



## **BUILDING AND SAFETY DIVISION**

**73510 Fred Waring Dr, Palm Desert, CA 92260**

**Phone (760)776-6435 • Email: [permitcenter@cityofpalmdesert.org](mailto:permitcenter@cityofpalmdesert.org)**

**Website: [www.pdpermits.com](http://www.pdpermits.com)**

### ***Expedited Permitting Process for Electric Vehicle Charging Stations for Residential EVChargers.***

**Purpose:** This document provides all of the needed links to forms and checklists necessary to utilize the City of Palm Desert Expedited Permitting Process for Electric Vehicle Charging Stations (EVCS). This process provides an expedited and streamlined permitting process for qualifying EVCS systems. Once all of the documentation is correctly and fully completed, and submitted, a permit will be processed and approved for issuance in a timely manner (usually 1 to 3 business days for residential and 5 to 10 business days for commercial).

**Step 1** Download, review, and complete the Electric Vehicle Charging Stations (EVCS) Checklist below. Submit all information requested on the checklist.

**Step 2** Fully complete and sign a [Building Permit Application](#) form.

**Step 3** Submit all of the required documentation to City of Palm Desert Permit Center at [www.pdpermits.com](http://www.pdpermits.com). The Permit Center will notify you when the documents have been uploaded, applicable fees required, and when approved and the permit is ready to be issued.

#### **There are 2 basic types of EV chargers for home use (Level 1 and Level 2):**

- Level 1 Chargers are smaller units that plug directly into a standard 120 volt receptacle outlet. These types of chargers typically require a longer period of time to recharge the vehicle. As long as the receptacle outlet being used to plug-in the Level 1 Charger is existing, there is no requirement to secure a permit from the Department of Building and Safety. On the other hand, if you will be installing a new 120 volt receptacle outlet for the charger, you will need to obtain a permit – but you will not need to provide any plans or electrical load calculations as would be required for the more powerful Level 2 type charging systems.
- Level 2 EV charging system requires a 240 volt electrical circuit and charges the vehicle battery much faster than a Level 1 charger. Level 2 charger installations typically require an electrical permit and inspections of the installation. In order to obtain the permit you will need to provide some basic information to show that your existing electrical service can handle the added load. Installing a Level 2 EV Charging system often requires changes to building's electrical wiring. Before installing the EV charging equipment and the associated wiring, talk to your EV manufacturer about the electrical requirements for the charger unit to be installed at your home.
- When installing your EV charger, be sure to use a licensed Electrical contractor whose state contractor's license and insurance are current. The contractor should follow the installation instructions of the EV charger manufacturer and the requirements of California Electrical Code.
- Why is the Electric Utility concerned about your EV charger installation? Though an individual Level 2 EV charger may have a negligible impact on the utility electric system, the combined effect of several chargers in the same neighborhood could result in overloads on utility secondary wires and transformers. It is important that the Electrical Utility provider be notified of any Level 2 charger installations to ensure that utility electrical system components are adequately sized to maintain high levels of service reliability.

# ***Submittal Requirements Checklist for Permitting of Electric Vehicle Charging Stations (EVCS)***

This checklist is provided to guide applicants through a streamlined permitting process for Electric Vehicle Charging Stations (EVCS).

## **1. Approval Requirements**

- Building and Safety Division is responsible for plan review and inspections for all EVCS installations.
- Planning Division will not plan interior garage review residential EVCS installations. Exterior installation are encouraged to be adequately screened from public view.
- Fire Marshal's Office plan review and inspection approvals are not required for EVCS installations unless the system includes an energy storage system as defined in the CA Fire Code.

## **2. Submittal Information**

- a) All forms and checklists described herein are available on the Palm Desert Permit Center website located at [www.pdpermits.com](http://www.pdpermits.com)
- b) A [Building Permit Application](#) is required for all EVCS installations.
- c) One copy of this checklist must be completed and submitted to the Palm Desert Permit Center along with the Building Permit application. Please provide an explanation for any checklist items not completed or met.
- d) Provide a digital set of plans for the proposed EVCS installation. Document Properties are minimum of 11"x 17" and a Landscaped Orientation. 10pt. minimum font. Plan submittals shall include, but not be limited to:
  - 1) *A Title Page.*
  - 2) *A Site Plan. (Not required for Level One or Level Two EVCS equipment installed within an existing one- or two-family residential structure (i.e. garage or carport).*
  - 3) *An Electrical Floor Plan (Not required for exterior EVCS equipment installations).*
  - 4) *A Single-Line Electrical Diagram. (Not required for Level 1 charging station installations)*
  - 5) *EVCS Manufacturer Installation Details and Specifications.*
  - 6) *Electrical Service Load Calculations.*

## **3. General Requirements for EVCS to be Shown and Noted on Plans**

Use the following checklist items for preparation and submittal of your plans. The level of detail and the specific plan requirements will depend upon the extent, nature and complexity of the work to be done. All applicable checklist items must be noted or specified on the plans. Indicate the plan sheet number where the applicable requirement is shown or specified.



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#### 4. Type of EVCS (please check one)

Check One	Type of Charging Station(s) Proposed	Power Levels (proposed circuit rating)
	Level 1	110/120 volt alternating current (VAC) at 15 or 20 Amps
	Level 2 - 3.3 kilowatt (kW) (low)	208/240 VAC at 20 or 30 Amps:
	Level 2 - 6.6kW (medium)	208/240 VAC at 40 Amps:
	Level 2 - 9.6kW (high)	208/240 VAC at 50 Amps:
	Level 2 - 19.2kW (highest)	208/240 VAC at 100 Amps:
	DC Fast Charging?	440 or 480 VAC:
	Other (Specify and provide details):	

#### 5. Submittal Requirements Checklist for EVCS

PERMIT APPLICATION REQUIREMENTS		
Yes	No	1. The permit application is complete with the following information: <ul style="list-style-type: none"> <li>• Project address and parcel number,</li> <li>• Owner name, address and phone number;</li> <li>• Contractor name, address and phone number and contractor's license number; and</li> <li>• Other information requested on the permit application form?</li> </ul>
ELECTRICAL LOAD CALCULATION WORKSHEET		
Yes	No	2. An electrical load calculation is included with the permit application? (CEC <sup>1</sup> 220)
Yes	No	3. Based on the required load calculation <sup>2</sup> , is an electrical service panel upgrade required? If yes, do plans show and specify the electrical service panel upgrade?
Yes	No	4. The EVCS branch circuit conductor is appropriately sized for a continuous load of 125% of the EVCS equipment plus any other non-continuous loads per CEC 210.19?

<sup>1</sup> CEC means the 2022 California Electrical Code

<sup>2</sup> Load Calculation: The size of the existing service breaker MUST be equal to or larger than the minimum required size of main service breaker as determined by the load calculations required by CEC article 220. If the existing service panel is smaller than the minimum required size of existing electrical services, then a new upgraded electrical service panel must be installed in order to handle the added electrical load from the proposed EVCS.



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Yes No Sheet#_____	15. The plans identify the amperage and location of the existing (or new) electrical service panel and the service panel is sized in accordance with the electrical service load calculations? (CEC 220)
Yes No Sheet#_____	16. The plans indicate the size of the service entrance conductors?
Yes No Sheet#_____	17. The plans indicate that the charging equipment shall have a Nationally Recognized Testing Laboratory (NRTL) approved listing mark? (UL 2202/UL 2200)
Yes No Sheet#_____	18. The single-line electrical diagram shows and specifies the required overcurrent protection for the proposed EVCS?
Yes No Sheet#_____	19. Conduit and conductor size and type are specified and the routes and requirements for their installation (i.e. within framing, mounted to structures, underground, etc.) are shown?
Yes No Sheet#_____	20. The plans specify that the electric vehicle charging system shall be installed in accordance with manufacturer's installation instructions and shall be suitable for the environment (indoor/ outdoor) in which they will be installed?
Yes No Sheet#_____	21. The plans specify where the labeling of the EVCS equipment (i.e. "FOR USE WITH ELECTRIC VEHICLES", "VENTILATION NOT REQUIRED", "VENTILATION REQUIRED", etc.) is required?(CEC 625.15)
Yes No N/A	22. An approval letter from SCE is provided to the building department if <u>a dedicated electrical meter is to be installed for the electric vehicle charging system?</u>
Yes No N/A Sheet#_____	23. If the EV charging equipment is rated more than 60 amps or more than 150V to ground, the plans specify that the disconnecting means shall be lockable open and shall be provided in a readily accessible location? (CEC 625.42)
Yes No Sheet#_____	24. The plans specify that the EVCS equipment disconnecting means shall be identified with a durable label stating "Emergency Power Off – Electric Vehicle Charging Station"? (CEC 110.21)
Yes No Sheet#_____	25. The plans specify that the main service conductors and the equipment for the protection of electrical service (i.e. disconnecting means, overcurrent protection, etc.) will be installed in accordance with CEC Article 230?
Yes No N/A Sheet#_____	26. If trenching is required, a trenching detail is provided on the plans showing compliance with the minimum cover requirements pursuant to CEC 300.5? <i>(NOTE: trenching for electrical feeders from structure to structure must comply with CEC 225.)</i>



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Yes No N/A	<p>8. An <b>Electrical Floor Plan</b> is included with the permit application and includes the following information? <i>(Not required for exterior installations)</i></p> <ul style="list-style-type: none"> <li>Plan view of the location of the proposed EVCS equipment including the use of the space or area where the EVCS will be installed;</li> <li>All applicable electrical plan related requirements of CEC Article 625 are shown or specified on the plan;</li> <li>Detailed and specific plan of all related proposed work. <i>(See additional requirements below.)</i></li> </ul>
Yes No N/A	<p>9. A <b>Single-Line Electrical Diagram</b> is included with the permit application and includes the following information? <i>(Not required for Level 1 charging station installations)</i></p> <ul style="list-style-type: none"> <li>List and label all EVCS supply equipment;</li> <li>Conductor and conduit size, type and location;</li> <li>Size of the over current device (circuit breaker) supplying the EVCS;</li> <li>The size and location of the main electric panel, distribution panels (sub panels), overcurrent protection, disconnects, additional meters, and EVCS equipment;</li> <li>The type (level), voltage and ampacity for each charging station;</li> <li>All equipment labeling requirements per CEC 625.15.</li> </ul>
Yes No	<p>10. A digital copy of the <b>EVCS Manufacturer Installation Details and Specifications</b> are included with the permit application?</p>
Yes No N/A	<p>11. A digital set of <b>Electrical Service Load Calculations</b> are provided for sizing of the electrical service panel pursuant to CA Electrical Code (CEC) Article 220? <i>(NOTE: Include 125% of the EV charging station load in the calculation)</i></p>
Yes No N/A	<p>12. If the EVCS equipment is listed for charging electric vehicles that require ventilation for indoor charging, is a Mechanical Plan showing and specifying all of the ventilation requirements prescribed by CEC 625.52 included with the permit application?</p>
Yes No	<p>13. The plans indicate that the installation shall meet all requirements of the 2022 California Electrical Code - Article 625 for Electric Vehicle Charging Systems.</p>



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PLANS	2022 CALIFORNIA ELECTRICAL CODE - MINIMUM PLAN REQUIREMENTS
Yes No	<p>1. The digital drawings are:</p> <ul style="list-style-type: none"> <li>• to scale or fully dimensioned;</li> <li>• Document Properties of no less than 17" wide by 11" high (36" x 24" preferred);</li> <li>• A landscape orientation;</li> <li>• No hand drawn plans.</li> </ul>
Yes No	<p>2. The plans include a <b>Title Page</b> with property information including, but not limited to:</p> <ul style="list-style-type: none"> <li>• address of property;</li> <li>• name, address, phone number of the property owner;</li> <li>• name, address, phone number and license number of the person responsible for the EVCS system design; signed and stamp if a licensed design professional is used.</li> <li>• 2022 California Model Codes applicable to the project;</li> <li>• occupancy and use of the facilities; and</li> <li>• narrative description and scope of the proposed work?</li> </ul>
Yes No N/A	<p>3. A <b>Site Plan</b> is included with the permit application and includes the following information?</p> <ul style="list-style-type: none"> <li>• Location and name of structure(s) on the site;</li> <li>• Property lines, streets, lot dimensions, north arrow, the distance from property lines to structures and the proposed EVCS equipment;</li> <li>• Dimensioned parking improvements, driveways, etc.;</li> <li>• EVCS equipment, main electric service panel, disconnects and overcurrent protection locations;</li> <li>• Underground conduit locations and routing;</li> <li>• Location of additional meter, if applicable;</li> <li>• Detailed and specific site of all related proposed work. <i>See additional requirements below.</i></li> </ul>



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## **ELECTRIC VEHICLE CHARGER - SERVICE LOAD CALCULATION**

**INSTRUCTIONS:** Review the list of electrical loads in the table below and check (✓) all that exist in your home (don't forget to include the proposed Level 2 EV Charger). For each item checked (✓), fill-in the corresponding "**Watts used**" (refer to the "**Typical usage**" column for wattage information). Add up all of the numbers that are written in the "Watts Used" column and write that number in the "**TOTAL WATTS USED**" box at the bottom of the table, then go to the next page to determine if your existing electric service will accommodate the new loads.

*(Loads shown are rough estimates; actual loads may vary – for a more precise analysis, use the nameplate ratings for appliances and other loads and consult with a trained electrical professional.)*

✓ Check All Applicable Loads	Description of Load	Typical usage	Watts used
<b>GENERAL LIGHTING AND RECEPTACLE OUTLET CIRCUITS</b>			
	Multiply the Square Footage of House X 3	3 watts/sq. ft.	
<b>KITCHEN CIRCUITS</b>			
	Kitchen Circuits	3,000 watts	
	Electric Oven	2,000 watts	
	Electric Stove Top	5,000 watts	
	Microwave	1,500 watts	
	Garbage Disposal under Kitchen Sink	1,000 watts	
	Automatic Dish Washer	3,500 watts	
	Garbage Compactor	1,000 watts	
	Instantaneous Hot Water at Sink	1,500 watts	
<b>LAUNDRY CIRCUIT</b>			
	Laundry Circuit	1,500 watts	
	Electric Clothes Dryer	4,500 watts	
<b>HEATING AND AIR CONDITIONING CIRCUITS</b>			
	Central Heating (gas) and Air Conditioning	6,000 watts	
	Window Mounted AC	1,000 watts	
	Whole-house or Attic Fan	500 watts	
	Central Electric Furnace	8,000 watts	
	Evaporative Cooler	500 watts	
<b>OTHER ELECTRICAL LOADS</b>			
	Electric Water Heater (Storage type)	4,000 watts	
	Electric Tankless Water Heater	15,000 watts	
	Swimming Pool or Spa	3,500 watts	
	Other: (describe)	watts	
	Other:	watts	
	Other:	watts	
<b>ELECTRIC VEHICLE CHARGER CIRCUIT</b>			
	Level 2 Electric Vehicle Charger Wattage Rating*		
(Add-up all of the watts for the loads you have checked ✓)  <b>TOTAL WATTS USED</b>			

\*Use name plate rating in watts or calculate as: (Ampere rating of circuit X 240 volts = Watts)

**INSTRUCTIONS:** Using the “**TOTAL WATTS USED**” number from the previous page, check (✓) the appropriate line in column 1 and follow that line across to determine the minimum required size of the electrical service panel shown in column 3. In column 4, write-in the size of your existing service panel (main breaker size). If your Existing service panel (column 4) is smaller than the minimum required size of the existing service (column 3), then you will need to install a new upgraded electrical service panel to handle the added electrical load from the proposed Level 2 EVCharger.

**Table based on CEC 220.83(A), 230.42, and Annex D.**

1	2	3	4
✓Check the appropriate line	Total Watts Used (from previous page)	Minimum <u>Required</u> Size of Existing 240 Volt Electrical Service Panel (Main Service Breaker Size)	Identify the Size of Your <u>Existing</u> Main Service Breaker (Amps)**
	up to 48,000	100 amps	
	48,001 to 63,000	125 amps	
	63,001 to 78,000	150 amps	
	78,001 to 108,000	200 amps	
	108,001 to 123,000	225 amps	

\*\*Please note that the size of your Existing service (column 4) MUST be equal to or larger than the Minimum Required Size (column 3) or a new larger electrical service panel will need to be installed in order to satisfy the electrical load demand of the EV charger.

### **STATEMENT OF COMPLIANCE**

By my signature, I attest that the information provided is true and accurate.

Job Address: \_\_\_\_\_  
(Print job address)

Signature: \_\_\_\_\_  
(Signature of applicant) (Date)

In addition to this document, you will also need to provide a copy of the manufacturer’s installation literature and specifications for the Level 2 charger you are installing.

*Note: This is a voluntary compliance alternative and you may wish to hire a qualified individual or company to perform a thorough evaluation of your electrical service capacity in lieu of this alternative methodology. Use of this electrical load calculation estimate methodology is at the user's risk and carries no implied guarantee of accuracy. Users of this methodology and these forms are advised to seek professional assistance in determining the electrical capacity of a service panel.*



### **OTHER HELPFUL INFORMATION FOR EV CHARGER INSTALLATIONS:**

The Table below illustrates the type and size of wire and conduit to be used for various Electric Vehicle Charger circuits.

Size of EV Charger Circuit Breaker	Required minimum size of Conductors (THHN wire)	Conduit Type and Size***		
		Electrical Metallic Tubing (EMT)	Rigid Nonmetallic Conduit – Schedule 40 (RNC)	Flexible Metal Conduit (FMC)
20 amp	#12	1/2"	1/2"	1/2"
30 amp	#12	1/2"	1/2"	1/2"
40 amp	#10	1/2"	1/2"	1/2"
50 amp	#8	3/4"	3/4"	3/4"
60 amp	#6	3/4"	3/4"	3/4"
70 amp	#6	3/4"	3/4"	3/4"

**\*\*\*Based on 4 wires in the conduit (2-current carrying conductors, 1-grounded conductor, 1-equipment ground).**

***As an alternate, Nonmetallic Sheathed Cable (aka: Romex Cable or NMC) may be used if it is protected from physical damage by placing the cable inside a wall cavity or attic space which is separated from the occupied space by drywall or plywood.***

The Table below illustrates the required supports for various types of electrical conduit or cable.

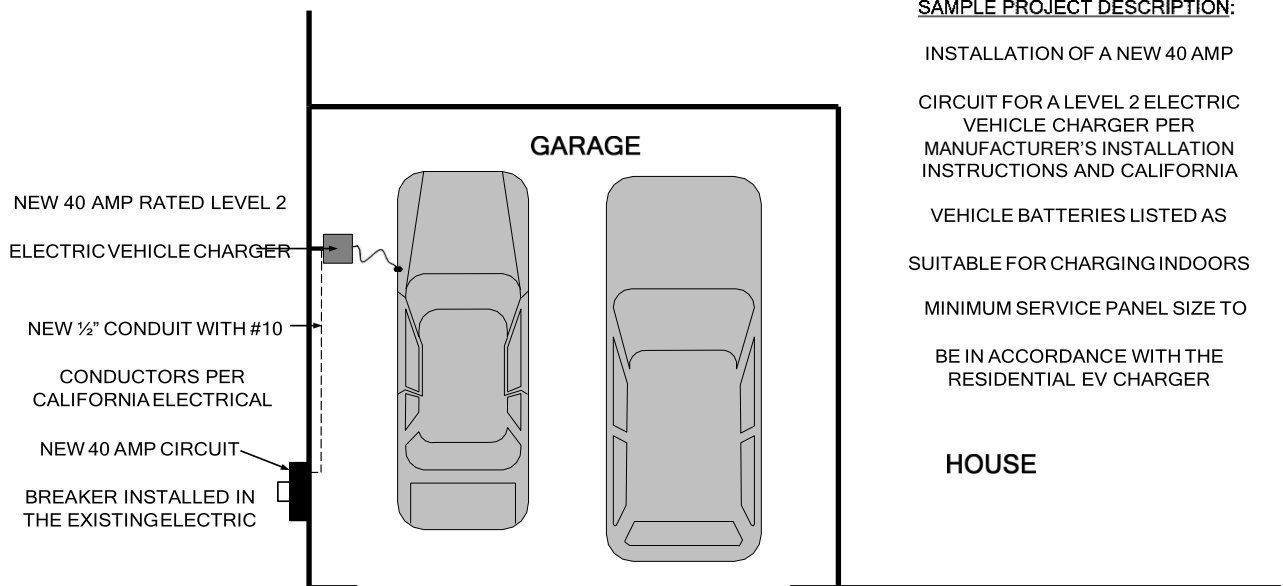
Conduit Support	Electrical Metallic Tubing (EMT)	Rigid Nonmetallic Conduit – Schedule 40 (RNC)	Flexible Metal Conduit (FMC)	Nonmetallic Sheathed Cable (NMC)
Conduit Support Intervals	10'	3'	4-1/2'	4-1/2'
Maximum Distance from Box to Conduit Support	3'	3'	1'	1'

In addition to the above noted requirements, the California Electrical Code contains many other provisions that may be applicable to the installation of a new electrical circuit. Installers are cautioned to be aware of all applicable requirements before beginning the installation. For additional information or guidance, consult with the Department of Building and Safety staff or a qualified and experienced Electrical Contractor.

## **GENERAL INSTALLATION GUIDELINES FOR LEVEL 2 RESIDENTIAL EVCHARGERS**

1. **GENERAL REQUIREMENTS** - All Electrical Vehicle Charging Systems shall comply with the applicable sections of the California Electrical Code, including Article 625.
2. **EQUIPMENT HEIGHT** - The coupling means of the Electric Vehicle Supply Equipment shall be stored at a height of 18 – 24 inches above the finished floor. (CEC Art 625.50).
3. **LISTED EQUIPMENT** - All Electric Vehicle Supply Equipment shall be listed by a nationally recognized testing laboratory.
4. **PROTECTION FROM PHYSICAL DAMAGE** - Electrical Vehicle Supply Equipment shall be protected against vehicle impact damage when located in the path of a vehicle. In order to avoid the installation of a substantial pipe bollard as an equipment guard, locate the Electrical Vehicle Supply Equipment on a garage side wall, out of vehicular path. (see sample drawing below) (CEC Art. 110.27(B))
5. **IF MORE THAN 60 AMPS**- When EV charging equipment is rated at more than 60 amps or 150 volts, the disconnect means shall be provided and installed in a readily accessible location and shall be capable of being locked on the open position. (CEC Art. 625.43)

### ***SAMPLE ELECTRICAL PLAN FOR LEVEL 2 ELECTRIC VEHICLE CHARGER CIRCUIT INSTALLATION***



## 6. Plan Review

Permit applications must be submitted electronically to the City of Palm Desert Permit Center at [www.pdpermits.com](http://www.pdpermits.com). Permit applications eligible for the expedited permitting process will receive a high priority and be reviewed as early as practical with a processing goal of 3 to 5 business days following receipt of the submittal and all necessary plan review fees paid.

## 7. Inspections

Once all permits to construct the EVCS have been issued and the system has been installed, it must be inspected before final approval. On-site inspections can be scheduled by emailing [inspections@cityofpalmdesert.org](mailto:inspections@cityofpalmdesert.org). Inspection requests received before midnight can usually be scheduled for the following business day.

Permit holders must provide the inspector with the printed approved plans, the Building Permit Inspection Record and access to the location of the work. The permittee must be prepared to show conformance with all technical requirements in the field at the time of inspection. The inspector will verify that the installation is in conformance with applicable code requirements and the approved plans.

## 8. Departmental Contact Information

For additional information regarding this permitting process, please consult our website at: [City of Palm Desert Building and Safety](http://City of Palm Desert Building and Safety) or contact the Building and Safety Division at (760) 77-6420.



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