Town of Erwin

Zoning Application & Permit

Planning & Inspections Department

Permit # 24-0174

Rev Jan2013

Each application should be submitted with an attached plot/site plan with the proposed use/structure showing lot shape, existing and proposed buildings, parking and loading areas, access drives and front, rear, and side yard dimensions.

Name of Applicant	Chad Preece	Property Owner	David Allison
Home Address	4801 Freidrich Ln, Ste 100	Home Address	81 Chicora Club Dr
City, State, Zip	Austin, TX 78744	City, State, Zip	Dunn, NC 28334
Telephone	512-766-5765	Telephone	910-261-9553, 910-766-7059
Email	permitting@freedomsolarpower.com	Email	elitelotus@earthlink.net

Address of Proposed Property	81 Chicora Club Dr // Dunn, NC 28334		
Parcel Identification Number(s) (PIN)	060596 0278	Estimated Project Cost	$16,567
What is the applicant requesting to build / what is the proposed use of the subject property? Be specific.	Installation of 1 Tesla Powerwall to an already existing PV, roof-mounted solar system		
Description of any proposed improvements to the building or property	N/A		
What was the Previous Use of the subject property?	Residential		
Does the Property Access DOT road?	Unusre		
Number of dwelling / structures on the property already	1		
Property / Parcel Size	0.55 acres		
MUST circle one that applies to property	Existing/Proposed Septic System **Or** Existing/Proposed County/City Sewer		

Owner/Applicant Must Read and Sign

The undersigned property owner, or duly authorized agent/representative thereof certifies that this application and the forgoing answers, statements, and other information herewith submitted are in all respects true and correct to the best of their knowledge and belief. The undersigning party understands that any incorrect information submitted may result in the revocation of this application. Upon issuance of this permit, the undersigning party agrees to conform to all applicable town ordinances, zoning regulations, and the laws of the State of North Carolina regulating such work and to the specifications of plans herein submitted. The undersigning party authorizes the Town of Erwin to review this request and conduct a site inspection to ensure compliance to this application as approved.

Chad Preece	Chad Preece	03/01/2024
Print Name	Signature of Owner or Representative	Date

For Office Use

Zoning District	M-1D	Existing Nonconforming Uses or Features	NA	
Front Yard Setback	35 Ft	Other Permits Required	__Conditional Use ✓Building __Fire Marshal __Other	
Side Yard Setback	10 Ft	Zoning Permit Status	✓Approved ___Denied	
Rear Yard Setback	35 Ft	Fee Paid: $25	Date Paid:	Staff Initials:

Comments	Building permits from Harnett Co.
Signature of Town Representative:	Date Approved/Denied: 3/4/2024

SCOPE OF WORK

TO INSTALL A SOLAR PHOTOVOLTAIC (PV) SYSTEM AT THE ALLISON RESIDENCE, LOCATED AT 81 CHICORA CLUB DRIVE, DUNN, NORTH CAROLINA.
THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT.
THE PV SYSTEM DOES INCLUDE STORAGE BATTERIES.

EXISTING SYSTEM RATING

21.750 kW DC STC
19.200 kW AC

EXISTING EQUIPMENT SUMMARY

(50) SUNPOWER SPR-M435-H-AC PV MODULES
(50) TYPE H MODULE-INTEGRATED MICRO-INVERTERS: ENPHASE IQ7HS [240V] PV INVERTERS
(387) (36 X 10.75') LINEAR FEET SUNPOWER INVISIMOUNT

NEW EQUIPMENT SUMMARY

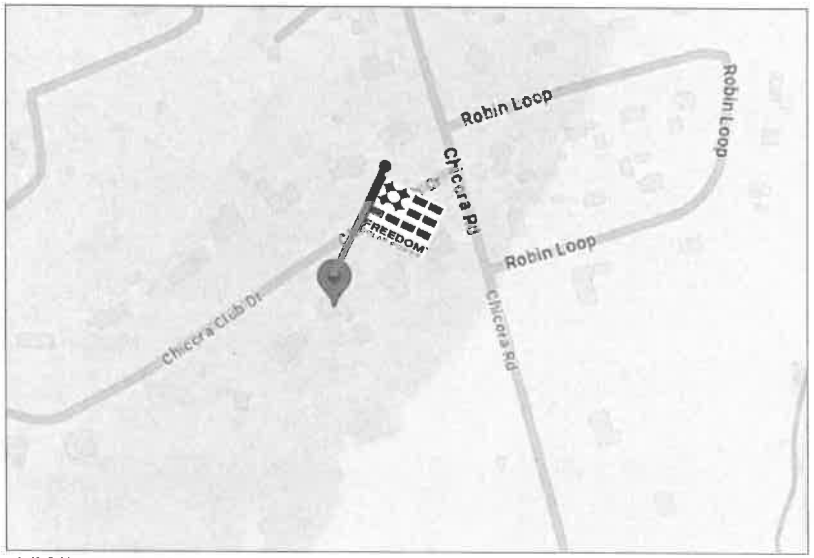
(01) TESLA POWERWALL 2.0 BATTERY

SHEET INDEX

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 SOLAR POWER

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

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

PE STAMP

PROJECT NAME

DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

SHEET NAME

COVER

SHEET SIZE

ANSI B
11" x 17"

SHEET NUMBER

PV-0

LEAD ID: 113936

EXISTING CONSTRUCTION SUMMARY

(50)	(SUNPOWER SPR-M435-H-AC) SOLAR MODULES, 21.750 kW DC STC MODULE DIMENSIONS = 40.6" X 73.7" X 1.57"
(50)	ENPHASE IQ8M-72-M-US [240V] PV INVERTERS COMBINED INVERTER OUTPUT = 19.200 kW AC.
(387)	(36 X 10.75') LINEAR FEET SUNPOWER INVISIMOUNT
(132)	QUICKBOLT QB2 ROOF ATTACHMENTS
(01)	SUNPOWER MONITORING
(01)	TESLA ENERGY GATEWAY
(02)	TESLA POWERWALL 2.0 BATTERY
(01)	GENERATION PANEL

NEW CONSTRUCTION SUMMARY

(01)	TESLA POWERWALL 2.0 BATTERY

EXISTING SITE DETAILS

ROOF TYPE: ASPHALT SHINGLE
ARRAY #1 - TILT = 39°, AZIMUTH = 148°

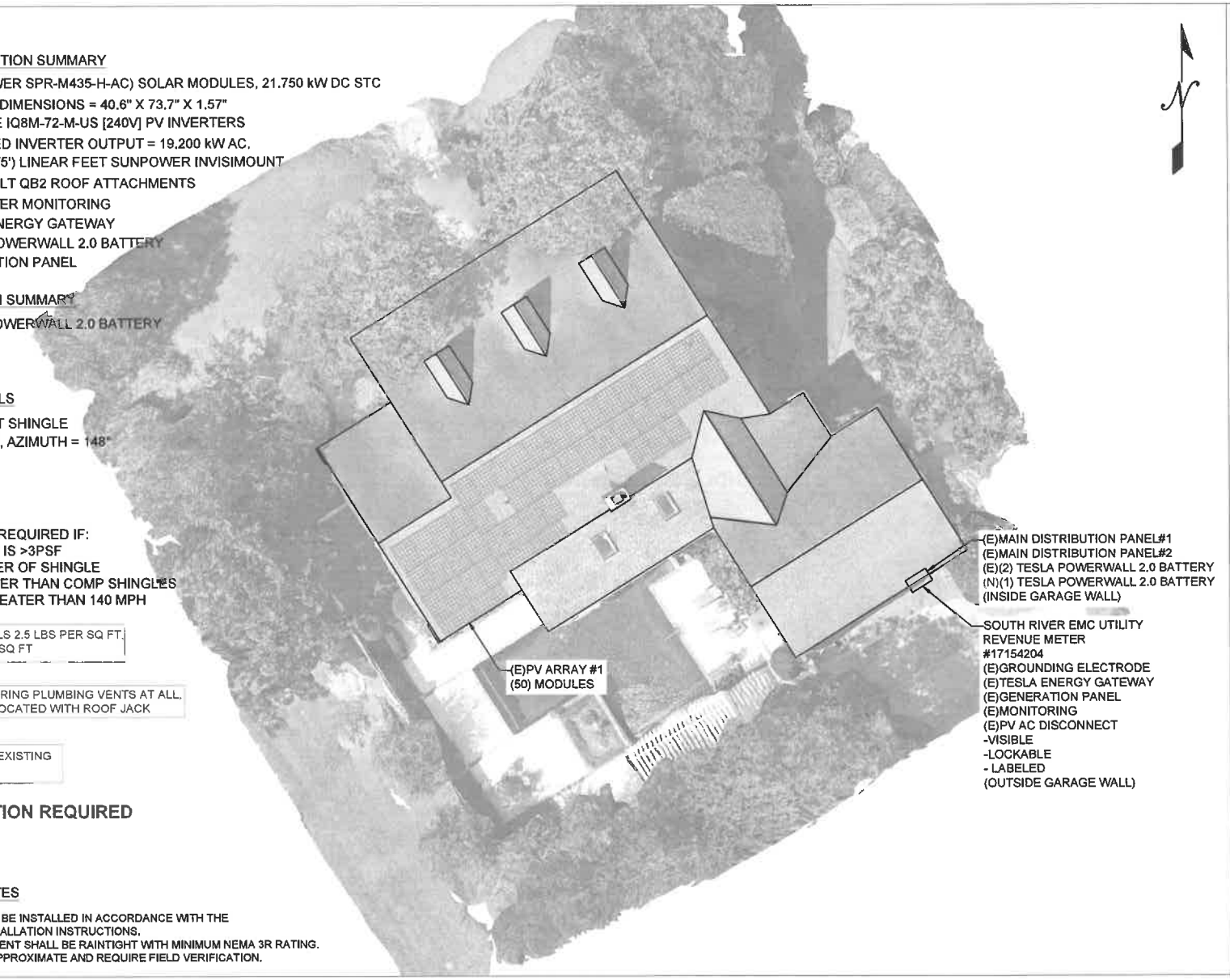
NOTE : PE STAMPS REQUIRED IF:
-WEIGHT OF ARRAY IS >3PSF
-MORE THAN 1-LAYER OF SHINGLE
-ROOF TYPE IS OTHER THAN COMP SHINGLES
-WIND SPEED IS GREATER THAN 140 MPH

-PANEL WEIGHT EQUALS 2.5 LBS PER SQ FT.
LESS THAN 3 LBS PER SQ FT

NO CUTTING AND COVERING PLUMBING VENTS AT ALL.
PVC PIPES CAN BE RELOCATED WITH ROOF JACK

PHASE 3, (1) PW WITH EXISTING
SOLAR INSTALLATION

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 RAINTIGHT WITH MINIMUM NEMA 3R RATING.
3.) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.

CONTRACTOR
FREEDOM SOLAR POWER
FREEDOM SOLAR LLC
4801 FREIDRICH LN, STE 100
AUSTIN, TX 78744
512-759-5313
TECL # 28621

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

PE STAMP

-

PROJECT NAME

DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

SHEET NAME

SITE MAP & PV LAYOUT

SHEET SIZE

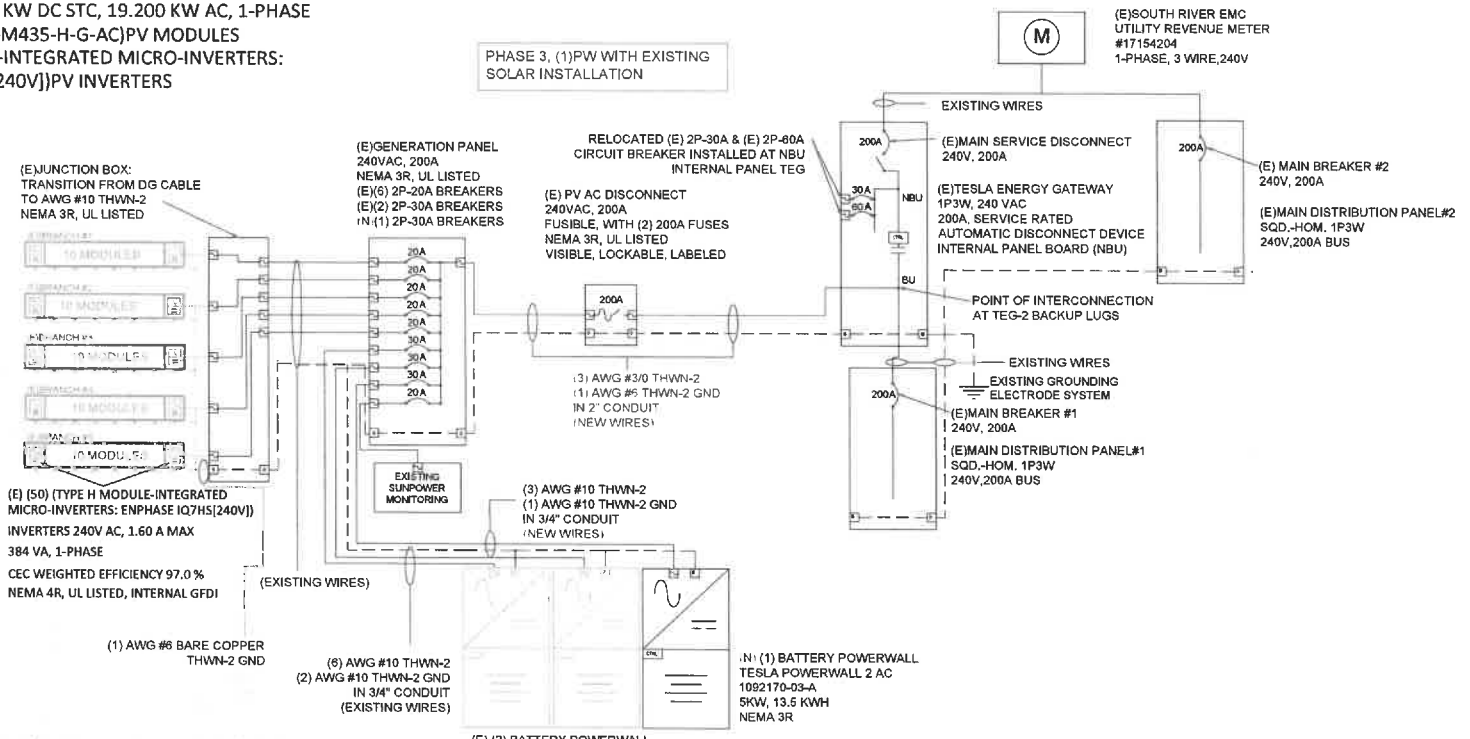
ANSI B
11" x 17"

SHEET NUMBER

PV-1

(E) SOLAR ARRAY -21.750 KW DC STC, 19.200 KW AC, 1-PHASE
(E) (50) (SUNPOWER SPR-M435-H-G-AC)PV MODULES
(E) (50) (TYPE H MODULE-INTEGRATED MICRO-INVERTERS:
ENPHASE IQ7HS[240V])PV INVERTERS

PHASE 3, (1)PW WITH EXISTING SOLAR INSTALLATION



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 ACESSORIES 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 36" 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.

EXISTING & NEW CALCULATIONS FOR CURRENT CARRYING CONDUCTORS

INVERTER OUTPUT WIRE AMPACITY CALCULATION
[NEC 690.8(A)(3)]:(E) 1.60A PER INVERTER
TYPE H MODULE-INTEGRATED MICRO-INVERTERS: ENPHASE IQ7HS[240V]
MAXIMUM INVERTER BRANCH CURRENT = (10)(1.60A) = 16.00A
CONTINUOUS USE.
#10 WIRE 75°C DERATED AMPACITY = (0.80)(35.0A) = 28.00A
28.00A > 16.00A
CONDITIONS OF USE:
#10 WIRE 90°C DERATED AMPACITY = (0.91)(0.50)(40.0A) = 18.20A
18.20A > 16.00A

(E)GENERATION PANEL OUTPUT WIRE AMPACITY CALCULATION
[NEC 690.8(A)(3)]: (E)1.60A PER INVERTER
TYPE H MODULE-INTEGRATED MICRO-INVERTERS: ENPHASE IQ7HS[240V]
24.0A PER (E)&(N)TESLA POWERWALL 2.0 BATTERY INVERTER
(E & N)COMBINED CURRENT = (50)(1.60A)+(3 x 24.00A) = 152.00A
CONTINUOUS USE.
#3/0 WIRE 75°C DERATED AMPACITY = (0.80)(200A) = 160.00A
160.00A > 152.00A
CONDITIONS OF USE:
#3/0 WIRE 90°C DERATED AMPACITY = (0.91)(225A) =204.75A
204.75A > 152.00A

EXISTING & NEW CALCULATIONS FOR OVERCURRENT DEVICES

INVERTER BRANCH AC CURRENT CALCULATION
[NEC 690.8(A)(3)]: (E)1.60A PER INVERTER
TYPE H MODULE-INTEGRATED MICRO-INVERTERS: ENPHASE IQ7HS[240V]
MAXIMUM BRANCH INVERTER CURRENT = (10)(1.60A) = 16.00A
MINIMUM OCPD = (16.00A)(1.25) = 20.00A
USE 2P-20A BREAKERS IN (E)GENERATION PANEL FOR INVERTER BRANCH OCPD

SYSTEM AC CURRENT CALCULATION
[NEC 690.8(A)(1)(c)]:(E) 1.60A PER INVERTER
TYPE H MODULE-INTEGRATED MICRO-INVERTERS: ENPHASE IQ7HS[240V]
24.0A PER (E)&(N)TESLA POWERWALL 2.0 BATTERY INVERTER
(E & N)COMBINED CURRENT = (50)(1.60A)+(3 x 24.00A) = 152.00A
MINIMUM OCPD = (152.00A)(1.25) = 190.00A

USE (E)(2) 200A FUSES IN PV AC DISCONNECT FOR SYSTEM OCPD
AWG #3/0 CONDUCTORS ARE ADEQUATELY PROTECTED BY (E)(2) 200A FUSES

NEW CALCULATION FOR OVERCURRENT POWERWALL DEVICES

TESLA POWERWALL OUTPUT CURRENT CALCULATION
24.0A PER TESLA POWERWALL 2.0 BATTERY INVERTER
COMBINED CURRENT = (1)(24.0A) = 24.0A
MINIMUM OCPD = (24.0A)(1.25) = 30.0A
USE (E)(2) 2P-30A BREAKER IN GENERATION PANEL FOR POWERWALL OCPD
USE (N)(1) 2P-30A BREAKER IN GENERATION PANEL FOR POWERWALL OCPD

CONTRACTOR
FREEDOM SOLAR POWER
FREEDOM SOLAR LLC
4801 FREIDRICH LN, STE 100
AUSTIN, TX 78744
512-759-6313
TECL # 28621

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

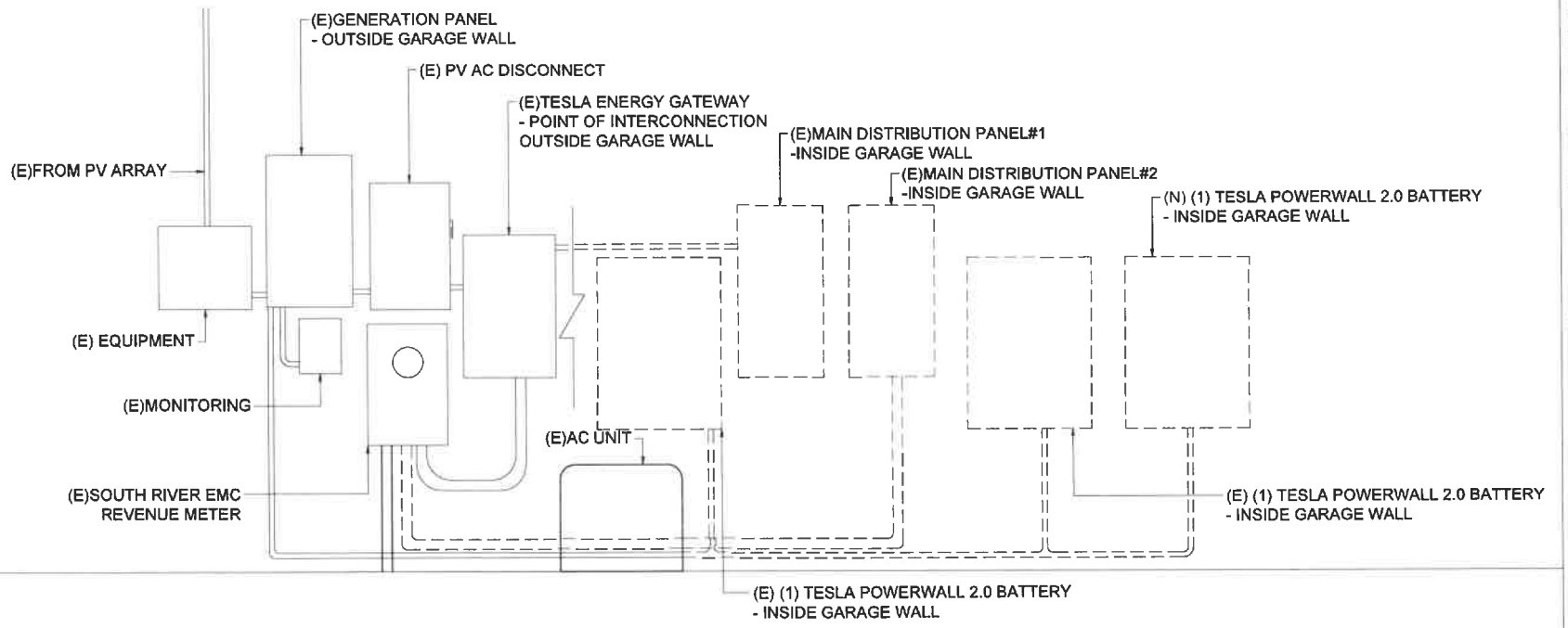
PE STAMP

PROJECT NAME
DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

SHEET NAME
ELECTRICAL DIAGRAM

SHEET SIZE
ANSI B
11" x 17"

SHEET NUMBER
PV-2



CONTRACTOR
FREEDOM
SOLAR POWER
FREEDOM SOLAR LLC
4801 FREIDRICH LN, STE 100
AUSTIN, TX 78744
512-750-8313
TECL # 28621

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

PE STAMP

PROJECT NAME

DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

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

PV SYSTEM DISCONNECT

REQ'D BY: NEC 690.13(B) — A

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) — B

APPLY TO:
PV DISCONNECT

WARNING: PHOTOVOLTAIC POWER SOURCE

REQ'D BY: NEC 690.31(G)(3) — C

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) — D

APPLY TO:
DISTRIBUTION EQUIPMENT ADJACENT TO BACK-FED BREAKER

2" ADDRESS NUMBERS

REQ' BY: AHJ — E

APPLY TO:
REVENUE METER SOCKET (IF APPLICABLE)

REVENUE METER

REQ'D BY: AHJ — F

APPLY TO:
REVENUE METER SOCKET (IF APPLICABLE)

MONITORING

REQ'D BY: FREEDOM SOLAR — G

APPLY TO:
MONITORING DEVICE ENCLOSURE

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

REQ'D BY: NEC 690.56(D)(2) — H

APPLY TO:
PV DISCONNECT

PHOTOVOLTAIC SYSTEM
AC DISCONNECT
OPERATING CURRENT: 152.00A
OPERATING VOLTAGE: 240 VAC

REQ'D BY: 690.56(1)(a) — I

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: NEC 690.56(C)(1)(a) — J

APPLY TO:
UTILITY AC DISCONNECT

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 — K

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

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

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

PE STAMP

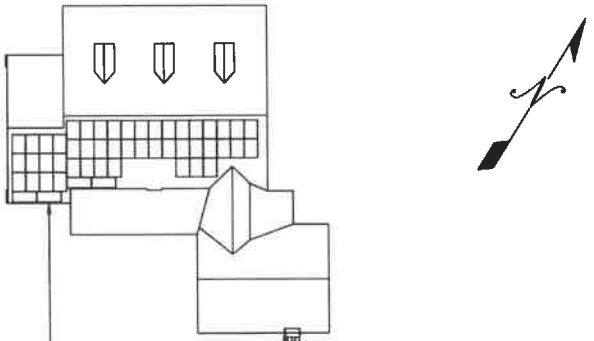
PROJECT NAME
DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

SHEET NAME
SYSTEM LABELING DETAIL

SHEET SIZE
ANSI B
11" x 17"

SHEET NUMBER
PV-4

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



(E)SOLAR ARRAYS
(ON ROOF)

(E)TESLA ENERGY GATEWAY
(OUTSIDE GARAGE WALL)
(E)SOUTH RIVER EMC REVENUE METER
(E)PV AC DISCONNECT
(E)GENERATION PANEL
(OUTSIDE GARAGE WALL)
(E)MAIN DISTRIBUTION PANEL#1
(E)MAIN DISTRIBUTION PANEL#2
(E)(2) TESLA POWERWALL 2.0 BATTERY
(N)(1)TESLA POWERWALL 2.0 BATTERY
(INSIDE GARAGE WALL)

QUESTIONS, CALL:
800-504-2337
www.freedomsolarpower.com

FREEDOM SOLAR POWER
81 CHICORA CLUB DRIVE
PROJECT ID: 113936

CONTRACTOR

FREEDOM SOLAR POWER

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

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

PE STAMP

PROJECT NAME

DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

SHEET NAME
SITE DIRECTORY PLACARD

SHEET SIZE
ANSI B
11" x 17"

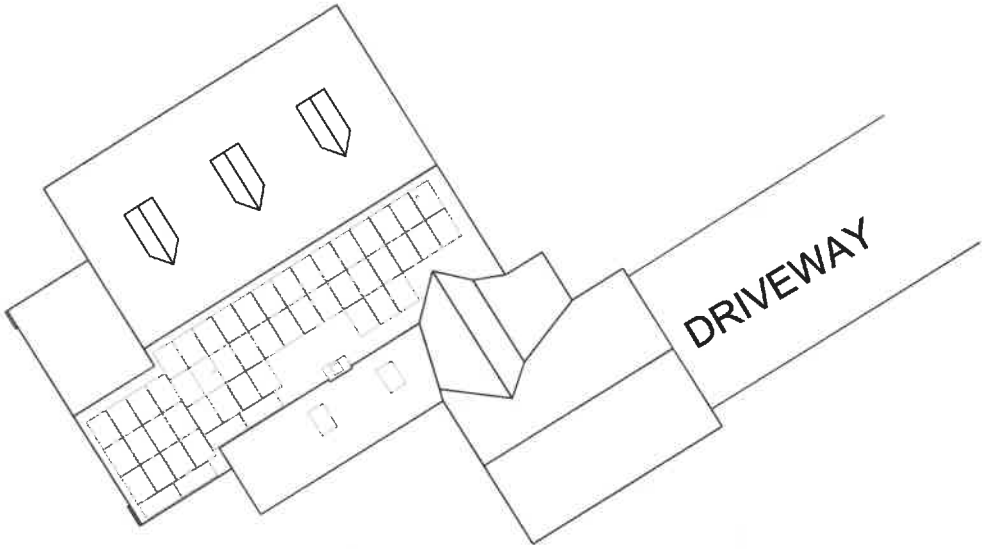
SHEET NUMBER
PV-5

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. _____

COMPETENT PERSON: _____ **JOB START DATE:** _____

CONTRACTOR

FREEDOM SOLAR POWER

FREEDOM SOLAR LLC
4801 FREIDRICH LN, STE 100
AUSTIN, TX 78744
512-759-8313
TECL # 28821

REVISIONS

DESCRIPTION	DATE	REV
DESIGN PACKET	02/29/2024	-

PE STAMP

PROJECT NAME

DAVID ALLISON
81 CHICORA CLUB DRIVE
DUNN, NORTH CAROLINA, 28334
(910) 261-9553, (910) 766-7059

SHEET NAME

SAFETY PLAN

SHEET SIZE

ANSI B
11" x 17"

SHEET NUMBER

PV-6

POWERWALL

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

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

PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Total Energy	14 kWh
Usable Energy	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10 s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/- 1.0 adjustable
Power Factor Range (full-rated power)	+/- 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency[2,3]	90%
Warranty	10 years

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

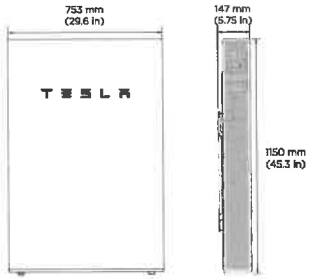
COMPLIANCE INFORMATION

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

MECHANICAL SPECIFICATIONS

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

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



ENVIRONMENTAL SPECIFICATIONS

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

POWERWALL
Backup Gateway 2

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

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

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

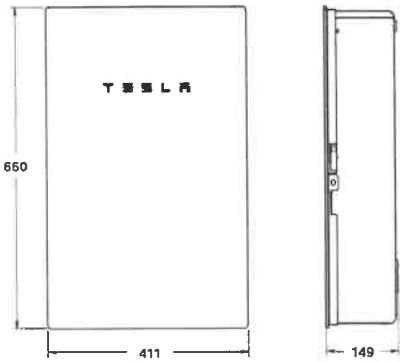
PERFORMANCE SPECIFICATIONS

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

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

MECHANICAL SPECIFICATIONS

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



COMPLIANCE INFORMATION

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

ENVIRONMENTAL SPECIFICATIONS

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