



SUBMITTAL AND CODE REQUIREMENTS FOR:

# ELECTRIC VEHICLE CHARGING STATION

## **PERMIT INFORMATION:**

Electric vehicle charging stations (EVCS) must be installed in accordance with manufacturer's installation instructions and in accordance with the 2016 California Electrical Code (CEC) based on the National Electrical Code (NEC). Wiring methods in Chapter 3 of the CEC must be applied to each installation. The EVCS must be listed by a nationally recognized testing laboratory (NRTL). *NOTE: This policy applies to EVCS equipment and receptacle outlets intended for use with cord and plug type vehicle charging systems (e.g. Tesla, etc.).*

Governor's *Plug-In Electric Vehicles: Universal Charging Access Guidelines* may be incorporated in the design and layout of charging stations, however it is not mandatory. Check the State's website of updates to guidelines. The Guidelines are available at: [http://opr.ca.gov/docs/PEV\\_Access\\_Guidelines.pdf](http://opr.ca.gov/docs/PEV_Access_Guidelines.pdf).

## **APPLICABLE BUILDING CODES:**

All work shall comply with the following codes:

2016 California Fire Code	2016 California Building Code
2016 California Building Code	2016 California Existing Building Code
2016 California Existing Building Code	2016 California Electrical Code
2016 California Mechanical Code	2016 California Plumbing Code
2016 California Green Building Code	2016 California Residential Code
2016 Building Energy Efficiency Standards	

## **THINGS TO KNOW:**

- A Building Permit may be issued only to a State of California Licensed Contractor or the Homeowner. If the Homeowner hires workers, State Law requires the Homeowner obtain Worker's Compensation Insurance.
- When a permit is required for an alteration, repair or addition exceeding *one thousand dollars (\$1,000.00)* to an existing dwelling unit that has an attached garage or fuel-burning appliance, the dwelling unit shall be provided with a Smoke Alarm and Carbon Monoxide Alarm in accordance with the currently adopted code.
- IMPORTANT NOTE:** Verification shall be made that the existing main service panel and all panels in the electrical system used for the EVCS are safe and free of electrical hazards. If electrical violations or hazards are present the Owner/Contractor will be required to have a licensed contractor correct the violations and/or hazards. Damaged equipment must be replaced or repaired and will require permits and inspections.

## **PLAN SUBMITTAL REQUIREMENTS:**

Complete sets of building plans/reports and documents are required for the plan check of the proposed construction. All dimensions and scales shall be clearly indicated on the plans.

## **FORMS REQUIRED AT SUBMITTAL:**

- Building Permit Application
- Owner/Builder Form, *if applicable*

### **SUBMITTAL REQUIREMENTS:**

- Three (3) Sets of Floor Plans, 8 ½” x 11” minimum size
- Two (2) Sets of the Manufacturer’s Installation Instructions.
- Two (2) Copies of the Property’s Electrical Service Load Calculations per CEC Article 220. Make sure to include the EV Unit in the Calculation.**

*The following are guidelines for preparation and submittal of your plans. Specific plan requirements will depend largely upon the extent, nature and complexity of the work to be done.*

- Property Information - Address of Property and Name, Address, Contact Phone Number of Property Owner; Applicable Codes; Occupancy and Type of Construction and Description and Scope of Work.
- Site plans showing the location of the building, street, existing trees, all charging stations, electric service, conduit location and disconnects.
- A single line diagram must be included in the submittal with the following information:
  - Conductor types and sizes
  - Size of the over current device (circuit breaker) supplying the EVCS
  - Conduit size, type and location
  - The manufacturer and model of the charging stations
  - The size of the main electric panel, distribution panels (sub panels) and disconnects.
  - Type charging station (Level 1,2, or 3)
- Electrical Load Calculation Sheet: Provide size of the existing electrical panel, existing load on the panel, and proposed load/circuits from the electric vehicle charging system in order to determine if there is adequate capacity in the existing panel. (CEC 220).
- A lockable disconnect is required in a readily accessible location (CEC 625.42) for EV charging stations > 60A or 150V to ground. A phenolic plaque with red background and white letter stating “Emergency Power Off – Electric Vehicle Charging Station” must be installed on each disconnect.
- Attachment detail for post/bollard installations where protection of electrical equipment is required.
- SECOND SERVICES MAY ONLY BE APPLIED FOR WITH SPECIAL PERMISSION FROM THE CITY AND FROM THE UTILITY PROVIDER.**

### **GENERAL REQUIREMENTS:**

- Verification that the existing main service panel and all panels in the electrical system used for the EVCS are safe and free of electrical hazards. If electrical violations or hazards are present the Owner/Contractor will be required have to have a licensed contractor correct the violations and/or hazards. Damaged equipment must be replaced or repaired and will require permits and inspections.
- The electric vehicle charging system shall be listed by a nationally recognized testing laboratory (i.e., UL) in compliance with UL 2202 “Standard for Electric Vehicle (EV) Charging System Equipment.” (CEC 90.7)
- The electric vehicle charging system shall be installed in accordance with manufacturer’s guideline and shall be suitable for the environment (indoor/outdoor).
- If the electric vehicle charging equipment is located in an area subject to vehicular damage, an adequate barrier must be installed (e.g. 4” diameter steel pipe filled with concrete, a minimum of 40” above the finished floor/grade, installed in a footing measuring 12” in diameter and 3’ deep). (CEC 110.27)

- If a separate meter will be installed for the electric vehicle charger, it shall be 48” and 66” above the ground. Additionally, if a single mast will continue to be used to serve the meters, ensure that the service entrance conductors shall be sized for the sum of the two meters, based on the table below (CEC Table 310.15(b)(7)(1) thru (4) and Chapter 9 Table 1):

<b>SERVICE ENTRANCE CONDUCTORS SIZE AND RATING</b>			
<b>Service or Feeder Rating</b>	<b>Copper Conductors</b>	<b>Aluminum or Copper-Clad Aluminum</b>	<b>Minimum Conduit Size</b>
100 AMPS	#4 AWG	#2 AWG	1 ¼ Inch
125 AMPS	#2 AWG	#1/0 AWG	1 ¼ Inch
150 AMPS	#1 AWG	#2/0 AWG	1 ¼ Inch
200 AMPS	#2/0 AWG	#4/0 AWG	1 ½ Inch

**PLAN CHECK PROCESS:**

- Plans for Electric Vehicle Charging Stations can generally be performed over the counter.

**FEES:** *Other fees may apply; refer to the currently adopted fee schedule for further fee information.*

- Permit Application Fee
- Plan Check Fee – ½ hour Plan Check Fee
- Electrical Permit Fee
- Document Imaging Fee
- Community Planning Fee (CPF) – 15% of Permit and Plan Check Fees

**INSPECTIONS:**

- ONE** Final inspection is required after all the work has been completed. **PROPERTY OWNER** shall complete and give to the inspector at final, the “Affidavit Self-Certification for Compliance of Smoke and Carbon Monoxide Detectors” form, verifying that they have installed the required smoke and carbon monoxide detectors in their home/property.

**GENERAL CONTACT INFORMATION:**

**DEVELOPMENT SERVICES CENTER, 39550 Liberty Street, Fremont, CA 94538 - (510) 494-4443**

Building and Safety	(510) 494-4400	Plans & Permits Division	(510) 494-4460
Code Enforcement	(510) 494-4430	Planning Division	(510) 494-4440
Inspection Scheduling	(510) 494-4885	Zoning Information Line	(510) 494-4455