

Appendix B: Regulations, Permits, Standards, and Inspections for EVSE

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EVSE Relevant Regulations, Permits, and Standards

Regulations

Building Regulations

The California Green Building Code 5.106.5.3.1 (EV Capable Spaces) stipulates that the electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space (UpCodes). Additionally, raceways should be no less than 1 inch in diameter and terminate in appropriate cabinets, boxes, enclosures, or equivalent. A common raceway may be used to serve multiple EV spaces. Accessible EVCS shall be provided in accordance with the California Building Code and EVCS signs adhere to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

Accessibility Regulations

California's requirements for electric vehicle charging station accessibility are found in the current edition of the California Building Code (California Code of Regulations, Title 24, Part 2). Definitions can be found in Chapter 2, Section 202. Scoping information can be found in Chapter 11B, Division 2, Section 11B-228.3 Electric Vehicle Charging Stations. Technical information can be found in Chapter 11B, Division 8, Section 11B-812 Electric Vehicle Charging Stations.

The number and type of accessible charging stations required for an installation are dependent on the number of EVSE usable spaces at an installation as described in the table below (CALeVIP).

Table 1: Required number and type of accessible spaces

(Table 11B-228.3.2.1 from the 2019 California Building Code, Chapter 11B, Section 11B-228.3)

Total Number of EVCS at a Facility ¹	Minimum Number (by type of EVCS Required to Comply with Section 11B-812) ¹		
	Van Accessible	Standard Accessible	Ambulatory
1 to 4	1	0	0
5 to 25	1	1	0
26 to 50	1	1	1
51 to 75	1	2	2
76 to 100	1	3	3
101 and over	1, plus 1 each 300 or fraction thereof, over 100	3, plus 1 each 60, or fraction thereof, over 100	3, plus 1 each 50, or fraction thereof, over 100

¹ Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

Table 1: Required parking spaces for different size EVSE installations. (CALeVIP)

This installation with 12 chargers will have 24 charging stations. Therefore it will need one van accessible space (ISA) and one standard accessible space. Ambulatory accessible spaces are not required. The van accessible space needs to be identified with ISA signage, but the standard accessible stall is not required to be identified with an ISA. An example of such a sign is presented in Figure 7.



Figure 1: Examples of accessible EV charging signs.

All accessible EV spaces must be 18 feet minimum in length and be marked with letters that are at least 12 inches high that read, “EV CHARGING ONLY”. Vertical clearance of at least 98 inches must be provided. The van accessible space is required to be 12 feet minimum in width with an accessible aisle of 5 feet minimum width and be located on the passenger side. The access aisle shall have the words “NO PARKING” painted on the surface at a minimum of 12 inches in height. The standard accessible space are provided with an adjacent 5 foot wide minimum access aisle on either side and required to be 9 feet minimum in width.

Zero-Emission Vehicle Signage

In addition to accessibility signage, signs directing people to the EV charging station on the highway and follow-up signs should be installed. For signs on the highway the Caltrans District Sign Coordinator will need to be contacted and will determines the sign and location based on the requirements set forth in the California Manual on Uniform Traffic Control Devices (DOT-CA). An annual permit and rental fee may be charged for each sign on the highway. Follow-up signs off the highway should be discussed with the park service. A station host may decide that spaces associated with charging stations are only for EVs that are actively charging, or place a limit on the amount of time a vehicle may occupy a charging space (USD OE).

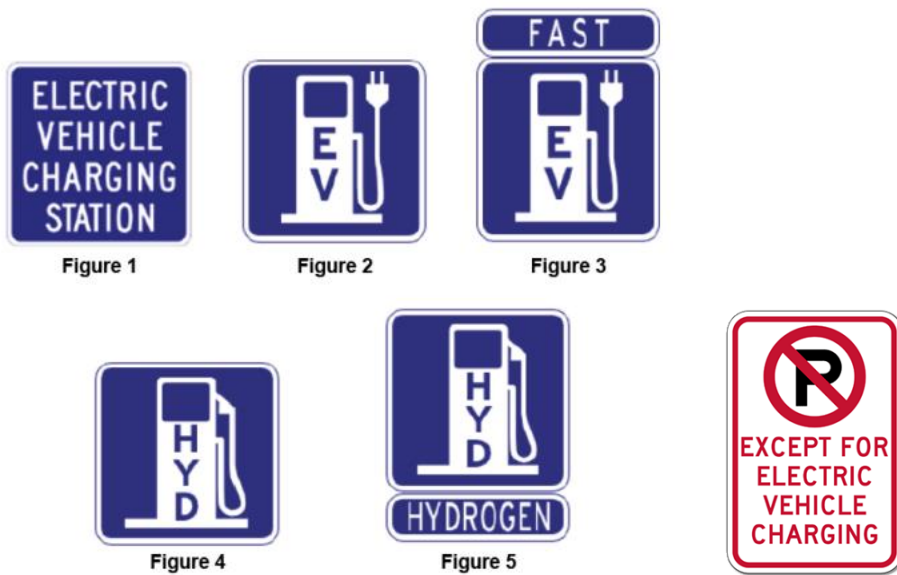


Figure 2: Examples of EV and HYD signage.

Electrical Codes

All electrical components (such as raceways) must comply with the California Electrical Code.

Fire Safety Regulations

Structures and EVSE charging activities must adhere to California Fire Code and not block fire lanes, visibility, or fire hydrants (CFOB&ED). The 2022 California fire code may be purchased online.

California Air Resource Board (CARB) Regulation for Electric Vehicle Supply Equipment

All publicly available electric vehicle supply equipment are required to meet the following in relation to SB 123 (Committee of Budget and Fiscal Review, Chapter 52, Statutes of 2023) and the modified SB 454 (CALeVIP).

Labeling:

- All EVSE must be labeled according to section 309.17 in Title 16 of the Code of Federal Regulations. This includes regulations related to the 3" labels on EVSE chargers (CLS).
- All EVSE must disclose all fees at the point of sale.

Payment:

- All EVSE, if requiring a fee to dispense energy, shall provide the following payment options: 1)credit card reader or kiosk, 2)mobile payment via an NFC reader, and 3)a toll-free number
- A subscription or membership cannot be required for the EVSE to dispense energy

Network Roaming:

- Network providers must meet, at a minimum, and maintain the “California Open Charge Point Interface Interim Test Procedures for Networked Electric Vehicle Supply Equipment for Level 2 and Direct Current Fast Charge Classes.”

Reporting:

- Network providers must report EVSE-related data annually to the Executive Officer.
- Network providers must report EVSE-related data monthly to the National Renewable Energy Laboratory (NREL Alternative Fuels Data Center (AFCD)).

California Electric Vehicle Infrastructure Training Program (EVITP) Requirements

For 25kW+ projects funded in part by the California Public Utilities Commission, the California Energy Commission, or the California Air Resources Board, at least 25% of the electricians for the project must have EVITP certification (CALeVIP). EVITP-certified electricians can be found through EVITP.org.

Standards

DCFC Equipment

Relevant standards commonly advertised for DCFC are mentioned below.

- **ETL Listing:** Product compliance to North American safety standards
- **UL 2202:** DC Charging Equipment for Electric Vehicles
- **UL2231-1:** Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits; Part 1: General Requirements
- **UL2231-2:** Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Particular Requirements for Protection Devices for Use in Charging Systems
- **UL50E:** Enclosures for Electrical Equipment, Environmental Considerations
- **NEC Article 625:** installation of equipment and devices related to electric vehicle charging for on-road use
- **CSA STD C22.2 No. 107.1:** Power Conversion Equipment
- **FCC Part 15 Class A:** Electromagnetic interference or radio-frequency interference
- **ISO 15118-2:2014:** Road Vehicles, Vehicle to Grid Communication Interface

Solar Panels

Relevant standards commonly advertised for PV are mentioned below.

- **UL 61215-1:2017 Ed.1:** Terrestrial Photovoltaic (PV) Modules - Design Qualification And Type Approval - Special Requirements For Testing Of Crystalline Silicon Photovoltaic (PV) Modules
- **UL 61215-2:2017 Ed.1:** Terrestrial Photovoltaic (PV) Modules - Design Qualification And Type Approval - Part 2: Test Procedures

- **UL 61730-1:2017 Ed.1:** Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements For Construction
- **UL 61730-2:2017 Ed.1:** Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements For Testing
- **CSA C22.2#61730-1:2019 Ed.2:** Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction
- **CSA C22.2#61730-2:2019 Ed.2:** Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing
- **IEC 61215-1:2016 Ed.1:** Terrestrial photovoltaic (PV) modules - Design qualification and type approval -Special requirements for testing of crystalline silicon photovoltaic (PV) modules
- **IEC 61215-2:2016 Ed.1:** Terrestrial photovoltaic (PV) modules – Design qualification and type approval –Test procedures
- **IEC 61730-1:2016 Ed.2:** Photovoltaic module safety qualification requirements for construction
- **IEC 61730-2:2016 Ed.2:** Photovoltaic module safety qualification, requirements for testing
- **IEC 61701:2020** (Salt Mist Corrosion): Salt mist corrosion for solar panels
- **IEC 62716:2013** (Ammonia Corrosion): Ammonia corrosion for solar panels
- **CEC Listing:** California Energy Commission-Solar Equipment Lists Program
- **UL Fire Rating:** Type 1: Fire rating (Class 1 is best)
- **ISO9001:2015:** Quality Management Systems

Solar Inverters

Relevant standards for PV inverters are mentioned below.

- **UL 1741:** Inverters, converters, controllers and interconnection system equipment for use with distributed energy resources
- **IEC 61683:** Power conditioners – Procedure for measuring efficiency
- **IEC 62109-1:** Safety of power converters for use in photovoltaic power systems – General requirements
- **IEC 62109-2:** Safety of power converters for use in photovoltaic power systems - Particular requirements for inverters

Grid Connection

Relevant standards for grid interconnection are mentioned below.

- **IEEE 1547-2018:** Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces
- **IEEE 1547.1-2020:** Standard Conformance Test Procedures for Equipment Interconnecting Distributed Energy Resources with Electric Power Systems and Associated Interfaces
- **IEEE 1547.2-2008:** Standard for Interconnecting Distributed Resources with Electric Power Systems
- **IEEE 1547.3-2023:** Guide for Cybersecurity of Distributed Energy Resources Interconnected with Electric Power Systems

- **IEEE 1547.4-2011:** Guide for Design, Operation, and Integration of Distributed Resource Island Systems and Electric Power Systems
- **IEEE 1547.6-2011:** Recommended Practice for Interconnecting Distributed Resources with Electric Power Systems Distributed Secondary Networks
- **IEEE 1547.7-2013:** Guide for Conducting Distribution Impact Studies for Distributed Resource Interconnection

EVSE Permits

AB 1236 requires cities and counties to adopt an electric vehicle charging station permitting checklist(s). Mariposa county generally follows the “Plug-In Electric Vehicle Infrastructure Permitting Checklist” contained in the Governor’s Office of Planning and Research “Zero Emission Vehicles in California: Community Readiness Guidebook” (Mariposa, Country of Mariposa - Residential and Non-Residential Checklist for Permitting Electric Vehicles and Electric Vehicle Service Equipment (EVSE)). The hotel is considered a “tourist destination” for this project and falls into the category of “Retail and Public Sector Charging” (GOPR) and “Fast Charging”.

Right-of-Way Permit

A Right-of-Way Permit will need to be submitted to the Office of Special Park Uses (209-379-1434). There is a non-refundable \$100.00 fee. The permit form can be found through the National Park Services “Special Use Permits for Activities in Yosemite National Park” webpage (NPS).

Mariposa Checklist for Permitting Electric Vehicles and Electric Vehicle Service Equipment

Mariposa county requires a filled out “Checklist for Permitting Electric Vehicles and Electric Vehicle Service Equipment” form be filled out and submitted as a supplement to the application for a building permit and the is available online (Mariposa, Country of Mariposa - Residential and Non-Residential Checklist for Permitting Electric Vehicles and Electric Vehicle Service Equipment (EVSE)). It appears this form is equivalent to an electrical permit. Whether any further electrical permitting is required should be double-checked with the county office.

Encroachment Permit

An encroachment permit may be necessary with the park service and/or Caltrans, especially if trenching under an existing right of way is necessary (CALeVIP). This should be discussed in a consultation with PG&E. Information on Caltrans encroachment permits may be found through their website and web portal (Caltrans). Encroachment permits for national parks are not easily found online. Relevant encroachment permits will need to be discussed with the NPS.

Building Permits

The Country of Mariposa requires several forms and sets of building plans in order to permit building . These include:

- EV-Application- mariposacounty.org/DocumentCenter/View/93586/EV-Application

- Mariposa County Commercial/Multi-Family Development Permit Application - mariposacounty.org/DocumentCenter/View/8366/Commercial-Building-Permit?bidId=
- Checklist for Commercial Building Permit Application - mariposacounty.org/DocumentCenter/View/57108/Commercial-Checklist-?bidId=
- Building plans (including a site plan) which include floor plan with electrical details and plumbing features, elevation of all sides of structure, unusual construction techniques, energy calculations, etc...
 - Site plan requirements can be found at this site: mariposacounty.org/DocumentCenter/View/48819/Site-Map-Requirements?bidId=
- Relevant encroachment permits
- Potentially a completed Development Services Application (not found online)
- Authorization for Agent to Apply for Building and Grading Permits for the Licensed Contractor

National Historic Site Permits

The Ahwahnee hotel is a National Historic Landmark but the grounds were not included in the National Register of Historic Places nomination forms. It should be expected that any modification to the hotel building such as installing solar panels on the roof will not be allowed but modifications to the site grounds should be allowed. (NPS). Permits related to modifying a National Historic Site are not expected to be needed for the solar or EVSE parts of the project.

NPS Form 10-900
(3-82)

N. H. L. ARCHITECTURE IN THE PARKS

ONS No. 1024-0018
Expires 10-31-87

**United States Department of the Interior
National Park Service**

For NPS use only
received
date entered

**National Register of Historic Places
Inventory—Nomination Form**

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic The Ahwahnee Hotel

and or common _____

2. Location

street & number Yosemite Valley _____ not for publication

city, town Yosemite National Park _____ vicinity of _____

state California code 06 county Mariposa code 043

3. Classification

Category	Ownership	Status	Present Use	
<input type="checkbox"/> district	<input type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> museum
<input checked="" type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input type="checkbox"/> military	<input checked="" type="checkbox"/> other: <u>Luxury Hotel</u>

Figure 3: Nomination form for National Register of Historic Places Inventory – Nomination Form. As can be seen in the classification section, the buildings are included but not the site as a whole.

Inspections

Inspections should be discussed early with national park staff, the Mariposa Country Building Department, and PG&E. The available information online is not completely clear on when and how many inspections will be needed. As a general rule, Mariposa Country Building Department requires that before any phase of construction is concealed by a subsequent phase, an inspection is required (MC). For example, if a trench is dug to bury conduit, an inspection is likely necessary before the trench can be filled in.

It can be expected that after charger installation a building inspector will check for proper charger installation, code compliant electrical work, and that construction is in line with the permit granted by the building department. Additionally, there will be a final inspection from PG&E to evaluate the site and ensure the conduit is complete, the structures are set and backfilled, the bollards are secure, the switchgear is installed properly, etc. Approval from the building department and utility will be required before operation can begin.

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