

GENERAL NOTES

1. ALL ELECTRICAL MATERIALS SHALL BE NEW AND LISTED BY RECOGNIZED ELECTRICAL TESTING LABORATORY

CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY

2. OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED OR BETTER

3. ALL METALLIC EQUIPMENT SHALL BE GROUNDED

4. CONTRACTOR SHALL OBTAIN ELECTRICAL PERMITS PRIOR TO INSTALLATION AND SHALL COORDINATE ALL INSPECTIONS, TESTING COMMISSIONING AND ACCEPTANCE WITH THE CLIENT, UTILITY CO. AND CITY INSPECTORS AS NEEDED.

5. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF SERVICE POINTS AND SERVICE SIZES WITH THE SERVING UTILITY COMPANY AND COMPLY WITH ALL UTILITY COMPANIES REQUIREMENTS.

6. DRAWINGS ARE DIAGRAMMATIC ONLY, ROUTING OF RACEWAYS SHALL BE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER TRADES.

7. IF THE ROOF MATERIAL OR ROOF STRUCTURE NOT ADEQUATE FOR PV INSTALLATION, CALL ENGINEER PRIOR TO INSTALL. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THAT THE ROOF IS CAPABLE OF WITHSTANDING THE EXTRA WEIGHT.

8. IF THE DISTANCES FOR CABLE RUNS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL ENGINEER TO VALIDATE THE WIRE SIZE. FINAL DRAWINGS WILL BE RED-LINED AND UPDATED AS APPROPRIATE.

9. WHENEVER A DISCREPANCY IN QUALITY OF EQUIPMENT ARISES ON THE DRAWING OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE COMPLIANCE AND LONGEVITY OF THE OPERABLE SYSTEM REQUIRED BY THE ARCHITECT/ENGINEERS.

10. ALL BROCHURES, OPERATION MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE HANDED OVER TO OWNER'S REPRESENTATIVE AT THE COMPLETION OF WORK

PHOTOVOLTAIC NOTES:

1. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY

2. SOLAR SYSTEM SHALL NOT COVER ANY PLUMBING OR MECHANICAL VENTS

3. MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED.

4. SOLAR INVERTER SHALL BE LISTED TO UL1741.

5. REMOVAL OF AN INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PHOTOVOLTAIC SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTORS.

6. ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

7. LIVE PARTS OF PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS OVER 150V TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.

8. INVERTER IS EQUIPED WITH INTEGRATED GFDI, THUS PROVIDING GROUND FAULT PROTECTION

9. ALL CONDUCTORS SHALL BE COPPER AND 90 DEG RATED

10. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY.

11. A SINGLE CONDUCTOR SHALL BE PERMITTED TO BE USED TO PERFORM THE MULTIPLE FUNCTIONS OF DC GROUNDING, AC GROUNDING AND BONDING BETWEEN AC AND DC SYSTEMS.

12. NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT SHALL BE EFFECTIVELY BONDED TOGETHER. BOND BOTH ENDS OF RACEWAYS.

MAIN

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

- 2020 NATIONAL ELECTRICAL CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: RESIDENTIAL
- 2018 NORTH CAROLINA STATE BUILDING CODE: BUILDING
- 2018 NORTH CAROLINA STATE BUILDING CODE: FIRE

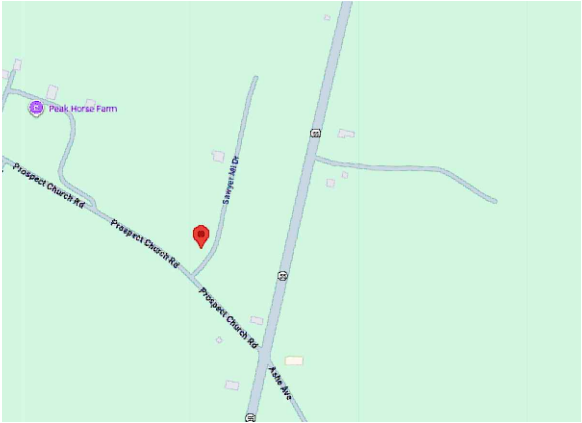
AS ADOPTED BY THE STATE OF NORTH CAROLINA  
ALL OTHER ORDINANCE ADOPTED BY THE  
LOCAL GOVERNING AGENCIES

PV SOLAR SYSTEM DETAILS

SYSTEM SIZE: DC STC: 5.060 KW  
SYSTEM SIZE: AC CEC: 11.500 KW  
SOLAR MODULES: (11) Aptos Solar 460 WATT  
SOLAR SHITDOWNS: ( 4 ) MCI-2 Solar Shutdowns  
  
INVERTER: ( 1 ) TESLA MODEL #1707000-xx-y / 11.5KW  
BATTERY: ( 1 ) POWERWALL 3 MODEL# 1707000-xx-y - 13.5KWH

ELECTRICAL INFORMATION:  
EXISTING  
MAIN SERVICE PANEL BUS SIZE: 200A  
MAIN SERVICE BREAKER SIZE: 200A  
MOUNTING SYSTEM: IRONRIDGE XR-100

**BUILDING INFORMATION:**  
CONSTRUCTION TYPE: V-B  
OCCUPANCY: R3  
ROOF: COMP. SHINGLE  
TRUSS: 2 X 4 @ 24" O.C.



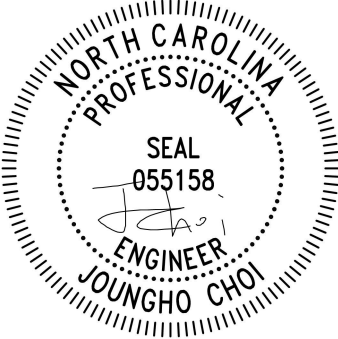
VICINITY MAP  
SCALE: NTS



SATELLITE VIEW  
SCALE: NTS

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12	BACKUP SWITCH DATA SHEET

Project Name:  
**Garrett Barefoot**  
Property address:  
**29 Sawyer MI Dr  
Dunn, NC 28334**







Wiring Solutions Plus LLC

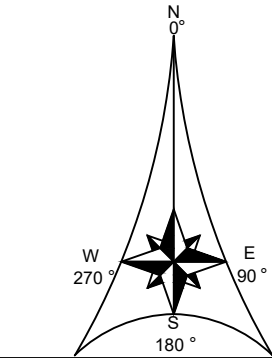
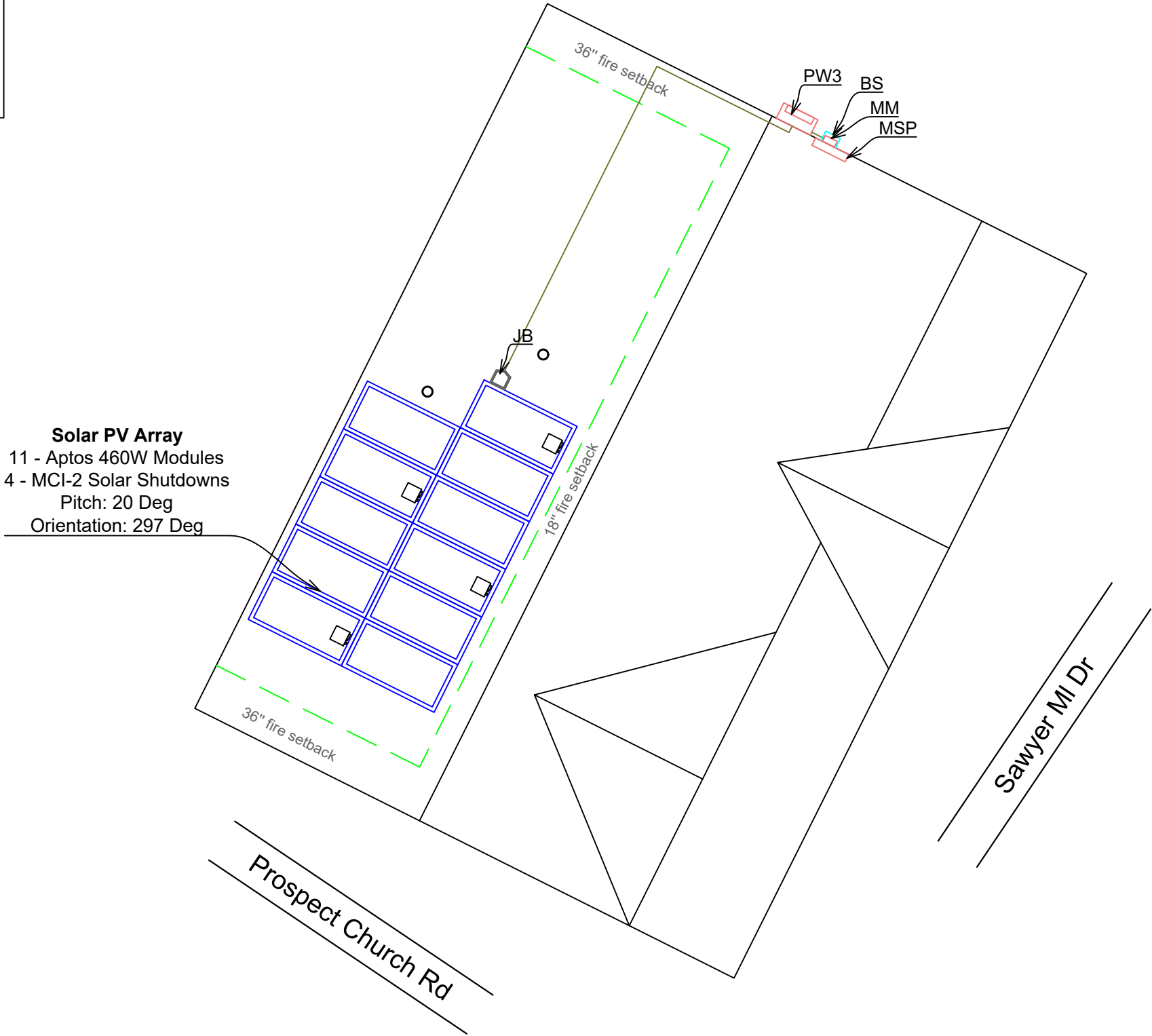
**Address:**  
4724 Hargrove Rd, Raleigh, NC 27616  
**Phone Number:**  
984-200-7489  
**E-Mail:**  
wiringsolutionsoffice@gmail.com  
**License Number:**  
25181-L



DATE: 08/20/2025

INDEX	
MM	(E) Main Meter
MSP	(E) Main Service Panel
BS	(N) Backup Switch
PW3	(N) Powerwall 3
JB	(N) Junction Box
	(N) Solar Shutdowns
	(N) Solar Modules
	EMT Conduit
	Setback

Total Roof Area: 1858  
Total Module Area:242  
13.02% of Coverage



SCALE: 1/8" = 1'-0"

1

ROOF PLAN

Project Name:

Garrett Barefoot

Property address:

29 Sawyer MI Dr  
Dunn, NC 28334



STRUCTURAL ONLY

Wiring Solutions Plus LLC

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1

**WARNING**

SOURCES: UTILITY GRID AND  
PV SOLAR ELECTRICAL SYSTEM

2

**PHOTOVOLTAIC AC DISCONNECT**

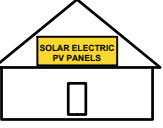
RATED OUTPUT CURRENT: **60A**

NOMINAL OPERATING VOLTAGE: **240V**

3

**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



4

**WARNING: PHOTOVOLTAIC  
POWER SOURCE**

5

**PV SOLAR BREAKER**

DO NOT RELOCATE  
THIS OVERCURRENT  
DEVICE

6

**WARNING**

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

7

**WARNING!**

INVERTER OUTPUT CONNECTION. DO NOT  
RELOCATE THIS OVERCURRENT DEVICE

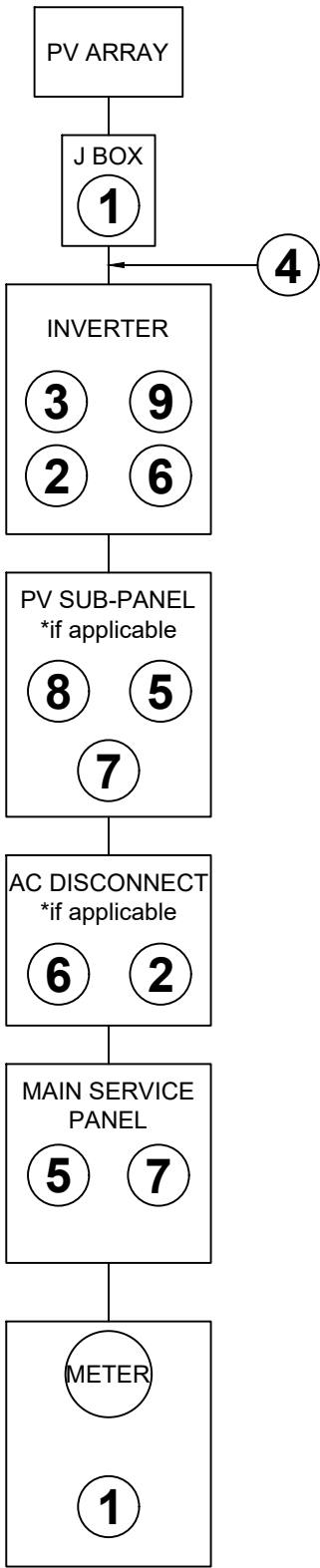
8

**PV LOAD CENTER SIZED FOR PV  
BREAKERS ONLY OR RENDERED UNABLE  
TO ACCEPT ANY ADDITIONAL LOADS.**

9

MAXIMUM VOLTAGE:  V

MAXIMUM CIRCUIT CURRENT:  
MAX RATED OUTPUT CURRENT OF  
THE CHARGE CONTROLLER OR  
DC-TO-DC CONVERTER  
(IF INSTALLED):  A

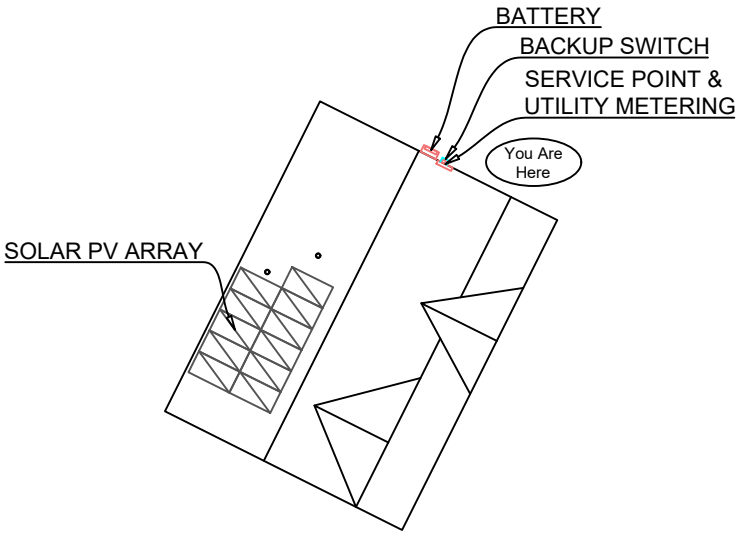


MARKINGS, LABELS AND WIRING SIGNS

- A. Purpose: Provide emergency responders with appropriate warning and guidance with respect to isolating solar electric system.  
This can facilitate identifying energized electrical lines that connect solar panels to the inverter, as these should not be cut when venting for smoke removal
- B. Main Service Disconnect.
1. Residential buildings - The marking main be placed within the main service disconnect. The marking shall be placed outside cover if the main service disconnect is operable with the service panel closed.
2. Commercial buildings - Tha marking shall be placed adjacent to the main service disconnect clearly visible from the location where the level is operated
3. Markings: Verbiage, Format and Type of Material.
- a. Verbiage: CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED
- b. Format: White lettering on a red background. Minimum 3/8 inches letter height. All letters shall be capitalized. Arial or similar font, non bold.
- c. Material: Reflective, weather resistant material suitable for the environment (use UL - 969 as standard for weather rating). Durable adhesive materials meet this requirement.
- C. Marking Requirements on DC conduit, raceways, enclosures, cable assemblies, DC combiners and junction boxes:
1. Markings: Verbiage, Format and Type of Material.
- a. Placement : Markings shall be placed every 10 feet on all interior and exterior DC conduits, raceways, enclosures, and cable assemblies, at turns, above and for below penetrations, all DC combiners and junction boxes
- b. Verbiage: CAUTION: SOLAR CIRCUIT Note: The format and type of material shall adhere to "V. V-3b, c" of this requirement.
- c. Inverters are not required to have caution markings
1. Marking is required on all interior and exterior DC conduit raceways, enclosures, cable assemblies, and junction boxes, combiner boxes and disconnects.
2. The materials used for marking shall be reflective, weather resistant material suitable for the environment.
- Minimum 3/8 "letter height; all upper case letters Arial or similar font; Red background with white lettering.
3. Marking shall contain the words: **WARNING : PHOTOVOLTAIC POWER SOURCE.**
4. Marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated

**CAUTION**

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



3

**SIGNAGE**

Project Name:  
**Garrett Barefoot**

Property address:  
**29 Sawyer MI Dr  
Dunn, NC 28334**



**Wiring Solutions Plus LLC**

**Address:**  
4724 Hargrove Rd, Raleigh, NC 27616

**Phone Number:**  
984-200-7489

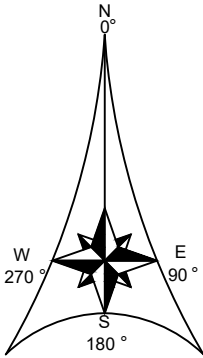
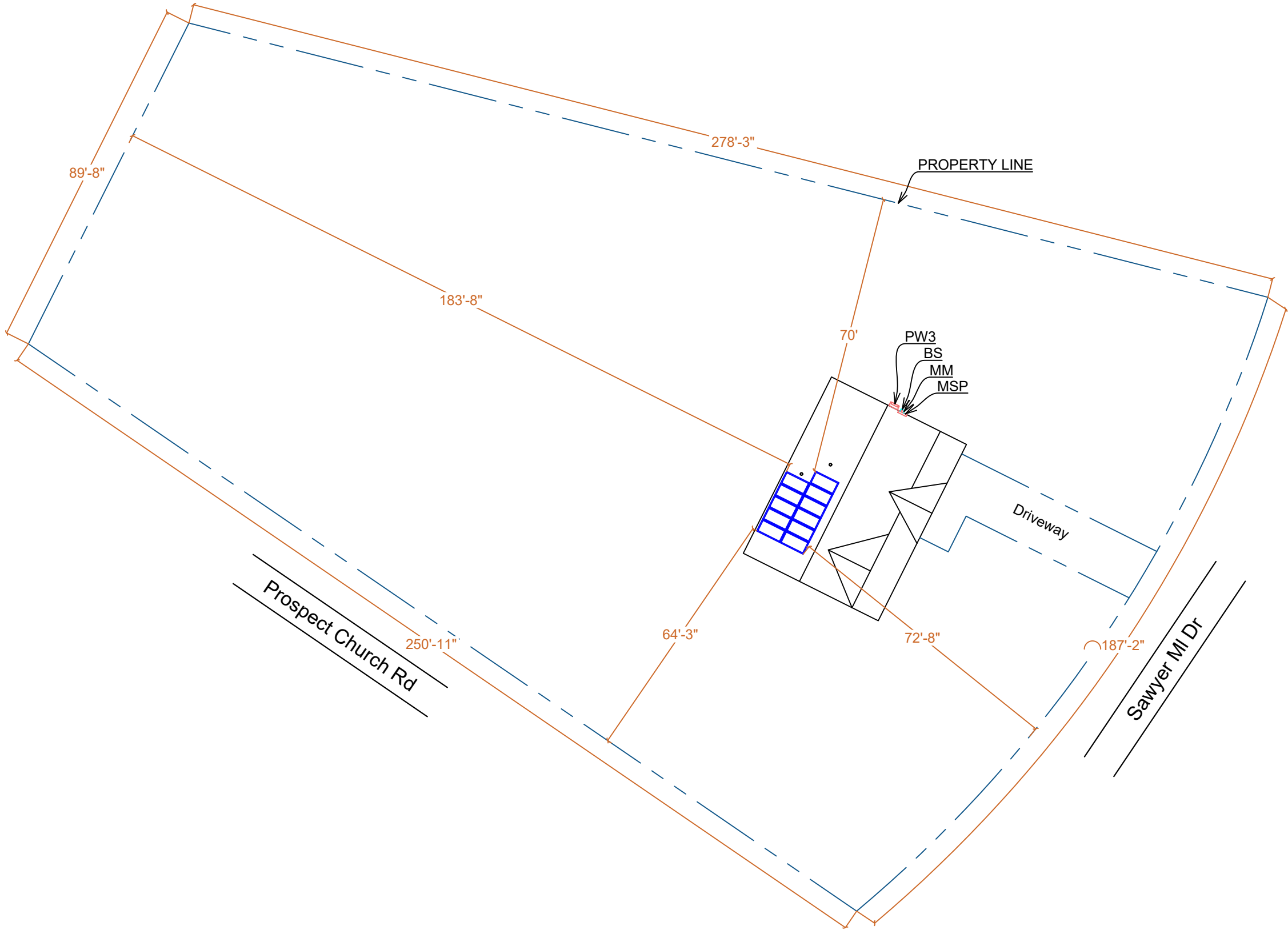
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SCALE: 1/32" = 1'-0"

4

SITE PLAN

Project Name:

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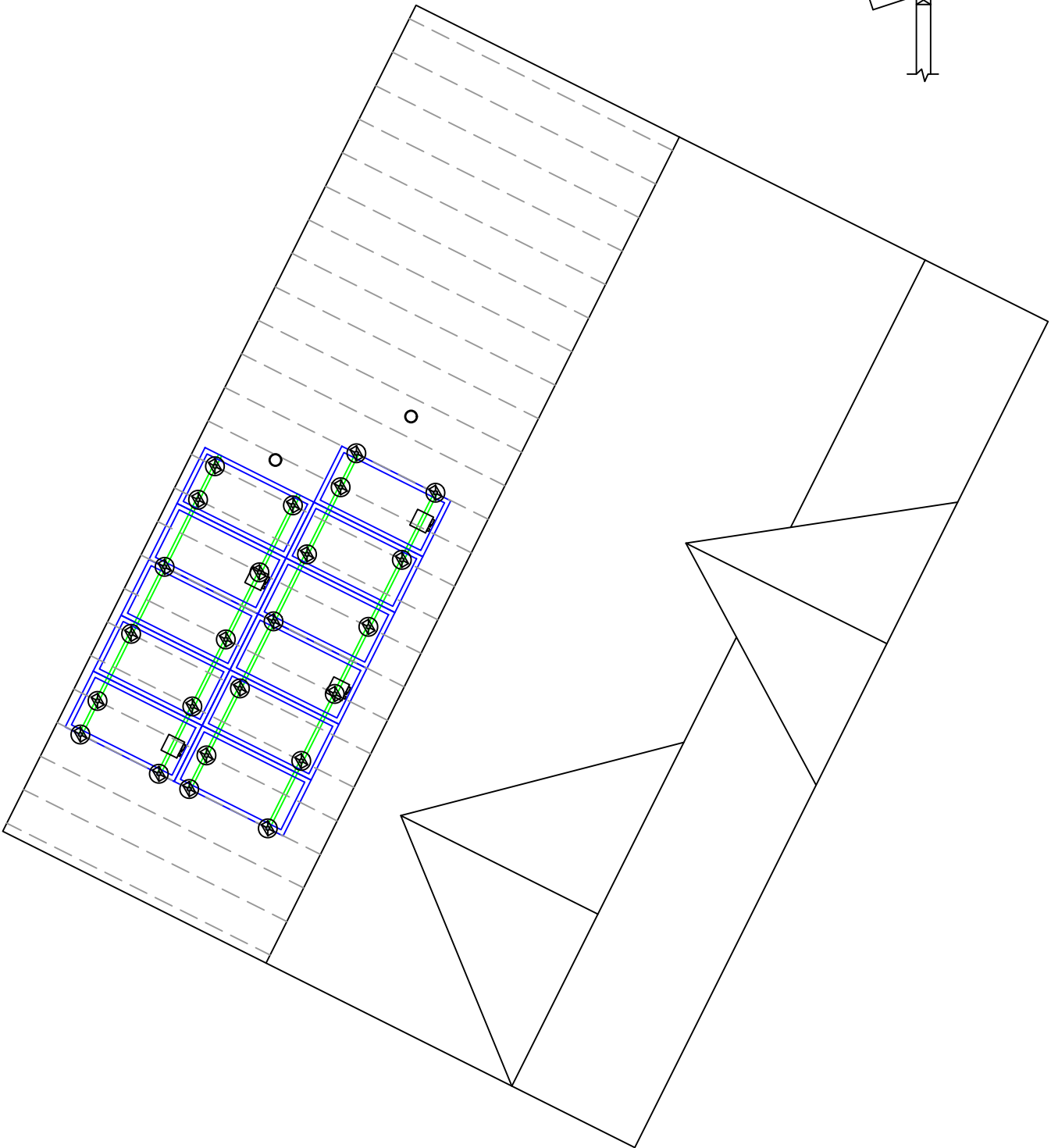
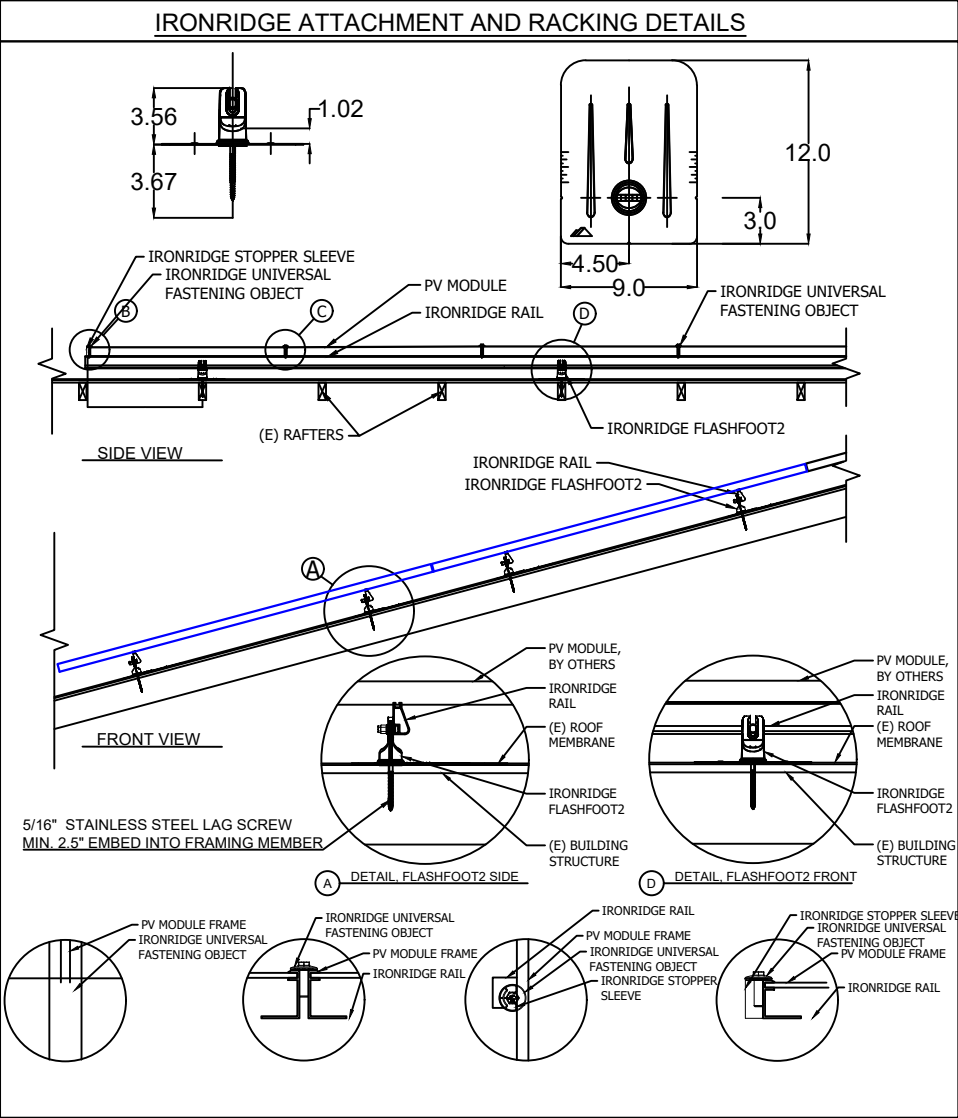
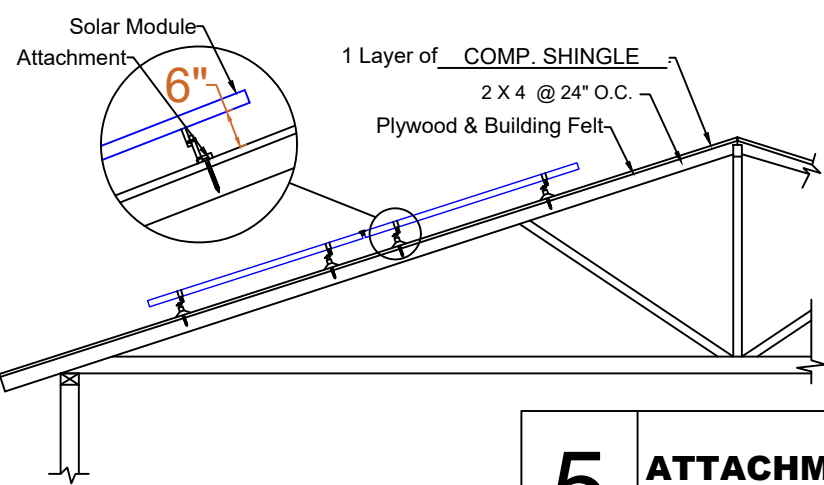
25181-L



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MODULE WEIGHT (lbs)	52.9
# OF MODULES	11
TOTAL MODULE WEIGHT (lbs)	581.9
RACK WEIGHT (lbs)	116.38
SOLAR SHUTDOWNS WEIGHT (lbs)	3.08
TOTAL SYSTEM WEIGHT (lbs)	701.36
# OF STANDOFFS	24
MAX SPAN BETWEEN STANDOFFS (in)	48
LOADING PER STANDOFF (lbs)	29.22
TOTAL AREA (sq.ft.)	242
LOADING (PSF)	2.89

1. Ironridge XR-100 Racking System
2. Ironridge FlashFoot 2 Attachment
3. Roof attachment hardware to be mounted to existing structure ( 2 X 4 @ 24" O.C. TRUSS ) with 48" O.C.rail spans less.
4. Roof sheathed with 1/2" plywood and upper surface is faced with felt paper. Finished roof surface is One layer of COMP. SHINGLE .



## 5 ATTACHMENT LAYOUT

Project Name:

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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 up to 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads rated up to 185 LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 Expansions make it easier and more affordable to scale up customers' systems to meet their current or future needs. Powerwall 3 is designed for fast and efficient installations, modular system expansion, and simple connection to any electrical service.



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			
	Nominal Battery Energy	13.5 kWh AC <sup>1</sup>			
	Nominal Output Power (AC)	5.8 kW	7.6 kW	10 kW	11.5 kW
	Maximum Apparent Power	5,800 VA	7,600 VA	10,000 VA	11,500 VA
	Maximum Continuous Current	24 A	31.7 A	41.7 A	48 A
	Overcurrent Protection Device <sup>2</sup>	30 A	40 A	60 A	60 A
	Configurable Maximum Continuous Discharge Power Off-Grid (PV Only, -20°C to 25°C)	15.4 kW <sup>3</sup>			
	Maximum Continuous Charge Current / Power (Powerwall 3 only)	20.8 A AC / 5 kW			
	Maximum Continuous Charge Current / Power (Powerwall 3 with up to (3) Expansion units)	33.3 A AC / 8 kW			
	Output Power Factor Rating	0 - 1 (Grid Code configurable)			
	Maximum Output Fault Current (1 s)	160 A			
	Maximum Short-Circuit Current Rating	10 kA			
	Load Start Capability	185 LRA			
	Solar to Battery to Home/Grid Efficiency	89% <sup>1,4</sup>			
	Solar to Home/Grid Efficiency	97.5% <sup>5</sup>			
	Power Scalability	Up to 4 Powerwall 3 units supported			
	Energy Scalability	Up to 3 Expansion units (for a maximum total of 7 units)			
	Supported Islanding Devices	Gateway 3, Backup Switch, Backup Gateway 2			
	Connectivity	Wi-Fi (2.4 and 5 GHz), Ethernet, Cellular (LTE/4G <sup>6</sup> )			
	Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters			
	AC Metering	Revenue Grade (+/- 0.5%, ANSI C12.20)			
	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			

<sup>1</sup>Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.

<sup>2</sup>See [Powerwall 3 Installation Manual](#) for fuse requirements if using fuse for overcurrent protection.

<sup>3</sup>If enabling the 15.4 kW off-grid maximum continuous discharge power, Powerwall 3 must be installed with an 80 A breaker and appropriately sized conductors.

<sup>4</sup>Typical solar shifting use case.

<sup>5</sup>Tested using CEC weighted efficiency methodology.

<sup>6</sup>The customer is expected to provide Internet connectivity for Powerwall 3; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

Powerwall 3 Technical Specifications

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	60 — 480 V DC
	MPPTs	6
	Maximum Current per MPPT (I <sub>mp</sub> )	13 A <sup>7</sup>
	Maximum Short Circuit Current per MPPT (I <sub>sc</sub> )	15 A <sup>7</sup>

<sup>7</sup>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<sub>sc</sub> / 30 A I<sub>sc</sub>.

Environmental Specifications	Operating Temperature	-20°C to 50°C (-4°F to 122°F) <sup>8</sup>
	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	IP67 (Battery & Power Electronics) IP55 (Wiring Compartment)
Compliance Information	Pollution Rating	PD3
	Operating Noise @ 1 m	< 50 db(A) typical < 62 db(A) maximum
	<sup>8</sup> Performance may be de-rated at operating temperatures above 40°C (104°F).	

Certifications	UL 1741, UL 9540, UL 9540A, UL 3741, UL 1741 PCS, UL 1741 SA, UL 1741 SB, UL 1973, UL 1699B, UL 1998, CSA C22.2 No. 0.8, CSA C22.2 No. 107.1, CSA C22.2 No. 330, CSA 22.3 No. 9, IEEE 1547, IEEE 1547A, IEEE 1547.1, CA Rule No.21
Grid Connection	United States and Canada
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)
Fire Testing	Meets the unit level performance criteria of UL 9540A

6 POWERWALL 3 DATA SHEET

Project Name:

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License Number:

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# DNA™ 120-Monofacial

Solar for Innovators

# DNA™ 120 Monofacial

## DNA-120-MF10-460W

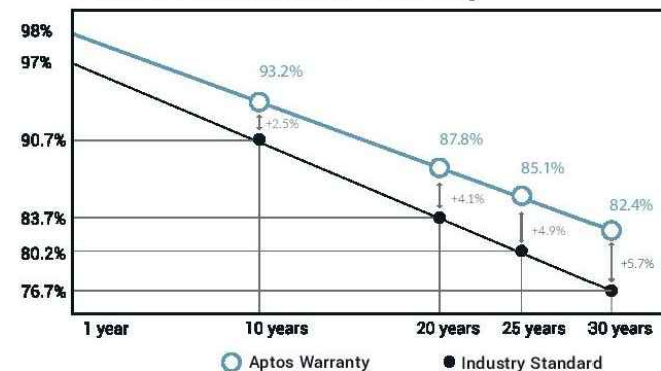
Residential | Commercial

Our DNA Split Cell Series uses advanced selective emitter PERC technology with thin film layers to improve heat tolerance, maximize energy harvest, minimize resistive loss, and use 5% more of the available active area for optimal power performance.

## Industry Leading 30 Years Product and Performance Warranty

445W | 450W | 455W | 460W

### Linear Performance Warranty



### Key Features



**Advanced Technology**  
Patented DNA™ technology boosts power performance & module efficiency.



**Miami-Dade Approved**  
Maximum Durability: LEVEL 6 SALT MIST Tested, 5400 Pa Wind Load Certified Panels



**Bankable Investment**  
Comprehensive warranty that covers both **30-year product** and **30-year power** performance.



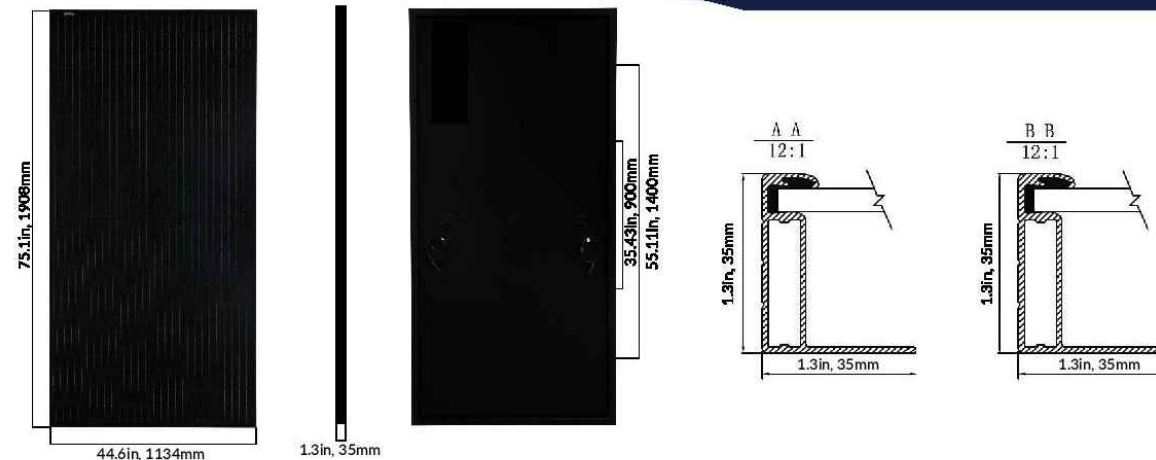
**Awards**  
Winners of the Leadership in Solar Energy award for three consecutive years and listed as one of the Top Solar Products from 2021-2022.



**Aesthetics**  
All black design with advanced split cell technology features 10 ultra-thin busbars that allow for less resistance and greater energy harvest.



Designed & Engineered In  
Silicon Valley



Electrical Specifications	DNA-120-MF10-445W		DNA-120-MF10-450W		DNA-120-MF10-455W		DNA-120-MF10-460W	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
STC Rated Output P <sub>max</sub> (W)	445W	333W	450W	336W	455W	341W	460W	344W
Open Circuit Voltage V <sub>oc</sub> (V)	41.79	39.42	41.79	39.50	41.88	39.58	41.97	39.67
Short Circuit Current I <sub>sc</sub> (A)	13.36	11.89	13.51	11.99	13.63	12.09	13.75	12.20
Rated Voltage V <sub>m</sub> (V)	35.03	32.32	35.15	32.39	35.27	32.46	35.36	32.53
Rated Voltage I <sub>m</sub> (A)	12.70	10.31	12.80	10.40	12.90	10.49	13.00	10.58
Module Efficiency	20.57%		20.79%		21.03%		21.26%	

STC for front-face of panel: 1000 W/m², 25°C, measurement uncertainty ±3%  
NOCT for front-face of panel: 800W/m², 45°C, Wind speed 1 m/s

### Temperature Coefficients

Temperature Coefficients P <sub>max</sub>	-0.35%/°C
Temperature Coefficients I <sub>sc</sub>	+0.054%/°C
Temperature Coefficients V <sub>oc</sub>	-0.27%/°C
Nominal Operating Cell Temperature (NOCT)	45±2°C

### Test Operating Conditions

Maximum Series Fuse	25A
Maximum System Voltage	1,500 VDC (UL&IEC)
Maximum Load Capacity (Per UL 1703)	5400 PA Snow Load / 5400 Pa Wind Load
Fire Performance Type	Type 1

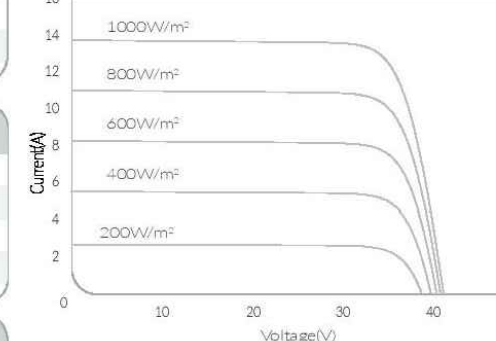
### Packaging Configuration

Number of Modules per Pallet	31
Number of Pallets per 40ft. Container	24
Pallet Dimensions	76.29 X 44.48 X 49.76 in, 1938 X 1130 X 1264 mm
Pallet Weight (lbs)	1640
Module per 40ft Container	744

### Mechanical Properties

Cell Type	SE-PERC
Glass	3.2mm, anti-reflection coating, high transmission, low iron, tempered glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68
Dimensions	75.1 X 44.6 X 1.3 in, 1908 X 1134 X 35 mm
Weight	52.9lbs.(24.2kg)
Output Cable	4mm2 (EU)12AWG,39.37in.(1200mm)
Cable Length	47.2 in
Encapsulant	POE
Connector Type	Staubli EVO2

### I-V Curve



### Certifications



7

## MODULE DATA SHEET

Project Name:  
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San Antonio, Texas 78230  
www.aptossolar.com | sales@aptossolar.com

Aptos Solar Technology reserves the right to make specification changes without notice.

DATE: 08/20/2025





Datasheet

## Flush Mount System



### Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.



#### Strength Tested

All components evaluated for superior structural performance.



#### Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.



#### UL 2703 Listed System

Entire system and components meet newest effective UL 2703 standard.



#### PE Certified

Pre-stamped engineering letters available in most states.



#### Design Assistant

Online software makes it simple to create, share, and price projects.



#### 25-Year Warranty

Products guaranteed to be free of impairing defects.

Datasheet

### XR Rails ☺

#### XR10 Rail



A low-profile mounting rail for regions with light snow.

- 6' spanning capability
- Moderate load capability
- Clear and black finish

#### XR100 Rail



The ultimate residential solar mounting rail.

- 8' spanning capability
- Heavy load capability
- Clear and black finish

#### XR1000 Rail



A heavyweight mounting rail for commercial projects.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish

#### Bonded Splices



All rails use internal splices for seamless connections.

- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

### Clamps & Grounding ☺

#### UFOs



Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear and black finish

#### Stopper Sleeves



Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- Sized to match modules
- Clear and black finish

#### CAMO



Bond modules to rails while staying completely hidden.

- Universal end-cam clamp
- Tool-less installation
- Fully assembled

#### Grounding Lugs



Connect arrays to equipment ground.

- Low profile
- Single tool installation
- Mounts in any direction

### Attachments ☺

#### FlashFoot2



Flash and mount XR Rails with superior waterproofing.

- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

#### Conduit Mount



Flash and mount conduit, strut, or junction boxes.

- Twist-on Cap eases install
- Wind-driven rain tested
- Secures 3/4" or 1" conduit

#### Slotted L-Feet



Drop-in design for rapid rail attachment.

- Secure rail connections
- Slot for vertical adjusting
- Clear and black finish

#### Bonding Hardware



Bond and attach XR Rails to roof attachments.

- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

### Resources



#### Design Assistant

Go from rough layout to fully engineered system. For free.

Go to [IronRidge.com/design](https://IronRidge.com/design)



#### NABCEP Certified Training

Earn free continuing education credits, while learning more about our systems.

Go to [IronRidge.com/training](https://IronRidge.com/training)

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## RACKING DATA SHEET

Project Name:  
**Garrett Barefoot**  
Property address:  
**29 Sawyer MI Dr**  
**Dunn, NC 28334**

### Wiring Solutions Plus LLC

Address:  
4724 Hargrove Rd, Raleigh, NC 27616

Phone Number:  
984-200-7489

E-Mail:  
[wiringsolutionsoffice@gmail.com](mailto:wiringsolutionsoffice@gmail.com)

License Number:  
25181-L



DATE: 08/20/2025





Tech Brief

## FlashFoot2

### The Strongest Attachment in Solar

IronRidge FlashFoot2 raises the bar in solar roof protection. The unique water seal design is both elevated and encapsulated, delivering redundant layers of protection against water intrusion. In addition, the twist-on Cap perfectly aligns the rail attachment with the lag bolt to maximize mechanical strength.

#### Twist-On Cap

FlashFoot2's unique Cap design encapsulates the lag bolt and locks into place with a simple twist. The Cap helps FlashFoot2 deliver superior structural strength, by aligning the rail and lag bolt in a concentric load path.

#### Three-Tier Water Seal

FlashFoot2's seal architecture utilizes three layers of protection. An elevated platform diverts water away, while a stack of rugged components raises the seal an entire inch. The seal is then fully-encapsulated by the Cap. FlashFoot2 is the first solar attachment to pass the TAS-100 Wind-Driven Rain Test.

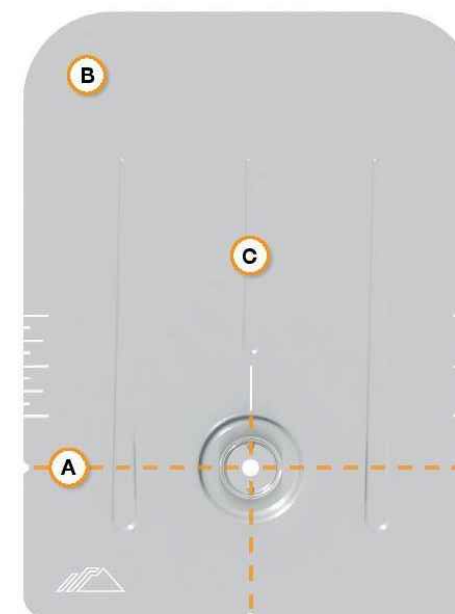
#### Single Socket Size

A custom-design lag bolt allows you to install FlashFoot2 with the same 7/16" socket size used on other Flush Mount System components.

#### Water-Shedding Design

An elevated platform diverts water away from the water seal.

### Installation Features



#### A Alignment Markers

Quickly align the flashing with chalk lines to find pilot holes.

#### B Rounded Corners

Makes it easier to handle and insert under the roof shingles.

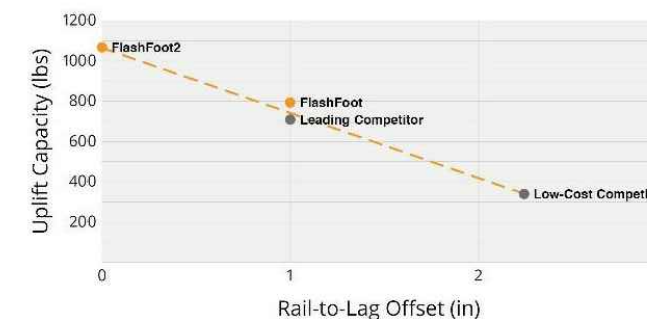
#### C Reinforcement Ribs

Help to stiffen the flashing and prevent any bending or crinkling during installation.

### Benefits of Concentric Loading

Traditional solar attachments have a horizontal offset between the rail and lag bolt, which introduces leverage on the lag bolt and decreases uplift capacity.

FlashFoot2 is the only product to align the rail and lag bolt. This concentric loading design results in a stronger attachment for the system.



### Testing & Certification

#### Structural Certification

Designed and Certified for Compliance with the International Building Code & ASCE/SEI-7.

#### Water Seal Ratings

Water Sealing Tested to UL 441 Section 27 "Rain Test" and TAS 100-95 "Wind Driven Rain Test" by Intertek. Ratings applicable for composition shingle roofs having slopes between 2:12 and 12:12.

#### UL 2703

Conforms to UL 2703 Mechanical and Bonding Requirements. See Flush Mount Install Manual for full ratings.

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### ATTACHMENT DATA SHEET

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# Solar Shutdown Device Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is integral to the rapid shutdown (RSD) function required for rooftop PV systems in accordance with Article 690 of the NEC. When paired with Powerwall 3, solar array shutdown is initiated by an External System Shutdown Switch or the On/Off Enable switch located on Powerwall 3. Systems not subject to rapid shutdown requirements must still install one or more MCIs for functional purposes; see the Powerwall 3 installation manual for details.

Electrical Specifications	Model	MCI-1	MCI-2	MCI-2 High Current
	Nominal Input DC Current Rating ( $I_{MP}$ )	13 A	13 A	15 A
	Maximum Input Short Circuit Current ( $I_{SC}$ )	19 A	17 A	19 A
	Maximum System Voltage	600 V DC	1000 V DC <sup>14</sup>	1000 V DC <sup>14</sup>
	Maximum Disconnect Voltage <sup>15</sup>	600 V DC	165 V DC	165 V DC
<sup>14</sup> Maximum System Voltage is limited by Powerwall to 600 V DC.				
<sup>15</sup> Maximum Disconnect Voltage is the maximum voltage allowed across each MCI in the open position (Rapid Shutdown Initiated). An individual MCI-2 has a voltage rating of 165V but in combination (connected in the same string) their voltage ratings are additive.				
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		
Environmental Specifications	Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)	
	Storage Temperature	-30°C to 70°C (-22°F to 158°F)	-30°C to 70°C (-22°F to 158°F)	
	Enclosure Rating	NEMA 4X / IP65		
Mechanical Specifications	Electrical Connections	MC4 Connector		
	Housing	Plastic		
	Dimensions	125 x 150 x 22 mm (5 x 6 x 1 in)	173 x 45 x 22 mm (6.8 x 1.8 x 1 in)	
	Weight	350 g (0.77 lb)	120 g (0.26 lb)	
	Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip	
Compliance Information	Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)		
	RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch		
UL 3741 PV Hazard Control (and PVRSA) Compatibility		See <a href="#">UL 3741 Application Addendum</a>		

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MCI DATA SHEET

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Wiring Solutions Plus

DATE: 08/20/2025





Keep Solar Wires Nested & Protected

JayBox® is an ever-adaptable junction box, designed to securely enclose wires on nearly any solar project—with ample space to shelter up to 4 module strings.

The box is UL-listed, NEMA-3R-rated, and supports up to 1500-volt systems. It is made of a NORYL™ resin, known for its long-lasting UV-resistance and impact strength.

JayBox® is available in two options: Roof Mount and Rail Mount. When installed on the roof deck, its low profile allows it to safely fit under the wings of the module array.



Multiple Configuration Options

Threaded standoffs give you the freedom to mount electrical components—including DIN rail, grounding bars, and terminal blocks—in any orientation. Easy-to-drill guides also come on three sides of the box for running conduit into the enclosure.



10-Year Warranty  
Product guaranteed free of impairing defects.

Tech Brief

QuickMount® JayBox®



Two Mounting Types: Roof & Rail

The roof-mounted JayBox® comes with two deck screws and a simple flashing that only goes under one shingle course—without the need to cut shingles or remove nails. The rail-mounted JayBox® comes with two interlocking hangers that attach to the rail using our Microinverter Bonding Hardware.

This component is part of the QuickMount® product line.

Durable NORYL™ Resin

JayBox® is fabricated from SABIC's NORYL™ resin, giving it greater strength and resistance to UV radiation. It is well known for its lasting stability and performance in extreme environments.

SABIC and brands marked with ™ are trademarks of SABIC or its subsidiaries or affiliates.

Abundant Feature Set

Trustworthy Flashing & Waterproofing

The JayBox® Roof Mount utilizes QuickMount's Elevated Water Seal Technology®, coming with a raised flashing that integrates with an EPDM sealing gasket on the underside of the box to fully protect roof penetrations. This waterproof assembly has passed the TAS-100 wind-driven rain test.

The flashing only installs in one direction, with an “upslope” marking to ensure proper placement. Simply align the box with the flashing and secure it to the roof with the supplied deck screws. No need to cut shingles or remove nails.

Hassle-Free Lid & Captive Hardware

JayBox® has a detachable, hinged lid to reduce interference and deliver maximum ease—staying open and out of the way even on up to 70° roof slopes.

Once the lid is closed, the single, pre-installed, captive screw and nut keeps it snug and secure. Because this hardware is embedded into the lid, there is no need to worry about it getting lost on the roof.

Drilling Guides & Draining Weep Holes

The enclosure includes easy-to-drill guide marks on three sides of the box. In addition, it has guides on the interior when drilling through the bottom for attic conduit runs. Weep holes also prevent any condensation from accumulating inside the box.

Certification & Performance

Technical Specifications	
Maximum System Voltage	1500V
Max Current (Isc)	100A
Max Current per Circuit (String)	30A
Max Number of Input Circuits	4
Ambient Operating Conditions	-40°C to 75°C
Enclosure Rating (NEMA)	Type 3R - Rainproof
Allowable Wire Inputs	12 - 10 AWG
Allowable Wire Outputs	12 - 8 AWG
Equipment Grounding Conductor	10 - 6 AWG

Tech Brief



Water Seal Ratings

Passed the UL 441 Section 27 “Rain Test” and TAS 100-95 “Wind-Driven Rain Test”.



UL Electrical Rating

Tested and evaluated to conform to UL 1741 by Intertek Group plc.



Durable NORYL™ Resin

Made of a high-strength Noryl resin, with stability that surpasses polycarbonate.

11 JUNCTION BOX DATA SHEET

Project Name:

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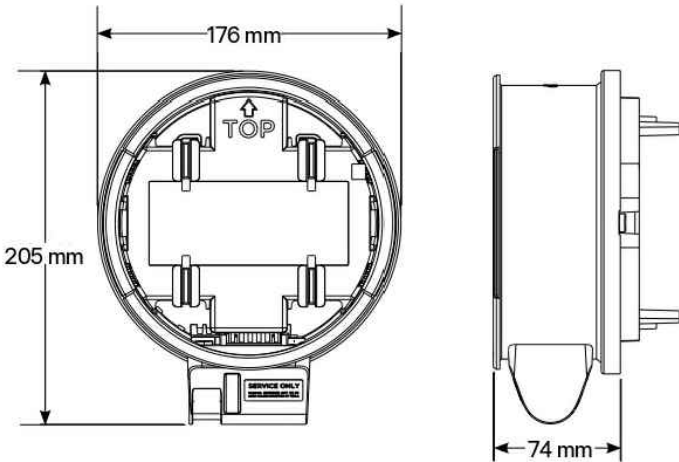
# Backup Switch

The Tesla Backup Switch controls connection to the grid in a Powerwall system, and can be easily installed behind the utility meter or in a standalone meter panel downstream of the utility meter.

The Backup Switch automatically detects grid outages, providing a seamless transition to backup power. It communicates directly with Powerwall, allowing home energy usage monitoring from any mobile device with the Tesla app.

Performance Specifications	Model Number	1624171-xx-y
	Continuous Load Rating	200 A, 120/240 V split phase
	Maximum Supply Short Circuit Current	22 kA with breaker <sup>17</sup>
	Communication	CAN
	AC Meter	+/- 0.5%
	Expected Service Life	21 years
	Warranty	10 years
Environmental Specifications	<sup>17</sup> Breaker maximum supply short circuit current rating must be equal to or greater than the available fault current.	
	Operating Temperature	−40°C to 50°C (−40°F to 122°F)
	Storage Temperature	−40°C to 85°C (−40°F to 185°F)
	Enclosure Rating	NEMA 3R
	Pollution Rating	PD3
Compliance Information	Safety Standards	USA: UL 414, UL 414 SB, UL 2735, UL 916, CA Prop 65
	Emissions	FCC Part 15, Class B, ICES 003
Mechanical Specifications	Dimensions	176 x 205 x 74 mm (6.9 x 8.1 x 2.9 in)
	Weight	2.8 lb
	Meter and Socket Compatibility	ANSI Type 2S, ringless or ring type
	External Service Interface	Contactor manual override <sup>18</sup> Reset button
	Conduit Compatibility	1/2-inch NPT

<sup>18</sup> Manually overrides the contactor position during a service event.



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BACKUP SWITCH DATA SHEET

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