


PLAN KEY	
PV-1	COVER PAGE
PV-2	PANEL LAYOUT
PV-3	LAYOUT DETAIL
PV-4	EQUIPMENT LABELS

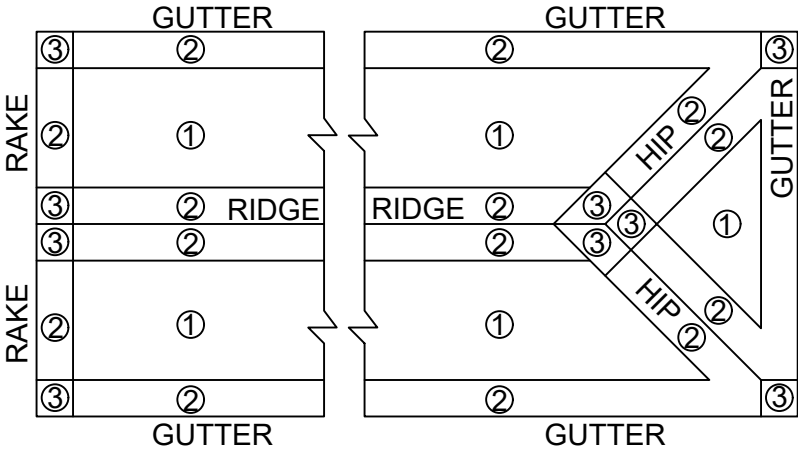
SYSTEM INFORMATION	
MODULE	HANWHA Q.PEAK DUO BLK-G10+ 365
INVERTER	ENPHASE IQ7PLUS-72-2-US
RACKING	ROOFTECH RT-APEX
SYSTEM SIZE (DC)	12.775 KW
LOCATION	40.6110674, -74.4187385

*X= 2 OR M DEPENDING ON MANUFACTURER'S AVAILABILITY. SAME ELECTRICAL CHARACTERISTICS WITH DIFFERENT DC CONNECTOR. SEE SPECS FOR DETAILS.

1.
- ALL WIND DESIGN CRITERIA ARE FOR LOW SLOPE ROOFS, GABLE AND HIP ROOFS CONSIDERED FROM AN ANGLE OF MIN. 9.5 ° ($\frac{2}{12}$) TO MAX. 45° ($\frac{12}{12}$) NOT TO EXCEED 30' MEAN ROOF HEIGHT ATTACHED WITH FASTENERS AS SPECIFIED BY THE MANUFACTURER.
2.
- SPAN TABLES ARE DERIVED FROM MECHANICAL LOAD TESTS PERFORMED BY THE MANUFACTURERS INDEPENDENT TESTING AGENCIES ON BEHALF OF THE MANUFACTURER.
3.
- ROOF SEALANTS SHALL CONFORM TO ASTM C920 AND ASTM 6511
4.
- ALL ATTACHMENTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS PRINTED INSTRUCTIONS.

FASTENER:
REFER TO STRUCTURAL CERTIFICATION LETTER FOR ALL STRUCTURAL INFORMATION OF EXISTING BUILDING STRUCTURE.
ATTACHMENT SPACING NOT EXCEED MANUFACTURERS SPECIFICATIONS FOR WIND LOADS AS PER ASCE 07-16. RISK CATEGORY II TOPOGRAPHIC EFFECTS B,C, & D AND ROOF WIND ZONES 1,2,& 3. ROOF ZONES 2 & 3 ARE WITHIN 48" OF ANY OUTER EDGE, HIP, RIDGE, OR GUTTER LINE FOR STRUCTURES 30'- 0" OR LESS MEAN ROOF HEIGHT.


HANWHA Q.PEAK DUO BLK-G10+ 365 365 WATT MODULE 67.6" X 41.1" X 1.26" (SEE DATASHEET)



ROOF WIND ZONES AS PER IRC R301.2(7)
ROOF ZONES 2 & 3 ARE 48" FROM OUTER ROOF EDGES, RIDGES, HIPs, RAKES, AND GUTTER EDGES FOR STRUCTURES BELOW 30'-0" MEAN ROOF HT.

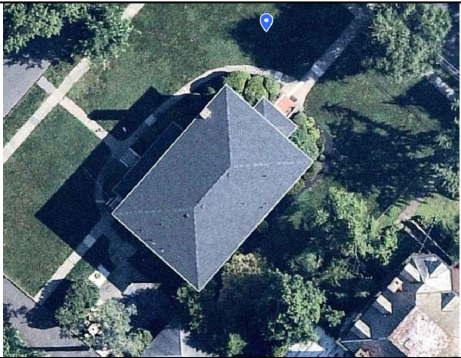


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VICINITY MAP



CUSTOMER
INFORMATION

JORGE PENA
800-06 CENTRAL AVE
PLAINFIELD, NJ 07060
9177317720

PV SYSTEM
INFORMATION

SYSTEM SIZE (DC) : 12.775 KW
35 MODULES: HANWHA Q.PEAK DUO BLK-G10+ 365
(SAFE HARBOR MODULES: 0)
35 INVERTERS: ENPHASE IQ7PLUS-72-2-US

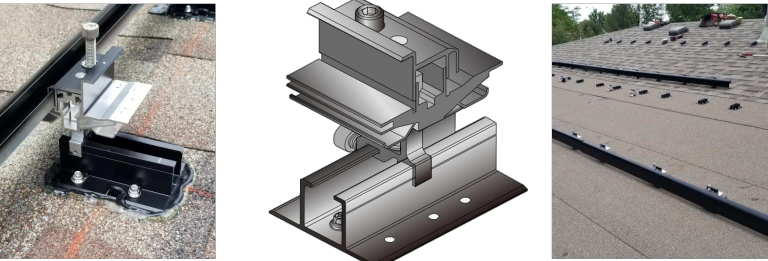
PROJECT INFORMATION - MS102402

INITIAL	DATE: 8/4/2022	DESIGNER: EM
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REV:	DATE:	DESIGNER:

COVER PAGE

PV-1

RT-APEX
The most advanced Rail-less & Self-flashing PV Mounting System



RT-APEX

Universal Clamping / Slide In Mounting
One Step Leveling / Integrated Flexible Flashing

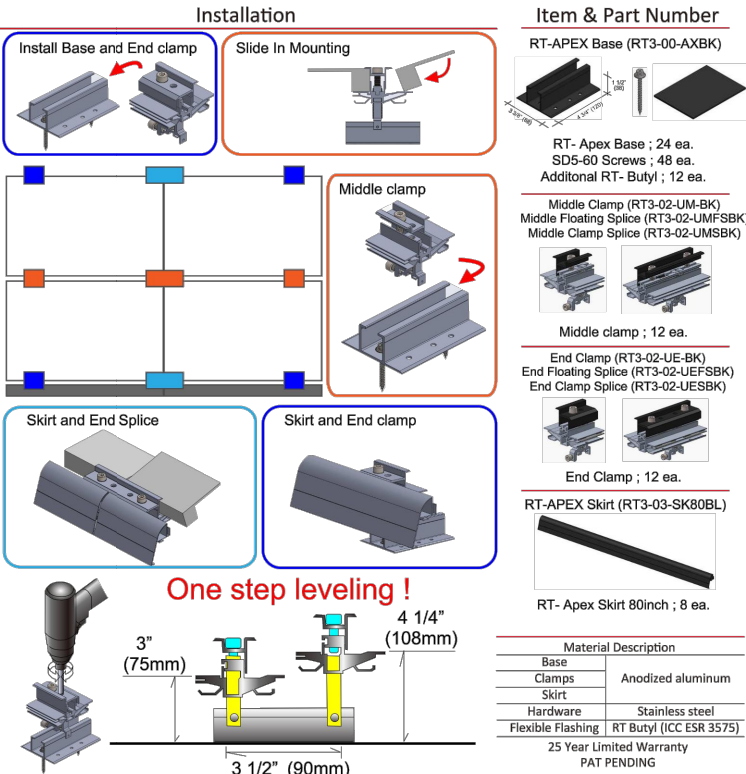
Proven PV mounting since 1994



Roof Tech
The Standard for Waterproof Flexible Flashing Since 1994
www.roof-tech.us info@roof-tech.us

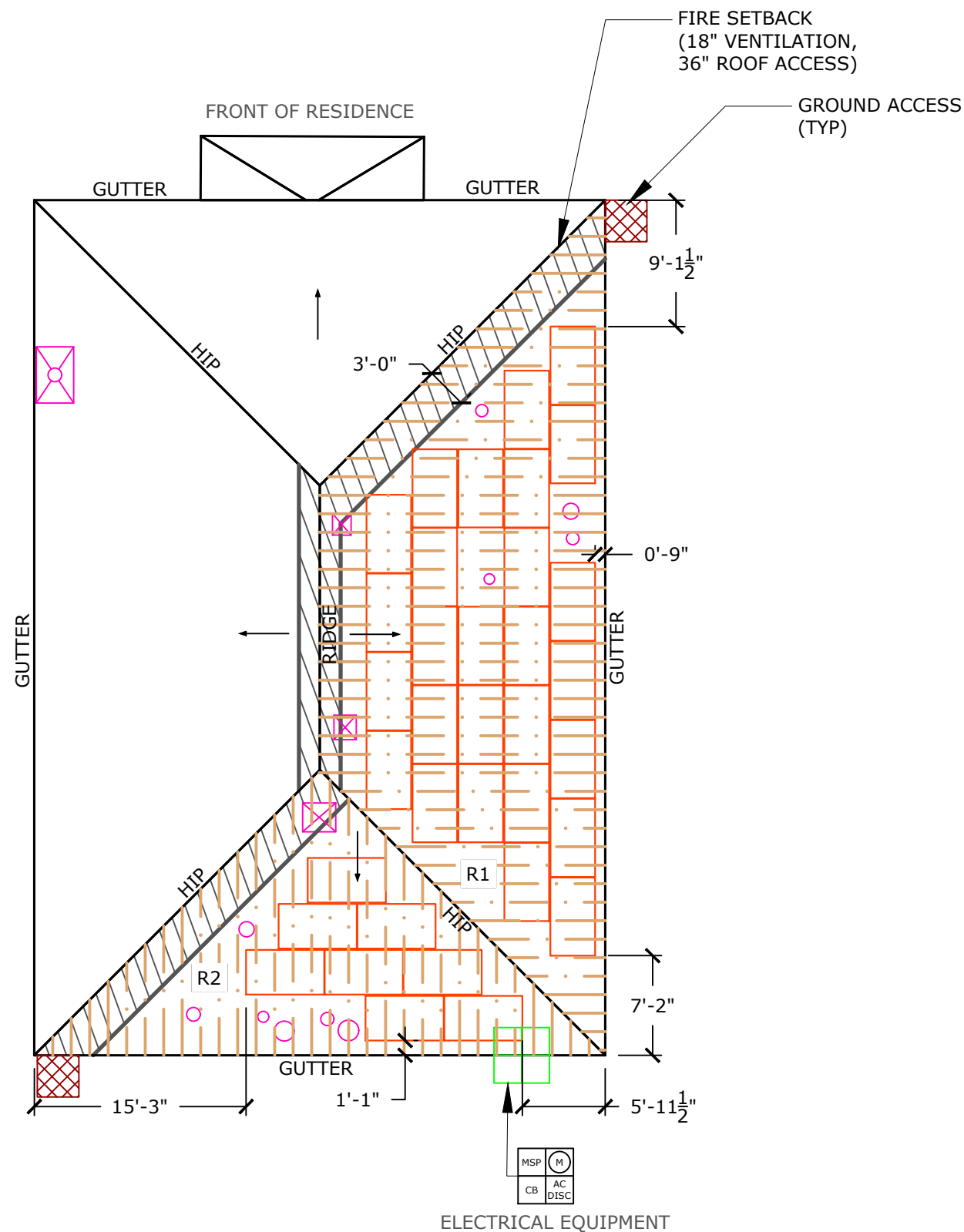
RT-APEX

The standard for rail-less PV mounting



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AND LOAD CALCULATIONS FOR SOLAR INSTALLATION SPANS &
ATTACHMENTS TO MEET LOCAL AND STATE BUILDING CODE
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PV SYSTEM INFORMATION

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35 INVERTERS: ENPHASE IQ7PLUS-72-2-US

PROJECT INFORMATION -	MS102402
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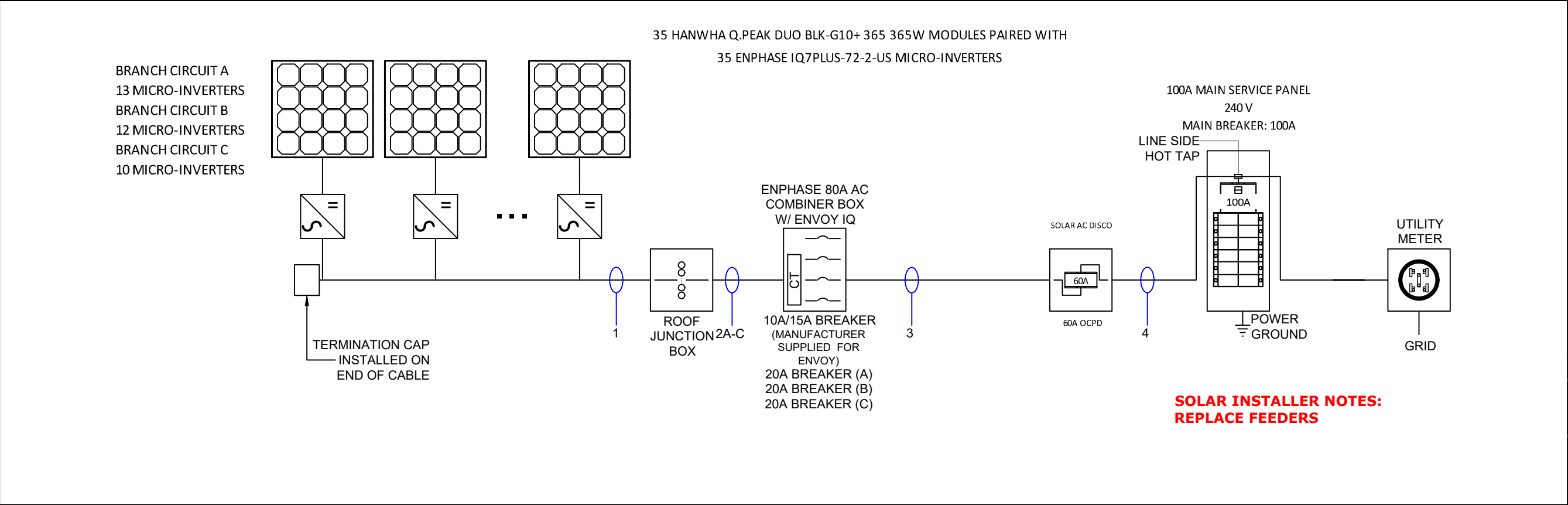
INITIAL	DATE: 8/4/2022	DESIGNER: EM
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PANEL LAYOUT

PV-2



- ELECTRICAL NOTES:**
1. ALL CALCULATIONS FOR VOC, VMAX, IMP AND ISC HAVE BEEN CALCULATED USING THE MANUFACTURED STRING CALCULATOR BASED ON ASHRAE 2% HIGH AND EXTREME MINIMUM TEMPERATURE COEFICIENTS.

2. THE ENTIRE ARRAY IS BONDED ACCORDING TO (NEC 690.46 - 250.120 PARAGRAPH C).

3. THIS SYSTEM COMPLIES WITH NEC 2017

4. BRANCH CIRCUIT CALCULATION FOR WIRE TAG 1 DISPLAYS THE LARGEST BRANCH CIRCUIT IN SYSTEM. OTHER BRANCH CIRCUITS WILL HAVE LOWER DESIGN CURRENT THAN THE ONE SHOWN.

5. ALL CONDUCTORS ARE SIZED BASED ON NEC 2017 ARTICLE 310
6. ALL EQUIPMENT INSTALLED IS RATED AT 75°C UNLESS NOTED

7. INVERTER NOC (NOMINAL OPEN CURRENT) OBTAINED FROM EQUIPMENT DATA SHEET

8. GROUNDING CONDUCTOR RUN WITH PHASE CONDUCTOR IN THE SAME CONDUIT.

9. SYSTEM IS CONSIDERED AN AC MODULE SYSTEM. NO DC CONDUCTORS ARE PRESENT IN CONDUIT, COMBINER, JUNCTION BOX, DISCONNECT. AND COMPILES WITH 690.6- NO DC. DISCONNECT AND ASSOCIATED DC CABLING ARE REQUIRED.

10. CONDUCTORS IN CONDUIT ARE AC CONDUCTORS - BRANCH CIRCUITS AND NOT PV SOURCE CIRCUITS 690.6.
11. SYSTEM COMPLIES WITH 690.12 RAPID SHUTDOWN AND ASSOCIATED LABELING AS PER 690.56(C). AC VOLTAGE AND SYSTEM OPERATING CURRENT SHALL BE PROVIDED AS PER 690.52.

12. ALL GROUNDING SHALL COMPLY WITH 690.47(A) IN THAT THE AC MODULES SHALL COMPLY WITH 250.64.

13. NO TERMINALS WILL BE ENERGIZED IN THE OPEN POSITION IN THIS AC MODULE SYSTEM 690.6, 690.15.

14. WHERE APPLICABLE, INTERCONNECTION SHALL COMPLY WITH 705.12(B)(2)(3)(b), 705.12(A) AS PERMITTED BY 230.86(6)

15. WHERE APPLICABLE, SOLAR OVERCURRENT PROTECTION FOR SUPPLY SIDE CONNECTION SHALL BE LOCATED WITHIN 10FT OF THE INTERCONNECTION POINT.

- PERMANENT LABEL & LOCATION
CUSTOMER OWNED PARALLEL GENERATION
LABELS ARE WEATHER UV RATED RED PLASTIC WITH WHITE LETTERS

(A) LOAD CENTER: WARNING DUAL POWER SOURCE.
SECOND SOURCE IS PV SYSTEM.

(B) WARNING INVERTER OUTPUT CONNECTION.
DO NOT RELOCATE THIS OVERCURRENT BACKFED DEVICE
- (C) AC DISCONNECT: PV AC DISCONNECT 690.15

(D) WARNING ELECTRIC SHOCK HAZARD.
DO NOT TOUCH TERMINALS. TERMINALS ON BOTH LINE & LOADSIDES MAY BE ENERGIZED IN THE OPEN POSITION.

(E) INVERTER: WARNING ELECTRICAL SHOCK HAZARD.
IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UN-GROUNDED AND ENERGIZED.
- (F) JUNCTION BOX: WARNING ELECTRICAL SHOCK HAZARD.
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

(G) CONDUIT/CABLE EVERY 10 FEET:
CAUTION: SOLAR CIRCUIT

Wire Tag	Conduit	Wire Qty	Wire Gauge	Wire Type	Temp. Rating	Wire Ampacity (A)	Temp. Derate	Conduit Fill Derate	Derated Ampacity (A)	Inverter Qty	NOC (A)	NEC Correction	Design Current (A)	Ground Size	Ground Wire Type
1	OPEN AIR	2	12 AWG	Trunk Cable	90°C	30	0.96	1	28.80	13	1.21	1.25	19.66	08 AWG	THWN-2
2A	3/4" PVC	2	10 AWG	THWN-2	90°C	40	0.96	0.8	30.72	13	1.21	1.25	19.66	08 AWG	THWN-2
2B	3/4" PVC	2	10 AWG	THWN-2	90°C	40	0.96	0.8	30.72	12	1.21	1.25	18.15	08 AWG	THWN-2
2C	3/4" PVC	2	10 AWG	THWN-2	90°C	40	0.96	0.8	30.72	10	1.21	1.25	15.13	08 AWG	THWN-2
3	3/4" PVC	3+G	06 AWG	THWN-2	75°C	65	0.96	1	62.40	35	1.21	1.25	52.94	08 AWG	THWN-2
4	3/4" PVC	3+G	06 AWG	THWN-2	75°C	65	0.96	1	62.40	35	1.21	1.25	52.94	08 AWG	THWN-2

NOTE: LETTER "G" IN WIRE QTY TAB STANDS FOR GROUNDING CONDUCTOR.

momentum
SOLAR

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ELECTRICIAN

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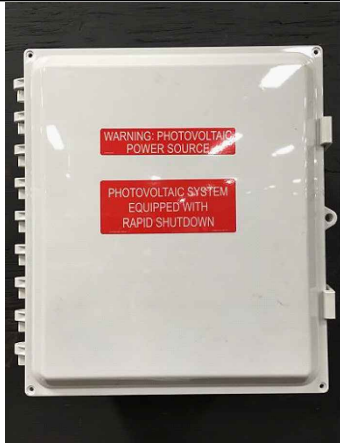


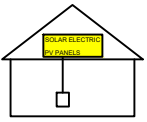


**PV SYSTEM
INFORMATION**

SYSTEM SIZE (DC): 12.775 KW
35 MODULES: HANWHA Q.PEAK DUO BLK-G10+ 365
(SAFE HARBOR MODULES: 0)
35 INVERTERS: ENPHASE IQ7PLUS-72-2-US

PROJECT INFORMATION - MS102402

INITIAL	DATE: 8/4/2022	DESIGNER: EM
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REV:	DATE:	DESIGNER:

**ELECTRICAL
PV-3**

TAG	LABEL		QUANTITY	LOCATION	NOTE	EXAMPLES		<div><div></div><div>PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 3096 HAMILTON BLVD, SOUTH PLAINFIELD, NJ 07080 (732) 902-6224 MOMENTUMSOLAR.COM</div><div>STRUCTURAL ENGINEERING</div><div>DANIEL W. DUNZIK RA LEED - AP LICENSE # AI11688 (908) 872-3664 370 BURNT HILL ROAD SKILLMAN, NJ 08558 ENGINEERING LETTER ATTACHED HAS SPECIFICATIONS FOR WIND AND LOAD CALCULATIONS FOR SOLAR INSTALLATION SPANS & ATTACHMENTS TO MEET LOCAL AND STATE BUILDING CODE COMPLIANCE. WARNING THAT IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, TO ALTER AN ITEM IN ANY WAY.</div><div>ELECTRICIAN</div><div>PRO CUSTOM SOLAR DBA MOMENTUM SOLAR MATT FRANZ 325 HIGH STREET METUCHEN, NJ 08440 (732) 902-6224</div><div>CUSTOMER INFORMATION</div><div>JORGE PENA</div><div>800-06 CENTRAL AVE</div><div>PLAINFIELD, NJ 07060</div><div>9177317720</div><div>PV SYSTEM INFORMATION</div><div>SYSTEM SIZE (DC): 12.775 KW</div><div>35 MODULES: HANWHA Q.PEAK DUO BLK-G10+ 365</div><div>(SAFE HARBOR MODULES: 0)</div><div>35 INVERTERS: ENPHASE IQ7PLUS-72-2-US</div><div>PROJECT INFORMATION - MS102402</div><div>INITIALDATE: 8/4/2022DESIGNER: EM</div><div>REV:DATE:DESIGNER:</div><div>REV:DATE:DESIGNER:</div><div>EQUIPMENT LABELS</div><div>PV-4</div></div>
Ⓐ	CAUTION: AC SOLAR VOLTAGE		12	AC CONDUITS	1 AT EVERY SEPARATION BY ENCLOSURES / WALLS / PARTITIONS / CEILINGS / FLOORS OR NO MORE THAN 10'			
Ⓑ	! WARNING PHOTOVOLTAIC POWER SOURCE	PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN	1	COMBINER BOX	1 AT ANY COMBINER BOX			
Ⓒ	⚠ WARNING ELECTRICAL SHOCK HAZARD TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION		1	JUNCTION BOX	1 AT ANY JUNCTION BOX			
Ⓓ	PV SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENT 42.35A NOMINAL OPERATING AC VOLTAGE 240 V ⚠ CAUTION POWER TO THIS SERVICE IS ALSO SUPPLIED FROM ON-SITE SOLAR GENERATION AC SYSTEM DISCONNECT	⚠ WARNING ELECTRICAL SHOCK HAZARD TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM	1	AC DISCONNECT	1 OF EACH AT FUSED AC DISCONNECT COMPLETE VOLTAGE AND CURRENT VALUES ON DISCONNECT LABEL			
Ⓔ		PV METER	1	PV METER SOCKET	1 AT PV METER SOCKET AND ONE DIRECTORY PLACARD			
Ⓕ	⚠ WARNING DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM	REVENUE METER	1	UTILITY METER	1 AT UTILITY METER AND ONE DIRECTORY PLACARD			
Ⓖ	SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY 	⚠ WARNING DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM	1	INTERCONNECTION POINT	1 OF EACH AT BUILDING INTERCONNECTION POINT AND ONE DIRECTORY PLACARD			
	⚠ WARNING: INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE		1	BACKFEED PANEL				
Ⓕ	NOMINAL OPERATING AC VOLTAGE : 240V NOMINAL OPERATING AC FREQUENCY : 60HZ MAXIMUM AC POWER : 230VA MAXIMUM AC CURRENT : 42.35A MAXIMUM OVERCURRENT DEVICE RATING FOR AC MODULE PROTECTION : 20A		1	AC CURRENT PV MODULES				