		WARRANTIES	
Temperature Coefficient Isc	+0.064 %/°C	Module product workmanship warranty	25 years**
Temperature Coefficient Voc	-0.28 %/°C	Linear power performance guarantee	30 years
Temperature Coefficient Pmax	-0.36 %/°C		≥ 97.1% end 1st yr ≥ 91.6% end 12th yr ≥ 85.1% end 25th yr ≥ 82.6% end 30th yr
NOCT (± 2°C)	45 °C		
Operating temperature	-40/+85 °C		

CERTIFICATIONS		SHIPPING SPECS	
Product	ULC ORD C1703, UL1703, CEC listed, UL 61215-1/-1-1/-2, UL 61730-1/-2, IEC 61215-1/-1-1/-2-2***, IEC 61730-1/-2-2***, CSA C22.2#61730-1/-2, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2	Modules Per Pallet:	26 or 26 (California)
Factory	ISO9001:2015	Pallets Per Truck	34 or 32 (California)
		Modules Per Truck	884 or 832 (California)

* ⚠ Warning. Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.
** 12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at silfabsolar.com
*** Certification in progress.
PAN files generated from 3rd party performance data are available for download at: silfabsolar.com/downloads



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PROJECT NAME

KASPAR, VIC

**494 HOBSON ROAD
DUNN, NC 28334**

SHEET NAME
**MODULE
DATA SHEET**

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
DS-01

Signature with Seal

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Enphase IQ 7 and IQ 7+ Microinverters

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

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

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



Easy to Install

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

Productive and Reliable

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

Smart Grid Ready

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

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

Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US		IQ7PLUS-72-2-US	
Commonly used module pairings ¹	235 W - 350 W +		235 W - 440 W +	
Module compatibility	60-cell PV modules only		60-cell and 72-cell PV modules	
Maximum input DC voltage	48 V		60 V	
Peak power tracking voltage	27 V - 37 V		27 V - 45 V	
Operating range	16 V - 48 V		16 V - 60 V	
Min/Max start voltage	22 V / 48 V		22 V / 60 V	
Max DC short circuit current (module Isc)	15 A		15 A	
Overvoltage class DC port	II		II	
DC port backfeed current	0 A		0 A	
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit			
OUTPUT DATA (AC)	IQ 7 Microinverter		IQ 7+ Microinverter	
Peak output power	250 VA		295 VA	
Maximum continuous output power	240 VA		290 VA	
Nominal (L-L) voltage/range ²	240 V / 211-264 V	208 V / 183-229 V	240 V / 211-264 V	208 V / 183-229 V
Maximum continuous output current	1.0 A (240 V)	1.15 A (208 V)	1.21 A (240 V)	1.39 A (208 V)
Nominal frequency	60 Hz		60 Hz	
Extended frequency range	47 - 68 Hz		47 - 68 Hz	
AC short circuit fault current over 3 cycles	5.8 Arms		5.8 Arms	
Maximum units per 20 A (L-L) branch circuit ³	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)
Overvoltage class AC port	III		III	
AC port backfeed current	0 A		0 A	
Power factor setting	1.0		1.0	
Power factor (adjustable)	0.85 leading ... 0.85 lagging		0.85 leading ... 0.85 lagging	
EFFICIENCY	@240 V	@208 V	@240 V	@208 V
Peak efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C			
Relative humidity range	4% to 100% (condensing)			
Connector type (IQ7-60-2-US & IQ7PLUS-72-2-US)	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)			
Dimensions (WxHxD)	212 mm x 175 mm x 30.2 mm (without bracket)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection - No fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category / UV exposure rating	NEMA Type 6 / outdoor			
FEATURES				
Communication	Power Line Communication (PLC)			
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.			
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.			
Compliance	CA Rule 21 (UL 1741-SA) 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 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.			

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

To learn more about Enphase offerings, visit enphase.com

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SOLARWISE ENERGY SOLUTIONS, LLC
 4020 W CAYUGA STREET
 TAMPA, FL 33614

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	05-20-2022	01
UTILITY	06-21-2022	02

PROJECT NAME

KASPAR, VIC

**494 HOBSON ROAD
 DUNN, NC 28334**

SHEET NAME
INVERTER DATA SHEET

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
DS-02

Signature with Seal

JEFFREY A. TORRES, P.E.
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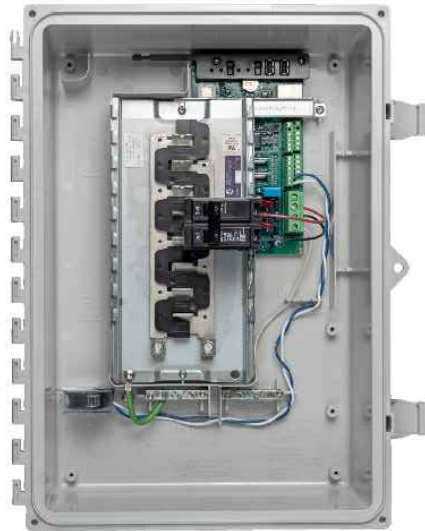


To learn more about Enphase offerings, visit enphase.com



Enphase IQ Combiner 3 (X-IQ-AM1-240-3)

The **Enphase IQ Combiner 3™** with Enphase IQ Envoy™ consolidates interconnection equipment into a single enclosure and streamlines PV and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.



Smart

- Includes IQ Envoy for communication and control
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and optional consumption monitoring

Simple

- Reduced size from previous combiner
- Centered mounting brackets support single stud mounting
- Supports back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year warranty
- UL listed

Enphase IQ Combiner 3

MODEL NUMBER	
IQ Combiner 3 X-IQ-AM1-240-3	IQ Combiner 3 with Enphase IQ Envoy™ printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional* consumption monitoring (+/- 2.5%).
ACCESSORIES and REPLACEMENT PARTS (not included, order separately)	
Enphase Mobile Connect™ CELLMODEM-03 (4G / 12-year data plan) CELLMODEM-01 (3G / 5-year data plan) CELLMODEM-M1 (4G based LTE-M / 5-year data plan)	Plug and play industrial grade cellular modem with data plan for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.)
Consumption Monitoring* CT CT-200-SPLIT	Split core current transformers enable whole home consumption metering (+/- 2.5%).
Circuit Breakers BRK-10A-2-240 BRK-15A-2-240 BRK-20A-2P-240	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220
EPLC-01	Power line carrier (communication bridge pair), quantity 2
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 3 (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Envoy printed circuit board (PCB) for Combiner 3
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating (output to grid)	65 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. continuous current rating (input from PV)	64 A
Max. total branch circuit breaker rating (input)	80A of distributed generation / 90A with IQ Envoy breaker included
Production Metering CT	200 A solid core pre-installed and wired to IQ Envoy
MECHANICAL DATA	
Dimensions (WxHxD)	49.5 x 37.5 x 16.8 cm (19.5" x 14.75" x 6.63"). Height is 21.06" (53.5 cm with mounting brackets).
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	<ul style="list-style-type: none"> • 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing.
Altitude	To 2000 meters (6,560 feet)
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	802.11b/g/n
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
Cellular	Optional, CELLMODEM-01 (3G) or CELLMODEM-03 (4G) or CELLMODEM-M1 (4G based LTE-M) (not included)
COMPLIANCE	
Compliance, Combiner	UL 1741 CAN/CSA C22.2 No. 107.1 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production)
Compliance, IQ Envoy	UL 60601-1/CANCSA 22.2 No. 61010-1

* Consumption monitoring is required for Enphase Storage Systems.

To learn more about Enphase offerings, visit enphase.com

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2018-09-13



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4020 W CAYUGA STREET
TAMPA, FL 33614

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	05-20-2022	01
UTILITY	06-21-2022	02

PROJECT NAME

KASPAR, VIC

**494 HOBSON ROAD
DUNN, NC 28334**

SHEET NAME
**COMBINER BOX
DATA SHEET**

SHEET SIZE
**ANSI B
11" X 17"**

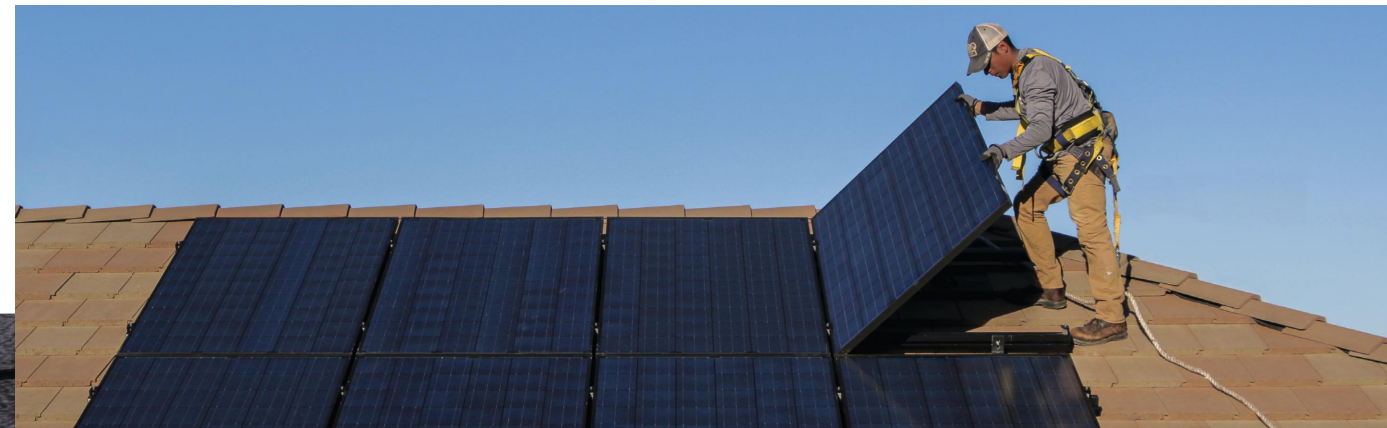
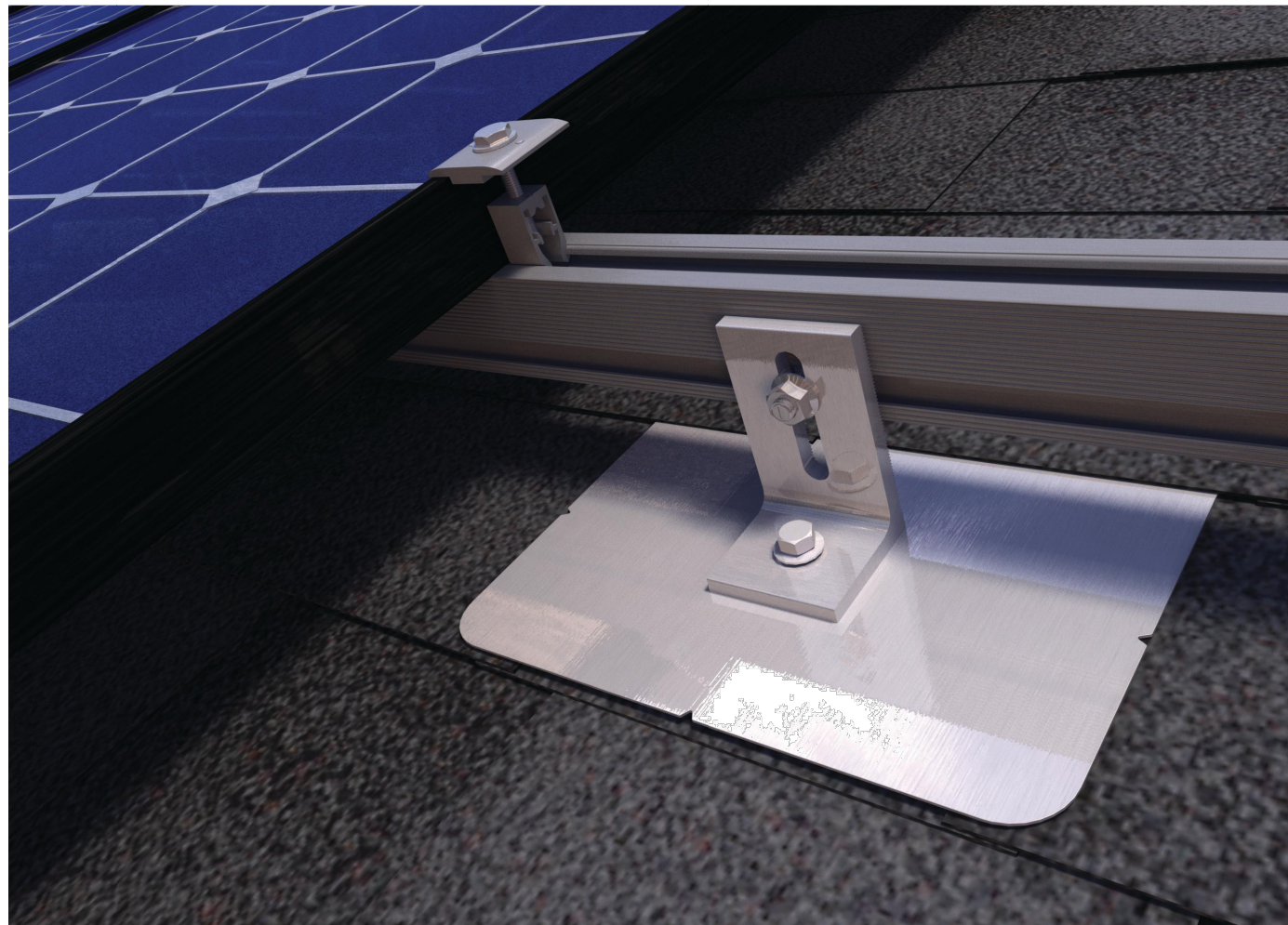
SHEET NUMBER
DS-03

Signature with Seal

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QRail™ Series

Rail System with QClick Technology™



QRail™ — Single-Tool Mounting and Racking System

The QRail Series is a strong and versatile single-tool installation solar racking system that provides unrivaled benefits to solar designers and installers. Combined with Quick Mount PV's industry-leading weather-proof mounts, QRail offers a complete racking solution for mounting solar modules on any roof. An optional skirt is available.



QDesign.solar

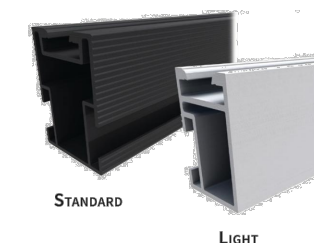
Easily design array configurations with the QDesign software application. Generate complete engineering reports and calculate a precise bill of materials for all the mounting, racking and accessories needed for a complete solar array. Works 2-rail, 3-rail, shared-rail and fixed-tilt applications.

Comprehensive, One-Source Solution

QRail, together with Quick Mount PV's waterproof mounting products, provides the benefit of a single-sourced, seamlessly integrated rooftop installation that works with all roof types — composition/asphalt shingles, flat or curved tile, metal shingle, shake, slate and low slope roofs. The QRail system also works with any roof attachment system for maximum flexibility.

Superior Strength and Versatility

QRail is engineered for optimal structural performance. The system is certified to UL 2703, fully code compliant and backed by a 25-year warranty. QRail is available in Light and Standard versions and is compatible with virtually all modules and works on a wide range of pitched roof surfaces. Modules can be mounted in portrait or landscape orientation in standard or shared-rail configurations.



QRails come in two lengths —
168 inches (14 ft) and 208 inches (17.3 ft)
Mill and Black Finish

Cost-Effective Mounting and Racking For All Roofs



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4020 W CAYUGA STREET
TAMPA, FL 33614

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	05-20-2022	01
UTILITY	06-21-2022	02

PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
DUNN, NC 28334

SHEET NAME

RAIL DATA SHEET

SHEET SIZE

**ANSI B
11" X 17"**

SHEET NUMBER

DS-04

Signature with Seal

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S-5![®]

The Right Way!

NEW PRODUCT
SolarFoot™

Introducing the new SolarFoot™ for exposed fastener metal roofing with the strength, testing, quality, and time-proven integrity you expect from S-5!. The SolarFoot provides an ideal mounting platform to attach the L-Foot (not included) of a rail-mounted PV system to the roof. This solution is The Right Way to secure rail-mounted solar systems to exposed fastener metal such as AG-Panel or R-Panel.

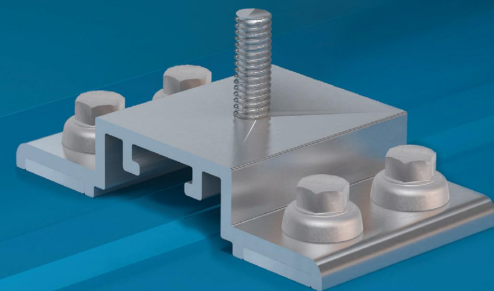
The right way to attach almost anything to metal roofs!

SolarFoot Features:

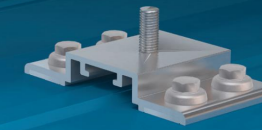
- Manufactured in the U.S.A. from certified raw material
- Fabricated in our own ISO 9001:2015 certified factory
- All aluminum and stainless components
- 25yr limited warranty
- Compatible with all commercial L-Foot products on the market
- Factory applied 40-year isobutylene/isoprene crosslink polymer sealant for reliable weathertightness
- Sealant reservoir to prevent over-compression of sealant
- Load-to-failure tested Normal to Seam by a nationally accredited laboratory on numerous metal roof materials and substrates
- Four points of attachment into structure or deck with tested holding strength for engineered applications
- Integrated M8-1.25x17mm stud and M8-1.25 stainless steel hex flange nut included



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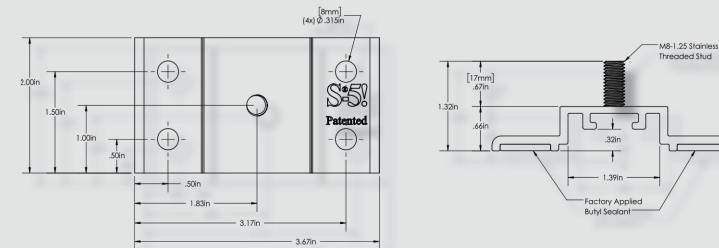


S-5![®]
The Right Way!



SolarFoot™ Mounting for Exposed Fastener Roofing

The SolarFoot is a simple, cost-effective pedestal for L-Foot (not included) attachment of rail-mounted solar PV. The unique design is compatible with all rail producer L-Foot components. The new SolarFoot assembly ensures a durable weathertight solution for the life of the roof. Special factory applied butyl co-polymeric sealant contained in a reservoir is The Right Way, allowing a water-tested seal. Stainless integrated stud and hex flange lock-nut secure the L-Foot into position. A low center of gravity reduces the moment arm commonly associated with L-Foot attachments. Direct attachment of the SolarFoot to the structural member or deck provides unparalleled holding strength.



*Fasteners sold separately. Fastener type varies with substrate. Contact S-5! on how to purchase fasteners and obtain our test results. L-Foot also sold separately.

Fastener Selection



Metal to Metal:
1/4-14 Self Drilling Screw
1-1/2" to 2-1/2"



Metal to Wood:
1/4-14 Type 17 AB Milled Point
1-1/2" to 2-1/2"

To source fasteners for your projects, contact S-5!

When other brands claim to be "just as good as S-5!", tell them to PROVE IT.

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

The independent lab test data found at www.S-5.com can be used for load-critical designs and applications.

Products are protected by multiple U.S. and foreign patents. For published data regarding holding strength, fastener torque, patents, and trademarks, visit the S-5! website at www.S-5.com. Copyright 2017, Metal Roof Innovations, Ltd. S-5! products are patent protected.

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SolarFoot Advantages:

- Exposed fastener mounting platform for solar arrays attached via L-Foot and Rails
- Weatherproof attachment to exposed fastener roofing
- Butyl sealant reservoir provides long-term waterproof seal
- M8-1.25x17mm stud with M8 hex flange nut for attachment of all popular L-Foot/rail combinations
- Tool: 13 mm Hex Socket or 1/2" Hex Socket
- Tool Required: Electric screw gun with hex drive socket for self-tapping screws.
- Low Center of Gravity reduces moment arm commonly associated with L-Foot/Rail solar mounting scenarios
- Attaches directly to structure or deck for optimal holding strength
- S-5! Recommended substrate-specific (e.g. steel purlin, wood 2x4, OSB, etc.) fasteners provide excellent waterproofing and pull-out strength
- Fastener through-hole locations comply with NDS (National Design Specification) for Wood Construction

Distributed by:



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4020 W CAYUGA STREET
TAMPA, FL 33614

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	05-20-2022	01
UTILITY	06-21-2022	02

PROJECT NAME

KASPAR, VIC

494 HOBSON ROAD
DUNN, NC 28334

SHEET NAME

ATTACHMENT
DATA SHEET

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

DS-05

Signature with Seal

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