



CITY OF FOSTER CITY

Community Development Department

Building Division

610 Foster City Blvd, Foster City, CA 94404

Phone: 650-286-3227 | Email: building@fostercity.org

SUBMITTAL REQUIREMENTS: EV CHARGE STATIONS

The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed appropriate.

EV Charging Systems must be installed in accordance with manufacturer's installation instructions and in accordance with current codes, California Electrical Code (CEC) & current California Building Code (CBC). Wiring methods in Chapter 3 of the CEC must be applied to each installation.

The EVSE must be listed by a nationally recognized testing laboratory (NRTL). A third party field evaluation would be required for any chargers not listed.

Please Note: Installing an Electric Vehicle (EV) charging system will require changes to building wiring and may also require upgrading the electric service main panel to meet the needs of this specialized equipment. Before installing charging equipment and associated infrastructure, talk to your EV manufacturer for information about what you need to charge your vehicle and what regulatory requirements there might be.

Submit four sets of drawings to the building and planning department.

- Complete the City of Foster City [building permit application form](#). Include job address, valuation of EVC including all labor and material costs, description of work, name, address, and contact information of the applicant, contractor and the owner.
- Complete manufacturer's installation instructions must accompany each submittal.

- Provide a job specific site plan showing the location of the building, street, all charging stations, electric service, disconnects and the existing premise wiring electrode. EVC, conduit and appurtenances shall not be installed on the exterior or residential buildings. Provide a detailed site plan showing where the charging unit is located within the parking garage.
- Provide a complete electrical three line drawing showing the main service, sub panels and disconnecting means as applicable, and proposed EV charging unit, include; size of overcurrent protection devices (in amperes) for main service, sub panels, disconnects and EV charger circuit supply, show conduit sizes and types, and conductor sizes and types.
- Include [load calculations](#) per CEC Article 220.
- As required by type of EVCS, installation mounting methods provide necessary structural details.
- If a service replacement or upgrade is to be part of the application this should be specified, and a separate permit will be required.

A three line diagram (submittal document provided on page three of this handout) must be included in the submittal with the following information:

- Wire size, insulation type, distance of the wires (include the equipment grounding conductor EGC)
- Size of the over current device (e.g. circuit breaker)
- Install disconnect in proper readily accessible location for EVCS. If additional service disconnects are installed, verify that they are grouped and do not exceed the maximum number of service disconnects.
- Conduit size, type and location

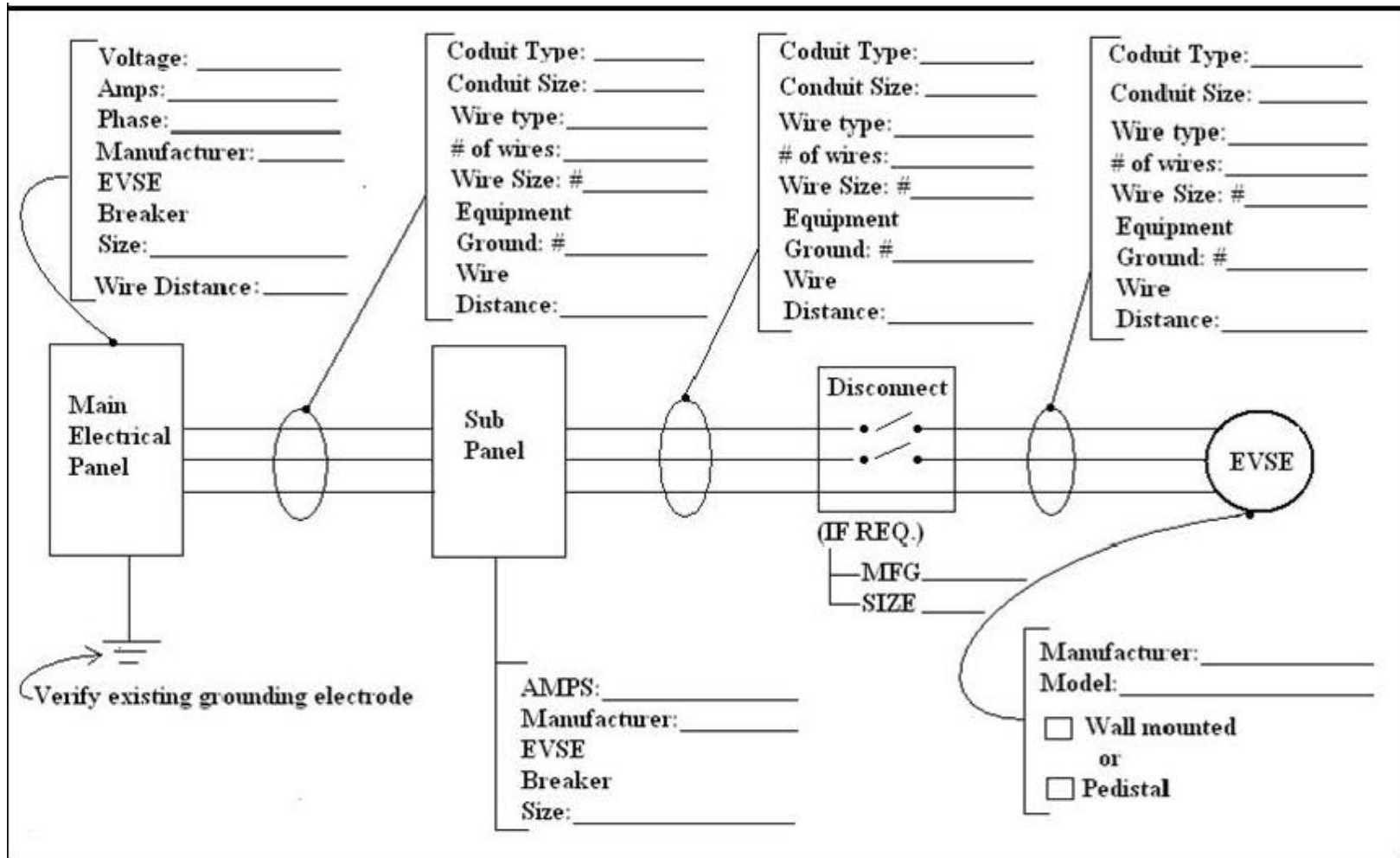
- The manufacturer and model of the charging stations
- The size of the main electric panel, distribution panels (sub panels) and disconnects.
- **Additionally**, the plans should indicate the following:
 - Number of chargers being installed.
 - Number of electric vehicles.
 - Is the charger level 1, 2 or 3 (see table below)?
 - For level 3 charge stations provide: voltage (V), current (A) and power (kVA).

Level	Voltage (V)	Maximum Current (A)	Frequency (Hz)	Power (kVA)
1	120	12	60	1.4
2	208 / 240	32	60	6.7 / 6.8
3	High Power, High Speed Charging – Defined by Manufacturer’s Requirements			

The above required information has been included, when applicable, with this submittal.

Applicant Signature: _____ Date: _____

City of Foster City - EV Three Line Diagram





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Residential Electrical Load Calculation Sheet

1. General Lighting: Table 220.12

_____ sq. ft. x 3 VA = _____ VA

Small Appliances: 220.52 (A)

1,500 VA x _____ Circuit(s) (Min. 2) = _____ VA

Laundry: 220.52 (B)

1,500 VA x 1 Circuit = _____ VA

Total Demand: _____ VA

Applying Demand Factors: Table 220.42

First 3,000 VA x 100% = _____ 3,000 VA

_____ x 35% = _____ VA

(Additional)

Total: _____ VA

2. Fixed Appliances 110V: 220.53

(It shall be permissible to apply a demand factor of 75% for 4+ appliances)

	(Min.)
Dishwasher	_____ (1,500) VA
Disposer	_____ (800) VA
Compactor	_____ (99) VA
Microwave	_____ (1,300) VA
Spa	_____ (12,000) VA
Refrigerator	_____ (400) VA
Freezer	_____ (800) VA
Attic Fan	_____ (1,600) VA
Insta-Hot	_____ VA
RV (20/30/50)	_____ VA
Other	_____ VA

Total: _____ VA x 75% = CDD - _____ VA

3. Fixed Appliances 220V: Table 220.54

Dryer (Min. 5,000 VA or Nameplate) _____ VA x 100% = _____ VA
Insta-Hot _____ VA x 100% = _____ VA
Steam Shower _____ VA x 100% = _____ VA
RV (20/30/50 amp) _____ VA x 100% = _____ VA
Other (Compressor, Welder, etc.) _____ VA x 100% = _____ VA

4. Cooking Equipment: Table 220.55

Col A _____ VA x 80% = _____ VA
Col B _____ VA x 75% = _____ VA
Col C _____ VA x 70% = _____ VA

Total: _____ VA

5. Heating or A/C: 220.60 (Non-Coincident Loads)

Heating Unit _____ VA x 100% = _____ VA
A/C Unit _____ VA x 100% = _____ VA
Heat Pump _____ VA x 100% = _____ VA

Largest Single Load: _____ VA

6. Largest Motor: 220.14 (C) = > 430.24 & 440.6 (from Sec. 5)

A/C Unit or Electric Dryer _____ VA x 25% = _____ VA

7. EV Charger: _____ VA x 1.25 (cont. duty) = _____ VA

(If connected using plug, calculate off breaker size. If hardwired, use charger maximum draw.)

Energy Management System: _____ Yes _____ No

8. Required Service Size:

Total Volt Amps = _____ VA
VA/240 = _____ Amps
Minimum Service Conductor Size # _____ Copper
Grounding Service Conductor Size # _____ Copper
Size of Existing Main Breaker _____ Amps