

## SCOPE OF WORK

TO INSTALL A SOLAR PHOTOVOLTAIC (PV) SYSTEM AT THE MCALISTER RESIDENCE, LOCATED AT 416 WIRE ROAD, BUNNLEVEL, NORTH CAROLINA. THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE NEW ELECTRICAL SERVICE EQUIPMENT. THE PV SYSTEM DOES INCLUDE STORAGE BATTERIES.

## EXISTING SYSTEM RATING

11.118 KW DC STC  
10.880 KW AC

## EXISTING EQUIPMENT SUMMARY

- (34) SUNPOWER SPR-X20-327-C-AC (327W) PV MODULES
- (34) SUNPOWER SPR-X20-327-C-AC [240V] PV INVERTERS

## NEW EQUIPMENT SUMMARY

- (01) TESLA ENERGY GATEWAY
- (02) TESLA POWERWALL 2.0 BATTERY
- (01) PW AC DISCONNECT
- (01) PW COMBINER PANEL

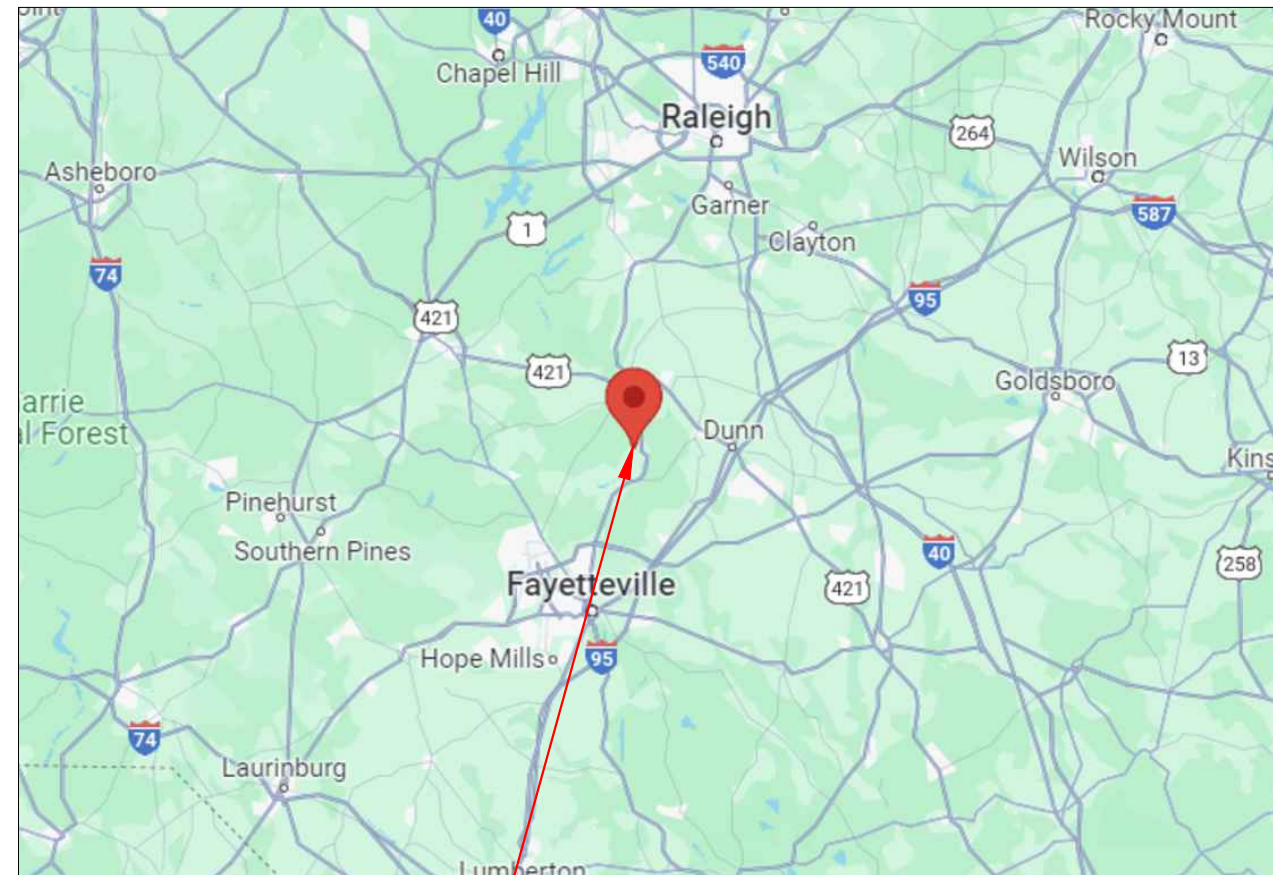
**PHASE 2, ADDITION OF (2) POWERWALL & TEG-2 TO AN EXISTING SYSTEM.**

## SHEET INDEX

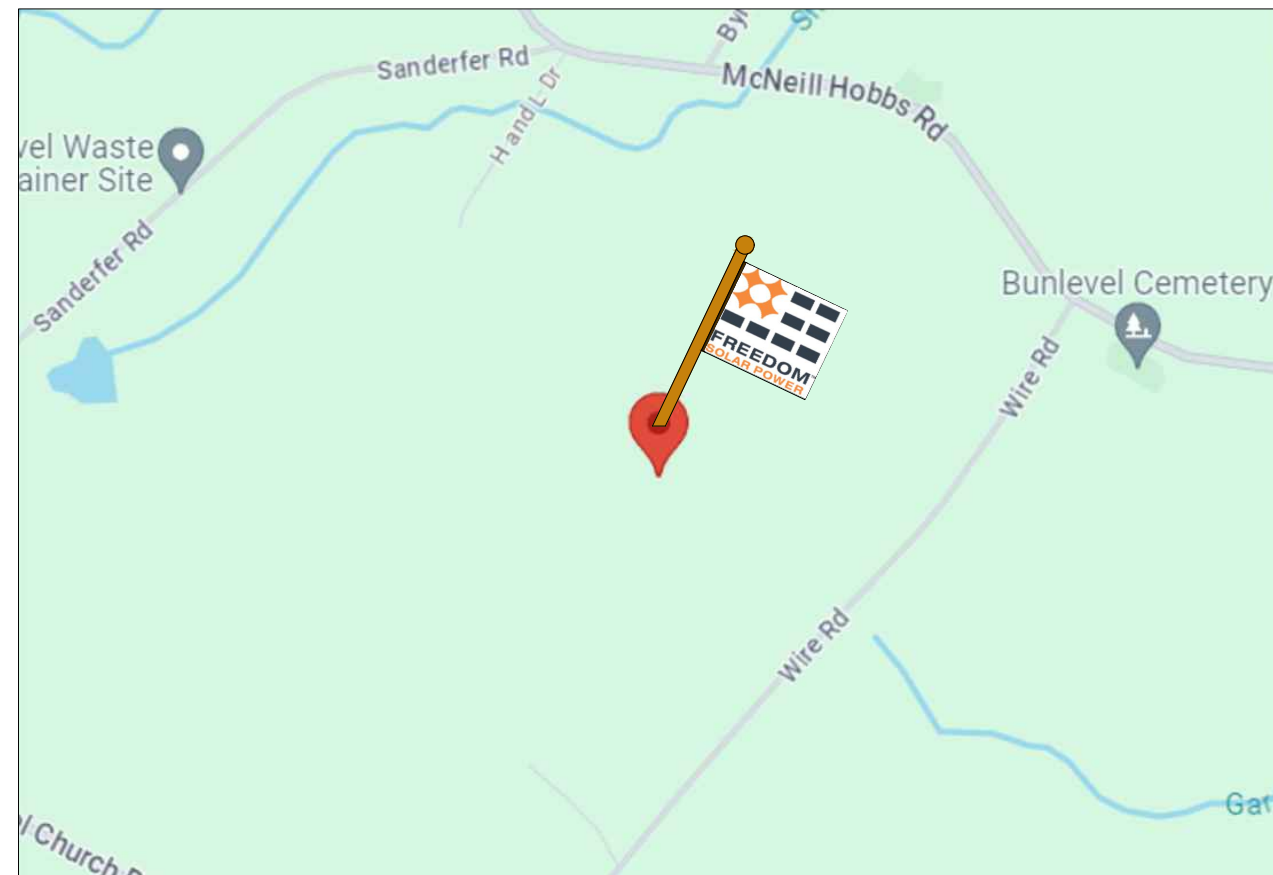
- PV-0 COVER
- PV-1 SITE MAP AND PV LAYOUT
- PV-2 1-LINE DIAGRAM
- PV-3 EQ WALL
- PV-4 SYSTEM LABELING DETAIL
- PV-5 SITE DIRECTORY PLACARD
- PV-6 SAFETY PLAN

## GOVERNING CODES

- 2017 NATIONAL ELECTRICAL CODE
- 2018 NORTH CAROLINA RESIDENTIAL CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE
- UNDERWRITERS LABORATORIES (UL) STANDARDS
- OSHA 29 CFR 1910.269



PROJECT LOCATION



VICINITY MAP

CONTRACTOR



**FREEDOM<sup>™</sup>  
SOLAR POWER**

FREEDOM SOLAR LLC  
4801 FREIDRICH LN, STE 100  
AUSTIN, TX 78744  
512-759-8313  
TECL # 28621

REVISIONS		
DESCRIPTION	DATE	REV
DESIGN PACKET	02/08/2024	

PE STAMP

PROJECT NAME

**RICHARD V MCALISTER**  
**416 WIRE ROAD**  
**BUNNLEVEL, NORTH CAROLINA,**  
**28323**  
**(910) 850-8783**

SHEET NAME

**COVER**

SHEET SIZE

**ANSI B**  
**11" x 17"**

SHEET NUMBER

**PV-0**

LEAD ID: 113690

**EXISTING CONSTRUCTION SUMMARY**

- (34) (SUNPOWER SPR-X20-327-C-AC (327W))SOLAR MODULES, 11.118 KW DC STC  
MODULE DIMENSIONS = 41.2" X 61.3" X 1.2"
- (34) SUNPOWER SPR-X20-327-C-AC [240V] PV INVERTERS  
COMBINED INVERTER OUTPUT = 10.880 KW AC.
- (01) SUNPOWER MONITORING

**NEW CONSTRUCTION SUMMARY**

- (01) TESLA ENERGY GATEWAY
- (02) TESLA POWERWALL 2.0 BATTERY
- (01) PW AC DISCONNECT
- (01) PW COMBINER PANEL

**EXISTING SITE DETAILS**

ARRAY #1 - TILT = 25°, AZIMUTH = 180°



**-UTILITY SHUTDOWN NEEDED TO INSTALL TESLA ENERGY GATEWAY-2**

**PHASE 2, ADDITION OF (2) POWERWALL & TEG-2 TO AN EXISTING SYSTEM.**

**FALL PROTECTION REQUIRED**

**CONSTRUCTION NOTES**

- 1.) ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 2.) ALL OUTDOOR EQUIPMENT SHALL BE RAIN-TIGHT WITH MINIMUM NEMA 3R RATING.
- 3.) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.

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SHEET NAME

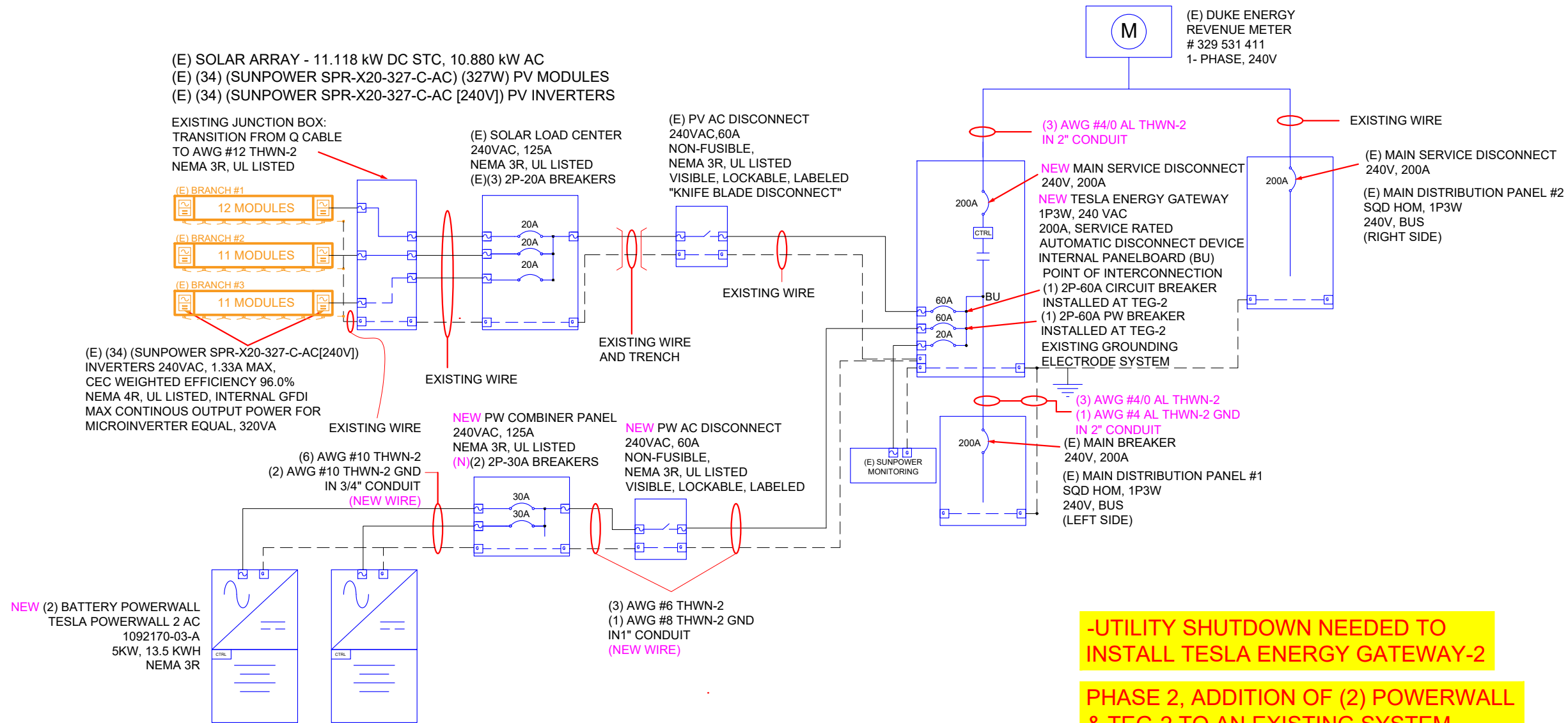
**SITE MAP & PV LAYOUT**

SHEET SIZE

**ANSI B  
11" x 17"**

SHEET NUMBER

**PV-1**



**-UTILITY SHUTDOWN NEEDED TO INSTALL TESLA ENERGY GATEWAY-2**

**PHASE 2, ADDITION OF (2) POWERWALL & TEG-2 TO AN EXISTING SYSTEM.**

**ELECTRICAL NOTES**

- 1.) ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- 2.) ALL CONDUCTORS SHALL BE COPPER. ALUMINUM CONDUCTORS MAY BE USED IF CORRECTLY UPSIZED FOR AMPACITY RATING PER NEC 310.12 OR 310.16. ALL CONDUCTORS SHALL BE RATED FOR 600V AND 90°C WET ENVIRONMENT UNLESS OTHERWISE NOTED.
- 3.) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- 4.) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- 5.) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY. SPECIFIED CONDUIT AND WIRE SIZES ARE MINIMUM REQUIREMENTS AND LARGER SIZES SHALL BE PERMITTED.
- 6.) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- 7.) MAXIMUM MOUNTING HEIGHT FROM GRADE TO CENTER OF METER SOCKET SHALL BE 72" FOR RESIDENTIAL SINGLE PHASE METER SOCKETS 0-320 AMPS. MINIMUM MOUNTING HEIGHT IS 30" FROM FOR AUSTIN ENERGY, AND 48" FOR ALL OTHER JURISDICTIONS
- 8.) MINIMUM HORIZONTAL CLEARANCE FROM GAS REGULATOR TO ANY ELECTRICAL ENCLOSURE IS 36", EXCEPT AUSTIN ENERGY WHICH REQUIRES 48" CLEARANCE FROM GAS TO METER SOCKET
- 9.) PV DISCONNECT SHALL BE VISIBLE, LOCKABLE AND LABELED AND THE DOOR CANNOT BE OPENED WHEN HANDLE IS IN ON POSITION
- 10.) BY DEFAULT THE MONITORING DEVICE IS SHOWN CONNECTED TO A 20-AMP BREAKER IN THE SOLAR LOAD CENTER. ALTERNATIVELY, THE MONITORING DEVICE MAY BE CONNECTED TO A 20-AMP BREAKER AT THE MAIN DISTRIBUTION PANEL.
- 11.) ALL EQUIPMENT TERMINATIONS SHALL BE RATED FOR 75 DEGREES OR GREATER
- 12.) ALL CT WIRES SHALL BE CONSIDERED CLASS 1 PER NEC ARTICLE 725, AND BE MARKED AS RATED FOR 600V. PER 725.48(A) CLASS 1 CIRCUITS SHALL BE PERMITTED TO OCCUPY THE SAME RACEWAY AS OTHER CIRCUITS PROVIDED ALL CONDUCTORS ARE INSULATED FOR THE MAXIMUM VOLTAGE OF ANY CONDUCTOR IN THE RACEWAY.
- 13.) AWG #10 COPPER CONDUCTORS ARE SPECIFIED AS THE DEFAULT WIRE REQUIRED FROM THE PV ARRAY TO THE SOLAR LOAD CENTER, HOWEVER, AWG #12 COPPER CONDUCTORS MAY BE UTILIZED IF BOTH OF THE FOLLOWING CONDITIONS ARE MET: THE LENGTH OF THE CONDUCTOR IS LESS THAN 75 FT AND THERE ARE LESS THAN 8 CURRENT-CARRYING CONDUCTORS WITHIN THE RACEWAY.

NEW CALCULATION FOR OVERCURRENT POWERWALL DEVICES
TESLA POWERWALL OUTPUT CURRENT CALCULATION
24.0A PER TESLA POWERWALL 2.0 BATTERY INVERTER
COMBINED CURRENT = (1)(24.0) = 24.0A
MINIMUM OCPD = (24.0A)(1.25) = 30.0A
USE (2) 2P-30A BREAKER IN PW COMBINER PANEL FOR POWERWALL OCPD

CONTRACTOR

**FREEDOM SOLAR POWER**  
 FREEDOM SOLAR LLC  
 4801 FREIDRICH LN, STE 100  
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 TECL # 28621

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**(910) 850-8783**

SHEET NAME

**1-LINE DIAGRAM**

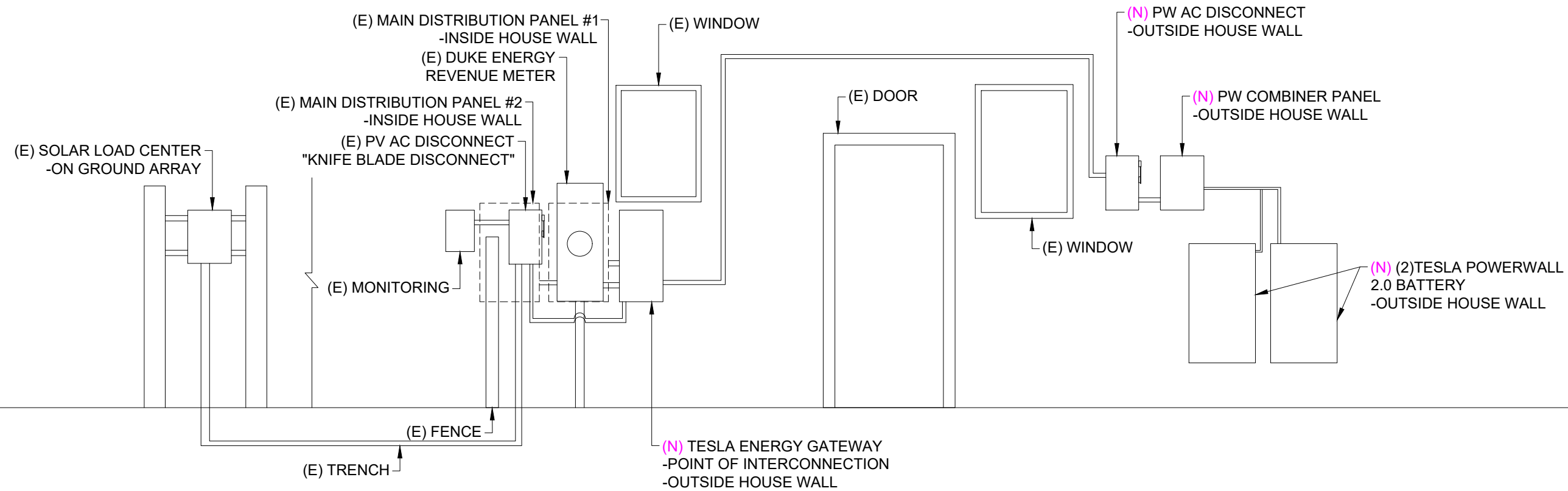
SHEET SIZE

**ANSI B**  
**11" x 17"**

SHEET NUMBER

**PV-2**

**PHASE 2, ADDITION OF (2) POWERWALL  
& TEG-2 TO AN EXISTING SYSTEM.**



EQUIPMENT ELEVATION  
NTS 1

CONTRACTOR

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28323  
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SHEET NAME

**EQ.WALL**

SHEET SIZE

**ANSI B  
11" x 17"**

SHEET NUMBER

**PV-3**

NOTE: NOT ALL LABELS MAY BE APPLICABLE

SIGNAGE REQUIREMENTS

- > RED BACKGROUND
- > WHITE LETTERING
- > MIN. 3/8" LETTER HEIGHT
- > ALL CAPITAL LETTERS
- > ARIAL OR SIMILAR FONT
- > REFLECTIVE, WEATHER RESISTANT MATERIAL, UL 969

CONTRACTOR



**FREEDOM<sup>™</sup>  
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PE STAMP

PROJECT NAME

RICHARD V MCALISTER  
416 WIRE ROAD  
BUNNLEVEL, NORTH CAROLINA,  
28323  
(910) 850-8783

SHEET NAME

SYSTEM LABELING  
DETAIL

SHEET SIZE

ANSI B  
11" x 17"

SHEET NUMBER

PV-4

**PV SYSTEM DISCONNECT**

REQ'D BY: NEC 690.13(B)  
APPLY TO:  
PV DISCONNECT



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

REQ'D BY: NEC 690.13(B)  
APPLY TO:  
PV DISCONNECT



**WARNING: PHOTOVOLTAIC  
POWER SOURCE**

REQ'D BY: NEC 690.31(G)(3)  
APPLY TO:  
RACEWAYS, CABLE TRAYS,  
OTHER WIRING METHODS, AND  
ENCLOSURES THAN CONTAIN  
PV SYSTEM DC CONDUCTORS



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

REQ'D BY: NEC 705.12(B)(2)(3)(b)  
APPLY TO:  
DISTRIBUTION EQUIPMENT  
ADJACENT TO BACK-FED BREAKER



**2" ADDRESS NUMBERS**

REQ' BY: AHJ  
APPLY TO:  
REVENUE METER SOCKET  
(IF APPLICABLE)



**REVENUE METER**

REQ'D BY: AHJ  
APPLY TO:  
REVENUE METER SOCKET  
(IF APPLICABLE)



**MONITORING**

REQ'D BY: FREEDOM SOLAR  
APPLY TO:  
MONITORING DEVICE ENCLOSURE



**RAPID SHUTDOWN SWITCH  
FOR SOLAR PV SYSTEM**

REQ'D BY: NEC 690.56(C)(2)  
APPLY TO:  
PV DISCONNECT



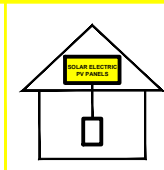
**PHOTOVOLTAIC SYSTEM  
AC DISCONNECT**  
OPERATING CURRENT: 45.2A  
OPERATING VOLTAGE: 240 VAC

REQ'D BY: 690.56(1)(a)  
APPLY TO:  
PV DISCONNECT



**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.



REQ'D BY: FREEDOM SOLAR  
APPLY TO:  
MAIN DISTRIBUTION PANEL



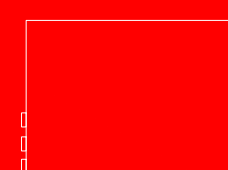
**CAUTION**

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

UTILITY SUPPLY & CUSTOMER  
SERVICE PANEL

PV AC DISCONNECT

RAPID SHUTDOWN SWITCH



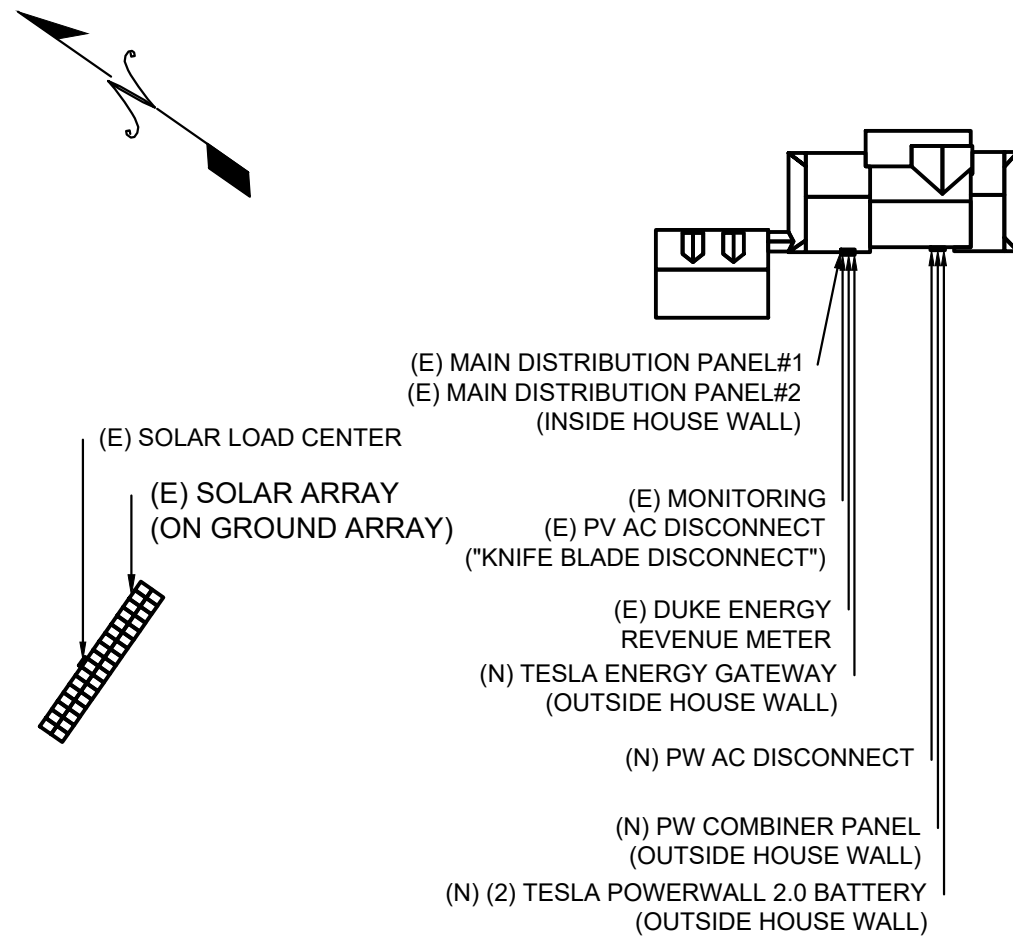
FRONT

REQ'D BY: 705.10



APPLY TO:  
MAIN DISTRIBUTION PANEL  
(\*ONLY REQUIRED IF PV SYSTEM  
DISCONNECT IS NOT GROUPED  
WITH MAIN SERVICE DISCONNECT)  
**SEE SHEET PV-6 FOR SITE  
SPECIFIC LABELS**

# CAUTION: MULTIPLE SOURCES OF POWER LOCATION OF EACH POWER SOURCE DISCONNECTING MEANS SHOWN BELOW



QUESTIONS, CALL:  
800-504-2337  
[www.freedomsolarpower.com](http://www.freedomsolarpower.com)

**FREEDOM**  
**SOLAR POWER**  
416 WIRE ROAD  
PROJECT ID: 113690

CONTRACTOR

**FREEDOM**  
**SOLAR POWER**  
FREEDOM SOLAR LLC  
4801 FREDRICH LN, STE 100  
AUSTIN, TX 78744  
512-759-8313  
TECL # 28621

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PE STAMP

PROJECT NAME

RICHARD V MCALISTER  
416 WIRE ROAD  
BUNNLEVEL, NORTH CAROLINA,  
28323  
(910) 850-8783

SHEET NAME

SITE  
DIRECTORY  
PLACARD

SHEET SIZE

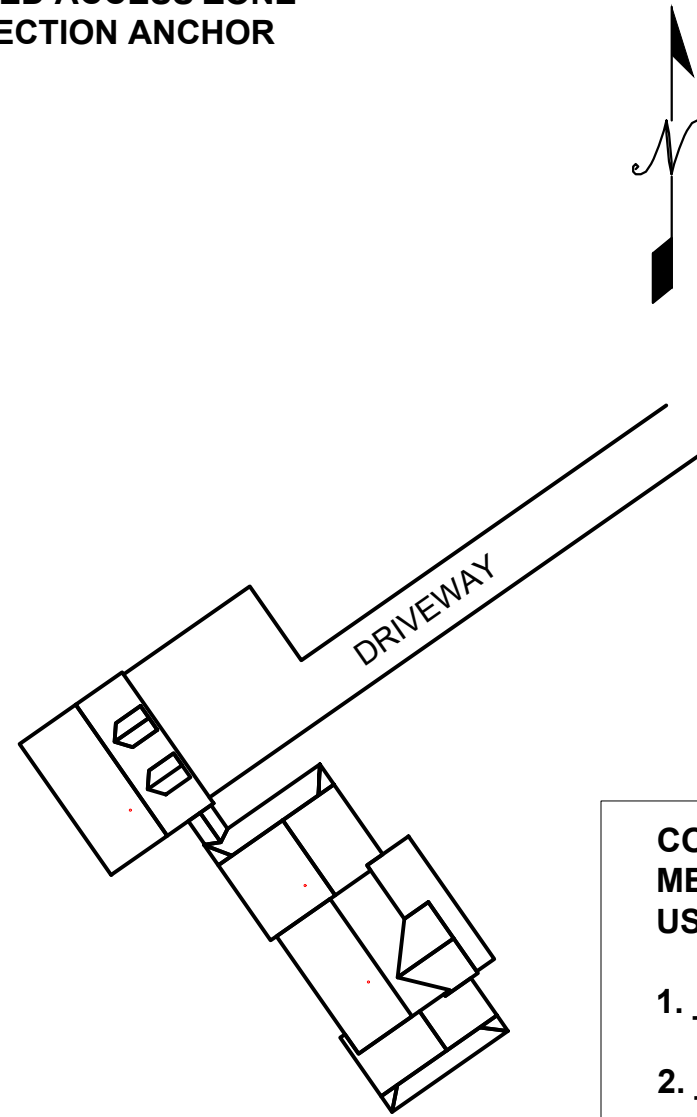
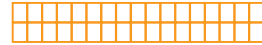
ANSI B  
11" x 17"

SHEET NUMBER

PV-5

USE THE SAFETY SYMBOL KEY TO DRAW IN THE CONTROLLED ACCESS ZONE (CAZ), LADDER PLACEMENT, METER LOCATION, FALL PROTECTION ANCHOR POINT, AND ANY OTHER HAZARD.

HARD HAT IS REQUIRED AT ALL TIMES IN CAZ



**SAFETY SYMBOL KEY**

- CAZ
- L** LADDER
- M** METER
- ==== POWER LINES
- R** RESTRAINT ANCHOR
- A** ARREST ANCHOR

**CONDUCT SAFETY MEETING WITH ALL CREW MEMBERS ON SITE AT THE BEGINNING OF EACH JOB. USE SIGN IN SHEET BELOW.**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**GUEST SIGN IN**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

COMPETENT PERSON: \_\_\_\_\_ JOB START DATE: \_\_\_\_\_

CONTRACTOR

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SHEET NAME

**SAFETY PLAN**

SHEET SIZE

**ANSI B  
 11" x 17"**

SHEET NUMBER

**PV-6**

## Eaton general duty cartridge fuse safety switch

DG222NRB

UPC:782113144221

### Dimensions:

- **Height:** 14.37 IN
- **Length:** 7.35 IN
- **Width:** 8.4 IN

**Weight:**10 LB

**Notes:**Maximum hp ratings apply only when dual element fuses are used. 3-Phase hp rating shown is a grounded B phase rating, UL listed.

### Warranties:

- Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

### Specifications:

- **Type:** General duty, cartridge fused
- **Amperage Rating:** 60A
- **Enclosure:** NEMA 3R
- **Enclosure Material:** Painted galvanized steel
- **Fuse Class Provision:** Class H fuses
- **Fuse Configuration:** Fusible with neutral
- **Number Of Poles:** Two-pole
- **Number Of Wires:** Three-wire
- **Product Category:** General duty safety switch
- **Voltage Rating:** 240V

### Supporting documents:

- [Eatons Volume 2-Commercial Distribution](#)
- [Eaton Specification Sheet - DG222NRB](#)

### Certifications:

- UL Listed

**Product compliance:** No Data



## Eaton general duty non-fusible safety switch

DG222URB

UPC:782113144238

### Dimensions:

- **Height:** 14.38 IN
- **Length:** 7.38 IN
- **Width:** 8.69 IN

**Weight:**9 LB

**Notes:**WARNING! Switch is not approved for service entrance unless a neutral kit is installed.

### Warranties:

- Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

### Specifications:

- **Type:** Non-fusible, single-throw
- **Amperage Rating:** 60A
- **Enclosure:** NEMA 3R, Rainproof
- **Enclosure Material:** Painted galvanized steel
- **Fuse Configuration:** Non-fusible
- **Number Of Poles:** Two-pole
- **Number Of Wires:** Two-wire
- **Product Category:** General duty safety switch
- **Voltage Rating:** 240V

### Supporting documents:

- [Eatons Volume 2-Commercial Distribution](#)
- [Eaton Specification Sheet - DG222URB](#)

### Certifications:

- UL Listed

**Product compliance:** No Data





## Eaton CH main lug loadcenter

CH8L125RP

UPC:782114190548

### Dimensions:

- **Height:** 3.69 IN
- **Length:** 13 IN
- **Width:** 11 IN

**Weight:** 12 LB

**Notes:** Ground bar kits priced separately. Suitable for use as service equipment when not more than two service disconnecting mains are provided or when not used as a lighting and appliance panelboard.

### Warranties:

- Limited lifetime

### Specifications:

- **Special Features:** Cover included
- **Type:** Main lug only
- **Amperage Rating:** 125A
- **Box Size:** 7r
- **Bus Material:** Copper
- **Enclosure:** NEMA 3R
- **Enclosure Material:** Metallic
- **Feed Type:** Overhead
- **Main Circuit Breaker:** CH
- **Number Of Circuits:** 8
- **Number Of Wires:** Three-wire
- **Phase:** Single-phase
- **Voltage Rating:** 120/240V, 208Y/120, 240V
- **Wire Size:** #6-1/0 AWG

### Supporting documents:

- [Type CH Circuit Breakers and Loadcenters](#)
- [Loadcenters and Circuit Breakers](#)
- [Eatons Volume 1-Residential and Light Commercial](#)



## Eaton CH main lug loadcenter

CH12L125R

UPC:782113097381

### Dimensions:

- **Height:** 5.19 IN
- **Length:** 16.75 IN
- **Width:** 14.31 IN

**Weight:** 15.8 LB

**Notes:** Suitable for use as service equipment when not more than six service disconnecting mains are provided or when not used as a lighting and appliance panelboard. Rainproof panels are furnished with hub closure plates. For rainproof hubs.

### Warranties:

- Limited lifetime

### Specifications:

- **Special Features:** Cover included
- **Type:** Main lug only
- **Amperage Rating:** 125A
- **Box Size:** B
- **Bus Material:** Copper
- **Enclosure:** NEMA 3R
- **Enclosure Material:** Metallic
- **Feed Type:** Overhead
- **Main Circuit Breaker:** CH
- **Number Of Circuits:** 12
- **Number Of Wires:** Three-wire
- **Phase:** Single-phase
- **Voltage Rating:** 120/240V
- **Wire Size:** #6-2/0 AWG

### Supporting documents:

- [Dimensional Drawing - CH 3/4 LOADCENTER, MAIN LUG ONLY, OUTDOOR NEMA 3R, 120/240 VAC, 1 PH](#)



## 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 (10s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10s, 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 <sup>1,3</sup>	90%
Warranty	10 years

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

<sup>2</sup>In Backup mode, grid charge power is limited to 3.3 kW.

<sup>3</sup>AC to battery to AC, at beginning of life.

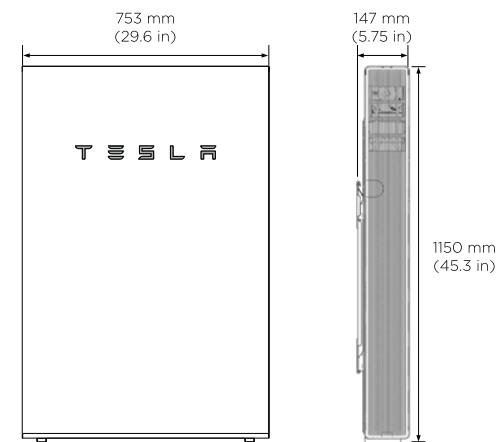
### COMPLIANCE INFORMATION

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 <sup>1</sup>	1150 mm x 755 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight <sup>1</sup>	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

<sup>1</sup>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)

## 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 <sup>1</sup>
Overcurrent Protection Device	100-200A; Service Entrance Rated <sup>1</sup>
Overvoltage Category	Category IV
AC Meter	Revenue accurate (+/- 0.2 %)
Primary Connectivity	Ethernet, Wi-Fi
Secondary Connectivity	Cellular (3G, LTE/4G) <sup>2</sup>
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

<sup>1</sup>When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.

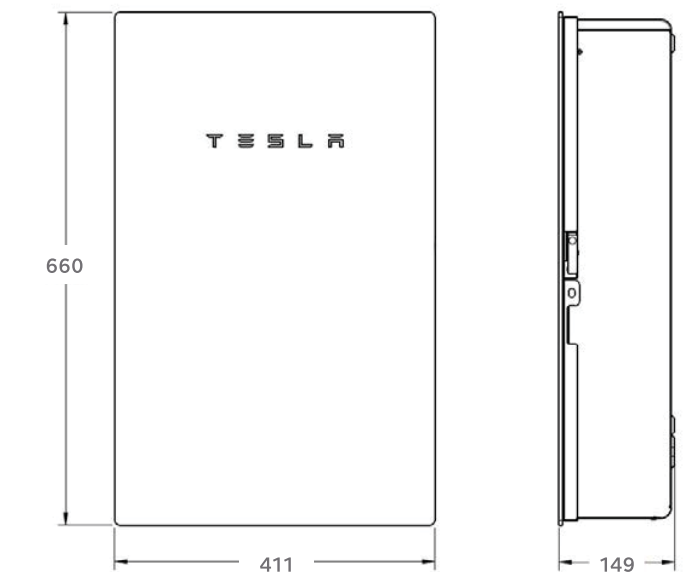
<sup>2</sup>The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

### 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

### MECHANICAL SPECIFICATIONS

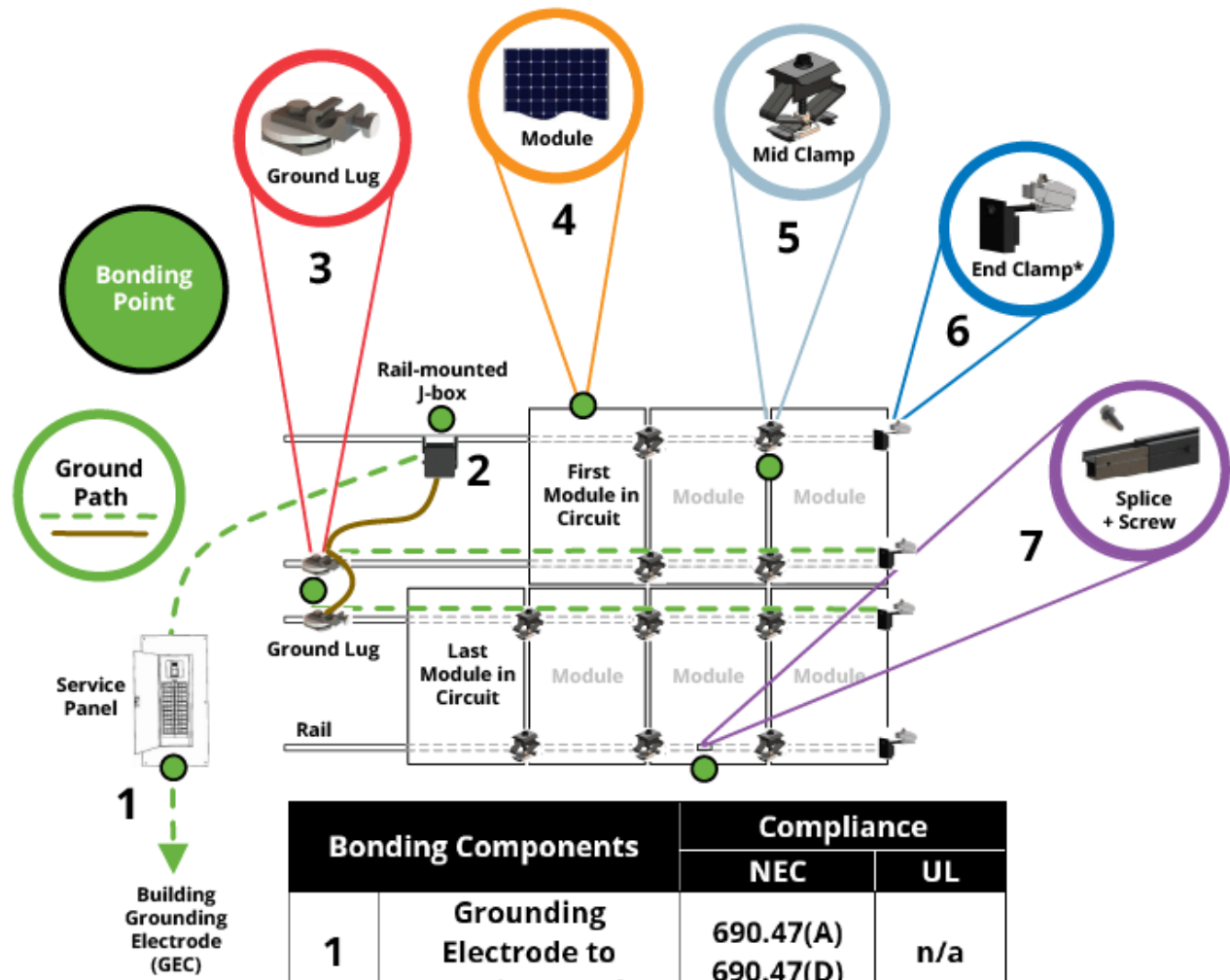
Dimensions	660 mm x 411 mm x 149 mm (26 in x 16 in x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



### ENVIRONMENTAL SPECIFICATIONS

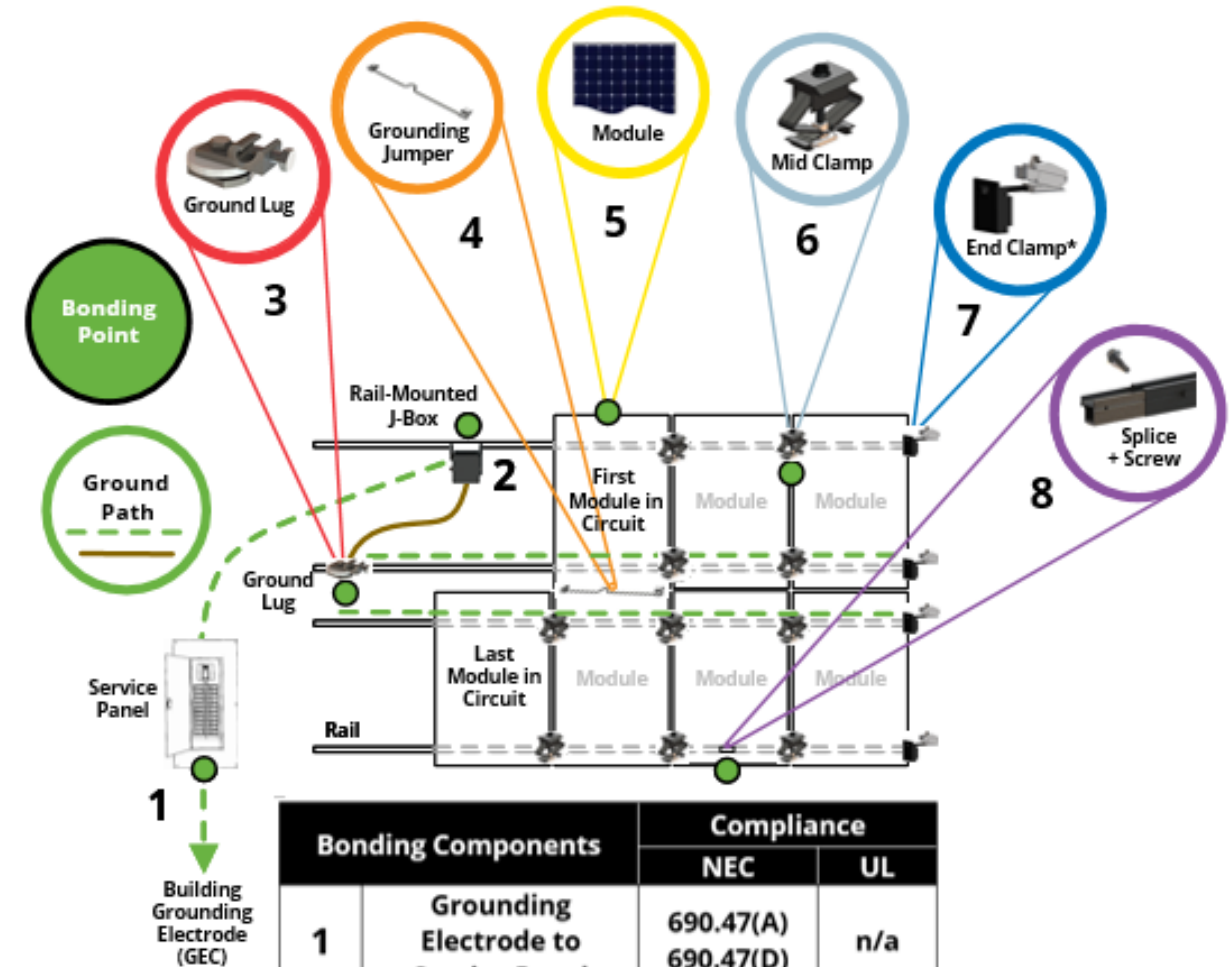
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

## SunPower Universal InvisiMount™ Ground Path and Compliance



Bonding Components	Compliance	
	NEC	UL
1 Grounding Electrode to Service Panel	690.47(A) 690.47(D)	n/a
2 Service Panel to Ground Wire	690.43(C)	1741
3 Ground Wire to Ground Lug to Rail	690.43(C)	2703
4 Module Frame	n/a	1703
5 Rail to Mid Clamp to Module Frame	690.43(A) 690.43(C) 690.43(D)	2703
6 End Clamp to Rail* *Note that end clamp does not bond module to rail; mid clamp bonds module to rail.	690.43(A) 690.43(C) 690.43(D)	2703
7 Rail to Splice	690.43(A) 690.43(C) 690.43(D)	2703

## SunPower Universal InvisiMount™ with Grounding Jumper Ground Path and Compliance



Bonding Components	Compliance	
	NEC	UL
1 Grounding Electrode to Service Panel	690.47(A) 690.47(D)	n/a
2 Service Panel to Ground Wire	690.43(C)	1741
3 Ground Wire to Ground Lug to Rail	690.43(C)	2703
4 Module Frame to Module Frame	690.43(C)	2703
5 Module Frame	n/a	1703
6 Rail to Mid Clamp to Module Frame	690.43(A) 690.43(C) 690.43(D)	2703
7 End Clamp to Rail* *Note that end clamp does not bond module to rail; mid clamp bonds module to rail.	690.43(A) 690.43(C) 690.43(D)	2703
8 Rail to Splice	690.43(A) 690.43(C) 690.43(D)	2703