

GENERAL NOTES

1. ALL ELECTRICAL MATERIALS SHALL BE NEW AND LISTED BY RECOGNIZED ELECTRICAL TESTING LABORATORY

CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY

2. OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED OR BETTER

3. ALL METALLIC EQUIPMENT SHALL BE GROUNDED

4. CONTRACTOR SHALL OBTAIN ELECTRICAL PERMITS PRIOR TO INSTALLATION AND SHALL COORDINATE ALL INSPECTIONS, TESTING COMMISSIONING AND ACCEPTANCE WITH THE CLIENT, UTILITY CO. AND CITY INSPECTORS AS NEEDED.

5. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF SERVICE POINTS AND SERVICE SIZES WITH THE SERVING UTILITY COMPANY AND COMPLY WITH ALL UTILITY COMPANIES REQUIREMENTS.

6. DRAWINGS ARE DIAGRAMMATIC ONLY, ROUTING OF RACEWAYS SHALL BE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER TRADES.

7. IF THE ROOF MATERIAL OR ROOF STRUCTURE NOT ADEQUATE FOR PV INSTALLATION, CALL ENGINEER PRIOR TO INSTALL. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THAT THE ROOF IS CAPABLE OF WITHSTANDING THE EXTRA WEIGHT.

8. IF THE DISTANCES FOR CABLE RUNS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL ENGINEER TO VALIDATE THE WIRE SIZE. FINAL DRAWINGS WILL BE RED-LINED AND UPDATED AS APPROPRIATE.

9. WHENEVER A DISCREPANCY IN QUALITY OF EQUIPMENT ARISES ON THE DRAWING OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE COMPLIANCE AND LONGEVITY OF THE OPERABLE SYSTEM REQUIRED BY THE ARCHITECT/ENGINEERS.

10. ALL BROCHURES, OPERATION MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE HANDED OVER TO OWNER'S REPRESENTATIVE AT THE COMPLETION OF WORK

PHOTOVOLTAIC NOTES:

1. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY

2. SOLAR SYSTEM SHALL NOT COVER ANY PLUMBING OR MECHANICAL VENTS

3. MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED.

4. SOLAR INVERTER SHALL BE LISTED TO UL1741.

5. REMOVAL OF AN INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PHOTOVOLTAIC SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTORS.

6. ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

7. LIVE PARTS OF PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS OVER 150V TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.

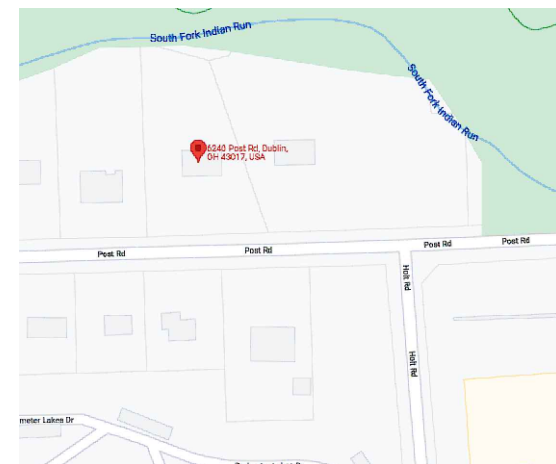
8. INVERTER IS EQUIPED WITH INTEGRATED GFDI, THUS PROVIDING GROUND FAULT PROTECTION

9. ALL CONDUCTORS SHALL BE COPPER AND 90 DEG RATED

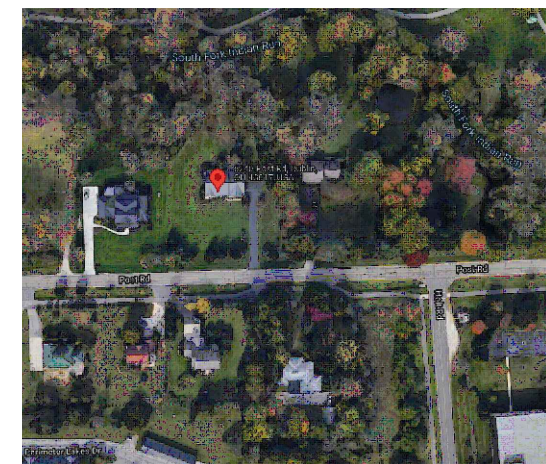
10. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY.

11. A SINGLE CONDUCTOR SHALL BE PERMITTED TO BE USED TO PERFORM THE MULTIPLE FUNCTIONS OF DC GROUNDING, AC GROUNDING AND BONDING BETWEEN AC AND DC SYSTEMS.

12. NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT SHALL BE EFFECTIVELY BONDED TOGETHER. BOND BOTH ENDS OF RACEWAYS.



VICINITY MAP
SCALE: NTS



SATELLITE VIEW
SCALE: NTS

INDEX

1	ROOF PLAN
2	SINGLE LINE DIAGRAM
3	SIGNAGE
4	SITE PLAN
5	ATTACHMENT LAYOUT
6	INVERTER DATA SHEET
7	RSD DATA SHEET
8	MODULE DATA SHEET
9	ATTACHMENT DATA SHEET
10	RACKING DATA SHEET
11	ECB DATA SHEET

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

**1809 O Brien Rd
Columbus, OH 43228**



Drawn by: New@engineerinc.io

DATE: 08/22/2022

MAIN

THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:

- NATIONAL ELECTRICAL CODE 2017
- OHIO BUILDING CODE 2019
- INTERNATIONAL FIRE CODE 2017
- INTERNATIONAL ENERGY CONSERVATION CODE 2018

AS ADOPTED BY THE STATE OF OHIO

ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES

PV SOLAR SYSTEM DETAILS





SYSTEM SIZE: DC STC: 11.47KW
SYSTEM SIZE: AC CEC: 8.99 KW
SOLAR MODULES: (31) LG 370 watt
INVERTERS: (31) Enphase IQ8+ microinverters

ELECTRICAL INFORMATION:

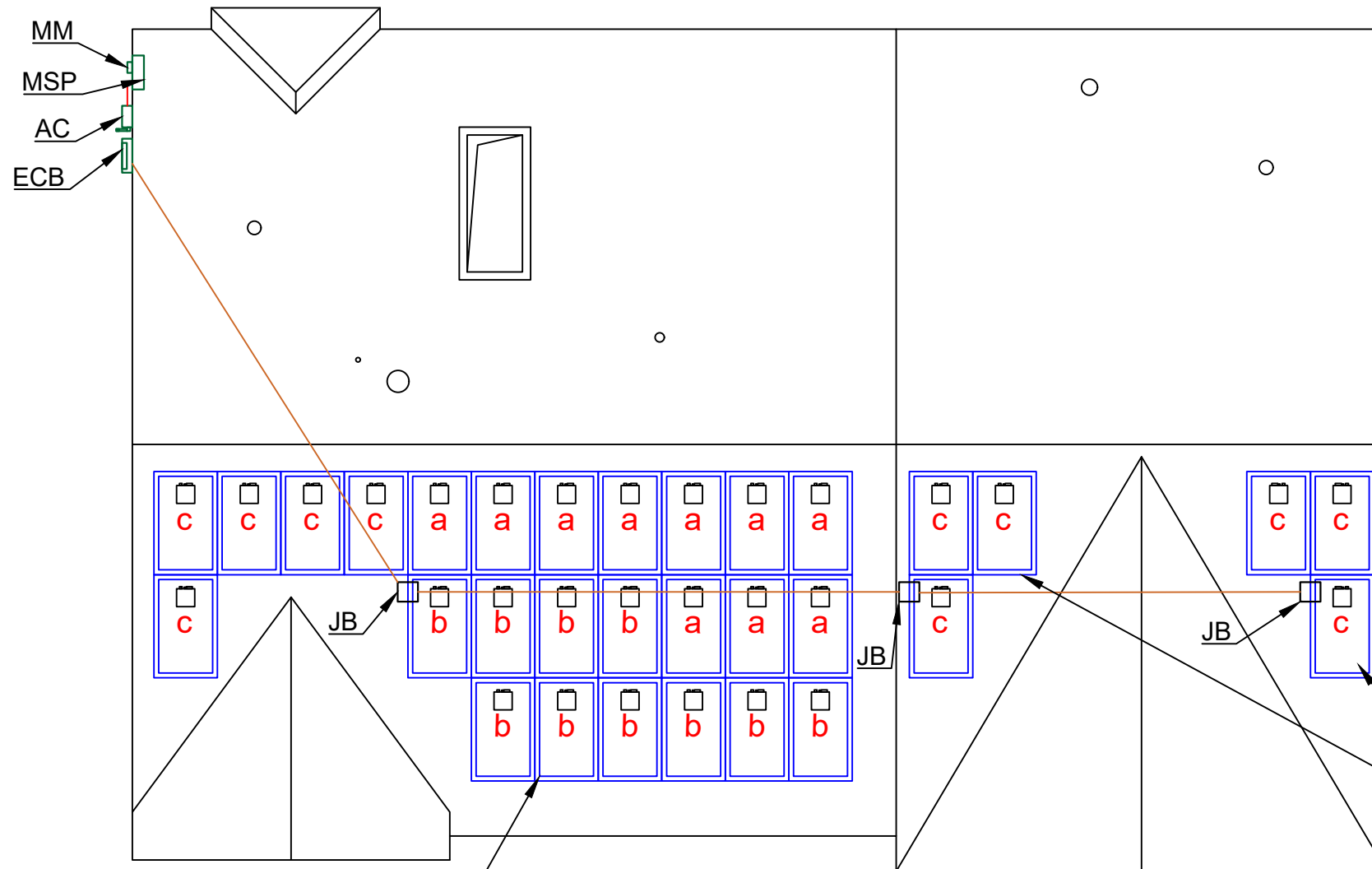
EXISTING
MAIN SERVICE PANEL BUS SIZE: 200A
MAIN SERVICE BREAKER SIZE: 200A
MOUNTING SYSTEM: IRONRIDGE XR100

BUILDING INFORMATION:

CONSTRUCTION TYPE: V-B
OCCUPANCY: R3
ROOF: Comp. Shingle
TRUSS : 2 X 6 @ 16" O.C.

INDEX	
MSP	(E) Main Service Panel
MM	(E) Main Meter
AC	(N) AC Disconnect
ECB	(N) Enphase IQ Combiner
JB	(N) Junction Box
	Microinverter
	Solar Module
	EMT Conduit
	FMT Conduit

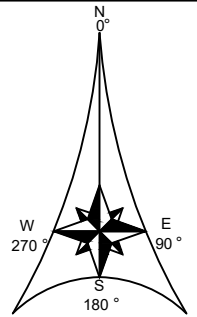
Total Roof Area: 2870
 Total Module Area: 558
 19.44% of Coverage



Solar PV Array 1
 25 -LG 370W Modules
 25 - IQ8+ Microinverters
 Pitch: 33 Deg
 Orientation: 180 Deg

Solar PV Array 2
 6 -LG 370W Modules
 6 - IQ8+ Microinverters
 Pitch: 33 Deg
 Orientation: 180 Deg

Post Rd



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

1 ROOF PLAN

Project Name:
Wadsworth Residence
 Property address:
**6240 Post Rd
 Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

**1809 O Brien Rd
 Columbus, OH 43228**



ENGINEERINC

Drawn by: New@engineerinc.io

DATE: 08/22/2022

NOTE: CONDUIT WILL RUN THROUGH ATTIC

#	ITEM	DESCRIPTION	QTY
1	PV MODULE	LG LG370N1K-A6 Voc = 41.9V, Vmp = 35.5V Isc = 10.96A, Imp = 10.43A	31
2	MICROINVERTERS	ENPHASE IQ8+ MICROINVERTERS IQ8PLUS-72-2-US (240V) PEAK PWR TRACKING VOLTAGE: = 29-45 V CEC EFFICIENCY : = 97.0 % ENCLOSURE : NEMA 6 MAXIMUM INPUT CURRENT: = 15 A MAXIMUM OUTPUT CURRENT: = 1.21 A MAXIMUM INPUT POWER: = 235 - 440W+ MAXIMUM OUTPUT POWER: = 290 VA	31
3	PVC JUNCTION BOX	4"x4"x2" UL LISTED WATER TIGHT NEMA TYPE 3	3
4	AC DISCONNECT	60A 2P BLADE TYPE 240V FUSIBLE AC DISCONNECT, WITH 50A FUSES	1
5	MAIN SERVICE PANEL	(E) MAIN SERVICE PANEL 200A BUSBAR & 200A MAIN BREAKER	1
6	ENPHASE IQ COMBINER	(N)ENPHASE IQ COMBINER 4/4C 120/240V, NEMA 3R	1
7	ENPHASE MONITORING	(N)ENVOY 3G PV MONITORING SYSTEM	1
8	MAIN METER	UTILITY METER	1

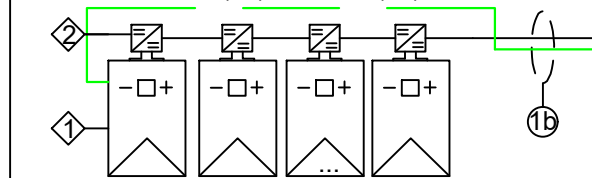
#	MODULE QTY x NEC MULT x MICROINV. OUTPUT AMPS = DESIGN AMPS	BREAKER SIZE (A)	WIRE TYPE	EGC	WIRE RATING X TEMP DERATE X CONDUCTOR DERATE = DERATED WIRE	CONDUIT SIZE
1a	10 X 1.25 X 1.21 = 15.12A	20	(2) #12 AWG, ENPHASE Q CABLE	(1) #6 BARE SOLID COPPER GEC	30 X .71 X 1 = 21.3 >= 15.12A	IN FREE AIR
1b	11 X 1.25 X 1.21 = 16.63A	20	(2) #12 AWG, ENPHASE Q CABLE	(1) #6 BARE SOLID COPPER GEC	30 X .71 X 1 = 21.3 >= 16.63A	IN FREE AIR
2a	11 X 1.25 X 1.21 = 16.63A	20	(6) #10 AWG, CU-THWN-2	(1) #10 AWG, CU-THWN-2-EGC	40 X .71 X .8 = 22.72 >= 16.63A	3/4" FMT
2b	11 X 1.25 X 1.21 = 16.63A	20	(6) #10 AWG, CU-THWN-2	(1) #10 AWG, CU-THWN-2-EGC	40 X .71 X .8 = 22.72 >= 16.63A	3/4" EMT
3	31 X 1.25 X 1.21 = 46.88A	50	(3) #8 AWG, CU-THWN-2	(1) #8 AWG, CU-THWN-2-EGC	55 X .91 X 1 = 50.05 >= 46.88	3/4" EMT
4	31 X 1.25 X 1.21 = 46.88A	50	(3) #6 AWG, CU-THWN-2	(1) #8 AWG, CU-THWN-2-EGC	75 X .91 X 1 = 68.25 >= 46.88	3/4" EMT

KEY NOTES:

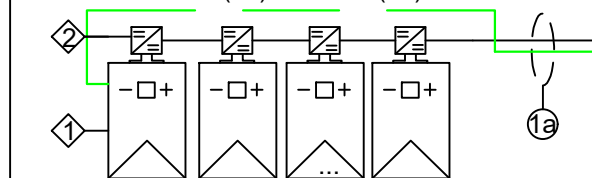
- SOLID BARE G.E.C (FREE-AIR) MOUNTED UNDER ARRAY
- PER NEC ARTICLE 690.35 INVERTER GROUND FAULT PROTECTION PROVIDED
- ALL GROUNDS AND NEUTRALS BONDED TO EXISTING GROUNDING CONDUCTOR W/IRREVERSIBLE CRIP CONNECTOR,
- BACKFED BREAKERS MUST BE LOCATED @ OPPOSITE END OF BUS BAR FROM MAIN BREAKER OR MAIN LUG ON GRID SIDE. WHEN A BACKFED BREAKER IS THE METHOD OF UTILITY INTERCONNECTION, BREAKER SHALL NOT READ LINE'.
- PER CEC 250.65(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.
- LINE SIDE INTERCONNECTION AT MAIN PANEL PER ART. 705.12

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
.80	4-6
.70	7-9
.50	10-20

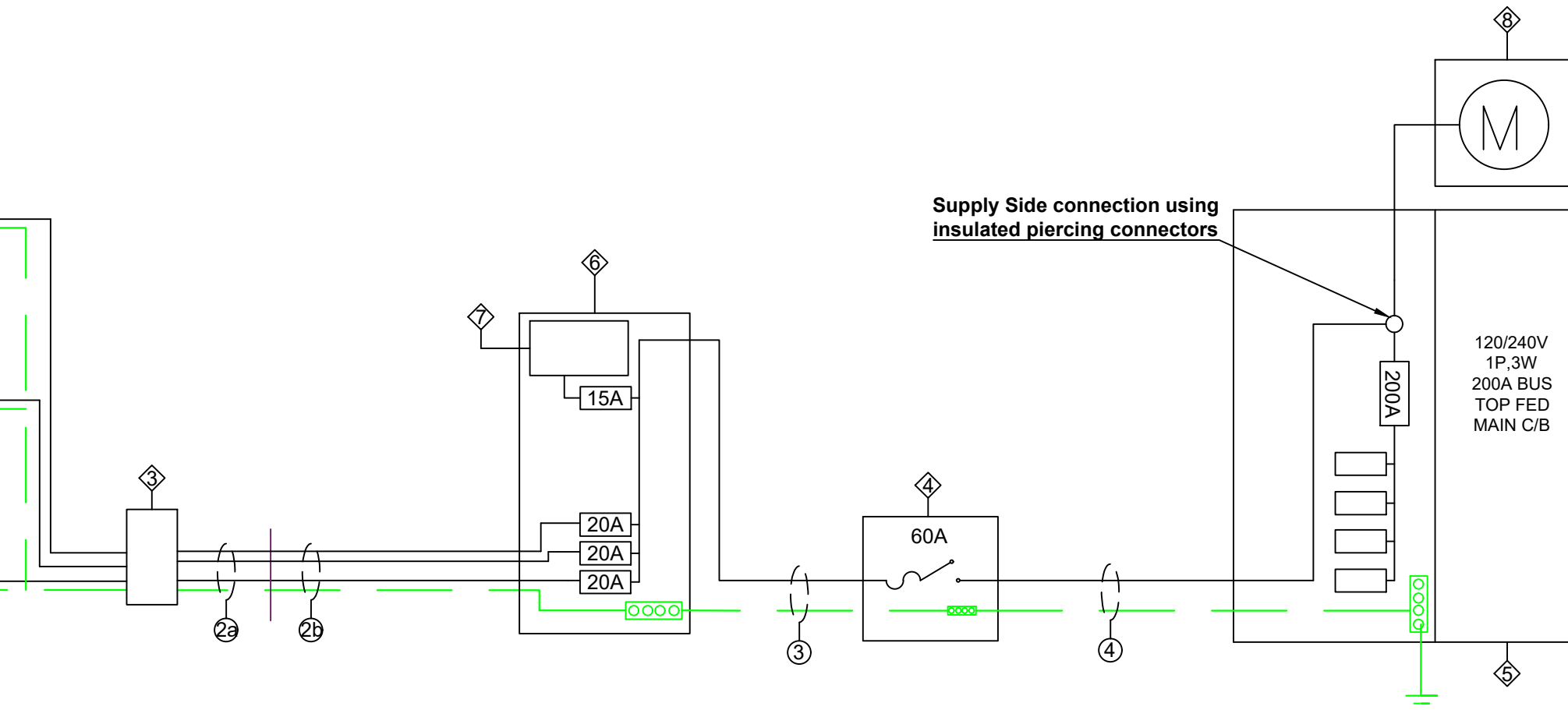
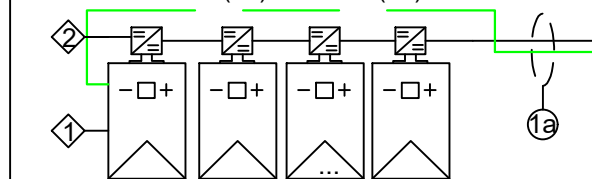
Branch Circuit c : (11) Modules (11) Microinverters



Branch Circuit b : (10) Modules (10) Microinverters



Branch Circuit a : (10) Modules (10) Microinverters



2 SINGLE LINE DIAGRAM

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

**1809 O Brien Rd
Columbus, OH 43228**



Drawn by: New@engineerinc.io

DATE: 08/22/2022

1 CAUTION AUTHORIZED SOLAR PERSONNEL ONLY!

2 CAUTION SOLAR DC CURRENT PRESENT DURING DAYLIGHT HOURS

(STICKER TO BE LOCATED ON CONDUIT WITH DC CURRENT EVERY 4' HORIZONTALLY OR 10' VERTICALLY AND 1' FROM EACH SIDE OF A BEND)

3 WARNING! ELECTRIC SHOCK HAZARD. IF GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED.

4 WARNING! ELECTRIC SHOCK HAZARD. DO NOT TOUCH THE TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

5 PV SUB-PANEL ONLY (TO BE LOCATED ON SUB-PANEL ONLY WHEN SUB-PANEL IS DEDICATED FOR PV ONLY)

6 AC DISCONNECT AC PHOTOVOLTAIC POWER SOURCE RATED AC OUTPUT CURRENT: 46.88 A MAX NOMINAL AC OPERATING VOLTAGE: 240 Vac

7 THIS PANEL FED BY MULTIPLE SOURCES (UTILITY & SOLAR)

Plaques will have red background & white lettering.

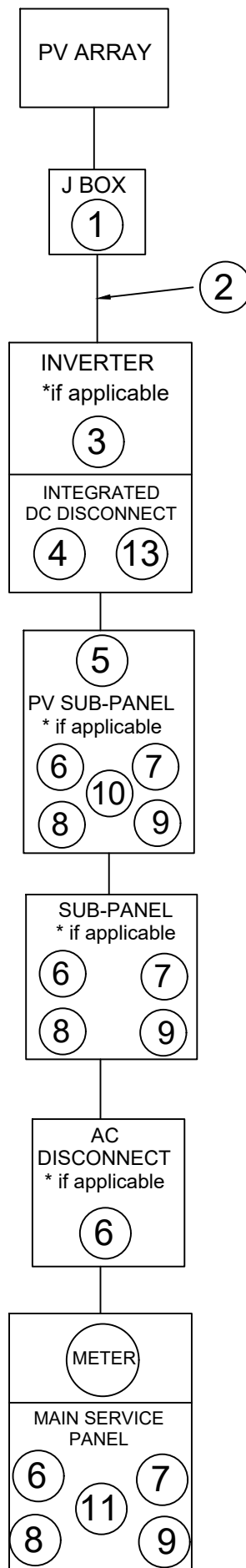
8 SOLAR (STICKER LOCATED INSIDE PANEL NEXT TO SOLAR BREAKER)

9 WARNING! INVERTER OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE (STICKER LOCATED INSIDE PANEL BELOW PV BREAKER)

10 PV LOAD CENTER SIZED FOR PV BREAKERS ONLY OR RENDERED UNABLE TO ACCEPT ANY ADDITIONAL LOADS. (STICKER LOCATED ON THE PV SUB PANEL)

11 PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUT DOWN (STICKER LOCATED ON THE MAIN SERVICE PANEL)

12 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



MARKINGS, LABELS AND WIRING SIGNS

A. Purpose: Provide emergency responders with appropriate warning and guidance with respect to isolating solar electric system. This can facilitate identifying energized electrical lines that connect solar panels to the inverter, as these should not be cut when venting for smoke removal

B. Main Service Disconnect.

- Residential buildings - The marking main be placed within the main service disconnect. The marking shall be placed outside cover if the main service disconnect is operable with the service panel closed.
- Commercial buildings - The marking shall be placed adjacent to the main service disconnect clearly visible from the location where the level is operated
- Markings: Verbiage, Format and Type of Material.
 - Verbiage: CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED
 - Format: White lettering on a red background. Minimum 3/8 inches letter height. All letters shall be capitalized. Arial or similar font, non bold.
 - Material: Reflective, weather resistant material suitable for the environment (use UL-969 as standard for weather rating). Durable adhesive materials meet this requirement.

C. Marking Requirements on DC conduit, raceways, enclosures, cable assemblies, DC combiners and junction boxes:

- Markings: Verbiage, Format and Type of Material.
 - Placement: Markings shall be placed every 10 feet on all interior and exterior DC conduits, raceways, enclosures, and cable assemblies, at turns, above and for below penetrations, all DC combiners and junction boxes
 - Verbiage: CAUTION: SOLAR CIRCUIT Note: The format and type of material shall adhere to "V. V-3b, c" of this requirement.
 - Inverters are not required to have caution markings

1. Marking is required on all interior and exterior DC conduit raceways, enclosures, cable assemblies, and junction boxes, combiner boxes and disconnects.

2. The materials used for marking shall be reflective, weather resistant material suitable for the environment. Minimum 3/8" letter height; all upper case letters Arial or similar font; Red background with white lettering.

3. Marking shall contain the words: **WARNING : PHOTOVOLTAIC POWER SOURCE**.

4. Marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated

Permanent directory or plaque providing location of service disconnecting means and photovoltaic system disconnecting means, if not located at the same location. (Plaques shall be metal or plastic, with engraved or machine printed letters, or electro-photo plating, in a contrasting color to the plaque. Plaques shall be permanently attached to the equipment or in the required location using an approved method that is suitable to withstand the environment to which it is exposed. Plaques and signage shall meet legibility, defacement, exposure and adhesion requirements of Underwriters Laboratories marking and labeling system 969(UL969).

3 SIGNAGE

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR


ECOHOUSE SOLAR

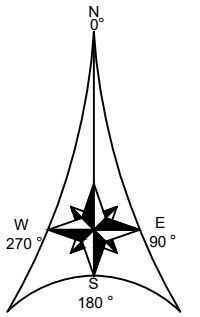
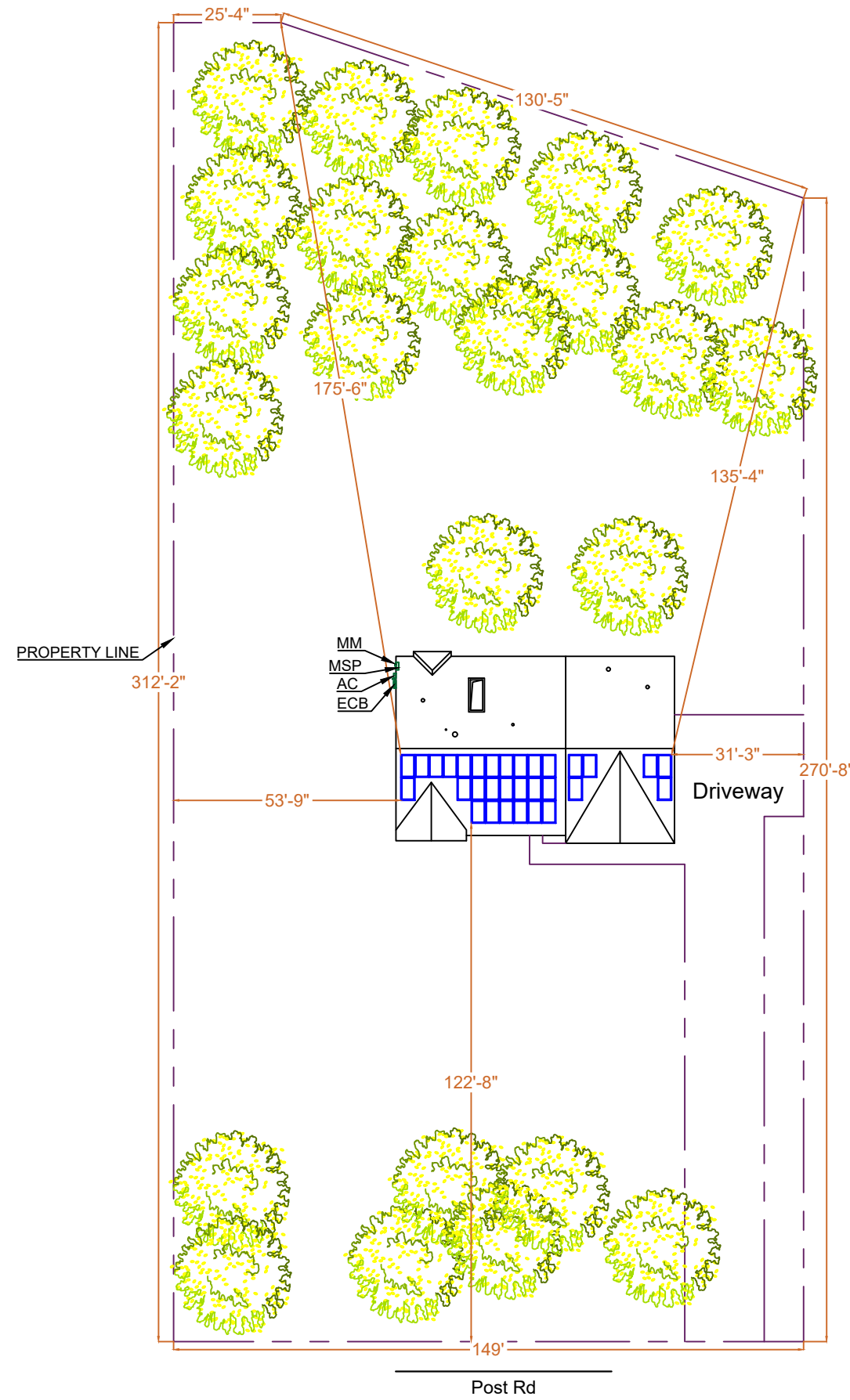
1809 O Brien Rd
Columbus, OH 43228



ENGINEERING

Drawn by: New@engineerinc.io
DATE: 08/22/2022

INDEX	
MSP	(E) Main Service Panel
MM	(E) Main Meter
AC	(N) AC Disconnect
ECB	(N) Enphase IQ Combinier
	Solar Module



SCALE: 1/16" = 1'-0"

4 SITE PLAN

Project Name:
Wadsworth Residence
 Property address:
6240 Post Rd
Dublin, OH 43017

CONTRACTOR

ECOHOUSE SOLAR

1809 O Brien Rd
Columbus, OH 43228



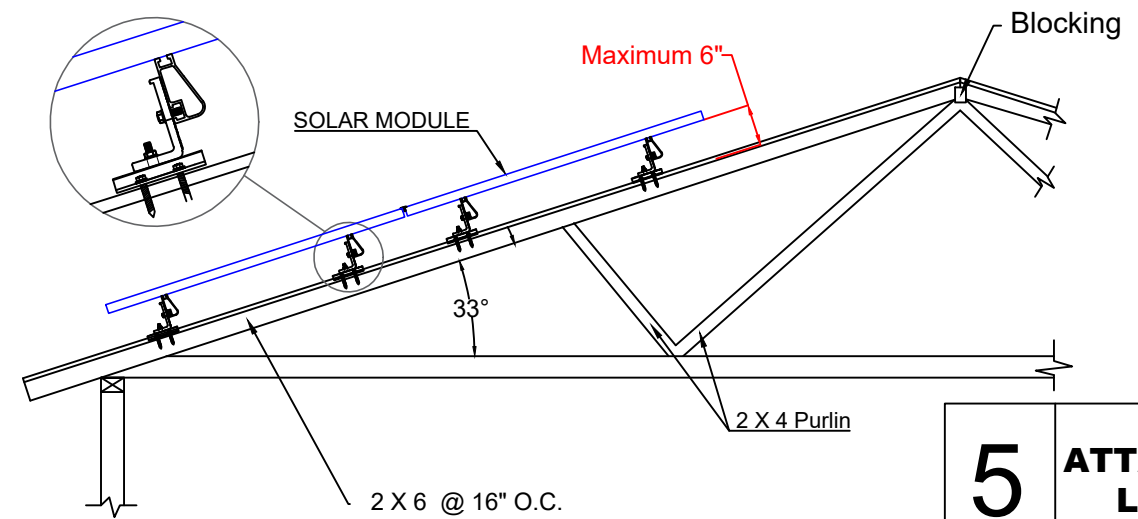
ENGINEERING INC

Drawn by: New@engineerinc.io

DATE: 08/22/2022

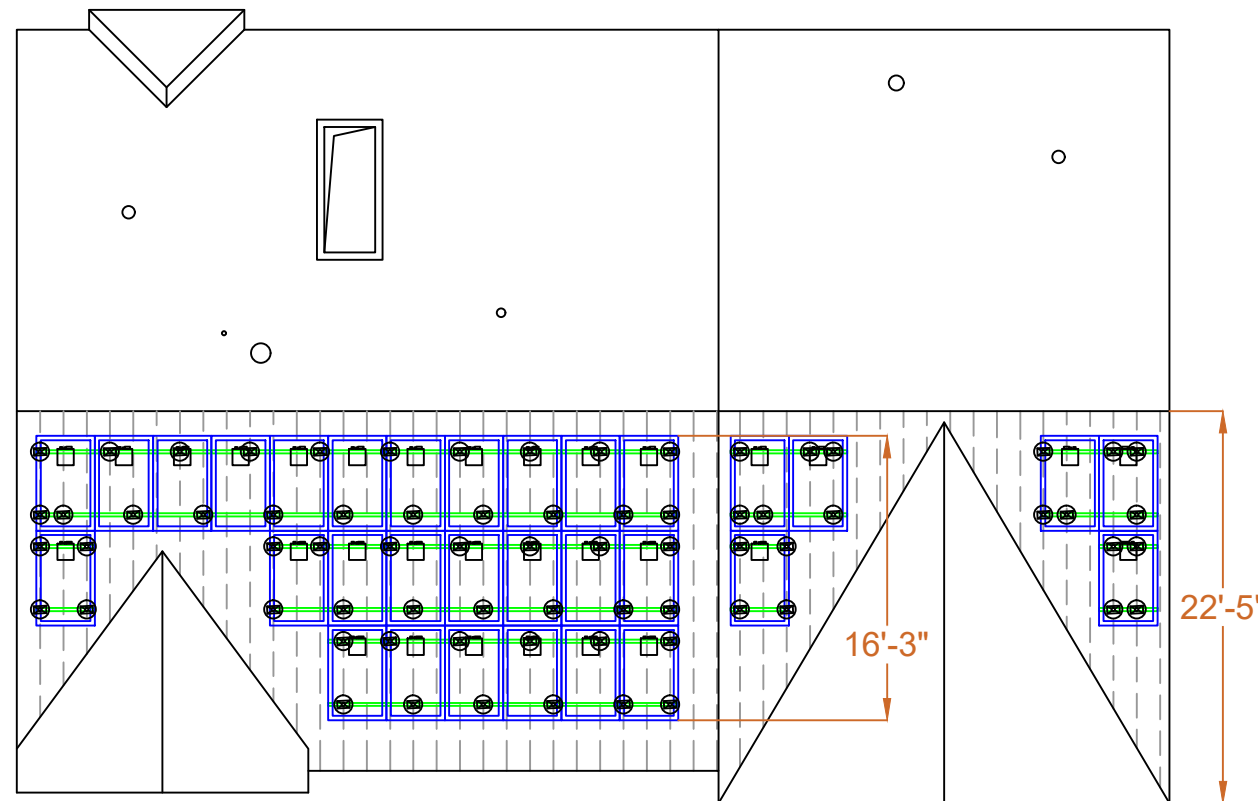
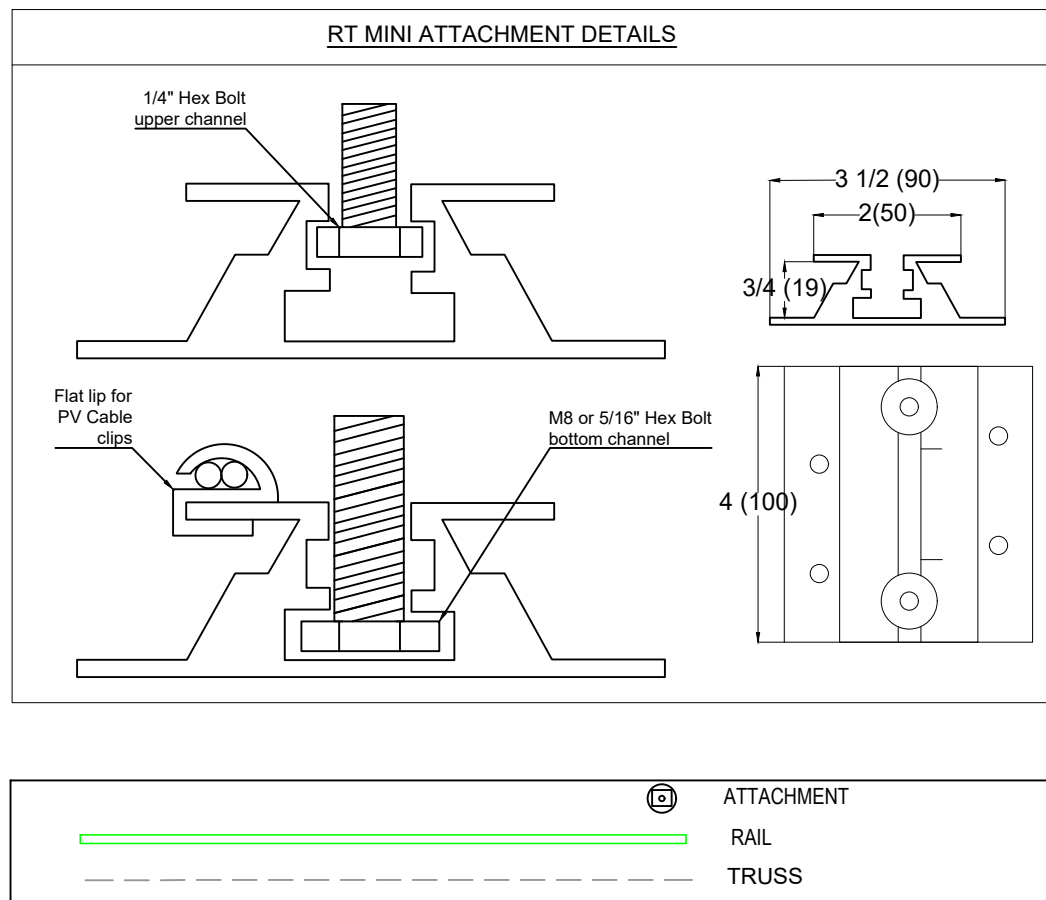
MODULE WEIGHT (lbs)	41
# OF MODULES	31
TOTAL MODULE WEIGHT (lbs)	1271
RACK WEIGHT (lbs)	254.2
MICROINVERTERS WEIGHT (lbs)	73.78
TOTAL SYSTEM WEIGHT (lbs)	1598.98
# OF STANDOFFS	71
MAX SPAN BETWEEN STANDOFFS (in)	48
LOADING PER STANDOFF (lbs)	22.52
TOTAL AREA (sq.ft.)	558
LOADING (PSF)	2.86

1. IronRidge XR100 Racking System
2. RoofTech Mini Attachment
3. Roof attachment hardware to be mounted to existing structure (2 X 6 @ 16" O.C. TRUSS) with 48" O.C.rail spans less.
4. Lag bolts are 5/16" X 3.5" stainless steel with 2.5" minimum embedment into the center of the roof
5. Roof sheathed with 1/2" plywood and upper surface is faced with felt paper.
Finished roof surface is One layer of Comp. Shingle .



5 ATTACHMENT LAYOUT

Project Name:
Wadsworth Residence
Property address:
6240 Post Rd
Dublin, OH 43017



CONTRACTOR

ECOHOUSE SOLAR

1809 O Brien Rd
Columbus, OH 43228



ENGINEERING INC

Drawn by: New@engineerinc.io

DATE: 08/22/2022

Prior to the commencement of work, the contractor shall verify the existing roof and framing conditions. Notify New@engineerinc.io of any Discrepancies prior to starting construction.

Prior to the commencement of work, the contractor shall inspect framing for any damage such as water damage, cracked framing, etc. and notify New@engineerinc.io if any issues are found.

These Plans are stamped for structural code compliance of the roof framing supporting the proposed PV installation reference only. These plans are not stamped for water leakage. PV modules, racking, and attachment components must follow manufacturer guidelines and requirements.

Attachments to be installed in a staggered orientation to properly distribute loads.



IQ8 Series 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.



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.



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

© 2021 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ8 microinverters, and other names are trademarks of Enphase Energy, Inc. Data subject to change.

IQ8SE-DS-0001-01-EN-US-2021-10-19

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 Series Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US ⁽¹⁾
Commonly used module pairings ²	W	235 – 350	235 – 440	260 – 460	295 – 500	320 – 540+	295 – 500+
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	33 – 45	36 – 45	38 – 45	38 – 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 ³ [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	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range ⁴	V			240 / 211 – 264			208 / 183 – 250
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz			60			
Extended frequency range	Hz			50 – 68			
Max units per 20 A (L-L) branch circuit ⁵		16	13	11	11	10	9
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	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	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 1m		<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) The IQ8H-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility> (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SE-DS-0001-01-EN-US-2021-10-19

6 INVERTER DATA SHEET

Project Name:
Wadsworth Residence
Property address:
6240 Post Rd
Dublin, OH 43017

CONTRACTOR

ECOHOUSE SOLAR

1809 O Brien Rd
Columbus, OH 43228



Drawn by: **New@engineerinc.io**

DATE: **08/22/2022**

Rapid shutdown is built-in

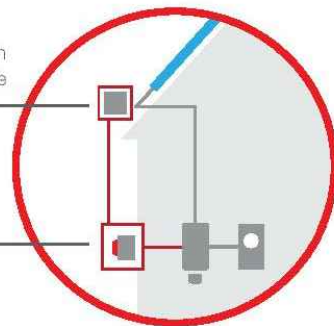
The 2014 edition of the National Electrical Code (NEC 2014) added new rapid shutdown requirements for PV systems installed on buildings. Enphase Microinverters fully meet rapid shutdown requirements in the new code without the need to install any additional electrical equipment.

What's new in NEC 2014?
NEC 2014, Section 690.12 applies to PV conductors over 10 feet from the PV array and requires that the conductors power down to 30 volts and 240 volt-amperes within 10 seconds of rapid shutdown initiation.

String inverters require work arounds for rapid shutdown

Work around.

Specialized Rapid Shutdown electrical box installed on the roof within 10 feet of array.



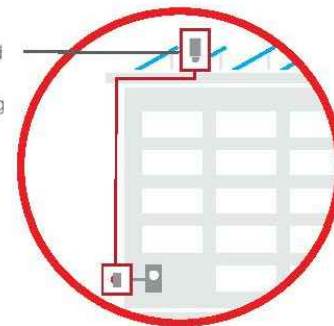
Residential String Inverter

Work around.

Shutoff switch that is easily accessible to first responders on the ground.

Work around.

String inverter installed on roof, a hostile environment that string inverters are not built to live in.



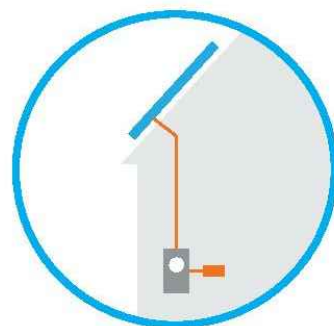
Commercial String Inverter

Work around.

Extra conduit in installation.

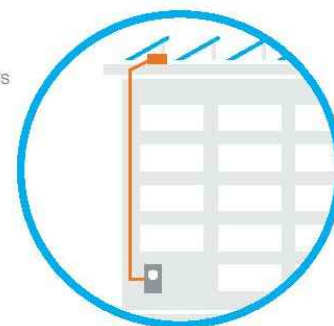
Enphase comes standard with rapid shutdown capability

All Enphase microinverters, even those that were previously installed, inherently meet rapid shutdown requirements, no additional equipment or workarounds needed.



Residential Microinverter

Enphase microinverters can safely shut down automatically, leaving only low-voltage DC electricity isolated to the PV module.



Commercial Microinverter

To learn more, visit enphase.com



QUICK INSTALL GUIDE



Install the Enphase IQ8 Series Microinverter

To install Enphase IQ8 Series Microinverters, read and follow all warnings and instructions in this guide and in the *Enphase IQ8 Series Microinverter Installation and Operation Manual* at enphase.com/support. Safety warnings are listed on the back page of this guide.

The Enphase Microinverter models listed in this guide do not require grounding electrode conductors (GEC), equipment grounding conductors (EGC), or grounded conductor (neutral). The microinverter has a Class II double-insulated rating, which includes ground fault protection (GFP). To support GFP, use only PV modules equipped with DC cables labeled **PV Wire** or **PV Cable**.

IMPORTANT: Enphase IQ8 Series Microinverters require the IQ Cable. An IQ Gateway is required to monitor performance of the IQ Microinverters. The Q Accessories work only with Enphase IQ8 Series Microinverters.

Note: After you log in to your Enphase Installer Platform account from Enphase Installer app, Scan the microinverter QR code and connect to the Enphase IQ Gateway to track the system installation progress.

PREPARATION

A) Download the Enphase Installer App and open it to log in to your Enphase Installer Platform account. With this app, scan the microinverter QR code and connect to the Enphase IQ Gateway to track system installation progress. To download, go to enphase.com/toolkit or scan the QR code at right.



B) Refer to the following table and check PV module electrical compatibility at: enphase.com/en-us/support/module-compatibility.

Model	DC connector	Typical PV module* cell count
IQ8-60-2-US	MC-4 locking type	Pair with 60 cell /120-half-cell modules
IQ8PLUS-72-2-US	MC-4 locking type	Pair with 60 cell / 120-half-cell, 66 cell, or 72 cell / 144-half-cell
IQ8M-72-2-US		
IQ8A-72-2-US		
IQ8H-240-72-2-US	MC-4 locking type	Pair with 60 cell /120-half-cell, 66 cell, or 72 cell / 144-half-cell
IQ8H-208-72-2-US		

* Enphase IQ8 Series Microinverters are compatible with bi-facial PV modules if the temperature adjusted electrical parameters (maximum power, voltage and current) of the modules, considering the front side electrical parameters (i.e., 0% back side gain), are within the allowable microinverter input parameters range.

- C) In addition to the Enphase Microinverters, PV modules and racking, you will need these **Enphase IQ8 Series Microinverters**:
- Enphase IQ Gateway (model ENV-IQ-AM1-240) communications gateway or Enphase IQ Combiner (check enphase.com for models): is required to monitor solar production.
 - Tie wraps or cable clips (Q-CLIP-100)
 - Enphase Sealing Caps (Q-SEAL-10): for any unused connectors on the Enphase IQ Cable
 - Enphase Terminator (Q-TERM-10): one needed at the end of each AC cable segment
 - Enphase Disconnect Tool (Q-DISC-10)
 - Enphase IQ Cable:

Cable model	Connector spacing*	PV module orientation	Connectors per box
Q-12-10-240	1.3m	Portrait (all)	240
Q-12-17-240	2.0m	Landscape (60- and 66-cell)	240
Q-12-20-200	2.3m	Landscape (72-cell)	200

*Allows for 30cm of cable slack.

D) Check that you have these other items:

- AC junction box.
- Tools: screwdrivers, wire cutter, voltmeter, torque wrench, sockets, and wrenches for mounting hardware

E) Protect your system with lightning and/or surge suppression devices. It is also important to have insurance that protects against lightning and electrical surges.

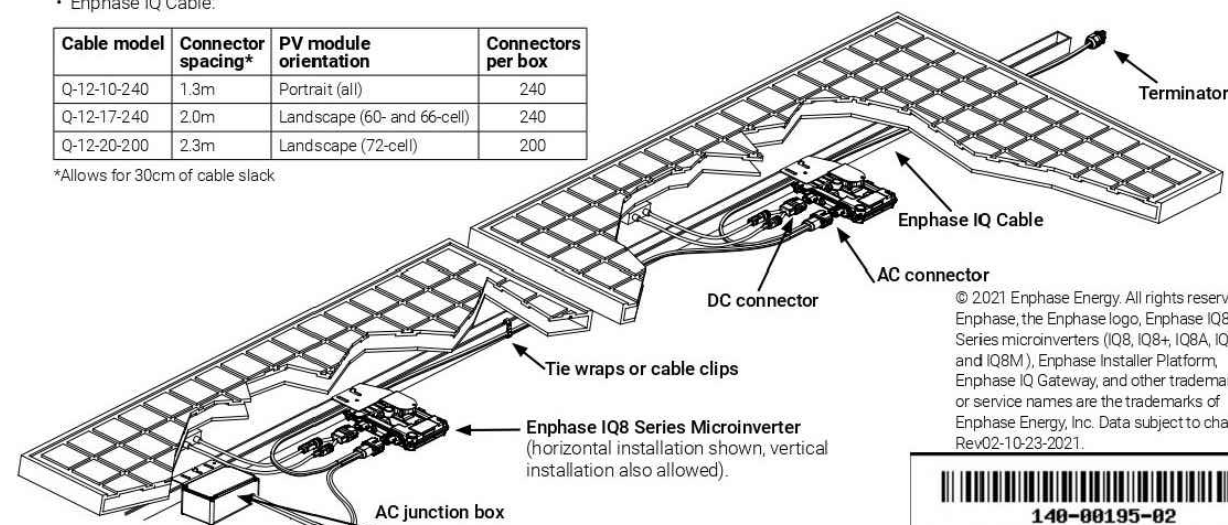
F) Plan your AC branch circuits to meet the following limits for maximum number of microinverters per branch when protected with a 20-amp over-current protection device (OCPD).

Maximum* IQ8 Series Microinverters per AC branch circuit (single-phase)		
IQ8 (240V)	IQ8+ (240V)	IQ8M (240V)
16	13	11
IQ8A (240V)	IQ8H (240V)	IQ8H (208V)
11	10	9

* Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

G) Size the AC wire gauge to account for voltage rise. Select the correct wire size based on the distance from the beginning of the Enphase IQ Cable to the breaker in the load center. Design for a voltage rise total of less than 2% for these sections. Refer to the Voltage Rise Technical Brief at enphase.com/support for more information.

Best practice: Center-feed the branch circuit to minimize voltage rise in a fully-populated branch.



© 2021 Enphase Energy. All rights reserved. Enphase, the Enphase logo, Enphase IQ8 Series microinverters (IQ8, IQ8+, IQ8A, IQ8H and IQ8M), Enphase Installer Platform, Enphase IQ Gateway, and other trademarks or service names are the trademarks of Enphase Energy, Inc. Data subject to change. Rev:02-10-23-2021.



7 RSD DATA SHEET

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

**1809 O Brien Rd
Columbus, OH 43228**



Drawn by: New@engineerinc.io

DATE: 08/22/2022

LG NeON[®] 2 Black

LG370N1K-A6

370W

The LG NeON[®] 2 is LG's best selling solar module and one of the most powerful and versatile modules on the market today. The cells are designed to appear all-black at a distance, and the performance warranty guarantees 90.6% of labeled power output at 25 years.



Features



Enhanced Performance Warranty

LG NeON[®] 2 Black has an enhanced performance warranty. After 25 years, LG NeON[®] 2 Black is guaranteed at least 90.6% of initial performance.



25-Year Limited Product Warranty

The NeON[®] 2 Black is covered by a 25-year limited product warranty. In addition, up to \$450 of labor costs will be covered in the rare case that a module needs to be repaired or replaced.



Solid Performance on Hot Days

LG NeON[®] 2 Black performs well on hot days due to its low temperature coefficient.



Roof Aesthetics

LG NeON[®] 2 Black has been designed with aesthetics in mind using thinner wires that appear all black at a distance.

When you go solar, ask for the brand you can trust: LG Solar

About LG Electronics USA, Inc.

LG Electronics is a global leader in electronic products in the clean energy markets by offering solar PV panels and energy storage systems. The company first embarked on a solar energy source research program in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry and materials industries. In 2010, LG Solar successfully released its first Mono[®] series to the market, which is now available in 32 countries. The NeON[®] (previous Mono[®], NeON), NeON[®]2, NeON[®]2 Bifacial won the "Intersolar AWARD" in 2013, 2015 and 2016, which demonstrates LG's leadership and innovation in the solar industry.



LG NeON[®] 2 Black

LG370N1K-A6

General Data

Cell Properties (Material/Type)	Monocrystalline/N-type
Cell Maker	LG
Cell Configuration	60 Cells (6 x 10)
Number of Busbars	12EA
Module Dimensions (L x W x H)	1,740mm x 1,042mm x 40 mm
Weight	18.6 kg
Glass (Material)	Tempered Glass with AR coating
Backsheet (Color)	Black
Frame (Material)	Anodized Aluminium
Junction Box (Protection Degree)	IP 68 with 3 Bypass Diodes
Cables (Length)	1,100mm x 2EA
Connector (Type/Maker)	MC 4/MC

Certifications and Warranty

Certifications*	IEC 61215-1/-1-2: 2016, IEC 61730-1/2: 2016, UL 61730-1: 2017, UL 61730-2: 2017, ISO 9001, ISO 14001, ISO 50001
	OHSAS 18001
Salt Mist Corrosion Test	IEC 61701:2012 Severity 6
Ammonia Corrosion Test	IEC 62716:2013
Module Fire Performance	Type 2 (UL 61730)
Fire Rating	Class C (UL 790, ULC/ORD C 1703)
Solar Module Product Warranty	25 Year Limited
Solar Module Output Warranty	Linear Warranty*

*Improved: 1st year 98.5%, from 2-24th year: -0.33%/year down 90.6% at year 25

Temperature Characteristics

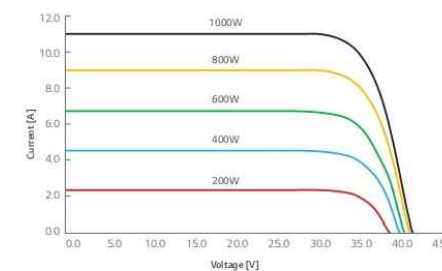
NMOT*	[°C]	42 ± 3
Pmax	[%/°C]	-0.35
Voc	[%/°C]	-0.26
Isc	[%/°C]	0.03

*NMOT (Nominal Module Operating Temperature): Irradiance 800 W/m², Ambient temperature 20°C, Wind speed 1 m/s, Spectrum AM 1.5

Electrical Properties (NMOT)

Model	LG370N1K-A6	
Maximum Power (Pmax)	[W]	277
MPP Voltage (Vmpp)	[V]	33.3
MPP Current (Impp)	[A]	8.32
Open Circuit Voltage (Voc)	[V]	39.4
Short Circuit Current (Isc)	[A]	8.81

I-V Curves



Electrical Properties (STC*)

Model	LG370N1K-A6	
Maximum Power (Pmax)	[W]	370
MPP Voltage (Vmpp)	[V]	35.5
MPP Current (Impp)	[A]	10.43
Open Circuit Voltage (Voc ± 5%)	[V]	41.9
Short Circuit Current (Isc ± 5%)	[A]	10.96
Module Efficiency	[%]	20.4
Power Tolerance	[%]	0 ~ +3

*STC (Standard Test Condition): Irradiance 1000 W/m², cell temperature 25°C, AM 1.5
Measurement Tolerance of Pmax: ± 3%

Operating Conditions

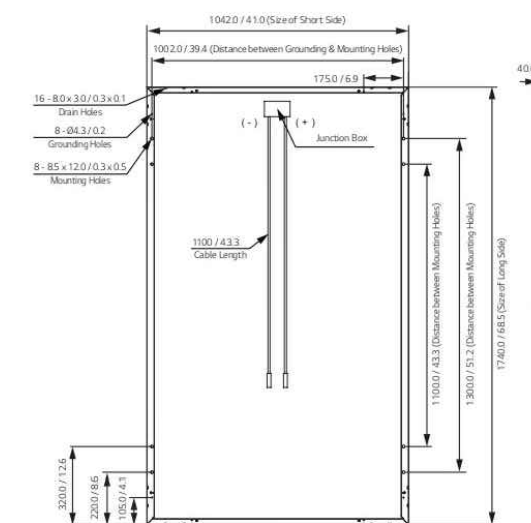
Operating Temperature	[°C]	-40 ~ +85
Maximum System Voltage	[V]	1,000 (UL/IEC)
Maximum Series Fuse Rating	[A]	20
Mechanical Test Load* (Front)	[Pa/psf]	5,400
Mechanical Test Load* (Rear)	[Pa/psf]	4,000

*Based on IEC 61215-2: 2016 (Test Load = Design Load x Safety Factor (1.5))
Mechanical Test Loads: 6,000Pa/5,400Pa based on IEC 61215:2005

Packaging Configuration

Number of Modules per Pallet	[EA]	25
Number of Modules per 40' Container	[EA]	650
Number of Modules per 53' Container	[EA]	850
Packaging Box Dimensions (L x W x H)	[mm]	1,790 x 1,120 x 1,213
Packaging Box Dimensions (L x W x H)	[in]	70.5 x 44.1 x 47.8
Packaging Box Gross Weight	[kg]	500
Packaging Box Gross Weight	[lb]	1,102

Dimensions (mm/inch)



8

MODULE DATA SHEET

Project Name:
Wadsworth Residence
Property address:
6240 Post Rd
Dublin, OH 43017

CONTRACTOR

ECOHOUSE SOLAR

1809 O Brien Rd
Columbus, OH 43228



Drawn by: **New@engineerinc.io**

DATE: **08/22/2022**



LG Electronics USA, Inc.
Solar Business Division
2000 Millbrook Drive
Lincolnshire, IL 60069
www.lg-solar.com

Product specifications are subject to change without notice.
LG370N1K-A6.pdf
020221

© 2021 LG Electronics USA, Inc. All rights reserved.

RT-MINI

Self-flashing base for asphalt & metal roof-top PV mounting systems

RT-MINI is suitable for mounting any rail system with a conventional L-Foot.



Dual bolt design: M8 or 5/16" for L-Foot & 1/4" for EMC

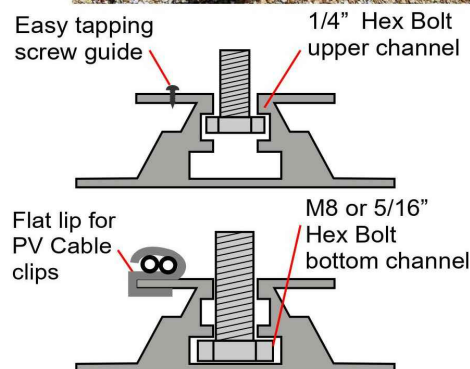
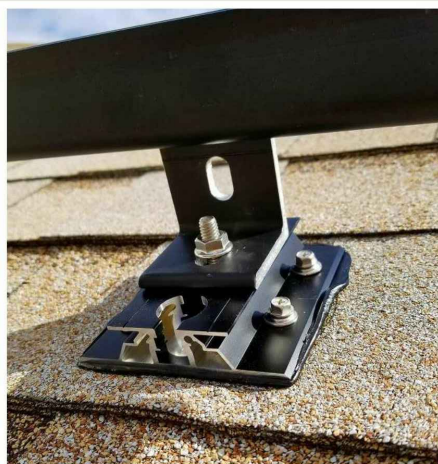


ICC ESR 3575

Call Now for more details

858-935-6064

Roof Tech
Smarter PV mounting solutions from top of roof to bottom line®
www.roof-tech.us info@roof-tech.us



RT-MINI

Flexible Flashing certified by the International Code Council (ICC)

Engineered to ASTM D 1761 (Standard Test Methods for Mechanical Fasteners in Wood)

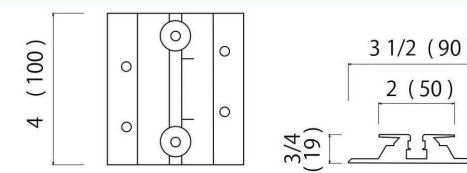
Components

RT2-00-MINIBK
PAT : PENDING

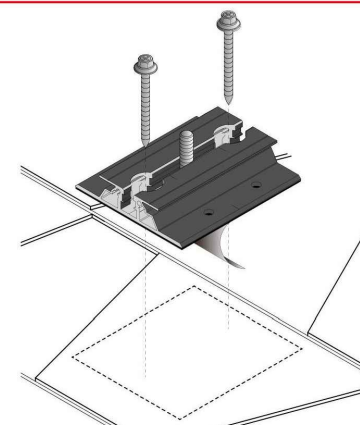


MINI base : 20 ea.
Screw : 40 ea.
Extra RT-Butyl : 10 ea.

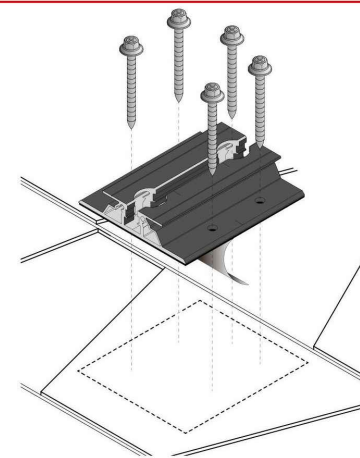
Dimensions in (mm)



Rafter installation

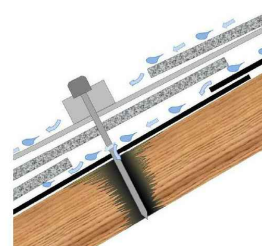


Deck installation

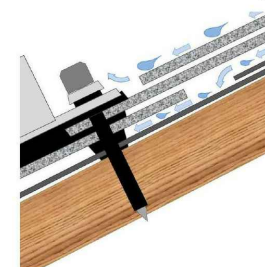


RT-Butyl is Roof Tech's flexible flashing used in 550,000 residential PV systems for the last 20 years. It is the first PV mounting system with Flexible Flashing certified by the ICC.

Metal Flashing Retrofit



Flexible Flashing



Shedding water?

100% Waterproof

ICC ESR-3575

ASTM2140 testing

UV testing (7500 hrs.)



P.E. Stamped Letters available at www.roof-tech.us/support

9 ATTACHMENT DATA SHEET

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

1809 O Brien Rd
Columbus, OH 43228



ENGINEERING

Drawn by: New@engineerinc.io

DATE: 08/22/2022

Roof Tech Inc.
www.roof-tech.us info@roof-tech.us
10620 Trenea Street, Suite 230, San Diego, CA 92131
858.935.6064



Flush Mount System

Datasheet



Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.



Strength Tested

All components evaluated for superior structural performance.



Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.



UL 2703 Listed System

Entire system and components meet newest effective UL 2703 standard.



PE Certified

Pre-stamped engineering letters available in most states.



Design Assistant

Online software makes it simple to create, share, and price projects.



25-Year Warranty

Products guaranteed to be free of impairing defects.

Datasheet

XR Rails

XR10 Rail



A low-profile mounting rail for regions with light snow.

- 6' spanning capability
- Moderate load capability
- Clear and black finish

XR100 Rail



The ultimate residential solar mounting rail.

- 8' spanning capability
- Heavy load capability
- Clear and black finish

XR1000 Rail



A heavyweight mounting rail for commercial projects.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish

Bonded Splices



All rails use internal splices for seamless connections.

- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

Clamps & Grounding

UFOs



Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear and black finish

Stopper Sleeves



Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- Sized to match modules
- Clear and black finish

CAMO



Bond modules to rails while staying completely hidden.

- Universal end-cam clamp
- Tool-less installation
- Fully assembled

Grounding Lugs



Connect arrays to equipment ground.

- Low profile
- Single tool installation
- Mounts in any direction

Attachments

FlashFoot2



Flash and mount XR Rails with superior waterproofing.

- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

Conduit Mount



Flash and mount conduit, strut, or junction boxes.

- Twist-on Cap eases install
- Wind-driven rain tested
- Secures 3/4" or 1" conduit

Slotted L-Feet



Drop-in design for rapid rail attachment.

- Secure rail connections
- Slot for vertical adjusting
- Clear and black finish

Bonding Hardware



Bond and attach XR Rails to roof attachments.

- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

Resources



Design Assistant

Go from rough layout to fully engineered system. For free.

Go to IronRidge.com/design



NABCEP Certified Training

Earn free continuing education credits, while learning more about our systems.

Go to IronRidge.com/training

10

RACKING DATA SHEET

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

**1809 O Brien Rd
Columbus, OH 43228**



ENGINEERING INC

Drawn by: New@engineerinc.io

DATE: 08/22/2022

Enphase IQ Combiner 4/4C

X-IQ-AM1-240-4
X-IQ-AM1-240-4C



X-IQ-AM1-240-4C

X-IQ-AM1-240-4



To learn more about Enphase offerings, visit enphase.com

The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters 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 Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

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

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed



Enphase IQ Combiner 4/4C

MODEL NUMBER

IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem 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.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.

ACCESSORIES AND REPLACEMENT PARTS

Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	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 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
EPLC-01	Power line carrier (communication bridge pair), quantity - one pair
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 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. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway breaker included
Envy breaker	10A or 15A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers

MECHANICAL DATA

Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75" x 19.5" 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
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)

COMPLIANCE

Compliance, IQ 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) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit enphase.com

© 2022 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ Combiner 4/4C, and other names are trademarks of Enphase Energy, Inc. Data subject to change. 02-14-2022



11 ECB DATA SHEET

Project Name:
Wadsworth Residence
Property address:
**6240 Post Rd
Dublin, OH 43017**

CONTRACTOR

ECOHOUSE SOLAR

**1809 O Brien Rd
Columbus, OH 43228**



Drawn by: New@engineerinc.io

DATE: 08/22/2022