CITY OF PALO ALTO

DEVELOPMENT SERVICES – BUILDING INSPECTION

INSPECTION GUIDELINES: ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) – COMMERCIAL

INSPECTION CODE: 720

SCOPE: COMMERCIAL

APPLICABLE CODES: 2016 CBC, CRC, CPC, CMC, CEC, CALGreen, CEnC, and PAMC

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.

IMPORTANT

EVSE applications are a separate submittal/permit.

INSPECTION

- ☐ A representative from the installing contractor must be onsite. The representative must have an understanding of the project and be able to perform all requirements of this checklist.
- ☐ Verify work against the manufacturer's installation instructions.
- ☐ Check the job-specific site plan for all EVSEs, bollards, electric service, and conduit location. In addition, verify height and dimensions of the EVSE and sidewalk clearances when installed in the sidewalk. If the installation does not match the approved set of plans, a revision is required.
- ☐ Verify that the disconnect switch is in the vicinity of the EVSE and within the required minimum of 10' from each charging station location and readily accessible by the Fire Department. Disconnect switch door shall be secured. (CPA Municipal Code)
- ☐ Check signage. (CPA Municipal Code)
  - Minimum 8"x10" reflective signs with red background and white lettering stating "Electric Vehicle Charging Station EPO" and text should be 1.5" tall, Helvetica Med Compact
  - Labels to be mounted on disconnect switch and state the number charging stations served by the disconnect
- ☐ Verify that vehicle collision protection of EVSE is installed. (CPA Municipal Code)
  - Bollards on each side in front of charger. Bollards shall be 4" diameter, 2' below grade and 4' above ground with reflective stripe at the top. Bollards shall be set 4' on center from each other
  - For equipment over 400 lbs., verify details from a licensed structural engineer or civil engineer
- ☐ Provide the following working clearances: 36" in depth, 30" in width, and 6'-6" in height. (CEC 110.26)
- ☐ Circuit breakers shall be <u>listed to be used with the panel used</u> (usually the same manufacturer).

☐ All new and existing circuits must be labeled.

☐ Verify that the load calculations are attached to the job copy. (CPA Municipal Code)

☐ See Figure CPA 004 minimum specifications when EVSE is mounted on a metal post.

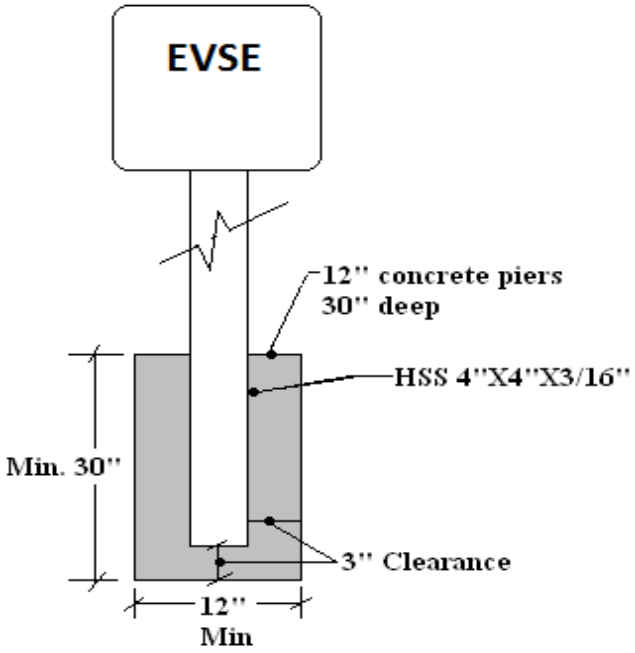

Figure CPA 004 – EVSE Mounted on Metal Post – Minimum Specifications

THREE LINE DIAGRAM

☐ Verify that work was installed as per the three line diagram. (CPA Municipal Code)
- Wire size, insulation type, distance of the wires from the service point to the EVSEs (include the equipment grounding conductor (GEC))
- Conduit size, type, and location
- Size of the over current device (i.e. circuit breaker)
- The manufacturer and model of the Electric Vehicle Service Equipment
- Utility voltage
- The size of the main electric panel, distribution panels (sub panels) and disconnects

GROUNDING AND BONDING

☐ Verify that new buildings and remodels have at least one of the following primary grounding electrode systems:
- A Ufer Ground that is made up of 20’ of #4 rebar
  - Make sure that ground clamps are marked as “RB”, which means that they are listed for rebar
- 20’ of minimum 4AWG bare copper wire (placed 3” from the bottom of the footing)
- Two 5/8” by 8’ ground rods spaced a minimum of 6’ apart
  - Both ground rods should be placed at the service location whenever possible

- ☐ In addition to the primary grounding electrode, a metal water pipe supplemental electrode is required and must be connected with a minimum 4 AWG copper wire and connected at the exterior hose bib where the water service enters the building. (CEC 250.52)
    - Note: For sizing the grounding electrode conductor for services over 200A refer to NEC/CEC Table 250.66

TORQUE REQUIREMENTS

- ☐ Contractor to provide a written list of torque specifications on site for the inspection (including Final inspection) specific to each piece of electrical equipment. Contractor to torque all connections per the manufacturer's listings prior to the CPA inspection. The inspector will witness a spot check. If all terminations are found to be tight, no further torqueing will be required. If loose connections are found, all connections will be required to be torqued in front of the CPA inspector.

- ☐ The electrical contractor must be on site with the following tools. (CEC 100.3 (b))
    - Torque wrench
    - Torque screwdriver (with a range of up to 50 lb-in.) and be audible type (ratcheting)
    - Channel locks to secure lugs in place when applying the proper torque

GREEN BUILDING REQUIREMENTS

- ☐ Verify EVSE charging spaces in accordance with the plans and the scope of work for Green Building requirements. (CPA Municipal Code)

ACCESSIBLE PARKING SPACE REQUIREMENTS

- ☐ Verify that accessible EVSE spaces in accordance with the Table 11B-228.3.2.1.

- ☐ Verify that shall that the accessible route for the project is as shown in the Site Plan, including any upgrades of route elements in accordance with CBC 11B-402. Check the accessible route from the accessible EVSE parking spaces to the Building or Facility, and between the vehicle space and EV charger (CBC 11B-812.5).

- ☐ Provide inspector with the operable parts specifications (CBC 11B-812.2).

- ☐ Check the dimensioned accessible parking spaces, access aisles, required markings, and lettering (CBC 11B- 812.6, CBC 11B-812.7).

- ☐ Provide inspector with the identification sign specifications (CBC 11B-812.8).

- ☐ Check the surface marking specifications (11B-812.9)