



ELECTRIC VEHICLE CHARGING (RESIDENTIAL)

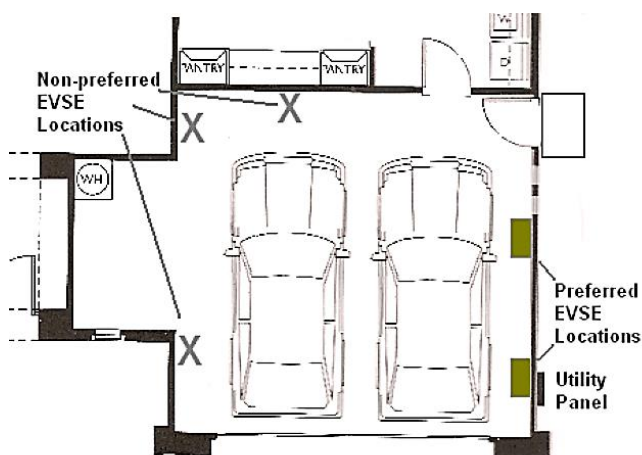
1. PERMIT INFORMATION:

- ☐ Installation of electric vehicle charging systems and outlets for vehicle charging requires an electrical permit. Additionally, a mechanical permit is required when the manufacturer's installation instructions require mechanical ventilation.
 - **Definition ~ EVSE.** *Electric Vehicle Supply Equipment* – The conductors, electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.
 - An online electric vehicle charging permit does not include replacement or upgrading of the existing electrical panel or service or installation of a second meter. It also does not include the mechanical permit, where one is required.
- ☐ A Building Permit may be issued only to the Building Owner or their Authorized Agent [CRC 105.1].
 - See also [Authorized Agent Sample Letter](#).
 - Where the Contractor is acting as the Owner's Authorized Agent, they must be a State of California Licensed Contractor with the proper license classification.
- ☐ If the work is performed by the Building Owner personally or by his/her workers and an inspection indicates the work cannot be completed satisfactorily, then a licensed contractor must perform the work.
- ☐ If the Building Owner hires workers, State Law requires the Building Owner to obtain Worker's Compensation Insurance. Proof of this insurance is required prior to inspection.
- ☐ If the property is regulated by a Homeowners Association, any exterior work must have approval of the Association. It is the property owner's responsibility to obtain this approval.

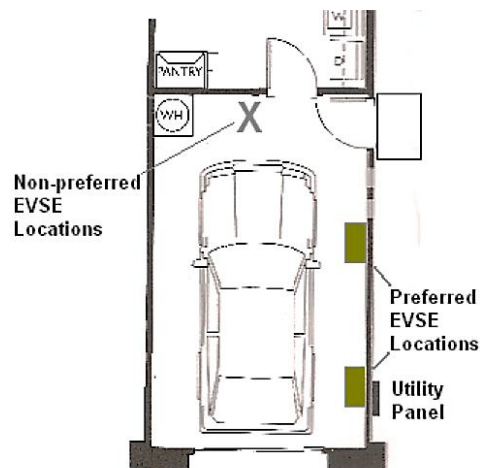
2. INSTALLATION REQUIREMENTS:

- ☐ **Building Codes:** All work must comply with the 2022 California Residential Code (CRC) or 2022 California Building Code, 2022 California Electrical Code (CEC), 2022 California Mechanical Code (CMC), 2022 California Plumbing Code (CPC), 2022 California Energy Code, 2022 California Green Building Code and 2023 Milpitas Municipal Code (MMC).
- ☐ **Equipment.**
 - **Listing.** All EVSE must be listed and installed in accordance with any instructions used in its listing [CEC 625.5, 110.3(B)].
 - **Power-Supply Cord.** The cable for stationary, cord-connected equipment must be no longer than 6 ft and be installed at a height that prevents it from contacting the floor while connected to the proper receptacle [CEC 625.17(A)(3)]. Where the interruption device of the personnel protection system is located at or within the first 12 in. of the attachment plug, the cord length may be up to 15 ft.
 - **Personnel Protection System.** The equipment shall have a listed system of protection against electric shock of personnel [CEC 625.22].
- ☐ **Installation.**
 - **Branch Circuit.** EVSE outlets must each be supplied by an individual branch circuit with no other outlets [CEC 625.40].
 - **Disconnecting Means.** For equipment rated more than 60A or 150v, the disconnecting means must be readily accessible and lockable open [CEC 625.43].

- **Location.** The EVSE shall be located for direct electrical coupling of the EV connector to the electric vehicle. Unless specifically listed and marked for the location, the coupling means of the EVSE shall be stored or located at a height of not less than 18 in. above the floor level for indoor locations or 24 in. for outdoor locations. [CEC 625.50].
- **GFCI Required.** All receptacles installed as part of the EVSE shall be GFCI [CEC 625.54].



In this figure, the best location would be for the electric vehicle on the right. The non-preferred EVSE locations are in typical walking areas which could present a tripping hazard. In addition, these options are farther away from the utility panel. An alternative for the electric vehicle owner who wishes to place the EVSE in these locations could be to use an overhead support for the charge cable and connector. If the electric vehicle inlet is on the left side of the vehicle, the owner could consider backing into the garage.



In the single garage environment, most locations will be acceptable for placing the EVSE, except perhaps at the head of the vehicle because of tripping concerns. The preferred locations have been selected for their proximity to the utility panel. Again, overhead support for the EVSE cable would allow EVSE installation where the owner prefers.

3. ADDITIONAL REQUIREMENTS

- ❑ **Smoke/Carbon Monoxide Alarms and Spark Arrestor Inspection.** In all one- and two-family residences, installation and inspection of required smoke alarms, carbon monoxide alarms, and spark arresters must be completed prior to the final inspection. Refer to the [Smoke Alarm, Carbon Monoxide Alarm, and Spark Arrestor Certificate](#) handout for detailed information.
- ❑ **Water Conserving Fixture Inspection.** All one- and two- family residences must have replaced all non-compliant plumbing fixtures with water-conserving plumbing fixtures and verification of this is required as a condition of final approval of any permit [CA Civ Code § 1101]. Refer to the [Water Conserving Certificate of Compliance](#) handout for details and exceptions.

4. INSPECTION PROCEDURES

- ❑ Typically, one or two inspections are required.
 - **Rough Electrical.** A rough inspection shall be scheduled if any work is inside walls or ceilings and will be covered with finish materials.
 - **Final Electrical.** A final inspection should be scheduled after all work is complete.
 - For each inspection, the Permit Card with the Energy Compliance Report forms completely filled out and attached, and the Approved Job Copy of the Drawings (if any) must be presented to the inspector.
 - When the service panel is 125A or less, load calculations per CEC Article 220 shall be provided to the Inspector.

5. QUESTIONS

- ❑ If you have any questions regarding your project, contact the Office of Building Safety at (408) 586-3240.