Permit Submittal and Plan Review Checklist for Electric Vehicle Charging Stations

This information is designed to assist an applicant in applying for a permit for an electrical vehicle charging station (EVCS) installation. This handout is not all inclusive. It identifies items we find are most often missing in permit submittals. Special circumstances or unique designs may require Village Staff to request additional information or details.
Please read the **"Permit Submittal Checklist and Process for Electric Vehicle Charging Stations"** for the actual process of obtaining a permit.

CONSTRUCTION REQUIREMENTS:

- Drawings must include the following information:
- Cover Sheet indicating the specific building codes and pertinent project information. Installation shall conform to the 2017 NEC article 625 part III.
- Vehicle charging stations should be installed on a minimum of a dedicated circuit following the vehicle manufacturer's requirement. There are typically three levels of car charging, all require a continuous duty rating of not less than 125% of the maximum load.
- Include the Manufacturer's requirements and note the following
    1. Requires an individual branch circuit, with no other outlet.
    2. Overcurrent protection must be sized for continuous duty.
    3. The EV charging unit location shall be directly adjacent to the vehicle it is charging
    4. Power supply cord overall Cord length shall be minimum of 6' to a maximum of 15'
- Plans shall include the following:
    1. EV Charging unit brand, model, plug type and spec. sheets
    2. Size of the Electrical circuit required by the charger, amps or KW
    3. Conductor size, type and quantity per conduit run
    4. Breaker size in amps
    5. Conduit size and type
    6. Drawing of raceway route from panel to charger.
    7. NEMA wall plug type
    8. Written scope of work and signed contract
    9. Provide a Load Calculation Sheet

ELECTRIC VEHICLE CHARGING STATION (EVCS) SPECIFICATIONS

Charging Level
□ Level 1 (120V)
□ Level 2 (240V)
□ Level 3 (480V)

Mounting Type
□ Wall Mount
□ Pole Pedestal Mount
□ Other _____

Max. Rating (Nameplate) _____kW
Voltage _____V
Manufacturer: _____

SERVICE PANEL SPECIFICATIONS

System Voltage
□ 120/240V, 1 Phase, 3W
□ 120/208V, 3 Phase, 4W
□ 120/240V, 3 Phase, 4W
□ 277/480V, 3 Phase, 4W
□ Other _____

System Rating
Existing Main Electrical Service Equipment Rating _____ Amps
Panel Rating Supplying EVCS (if using a sub-panel) _____ Amps
Circuit Rating for EVCS: _____ Amps /_____Poles

CONNECTIONS

EVCS Maximum Continuous Output _____Amps X 1.25 = _____Amps (required breaker size)
Minimum Gauge of EVCS Conductor # _____AWG (required wire size)
Accessible Service Disconnect (NEC 625.23) _____YES _____N/A (required at 60 amps or per manufacturer's specs)
Conduit Size_____ Number of Conductors_____ Gauge of Ground Conductor #_____AWG
Conduit Size_____ Number of Conductors_____ Gauge of Ground Conductor #_____AWG

Electric Load Worksheet

Address: _____ Date: _____

Main Electric Panel Service Size: Existing _____ (Amps) / New *(if applicable)* _____ (Amps)

Quantity of Existing Subpanels: _____ Quantity of New Subpanels: _____ Gas Furnace (Y/N) _____

Breaker Size(s) feeding subpanel(s)? _____ *Wires Size(s) feeding subpanel(s)?* _____

A. Calculate Habitable[1] Square Footage

_____ (Existing S.F) + _____ (New S.F., if any) = _____Total Habitable[1] Square Footage

B. Identify General Loads

General Lighting and Use Receptacles:	_____ Total Habitable[1] SF	x 3	= _____	total watts
Kitchen Small Appliance Branch Circuits:	_____ (Quantity, Min. 2)	x 1500	= _____	total watts
Bathroom Small Appliance Branch Circuits:	_____ (Quantity, Min. 1)	x 1500	= _____	total watts
Range:	_____ (Nameplate Rating)	x 1	= _____	total watts
Oven:	_____ (Nameplate Rating)	x 1	= _____	total watts
Water Heater:	_____ (Nameplate Rating)	x 1	= _____	total watts
Dishwasher:	_____ (Nameplate Rating)	x 1	= _____	total watts
Garbage Disposal:	_____ (Nameplate Rating)	x 1	= _____	total watts
Washer:	_____ (Nameplate Rating)	x 1	= _____	total watts
Dryer:	_____ (Nameplate Rating)	x 1	= _____	total watts
Total Subpanel Load[2]:	_____ (Combined Watts2)	x 1	= _____	total watts
Motor Loads:	_____ (Nameplate Rating)	x 1	= _____	total watts
Other Loads:	_____ (Nameplate Rating)	x 1	= _____	total watts

Add total watts together (from above) = _____ *Total B*

C. Identify Largest of the Following Six Heating and Air Conditioning (HAC) Loads

Electric Thermal Storage: _____ (Nameplate Rating) x 1 = _____ total watts

Air Conditioning and Cooling: _____ (Nameplate Rating) x 1 = _____ total watts

Heat Pump (without any supplemental electric heating): _____ (Nameplate Rating) x 1 = _____ total watts

3 or Less (Separately Controlled) Electric Space Heating Units: _____ (Nameplate Rating) x 0.65 = _____ total watts

4 or more (Separately Controlled) Electric Space Heating Units: _____ (Nameplate Rating) x 0.40 = _____ total watts

Central Electric Space Heating System[3]: _____ (Combined Nameplate Rating3)= _____ total watts

Enter single largest Heating and Air Conditioning Load (from above) = _____ Total C

D. Calculate Total Service Load

_____ **- 10,000 watts x 0.40 + 10,000 watts +** _____ **÷ 240 =** _____**Total Amps**
Total B (from above) Total C (from above)

_____

Signature Print Name State License Number *(if applicable)*

1 Habitable square footage includes the floor area for each floor, calculated from the outside dimensions of the dwelling unit. It does not include open porches, garages, or unused or unfinished spaces not adaptable for future use.
2 Add all subpanel loads here that are not already included elsewhere on this form.
3 For Central Electric Space Heating Systems, add 100% of the heat pump compressor's nameplate rating plus 65% of the supplemental electric heating's nameplate rating. If the heat pump compressor is prevented from operating at the same time as the supplementary heat, it does not need to be added to the supplementary heat for the total central space heating load.