



**City of Laguna Niguel  
Planning Division**

30111 Crown Valley Pkwy  
Laguna Niguel, CA 92677  
(949) 362-4360 FAX 362-4369  
www.ci.laguna-niguel.ca.us

**RESIDENTIAL  
ELECTRICAL VEHICLE  
CHARGING STATION**

**141**

**RESIDENTIAL (R-3) ELECTRICAL VEHICLE CHARGER REQUIREMENTS**

Permit applicants must submit the following documents to the Building & Safety Division for approval prior to permit issuance:

- **SITE PLAN** - Include project address, property owner information, a detailed scope of work, all property lines and the building footprint of the house and garage, shows the existing electrical service location and all proposed work.
- **ELECTRICAL PLAN** - Provide electrical layout that indicates type and size of conductors and conduits in compliance with 2025 California Electrical Code (CEC). Each outlet installed for the purpose of charging electric vehicles shall be supplied by an individual branch circuit and all receptacles installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter (GFCI) protection for personnel.
- **EQUIPMENT SPECIFICATIONS** – Provide specification sheet along with listing information and installation instructions.
- **ELECTRICAL LOAD CALCULATION** - The purpose of the residential electrical load calculation is to determine if the ampere rating of the electrical service is adequate to supply the electrical equipment that will be installed. This calculation is required for service panels with a main breaker ampere rating of less than 200A. Please refer to 2025 CEC 220.83 for electrical load calculations.

Use the following table to size the circuit breakers, conductors, grounds, and conduit:

| THHN COPPER: (2) CURRENT CARRYING CONDUCTORS, (1) NEUTRAL, (1) GROUND |   |  | CONDUIT TYPE AND SIZE           |                                 |                              |
|---|---|--|---------------------------------|---------------------------------|------------------------------|
| SIZE OF CIRCUIT BREAKER (AMPS)  | REQUIRED MINIMUM RATING OF CONDUCTORS (AWG) | REQUIRED MINIMUM RATING OF EQUIPMENT GROUNDING CONDUCTOR (AWG) | ELECTRICAL METALIC TUBING (EMT) | RIGID NON-METALIC CONDUIT (PVC) | FLEXIBLE METAL CONDUIT (FMC) |
| 20  | #12   | #12  | 1/2"                            | 1/2"                            | 1/2"                         |
| 30  | #10   | #10  | 1/2"                            | 1/2"                            | 1/2"                         |
| 40  | #8  | #10  | 3/4"                            | 3/4"                            | 3/4"                         |
| 50  | #8  | #10  | 3/4"                            | 3/4"                            | 3/4"                         |
| 60  | #6  | #10  | 3/4"                            | 3/4"                            | 3/4"                         |