KAREN ZETROUER

1262 SW BLUFF DR

FORT WHITE FL 32038

DC:	11.64 KW-DC MODULE STC RATING
AC:	9.894 kW-AC GROSS POWER RATING
AC:	23 kW-AC INVERTER

THIS SYSTEM CONSISTS OF 11.64 KW OF NEW MODULES. THE 6 NEW Q.PEAK DUO XL-G10.3 BFG/485 GULFLOK ROOF MOUNTED MODULES HAVE NEW IRONRIDGE XR10 RACKING WITH THE MODULES TILTED FROM THE SURFACE AT 34.0° AND THE SURFACE FACING NORTH AND THE MODULE FACING SOUTH. THE 18 NEW Q.PEAK DUO XL-G10.3 BFG/485 GULFLOK ROOF MOUNTED MODULES HAVE NEW IRONRIDGE XR10 RACKING WITH THE MODULES PARALLEL TO THE SURFACE AND THE SURFACE AND MODULE FACING SOUTH. THE SYSTEM HAS 2 NEW TESLA POWERWALL 3 INVERTER/BATTERIES AND 12 NEW TESLA SSDS.

DOCUMENTS SIZED FOR 11"X17" PAPER

SUMMARY

PAGE INDEX

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ENGINEER OF RECORD:
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PE#51402
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BARRY@SOLARIMPACT.COM

CLIENT:
KAREN ZETROUER

GENERAL CONTRACTOR:
N/A

AUTHORITY HAVING JURISDICTION:
COLUMBIA COUNTY BUILDING DEPARTMENT

UTILITY:
CLAY ELECTRIC COOPERATIVE (CEC)

Columbia County Building Department — Plans Reviewed for Code Compliance — State of Florida

PARTICIPANTS

CODE REFERENCES

2023 8TH EDITION FLORIDA BUILDING CODE : BUILDING

2023 8TH EDITION FLORIDA BUILDING CODE : RESIDENTIAL

2023 8TH EDITION FLORIDA BUILDING CODE : MECHANICAL

2023 8TH EDITION FLORIDA BUILDING CODE : PLUMBING

2023 8TH EDITION FLORIDA BUILDING CODE : FUEL GAS

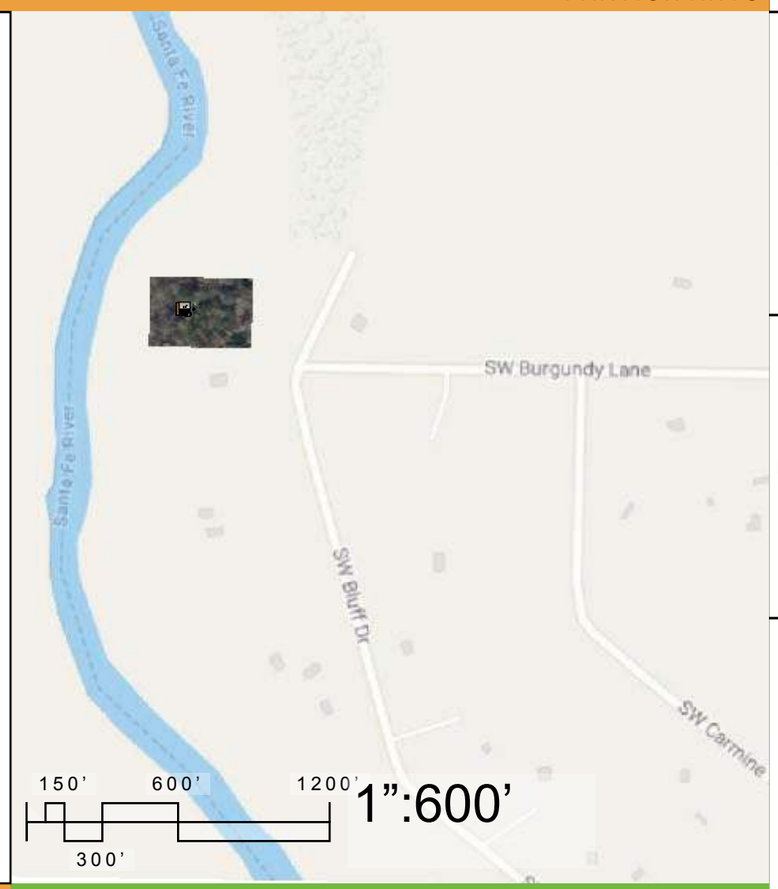
2023 8TH EDITION FLORIDA BUILDING CODE : ENERGY CONSERVATION

2023 8TH EDITION FLORIDA BUILDING CODE : EXISTING BUILDING

2023 8TH EDITION FLORIDA BUILDING CODE : ACCESSIBILITY

2023 8TH EDITION FLORIDA FIRE PREVENTION CODE (NFPA)

2020 NATIONAL ELECTRIC CODE (NEC)



SITE LOCATION

Designed By:

solar impact

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		PER CUSTOMER

Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

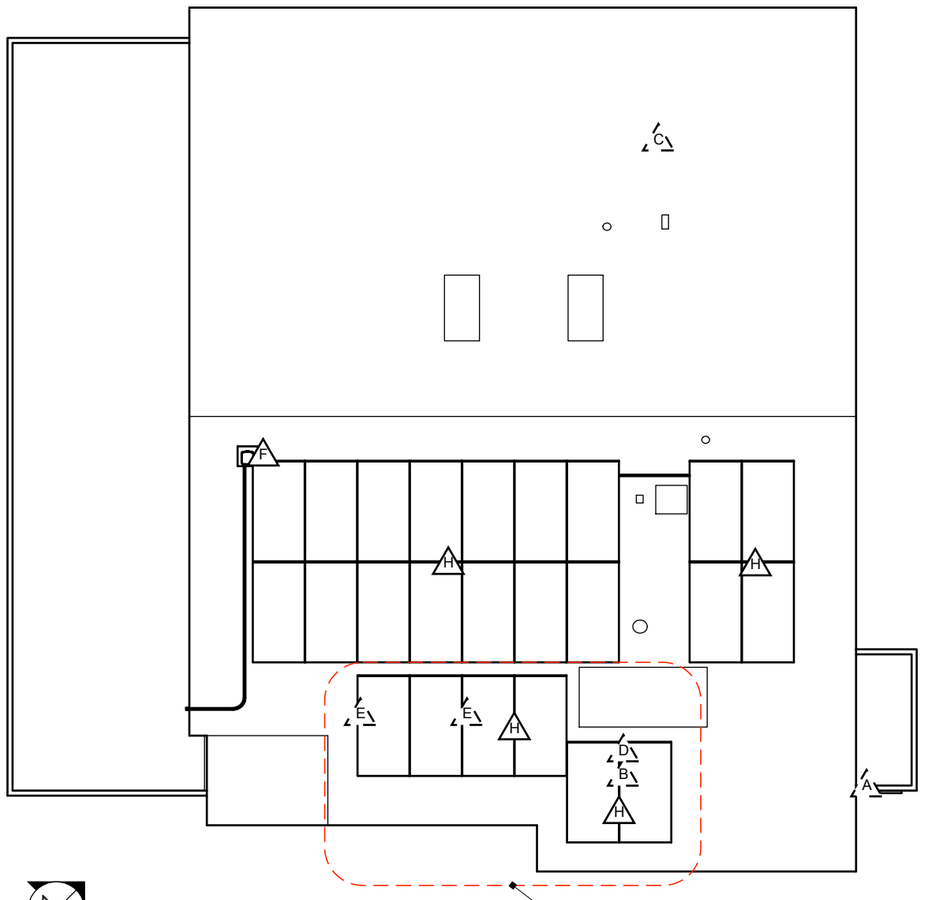
PAGE TITLE: GENERAL NOTES

PAGE #: G01

SYSTEM SUMMARY	
ITEM	DETAIL
DC:	11.64 KW-DC MODULE STC RATING
AC:	9.894 kW-AC GROSS POWER RATING
AC:	23 kW-AC INVERTER
MODULES:	24 Q CELLS Q.PEAK DUO XL-G10.3 BFG/485 (N)
RSD:	12 TESLA SSD (N)
INVERTER(S):	2 TESLA POWERWALL 3 (N)
TILT FROM SURFACE:	34° AND 0°
TILT FROM HORIZ:	9.1° AND 24.9°
AZIMUTH:	179°

EQUIPMENT SCHEDULE

LETTER	TYPE	DESCRIPTION
A	UTILITY METER SOCKET	(E) 200A METER/MAIN | 200A MAIN BREAKER | VOLTAGE : 120/240V
B	TESLA GATEWAY	(N) TESLA ENERGY GATEWAY 2 | INTERNAL PANELBOARD | MAINBREAKER : 200A
C	BACKUP PANEL	(E) LOADCENTER 200A | MAIN BREAKER : 200A | VOLTAGE : 120/240V
D	SOLAR DISCONNECT	(N) DISCONNECT 200A | FUSIBLE | FUSE : 125A | 120/240V | SERVICE RATED | NEMA 3R (GENERIC)
E	INVERTER/BATTERY	(N) TESLA POWERWALL 3 | OCPD : 60A | STORAGE : 13.5 KWH
F	DC JUNCTION BOX	(N) ROOF-MOUNTED DC JUNCTION BOX | NEMA4X (GENERIC)
G	RAPID SHUTDOWN DEVICE	(N) TESLA SSD
H	MODULE	(N) Q CELLS Q.PEAK DUO XL-G10.3 BFG/485



2.5’ 10’ 20’ 5’ 1”:10’

1/A02

01 - EQUIPMENT LOCATIONS

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Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: EQUIPMENT LOCATIONS

PAGE #: A01

EQUIPMENT SCHEDULE		
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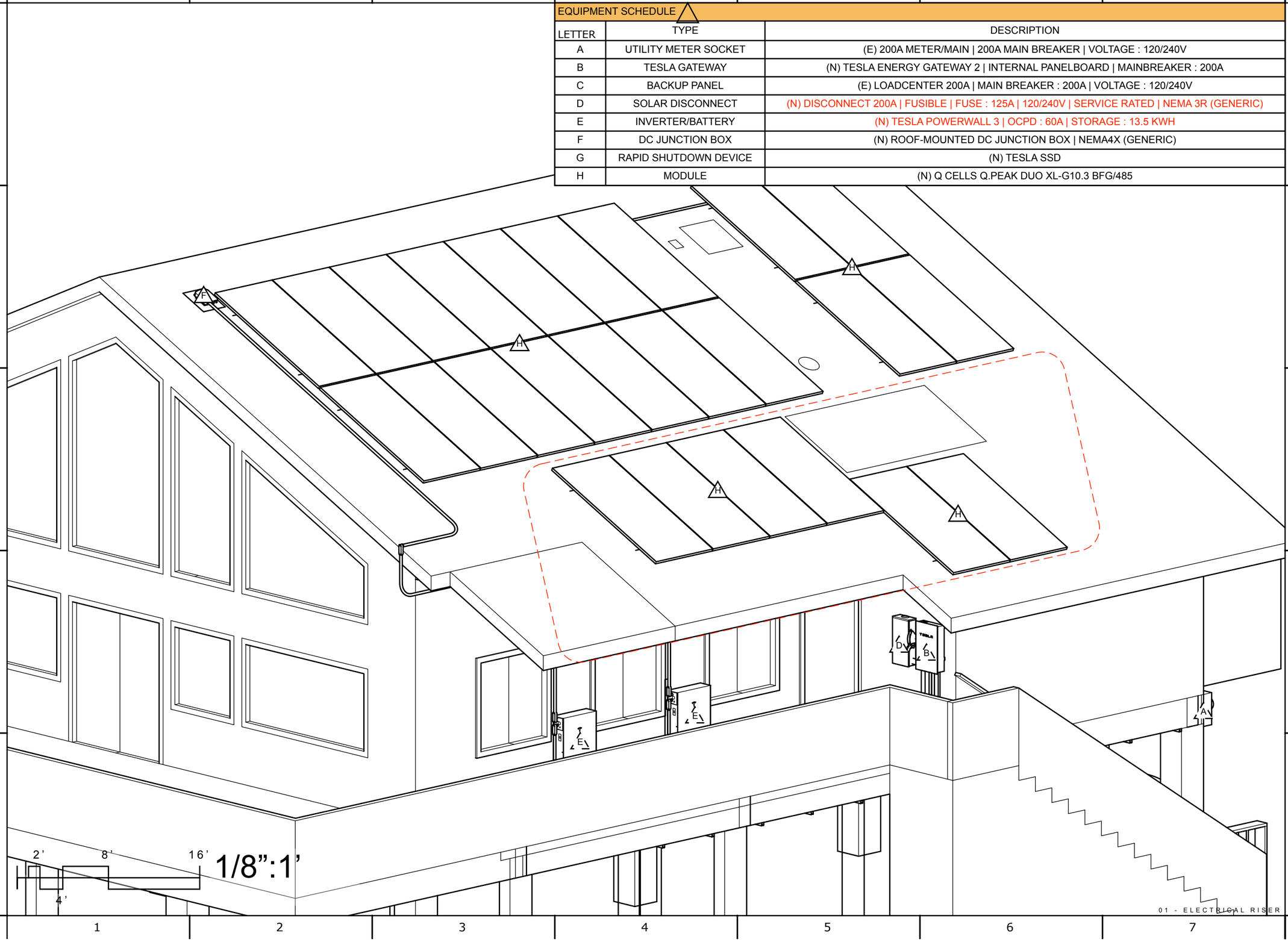
H	MODULE	(N) Q CELLS Q.PEAK DUO XL-G10.3 BFG/485



01 - ELECTRICAL RISER

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Project Name:
KAREN ZETROUER

Project Address:
1262 SW BLUFF DR
FORT WHITE FL 32038

PAGE TITLE:
ELECTRICAL RISER

PAGE #:
A02

ROOF INFORMATION		
	QUANTITY	UNITS
ARRAY AREA	597	SF
ROOF AREA	2,564	SF
PERCENT COVERED	23%	-

LEGEND

WALKWAY

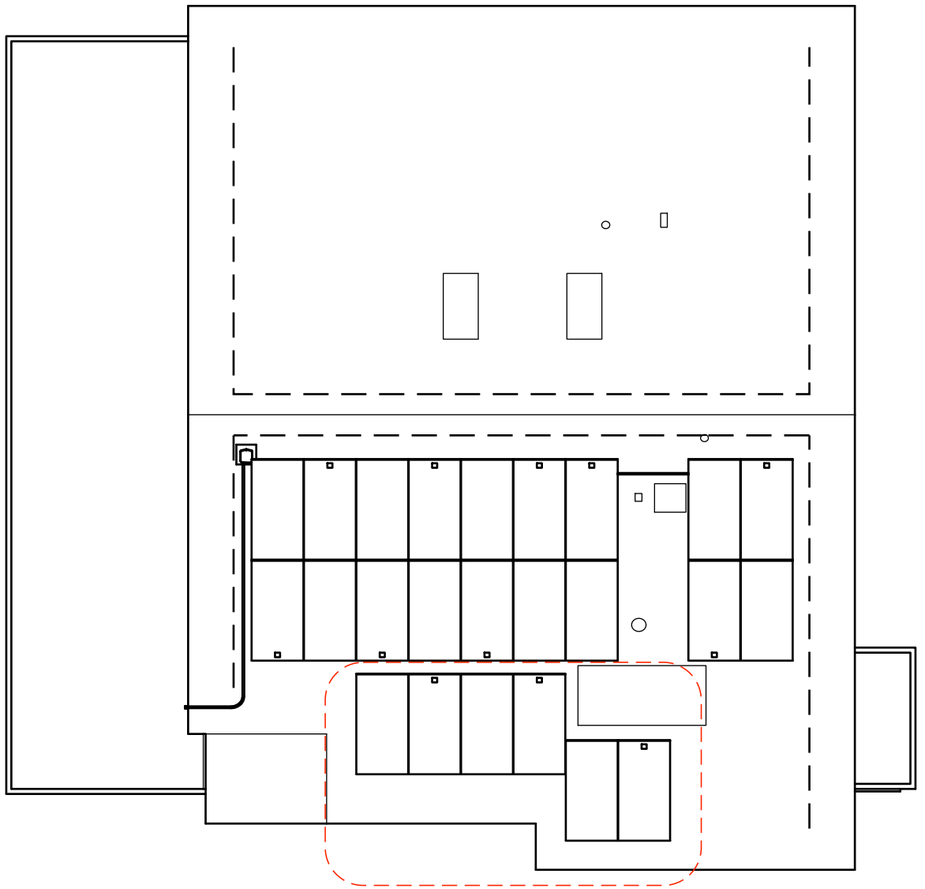
2023 FBC - RESIDENTIAL, 8TH EDITION

R324.6.1 Pathways

Not fewer than two pathways, on separate roof planes from lowest roof edge to ridge and not less than **36 inches** (914 mm) wide, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, a pathway not less than 36 inches wide (914 mm) shall be provided from the lowest roof edge to ridge on the same roof plane as the photovoltaic array, on an adjacent 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** (457 mm) clear setback 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 (914 mm) clear setback is required on both sides of a horizontal ridge.



STREET SIDE

2.5’ 10’ 20’ 1”:10’
5’

01 - FIRE SAFETY

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Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: FIRE SAFETY

PAGE #: A03

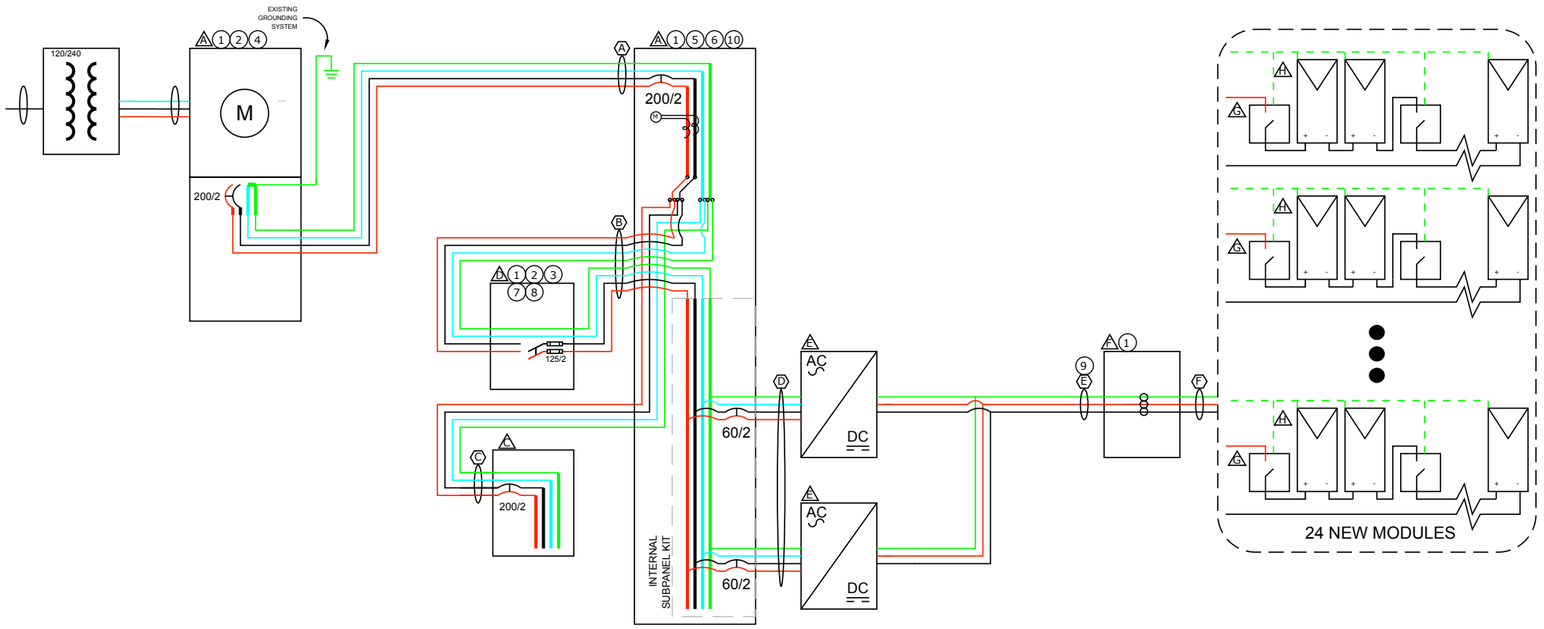
EQUIPMENT SCHEDULE		
LETTER	TYPE	DESCRIPTION
A	UTILITY METER SOCKET	(E) 200A METER/MAIN | 200A MAIN BREAKER | VOLTAGE : 120/240V
B	TESLA GATEWAY	(N) TESLA ENERGY GATEWAY 2 | INTERNAL PANELBOARD | MAINBREAKER : 200A
C	BACKUP PANEL	(E) LOADCENTER 200A | MAIN BREAKER : 200A | VOLTAGE : 120/240V
D	SOLAR DISCONNECT	(N) DISCONNECT 200A | FUSIBLE | FUSE : 125A | 120/240V | SERVICE RATED | NEMA 3R (GENERIC)
E	INVERTER/BATTERY	(N) TESLA POWERWALL 3 | OCPD : 60A | STORAGE : 13.5 KWH
F	DC JUNCTION BOX	(N) ROOF-MOUNTED DC JUNCTION BOX | NEMA4X (GENERIC)
G	RAPID SHUTDOWN DEVICE	(N) TESLA SSD
H	MODULE	(N) Q CELLS Q.PEAK DUO XL-G10.3 BFG/485

CONDUCTOR SIZES	
A	(1 SET) 2X #3/0 CU + 1X #3/0 CU NTRL + 1X #6 CU GRD IN 2" PVC SCH 40/HPDE
B	(1 SET) 2X #1 CU + 1X #1 CU NTRL + 1X #6 CU GRD IN 1.5" PVC SCH 40/HPDE
C	(1 SET) 2X #3/0 CU + 1X #3/0 CU NTRL + 1X #6 CU GRD IN 2" PVC SCH 40/HPDE
D	(1 SET) 4X #6 CU + 2X #6 CU NTRL + 1X #10 CU GRD IN 1.25" EMT
E	(1 SET) 8X #10 CU + 2X #10 CU GRD IN 1" EMT
F	(1 SET) 8X #10 CU + 1X #4 CU GRD IN FREE AIR

FIELD APPLIED PLACARDS

1	SEE PLACARDS PAGE FOR DETAILS

*Note: NEC 705.95(B) says “Neutral Conductor for Instrumentation, Voltage Detection or Phase Detection. A conductor used solely for instrumentation, voltage detection, or phase detection and connected to a single-phase or 3-phase utility-interactive inverter, shall be permitted to be sized at less than the ampacity of the other current-carrying conductors and shall be sized equal to or larger than the equipment grounding conductor.”



SOLAR SCHEDULE							
				STRING # 1		STRING # 2	
INVERTER	MODEL	MODULE	RSD	MODULE	RSD	MODULE	RSD
1	TESLA POWERWALL 3	Q Cells 485 W	Tesla SSD	6	3	6	3
2	TESLA POWERWALL 3	Q Cells 485 W	Tesla SSD	6	3	6	3

ELECTRICAL NOTES

1.) ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2.) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
3.) WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
4.) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5.) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
6.) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7.) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
8.) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
9.) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
10.) THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE

ADDITIONAL NOTES:

1. EACH MODULE TO BE GROUNDED USING THE SUPPLIED CONNECTION POINT PER MANUFACTURER'S REQUIREMENTS. ALL SOLAR MODULES, EQUIPMENT, AND METALLIC COMPONENTS ARE TO BE BONDED. IF THE EXISTING GROUNDING ELECTRODE SYSTEM CAN NOT BE VERIFIED OR IS ONLY METALLIC WATER PIPING, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE.
2. ALL PLAQUES AND SIGNAGE REQUIRED BY THE LATEST EDITION OF NATIONAL ELECTRICAL CODE. LABEL SHALL BE METALLIC OR PLASTIC, ENGRAVED OR MACHINE PRINTED IN A CONTRASTING COLOR TO THE PLAQUE. PLAQUE SHALL BE UV RESISTANT IF EXPOSED TO SUNLIGHT.
3. DC CONDUCTORS SHALL BE RUN IN EMT AND SHALL BE LABELED, "CAUTION DC CIRCUIT" OR EQUIV. EVERY 5 FT.
4. EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH 250.134 OR 250.136(A).
5. CONFIRM LINE SIDE VOLTAGE AT ELECTRIC UTILITY SERVICE PRIOR TO CONNECTING INVERTER. VERIFY SERVICE VOLTAGE IS WITHIN INVERTER VOLTAGE OPERATIONAL RANGE.
6. OUTDOOR EQUIPMENT SHALL BE NEMA-3R RATED OR BETTER.
7. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.
8. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE, AND FOR ROOF-MOUNTED SYSTEMS, WIRING MUST BE PERMANENTLY AND COMPLETELY HELP OFF OF THE ROOF SURFACE. NEC 110.2 - 110.4 / 300.4

01 - LINE DIAGRAM

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		PER CUSTOMER

Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: LINE DIAGRAM

PAGE #: E01

A

B

C

D

E

① ⚠ WARNING

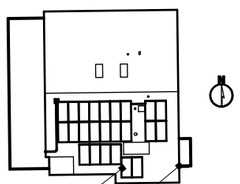
ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

x 3

LOCATION: METER,MSD,BREAKER PANEL,AC DISCONNECT,ROOF MOUNTED JUNCTION BOX
REF: NEC 706.15 (C)(4) & 690.13(B)

② CAUTION !

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



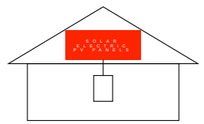
1"=25"

x 1

LOCATION: SERVICE DISCONNECTS
REF: 690.10, 690.56(B)

③ 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



x 1

LOCATION: AC & DC DISCONNECTS, POINT OF INTERCONNECTION
REF: NEC 605.11.3.1(1) & 690.56(C)(1)(a)
QTY: 1

④ ⚠ WARNING: DUAL POWER SOURCE

SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

x 1

LOCATION: MAIN SERVICE PANEL & NET METER
REF: NEC 690.31(I)

⑤ ⚠ CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

x 1

LOCATION:MAIN SERVICE PANEL
REF: NEC 690.13(F), NEC 705.12(B)(3-4) & NEC 690.59

⑥ WARNING: POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

x 1

LOCATION: PV BREAKER ON LOADCENTER
REF: 705.12(B)(2)(c)

⑦ PHOTOVOLTAIC

AC DISCONNECT

x 1

LOCATION: PV AC DISCONNECT
REF: 690.13(B)
QTY: 1

⑧ PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT: 96.0 AAC

NOMINAL OPERATING AC VOLTAGE: 240 V

x 1

LOCATION: AC DISCONNECT
REF: 690.54

⑨ SOLAR PV DC CIRCUIT

x 6

LOCATION: DC CONDUIT EVERY 10' O.C.
REF: 690.31(G)(3)(4)

⑩ PCS CONTROLLED CURRENT SETTING 200 A

THE MAXIMUM OUTPUT CURRENT FROM THIS SYSTEM TOWARDS THE MAIN PANEL IS CONTROLLED ELECTRONICALLY. REFER TO MANUFACTURERS INSTRUCTIONS FOR MORE INFORMATION.

x 1

LOCATION: TESLA ENERGY GATEWAY
REF: TESLA INSTALLATION MANUAL

⑩

0.5" 2" 4"
1"

1/2":1"

01 - PLACARDS

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PAGE TITLE: PLACARDS

PAGE #: E02

LOCATION INFORMATION	
Location	Gainesville AP
Temp, Ambient High (ASHRAE 2%)	34.0 C
Temp, Ambient Low (ASHRAE Extreme)	-5.0 C
Temp, Module Test	25.0 C
Temp, Delta Low	-30.0 C
Temp, Below Ground	25.0 C
MODULE SPECIFICATIONS AND CALCULATIONS	
ITEM	MODULE 1
Module Manufacturer	Q Cells
Module Model	Q.Peak Duo XL-G10.3 BFG/485
Module Power STC	485 W
Module Operating Volt	45.63 VDC
Module Open-circuit Volt	53.63 VDC
Module Coeff Volt/Temp	-0.27 %/C
Module Max Volt (Voc*(1+Td*VTCoef))	57.97 VDC
Module Operating Current	10.63 A
Module Short-Circuit Current	11.16 A
Module Max-Current (Isc*125%)	13.95 A
INVERTER SPECIFICATIONS AND CALCULATIONS	
ITEM	INVERTER 1
Inverter Make	TESLA
Inverter Model	Powerwall 3
Inverter Qnty	2
Inverter Power	11,500 W
Inverter Input Voltage, Max DC	600
Inverter Input Voltage, Nominal DC	60-550
Inverter Output Voltage, AC	240 VAC
Inverter Input Current, Max DC	13.0 ADC
Inverter Output Current, AC	48.0 AAC
Inverter Output Frequency	60 Hz
Inverter Phase Qnty	1 Phase
Inverter UL Listing	UL1741
Inverter Grounding	Ungrounded
Modules in Series	6
String Max Open Circuit Voltage	348 VDC

CONDUCTOR, CONDUIT, & OCD SIZES 310.10(H)						
Conductor ID in Oneline	A	B	C	D	E	F
Current-carrying Conductor	#3/0	#1	#3/0	#6	#10	#10
Insulation Type	THWN-2	THWN-2	THWN-2	THWN-2	THWN-2	PV Wire
Side of Service	Load	Load	Load	Load	Load	Load
Insulation Temp Rating	90 C	90 C	90 C	90 C	90 C	90 C
Conductor Material	CU	CU	CU	CU	CU	CU
Neutral Sizing	Current-Carry	Current-Carry	Current-Carry	Current-Carry	#N/A	#N/A
Over-current Device Type	Breaker	Breaker	Breaker	Breaker	#N/A	#N/A
Min Current-Carrying Conductor Based on Ampacities	#3/0	#1	#3/0	#6	#10	#10
Neutral, 310.10	#3/0	#1	#3/0	#6	#N/A	#N/A
EGC, 250.122,250.28,250.102,310.10,690.45,690.47	#6	#6	#6	#10	#10	#4
Over-Current Device	200 A	125 A	200 A	60 A	#N/A	#N/A
CURRENT SOURCE						
Current Type	AC	AC	AC	AC	DC	DC
Current Source	Loads	Inverters	Loads	Inverter 1	Module 1	Module 1
Parallel Sources Combined	Not Combined	Not Combined	Not Combined	Not Combined	Not Combined	Not Combined
# Parallel Sources	1	1	1	2	4	4
# Sets of Conductors	1	1	1	2	4	4
# Conduits	1	1	1	1	1	1
# Sets Conductors per OCD	1	1	1	1	1	1
# Conductors per Conduit	4	4	4	7	10	#N/A
# Current-Carrying Conductors per Conduit	2	2	2	4	8	8
# Grounds per Conduit	1	1	1	1	2	1
# Neutrals per Conduit	1	1	1	2	0	0
# Sources per Conductor	1	1	1	1	1	1
Source Maximum Current	191.0 A	96.0 A	191.0 A	48.0 A	13.9 A	13.9 A
Conductor Maximum Current	191.0 A	96.0 A	191.0 A	48.0 A	13.9 A	13.9 A
CONDITIONS OF USE CALCULATION 310.15 690.8(B)(2)(b)						
Bottom of Conduit Distance Above Roof (or Below Ground)	#N/A	#N/A	#N/A	#N/A	4"	4"
Temperature Ambient High	34.0 C	34.0 C	34.0 C	34.0 C	34.0 C	34.0 C
Temperature Adjustment (roof/sun)	0.0 C	0.0 C	0.0 C	0.0 C	0.0 C	0.0 C
Total Temperature	34.0 C	34.0 C	34.0 C	34.0 C	34.0 C	34.0 C
Derate for Temp	96%	96%	96%	96%	96%	96%
Derate for Fill / Bundled	100%	100%	100%	80%	70%	100%
Conductor Ampacity, w/o derates	271.0 A	145.0 A	271.0 A	75.0 A	40.0 A	55.0 A
Min Ampacity required >= Imax conductor*125% 690.8(B)(1)	191.0 A	120.0 A	191.0 A	60.0 A	17.4 A	17.4 A
Conductor Ampacity, with derates and 240.4(D)	260.2 A	139.2 A	260.2 A	57.6 A	26.8 A	30.0 A
Min Ampacity required >= Imax conductor 690.8(B)(2)	191.0 A	96.0 A	191.0 A	48.0 A	13.9 A	13.9 A
TERMINAL CALCULATION 110.14 310.15 690.8(B)(2)(a)						
Terminal Temp Rating	75 C	75 C	75 C	75 C	75 C	75 C
Conductor Ampacity at terminals	240.9 A	130.0 A	240.9 A	65.0 A	30.0 A	30.0 A
Min Ampacity required >= Imax conductor*1.25 690.8(B)(1)	238.7 A	125.0 A	238.7 A	60.0 A	17.4 A	17.4 A
OVER-CURRENT 690.8, 690.9, 240.4B						
# of Parallel Sources per OCD	1	1	1	1	1	1
Min Ampacity required >= # parallel sources*Imax source x 1.25	191.0 A	120.0 A	191.0 A	60.0 A	17.4 A	17.4 A
Over-current Device	200.0 A	125.0 A	200.0 A	60.0 A	#N/A	#N/A
CONDUIT ANNEX C, CHAPTER 9 TABLE 1, 376.22						
Conduit Type	PVC Sch 40/HPDE	PVC Sch 40/HPDE	PVC Sch 40/HPDE	EMT	EMT	Free Air
Nipple (less than or equal to 24-inches)	Not Nipple	Nipple	Not Nipple	Not Nipple	Not Nipple	Not Nipple
Conduit diameter	2"	1.5"	2"	1.25"	1"	#N/A
Max Allowable Conduit Fill	40%	60%	40%	40%	40%	#N/A
Conduit Fill	23%	22%	23%	23%	27%	#N/A
VOLTAGE DROP (WORST CASE), CHAPTER 9, TABLES 8 & 9						
Conductor Length One-Way	25.3'	7.2'	111.1'	36.0'	46.6'	42.8'
Power Factor	1	1	1	1	#N/A	#N/A
Resistance	0.077 ohm/kft	0.15 ohm/kft	0.077 ohm/kft	0.49 ohm/kft	1.24 ohm/kft	1.24 ohm/kft
Reactance	0.042 ohm/kft	0.046 ohm/kft	0.042 ohm/kft	0.064 ohm/kft	#N/A	#N/A
Impedance	0.077 ohm/kft	0.15 ohm/kft	0.077 ohm/kft	0.49 ohm/kft	#N/A	#N/A
Source Operating Current	191.0 A	96.0 A	191.0 A	48.0 A	10.6 A	10.6 A
Conductor Operating Current,	191.0 A	96.0 A	191.0 A	48.0 A	10.6 A	10.6 A
Nominal Operating Voltage	240.0 V	240.0 V	240.0 V	240.0 V	267.1 V	267.1 V
Voltage Drop, total	0.74 V	0.20 V	3.27 V	1.69 V	1.23 V	1.13 V
Voltage Drop, percentage	0.31%	0.08%	1.36%	0.70%	0.46%	0.42%

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Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: ELECTRICAL CALCULATIONS

PAGE #: E03

Q.PEAK DUO XL-G10.3 / BFG

470-485

BIFACIAL DOUBLE GLASS MODULE WITH EXCELLENT RELIABILITY AND ADDITIONAL YIELD

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2020

Q CELLS Yield Security

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 Technology[1], 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 warranty[2].

[1] APT test conditions according to IEC/TS 62804-1:2015, method B (−1500 V, 168 h) 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:

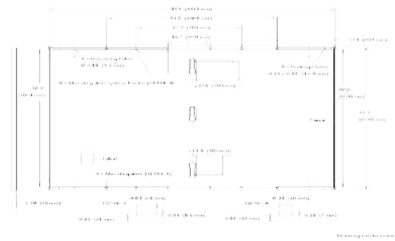
Ground-mounted solar power plants

Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	67.2 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 × 0.59–0.71 in (53–101 mm × 32–60 mm × 15–18 mm), IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 27.6 in (700 mm), (−) ≥ 13.8 in (350 mm)
Connector	Stäubli MC4; Evo2, Hanwha Q CELLS HQC-4; IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS			470		475		480		485	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] AND BSTC[2] (POWER TOLERANCE +5 W / −0 W)										
				BSTC[2]		BSTC[2]		BSTC[2]		BSTC[2]
Minimum	Power at MPP[3]	P_{MPP} [W]	470	514.1	475	519.6	480	525.0	485	530.5
	Short Circuit Current[3]	I_{SC} [A]	11.04	12.08	11.08	12.12	11.12	12.17	11.16	12.21
	Open Circuit Voltage[3]	V_{OC} [V]	52.91	53.10	53.15	53.34	53.39	53.58	53.63	53.82
	Current at MPP	I_{MPP} [A]	10.51	11.50	10.55	11.54	10.59	11.58	10.63	11.63
	Voltage at MPP	V_{MPP} [V]	44.73	44.72	45.03	45.02	45.33	45.32	45.63	45.62
	Efficiency[3]	η [%]	≥ 20.3	≥ 22.2	≥ 20.5	≥ 22.4	≥ 20.7	≥ 22.7	≥ 20.9	≥ 22.9

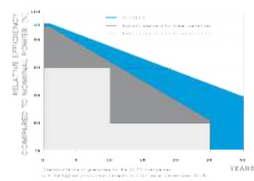
Bifaciality of P_{MPP} and I_{SC}: 70 % ± 5 % - Bifaciality given for rear side irradiation on top of STC (front side) - According to IEC 60904-1-2

[3] Measurement tolerances P_{MPP}: ± 3 %; I_{SC}; V_{OC}: ± 5 % at STC: 1000 W/m², ²at 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[1]										
Minimum	Power at MPP	P_{MPP}	[W]	353.8		357.6		361.4		365.1
	Short Circuit Current	I_{SC}	[A]	8.89		8.92		8.96		8.99
	Open Circuit Voltage	V_{OC}	[V]	50.04		50.27		50.49		50.72
	Current at MPP	I_{MPP}	[A]	8.27		8.30		8.34		8.37
	Voltage at MPP	V_{MPP}	[V]	42.77		43.06		43.35		43.63

[1] 800 W/m², NMOT, spectrum AM 1.5

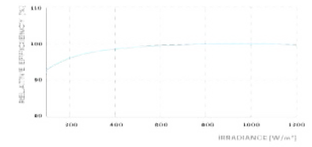
Q CELLS PERFORMANCE WARRANTY



At least 98 % of nominal power during first year. Thereafter max. 0.45 % degradation per year. At least 93.05 % 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_{SYS}	[V]	1500	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 29*
Max. Design Load, Push / Pull[4]	[lbs/ft²]	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[4]	[lbs/ft²]	113 (5400 Pa) / 50 (2400 Pa)		

[4] See Installation Manual

*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. 9,893,215
(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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Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: MODULE DATA

PAGE #: E04

SOLAR SHUTDOWN DEVICE

The Tesla Solar Shutdown Device is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Powerwall+, solar array shutdown is initiated by turning the Powerwall+ Enable switch off, or by pushing the System Shutdown Switch if one is present.

ELECTRICAL SPECIFICATIONS

Nominal Input DC Current Rating (I_{mp})	12 A
Maximum Input Short Circuit Current (I_{sc})	15 A
Maximum System Voltage	600 V DC

RSD MODULE PERFORMANCE

Maximum Number of Devices per String	5
Control	Power Line Excitation
Passive State	Normally open
Maximum Power Consumption	7 W
Warranty	25 years

COMPLIANCE INFORMATION

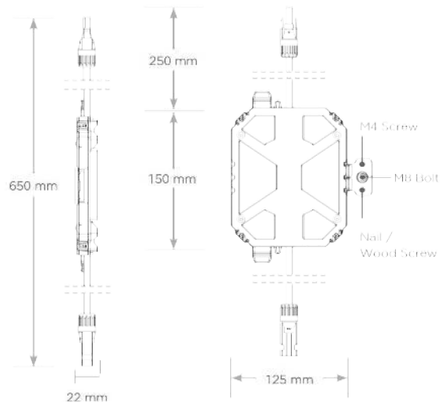
Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
RSD Initiation Method	External System Shutdown Switch
Compatible Equipment	*See Compatibility Table below*

ENVIRONMENTAL SPECIFICATIONS

Ambient Temperature	-40°C to 50°C (-40°F to 122°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Enclosure Rating	NEMA 4 / IP65

MECHANICAL SPECIFICATIONS

Electrical Connections	MC4 Connector
Housing	Plastic
Dimensions	125 mm x 150 mm x 22 mm (5 in x 6 in x 1 in)
Weight	350 g (0.77 lb)
Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw



UL 3741 PV HAZARD CONTROL (AND PVRSA) COMPATIBILITY

Tesla Solar Roof and Tesla/Zep ZS Arrays using the following modules are certified to UL 3741 and UL 1741 PVRSA when installed with the Powerwall+ and Solar Shutdown Devices. See the Powerwall+ Installation Manual for detailed instructions and for guidance on installing Powerwall+ and Solar Shutdown Devices with other modules.

Brand	Model	Required Solar Shutdown Devices
Tesla	Solar Roof V3	1 Solar Shutdown Device per 10 modules
Tesla	Tesla Txxx5 (where xxx = 405 to 450 W, increments of 5)	1 Solar Shutdown Device per 3 modules
Hanwha	Q.PEAK DUO BLK-G5	1 Solar Shutdown Device per 3 modules
Hanwha	Q.PEAK DUO BLK-G6+	1 Solar Shutdown Device per 3 modules

Exception: Tesla solar modules installed in locations where the max Voc for three modules at low design temperatures exceeds 165 V shall be limited to two modules between MCIs.

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.

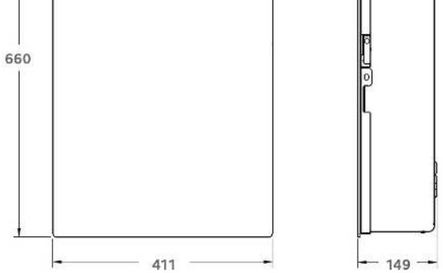
PERFORMANCE SPECIFICATIONS

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
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

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Project Address:
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FORT WHITE FL 32038

PAGE TITLE:
TESLA RSD / GATEWAY

PAGE #:
E05

Powerwall 3

Power Everything

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 150 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy system expansion, and simple connection to any electrical service.

2023

Powerwall 3 Technical Specifications

System Technical Specifications	Model Number	1707000-xx-y
	Nominal Grid Voltage (Input & Output)	120/240 VAC
	Grid Type	Split phase
	Frequency	60 Hz
	Overcurrent Protection Device	Configurable up to 60 A
	Solar to Battery to Grid Round Trip Efficiency	89% [1,2]
	Solar to Grid Efficiency	97% [1]
	Supported Islanding Devices	Backup Gateway 2, Backup Switch
	Connectivity	Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G [4])
	Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
	AC Metering	Revenue Grade (+/- 0.5%)
	Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
	Customer Interface	Tesla Mobile App
	Warranty	10 years
Solar Technical Specifications	Maximum Solar STC Input	20 kW
	Withstand Voltage	600 V DC
	PV DC Input Voltage Range	60 — 550 V DC
	PV DC MPPT Voltage Range	150 — 480 V DC
	MPPTs	6
	Maximum Current per MPPT (I_{mp})	13 A [5]
	Maximum Short Circuit Current per MPPT (I_{sc})	15 A [5]
Battery Technical Specifications	Nominal Battery Energy	13.5 kWh AC [2]
	Maximum Continuous Discharge Power	11.5 kW AC
	Maximum Continuous Charge Power	5 kW AC
	Output Power Factor Rating	0 - 1 (Grid Code configurable)
	Maximum Continuous Current	48 A
	Maximum Output Fault Current	10 kA
	Load Start Capability (1 s)	150 A LRA
	Power Scalability	Up to 4 Powerwall 3 units supported

[1] Typical solar shifting use case.
[2] Values provided for 25°C (77°F), at beginning of life, 3.3 kW charge/discharge power.
[3] Tested using CEC weighted efficiency methodology.
[4] Cellular connectivity subject to network service coverage and signal strength.
[5] Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A I_{mp} / 30 A I_{sc}.

Powerwall 3 Technical Specifications

Environmental Specifications	Operating Temperature	-20°C to 50°C (-4°F to 122°F) [1]
	Operating Humidity (RH)	Up to 100%, condensing
	Storage Temperature	-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 Rating	NEMA 3R
	Ingress Rating	IPX7 (Battery & Power Electronics) IPX5 (Wiring Compartment)
	Pollution Rating	PD3
	Operating Noise @ 1 m	< 50 db(A) typical <62 db(A) maximum
Compliance Information	Certifications	UL 1642, UL 1699B, UL 1741, UL 1741 SA, UL 1741 SB, UL 3741, UL 1973, UL 1998, UL 9540, IEEE 1547-2018, IEEE 1547.1, UN 38.3
	Grid Connection	United States
	Emissions	FCC Part 15 Class B
	Environmental	RoHS Directive 2011/65/EU
	Seismic	AC156, IEEE 693-2005 (high)
	Fire Testing	Meets the unit level performance criteria of UL 9540A
Mechanical Specifications	Dimensions	1099 x 609 x 193 mm (43.25 x 24 x 7.6 in)
	Weight	130 kg (287 lb)
	Mounting Options	Floor or wall mount

[1] Performance may be de-rated at operating temperatures above 40°C (104°F).

01 - TESLA POWERWALL 3

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PAGE TITLE: TESLA POWERWALL 3

PAGE #: E06

The building has a gulflok roof. The roof support is hidden fastener roof with 26 ga steel on 24-inch centers. The section of the roof where the PV will be installed is Gabled with a roof slope of 5.6:12 slope. ASCE 7-16 with adjustment for rooftop solar modules parallel to the roof surface (29.4.4) was used for the roof section with solar. The design wind speed is 130 mph.

The solar modules and racking will add approximately 2.5 psf to the roof. This roof has been evaluated and deemed sufficient to support this added load.

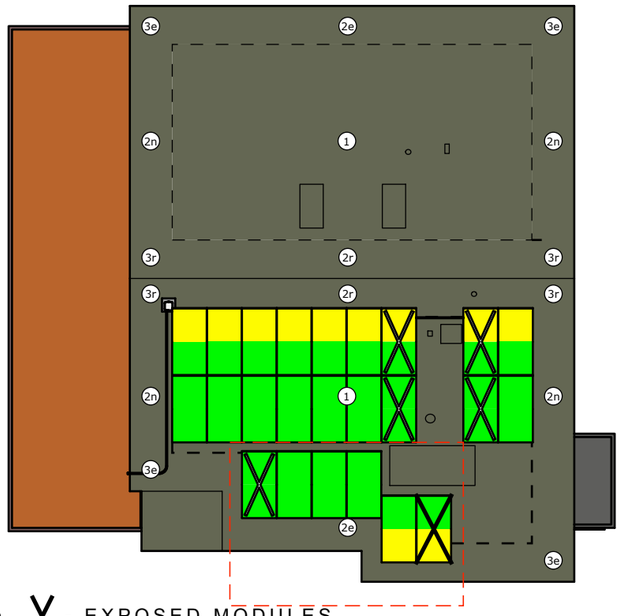
Roof section with 5.6:12 slope and flush mounted non-exposed solar modules with XR10 rails

Roof Zone	Max Force (psf)	Attachment Spacing (in)	Nominal Attachment Spacing (in)	Max Cantilever	# Rails per Module	Module Area per Attachment	Uplift (lb)
1/2e	-22.50	57 in	48 in	23 in	2 in	17.1	386.0
2n/2r/3e	-32.14	40 in	24 in	16 in	2 in	12.0	386.0
3r	-35.81	36 in	24 in	14 in	2 in	10.7	386.0

Roof section with 5.6:12 slope and flush mounted exposed solar modules with XR10 rails

Roof Zone	Max Force (psf)	Attachment Spacing (in)	Nominal Attachment Spacing (in)	Max Cantilever	# Rails per Module	Module Area per Attachment	Uplift (lb)
1/2e	-33.75	38 in	24 in	15 in	2 in	11.4	386.0
2n/2r/3e	-48.22	26 in	24 in	11 in	2 in	8.0	386.0
3r	-53.71	24 in	0 in	9 in	2 in	7.1	386.0

Roof zone #1 is the interior area of the roof that is not within the other zones. Roof zone #2e is the area that is not within zone #3 and is within 4 ft 2 in of the roof eave. Roof zone #2n is the area that is not within zone #3 and is within 4 ft 2 in of the roof rake. Roof zone #2r is the area that is not within zone #3 and is within 4 ft 2 in of the roof ridge. Roof zone #3e is a 4 ft 2 in x 4 ft 2 in square at the lower corners of the roof. Roof zone #3r is a 4 ft 2 in x 4 ft 2 in square at the upper corners of the roof.



a = 4 ft 2 in X - EXPOSED MODULES

Installation Requirements

Use S-5N attachments using two set screws. Install the attachment into the 26 ga steel. Alternately, use Zilla Double Stud-XL attachments using eight 0.25-inch x 1.5-inch lag screws. Install the attachment into the 0.5-inch OSB or plywood decking.

Use IronRidge XR10 rails. Additional manufacturers and models may be used with written confirmation from the engineer of record.

Solar modules shall not be cantilevered more than the maximum allowable cantilever provided by the rail manufacturer and half the allowable support spacing for that zone.

Attachments between solar modules and racks must be between 11 3/4 in and 21 5/8 in from the end of the solar modules.

Solar modules shall not be installed within 7 in of the roof edge or change in roof slope.

Nuts and screws for IronRidge components shall be torqued to the settings in the torque table.

Designed By:
solar impact
4509 NW 23rd Ave.
Suite.20
Gainesville, FL 32606
www.solarimpact.com
352.338.8221

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001	2/22/24	UPDATED CODE REFERENCES AND PW3
002	4/3/24	MOVED TILT ROW TO SOUTH EDGE OF ROOF
		PER CUSTOMER

Project Name: KAREN ZETROUER

Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: ROOF ZONES

PAGE #: S01

IronRidge socket and torque settings

Item	Socket	Torque
Bonded Splice Screws	5/16”	20 in-lbs
UFO Clamp	7/16”	80 in-lbs
Rail Grounding Lug Nut	7/16”	80 in-lbs
Grounding Lug Terminal Screw	7/16”	20 in-lbs
Expansion Joint Nut	7/16”	80 in-lbs
Microinverter Kit Nut	7/16”	80 in-lbs

External Pressure Coefficients, (GC), for Enclosed and Partially Enclosed Buildings (Figure 30.3-2B to 30.3-2H and 29.4-7)

Roof Zone	GCp min
1/2e	-1.443
2n/2r/3e	-2.062
3r	-2.297

Wind Speed	V	130 mph	
Roof Type	RoofType	Gabled	
Roof Material	RoofMat	GulfLok	
Attachment	Attach	S-5N	
Substrate	Substrate	hidden fastener roof	
Substrate Material	SubstrateMat	26 ga steel	
Fastener Type	FastenType	set screws	
Fastener Qty	FastenQty	two	
Eave Height	Eht	19.084248 ft	
Building Width Perpendicular to Ridge	W	41.8 ft	
Building Length Parallel to Ridge	L	50.0 ft	
Soffit Width	OH	24 in	
Slope of Roof	Slope	5.6:12	
Exposure Category	EC	B	
Module Model	ModModel	Q.Peak Duo XL-G10.3 BFG/485	
Min Attachment Spacing	MinAS	24 in	
Max Attachment Spacing	MaxAS	72 in	
Module Orientation	Orient	Portrait	
Low Module Height Above Roof	H1	3.5 in	
Module Tilt from Roof	omega	0	
Parapet Height	hpt	0 ft	
Rail Selection	rail	XR10	
Safety Factor	SafetyFactor	2	
Design Attachment Uplift	AttachUp	386 lbs	
Module Length	Lp	87.2 in	
Module Width	Wp	41.1 in	
Cell Count	CellCount	72	
Min Strike Zone Distance	StrikeMin	11.8 in	
Max Strike Zone Distance	StrikeMax	21.6 in	
Roof Angle	Theta	25.0	
Roof Slope Category	lowSlope	FALSE	
Ridge Height	RHt	29.7 ft	
Roof Height Reference	RoofHtRef	mean roof height above grade	
Roof Height	h	24.4 ft	
Half Roof Height	rh2	12.2 ft	
Area of Solar Module	Asm	24.88 ft2	
Solar Module Pressure Equalization Factor	Ga	0.641	Figure 29.4-8
Width for Zone 2 and 3 Determination	a	4.18 ft	a=max(3,0.04*h,min(0.4*h,0.1*W,0.1*L))
Least Building Horiz Dist	B	41.87 ft	B=min(W,L)
Mean Roof Height : Least Building Horiz Dist	h/B	0.58	
Load Factor Based on Strength Design	LF	1	
Topographic Factor	Kzt	1	Topographic Factor is 1 since no topographic feature specified
Wind Directionality Factor	Kd	0.85	Table 26.6-1 kd=0.85 for buildings
Ground Elevation Factor	Ke	1	Table 26.9-1. Value of 1.0 is permissible for all elevations
Velocity Pressure Exposure Coefficient	Kh	0.660	Table 26.10-1 if h<15 then Kh=2.01*(15/zg)^(2/alpha) elseif h<=zg then Kh=2.01*(h/zg)^(2/alpha))
Velocity Pressure at Mean Roof Height	qh	24.2 psf	26.10.2 qh = (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF
Exposure Category Coefficient alpha	alpha	7.0	Table 26.11-1
Exposure Category Coefficient zg	zg	1,200 ft	Table 26.11-1
Parapet Height Factor	Gp	0.9 psf	Eqn 29.4-6 Gp = min(1.2,0.9+hpt/h)
Panel Cord Factor	Gc	1.03	Eqn 29.4-6 Gc=max(0.6+0.06*Lp/12,0.8)
Normalized wind area	An	110.61	Figure 29.4-7 An=1000/max(Lb,15)^2*Asm
Normalized Building Length	Lb	13.98	Figure 29.4-7 Lb=min(0.4*(h*max(W,L))^0.5,h,B)
High Module Height Above Roof	H2	3.50 in	
Limit for Adjacent Modules	d1_limit	4.00 ft	d1_limit=max(4*h2, 4 ft)
Min Horiz Dist Between Modules & Roof Edge	d_minHoriz	0.58 ft	d_minHoriz=2*h2

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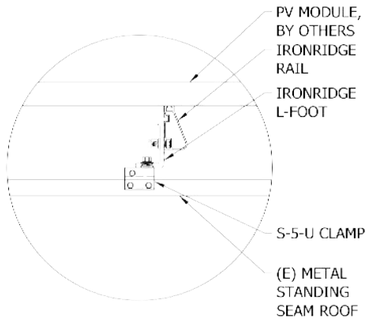
Project Address: 1262 SW BLUFF DR FORT WHITE FL 32038

PAGE TITLE: ROOF ZONE CALCS

PAGE #: S02



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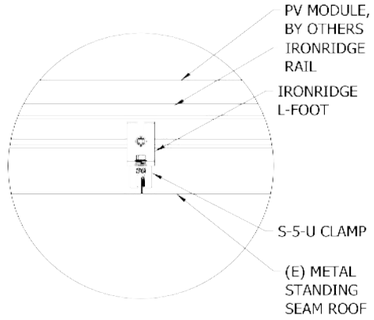

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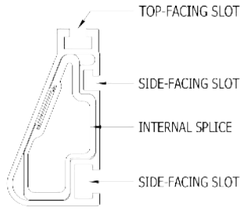
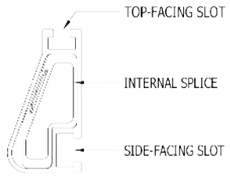
Scale: 3"=1'-0"



M DETAIL, SPLICE, XR1000
1'-0"=1'-0"



N DETAIL, SPLICE, XR100
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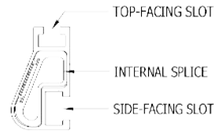

O DETAIL, SPLICE, XR10
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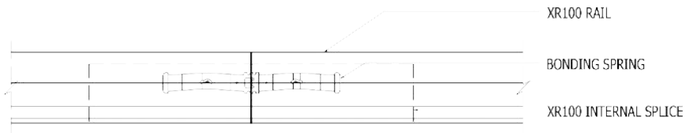
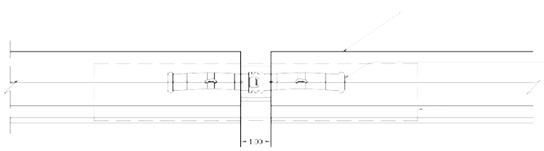


K DETAIL, SPLICE CONNECTION, XR100
6"=1'-0"



L DETAIL, THERMAL EXPANSION CONNECTION, XR100
6"=1'-0"

IRONRIDGE
1496 ZEPHYR AVE. HAYWARD, CA 94544
800.227.9523 IRONRIDGE.COM

CLIENT NAME: IRONRIDGE
PROJECT NAME: SLOPED ROOF MOUNT SYSTEM
PROJECT ADDRESS:
SYSTEM KW DC:

WIND SPEED: MPH
SNOW LOAD: PSF
EXPOSURE CAT:
RISK CAT:
MODULE TYPE: 72-CELL, GENERIC
MODULE W DC:
MODULE QTY:

NOT FOR CONSTRUCTION

SLOPED ROOF PV SYSTEM DETAILS: S-5-U ASSEMBLY

3 1 SR
DEC 2018
IR 9.4
24X36

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solar impact

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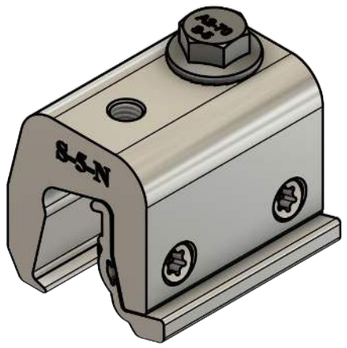
PAGE TITLE: ATTACHMENT DATA

PAGE #: S03

S-5-N



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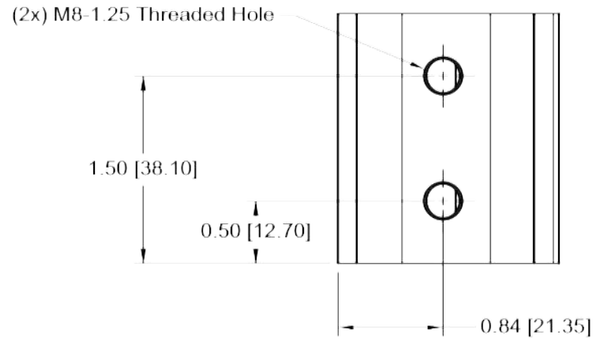

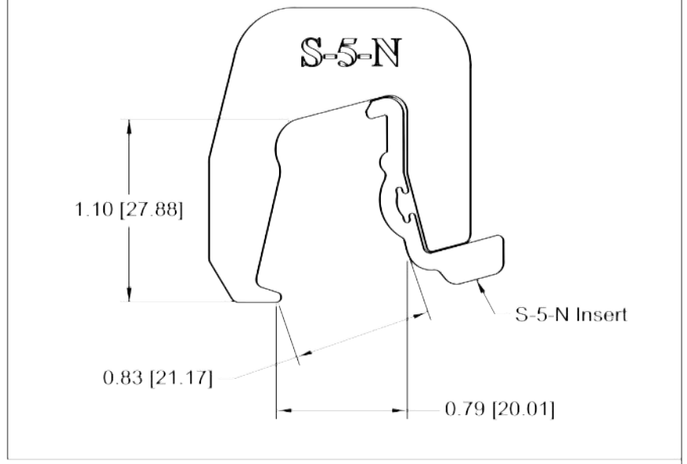

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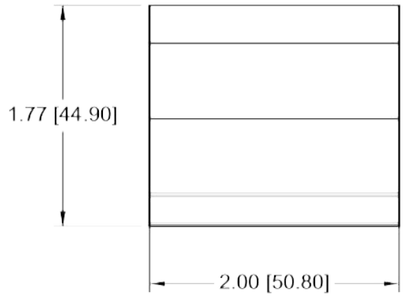

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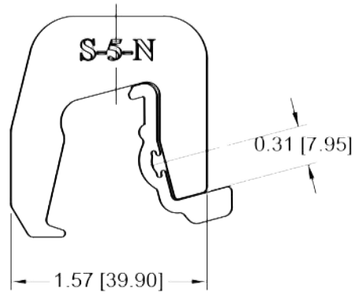
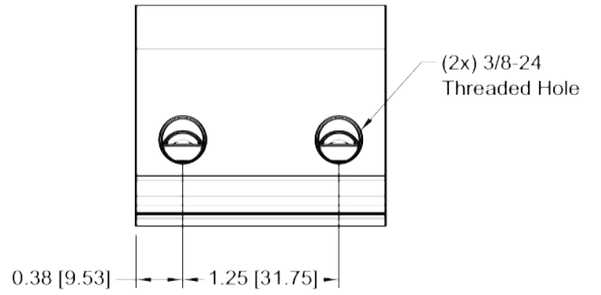
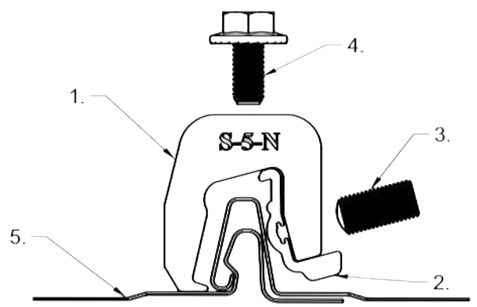


Right



General Notes:

1. S-5-N Clamp
2. S-5-N Insert
3. 0.9" 3/8-24 T30 Drive Setscrew
4. M8-1.25 16 mm Bolt
5. Example Roof



MATERIAL	6000 Series Al
EST ASSEMBLY WT	.4065 lbs
HARDWARE	

S-5!®

METAL ROOF INNOVATIONS, LTD.
8750 WALKER RD
COLORADO SPRINGS, CO 80908
719-495-0518
719-495-0045 (FAX)

TITLE	S-5-N [CCD]		
DRAWING NO	NG73-A-0-D	DRAWN BY SNLR	DATE 3/8/2022
SCALE	1:1	FILE NAME	NG73-A-0-D (S-5-N) [CCD]

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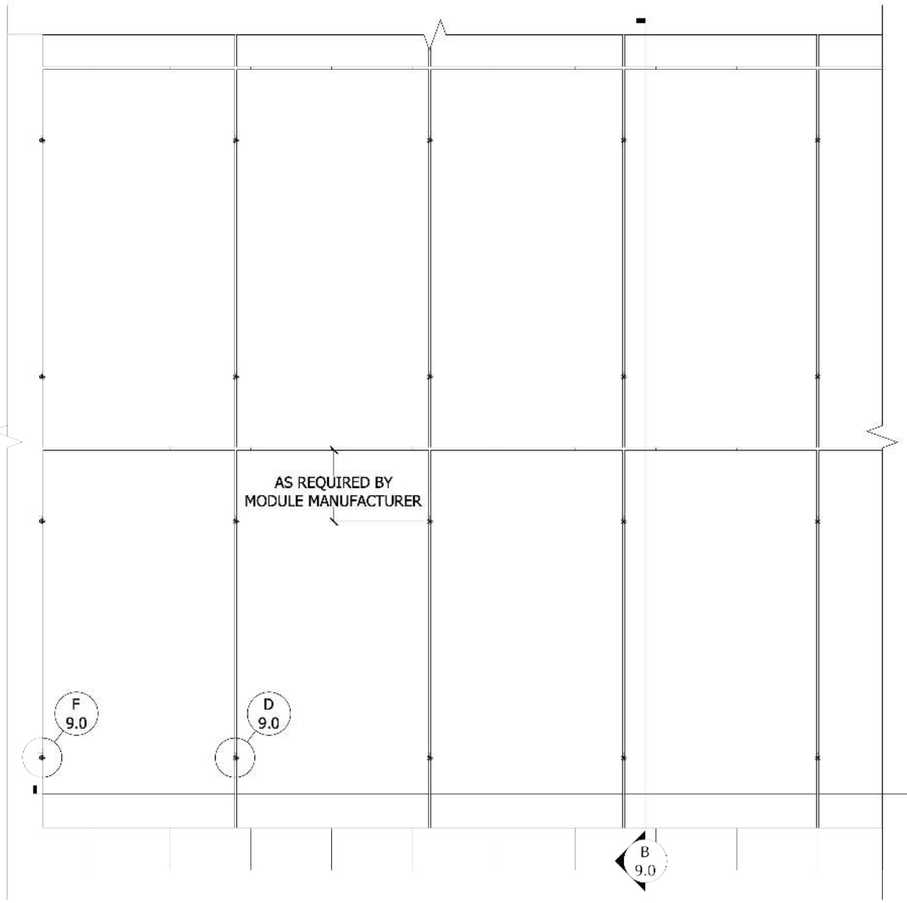
PAGE TITLE:	PAGE #:
ATTACHMENT DATA (CONT)	S03B



A PLAN VIEW, S-5-U ASSEMBLY MOUNT, PORTRAIT MODULE
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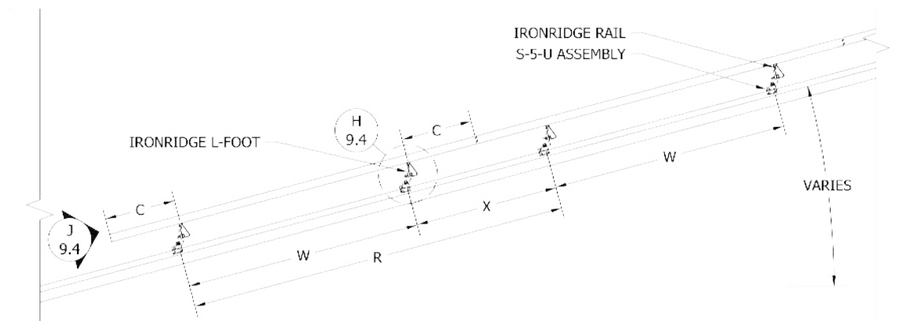

B SIDE VIEW, S-5-U ASSEMBLY MOUNT, PORTRAIT MODULE
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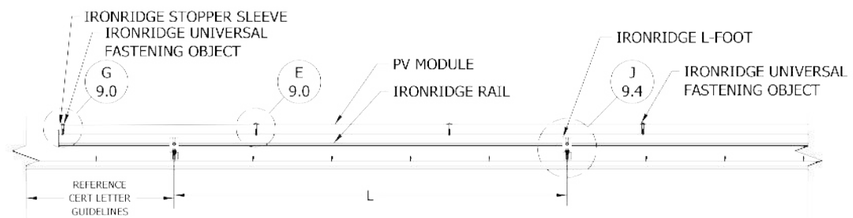
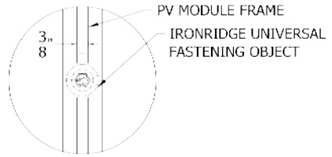


C FRONT VIEW, S-5-U ASSEMBLY MOUNT, PORTRAIT MODULE
Scale: 1"=1'-0"



D DETAIL, MID CLAMP PLAN
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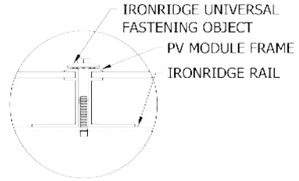

E DETAIL, MID CLAMP FRONT
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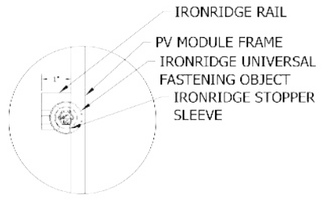

F DETAIL, END CLAMP (UFO) PLAN
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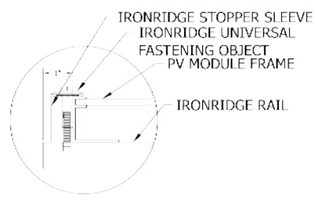

G DETAIL, END CLAMP (UFO) FRONT
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1495 ZEPHYR AVE. HAYWARD, CA 94544
800.227.9523 IRONRIDGE.COM

CLIENT NAME
IRONRIDGE
PROJECT NAME
SLOPED ROOF MOUNT SYSTEM
PROJECT ADDRESS
SYSTEM KW DC

WIND SPEED MPH	-
SNOW LOAD PSF	-
EXPOSURE CAT	-
RISK CAT	-
MODULE TYPE	72-CELL, GENERIC
MODULE W DC	-
MODULE QTY	-

NOT FOR CONSTRUCTION

SLOPED ROOF
PV SYSTEM
DETAILS: S-5-U
ASSEMBLY (UFO)

3.1 SR
DEC 2018
IR 9.0
24X36

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PAGE #:
S04