

# BUILDING DIVISION INFORMATION SHEET

## EV Charger Streamlined Permitting



### GENERAL PERMITTING REQUIREMENTS

1. Provide site plan of project location and identify the proposed location of the Electric Vehicle Supply Equipment.
2. Demonstrate physical protection of Electric Vehicle Supply Equipment (CEC 110.27).
3. Provide electrical load calculations of existing and/or proposed electrical system, including EVSE model number and full load amperage.
4. Provide electrical single line diagram of proposed work (see example on Page 4).

### ELECTRICAL INSTALLATION REQUIREMENTS

Electric Vehicles – an automotive type vehicle for on-road use, such as passenger automotive, buses, van, neighborhood electric vehicles primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electrical current (CEC Art. 625).

**LOCATION IDENTIFICATION:** Identify the equipment installation location.

**INDOOR SITES:** Installation of Electric Vehicle Supply Equipment shall comply with California Electrical Code Article 625.

**Equipment Height:** The coupling means of the electric vehicle supply equipment shall be stored at a height of not less than 450mm (18 inches) above the finished floor (CEC Art 625.50).

**FASTEN EQUIPMENT:** Electric Vehicle Supply Equipment may be permanently connected and fastened in place (CEC Art. 625.17).

Electric Vehicle Supply Equipment is provided with an interlock that de-energizes the electric vehicle connector and its cable whenever the electric connector is uncoupled from the electric vehicle (CEC Art. 625.18).

**EQUIPMENT PROTECTION:** Electrical Vehicle Supply Equipment operating at 50 volts or more shall be guarded against accidental contact by approved enclosures (CEC Art. 625.10(C)).

**DISCONNECT:** When equipment is rated more than 60 amps or more than 150 volts to ground, the disconnecting means shall be provided and installed in a readily accessible location (CEC Art. 625.42).

**SYSTEM CERTIFICATION:** Verify the equipment is listed by a nationally recognized testing laboratory (as recognized by the Authority Having Jurisdiction (AHJ)).

## Level 2 Electric Vehicle Charger Service Load Calculator

INSTRUCTIONS: Review the list of electrical loads in the table below and check all that exist in your home (do not forget to include the proposed Level 2 charger). For each item checked, fill in the corresponding "Watts Used" (refer to the "Typical Usage" column for wattage information). Add up all of the numbers that are written in the "Watts Used" column and write that number in the "TOTAL WATTS USED" box at the bottom of the table. Then go to the next page to determine if your existing electric service will accommodate the new loads.

Check all Applicable (✓):

Description of Load	Typical Usage	Watts Used
<b><u>General Lighting and Receptacle Outlet Circuits</u></b>		
<input type="checkbox"/> Multiply the square footage of house x 3	3 watts/sq. ft.	_____
<b><u>Kitchen Circuits</u></b>		
<input type="checkbox"/> Kitchen circuits	3,000 watts	_____
<input type="checkbox"/> Electric oven	2,000 watts	_____
<input type="checkbox"/> Electric stove top	5,000 watts	_____
<input type="checkbox"/> Microwave	1,500 watts	_____
<input type="checkbox"/> Garbage disposal under kitchen sink	1,000 watts	_____
<input type="checkbox"/> Automatic dish washer	3,500 watts	_____
<input type="checkbox"/> Garbage compactor	1,000 watts	_____
<input type="checkbox"/> Instantaneous hot water at sink	1,500 watts	_____
<b><u>Laundry Circuits</u></b>		
<input type="checkbox"/> Laundry circuit	1,500 watts	_____
<input type="checkbox"/> Electric clothes dryer	4,500 watts	_____
<b><u>Heating and Air Conditioning Circuits</u></b>		
<input type="checkbox"/> Central heating and air conditioning	6,000 watts	_____
<input type="checkbox"/> Window mounted air conditioning	1,000 watts	_____
<input type="checkbox"/> Whole house or attic fan	500 watts	_____
<input type="checkbox"/> Central electric furnace	8,000 watts	_____
<input type="checkbox"/> Evaporative cooler	500 watts	_____
<b><u>Other Electric Loads</u></b>		
<input type="checkbox"/> Electric water heater (storage type)	4,000 watts	_____
<input type="checkbox"/> Electric tank-less water heater	15,000 watts	_____
<input type="checkbox"/> Swimming pool heater	3,500 watts	_____
<input type="checkbox"/> Other (describe) _____	_____ watts	_____
<input type="checkbox"/> Other (describe) _____	_____ watts	_____
<input type="checkbox"/> Other (describe) _____	_____ watts	_____
<b>Electric Vehicle Charger Circuit</b>		
<input type="checkbox"/> Level 2 electric vehicle charger wattage rating	_____ watts	_____
		<b>TOTAL WATTS USED</b> _____

**INSTRUCTIONS:** Using the “TOTAL WATTS USED” number from previous page, check the appropriate line in column 1 and follow that line across to determine the minimum required size of the electrical service panel shown in column 3. In column 4, write in the size of your existing service panel (main breaker size). If your existing service panel (column 4) is smaller than the minimum required size of the existing service (column 3), then you will need to install a new upgraded electrical service panel to handle the added electrical load from the proposed Level 2 charger.

The table below is based on CEC 220.83(A), 230.42 and Annex D. 1 2 3 4.

1 Check (✓) the Appropriate Line of Total Watts Used from Previous Page	2 Minimum Required Size of Existing 240 Volt Electrical Service Panels (Main Service Breaker Size)	3 Identify Your Existing Main Service Breaker (Amps)*
_____ Up to 48,000	100 Amps	_____
_____ 48,001 to 63,000	125 Amp	_____
_____ 63,001 to 78,000	150 Amps	_____
_____ 78,001 to 108,000	200 Amps	_____
_____ 108,001 to 123,000	225 Amps	_____

\*Note that the size of your existing service (column 3) MUST be equal to or larger than the Minimum Required Size (column 2) or a new larger electrical service panel will need to be installed in order to satisfy the electrical load demand of the EV charger.

**STATEMENT OF COMPLIANCE**

By my signature, I attest that the information provided is true and accurate.

Job Address: \_\_\_\_\_  
(Print job address)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Signature of applicant)

In addition to this document, you will also need to provide a copy of the manufacturer’s installation literature and specifications for the Level 2 charger you are installing.

*This is a voluntary compliance alternative and you may wish to hire a qualified individual of company to perform a thorough evaluation of your electrical service capacity in lieu of this alternative methodology. Users of this methodology and these forms are advised to seek professional assistance in determining the electrical capacity of a service panel.*

## SAMPLE PLAN

The following sample electrical plan, information and project description are illustrative of what is needed to plan check and permit a typical residential installation for a Level 2 charger. Other types of installations may also use this as a guide, but should include other pertinent information such as distance to property lines, location or placement on property, etc.

### SAMPLE ELECTRICAL PLAN FOR LEVEL 2 ELECTRIC VEHICLE CHARGER CIRCUIT

