

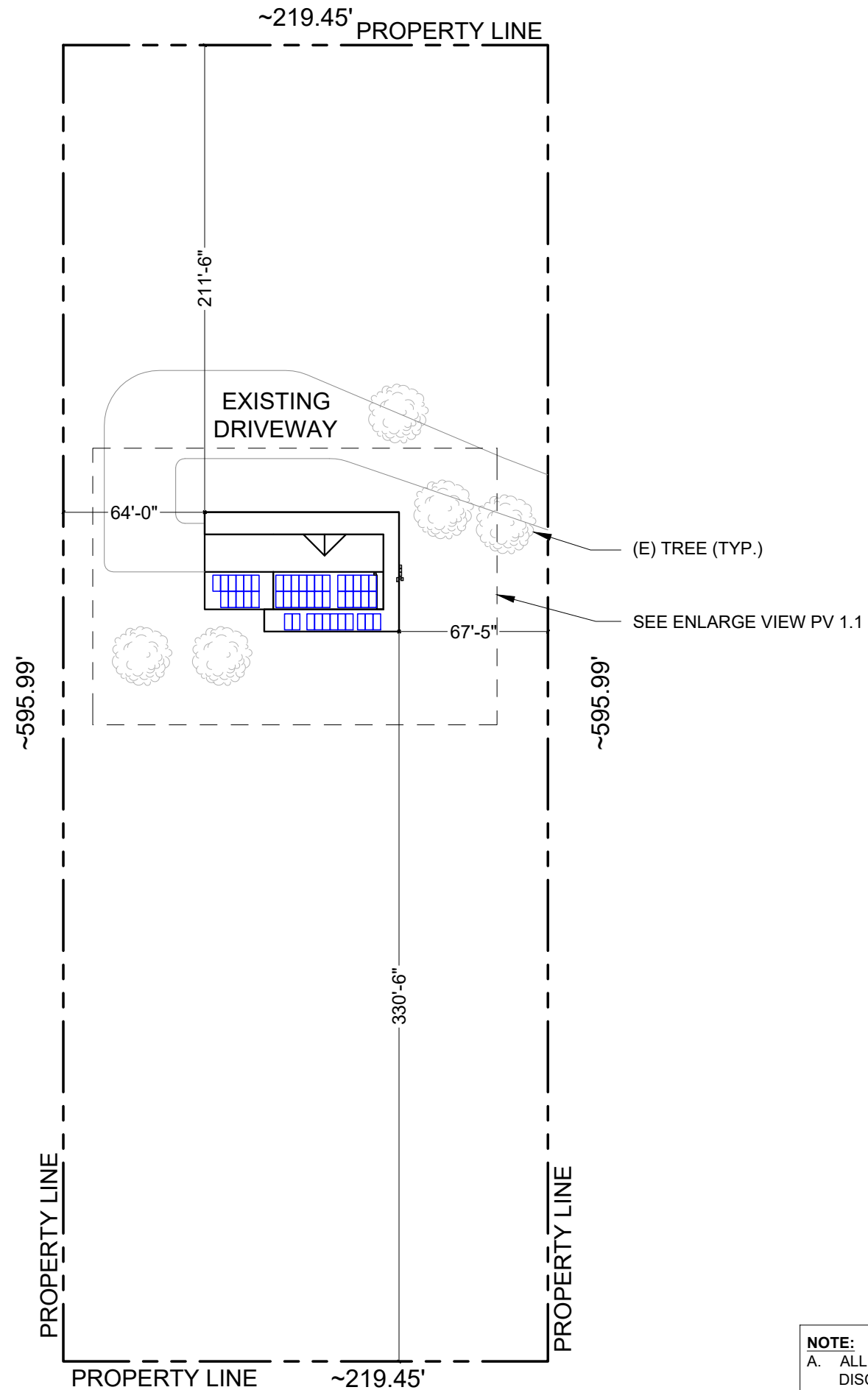
Required Documents for Solar Photovoltaic System- Net Meter Applications

Please submit at www.ColumbiaREA.coop a completed net-meter application and PDF copies of the following documents showing:

1. Roof or ground mount plan showing all system components and locations.
2. Site plan, must show address, property lines, structures, dimensions, and all buried utilities.
3. Detailed System Diagram of all the system components, highlighting system grounding and bonding. Must show PV AC disconnect and utility meter with 10' of each other or document the accessibility of the PV AC disconnect for utility service personnel.
4. Show specific locations and labels used for compliance with NEC 690 and UL 969.
5. Inverter specification sheet showing UL1741 compliance for the model used.
6. Line Drawing that shows all devices and how they are connected:
 - a. Specify manufacturer and model numbers.
 - b. Quantities ratings/sizes of all the system components including Solar modules.
 - c. Inverter(s)
 - d. Sub-panels, junctions, combiners, and production meter base.
 - e. AC disconnect; Visibly open type, and lockable in the open position.
 - f. Main service meter/base and panel, with details of system connection method.
 - g. Wires/conductors with each phase shown, sizes and connections including grounding and bonding.
 - h. Any other power generation devices; Generators, batteries, etc.
 - i. Show system size in KW, both DC and AC.

Please review the Columbia REA Net-meter Interconnection Agreement for details.

● **ROOF ACCESS POINT** SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.



NOTE:
 A. ALL ELECTRICAL EQUIPMENT, INVERTERS, DISCONNECTS, MAIN SERVICE PANELS, ETC. SHALL NOT BE INSTALLED WITHIN 3' OF THE GAS METERS' SUPPLY OR DEMAND PIPING.

CONTRACTOR INFORMATION

SAMPLE

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	02/24/2022	UR

PROJECT NAME

WALLA WALLA, WA 99362

AHJ: WALLA WALLA COUNTY

SHEET NAME

SITE PLAN WITH ROOF PLAN

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-1

1

SITE PLAN WITH ROOF PLAN

SCALE: 1/64" = 1'-0"



● **ROOF ACCESS POINT** SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.

CONTRACTOR INFORMATION

SAMPLE

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	02/24/2022	UR

PROJECT NAME

WALLA WALLA, WA 99362
 AHJ: WALLA WALLA COUNTY

SHEET NAME

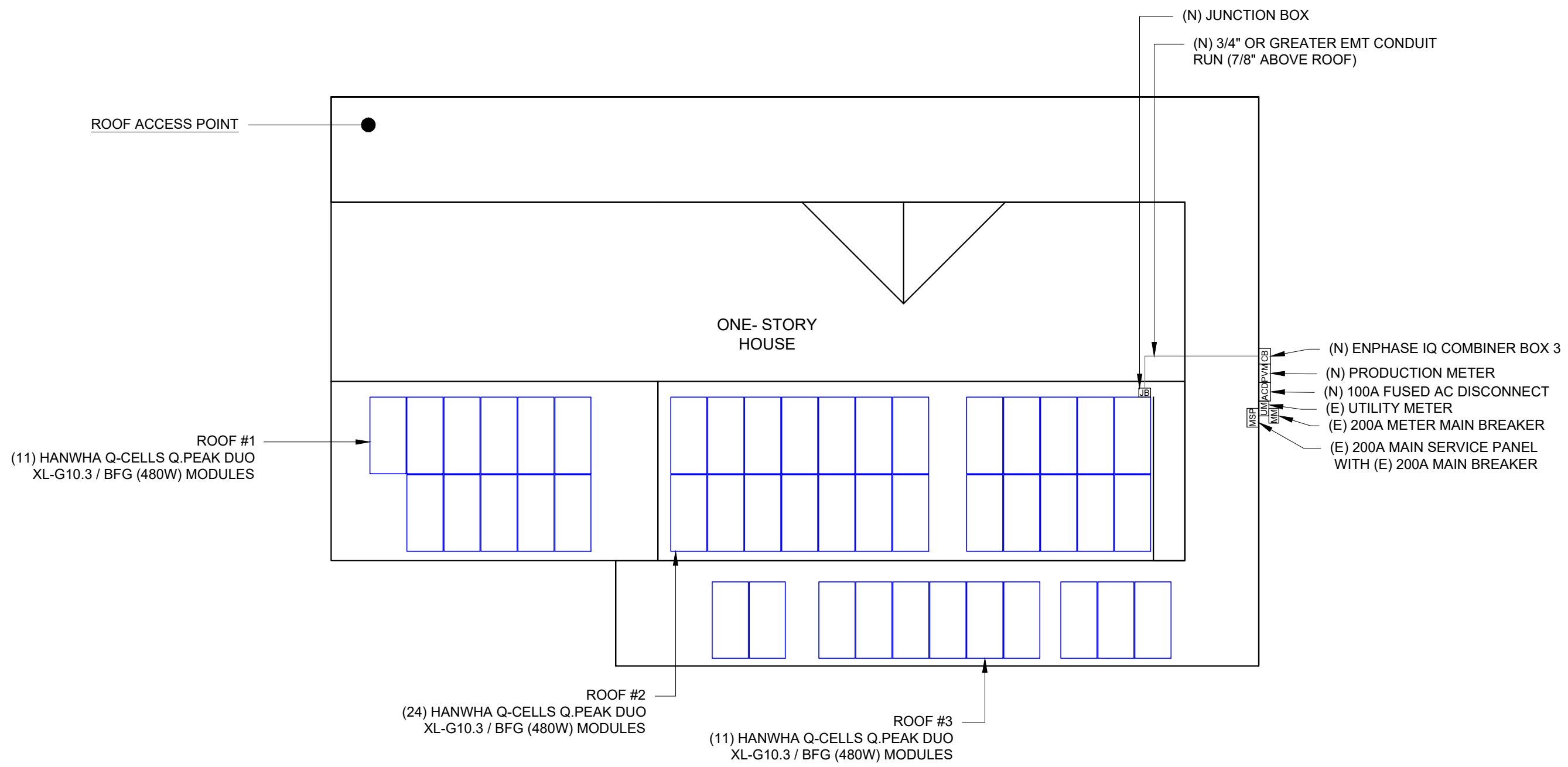
ENLARGE VIEW

SHEET SIZE

ANSI B
 11" X 17"

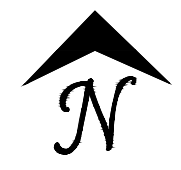
SHEET NUMBER

PV-1.1



NOTE:
 A. ALL ELECTRICAL EQUIPMENT, INVERTERS, DISCONNECTS, MAIN SERVICE PANELS, ETC. SHALL NOT BE INSTALLED WITHIN 3' OF THE GAS METERS' SUPPLY OR DEMAND PIPING.

1 ENLARGE VIEW
 SCALE: 3/32" = 1'-0"



(46) HANWHA Q-CELLS Q.PEAK DUO XL-G10.3 / BFG (480W) MODULES
 (46) ENPHASE ENERGY IQ7PLUS-72-2-US MICRO-INVERTERS

(03) BRANCHES OF 12 MODULES &
 (01) BRANCH OF 10 MODULES CONNECTED IN PARALLEL PER BRANCH

SYSTEM SIZE:- 46 x 480W = 22.08 kWDC

SYSTEM SIZE:- 46 x 290W = 13.34 kWAC

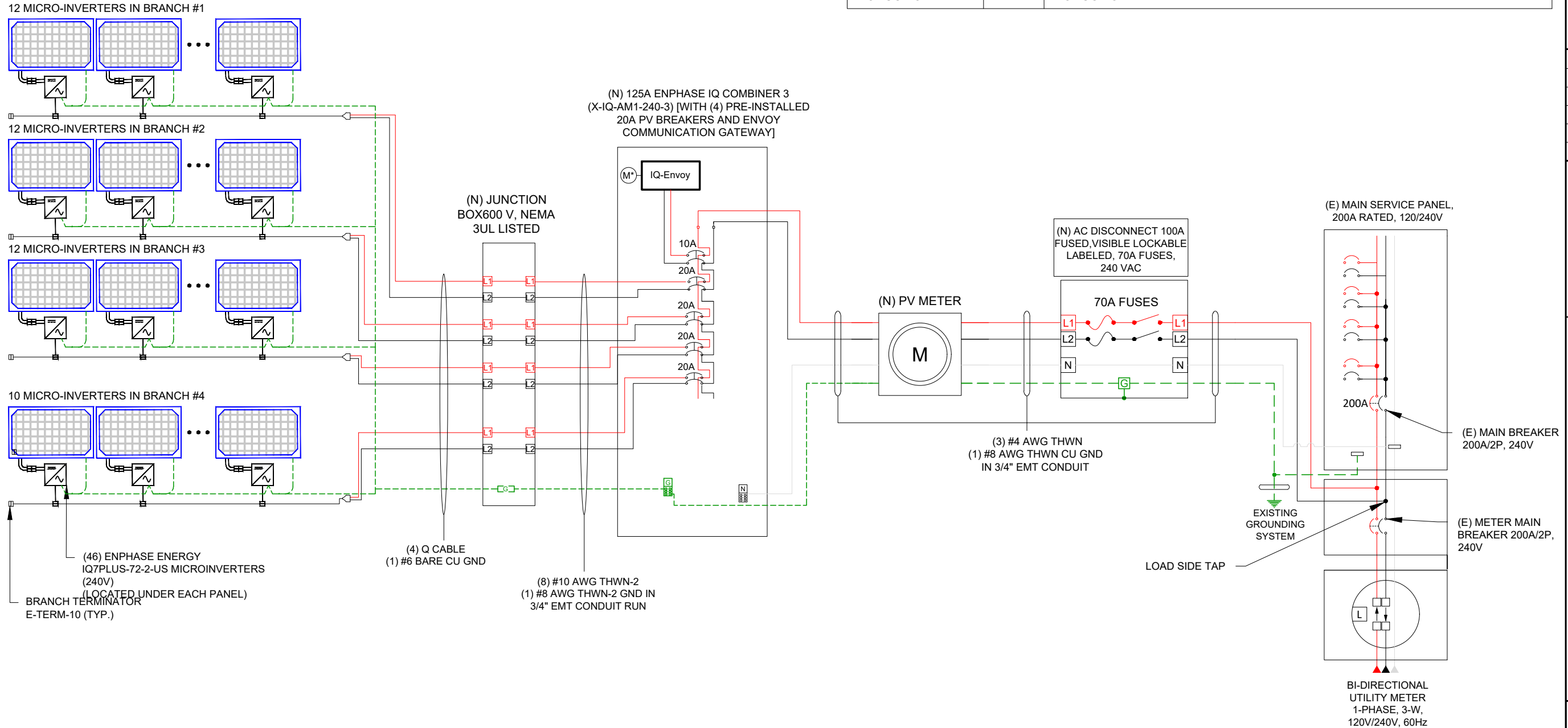
SAMPLE

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	46	HANWHA Q-CELLS Q.PEAK DUO XL-G10.3 / BFG (480W) MODULES
INVERTER	46	ENPHASE ENERGY IQ7PLUS-72-2-US MICRO-INVERTERS
JUNCTION BOX	1	600V, 55A MAX, 4 INPUTS, MOUNTED ON ROOF FOR WIRE & CONDUIT TRANSITION
COMBINER BOX	1	ENPHASE IQ COMBINER BOX 3
AC DISCONNECT	1	AC DISCONNECT 100A FUSED,VISIBLE LOCKABLE LABELED, 70A FUSES, 240 VAC
PRODUCTION METER	1	PRODUCTION METER

CONTRACTOR INFORMATION

VERSION

DESCRIPTION	DATE	REV
INITIAL RELEASE	02/24/2022	UR



SERVICE INFO.

UTILITY PROVIDER: COLUMBIA REA
 MAIN SERVICE VOLTAGE: SQUARE D
 MAIN PANEL BRAND:
 MAIN SERVICE PANEL: (E) 200A
 MAIN CIRCUIT BREAKER RATING: (E) 200A
 MAIN SERVICE LOCATION: EAST
 SERVICE FEED SOURCE: UNDERGROUND

PROJECT NAME

WALLA WALLA, WA 99362

AHJ: WALLA WALLA COUNTY

SHEET NAME

ELECTRICAL LINE DIAGRAM

SHEET SIZE

ANSI B
 11" X 17"

SHEET NUMBER

PV-5

1 ELECTRICAL LINE DIAGRAM
 SCALE: NTS

⚠ WARNING
ELECTRICAL SHOCK HAZARD

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

LABEL LOCATION:
INVERTER(S), AC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).
PER CODE(S): NEC 2020: NEC 706.15 (C)(4) & NEC 690.13(B)

PHOTOVOLTAIC

AC DISCONNECT

LABEL LOCATION:
AC DISCONNECT
NEC 690.13(B)

⚠ WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

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

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

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

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 55.66 AMPS
NOMINAL OPERATING AC VOLTAGE: 240 VAC

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

PHOTOVOLTAIC POWER SOURCE

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

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

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

⚠ WARNING

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

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

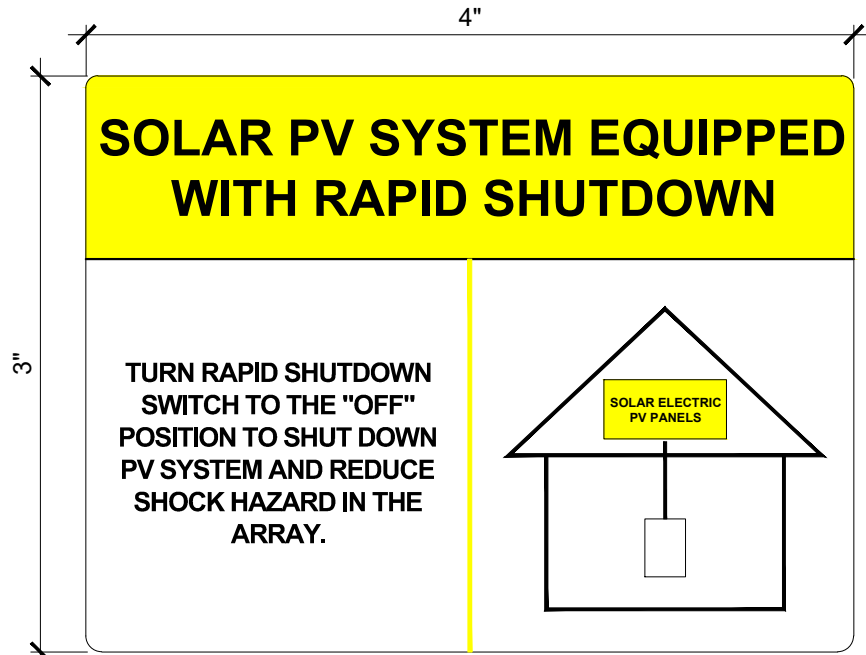
RAPID SHUTDOWN FOR SOLAR PV SYSTEM

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

⚠ WARNING

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

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

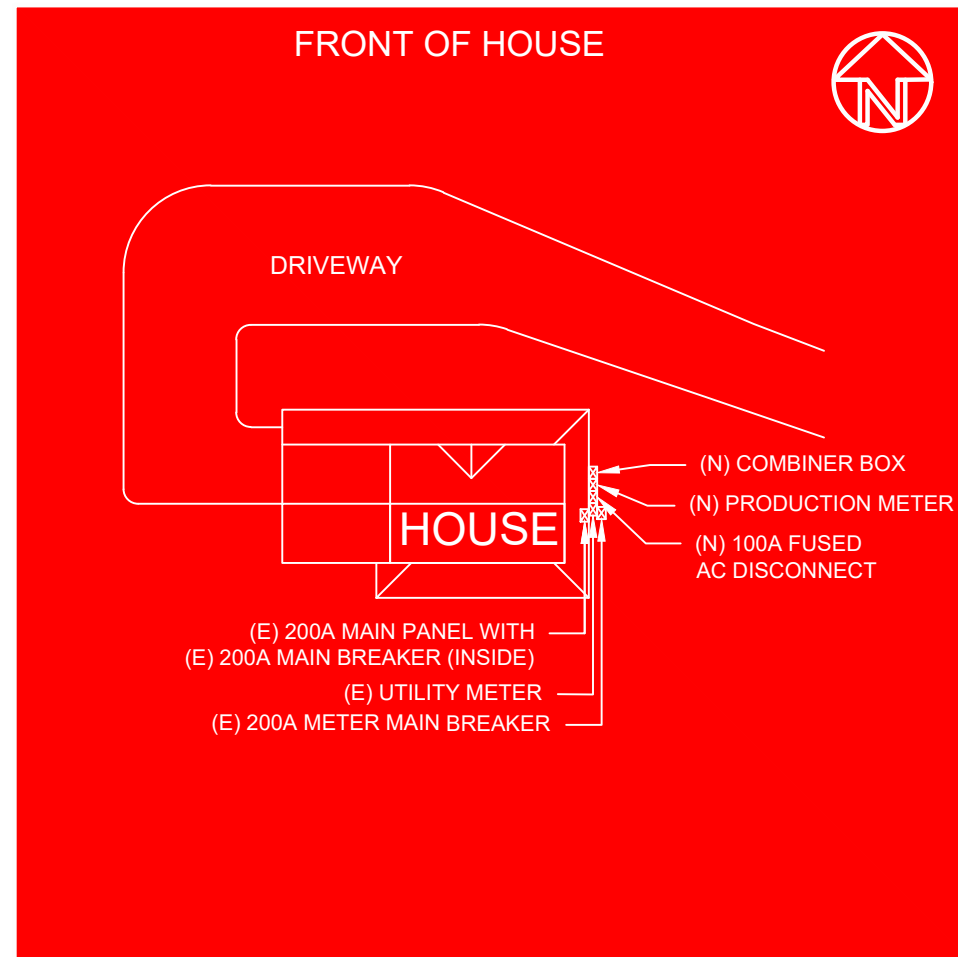


LABEL LOCATION:
ON OR NO MORE THAN 1 M (3 FT) FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.
PER CODE(S): NEC 2020: IFC 690.56(C)

SAMPLE

NOTES AND SPECIFICATIONS:

- SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF THE 2020 ARTICLE 110.21(B), UNLESS SPECIFIC INSTRUCTIONS ARE REQUIRED BY SECTION 690, OR IF REQUESTED BY THE LOCAL AHJ.
- SIGNS AND LABELS SHALL ADEQUATELY WARN OF HAZARDS USING EFFECTIVE WORDS, COLORS AND SYMBOLS.
- LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN.
- LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
- SIGNS AND LABELS SHALL COMPLY WITH ANSI Z535.4-2011, PRODUCT SAFETY SIGNS AND LABELS, UNLESS OTHERWISE SPECIFIED.
- DO NOT COVER EXISTING MANUFACTURER LABELS.



DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN: NEC 690.56(B) & (C), [NEC 705.10])

THE REQUIREMENTS FOR THE PLACARD ARE:

- MADE OF METAL OR HARD PLASTIC
- HAVE A RED BACKGROUND WITH WHITE ENGRAVING
- LETTERS SHOULD BE 9MM (1/4") TALL (COMPARABLE TO 25 POINT ARIAL FONT)

SAMPLE



Q.PEAK DUO XL-G10.3 / BFG 470-485

BIFACIAL DOUBLE GLASS MODULE WITH EXCELLENT RELIABILITY AND ADDITIONAL YIELD



BIFACIAL ENERGY YIELD GAIN OF UP TO 20%
Bifacial Q.ANTUM solar cells with zero gap cell layout make efficient use of light shining on the module rear-side for radically improved LCOE.



LOW ELECTRICITY GENERATION COSTS
Q.ANTUM DUO Z combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology for higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 21.2%.



INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID and Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



FRAME FOR VERSATILE MOUNTING OPTIONS
High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (2400 Pa).



A RELIABLE INVESTMENT
Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty².

¹ APT test conditions according to IEC/TS 62804-1:2015 method B (-1500V, 168h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)
² See data sheet on rear for further information.



THE IDEAL SOLUTION FOR:



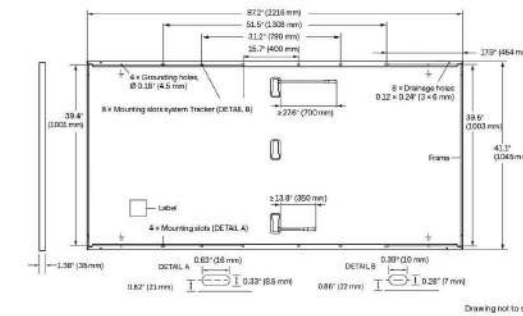
Ground-mounted solar power plants

Engineered in Germany



MECHANICAL SPECIFICATION

Format	87.2 in × 41.1 in × 1.38 in (including frame) (2216 mm × 1045 mm × 35 mm)
Weight	64.2 lbs (29.1 kg)
Front Cover	0.08 in (2.0 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2.0 mm) semi-tempered glass
Frame	Anodized aluminum
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 in × 1.26-2.36 in × 0.69-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 27.6 in (700 mm), (-) ≥ 13.8 in (350 mm)
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4, IP68



ELECTRICAL CHARACTERISTICS

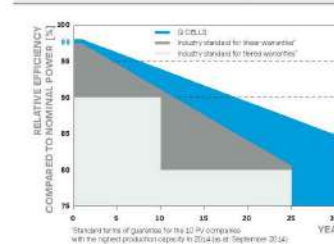
POWER CLASS	470	475	480	485
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ AND BSTC ² (POWER TOLERANCE +5W / -0W)				
		BSTC*	BSTC*	BSTC*
Power at MPP ³	P _{MPP} [W]	470	475	480
Short Circuit Current ¹	I _{SC} [A]	11.04	11.08	11.12
Open Circuit Voltage ¹	V _{OC} [V]	52.91	53.15	53.39
Current at MPP	I _{MPP} [A]	10.51	10.55	10.59
Voltage at MPP	V _{MPP} [V]	44.73	45.03	45.33
Efficiency ¹	η [%]	≥ 20.3	≥ 20.5	≥ 20.7

Bifaciality of P_{MPP} and I_{SC}: 70% ± 5% • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2
¹ Measurement tolerances P_{MPP} ± 3%, I_{SC}, V_{OC} ± 5% at STC: 1000 W/m²; *at BSTC: 1000 W/m² + φ × 135 W/m², φ = 70% ± 5%, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²				
Power at MPP	P _{MPP} [W]	353.8	357.6	361.4
Short Circuit Current	I _{SC} [A]	8.89	8.92	8.96
Open Circuit Voltage	V _{OC} [V]	50.04	50.27	50.49
Current at MPP	I _{MPP} [A]	8.27	8.30	8.34
Voltage at MPP	V _{MPP} [V]	42.77	43.06	43.35

² 800 W/m², NMOT, spectrum AM 1.5

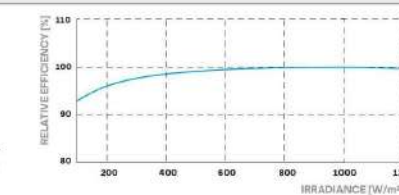
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.45% degradation per year. At least 93.95% of nominal power up to 10 years. At least 84.95% of nominal power up to 30 years.

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

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS					
Temperature Coefficient of I _{SC}	α [%/K]	+0.04	Temperature Coefficient of V _{OC}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	108 ± 5.4 (42 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{MYS}	[V]	1500	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 29 ⁴
Max. Design Load, Push / Pull ³	[lbs/ft ²]	75 (3600 Pa) / 33 (1600 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push / Pull ³	[lbs/ft ²]	113 (5400 Pa) / 50 (2400 Pa)		

³ See Installation Manual

⁴ New Type is similar to Type 3 but with metallic frame

QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,693,215 (solar cells); Certification in process.



Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

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Specifications subject to technical changes © Q CELLS Q.PEAK DUO XL-G10.3 / BFG_470-485_2023-01_Rev01_NA

INITIAL RELEASE

Enphase IQ 7 and IQ 7+ Microinverters

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

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

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



Easy to Install

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

Productive and Reliable

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

Smart Grid Ready

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

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

Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US		IQ7PLUS-72-2-US	
Commonly used module pairings ¹	235 W - 350 W +		235 W - 440 W +	
Module compatibility	60-cell PV modules only		60-cell and 72-cell PV modules	
Maximum input DC voltage	48 V		60 V	
Peak power tracking voltage	27 V - 37 V		27 V - 45 V	
Operating range	16 V - 48 V		16 V - 60 V	
Min/Max start voltage	22 V / 48 V		22 V / 60 V	
Max DC short circuit current (module Isc)	15 A		15 A	
Overtoltage class DC port	II		II	
DC port backfeed current	0 A		0 A	
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit			
OUTPUT DATA (AC)	IQ 7 Microinverter		IQ 7+ Microinverter	
Peak output power	250 VA		295 VA	
Maximum continuous output power	240 VA		290 VA	
Nominal (L-L) voltage/range ²	240 V / 211-264 V	208 V / 183-229 V	240 V / 211-264 V	208 V / 183-229 V
Maximum continuous output current	1.0 A (240 V)	1.15 A (208 V)	1.21 A (240 V)	1.39 A (208 V)
Nominal frequency	60 Hz		60 Hz	
Extended frequency range	47 - 68 Hz		47 - 68 Hz	
AC short circuit fault current over 3 cycles	5.8 Arms		5.8 Arms	
Maximum units per 20 A (L-L) branch circuit ³	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)
Overtoltage class AC port	III		III	
AC port backfeed current	18 mA		18 mA	
Power factor setting	1.0		1.0	
Power factor (adjustable)	0.85 leading ... 0.85 lagging		0.85 leading ... 0.85 lagging	
EFFICIENCY	@240 V	@208 V	@240 V	@208 V
Peak efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C			
Relative humidity range	4% to 100% (condensing)			
Connector type	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)			
Dimensions (HxWxD)	212 mm x 175 mm x 30.2 mm (without bracket)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection - No fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category / UV exposure rating	NEMA Type 6 / outdoor			
FEATURES				
Communication	Power Line Communication (PLC)			
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.			
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.			
Compliance	CA Rule 21 (UL 1741-SA) UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.			

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

To learn more about Enphase offerings, visit enphase.com

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SAMPLE



To learn more about Enphase offerings, visit enphase.com



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

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



Smart

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

Simple

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

Reliable

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

Enphase IQ Combiner 3

MODEL NUMBER	
IQ Combiner 3 X-IQ-AM1-240-3	IQ Combiner 3 with Enphase IQ Envoy™ printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional* consumption monitoring (+/- 2.5%).
ACCESSORIES and REPLACEMENT PARTS (not included, order separately)	
Enphase Mobile Connect™ CELLMODEM-03 (4G/12-year data plan) CELLMODEM-01 (3G/5-year data plan) CELLMODEM-M1 (4G based LTE-M/5-year data plan)	Plug and play industrial grade cellular modem with data plan for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.)
Consumption Monitoring* CT CT-200-SPLIT	Split core current transformers enable whole home consumption metering (+/- 2.5%).
* Consumption monitoring is required for Enphase Storage Systems	
Wireless USB adapter COMMS-KIT-01	Installed at the IQ Envoy. For communications with Enphase Encharge™ storage and Enphase Enpower™ smart switch. Includes USB cable for connection to IQ Envoy or Enphase IQ Combiner™ and allows redundant wireless communication with Encharge and Enpower.
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 - one pair
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

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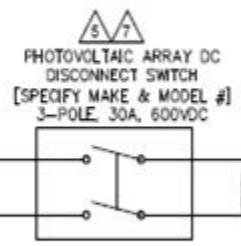
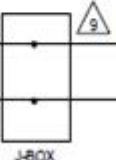
Sample 1-Line Diagram

Voc=457VDC, Isc=7.28AMP
Vmp=376VDC, Imp=6.78AMPS

Voc=457VDC, Isc=7.28AMP
Vmp=376VDC, Imp=6.78AMPS

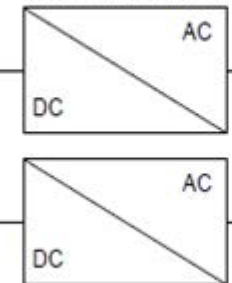


2-#10 CU USE-2
1-#10 CU USE-2
GROUND NOT IN CONDUIT



4-#10 CU THWN-2
2-#10 CU THWN-2 GROUND
2-1/2" EMT CONDUIT

[SPECIFY MAKE & MODEL #]
2.4 KW UTILITY INTERACTIVE INVERTER
250 - 600 VDC, 120/240VAC, 18, 3W
NEGATIVELY GROUNDING
(TYPICAL OF 2 INVERTERS)



2-#10 CU THWN-2
1-#10 CU THWN-2 NEUTRAL
1-#10 CU THWN-2 GROUND
1-1/2" EMT CONDUIT

FAULT CALCS:

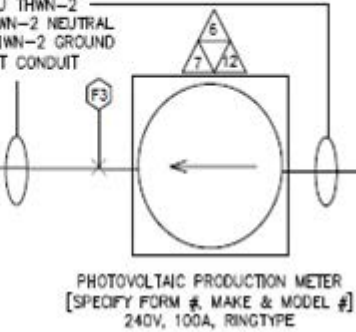
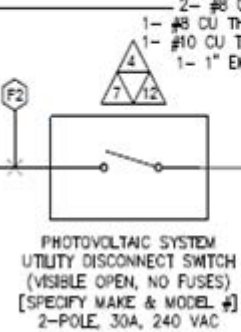
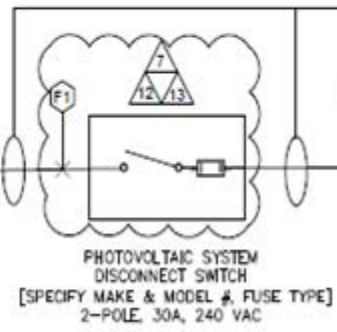
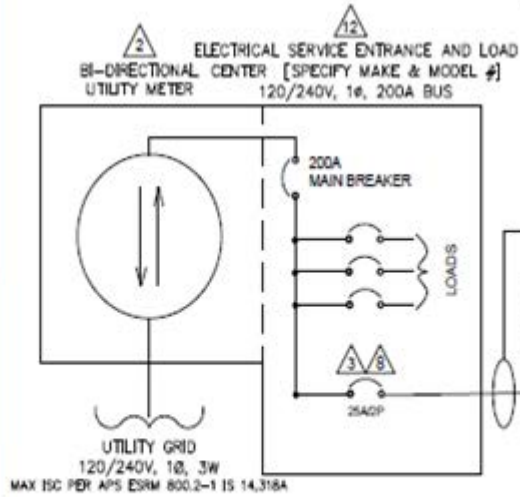
F1: AVAIL = 14,318 AIC
d = 5 feet
f = 383
m = 0.723
Isc = 10,355 AIC

F2: AVAIL = 10,355 AIC
d = 5 feet
f = 277
m = 0.783
Isc = 8,110 AIC

F3: AVAIL = 8,110 AIC
d = 5 feet
f = 217
m = 0.822
Isc = 6,665 AIC

F4: AVAIL = 6,665 AIC
d = 5 feet
f = 178
m = 0.849
Isc = 5,657 AIC

SOURCE: COOPER BUSSMAN
SPD MANUAL, REV 2009.
CALCULATIONS IN ACCORDANCE
WITH NEC ART 110.9 & 110.10.



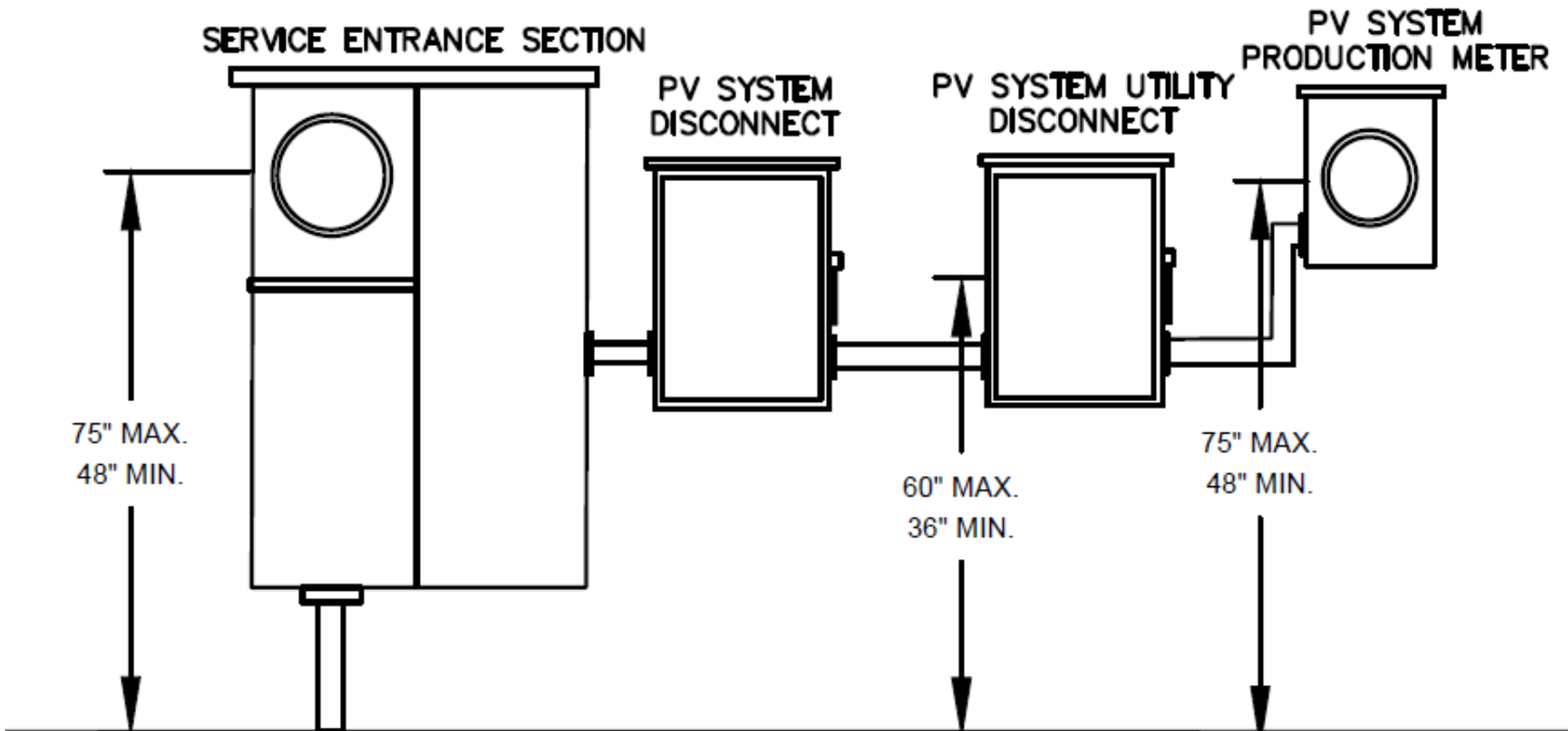
DEDICATED PHOTOVOLTAIC SYSTEM COMBINER PANEL [SPECIFY MAKE, MODEL #, VOLTAGE AND AMP RATING]

15A/2P (TYPICAL OF 2)

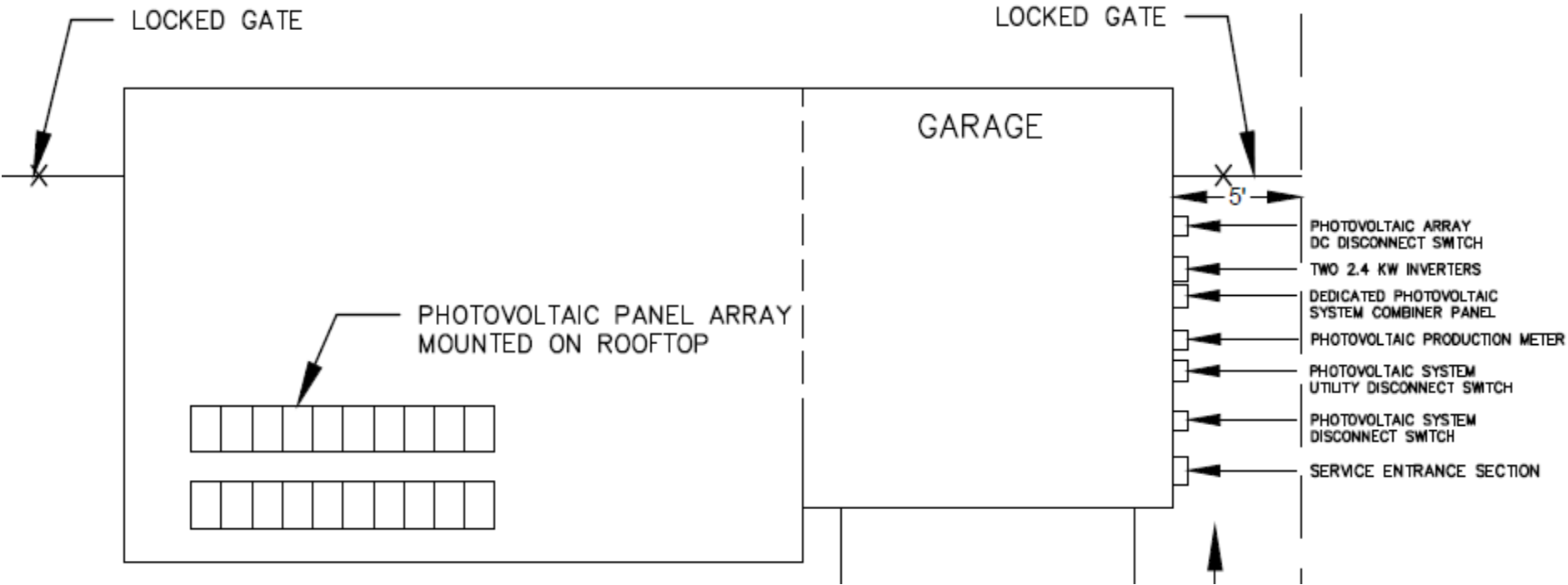
NOTES:

Example - Residential PV System

ELEVATION VIEW

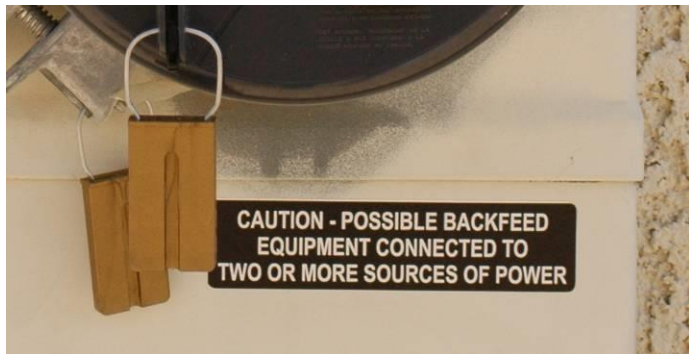


Sample Site Plan



NOTE: UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT SERVICE ENTRANCE.

Example of PV System Warning Labels



Example of PV System Warning Labels (cont.)

NOTICE

DEDICATED PHOTOVOLTAIC
SYSTEM COMBINER PANEL
DO NOT ADD LOADS TO THIS
PANEL

WARNING

A GENERATION SOURCE IS CONNECTED TO THE
SUPPLY (UTILITY) SIDE OF THE SERVICE
DISCONNECTING MEANS. FOLLOW PROPER
LOCK-OUT/TAG-OUT PROCEDURES TO ENSURE
THE PHOTOVOLTAIC SYSTEM UTILITY
DISCONNECT SWITCH IS OPENED PRIOR TO
PERFORMING WORK ON THIS DEVICE

WARNING

WARNING: MULTI POWER
PRODUCTION SOURCES
INTERCONNECTED TO THIS
ELECTRICAL SERVICE.

APS LABEL FOR 705.12(D)(2)(3)(d)

CAUTION

DUAL POWER SOURCES
SECOND SOURCE IS
PHOTOVOLTAIC SYSTEM

CAUTION

DO NOT MOVE BREAKERS OR ADD
NEW CIRCUITS WITHOUT
ELECTRICAL ENGINEER APPROVAL

WARNING

OTHER POWER SOURCE CONNECTED IS A
PHOTOVOLTAIC SYSTEM. UTILITY DISCONNECT
SWITCH FOR THIS SOURCE IS LOCATED APPROX 40
FEET FROM THIS LOCATION NORTH WEST SIDE OF
DETACHED GARAGE.

PHOTOVOLTAIC POWER SOURCE
BREAKERS ARE BACKFEEDING

BREAKER HAS BEEN DE-RATED
PER NEC 690.64(B)(2)

DENOTE LOCATION OF "UT PV SYS DISC" (2 OF 2)
OR
DENOTE LOCATION OF CRITICAL SUB-PANEL