
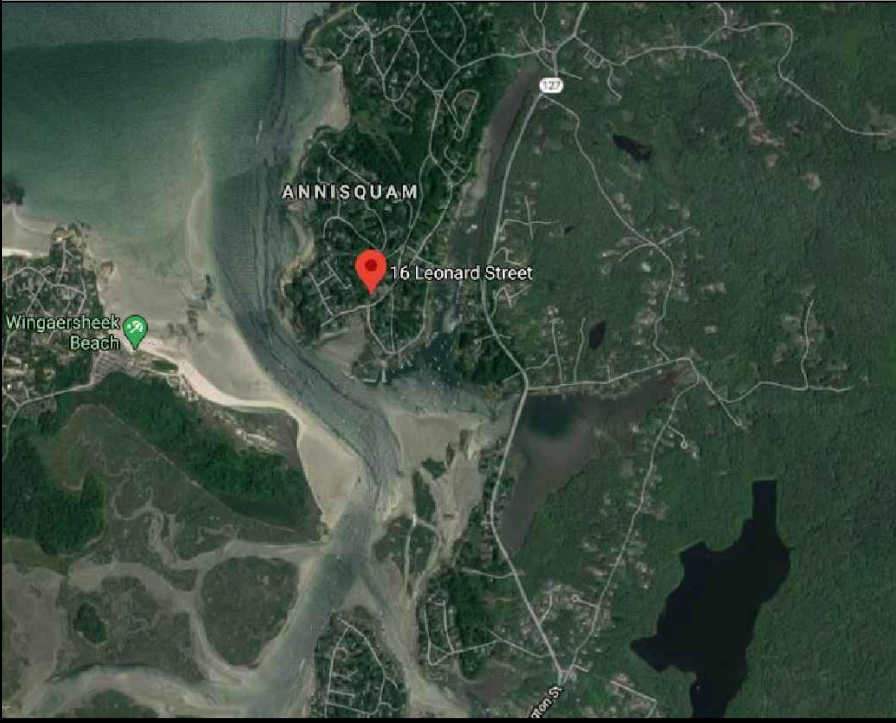
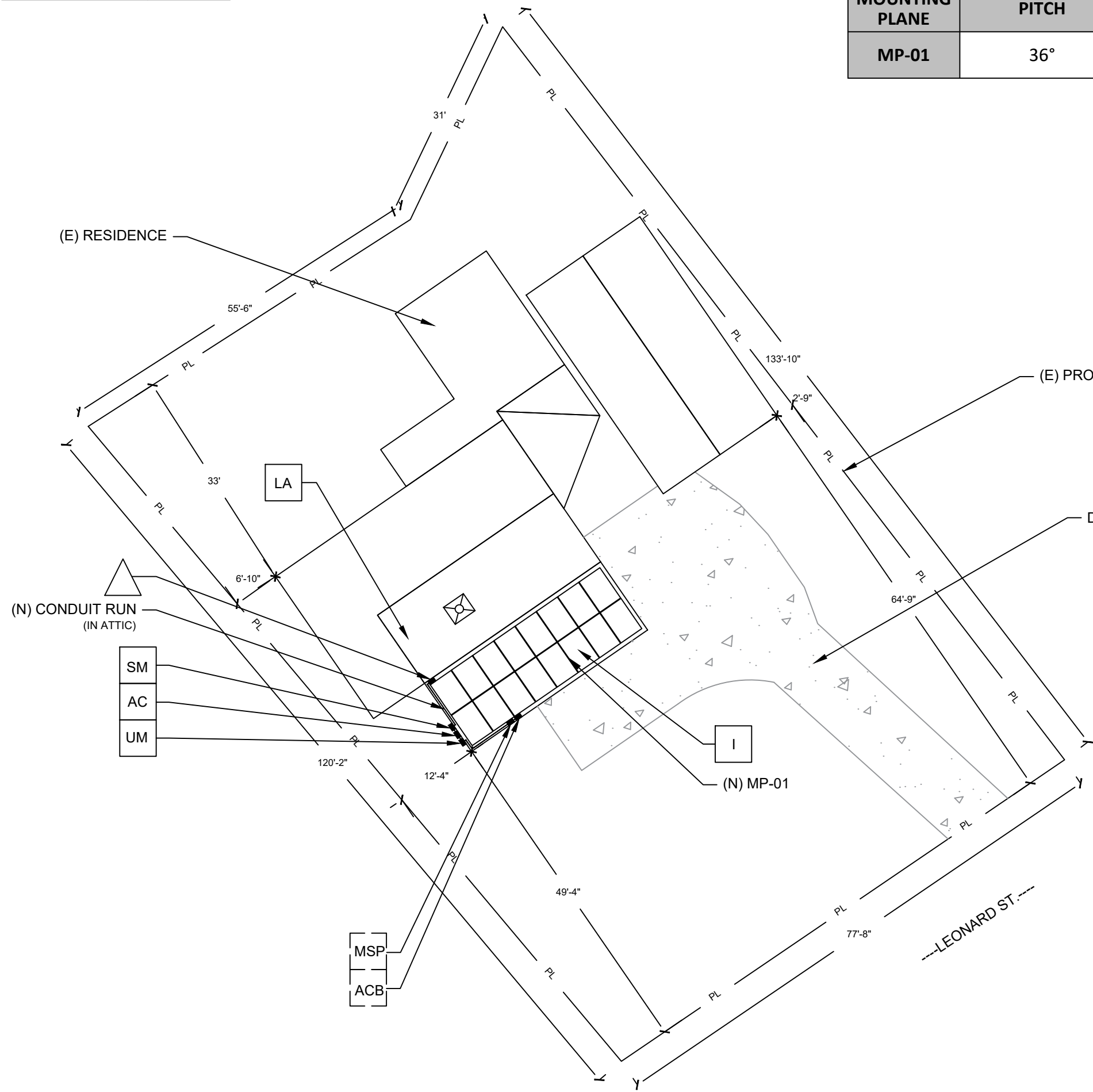
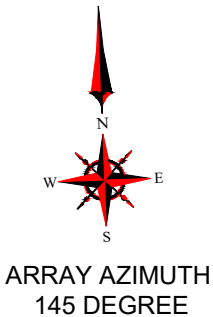


DESCRIPTION OF SYSTEM		CONSTRUCTION NOTES																																																																																					
<ul style="list-style-type: none"><li>• <b>SYSTEM SIZE:</b> 5920W DC,4640WAC</li><li>• <b>MOUNTING TYPE:</b> IRONRIDGE FLASH FOOT-2 MOUNT SYSTEM WITH IRONRIDGE XR-100 RAILS</li></ul> <ul style="list-style-type: none"><li>• <b>ELECTRICAL TYPE:</b> GRID TIED</li><li>• <b>CUSTOMER NAME:</b></li><li>• <b>ADDRESS:</b></li></ul>		<div><b>GENERAL NOTES:</b></div> <ul style="list-style-type: none"><li>• CONTRACTOR SHALL COMPLY WITH FEDERAL OSHA, AND LOCAL REGULATIONS PERTAINING TO WORK PRACTICES, PROTECTION OF WORKERS AND VISITORS TO THE SITE.</li><li>• ALL NECESSARY PERMITS SHALL BE OBTAINED, AND ALL RELATED PERMIT FEES SHALL BE PAID BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. WORK REQUIRED INCLUDES ALL LABOR AND MATERIALS, EQUIPMENT ETC. NECESSARY AND REASONABLY INCIDENTAL TO COMPLETE THE SOLAR PROJECT.</li><li>• ALL EXISTING CONDITIONS, DIMENSIONS AND QUANTITIES AT SITE MUST BE FIELD VERIFIED BY CONTRACTOR BEFORE COMMENCING WORK. CAZEAULT SOLAR IS NOT RESPONSIBLE FOR SITE INACCURACIES. IF ANY DISCREPANCIES ARISE, SOLAR ROOF DYNAMICS SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK.</li><li>• ALL MATERIALS INSTALLED ONSITE, SHALL BE IN NEW AND UNUSED CONDITION AND OF HIGH QUALITY IN EVERY RESPECT.</li><li>• MANUFACTURER'S MATERIAL, EQUIPMENT, ETC. SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.</li><li>• CONTRACTOR AND WORKMEN SHALL WEAR ALL REQUIRED PERSONAL PROTECTIVE EQUIPMENT AT ALL TIMES WHILE ON-SITE</li><li>• CONTRACTOR SHALL COMPLY WITH ALL FIRE SAFETY REGULATIONS AS THE LAW PRESCRIBES.</li><li>• THE CONTRACTOR SHALL BECOME FAMILIAR WITH ROOF STRUCTURAL PLAN, UTILITY AS-BUILT PLANS AND THE LOCATIONS OF ALL EXISTING UTILITIES AND STRUCTURES.</li><li>• THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES.</li><li>• EQUIPMENT STAGING AREA, LADDER ACCESS AREA, INDOOR ATTIC ACCESS, NOISE LEVELS, PARKING AREA, WORK HOURS ETC SHOULD BE DISCUSSED WITH OWNER PRIOR TO COMMENCEMENT OF WORK.</li><li>• GOOD HOUSEKEEPING IS ALWAYS EXPECTED. TRASH SHOULD BE REMOVED AS FREQUENTLY AS NEEDED TO ENSURE A TIDY AND SAFE WORK ENVIRONMENT.</li><li>• ALL WORK SHALL BE INSTALLED IN CONFORMANCE WITH CONSTRUCTION SPECIFICATIONS.</li></ul> <div><b>ELECTRICAL NOTES:</b></div> <ul style="list-style-type: none"><li>• THE EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE INSTALLED ONLY BY QUALIFIED PEOPLE. A QUALIFIED PERSON IS ONE WHO HAS SKILLS AND KNOWLEDGE RELATED TO THE CONSTRUCTION AND OPERATION OF THE ELECTRICAL EQUIPMENT AND INSTALLATIONS AND HAS RECIEVED SAFETY TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED. (NEC 690.4(E) AND 705.6)</li><li>• LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION. FOR A LINE SIDE TAP CONNECTION, UTILITY NEEDS TO BE NOTIFIED WELL IN ADVANCE TO COORDINATE BUILDING ELECTRICAL SHUT OFF.</li><li>• NEW CONDUIT ROUTING SHOWN IS ESSENTIALLY SCHEMATIC. SUBCONTRACTOR SHALL LAY OUT RUNS TO SUIT FIELD CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.</li><li>• ARRAY WIRING SHOULD NOT BE READILY ACCESSIBLE EXCEPT TO QUALIFIED PERSONNEL.</li><li>• ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE WATERTIGHT AND APPROVED FOR USE IN WET LOCATIONS. (NEC 314.15A).</li><li>• SEPARATION DISTANCE MEASUREMENT FROM BOTTOM OF PANEL TO TOP OF ROOF COVERING SHALL BE MINIMUM 3".</li><li>• WIRING METHODS FOR PV SYSTEM CONDUCTORS AREN'T PERMITTED WITHIN 10 IN. OF THE ROOF DECKING OR SHEATHING EXCEPT WHERE LOCATED DIRECTLY BELOW THE ROOF SURFACE THAT'S COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT. WIRING METHODS FOR PV SYSTEM CONDUCTORS MUST BE RUN PERPENDICULAR (90°) TO THE ROOF PENETRATION POINT. (NEC 690.31(E))</li><li>• BACK-FED BREAKER MUST BE AT THE OPPOSITE END OF BUS BAR FROM THE MAIN BREAKER OR MAIN LUG SUPPLYING CURRENT FROM THE UTILITIES.</li><li>• ALL CONDUCTORS AND WIRE TIES EXPOSED TO SUNLIGHT ARE LISTED AS UV RESISTANT.</li><li>• CONTRACTOR SHALL FOLLOW ALL ELECTRICAL EQUIPMENT LABELING REQUIREMENTS IN NEC 690 AND IFC 2012</li><li>• PV SOURCE, OUTPUT AND INVERTER CIRCUITS SHALL BE IDENTIFIED AT ALL POINTS OF TERMINATION, CONNECTION, AND SPLICES. THE MEANS OF ID CAN BE SEPARATE COLOR CODING, MARKING TAPE, TAGGING ETC. (NEC 690.4)</li><li>• MEASURE THE LINE-TO-LINE AND LINE-TO-NEUTRAL VOLTAGE OF ALL SERVICE ENTRANCE CONDUCTORS PROIR TO INSTALLING ANY SOLAR EQUIPMENT. THE VOLTAGES FOR THE 240VAC RATED.</li></ul>																																																																																					
DESIGN CRITERIA																																																																																							
<ul style="list-style-type: none"><li>• <b>WIND SPEED:</b> 110 MPH</li><li>• <b>EXPOSURE CATEGORY:</b> B</li><li>• <b>SNOW LOAD:</b> 50 PSF</li><li>• <b>OCCUPANCY:</b> II</li></ul>										SYSTEM SIZE: 5920W																																																																													
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SITE PLAN - SCALE: 1/16" = 1'-0"



MOUNTING PLANE	PITCH	TRUE AZIMUTH	ROOF TYPE	ROOF STORY	# OF MODULES
MP-01	36°	145°	ASPHALT SHINGLE	TWO	16



NOTE: AC COMBINER BOX AND MAIN PANEL ARE IN THE BASEMENT.

LEGEND AND ABBREVIATIONS

	INTERIOR EQUIPMENT SHOWN AS DASHED		SOLAR MODULES RAIL ATTACHMENTS
	AC COMBINER BOX		UTILITY METER
	JUNCTION BOX		MAIN SERVICE PANEL
	LADDER ACCESS		FIRE SETBACKS
	AC DISCONNECT		WALKWAY
	SMART METER		PROPERTY LINE
	MICRO INVERTERS		EXTERIOR CONDUIT RUN
			INTERIOR CONDUIT RUN

SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

TEL. #:

JOB NUMBER:

DRAFTER:

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SHEET SITE PLAN

REV: 0

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STRUCTURAL NOTES:

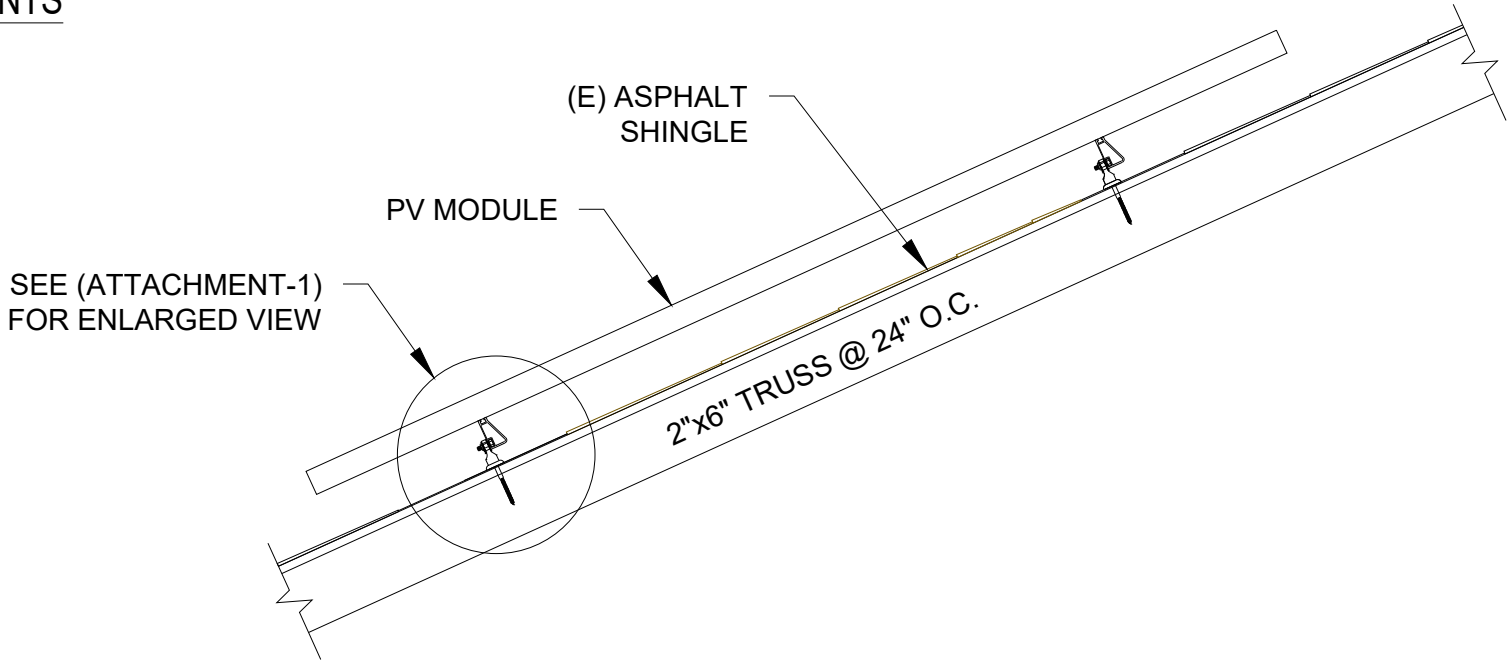
SNO.	MOUNTING SYSTEM	
1	MOUNTING TYPE	IRONRIDGE FLASHFOOT 2
2	MOUNTING WEIGHT PER MODULE (LBS.)	7.89
3	TOTAL MOUNTING WEIGHT (LBS.)	126
4	MAX. ATTACHMENT POINT SPACING	48 IN.
5	MAX RAIL OVERHANG	24 IN.

SNO.	SITE DETAILS	
1	FRAMING TYPE	SITE BUILT
2	FRAMING SIZE	2X6
3	FRAMING SPACING	24 IN. O.C
4	ROOF SLOPE	36°
5	FASTENERS PER ATTACHMENT	1
6	FASTENER SIZE	5/16"
7	EMBEDMENT DEPTH	2.5" IN. (MIN.)

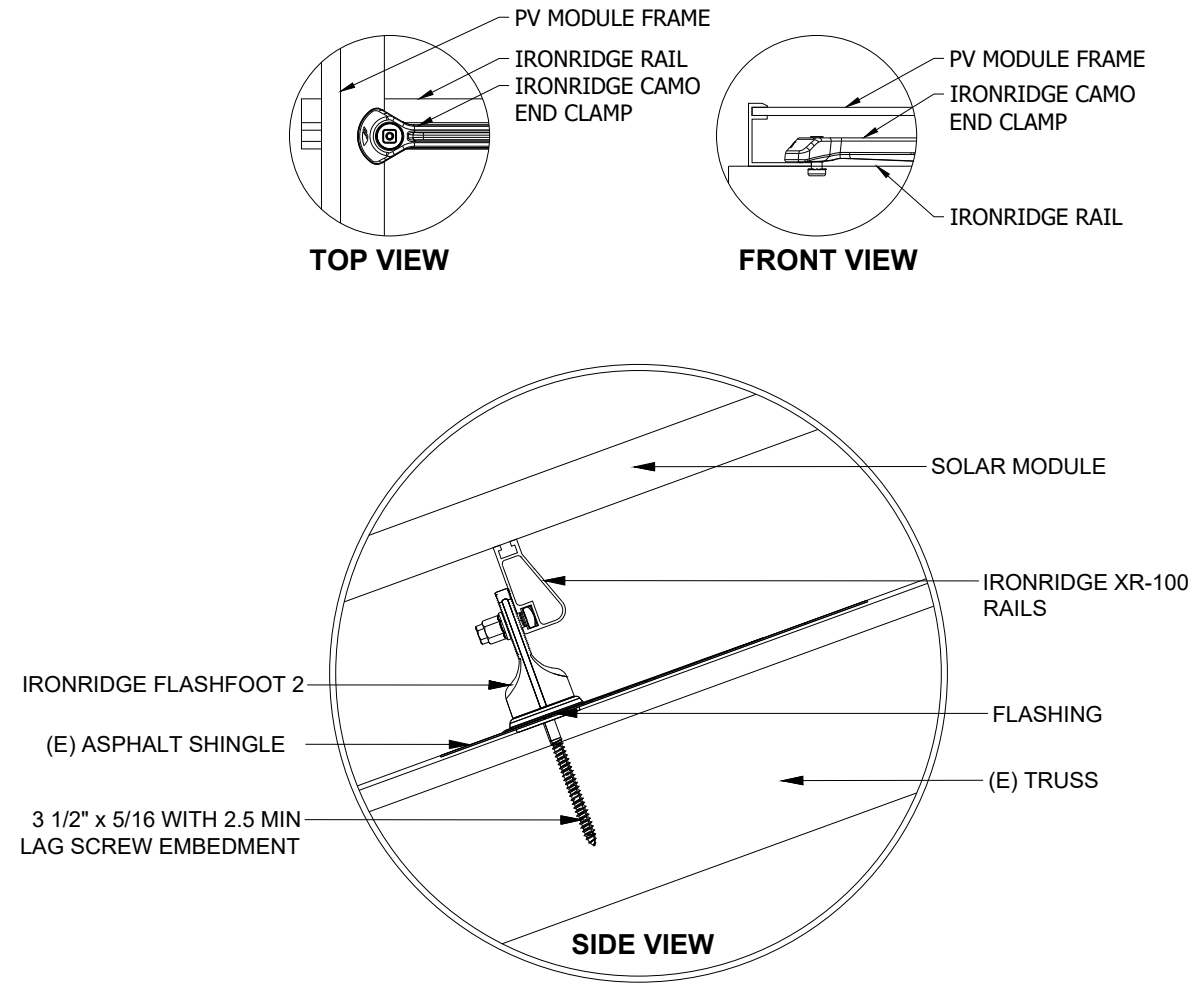
SNO.	WEIGHT CALCULATIONS	
1	TOTAL SYSTEM WEIGHT (LBS)	862
2	TOTAL # OF ATTACHMENTS	34
3	WEIGHT PER ATTACHMENT (LBS)	25.36
4	UNDER 45 LBS	YES
5	WEIGHT PER SQUARE FOOT (LBS/SQ.FT.)	2.77
6	UNDER 5 LBS/SQ.FT	YES

SNO.	SOLAR MODULE SPECS	
1	MODULE TYPE	SOLARIA POWER XT-370R-PD
2	MODULE WEIGHT (LBS.)	46
3	MODULE AREA (SQ.FT)	19.46
4	MODULE IN ARRAY	16
5	TOTAL MODULE WEIGHT (LBS.)	736
6	TOTAL MODULE AREA (SQ.FT.)	311

ATTACHMENT DETAILS - 2: SCALE - NTS



ATTACHMENT DETAILS - 1: SCALE - NTS



SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

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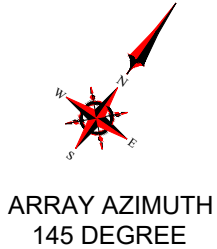
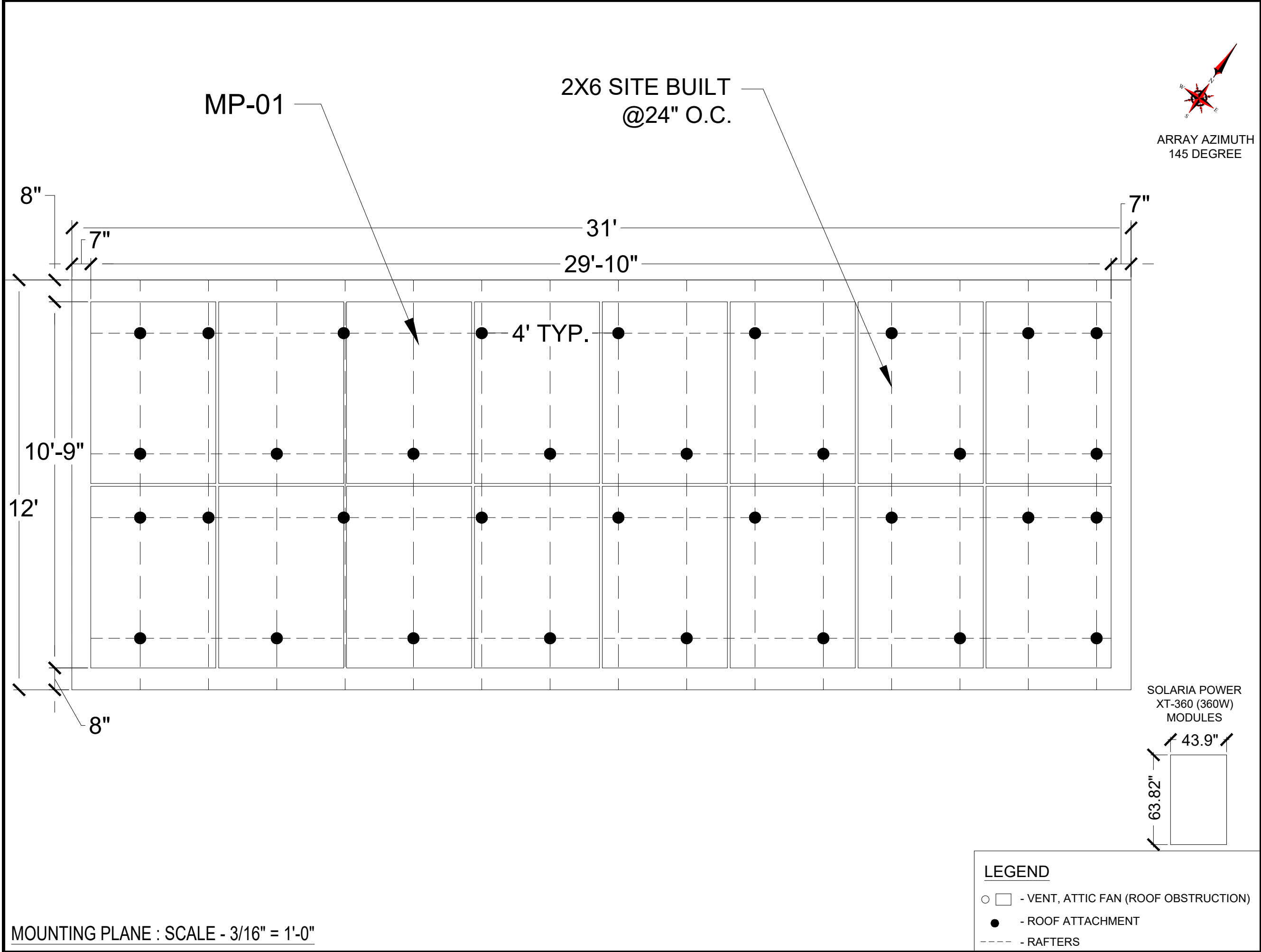
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SHEET  
STRUCTURAL DETAILS

REV: 0

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SYSTEM SIZE: 5920W


MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:

  
**IRONRIDGE**

PROJECT NAME:

PROJECT ADDRESS:

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**LEGEND**

○ □ - VENT, ATTIC FAN (ROOF OBSTRUCTION)

● - ROOF ATTACHMENT

----- - RAFTERS

MOUNTING PLANE : SCALE - 3/16" = 1'-0"

**SHEET MOUNTING PLANE  
DETAILS**

REV: 0

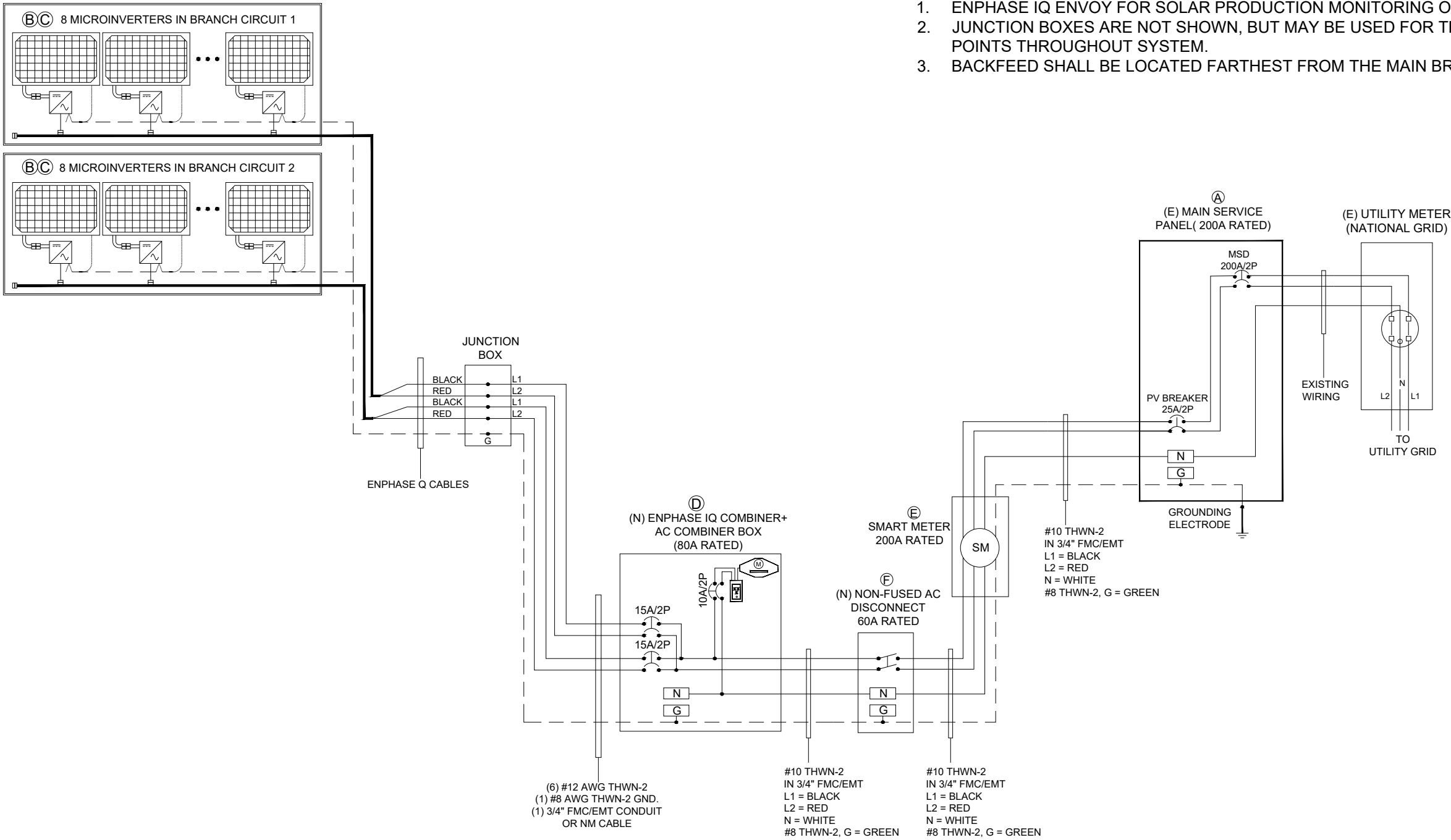
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ELECTRICAL DIAGRAM:

KEY	EQUIPMENT	QTY.
(A)	(E) MAIN SERVICE PANEL 200A RATED WITH 200A MAIN BREAKER	1
(B)	(N) INVERTER - ENPHASE IQ7PLUS -72-2-US	16
(C)	(N) MODULE - SOLARIA POWER XT-370R-PD	16
(D)	(N) AC COMBINER BOX - ENPHASE IQ COMBINER 80A RATED WITH (2) 15A/2P BREAKERS	1
(E)	(N) SMART METER 200A RATED	1
(F)	(N)NON FUSED AC DISCONNECT 60A RATED	1

- NOTES:
- ENPHASE IQ ENVOY FOR SOLAR PRODUCTION MONITORING ONLY.
  - JUNCTION BOXES ARE NOT SHOWN, BUT MAY BE USED FOR TRANSITION POINTS THROUGHOUT SYSTEM.
  - BACKFEED SHALL BE LOCATED FARTHEST FROM THE MAIN BREAKER.



SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

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SHEET  
ELECTRICAL DIAGRAM

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DESCRIPTION	CONDUCTOR SIZE	APPROXIMATE AREA OF CONDUCTOR (NEC CHAPTER-9 TABLE-5)	# OF CONDUCTORS PER CONDUIT	CONDUIT SIZE	NOMINAL INTERNAL AREA OF CONDUIT IN SQ.INCH (NEC CHAPTER-9 TABLE-4)	CONDUIT/ WIRE FILL PERCENT	FILL FACTOR (CEC 2016 TABLE 310.15(B)(3)(a))	AMBIENT TEMP. IN DEGREE CELCIUS	TEMP.ADDER (CEC 2016 Table 310.15(B)(3)(c))	TOTAL TEMP IN DEGREE CELCIUS	TEMP CORR. FACTOR (CEC-2016 TABLE-310.15 (B)(2)(a))	CONDUCTOR RATING IN AMPERE (CEC-2016 TABLE-310.15 (B)(16))	DERATED CURRENT RATING IN AMPERE	OCPD (CEC-2016 ARTICLE-690.8)
JUNCTION BOX TO AC COMBINER BOX	12 AWG	0.0133	4	3/4"EMT	0.533	9.98%	0.8	32	22	54	0.76	30	18.24	15A
AC COMBINER BOX TO POINT OF INTERCONNECTION	10 AWG	0.0211	3	3/4"EMT	0.533	11.88%	1	32	0	32	0.96	40	38.40	25A

CONDUCTOR AMPACITY CALC'S:

**JUNCTION BOX TO AC COMBINER BOX:**  
EXPECTED WIRE TEMP. (C): 54  
AMBIENT TEMP. CORRECTION PER NEC 310.15(B)(2)(a): 0.76

CIRCUIT CONDUCTOR SIZE: 12 AWG  
CIRCUIT CONDUCTOR AMPACITY PER NEC 310.15(B)(16): 30A  
# OF CURRENT CARRYING CONDUCTORS IN CONDUIT: 4  
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a): 0.8  
REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8 (B):  
1.25 X MAX CIRCUIT OUTPUT CURRENT=  
1.25 X 1.21 A X 8 = 12.1A

DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLES  
TEMP. CORR. PER NEC 310.15(B)(2)(a) X  
CONDUIT FILL CORR. PER NEC 310.15(B)(3)(a) X  
CIRCUIT CONDUCTOR AMPACITY PER NEC 310.15(B)(16) =  
0.76 X 0.8 X 30A = 18.24A

CONDUIT SIZING:

**JUNCTION BOX TO AC COMBINER BOX:**  
CIRCUIT CONDUIT SIZE: 3/4" FMC/EMT  
TOTAL INTERNAL AREA OF CONDUIT: 0.533 SQ.INCH

CIRCUIT CONDUCTOR SIZE: 12 AWG THWN-2  
APPROXIMATE AREA OF CONDUCTOR: 0.0133 SQ.INCH

AS PER NEC TABLE-1, CHAPTER 9:  
# OF CONDUCTOR X AREA OF CONDUCTOR =< 40% OF AREA OF CONDUIT  
4 X 0.0133 SQ.INCH < 0.4 X 0.533 SQ.INCH  
0.0532 < 0.2132

**AC COMBINER BOX TO POINT OF INTERCONNECTION:**  
EXPECTED WIRE TEMP. (C): 32  
AMBIENT TEMP. CORRECTION PER NEC 310.15(B)(2)(a): 0.96

CIRCUIT CONDUCTOR SIZE: 10 AWG  
CIRCUIT CONDUCTOR AMPACITY PER NEC 310.15(B)(16): 40A  
# OF CURRENT CARRYING CONDUCTORS IN CONDUIT: 3  
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a): 1

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8 (B):  
1.25 X MAX. INVERTER OUTPUT CURRENT=  
1.25 X 1.21A X 16 = 24.2A

DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLES  
TEMP. CORR. PER NEC 310.15(B)(2)(a) X  
CONDUIT FILL CORR. PER NEC 310.15(B)(3)(a) X  
CIRCUIT CONDUCTOR AMPACITY PER NEC 310.15(B)(16) =  
0.96 X 1 X 40A = 38.4A

**AC COMBINER BOX TO POINT OF INTERCONNECTION:**  
CIRCUIT CONDUIT SIZE: 3/4" FMC/EMT  
TOTAL INTERNAL AREA OF CONDUIT: 0.533 SQ.INCH

CIRCUIT CONDUCTOR SIZE: 8 AWG THWN-2  
APPROXIMATE AREA OF CONDUCTOR: 0.0211 SQ.INCH

AS PER NEC TABLE-1, CHAPTER 9:  
# OF CONDUCTOR X AREA OF CONDUCTOR =< 40% OF AREA OF CONDUIT  
3 X 0.0211 SQ.INCH < 0.4 X 0.533 SQ.INCH  
0.0633 < 0.2132

Inverter Specifications									
	Branch 1								Total
	(8) ENPHASE IQ7PLUS-72-2-US		(8) ENPHASE IQ7PLUS-72-2-US						
Max AC Power	2320	W	2320	W					4640 W
Max AC Current	9.68	A	9.68	A					19.36 A
Max AC Current X 1.25	12.10	A	12.10	A					24.20 A
Solar Breaker Size	15.00	A	15.00	A					30.00 A

Main Panel Connection		
Main Bus Rating	200	A
Main Bus X 120%	240	A
Main Breaker Rating	200	A
Maximum Solar Feed	40	A

Main Solar Breaker Size		
Main Solar Breaker size	25	A
Breaker less than max feed?	OK	

SYSTEM SIZE: 5920W

MODULES:

(16) SOLARIA POWER XT-370R-PD


INVERTER:

ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



IRONRIDGE

PROJECT NAME:

MOSKAL, JOHN

PROJECT ADDRESS:

TEL. #:

JOB NUMBER:

DRAFTER:

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SHEET

ELECTRICAL CALCS

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REQUIRED SIGNAGE:

1

WARNING

ELECTRIC SHOCK HAZARD

DO NOT TOUCH TERMINALS.

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

PHOTOVOLTAIC DC DISCONNECT

RATED MAXIMUM POWER-POINT CURRENT:

RATED MAXIMUM POWER-POINT VOLTAGE:

MAXIMUM SYSTEM VOLTAGE:

MAXIMUM CIRCUIT CURRENT:

2

WARNING

ELECTRIC SHOCK HAZARD

THE DC CONDUCTOR OF THE PV SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

PHOTOVOLTAIC AC DISCONNECT

MAXIMUM AC OPERATING CURRENT: 19.36A

NOMINAL AC OPERATING VOLTAGE: 240V

3

WARNING

ELECTRIC SHOCK HAZARD

IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

PHOTOVOLTAIC DC DISCONNECT

SOLAR DISCONNECT

WARNING:

PHOTOVOLTAIC POWER SOURCE

NOTE: REFLECTIVE LABEL REQUIRED EVERY 10FT.

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN SYSTEM

PHOTOVOLTAIC SYSTEM kWh METER

4

WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

5

WARNING

DUAL POWER SUPPLY

SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

SIGNAGE REQUIREMENTS

1. RED BACKGROUND

2. WHITE LETTERING

3. MIN. 3/8" LETTER HEIGHT

4. ALL CAPITAL LETTERS

5. ARIAL OR SIMILAR FONT

6. WEATHER RESISTANT PER UL 969

	DC SIDE					AC SIDE						
LABEL NUMBER	DC COMBINER BOX	DC ENCLOSURES	DC DISCONNECT	RACEWAYS/CONDUIT	INVERTER	AC DISCONNECT (IF PRESENT)	COMBINER BOX	PRODUCTION METER (IF PRESENT)	MAIN SERVICE	POINT OF CONNECTION	UTILITY METER	
1	X		X			X	X					690.17(E)
2	X	X	X									690.35(F)
3					X							690.5(C)
4					X				X	X		705.12(D)(2)(b)
5										X	X	705.12(D)(3)
6			X									690.53
7						X	X			X		690.54
8			X		X							690.13(B), IFC 605.11.3
9						X	X					690.13(B), IFC 605.11.3
10				X								690.31(G)(3), IFC 605.11.1.2
11					X					X		690.56(C)
12												

SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

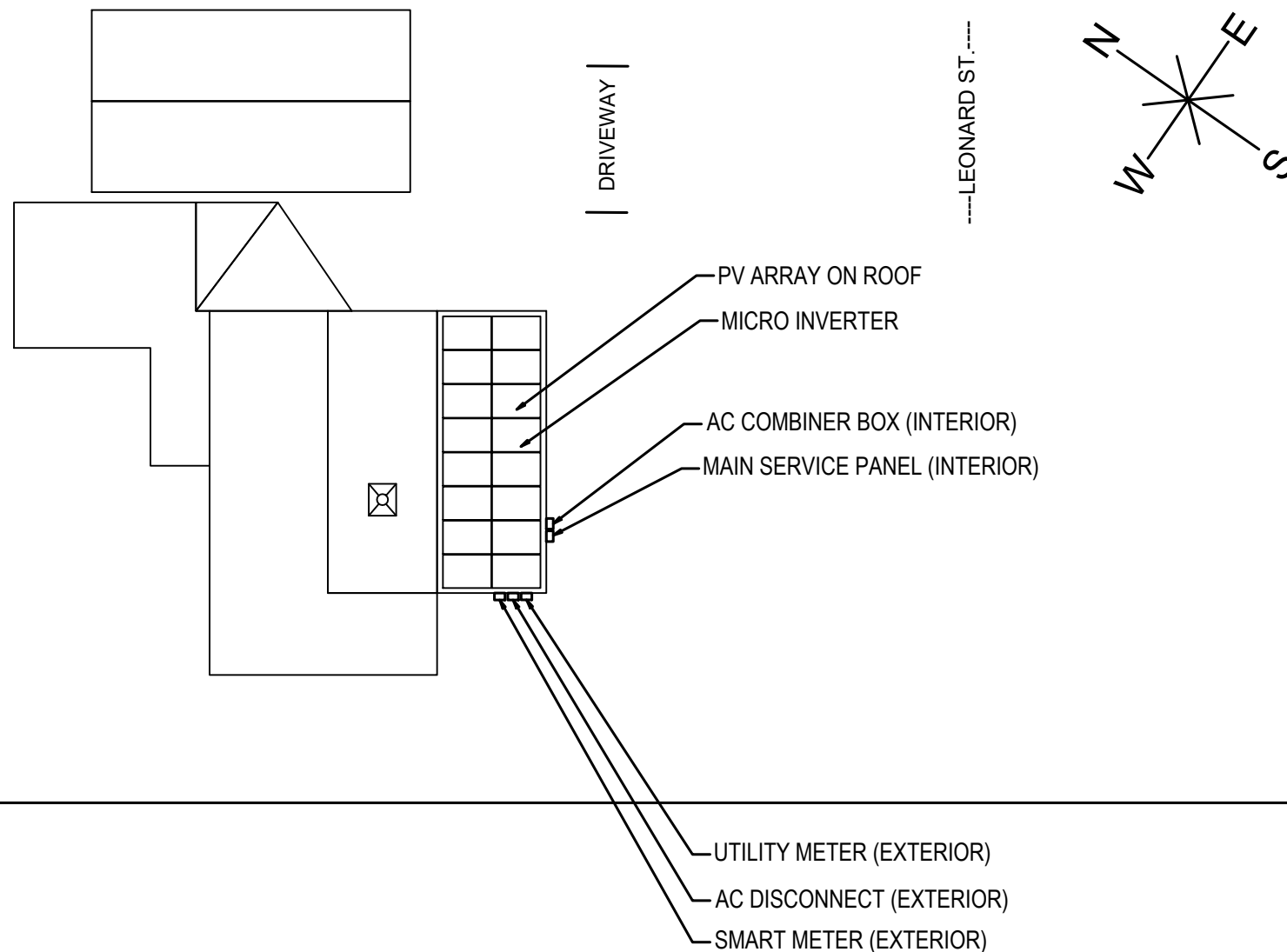
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JOB NUMBER:

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POWER TO THIS BUILDING IS ALSO SUPPLIED  
FROM THE FOLLOWING SOURCES WITH  
DISCONNECTS LOCATED AS SHOWN:



SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

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## PLACARD

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Solaria PowerXT® | DC Panel



Achieving 20% efficiency, Solaria PowerXT solar panels are one of the highest power panels in the residential and commercial solar market. Compared to conventional panels, Solaria PowerXT panels have fewer gaps between the solar cells; this leads to higher power and superior aesthetics. Solaria PowerXT Pure Black™ panels are manufactured with black backsheet and frames, enhancing a home or building's architectural beauty.

Developed in California, Solaria's patented cell cutting and panel assembly takes processed solar wafers and turns them into PowerXT solar panels. The process starts by creating a highly reliable PowerXT cell where busbars and ribbon interconnections are eliminated. Solaria then packages the cells into the PowerXT solar panel, reducing inactive space between the cells. This process leads to an exceptionally cost effective and efficient solar panel.

Higher Efficiency, Higher Power

Solaria PowerXT panels achieve up to 20% efficiency; conventional panels achieve 15% – 17% efficiency. Solaria PowerXT panels are one of the highest power panels available.

Lower System Costs

Solaria PowerXT panels produce more power per square meter area. This reduces installation costs due to fewer balance of system components.

Improved Shading Tolerance

Sub-strings are interconnected in parallel, within each of the four panel quadrants, which dramatically lowers the shading losses and boosts energy yield.

Improved Aesthetics

Compared to conventional panels, Solaria PowerXT panels have a more uniform appearance and superior aesthetics.

Durability and Reliability

Solder-less cell interconnections are highly reliable and designed to far exceed the industry leading 25 year warranty.



About Solaria

Established in 2000, The Solaria Corporation has created one of the industry's most respected IP portfolios, with over 65 patents encompassing materials, processes, applications, products, manufacturing automation and equipment. Headquartered in Oakland, CA, Solaria has developed a technology platform that unlocks the potential of solar energy.

The Solaria Corporation 1700 Broadway, Oakland, CA 94612 P: (510) 270-2500 [www.solaria.com](http://www.solaria.com)  
Product specifications are subject to change without notice.



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Rev 3C 08-15-2019



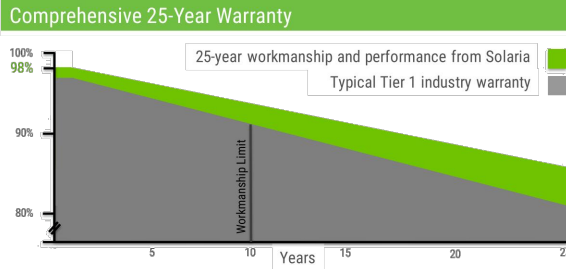
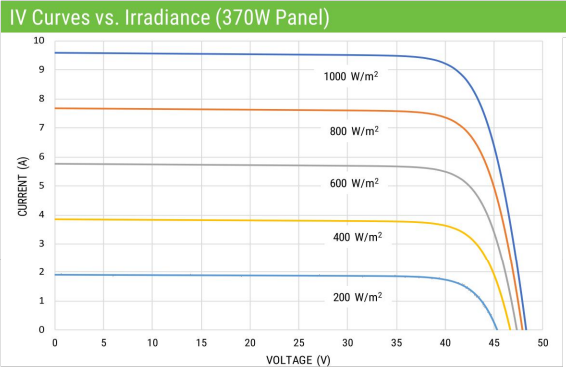
Solaria PowerXT®-370R-PD

Performance at STC (1000W/m <sup>2</sup> , 25° C, AM 1.5)			
Solaria PowerXT-	360R-PD	370R-PD	
Max Power (P <sub>max</sub> )	[W]	360	370
Efficiency	[%]	19.9	20.5
Open Circuit Voltage (V <sub>oc</sub> )	[V]	47.7	48.3
Short Circuit Current (I <sub>sc</sub> )	[A]	9.56	9.60
Max Power Voltage (V <sub>mp</sub> )	[V]	39.5	40.2
Max Power Current (I <sub>mp</sub> )	[A]	9.13	9.20
Power Tolerance	[%]	-0/+3	-0/+3

Performance at NOCT (800W/m <sup>2</sup> , 20°C Amb, Wind 1 m/s, AM 1.5)			
Max Power (P <sub>max</sub> )	[W]	265	272
Open Circuit Voltage (V <sub>oc</sub> )	[V]	44.8	45.4
Short Circuit Current (I <sub>sc</sub> )	[A]	7.71	7.74
Max Power Voltage (V <sub>mp</sub> )	[V]	36.3	37.0
Max Power Current (I <sub>mp</sub> )	[A]	7.30	7.35

Temperature Characteristics		
NOCT	[°C]	45 +/-2
Temp. Coeff. of P <sub>max</sub>	[% / °C]	-0.39
Temp. Coeff. of V <sub>oc</sub>	[% / °C]	-0.29
Temp. Coeff. of I <sub>sc</sub>	[% / °C]	0.04

Design Parameters		
Operating temperature	[°C]	-40 to +85
Max System Voltage	[V]	1000
Max Fuse Rating	[A]	15
Bypass Diodes	[#]	4

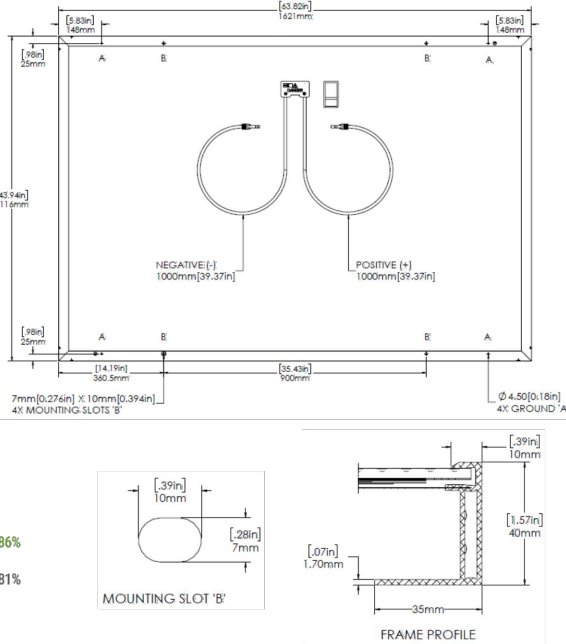


The Solaria Corporation 1700 Broadway, Oakland, CA 94612 P: (510) 270-2500 [www.solaria.com](http://www.solaria.com)  
Product specifications are subject to change without notice.

Mechanical Characteristics	
Cell Type	Monocrystalline Silicon
Dimensions (L x W x H)	1621mm x 1116mm x 40mm
Weight	21 kg / 46 lbs
Glass Type / Thickness	AR Coated, Tempered / 3.2mm
Frame Type	Black Anodized Aluminum
Cable Type / Length	12 AWG PV Wire (UL) / 1000mm
Connector Type	MC4
Junction Box	IP67 / 4 diodes
Front Load	5400 Pa / 113 psf*
Rear Load	3600 Pa / 75 psf*
* Refer to Solaria Installation Manual for details	

Certifications / Warranty	
Certifications	UL 1703/IEC 61215/IEC 61730/CEC CAN/CSA-C22.2
Fire Type (UL 1703)	1
Power & Product Warranty	25 years*
* Warranty details at <a href="http://www.solaria.com">www.solaria.com</a>	

Packaging	
Stacking Method	Horizontal / Palletized
Pcs / Pallet	25
Pallet Dims	1668 x 1150 x 1230 mm
Pallet Weight	590 kg / 1300 lbs
Pallets / 40-ft Container	28
Pcs / 40-ft Container	700



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SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

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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 / IQ7-60-B-US		IQ7PLUS-72-2-US / IQ7PLUS-72-B-US	
Commonly used module pairings¹	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/range²	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 circuit³	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)
Overvoltage class AC port	III		III	
AC port backfeed current	0 A		0 A	
Power factor setting	1.0		1.0	
Power factor (adjustable)	0.7 leading ... 0.7 lagging		0.7 leading ... 0.7 lagging	
EFFICIENCY	@240 V	@208 V	@240 V	@208 V
Peak CEC efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C			
Relative humidity range	4% to 100% (condensing)			
Connector type (IQ7-60-2-US & IQ7PLUS-72-2-US)	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)			
Connector type (IQ7-60-B-US & IQ7PLUS-72-B-US)	Friends PV2 (MC4 intermateable). Adaptors for modules with MC4 or UTX connectors: - PV2 to MC4: order ECA-S20-S22 - PV2 to UTX: order ECA-S20-S25			
Dimensions (WxHxD)	212 mm x 175 mm x 30.2 mm (without bracket)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection - No fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category / UV exposure rating	NEMA Type 6 / outdoor			
FEATURES				
Communication	Power Line Communication (PLC)			
Monitoring	Enlighten Manager and MyEnlighten monitoring options. 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](https://enphase.com)

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2018-05-24

SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

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CERTIFICATE OF COMPLIANCE

Certificate Number 20161220-E341165  
Report Reference E341165-20161210  
Issue Date 2016-DECEMBER-20

Issued to: ENPHASE ENERGY INC  
1420 N McDowell Blvd  
Petaluma CA 94954-6515

This is to certify that  
representative samples of

STATIC INVERTERS, CONVERTERS AND  
ACCESSORIES FOR USE IN INDEPENDENT POWER  
SYSTEMS, PHOTOVOLTAIC RAPID SHUTDOWN  
SYSTEM EQUIPMENT

Permanently-connected, utility Interactive, single-phase,  
distributed resource power system, Models IQ6PLUS-72-2-  
US, IQ6PLUS-72-5-US, IQ6-60-2-US, IQ6-60-5-US,  
IQ6PLUS-72-ACM-US and IQ6-60-ACM-US.  
Photovoltaic Rapid Shutdown Equipment, Models  
IQ6PLUS-72-2-US, IQ6PLUS-72-5-US, IQ6-60-2-US, IQ6-  
60-5-US, IQ6PLUS-72-ACM-US and IQ6-60-ACM-US

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

Standard(s) for Safety: See addendum page  
Additional Information: See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's  
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

  
Bruce Mahrenholz, Director North American Certification Program  
UL LLC

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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



CERTIFICATE OF COMPLIANCE

Certificate Number 20161220-E341165  
Report Reference E341165-20161210  
Issue Date 2016-DECEMBER-20

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

Standard(s) for Safety:  
UL1741, INVERTERS, CONVERTERS, CONTROLLERS AND INTERCONNECTION SYSTEM  
EQUIPMENT FOR USE WITH DISTRIBUTED ENERGY RESOURCES  
IEEE1547, IEEE STANDARD FOR INTERCONNECTING DISTRIBUTED RESOURCES WITH  
ELECTRIC POWER SYSTEMS  
IEEE1547.1, IEEE STANDARD FOR CONFORMANCE TEST PROCEDURES FOR EQUIPMENT  
INTERCONNECTING DISTRIBUTED RESOURCES WITH ELECTRIC POWER SYSTEMS

  
Bruce Mahrenholz, Director North American Certification Program  
UL LLC

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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



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CERTIFICATE

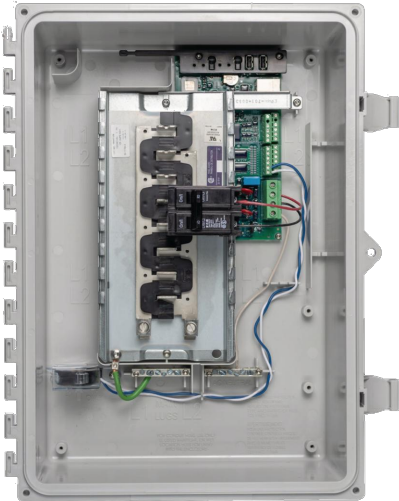
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Enphase  
IQ Combiner 3  
(X-IQ-AM1-240-3)

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



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



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	• 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](https://enphase.com)

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2018-09-13



SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

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SHEET ENPHASE IQ ENVOY  
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# Enphase Q Aggregator and Q Cable Accessories

The **Enphase Q Aggregator™** and **Enphase Q Cable™** are part of the sixth generation Enphase IQ System™. These accessories provide simplicity, reliability, and faster installation times.



### Enphase Q Cable

- Two-wire, double-insulated Enphase Q Cable is 50% lighter than the previous generation Enphase cable
- New cable numbering and plug and play connectors speed up installation and simplify wire management
- Link connectors eliminate cable waste

### Field-Wireable Connectors



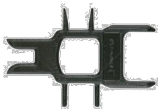

- Easily connect Q cables on the roof without complex wiring
- Make connections from any open connector and center feed any section of cable within branch limits
- Available in male and female connector types

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



## Enphase Q Cable Accessories

CONDUCTOR SPECIFICATIONS				
Certification	UL3003 (raw cable), UL 9703 (cable assemblies), DG cable			
Flame test rating	FT4			
Compliance	RoHS, OIL RES I, CE, UV resistant, combined UL for the United States			
Conductor type	THHN/THWN-2 dry/wet			
Disconnecting means	The AC and DC bulkhead connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.			
Q CABLE TYPES / ORDERING OPTIONS				
Connectorized Models	Size / Max Nominal Voltage	Connector Spacing	PV Module Orientation	Connector Count per Box
Q-12-10-240	12 AWG / 277 VAC	1.3 m (4.2 ft)	Portrait	240
Q-12-17-240	12 AWG / 277 VAC	2.0 m (6.5 ft)	Landscape (60-cell)	240
Q-12-20-200	12 AWG / 277 VAC	2.3 m (7.5 ft)	Landscape (72-cell)	200
ENPHASE Q CABLE ACCESSORIES				
Name	Model Number	Description		
Raw Q Cable	Q-12-RAW-200	300 meters of 12 AWG cable with no connectors		
Field-wireable connector (male)	Q-CONN-10M	Make connections from any Q Aggregator open connector		
Field-wireable connector (female)	Q-CONN-10F	Make connections from any Q Cable open connector		
Cable Clip	Q-CLIP-100	Used to fasten cabling to the racking or to secure looped cabling		
Disconnect tool	Q-DISC-10	Disconnect tool for Q Cable connectors, DC connectors, and AC module mount		
Q Cable sealing caps (female)	Q-SEAL-10	One needed to cover each unused connector on the cabling		
Terminator	Q-TERM-10	Terminator cap for unused cable ends		
Replacement DC Adaptor (MC4)	Q-DCC-2	DC adaptor to MC4 (max voltage 100 VDC)		
Replacement DC Adaptor (UTX)	Q-DCC-5	DC adaptor to UTX (max voltage 100 VDC)		

	<b>TERMINATOR</b> Terminator cap for unused cable ends, sold in packs of ten (Q-TERM-10)		<b>SEALING CAPS</b> Sealing caps for unused aggregator and cable connections (Q-BA-CAP-10 and Q-SEAL-10)
	<b>DISCONNECT TOOL</b> Plan to use at least one per installation, sold in packs of ten (Q-DISC-10)		<b>CABLE CLIP</b> Used to fasten cabling to the racking or to secure looped cabling, sold in packs of one hundred (Q-CLIP-100)

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

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SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

TEL. #:

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REVISION HISTORY			
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ENPHASE Q CABLES

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## Roof Mount System



### Built for solar's toughest roofs.

Anchored by the strongest rails in solar, the IronRidge Roof Mount System provides the durability and versatility to handle virtually any residential or commercial rooftop.

The unique curved profile of the XRS Rail increases its strength while also giving it an attractive look, making it very customer-friendly. In addition, IronRidge Rails are certified for integrated grounding, which eliminates separate module grounding components and procedures, making it very installer-friendly.



#### Strongest Rails

Longer spans between attachments, fewer roof penetrations.



#### PE Certified

Pre-stamped engineering letters available in most states.



#### Simple Assembly

Versatile and adjustable components simplify any array design.



#### Design Software

Online tool generates a complete bill of materials in minutes.



#### Integrated Grounding

UL 2703 system eliminates separate module grounding components.



#### 20 Year Warranty

Twice the protection offered by competitors.

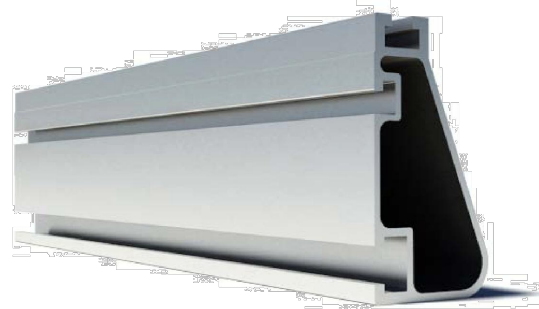


### Engineering Design Guide

### System Parts

#### XR1000 Rail

XR1000 is a heavyweight among solar mounting rails, built to handle extreme climates and spans 12 feet or more for commercial applications.



Property	Value
Material	6000 Series Aluminum
Finish	Clear Anodized
Beam Height	3.00"
Weight / Linear Foot	0.945 Lbs
Total Cross-Sectional Area	0.807 In <sup>2</sup>
Section Modulus (X-axis)	0.530 In <sup>3</sup>
Moment of Inertia (X-axis)	0.843 In <sup>4</sup>
Moment of Inertia (Y-axis)	0.182 In <sup>4</sup>
Torsional Constant	0.436 In <sup>3</sup>
Polar Moment of Inertia	0.3299 In <sup>4</sup>

#### XR100 Rail

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans.



Property	Value
Material	6000 Series Aluminum
Finish	Clear & Black Anodized
Beam Height	2.44"
Weight / Linear Foot	0.68 Lbs
Total Cross-Sectional Area	0.582 In <sup>2</sup>
Section Modulus (X-axis)	0.297 In <sup>3</sup>
Moment of Inertia (X-axis)	0.390 In <sup>4</sup>
Moment of Inertia (Y-axis)	0.085 In <sup>4</sup>
Torsional Constant	0.214 In <sup>3</sup>
Polar Moment of Inertia	0.126 In <sup>4</sup>

#### XR10 Rail

XR10 is a low-profile mounting rail, perfectly matched to regions with light snow. It achieves 6 foot spans, while staying light and economical.



Property	Value
Material	6000 Series Aluminum
Finish	Clear Anodized
Beam Height	1.75"
Weight / Linear Foot	0.436 Lbs
Total Cross-Sectional Area	0.363 In <sup>2</sup>
Section Modulus (X-axis)	0.136 In <sup>3</sup>
Moment of Inertia (X-axis)	0.124 In <sup>4</sup>
Moment of Inertia (Y-axis)	0.032 In <sup>4</sup>
Torsional Constant	0.076 In <sup>3</sup>
Polar Moment of Inertia	0.033 In <sup>4</sup>

SYSTEM SIZE: 5920W

MODULES:

(16) SOLARIA POWER XT-370R-PD

INVERTER:

ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

TEL. #:

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UFO Family of Components

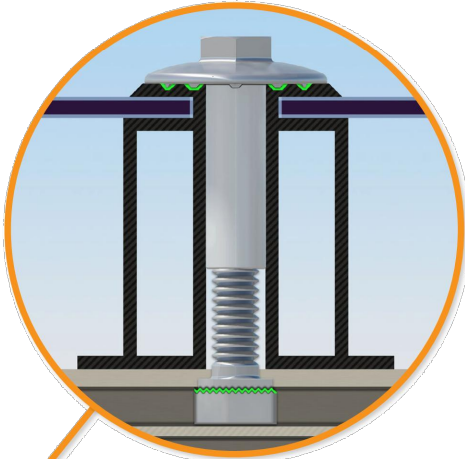
Simplified Grounding for Every Application

The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family—Flush Mount, Tilt Mount and Ground Mount—are fully listed to the UL 2703 standard.

UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.



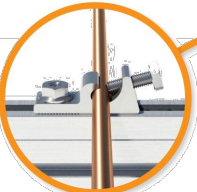
**Stopper Sleeve**  
The Stopper Sleeve snaps onto the UFO, converting it into a bonded end clamp.



**Universal Fastening Object (UFO)**  
The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.



**Bonded Splice**  
Each Bonded Splice uses self-drilling screws to form a secure connection. No bonding strap needed.

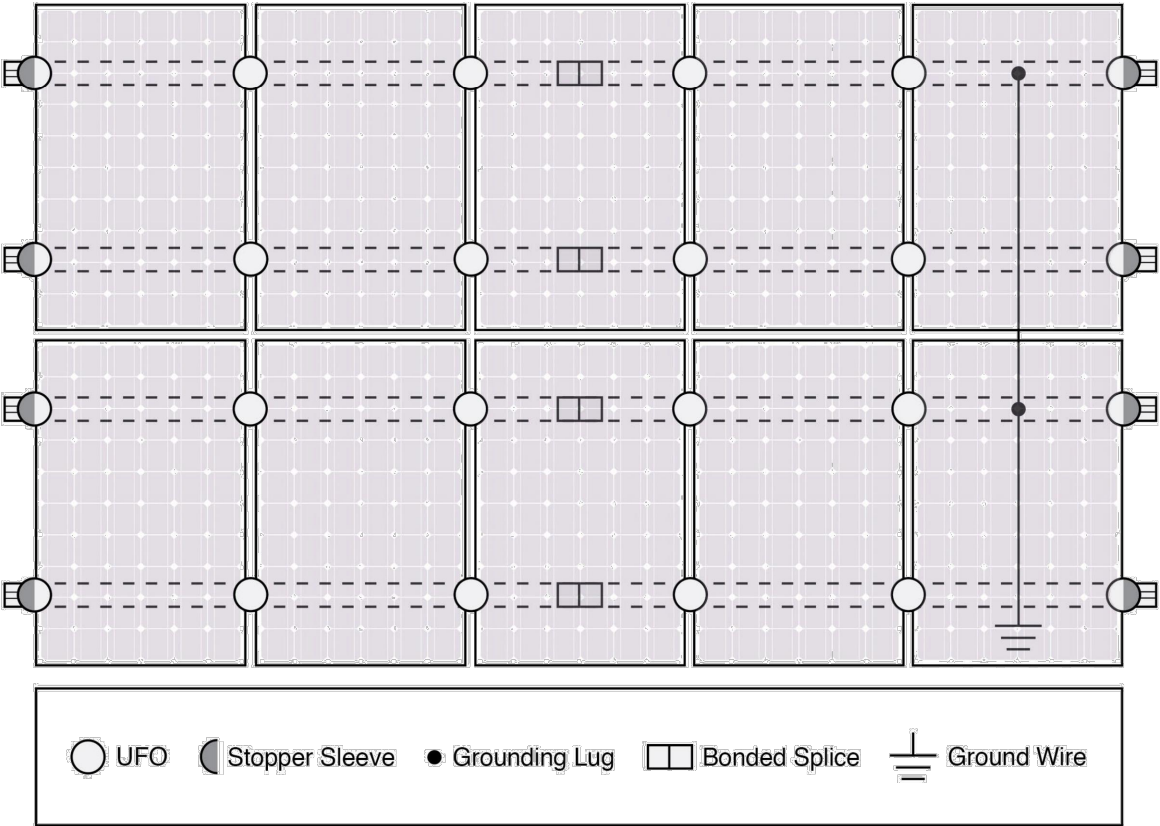


**Grounding Lug**  
A single Grounding Lug connects an entire row of PV modules to the grounding conductor.



**Bonded Attachments**  
The bonding bolt attaches and bonds the L-foot to the rail. It is installed with the same socket as the rest of the system.

System Diagram



Approved Enphase microinverters can provide equipment grounding of IronRidge systems, eliminating the need for grounding lugs and field installed equipment ground conductors (EGC). A minimum of two microinverters mounted to the same rail and connected to the same Engage cable is required. Refer to installation manuals for additional details.

UL Certification

The IronRidge Flush Mount, Tilt Mount, and Ground Mount Systems have been listed to UL 2703 by Intertek Group plc.

UL 2703 is the standard for evaluating solar mounting systems. It ensures these devices will maintain strong electrical and mechanical connections over an extended period of time in extreme outdoor environments.

Go to [IronRidge.com/UFO](https://www.ironridge.com/UFO)

Cross-System Compatibility			
Feature	Flush Mount	Tilt Mount	Ground Mount
XR Rails	✓	✓	XR1000 Only
UFO/Stopper	✓	✓	✓
Bonded Splice	✓	✓	N/A
Grounding Lugs	1 per Row	1 per Row	1 per Array
Microinverters & Power Optimizers	Enphase - M250-72, M250-60, M215-60, C250-72 Darfon - MIG240, MIG300, G320, G640 SolarEdge - P300, P320, P400, P405, P600, P700, P730		
Fire Rating	Class A	Class A	N/A
Modules	Tested or Evaluated with over 400 Framed Modules Refer to installation manuals for a detailed list.		

SYSTEM SIZE: 5920W  
MODULES:  
(16) SOLARIA POWER XT-370R-PD  
INVERTER:  
ENPHASE IQ7PLUS-72-2-US  
SURFACE TYPE: ROOF  
AHJ: CITY OF GLOUCESTER  
CONTRACTOR:



PROJECT NAME:

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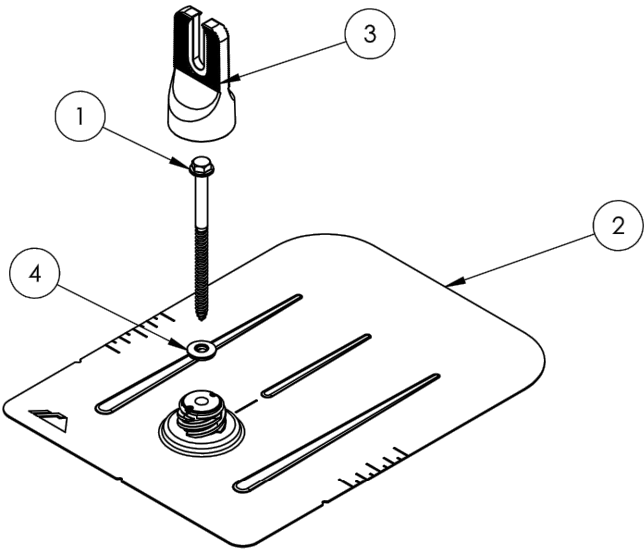
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FlashFoot2

Cut Sheet

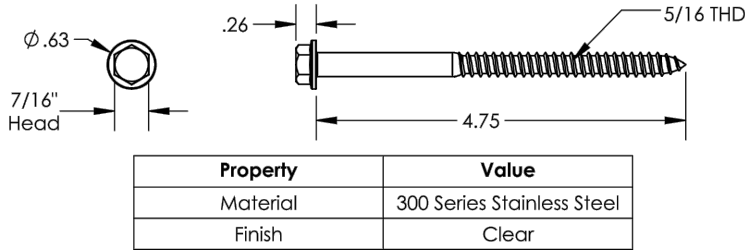


ITEM NO.	DESCRIPTION	Qty in Kit
1	BOLT LAG 5/16 X 4.75"	4
2	ASSY, FLASHING	4
3	ASSY, CAPFOOT	4
4	WASHER, EPDM BACKED	4

FLASHFOOT2

Part Number	Description
FM-FF2-001	Kit, 4pcs, FlashFoot2 (Mill)
FM-FF2-001-B	Kit, 4pcs, FlashFoot2 (Black)

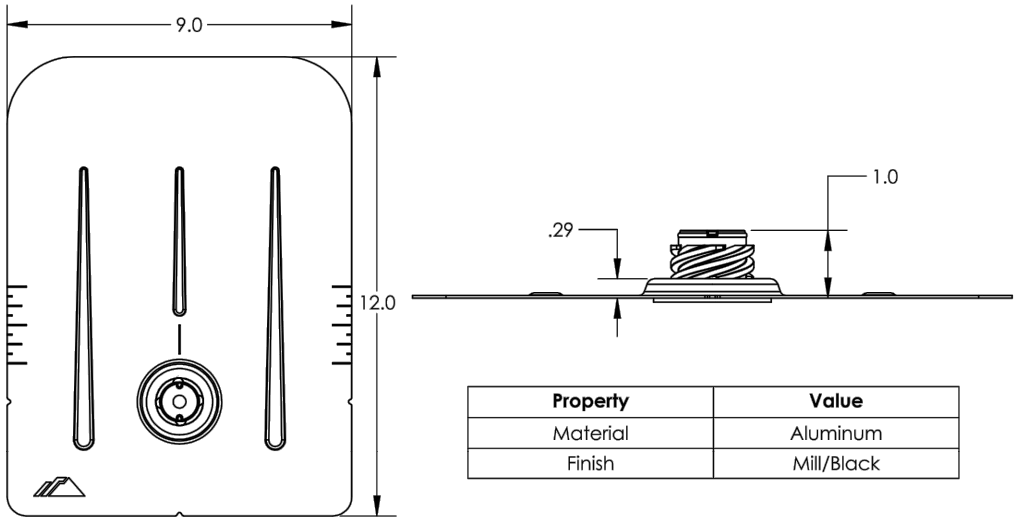
1) Bolt, Lag 5/16 x 4.75



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

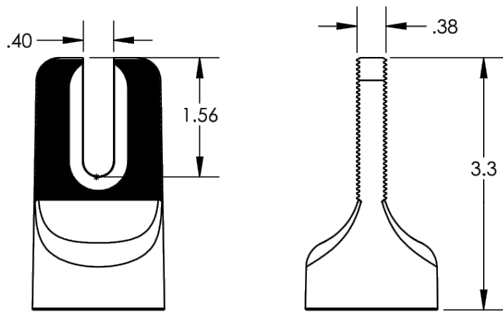
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2) Assy, Flashing



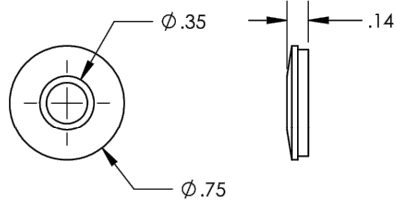
Property	Value
Material	Aluminum
Finish	Mill/Black

3) Assy, Capfoot



Property	Value
Material	Aluminum
Finish	Mill/Black

4) Washer, EPDM Backed



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.0

SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

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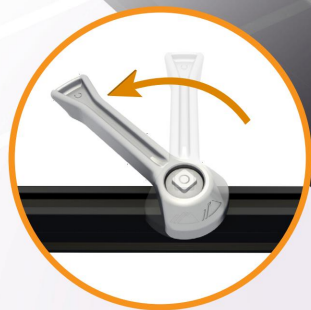
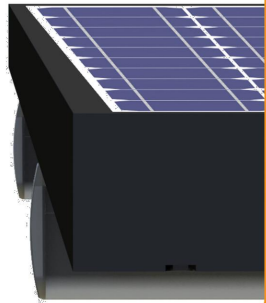
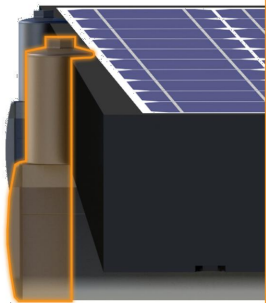
## Hidden End Cam

### Solar, Sleeker Than Ever

Most solar installations use mounting rails and fasteners to secure modules to the building structure, but these critical components often protrude from the sides of the modules, giving arrays a coarse look.

CAMO is an invisible fastener that secures solar modules flush to rail ends, creating a clean, sleek appearance. CAMO works with nearly all solar modules and installs without tools or torque specifications. It simply rotates into place to structurally secure and electrically bond with the module.

Standard Fastener



#### Cam-Locking Design

CAMO's unique design allows for a completely tool-less installation. Simply slide CAMO into the rail track and rotate the ergonomic handle 90 degrees to lock onto the module frame. It's that easy.



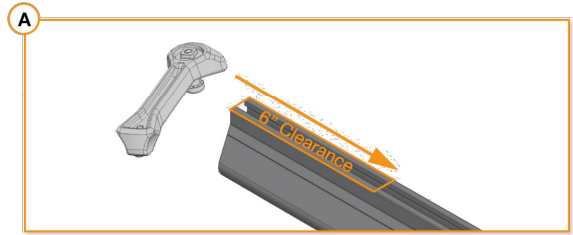
Certified to comply with International Building Code, ASCE/SEI-7, and UL 2703 Mechanical and Bonding Requirements.

Tech Brief

### Easy, Tool-Less Installation

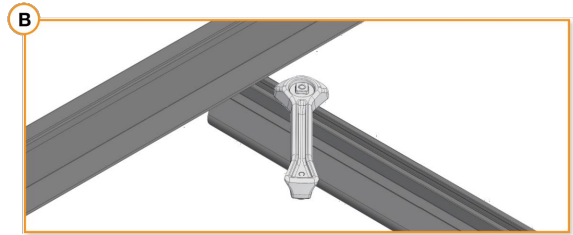
#### A. PLACE CAMO

Slide CAMO into rail track far enough to clear the module frame. CAMO requires 6" of clearance from end of rail.



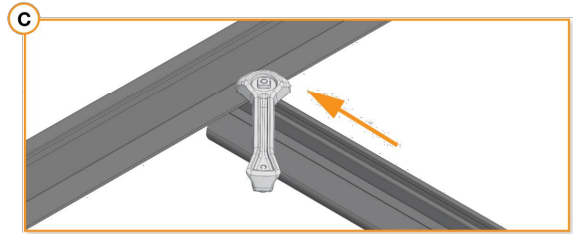
#### B. PLACE MODULE

Place module on rails and align flush with rail ends (module cells not shown in image to provide clarity). The module can overhang the rail no more than 1/4".



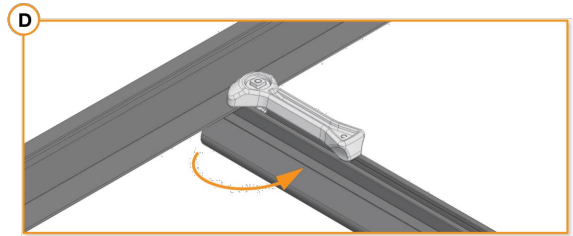
#### C. SLIDE CAMO

Pull CAMO towards rail end, at a 45 degree angle, so linear bonding pin contacts the module flange edge.

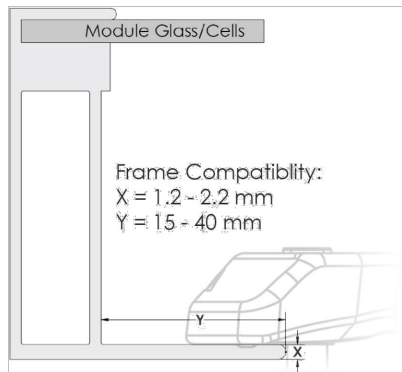


#### D. SECURE CAMO

Rotate handle with an upwards motion until CAMO snaps into rail track. Ensure CAMO bonding pins are fully seated on top of module frame.



### Tested & Certified



#### UL 2703

CAMO conforms to STD UL 2703 (2015) requirements and fits modules with bottom flanges that meet specifications shown in the frame compatibility diagram on the left.

See IronRidge Installation Manuals for full ratings and a list of certified compatible modules.



Tech Brief

SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

TEL. #:

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SHEET HIDDEN END CLAMP  
DATASHEET

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**BILL OF MATERIALS:**

BILL OF MATERIAL				
EQUIPMENT	MAKE	QUANTITY	PICKED	RETURNED
MODULE	SOLARIA POWER XT-370R-PD	16		
INVERTERS	ENPHASE IQ7PLUS-72-2-US	16		
MOUNTING POINTS	IRONRIDGE FLASHFOOT 2	34		
MOUNTING RAILS	IRONRIDGE XR-100 RAILS	12		
END CLAMPS	MODULE END CLAMP STANDARD	8		
MID CLAMPS	MODULE MIDDLE CLAMP SET STANDARD	28		
AC COMBINER BOX	AC COMBINER BOX - ENPHASE IQ COMBINER 80A RATED WITH (2)15A/2P BREAKERS	1		
AC DISCONNECT	60A RATED NON-FUSED AC DISCONNECT	1		
SMART METER	SMART METER 200A RATED	1		
PV BREAKER	30A/2P BREAKER	1		

SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

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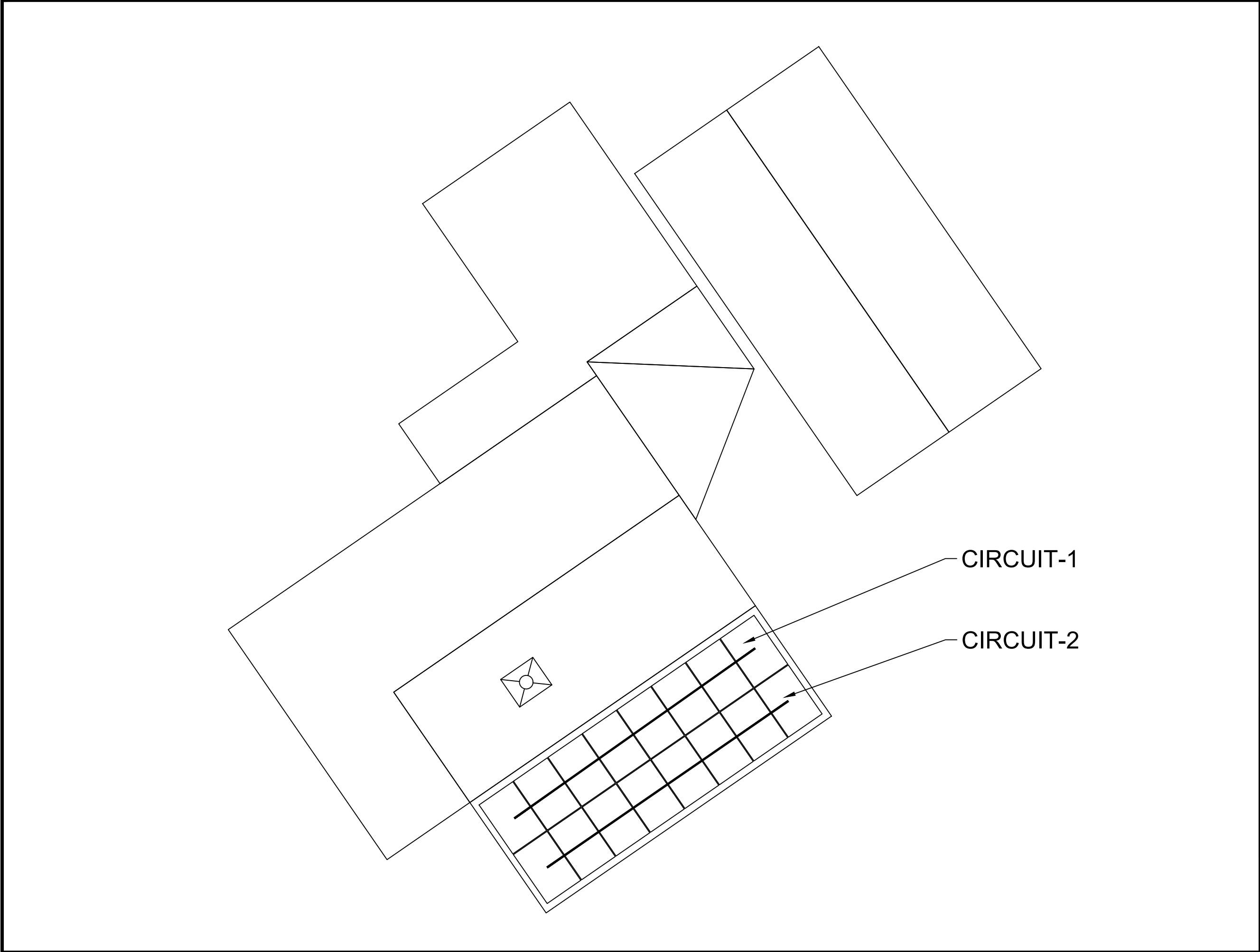
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BILL OF MATERIALS

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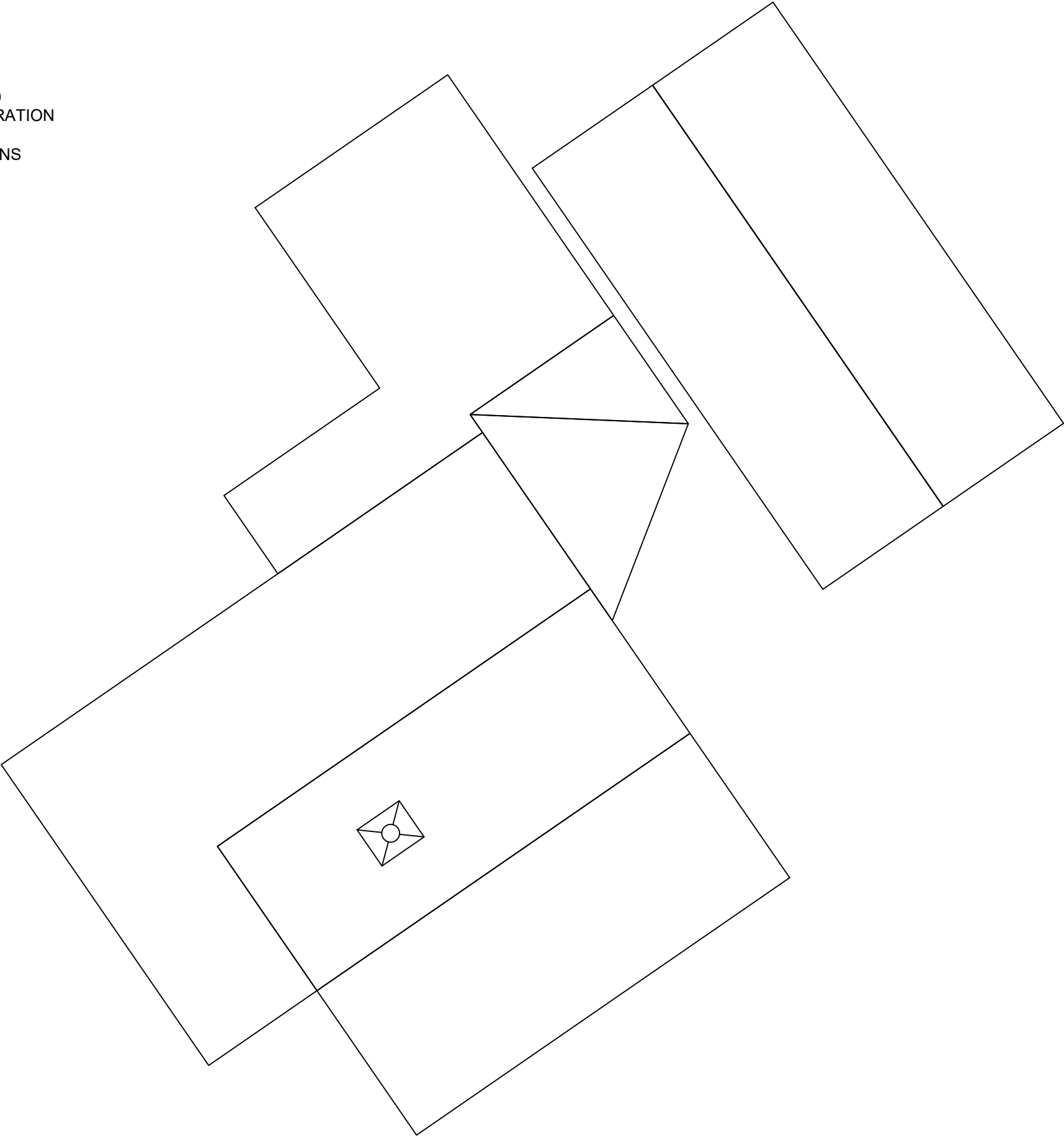
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SYSTEM SIZE: 5920W			
MODULES: (16) SOLARIA POWER XT-370R-PD			
INVERTER: ENPHASE IQ7PLUS-72-2-US			
SURFACE TYPE: ROOF			
AHJ: CITY OF GLOUCESTER			
CONTRACTOR:			
<div> <b>IRONRIDGE</b></div>			
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PROJECT ADDRESS:			
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JOB NUMBER:			
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CREW ROOF PLAN			
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DRAW IN FINAL LOCATION OF EQUIPMENT

- 1. PANELS
- 2. CIRCUITS
- 3. INVERTER(S)
- 4. MAIN PANEL
- 5. SUBPANEL (IF PRESENT)
- 6. DISCONNECT (IF PRESENT)
- 7. ROOF ELECTRICAL PENETRATION
- 8. CONDUIT ROUTES
- 9. COMMUNICATION WIRE RUNS
- 10. MONITORING EQUIPMENT



SYSTEM SIZE: 5920W

MODULES:  
(16) SOLARIA POWER XT-370R-PD

INVERTER:  
ENPHASE IQ7PLUS-72-2-US

SURFACE TYPE: ROOF

AHJ: CITY OF GLOUCESTER

CONTRACTOR:



PROJECT NAME:

PROJECT ADDRESS:

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