ROOF MOUNT SOLAR PERMIT PACKAGE

customer name

574 HILINAI ST, WAILUKU, HI 96793

BUILDING INFORMATION

1 STORY HOUSE
CONSTRUCTION TYPE: V-B
ROOF: COMP SHINGLE

SINGLE FAMILY RESIDENCE
OCCUPANCY: R3/U

BUILDING HEIGHT: UPTO 30FT
AHJ: MAUI COUNTY

PV SYSTEM SUMMARY:

SYSTEM SIZE (DC)	:	STC: 415 x 12 = 4.980kW DC
	:	PTC: 392.2 x 12 = 4.7064kW DC
SYSTEM SIZE (AC)	:	4.188kW AC @ 240V
TECHNICAL SYSTEM SIZE (PV+ESS)	:	9.188kW
PROGRAM SYSTEM SIZE	:	4.188kW AC
MODULES	:	(12) MAXEON: SPR-MAX3-415-BLK-R
BATTERY	:	(1) TESLA POWERWALL 2 (13.5 KWH)
MICRO-INVERTERS	:	(12) ENPHASE: IQ8A-72-2-US
TILT	:	22°, 22°
AZIMUTH	:	171°, 171°
ROOF	:	COMP SHINGLE
RAFTER/TRUSS SIZE	:	2" X 4" RAFTER @ 24" O.C.
ATTACHMENT TYPE	:	SNAPNRACK SPEEDSEAL FOOT WITH SNAPNRACK ULTRA RAIL
MAIN SERVICE PANEL	:	EXISTING 100 AMPS MSP ON HOT FED
INTERCONNECTION	:	PV BREAKER
OCPD RATING	:	30 AMPS
UTILITY	:	MECO

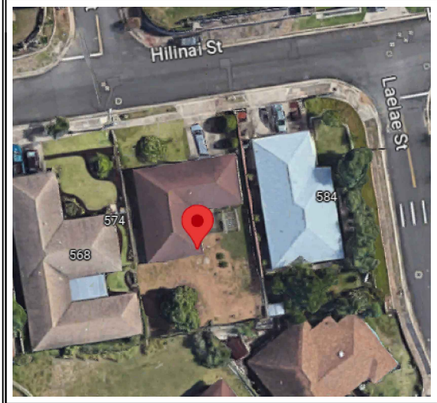
THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:

2018 INTERNATIONAL BUILDING CODE (IBC)
2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2018 INTERNATIONAL RESIDENTIAL CODE (IRC)
2017 NATIONAL ELECTRIC CODE (NEC) – EFFECTIVE 8/21/18
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101 LIFE SAFETY CODE 2018

GENERAL NOTES:

1. LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION ·
2. THIS PROJECT SHALL COMPLY WITH LOCAL ORDINANCES ·
3. PROPER ACCESS AND WORKING CLEARANCE WILL BE PROVIDED ·
4. ALL ELECTRICAL WORK SHOWN ON THESE PLANS WILL BE COMPLETED BY THE UNDERSIGNED ·
5. ALL APPLICABLE PV EQUIPMENT LISTED AND COMPLIANT WITH UL2703, UL1741 AND UL1703
6. ALL ROOF PENETRATIONS TO BE SEALED WITH A HIGH PERFORMANCE ROOF SEALANT SUCH AS GeoCel 2300 CLEAR SEALANT ·
7. THE SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND THE UTILITY IS OBTAINED ·
8. THE SOLAR PHOTOVOLTAIC INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS ·
9. IF THE EXISTING MAIN PANEL DOES NOT HAVE VERIFIABLE GROUNDING ELECTRODE, IT IS THE NECESSARY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE ·
10. 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" ·
11. A LADDER SHALL BE IN PLACE FOR THE INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS ·
12. MAX HEIGHT OF MODULES OFF OF ROOF FACE : <6" ·
13. PHOTOVOLTAIC SYSTEM WILL COMPLY WITH 2017 NEC . ·
14. PHOTOVOLTAIC SYSTEM INVERTER IS UNGROUNDED. NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER, AND SYSTEM COMPLIES WITH 690.35. ·
15. MODULES CONFORM TO AND ARE LISTED UNDER UL 1703. ·
16. INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741. ·
17. 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. ·
18. CONDUITS EXPOSED TO SUNLIGHT ON ROOF SHALL BE LOCATED NOT LESS THAN 7/8" ABOVE ROOF SURFACE.
19. IN EXPOSED LOCATIONS, WIRING AND CABLING SHALL BE IN CONDUIT OR CABLE SHALL BE RATED FOR EXPOSURE; TYPE NM CABLE ALLOWED IN PROTECTED LOCATIONS. WITHIN ATTIC SPACES, ALLOWED TO RUN TYPE NM (ROMEX) 10/3 OR 12/3 CONDUCTORS THROUGH OPEN SPACE OR TYPE THHN IN MINIMUM 3/4" ALUMINUM CONDUIT
20. MATERIALS, EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS, STANDARDS, RULES AND REGULATIONS OF THE FOLLOWING AND BE MOST SUITABLE TO THE PURPOSE INTENDED:

AERIAL VIEW



VICINITY VIEW

SHEET INDEX

CONTRACTOR INFO

customer name

PV+ESS SYSTEM SIZE
4.188KW + 5KW = 9.188KW

PROJECT	: xxxxxx
PROPERTY TMK	: 3-3-013:145-0000
ADDRESS	: 574 HILINAI ST
	: WAILUKU HI 96793
METER #	: 517223
PROJECT ID #	: 0065F00000NEREUAAJ
RSS PROJECT ID #	: 51389

Rev	Description	Date
A	INITIAL DESIGN	9/28/2023
A.3	UPDATED DESIGN	10/11/2023

OPPORTUNITY	xxxx
PROJECT #	0065F00000NEREUAAJ
DATE DRAWN	10/11/2023
DRAWN BY	E.R
SHEET #	0001

TITLE COVER PAGE

R324.6.1 PATHWAYS:
NOT LESS THAN TWO MINIMUM 36-INCH WIDE PATHWAYS ON SEPARATE ROOF PLANES,
FROM LOWEST ROOF EDGE TO RIDGE, SHALL BE PROVIDED ON ALL BUILDINGS.
AT LEAST ONE PATHWAY SHALL BE PROVIDED ON THE STREET OR DRIVEWAY SIDE OF THE ROOF.
FOR EACH ROOF PLANE WITH A PHOTOVOLTAIC ARRAY,A MINIMUM 36 INCH-WIDE PATHWAY FROM THE LOWEST ROOF EDGE TO RIDGE SHALL BE PROVIDED ON THE SAME ROOF PLANE OR STRADDLING THE SAME AND ADJACENT ROOF PLANES.PATHWAYS SHALL BE OVER AREAS CAPABLE OF SUPPORTING FIRE FIGHTERS ACCESSING THE ROOF.PATHWAYS SHALL BE LOCATED IN AREAS WITH MINIMAL OBSTRUCTIONS SUCH AS VENT PIPES,CONDUIT , OR MECHANICAL EQUIPMENT.

R324.6.2 SETBACK AT RIDGE:
FOR PHOTOVOLTAIC ARRAYS OCCUPYING NOT MORE THAN 33 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA,NOT LESS THAN AN 18 INCH CLEAR SET BACK IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.
FOR PHOTOVOLTAIC ARRAYS OCCUPYING MORE THAN 33 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA,NOT LESS THAN A 36-INCH CLEAR SET BACK IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.

R324.6.4 EMERGENCY ESCAPE AND RESCUE OPENING: PANELS AND MODULES INSTALLED ON DWELLINGS SHALL NOT BE PLACED THE PORTION OF A ROOF THAT IS BELOW AN EMERGENCY ESCAPE AND RESCUE OPENING. A 36-INCH-WIDE PATHWAY SHALL BE PROVIDED TO THE EMERGENCY ESCAPE AND RESCUE OPENING.

A - PATHWAY ON STREET OR DRIVEWAY SIDE OF ROOF
B - FIRE ACCESS POINT

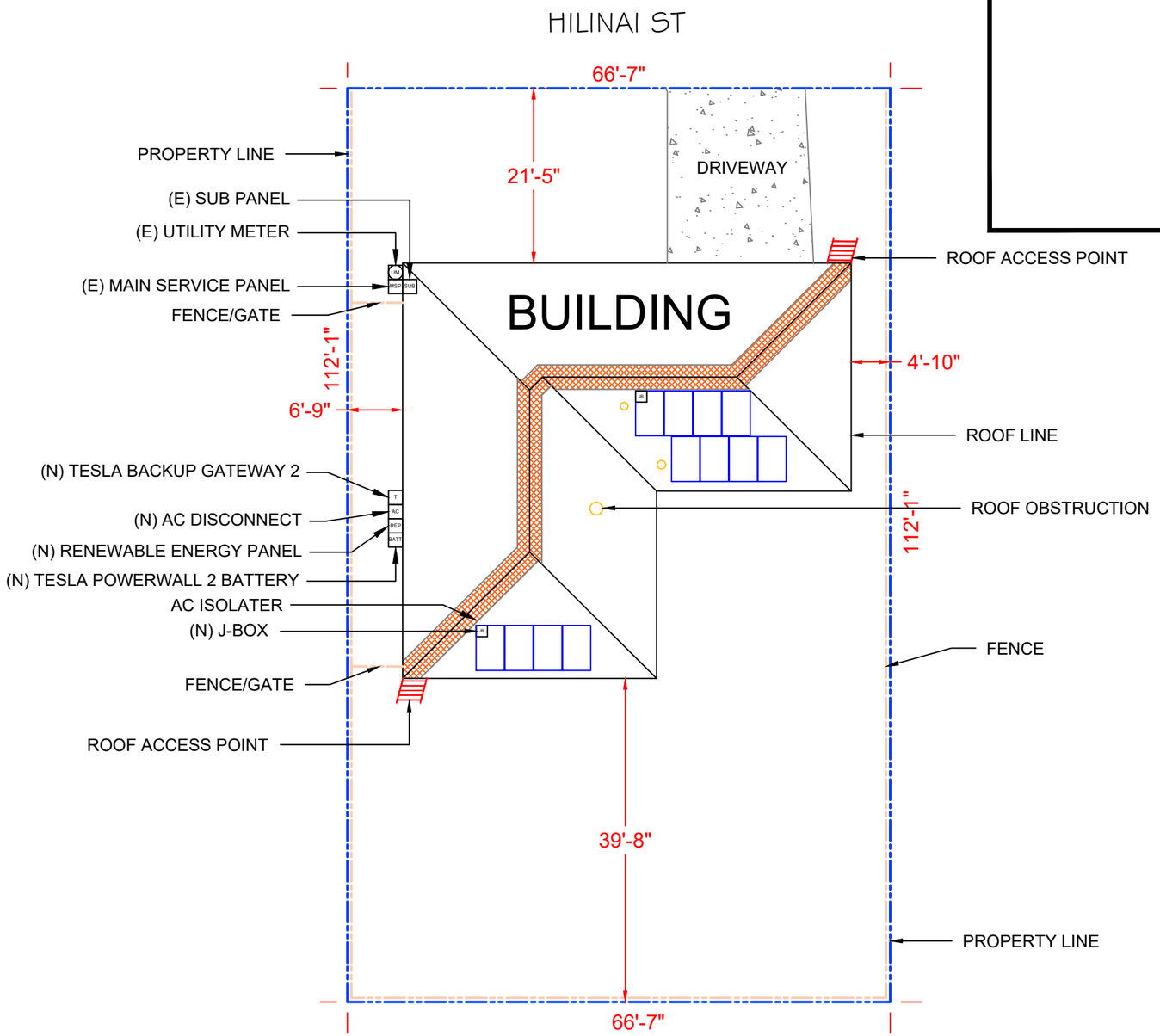
36" ACCESS PATHWAYS

18" ACCESS PATHWAYS

NOTES:
1. MINOR FIELD ADJUSTMENTS ALLOWED BASED ON ACTUAL SITE CONDITION AND MEASUREMENTS.
2. THE 30 SECOND SHUTDOWN REQUIREMENT IS INCORPORATED INTO THE 2017 NEC AND UL STANDARD 1741.
3. EXISTING ROOF VENT SHOULD NOT BE COVERED.

NOTE:
LISTED EQUIPMENT MUST SATISFY THE REQUIREMENTS OF THE ADOPTED NEC.

"FIRE SAFETY NOTE
11.12.1 NEW PHOTOVOLTAIC SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 11.10, SECTION 11.12, AND NFPA 70.
52.1 GENERAL. STATIONARY STORAGE BATTERY SYSTEMS HAVING AN ELECTROLYTE CAPACITY OF MORE THAN 100 GAL
(378.5L) IN SPRINKLERED BUILDINGS OR 50 GAL
(189.3L) IN UNSPRINKLERED BUILDINGS FOR FLOODED LEAD-ACID,
NICKEL-CADMIUM, AND VALVE-REGULATED LEAD-ACID (VRLA) BATTERIES OR 1000 LB (454 KG) FOR LITHIUM-ION
AND LITHIUM METAL POLYMER BATTERIES USED FOR FACILITY STANDBY POWER, EMERGENCY POWER, OR UNINTERRUPTED POWER SUPPLIES SHALL BE IN ACCORDANCE WITH CHAPTER 52 AND TABLE 52.1."



1 SITE PLAN

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

LEGEND

UM	UTILITY METER
MSP	MAIN SERVICE PANEL
AC	AC DISCONNECT
BATT	BATTERY
T	TESLA BACKUP GATEWAY 2
REP	RENEWABLE ENERGY PANEL
JB	JUNCTION BOX
	MODULE
	ROOF OBSTRUCTIONS
	ROOF ACCESS POINT
SUB	SUB PANEL

CONTRACTOR INFO

xxxxxxx

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OPPORTUNITY	xxxxxx
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DRAWN BY	E.R
SHEET #	0002
TITLE	SITE PLAN

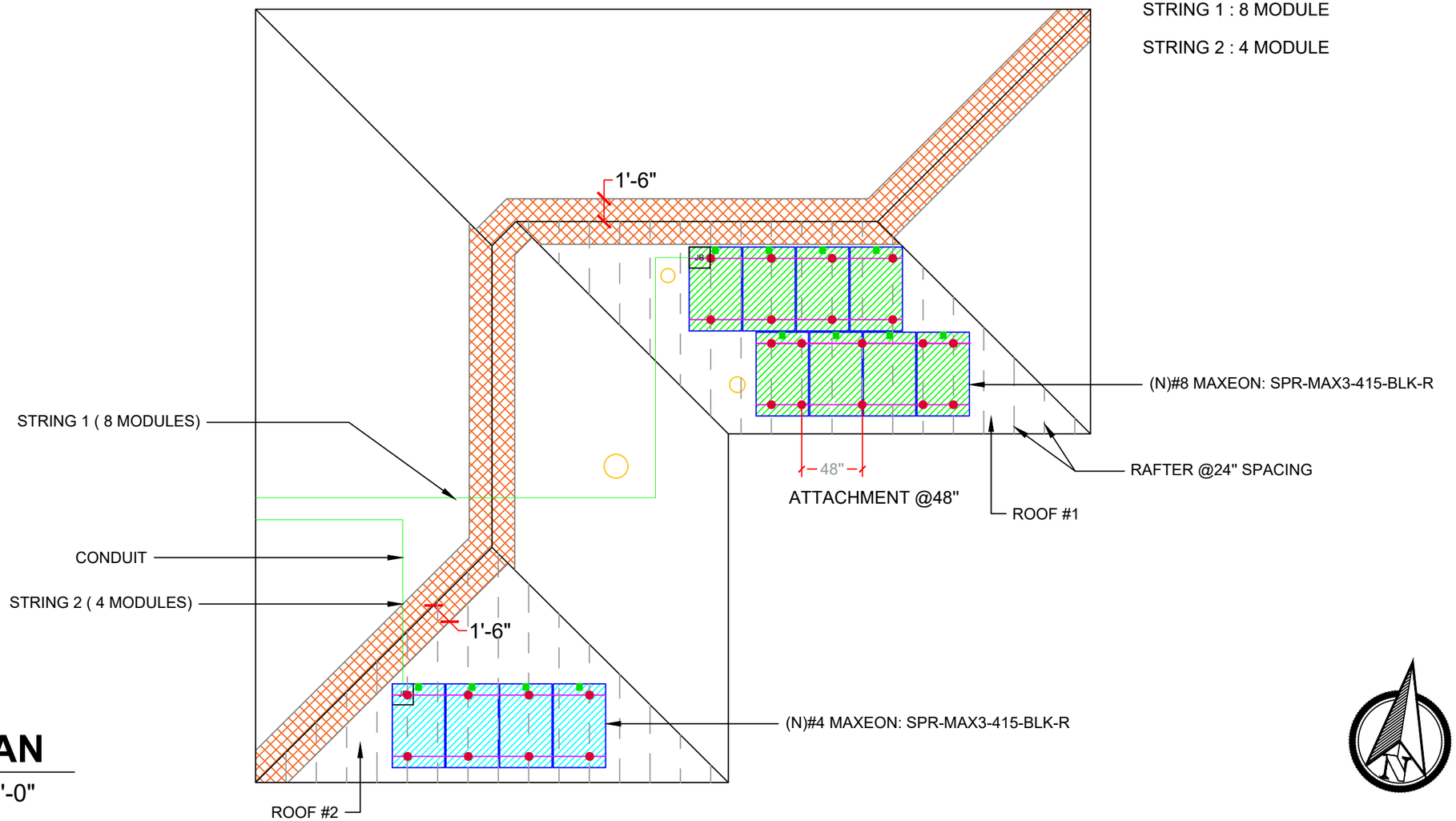
ARRAY AREA								
ROOF	ROOF TYPE	AZIMUTH	# OF MODULES	EAVE TO RIDGE DIMENSION (Ft.)	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)	TOTAL AREA COVERED BY ARRAY (%)
#1	COMP SHINGLE	171	8	15.5	163.20	2255	7.24	10.86
#2	COMP SHINGLE	171	4	14	81.60	2255	3.62	

NOTE:
ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 1703.

LEGEND

- JB — JUNCTION BOX
- MODULE
- ROOF OBSTRUCTIONS
- MICROINVERTER
- STRING 1 (8)
- STRING 2 (4)
- CONDUIT
- RAIL
- ATTACHMENT
- RAFTER

HILINAI ST



STRING 1 : 8 MODULE

STRING 2 : 4 MODULE

2 **ROOF PLAN**
SCALE: 1/8" = 1'-0"

CONTRACTOR INFO

XXXXXX

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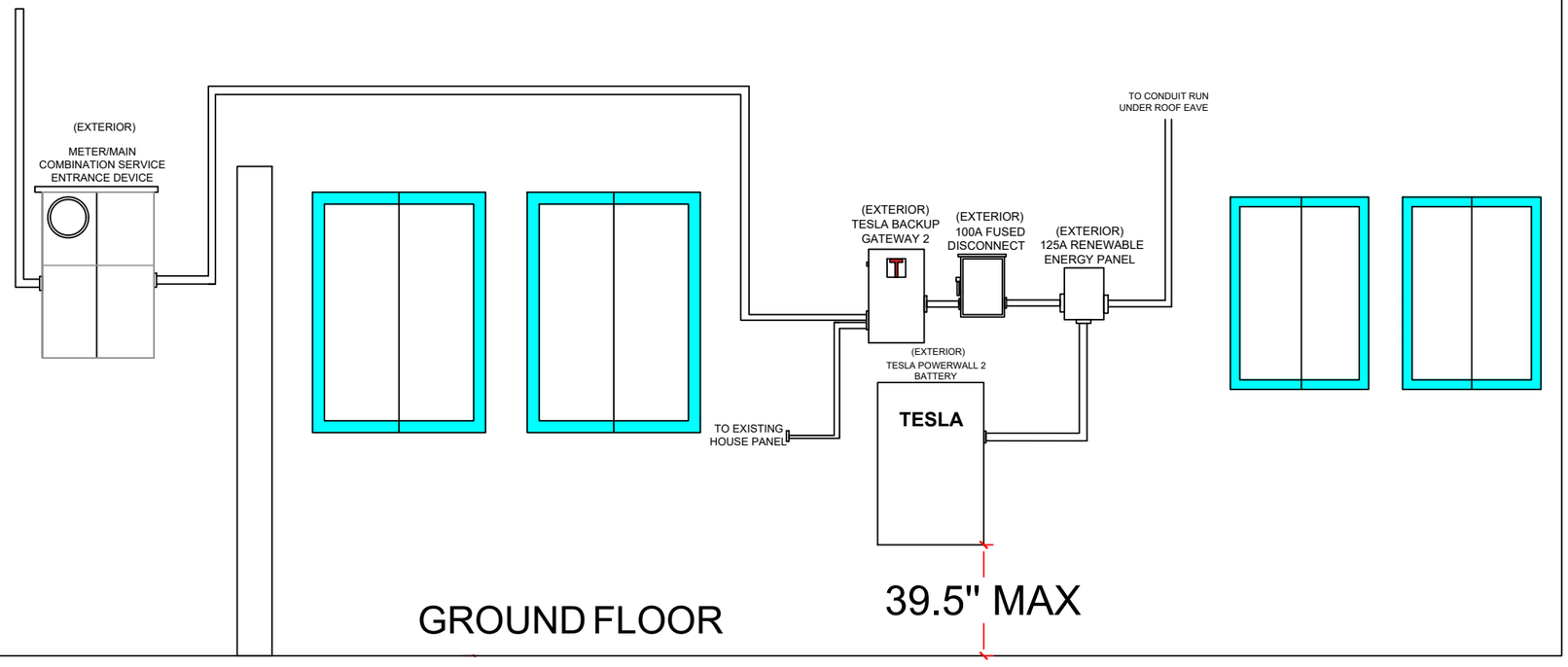
DRAWN BY	E.R
SHEET #	0003
TITLE	ROOF PLAN

PROVIDE ELEVATION DETAILS OF ALL NEW ELECTRICAL EQUIPMENT AND DEFINE THE EQUIPMENT MOUNTING HEIGHTS IN ACCORDANCE WITH NEC SECTIONS 240.24(A) AND 404.8(A). IN ADDITION, SHOW COMPLIANCE WITH NEC SECTIONS 110.26(A)(3) AND (E).

EQUIPMENT MOUNTING HEIGHTS IN ACCORDANCE WITH NEC SECTIONS 240.24(A) AND 404.8(A). & COMPLIANCE WITH NEC SECTIONS 110.26(A)(3) AND (E)

FLOOR OR
ROOF DECK

EQUIPMENT SYMMETRICAL PLAN



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SHEET #	0004
TITLE	ELEVATION

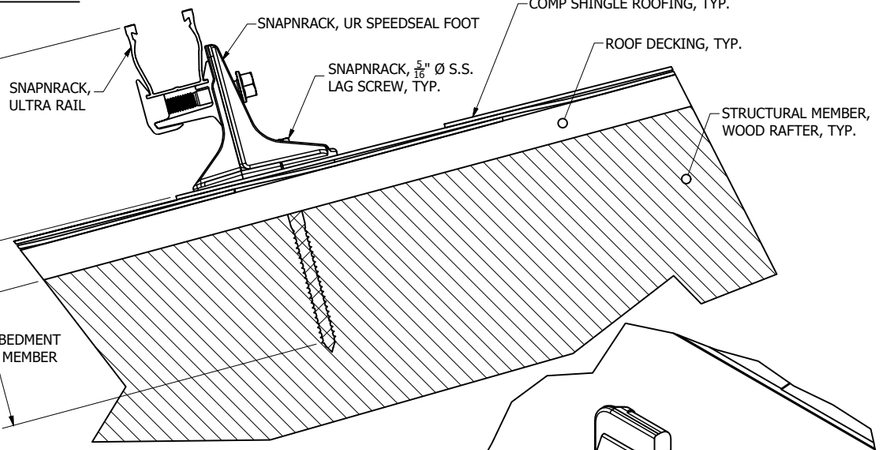
SNAPNRACK UR SPEEDSEAL FOOT FOR COMPOSITION ROOF MOUNTING

REFER TO SNAPNRACK ENGINEERING CHARTS FOR APPLICABLE RAIL SPANS.

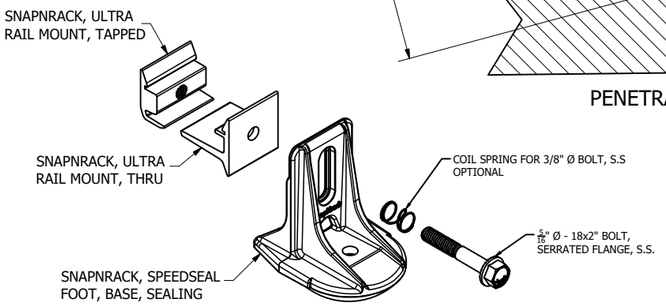
$\frac{5}{16}$" Ø S.S LAG SCREW MUST EMBED A MIN. OF 2 $\frac{1}{2}$" INTO STRUCTURAL MEMBER

REFER TO SNAPNRACK INSTALLATION MANUAL FOR $\frac{5}{16}$" Ø HARDWARE TORQUE SPECIFICATIONS

MODULE HEIGHT OFF ROOF, RANGE:
UR-40: 3 $\frac{3}{8}$" - 4 $\frac{3}{8}$"
UR-60: 4" - 5"



PENETRATION DETAIL



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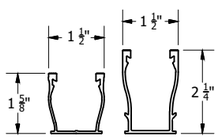
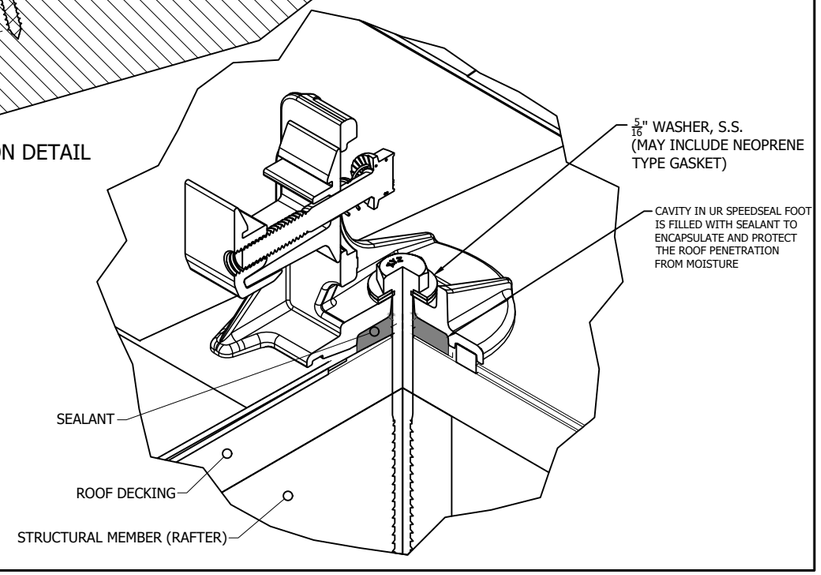


UR-40 RAIL | UP-60 RAIL
FOR USE WITH SNAPNRACK ULTRA SERIES RAILS



NOTE:
"PENETRATIONS OF HORIZONTAL ASSEMBLIES (LISTED IN IBC 2012 §714.4) AND FIRE-RESISTANCE-RATED WALL ASSEMBLIES (LISTED IN IBC 2012 §714.3) SHALL BE PROTECTED BY METHODS DESCRIBED IN IBC 2012 §714. PENETRATIONS OF SMOKE PARTITIONS SHALL COMPLY WITH IBC 2012 §710.6. PENETRATIONS SHALL NOT BE MADE WHERE PROHIBITED BY THE BUILDING CODE."

ROOF NO	ROOF TILT	ROOFING TYPE	ATTACHMENT TYPE	NO. OF STORIES	FRAMING TYPE	FRAMING SIZE	OC SPACING	PENETRATION PATTERN	MAX PENETRATION SPACING	MAX OVERHANG
ROOF 1	22	COMP SHINGLE	SNAPNRACK SPEEDSEAL FOOT	1	RAFTER	2" X 4"	24"	STACKED	48"	24"
ROOF 2	22	COMP SHINGLE	SNAPNRACK SPEEDSEAL FOOT	1	RAFTER	2" X 4"	24"	STACKED	48"	

CONTRACTOR INFO

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SHEET #	0005
TITLE	STRUCTURAL

MODULE INFO	
MAKE/MODEL	MAXEON: SPR-MAX3-415-BLK-R
VOC	40.7V
VMP	35.3V
ISC	12.64A
IMP	11.75A
STC RATING	415 W
PTC RATING	392.2 W

INVERTER SPECIFICATION	
MANUFACTURER & MODEL NO.	ENPHASE IQ8A-72-2-US
MAX DC VOLT RATING	60V
MAX POWER AT 240W	349WATT
NOMINAL AC VOLTAGE	240V
MAX AC CURRENT	1.45 A
MAX EFFICIENCY	97.0%
MAX OCPD RATING	20 A
MAX PANELS/CIRCUIT	11
MAXIMUM DC SHORT CIRCUIT CURRENT	25AMPS

NOTE:
1)CONDUIT AND CONDUCTORS SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.
2)ALL CONDUCTORS NOT UNDER ARRAY ARE TO BE IN CONDUIT MINIMUM 7/8" ABOVE ROOF WITH PROPER JUNCTION BOX AT EACH END PER 690.31A

NOTE: PCS CONTROLLED CURRENT SETTING: 200A"
THE MAXIMUM OUTPUT CURRENT FROM THIS SYSTEM TOWARDS THE MAIN PANEL IS CONTROLLED ELECTRONICALLY. REFER TO THE MANUFACTURER'S INSTRUCTIONS FOR MORE INFORMATION.

BATTERY INFO	
MAKE/MODEL	TESLA POWERWALL 2 (13.5 KWH)
OUTPUT AC	240V
RATED OUTPUT POWER	5 kW
NOMINAL FREQUENCY/RANGE	60 Hz
TOTAL WEIGHT	114 KG (251.3 lbs)
QUANTITY	1

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PROGRAM SYSTEM SIZE : 4.188kW AC
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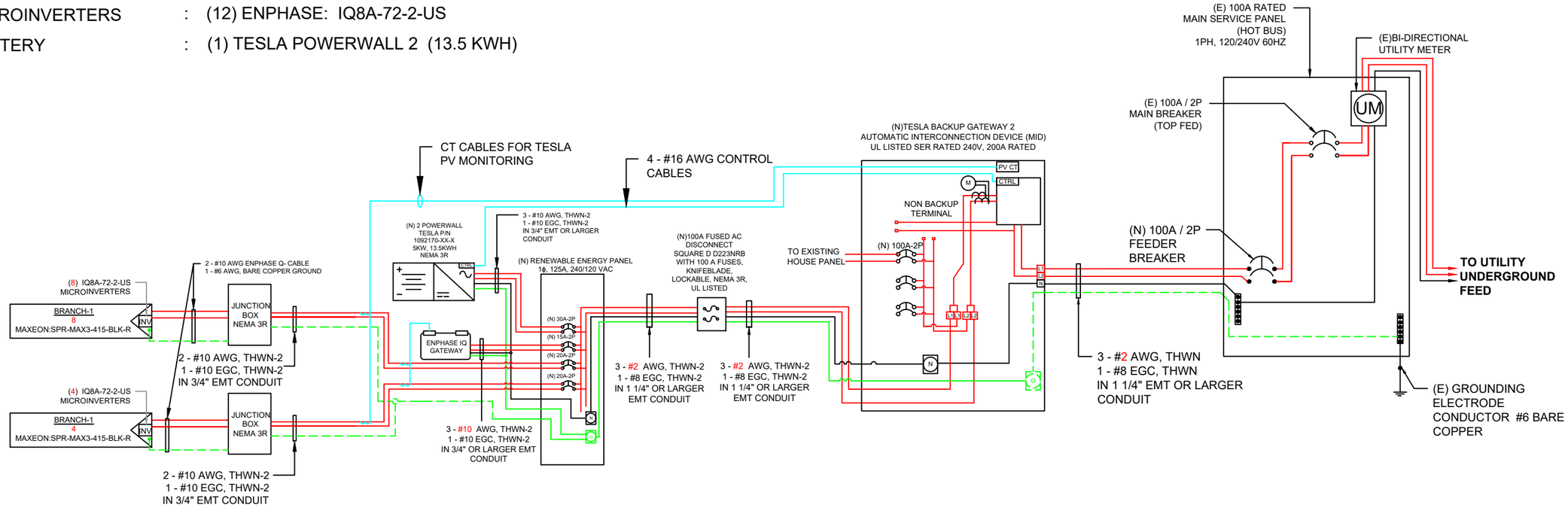
MICROINVERTERS : (12) ENPHASE: IQ8A-72-2-US
BATTERY : (1) TESLA POWERWALL 2 (13.5 KWH)



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DRAWN BY	E.R
SHEET #	0006

TITLE ELECTRICAL 3LD

MATERIAL LIST

ELECTRICAL EQUIPMENTS

QTY.	PART	PART #	DESCRIPTION
12	MODULE	SPR-MAX3-415-BLK-R	MAXEON: SPR-MAX3-415-BLK-R
2	JUNCTION BOX	480-276	600VDC NEMA 3R UL LISTED JUNCTION BOX
12	MICROINVERTER	IQ8A-72-2-US	ENPHASE: IQ8A-72-2-US 240V
1	AC DISCONNECT	D223NRB	100A RATED 240VAC NEMA 3R UL LISTED
1	RENEWABLE ENERGY PANEL	N/A	125A DEDICATED RENEWABLE ENERGY PANEL
1	BATTERY	TESLA POWERWALL 2	TESLA POWER WALL BATTERY 13.5KWH
1	TESLA BACKUP GATEWAY 2	TESLA BACKUP GATEWAY 2	TESLA POWERWALL BACKUP GATEWAY2, 200AMP , NEMA 3R RATED
1	ENPHASE IQ GATEWAY	N/A	ENPHASE IQ GATEWAY

BREAKER AND FUSES

QTY.	PART	PART #	DESCRIPTION
1	FUSES	100A FUSES	GENERAL 100A FUSES
2	RENEWABLE ENERGY PANEL BREAKER	20A 2-POLE BREAKER(S)	GENERAL 20A 2-POLE BREAKER(S)(BR220B)
1	BACKUP LOAD PANEL BREAKER	100A 2-POLE BREAKER(S)	GENERAL 100A 2-POLE BREAKER(S)
1	FEEDER BREAKER	100A 2-POLE BREAKER(S)	GENERAL 100A 2-POLE BREAKER(S)
1	BATTERY BREAKER	30A 2-POLE BREAKER(S)	GENERAL 30A 2-POLE BREAKER(S)
1	IQ GATEWAY BREAKER	15A 2-POLE BREAKER(S)	GENERAL 15A 2-POLE BREAKER(S)
1	TESLA GATEWAY 2 BREAKER	100A 2-POLE BREAKER(S)	GENERAL 15A 2-POLE BREAKER(S)

RACKING

QTY.	PART	PART #	DESCRIPTION
6	RAIL	232-02537	SNAPNRACK, UR-40 RAIL, 172IN, SILVER
0	SPLICE	242-01213	SNAPNRACK, UR-40 SPLICE, SILVER
18	MID CLAMP	242-02071	SNAPNRACK, ULTRA RAIL MID CLAMP, BLACK
12	END CLAMP	242-02215	SNAPNRACK, UNIVERSAL END CLAMP
3	LUG	232-02452	SNAPNRACK, GROUND LUG ASSEMBLY, 6-12 AWG
24	FLASHING	242-02167	SNAPNRACK, UR SPEEDSEAL FOOT, BLACK
12	END CAP	051-03418	SNAPNRACK, UR-40 END CAP
24	SEALING WASHER	242-02168	SNAPNRACK, SEALING WASHER LAG, 4-1/2IN, SS

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DRAWN BY	E.R
SHEET #	0007
TITLE	BOM

EXISTING SERVICE PANEL PHOTOS

CONTRACTOR INFO

XXXXXXXXX

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SHEET #	0008

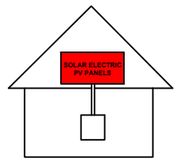
TITLE ELECTRICAL PHOTOS

PHOTOVOLTAIC SYSTEM,
EQUIPPED WITH RAPID SHUTDOWN

690.12

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



690.56(C)(1)(B)

M

AC

PV SYSTEM CUSTOMER GENERATOR
SYSTEM DISCONNECT
RATED AC OUTPUT CURRENT - **41.40** AMPS
AC NORMAL OPERATING VOLTAGE - 240 VOLTS

690.14, 690.15, 690.54

PM

"WARNING"
THREE POWER SOURCES
SECOND SOURCE IS PHOTO- VOLTAIC SYSTEM
RATED AC OUTPUT CURRENT - **41.40** AMPS
AC NORMAL OPERATING VOLTAGE - 240 VOLTS

690.54

OPTIONAL SOLAR LOAD CENTER

ARRAY

J/B

"WARNING"
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

(UNLESS BUSBAR IS FULLY RATED)
705.12(D)(2)

NEC 690.31(G)(3) & (4), CRC R324.7

"WARNING"
PHOTOVOLTAIC POWER SOURCE

EVERY 10' ON CONDUIT AND ENCLOSURES

PCS CONTROLLED
CURRENT SETTING: 100 A

THE MAXIMUM OUTPUT CURRENT
FROM THIS SYSTEM IS CONTROLLED
ELECTRONICALLY. REFER TO THE
MANUFACTURER'S INSTRUCTIONS
FOR MORE INFORMATION.

LABEL LOCATION:
POINT OF INTERCONNECTION.
PER CODE(S): NEC 2020: 705.13, UL 1741

WARNING: THIS SENSOR IS PART OF POWER CONTROL SYSTEM. DO NOT REMOVE, REPLACE ONLY WITH THE SAME TYPE AND RATING.

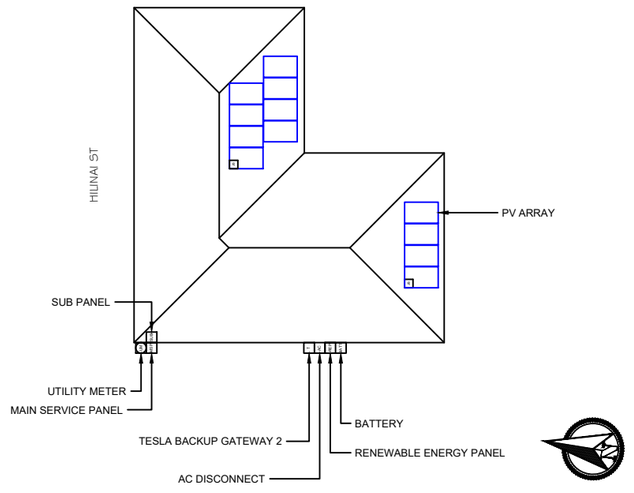
LABEL LOCATION:
ALL SITE AND SOLAR CTS AND/OR REMOTE ENERGY METER CTS
PER CODE(S): NEC 2020: 705.13, UL 1741

NOTES:

1. NEC ARTICLES 690 AND 705 AND NEC SECTION R324 MARKINGS SHOWN HEREON.
2. ALL MARKING SHALL CONSIST OF THE FOLLOWING:
   - A. UV RESISTANT SIGN MATERIAL WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PLATING.
   - B. RED BACKGROUND COLOR WHITE TEXT AND LINE WORK.
   - C. AERIAL FONT.
3. ALL SIGNS SHALL BE SIZED APPROPRIATELY AND PLACED IN THE LOCATIONS SPECIFIED. SIGNAGE CANNOT BE HAND-WRITTEN.
4. SIGNS SHALL BE ATTACHED TO THE SERVICE EQUIPMENT WITH POP-RIVETS OR SCREWS.

CAUTION

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



CONTRACTOR INFO

xxxx

PV+ESS SYSTEM SIZE
4.188KW + 5KW = 9.188KW

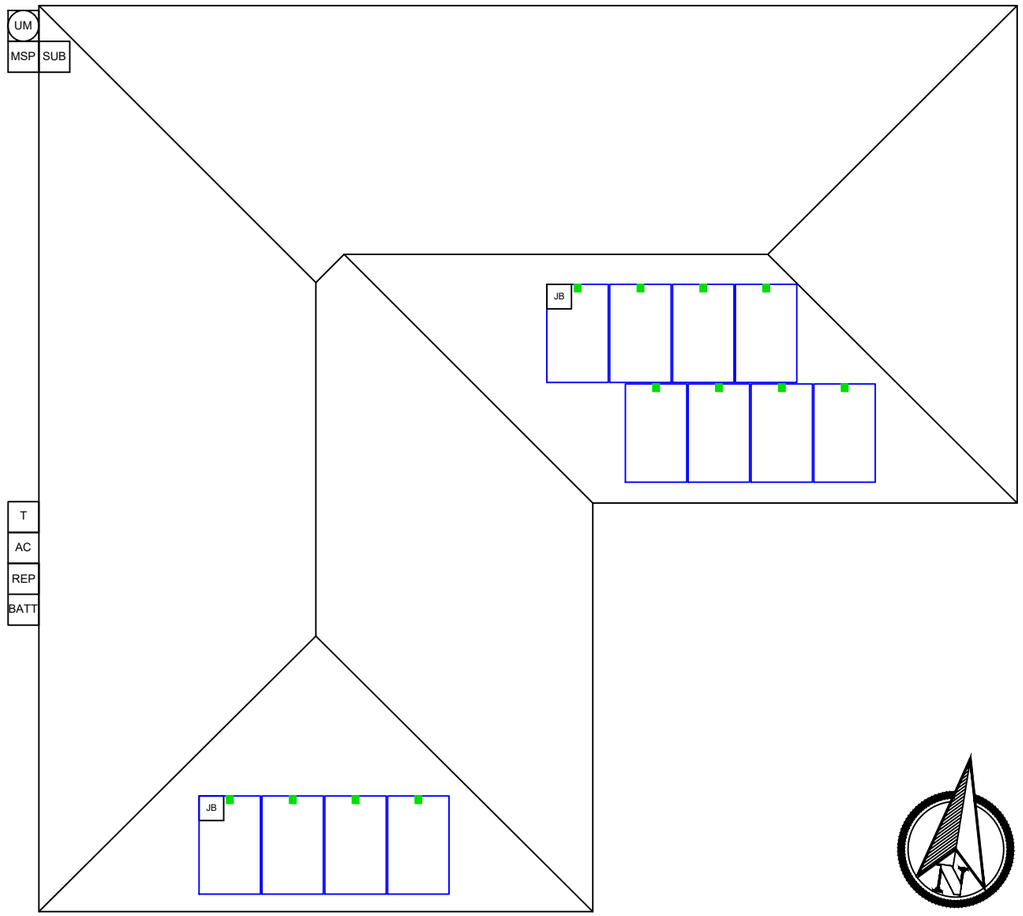
PROJECT	: xxxxx
PROPERTY TMK	: 3-3-013:145-0000
ADDRESS	: 574 HILINAI ST
	: WAILUKU HI 96793
METER #	: 517223
PROJECT ID #	: 0065F00000NEREUAAJ
RSS PROJECT ID #	: 51389

Rev	Description	Date
A	INITIAL DESIGN	9/28/2023
A.3	UPDATED DESIGN	10/11/2023

OPPORTUNITY	xxxxx
PROJECT #	0065F00000NEREUAAJ
DATE DRAWN	10/11/2023
DRAWN BY	E.R
SHEET #	0009
TITLE	SIGNAGE

	1-10	11-20	21-30	31-40	41-50	51-60
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

MICROINVERTER CHART



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OPPORTUNITY	xxxxxxxx
PROJECT #	0065F00000NEREUAAJ
DATE DRAWN	10/11/2023
DRAWN BY	E.R
SHEET #	0010

TITLE MICROINVERTER CHART

SAFETY PLAN

INSTRUCTIONS:

1. USE SYMBOLS IN KEY TO MARK UP THIS SHEET.
2. SAFETY PLAN MUST BE MARKED BEFORE JOB STARTS AS PART OF THE PRE-PLAN
3. DOCUMENT ALL ADDITIONAL HAZARDS ON THIS PAGE & MAKE NOTES ON THE JHA SHEET

IN CASE OF EMERGENCY

NEAREST HOSPITAL OR OCCUPATIONAL/INDUSTRIAL CLINIC

NAME: _____

ADDRESS: _____

SAFETY COACH CONTACT INFORMATION

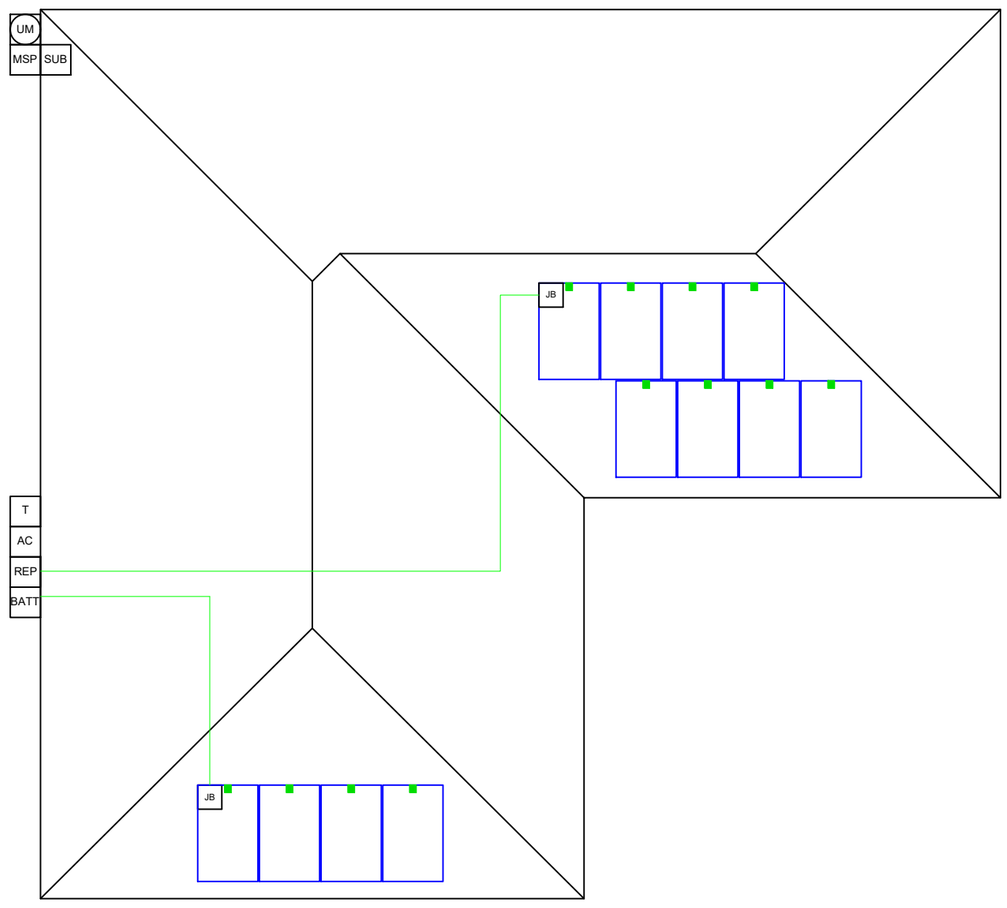
NAME: _____

ADDRESS: _____

ALL EMPLOYEES ON SITE SHALL BE MADE AWARE OF THE SAFETY PLAN AND SIGN INDICATING THAT THEY ARE AWARE OF THE HAZARDS ON-SITE AND THE PLAN FOR WORKING SAFELY.

NAME	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

DATE: _____ TIME:_____



MARK UP KEY

- REP — RENEWABLE ENERGY PANEL
- AC — AC DISCONNECT
- MSP — MAIN SERVICE PANEL
- UM — UTILITY METER
- SUB — SUB PANEL
- T — TESLA BACKUP GATEWAY 2
- MICROINVERTER
- P — PERMANENT ANCHOR
- BATT — BATTERY
- JB — JUNCTION BOX
- T — TEMPORARY ANCHOR
- IL — INSTALLER LADDER
- S — STUB-OUT
- SKYLIGHT
- NO LADDER ACCESS (STEEP GRADE OR GROUND LEVEL OBSTRUCTIONS)
- RESTRICTED ACCESS
- CONDUIT
- GAS — GAS SHUT OFF
- H2O — WATER SHUT OFF
- 7 — SERVICE DROP
- Z — POWER LINES

CONTRACTOR INFO

_____

_____

xxxxxx

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SHEET #	0011

TITLE SAFETY PLAN

JOB HAZARD ANALYSIS

Crew leader to fill out all sections below, hold a pre-job safety meeting with all personnel, and upload this completed document and the Safety Plan to Site Capture

Ladder Access

· Ladders must be inspected before each use.

· Extension ladders must be set up on a firm and level surface at a 4-to-1 rise to run angle (or 75 degrees) and the top must be secured to the structure. Extension style ladders placed on uneven, loose or slippery surfaces must additionally have the base firmly anchored or lashed so the base will not slip out.

- Extension ladders must be used with walk-through devices or the ladder must extend 36" above the stepping off point.
- A-frame ladders must only be climbed with the ladder spreader bars locked in the open position; A-frame ladders shall not be climbed while in the closed position (ex, closed and used while leaned against a structure).
- Additional notes:

Mobile Equipment

- Only Qualified operators will operate equipment; operators must maintain a certification on their person for the equipment being operated.
- Type(s) of mobile equipment (Type/Make/Model):
- Qualified operator(s):

Material Handling and Storage

- Materials will be staged/stored in a way that does not present a hazard to client, personnel or public. Materials stored on the roof will be physically protect from failing or sliding off.

Fall Protection

- A site-specific plan for fall prevention and protection is required prior to starting work and must remain onsite at all times until work is complete; a fall rescue plan must be outlined and discussed among the crew prior to work start.
- First-person-Up (FPU) must install their anchor and connect before any other task, including installing other anchors. The Last-Person-Down (LPD) must be the only person on a roof uninstalling fall protection.
- FPCP (name and title):

· FPU and LPD (name and title):

Electrical Safety

- The Electrical Qualified Person (EQP) is required onsite to perform electrical work.
- All electrical work will be performed with equipment in an electrically safe condition (de-energized) unless approval has been granted prior to work.
- Service drops and overhead electrical hazards will be indentified and protected from contact, as neccessary.

· EQP (name and tile):

Public Protection

- The safety of the Client and the Public must be maintained at all times.
- The Client and the Public shall be prevented from entering the work zone through the use of barriers and/or signage, as required.
- Company, Client and Public property shall be protect from falling objects.
- Pets (including dogs) shall be secured by their owners prior to work start.
- The client should not leave pets, family members, or others in the charge or care of Employees, Contractors, or Temporary Workers.
- Crew leader responsible for communication with the client:
- Client and public is excluded from work area by barricades (N/A, Yes, No):

Training and Pre-Job Safety Briefing

- All employees onsite shall be made aware of the specific hazards of this project and review this HJA during a pre-job briefing, and their signature indicates awareness of site conditions and the plan to eliminate any hazards identified prior to and during the project.

- Crew leader (name/title):
- Crew member (name/title):
- Crew member (name/title):
- Crew member (name/title):
- Crew member (name/title):
- Crew member (name/title):

Airborne Contaminants:

- Asbestos-containing (Transite) piping (ACP) - Do not disturb (move, drill, cut fracture, etc.)
- Asbestos-containing thermal insulation (ACI) and Asbestos-containing duct wrapping (ACW) - do not disturb, no attic or crawlspace access is allowed if work to be performed could cause exposure to personnel, client or public.

- If yes, list specific tasks and protection in place:

Weather and Environment

- The site supervisor shall forecast the weather conditions at the job site, prior to crew arrival, in order to mitigate any hazards associated with inclement weather (heat, cold, wind, rain, etc.)
- The site supervisor will utilized a portable wind meter (anemometer) to verify actual onsite wind conditions, by checking at the ground and on any elevated work surface (ex, rooftop) prior to work start, at midday and prior to solar panel staging on a roof.
- Elevated work involving the moving or maneuvering of solar panels shall cease at 25mph (sustained wind) until wind subsides.

· Forecasted weather maximum temp (degrees F):

Heat Related Illness Prevention

- Employees shall have access to potable drinking water that is fresh, pure, and suitably cool. The water shall be located as close as practicable to the areas where employees are working. Water shall be supplied in sufficient quantity at the beginning of the work shift to provide at least one quart per employee per hour for drinking for the entire shift. Employees may begin the shift with smaller quantities of water if they identify the location and have effective means for replenishment during the shift to allow employees to drink on quart or more per hour. The frequent drinking of water shall be encouraged.

· Shade shall be present when temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work exceeds 80 degrees Fahrenheit, employees shall have and maintain one or more areas with shade at all times.

· New employees must be acclimatized. New employees will be monitored by their Crew Leader (site supervisor) for the first two (2) weeks of employment or longer when necessary.

· Employees will be allowed and encouraged to implement scheduled breaks during each shift. Employees must take cool-down breaks in the shade any time they feel the need to do so to protect them from overheating. Supervisors are REQUIRED to allow employees any break period they need during high heat conditions.

- Cool Vests are encouraged for all employees at all times during periods of high heat.
- Identify the location of the closet Occupational/Industrial Clinic or Hospital in case a crew member becomes ill.

What is the specific plan to provide and replenish sufficient water for all employees on site?

- If offsite replenish is necessary, where will you go to replenish water (location/address):
- Who replenish the drinking water (name):

Restroom facilities

- Employees shall have access to restroom facilities with hand-washing stations. Use of onsite restroom is at the client's discretion (location is annotated below). If client does not give permission, location of suitable restroom facilities with hand-washing stations offsite will be provided. The onsite supervisor will identify location and make arrangements to ensure all employees have access at any point.
- Restroom facilities will be (circle one): Onsite - Offsite
- If Offsite, add location name and address:

Incident Reporting Procedure

- Contact your Site Supervisor

  Name:

  Phone:

- Contact your Manager

  Name:

  Phone:

- Contact your Site Supervisor

  Name:

  Phone:

With: Your full name, phone number, office location, brief description of what happen and when.

NOTE ADDITIONAL HAZARDS NOT ADDRESSED ABOVE
(add as many as necessary by using additional sheets)

Define the Hazard:	Method/steps to prevent incident:
Define the Hazard:	Method/steps to prevent incident:
Define the Hazard:	Method/steps to prevent incident:
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CONTRACTOR INFO

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DRAWN BY	E.R
SHEET #	0012

TITLE SAFETY PLAN

maxeon

SPR-MAX3-XXX-BLK-R

MAXEON 3 SOLAR PANEL

405–420 W | Up to 22.2% Efficient

Ideal for residential applications

Black backsheet, black frame

More Lifetime Energy

Designed to maximise energy generation through leading efficiency, enhanced performance in high temperatures, and higher energy conversion in low-light conditions like mornings, evenings and cloudy days.

Uncompromising Durability

Engineered to power through all types of weather conditions with crack-resistant cells and reinforced connections that protect against fatigue and corrosion, to an electrical architecture that mitigates the impact of shade and prevents hot-spot formation.

HOT-SPOT PROTECTED

Superior Sustainability

Clean ingredients, responsible manufacturing, and lasting energy production for 40 years make Maxeon panels the most sustainable choice in solar.

40 YEAR WARRANTY Power | Product | Service

The Industry's Longest Warranty

Maxeon panels are covered by a 40-year warranty[1] backed by extensive third-party testing and field data from more than 33 million panels deployed worldwide.

Product and power coverage	40 Years
Year 1 minimum warranted output	98.0%
Maximum annual degradation	0.25%

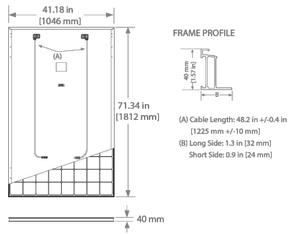
Learn more about the SPR-MAX3-XXX-BLK-R
maxeon.com/us

MAXEON 3 POWER: 405–420 W | EFFICIENCY: Up to 22.2%

Electrical Data	SPR-MAX3-420-BLK-R	SPR-MAX3-415-BLK-R	SPR-MAX3-410-BLK-R	SPR-MAX3-405-BLK-R
Nominal Power (Pnom) [2]	420 W	415 W	410 W	405 W
Power Tolerance	+5/0%	+5/0%	+5/0%	+5/0%
Panel Efficiency	22.2%	21.9%	21.6%	21.4%
Rated Voltage (Vmpp)	35.5 V	35.3 V	35.1 V	34.9 V
Rated Current (Impp)	11.82 A	11.75 A	11.68 A	11.61 A
Open-Circuit Voltage (Voc)	40.7 V	40.7 V	40.7 V	40.7 V
Short-Circuit Current (Isc)	12.65 A	12.64 A	12.63 A	12.62 A
Max. System Voltage	1000 V UL & 1000 V IEC			
Maximum Series Fuse	25 A			
Power Temp Coef.	−0.27% / °C			
Voltage Temp Coef.	−0.236% / °C			
Current Temp Coef.	0.058% / °C			

Operating Condition And Mechanical Data	
Temperature	−40°F to +185°F (−40°C to +85°C)
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)
Solar Cells	112 Monocrystalline Maxeon Gen 3
Tempered Glass	High-transmission tempered anti-reflective
Junction Box	IP-68, Stäubli (MC4), 2 bypass diodes
Weight	46.7 lbs (21.2 kg)
Max. Load [6]	Wind: 50 psf, 2400 Pa, 244 kg/m² back Snow: 112 psf, 5400 Pa, 550 kg/m² front
Frame	Class 1 black anodized (highest AAMA rating)

Certifications and Compliance	
Standard Tests [3]	UL 61730, IEC 61215, IEC 61730 (Pending)
Quality Management Certs	ISO 9001:2015, ISO 14001:2015
Ammonia Test	IEC 62716 (Pending)
Desert Test	IEC 60068-2-68, MIL-STD-810G (Pending)
Salt Spray Test	IEC 61701 (maximum severity) (Pending)
PID Test	1000 V: IEC 62804 (Pending)
Available Listings	UL, TUV
IFLI Declare Label	First solar panel labeled for ingredient transparency and LBC-compliance. [4]
Cradle to Cradle Certified™ Silver	First solar panel line certified for material health, water stewardship, material reutilization, renewable energy & carbon management, and social fairness. [5]
Green Building Certification Contribution	Panels can contribute additional points toward LEED and BREEAM certifications.
EHS Compliance	RoHS, ISO 45001:2018, Recycle Scheme, REACH SVHC-163



Please read the safety and installation instructions.
Visit Visit www.maxeon.com/us/InstallGuideUL.
Paper version can be requested through
techsupport.ROW@maxeon.com.

LEAD FREE RoHS COMPLIANT · Declare · cradle to cradle CERTIFIED SILVER

1 40-year warranty is not available in all countries or all installations and requires registration, otherwise our 25-year warranty applies. Service availability varies by country and installation provider.
2 Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25° C). NREL calibration Standard: SOMS current, LACCS FF and Voltage.
3 Type 2 fire rating per UL 61730, Class C fire rating per IEC 61730.
4 Maxeon DC panels first received the International Living Future Institute Declare Label in 2016.
5 Maxeon DC panels are Cradle to Cradle Certified™ Silver - www.c2ccertified.org/products/scorecard/maxeon_solar_panels_-_maxeon_corporation. Cradle to Cradle Certified™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.
6 As per IEC 61215-2016 tested and certified.

Made in Philippines (Cells)
Assembled in Mexico (Module)
Specifications included in this datasheet are subject to change without notice.

View warranty, patent and trademark information at maxeon.com/legal.

maxeon

545908 REV A.01 / LTR_US
Publication Date: February 2023

CONTRACTOR INFO

xxxxxxxxx

PV+ESS SYSTEM SIZE
4.188KW + 5KW = 9.188KW

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DRAWN BY	E.R
SHEET #	0013
TITLE	MODULE SPEC

ENPHASE.

DATA SHEET

IQ8M and IQ8A 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 superfast 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 IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

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.

CERTIFIED SAFETY

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

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) and IEEE 1547:2018 (UL 1741-SB 3rd Ed.)

Note:

IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, etc) in the same system.

*Only when installed with IQ System Controller 2, meets UL 1741.
**IQ8M and IQ8A support split-phase, 240V installations only.

IQ8M and IQ8A Microinverters

INPUT DATA (DC)		IQ8M-72-2-US	IQ8A-72-2-US
Commonly used module pairings[1]	W	260 – 460	295 – 500
Module compatibility		54-cell / 108 half-cell, 60-cell / 120 half-cell, 66-cell / 132 half-cell and 72-cell / 144 half-cell	
MPPT voltage range	V	30 – 45	32 – 45
Operating range	V	16 – 58	
Min. / Max. start voltage	V	22 / 58	
Max. input DC voltage	V	60	
Max. continuous input DC current	A	12	
Max. input DC short-circuit current	A	25	
Max. module I_{sc}	A	20	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
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)		**IQ8M-72-2-US**	**IQ8A-72-2-US**
Peak output power	VA	330	366
Max. continuous output power	VA	325	349
Nominal (L-L) voltage / range[2]	V	240 / 211 – 264	
Max. continuous output current	A	1.35	1.45
Nominal frequency	Hz	60	
Extended frequency range	Hz	47 – 68	
AC short circuit fault current over 3 cycles	Arms	2	
Max. units per 20 A (L-L) branch circuit[3]		11	
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	%	97.8	97.7
CEC weighted efficiency	%	97.5	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 (H x W x D)		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	
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, IEEE 1547:2018 (UL 1741-SB 3rd Ed.), 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 Shutdown 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) Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://link.enphase.com/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.

IQ8MA-12A-DS-0069-03-EN-US-2022-12-27

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SHEET #	0014
TITLE	MICROINVERTER SPEC

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.

PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-in Type	Split Phase
Grid Frequency	60 Hz
Total Energy	14 kWh
Usable Energy	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10 s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/– 1.0 adjustable
Power Factor Range (full-rated power)	+/– 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency[1,3]	90%
Warranty	10 years

[1]Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
[2]In Backup mode, grid charge power is limited to 3.3 kW.
[3]AC to battery to AC, at beginning of life.

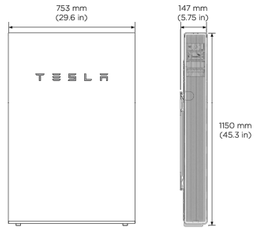
COMPLIANCE INFORMATION

Certifications	UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3
Grid Connection	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)

MECHANICAL SPECIFICATIONS

Dimensions[1]	1150 mm x 755 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight[1]	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

[1]Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

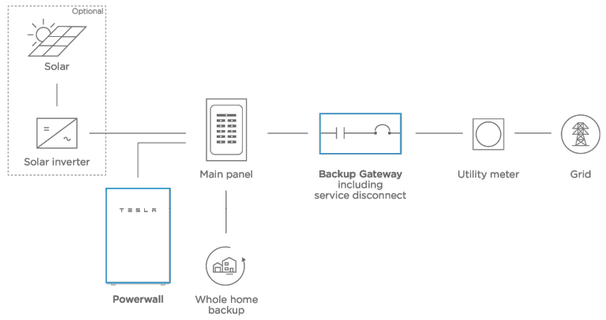


ENVIRONMENTAL SPECIFICATIONS

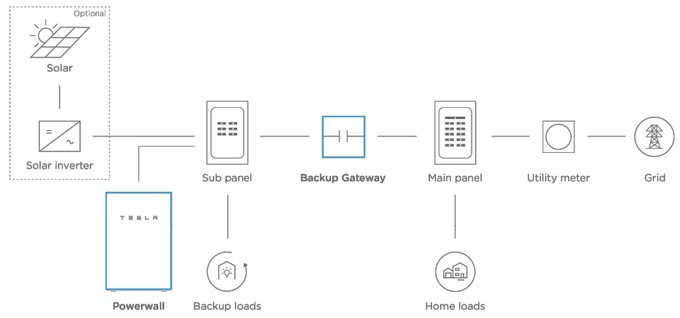
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	–20°C to 30°C (–4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Wet Location Rating	Yes
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



CONTRACTOR INFO

xxxxxxx

PV+ESS SYSTEM SIZE
4.188KW + 5KW = 9.188KW

PROJECT	: xxxxxxxx
PROPERTY TMK	: 3-3-013:145-0000
ADDRESS	: 574 HILINAI ST
	: WAILUKU HI 96793
METER #	: 517223
PROJECT ID #	: 0065F00000NEREUAAJ
RSS PROJECT ID #	: 51389

Rev	Description	Date
A	INITIAL DESIGN	9/28/2023
A.3	UPDATED DESIGN	10/11/2023

OPPORTUNITY	xxxxxxx
PROJECT #	0065F00000NEREUAAJ
DATE DRAWN	10/11/2023
DRAWN BY	E.R
SHEET #	0015
TITLE	BATTERY SPEC

POWERWALL
Backup Gateway 2

The Backup Gateway 2 for Tesla Powerwall provides energy management and monitoring for solar self-consumption, time-based control, and backup.

The Backup Gateway 2 controls connection to the grid, automatically detecting outages and providing a seamless transition to backup power. When equipped with a main circuit breaker, the Backup Gateway 2 can be installed at the service entrance. When the optional internal panelboard is installed, the Backup Gateway 2 can also function as a load center.

The Backup Gateway 2 communicates directly with Powerwall, allowing you to monitor energy use and manage backup energy reserves from any mobile device with the Tesla app.

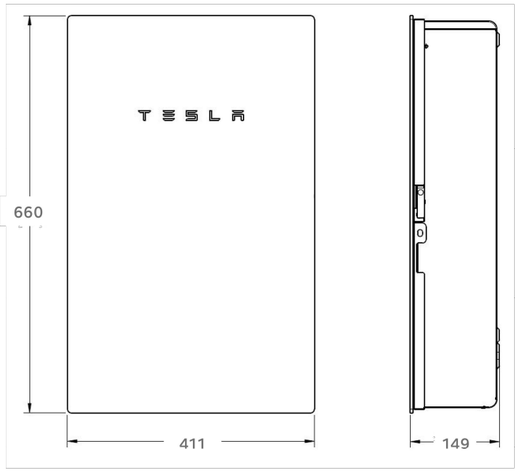
PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Current Rating	200 A
Maximum Input Short Circuit Current	10 kA[1]
Overcurrent Protection Device	100-200A; Service Entrance Rated[1]
Overvoltage Category	Category IV
AC Meter	Revenue accurate (+/– 0.2 %)
Primary Connectivity	Ethernet, Wi-Fi
Secondary Connectivity	Cellular (3G, LTE/4G)[2]
User Interface	Tesla App
Operating Modes	Support for solar self-consumption, time-based control, and backup
Backup Transition	Automatic disconnect for seamless backup
Modularity	Supports up to 10 AC-coupled Powerwalls
Optional Internal Panelboard	200A 6-space / 12 circuit Eaton BR Circuit Breakers
Warranty	10 years

[1] When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.
[2] The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 149 mm (26 in x 16 in x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



COMPLIANCE INFORMATION

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS CSA 22.2 0.19, CSA 22.2 205
Emissions	FCC Part 15, ICES 003

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

CONTRACTOR INFO

xxxxxxxx

PV+ESS SYSTEM SIZE
4.188KW + 5KW = 9.188KW

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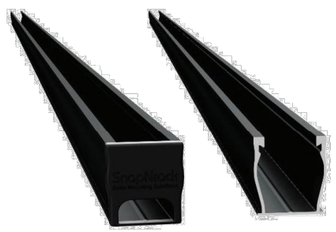
DRAWN BY	E.R
SHEET #	0016

TITLE GATEWAY SPEC

SnapNrack™
Solar Mounting Solutions

Ultra Rail

UR-40
UR-60

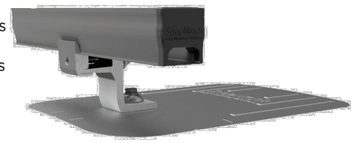


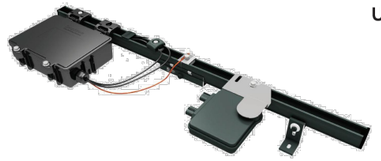
SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge





Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience

The Ultimate Value in Rooftop Solar

- Industry leading Wire Management Solutions
- Mounts available for all roof types
- Single Tool Installation
- All SnapNrack Module Clamps & Accessories are compatible with both rail profiles

Start Installing Ultra Rail Today

RESOURCES snapnrack.com/resources
DESIGN snapnrack.com/configurator
WHERE TO BUY snapnrack.com/where-to-buy

Quality. Innovative. Superior.

SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860 **www.snapnrack.com** **contact@snapnrack.com**

CONTRACTOR INFO

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DATE DRAWN	10/11/2023
DRAWN BY	E.R
SHEET #	0017

TITLE RAIL SPEC

DESCRIPTION:

SNAPNRACK, ULTRA RAIL SPEEDSEAL™ FOOT

DRAWN BY: mwatkins

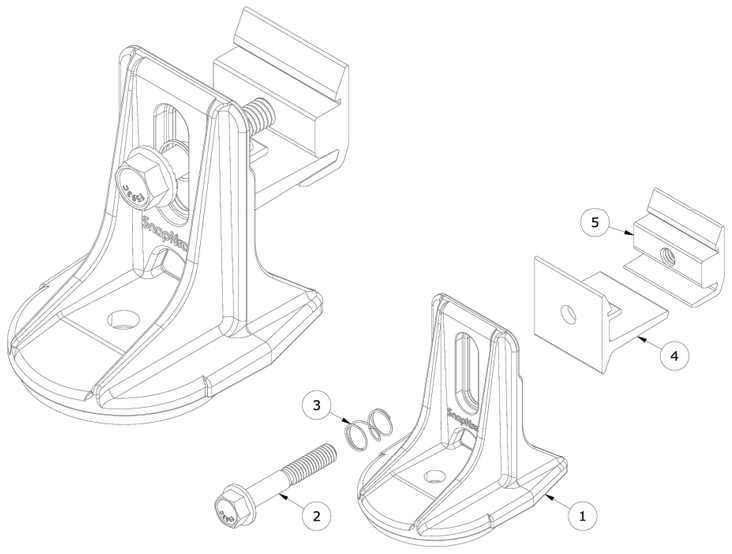
REVISION: A

PART NUMBER(S):

242-02163, 242-02167

SnapNrack™ Solar Mounting Solutions

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902



PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, SPEEDSEAL FOOT, BASE, SEALING, SILVER / BLACK
2	1	BOLT, FLANGE, SERRATED, 5/16IN-18 X 2IN, SS
3	1	SNAPNRACK, RL UNIVERSAL, MOUNT SPRING, SS
4	1	SNAPNRACK, ULTRA RAIL MOUNT THRU PRC, CLEAR / BLACK
5	1	SNAPNRACK, ULTRA RAIL MOUNT TAPPED PRC, CLEAR / BLACK

MATERIALS:	DIE CAST A380 ALUMINUM, 6000 SERIES ALUMINUM, STAINLESS STEEL	
DESIGN LOAD (LBS):	802 UP, 1333 DOWN, 357 SIDE	OPTIONS:
ULTIMATE LOAD (LBS):	2118 UP, 4006 DOWN, 1331 SIDE	CLEAR / BLACK
TORQUE SPECIFICATION:	12 LB-FT	
CERTIFICATION:	UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM SUBJECT UL 2582	
WEIGHT (LBS):	0.45	

DESCRIPTION:

SNAPNRACK, ULTRA RAIL SPEEDSEAL™ FOOT

DRAWN BY: mwatkins

REVISION: A

PART NUMBER(S):

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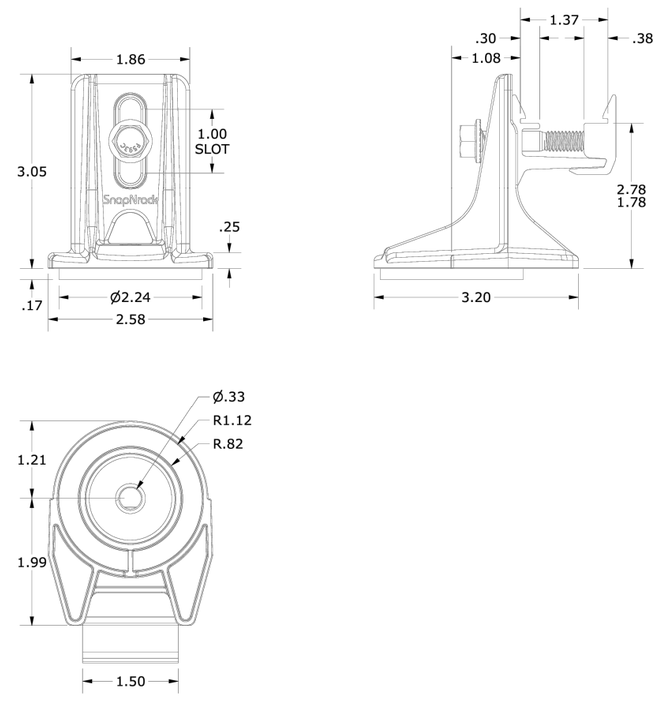

ALL DIMENSIONS IN INCHES

CONTRACTOR INFO

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SHEET #	0018

TITLE ATTACHMENT SPEC