

Photovoltaic Roof Mount System

30 MODULES-ROOF MOUNTED - 11.10 kWp DC / 9.75 kVA AC

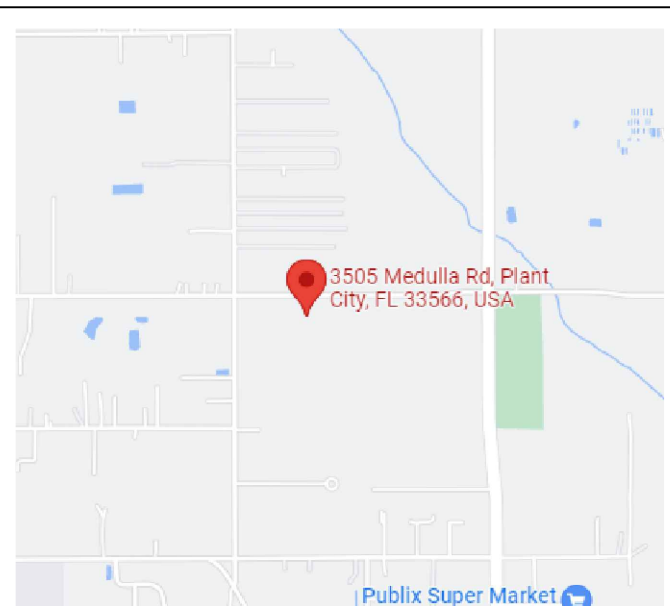
3505 Medulla Rd., Plant City FL 33566

SCOPE OF WORK:

SYSTEM SIZE: 11.10 KW DC, 9.75 KVA AC
 PV MODULES: BVM6610M-370S-H-HC-BF
 INVERTER (S): 30 x Enphase IQ8M-72-2-US
 RACKING STRUCTURE: S-5! ProteaBracket with PVKIT
 ATTACHMENT: N/A

NEC 2017, IBC 2014, IFC 2014, IRC 2014

This approval is for compliance to the current adopted building codes for the proposed Solar System only. It is the owner's/applicant's responsibility to ensure that the proposed installation of solar systems and associated equipment is on legally permitted structures. If determined by inspection staff the proposed solar system is installed on non-permitted structures, any required modifications needed for code compliance will be at the owner's/applicants expense.



VICINITY MAP
SCALE: NTS

GENERAL NOTES:

- LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION.
- THIS PROJECT SHALL COMPLY WITH LOCAL ORDINANCES.
- PROPER ACCESS AND WORKING CLEARANCE WILL BE PROVIDED.
- ALL ELECTRICAL WORK SHOWN ON THESE PLANS WILL BE COMPLETED BY THE UNDERSIGNED.
- ALL APPLICABLE PV EQUIPMENT LISTED AND COMPLIANT WITH UL2703, UL1741 AND UL1703.
- ALL ROOF PENETRATIONS TO BE SEALED WITH A HIGH PERFORMANCE ROOF SEALANT SUCH AS GeoCeil 2300 CLEAR SEALANT.
- THE SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND THE UTILITY IS OBTAINED.
- THE SOLAR PHOTOVOLTAIC INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- IF THE EXISTING MAIN PANEL DOES NOT HAVE VERIFIABLE GROUNDING ELECTRODE, IT IS THE NECESSARY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE.
- EACH MODULE WILL BE GROUNDED UL 2703 OR UL 1703 APPROVED USING THE SUPPLIED CONNECTION POINTS IDENTIFIED ON THE MODULE AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS".
- A LADDER SHALL BE IN PLACE FOR THE INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- MAX HEIGHT OF MODULES OFF OF ROOF FACE : <6".
- ALL WORK SHALL COMPLY WITH 2011 NEC, 2012 IRC, IBC 2012, 2012 IFC MUNICIPAL CODE, AND ALL MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTION..
- PHOTOVOLTAIC SYSTEM WILL COMPLY WITH 2011 NEC.
- PHOTOVOLTAIC SYSTEM INVERTER IS UNGROUNDED. NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER, AND SYSTEM COMPLIES WITH 690.35.
- MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.
- INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741.
- ELECTRICAL EQUIPMENT AND MATERIAL TO BE LISTED, LABELED, AND INSTALLED PER THE NEC, THE INSTALLATION STANDARDS/MANUFACTURER'S RECOMMENDATIONS AND IF REQUIRED A RECOGNIZED ELECTRICAL TESTING LABORATORY.
- CONDUITS EXPOSED TO SUNLIGHT ON ROOF SHALL BE LOCATED NOT LESS THAN 7/8" ABOVE ROOF SURFACE.

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BEAM SEQUENT
 Engineering & Consultaion
 Al-Quds Street Ramallah, Palestine
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Project Data

Tyrell Hicks Residence PV System

27°58'53.33"N 82° 3'41.81"W

3505 Medulla Rd.
 Plant City FL 33566

Drawing Details

Project Number	007-03-US-PV
Project Type	Photovoltaic Roof Mount System
Drawing Name	Solar Permit Document
Drawing Number	23014-US-Tyrell_hicks-PV_Permit-00
Drawing Type	Preliminary Design

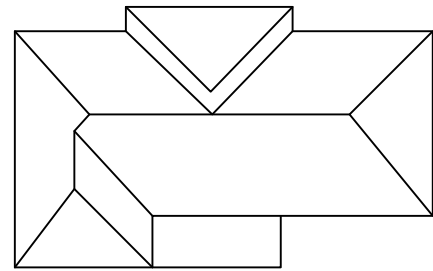
Revisions

REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

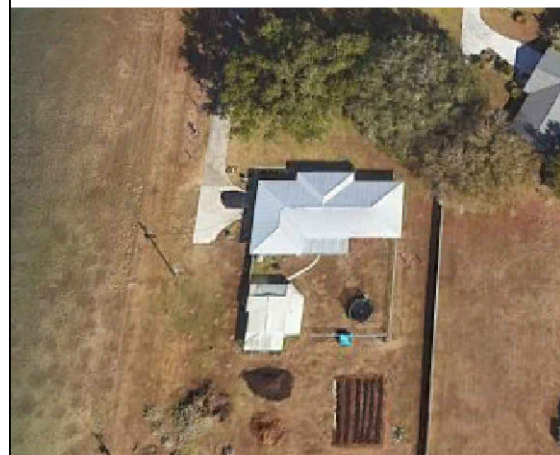
Sheet No.	PV-00
Sheet Name	COVER SHEET
Sheet Size	ANSI B 11" X 17"

APPLICABLE CODES

2017 NATIONAL ELECTRICAL CODE (NEC)
 2020 INTERNATIONAL BUILDING CODE (IBC)
 2020 INTERNATIONAL RESIDENTIAL CODE (IRC)
 2020 INTERNATIONAL MECHANICAL CODE (IMC)
 2020 INTERNATIONAL PLUMBING CODE (IPC)
 2020 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

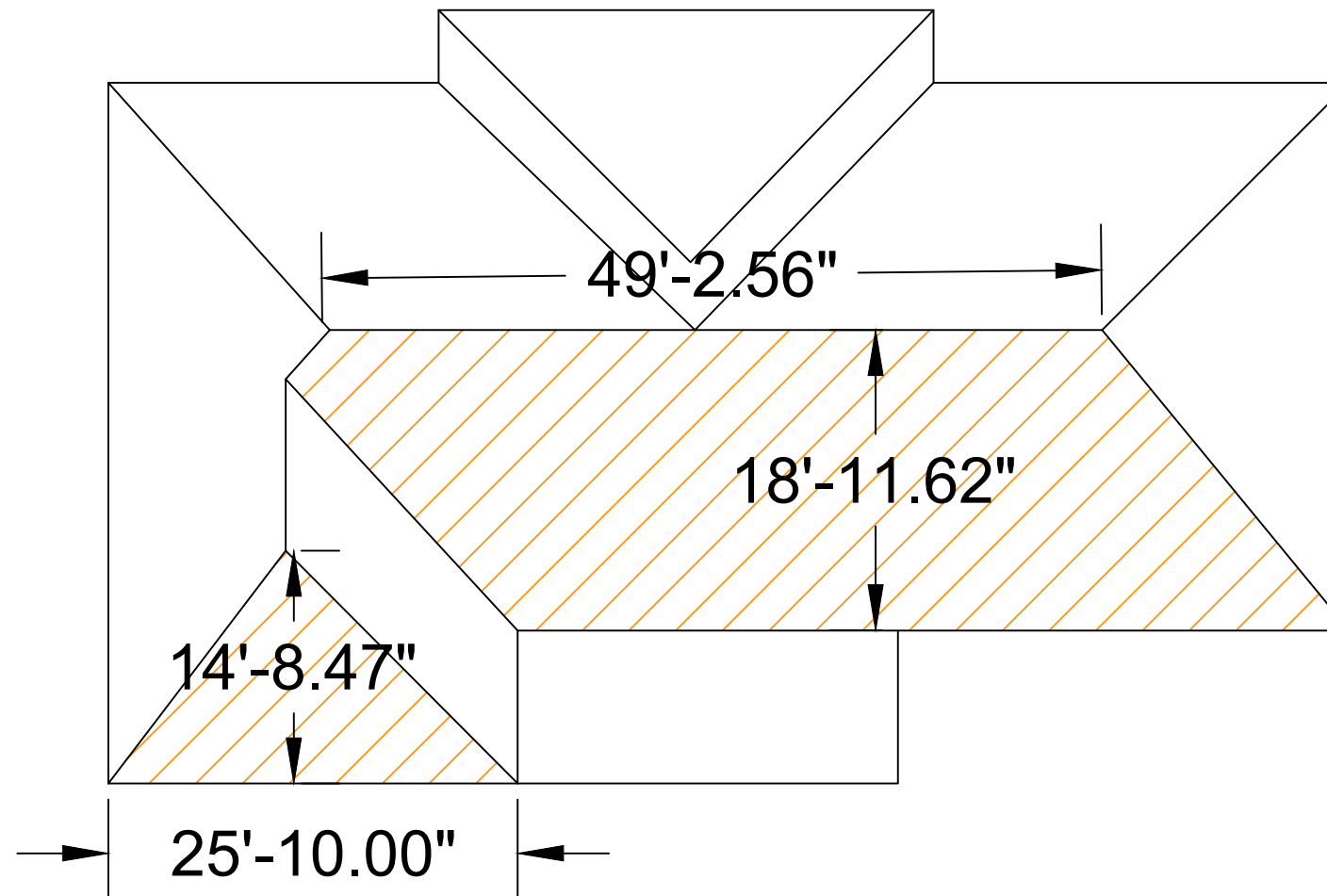


AERIAL VIEW



HOUSE AREA

SCALE: NTS



SITE PLAN AND ROOF PLAN

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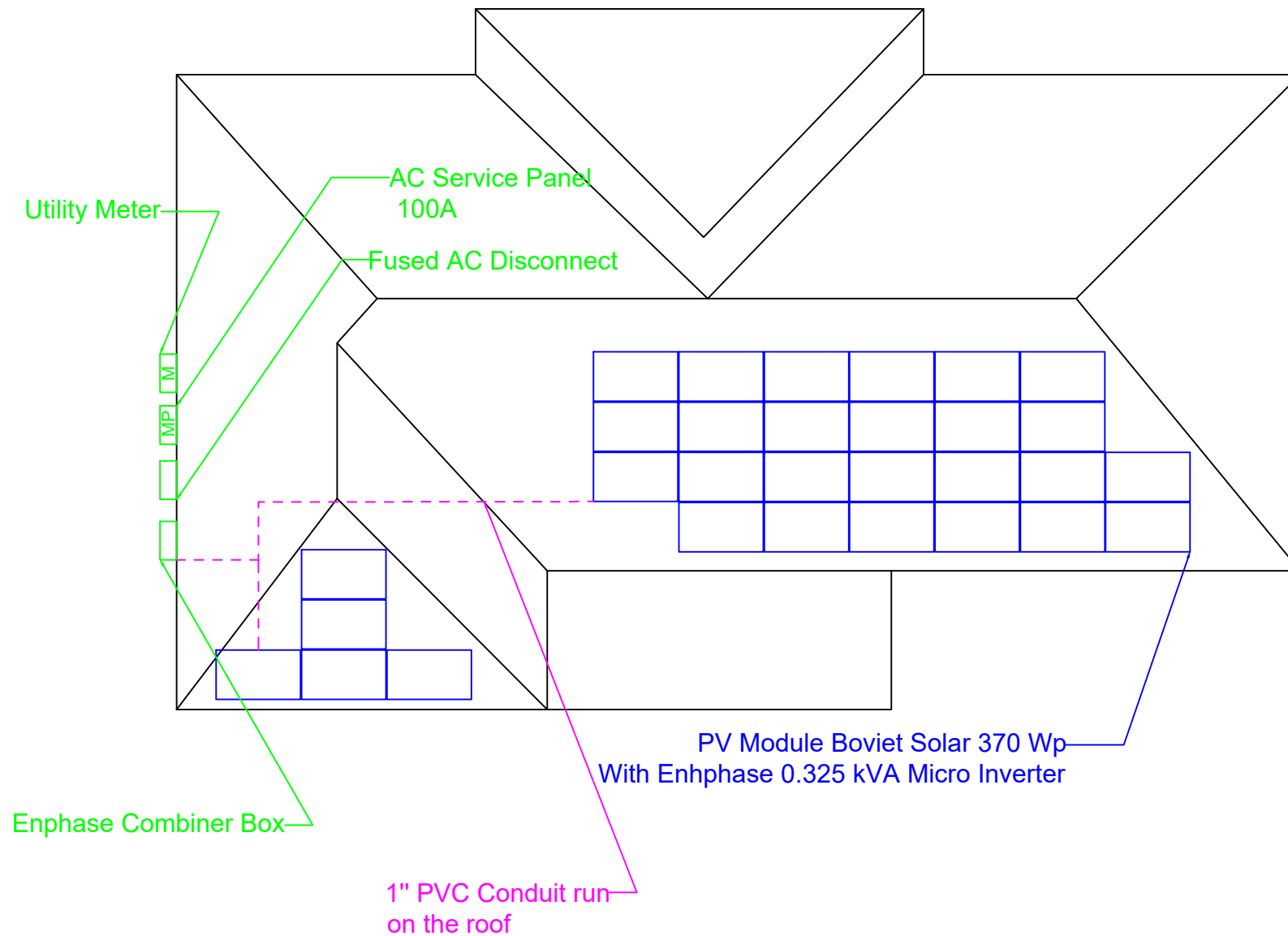
REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No.	PV-01
Sheet Name	SITE & ROOF PLAN
Sheet Size	ANSI B 11" X 17"

MODULE TYPE, DIMENSIONS, & WEIGHT:

- 1) NUMBER OF MODULES: 30 MODULES
- 2) MODULE TYPE: Boviet BVM6610M-370S-H-HC-BF
- 3) MODULE WEIGHT: 48.50 Lb
- 4) SOLAR PANEL AREA: 20.20 Sq. foot

ROOF DESCRIPTION				
ROOF TYPE			Trapezoidal	
ROOF	TILT	AZIMUTH		
# 1	14°	180°		
# 2	14°	180°		



ROOF PLAN WITH MODULES

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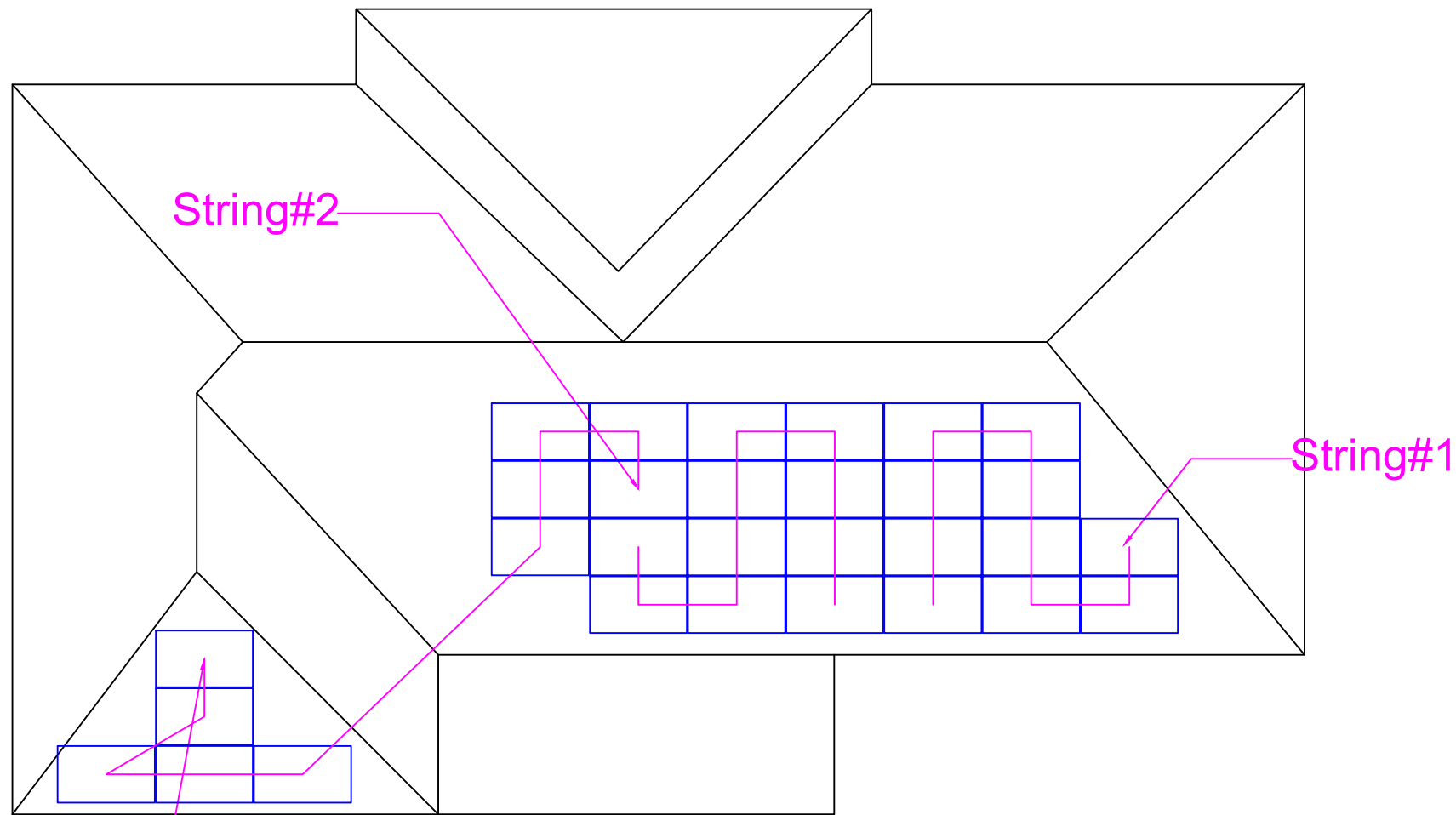
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REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No.	PV-02
Sheet Name	ROOF & MODULES PLAN
Sheet Size	ANSI B 11" X 17"

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	30	BOVIET BVM6610M-370S-H-HC-BF
INVERTER	30	ENPHASE IQM-72-2
FUSED AC DISCONNECT	1	AC DISCONNECT 240V, 50A
LOAD CENTER	1	Enphase IQ Combiner 4
ROOF BRACKET	174	ProteaBracket™ AL
MID CLAMPS	75	S-5-PVKIT@2.0 Edge Grab
END CLAMPS	99	S-5-PVKIT@2.0 Edge Grab



String#3

STRING LAYOUT
SCALE: NTS

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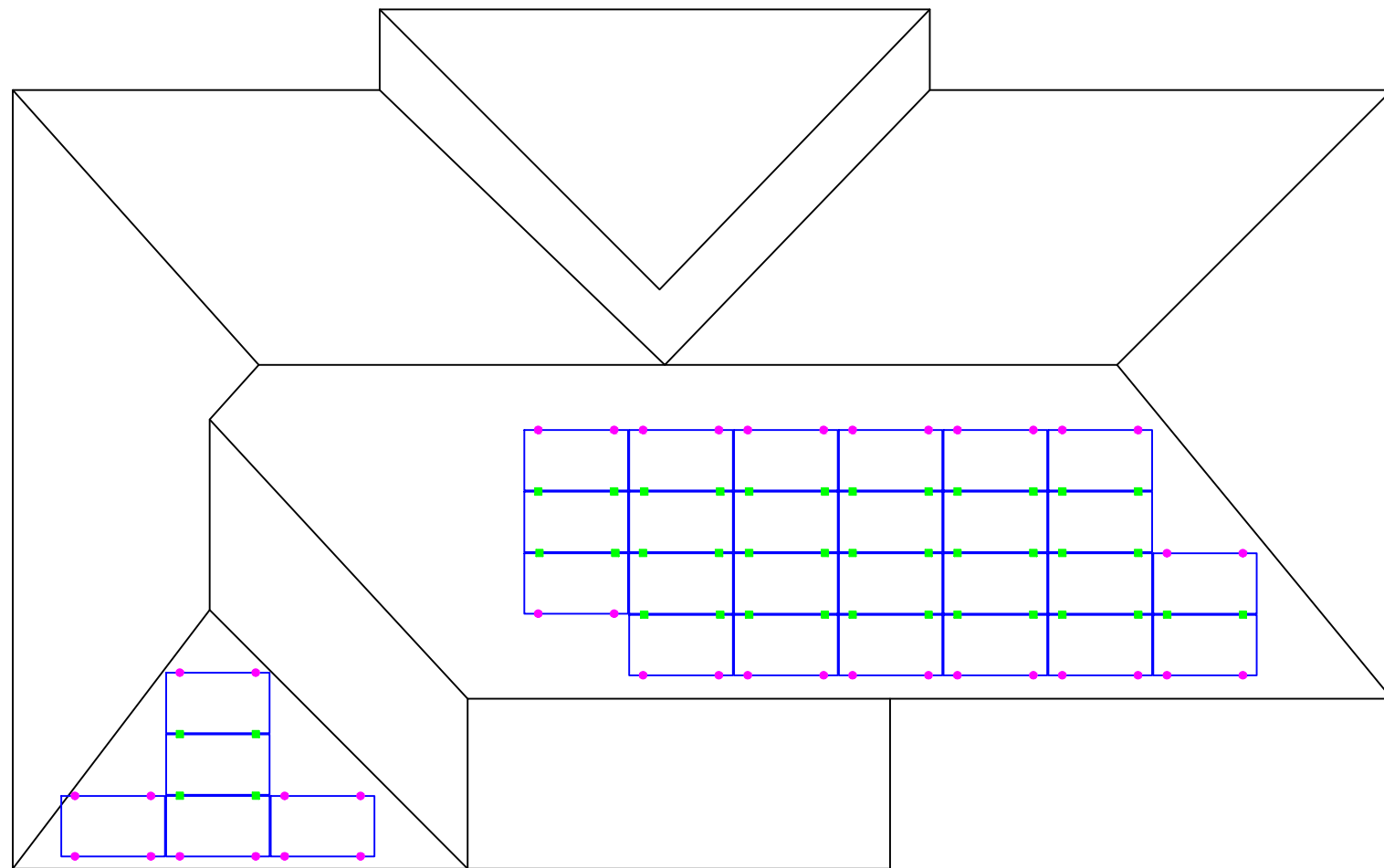
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REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No.	PV-03
Sheet Name	STRING LAYOUT
Sheet Size	ANSI B 11" X 17"



PVKIT 2.0 MidGrab



PVKIT 2.0 EdgeGrab



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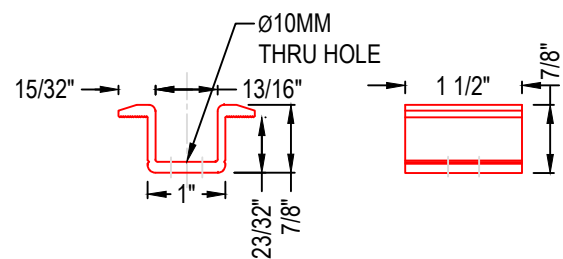
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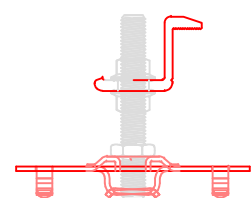
REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No.	PV-04
Sheet Name	MOUNTING LAYOUT
Sheet Size	ANSI B 11" X 17"

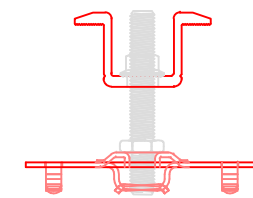
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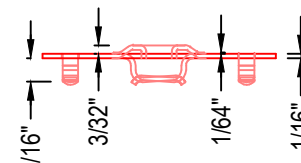
6061 T6 ALUMINUM PV GRAB 30



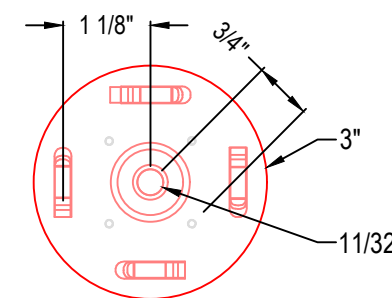
ASSEMBLED EDGE CONDITION



ASSEMBLED MID CONDITION



3" MOUNTING DISC



ATTACHMENT DETAIL (ENLARGED SECTION VIEW)
 SCALE: NTS

30 BOVIET BVM6610M-370S-H-HC-BF
3 STRING OF 12,6 MODULES CON. IN SERIES

SYSTEM SIZE 9.75 kVA

Conduits Schedule

No.	Conduits	Conductor	Neutral	Ground
1	1" PVC	(3) AWG#12, 1 Core RAW QD CABLE	(3) AWG#12, 1 Core RAW QD CABLE	(1) AWG #12 THWN-2 GND
2	1" PVC	(3) AWG#6, 1 Core THWN- 2	(1 AWG#6, 1 Core THWN- 2	(1) AWG#6, 1 Core GND- 2

CONDUCTOR SIZING CALCULATIONS

CIRCUIT DESCRIPTION	CURRENT	I _{max} (690.8(A))	I _{cont} (690.8(B)(1) calc)	SPECIFIED CONDUCTOR	AMPACITY @ 90c	AMBIENT TEMP c	CURRENT CARRYING COND.	COND. OF USE APPLIED (690.8(B)(2) calc)
From roof Combiner Box to Enphase IQ 4	13.5000	13.5000	16.8800	#12, THWN	25	45	1 TO 3	21.7500
From Enphase IQ To fused Disconnect	40.5000	40.5000	50.6400	#6, THWN	85	45	1 TO 3	73.9500

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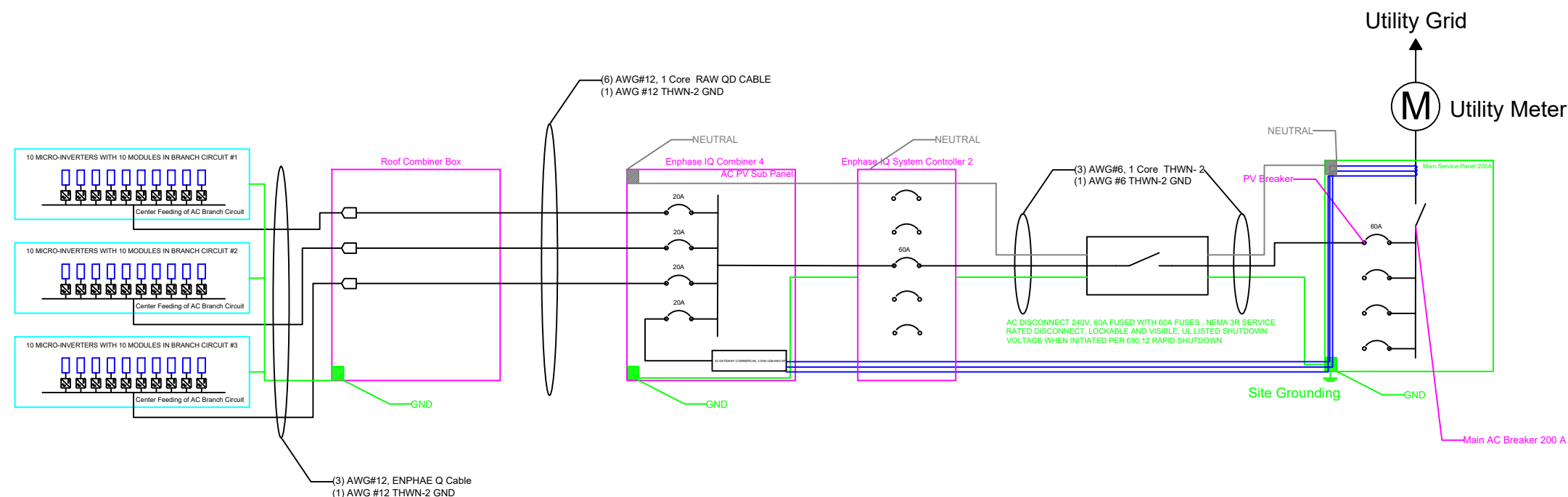
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REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No.	PV-05
Sheet Name	SINGLE-LINE DIAGRAM
Sheet Size	ANSI B 11" X 17"



ELECTRICAL SINGLE LINE DIAGRAM

SCALE: NTS

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CIRCUIT DESCRIPTION	CURRENT	I_{max} (690.8(A))	I_{cont} (690.8(B)(1) calc)	SPECIFIED CONDUCTOR	AMPACITY @ 90c	AMBIENT TEMP c	CURRENT CARRYING COND.	COND. OF USE APPLIED (690.8(B)(2) calc)
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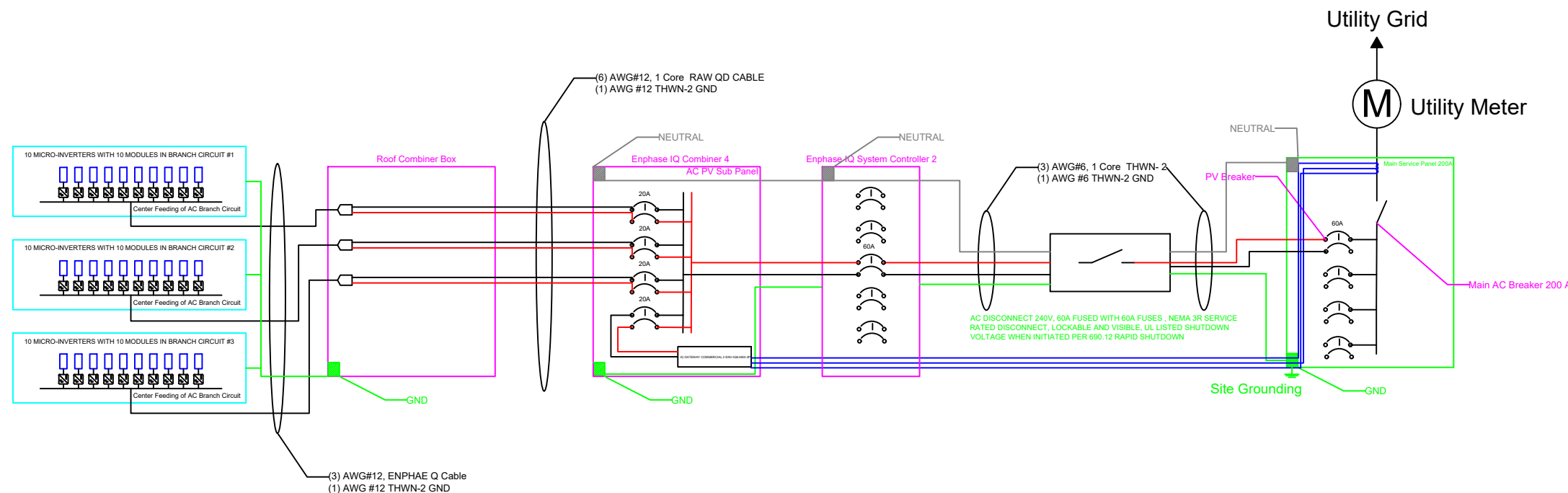
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REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No.	PV-06
Sheet Name	THREE-LINE DIAGRAM
Sheet Size	ANSI B 11" X 17"



ELECTRICAL SINGLE LINE DIAGRAM
SCALE: NTS



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REV.	DATE	Drawing Type	DESIGN	CHECK	APPROVAL

Sheet No. PV-07

Sheet Name METER & PANEL
PHOTOS

Sheet Size ANSI B
11" X 17"

INSTALL ON THE UTILITY METER

WARNING
THIS SERVICE METER
IS ALSO SERVED BY A
PHOTOVOLTAIC SYSTEM

INSTALL ON THE AC DISCONNECT

**PHOTOVOLTAIC SYSTEM
AC DISCONNECT**
OPERATING VOLTAGE 240 VOLTS
OPERATING CURRENT 60 AMPS

INSTALL ON THE MAIN BREAKER PANEL

**RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM**

**PV SYSTEM DISCONNECT FOR
UTILITY OPERATION**

TO BE INSTALLED IN ACCORDANCE WITH SECTION 690.56(C):

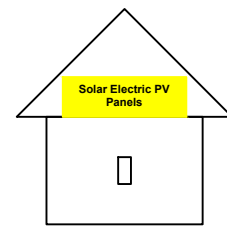
**CAUTION: SOLAR ELECTRIC
SYSTEM CONNECTED**

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

**PHOTOVOLTAIC SYSTEM
AC DISCONNECT**
OPERATING VOLTAGE 240 VOLTS
OPERATING CURRENT 60 AMPS

**SOLAR PV SYSTEM
EQUIPPED WITH
RAPID SHUTDOWN**

WARNING
TURN OFF PHOTOVOLTAIC
AC DISCONNECT PRIOR TO
WORKING INSIDE PANEL



TURN RAPID SHUTDOWN SWITCH TO THE
OFF POSITION TO SHUTDOWN THE PV
SYSTEM AND REDUCE THE SHOCK
HAZARD IN THE ARRAY

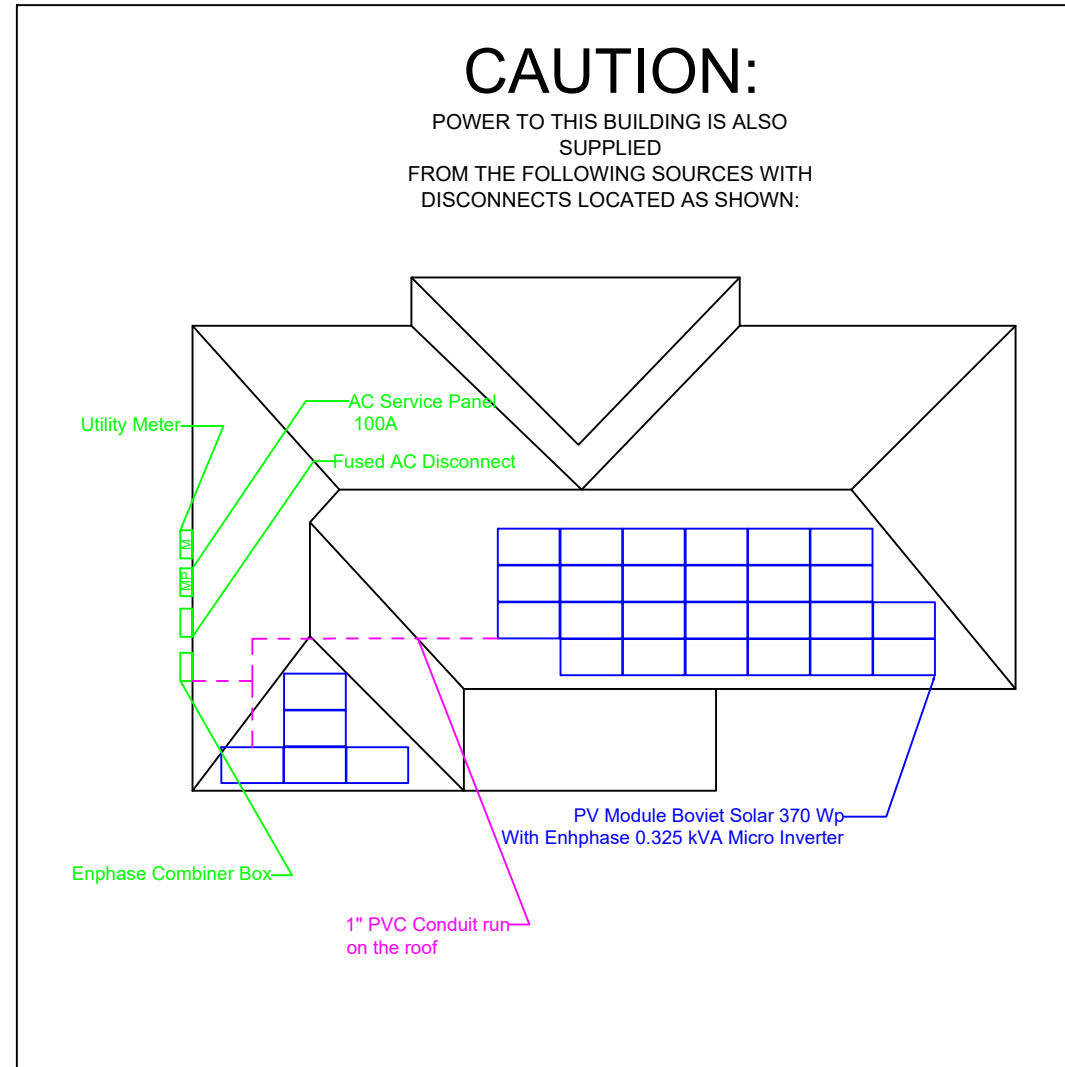
INSTALL INSIDE THE MAIN BREAKER PANEL, NEXT TO THE SOLAR BREAKER

PV SOLAR BREAKER
DO NOT RELOCATE
THIS OVERCURRENT
DEVICE

INSTALL ON THE AC DISCONNECT

CAUTION:

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



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Sheet No. PV-08

Sheet Name WARNING SIGNS

Sheet Size ANSI B
11" X 17"