

# Access California

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## New Accessibility Regulations for Electric Vehicle Charging Stations (EVCS)

Effective January 1, 2017

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# EV Charging California Goals

## Executive Order B-16-2012:

- By 2015, California's major metropolitan areas will be able to accommodate ZEVs through infrastructure plans.
- By 2020, California's ZEV infrastructure will be able to support up to 1 million vehicles.
- By 2025, 1.5 million ZEVs will be on California's roadways with easy access to infrastructure.

# EV Charging Infrastructure



## 2016 CALGreen Code

- Requires EV Infrastructure and EV Spaces for **new**:
  - Multifamily residential facilities
  - Nonresidential facilities
- EV Space: A space intended for future installation of EV charging equipment
- No requirement for EV spaces to be constructed or available until EV chargers are installed for use

# EV Charging

## Definitions in CALGreen

### Chapter 2 definitions in CALGreen that apply to EV charging:

- ELECTRIC VEHICLE (EV)
- ELECTRIC VEHICLE (EV) CHARGER
- ELECTRIC VEHICLE CHARGING SPACE (EV SPACE)
- ELECTRIC VEHICLE CHARGING STATION (EVCS)
- ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE)



# EV Charging Infrastructure

## Multifamily Residential (1 of 3)

### ■ Mandatory Measures

- Applies to new facilities of 17 dwelling units or more
- EV spaces are calculated as 3% of parking spaces provided
- At least one EV space shall be in a common use area and available for use by all residents

### ■ Voluntary Measures: Tier 1 and Tier 2

- EV spaces are calculated as 5% of parking spaces provided



# EV Charging Infrastructure

## Multifamily Residential (2 of 3)

### Mandatory Measures for infrastructure:

- A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit; minimum trade size 1
- Raceway shall originate at the main service or subpanel and terminate in an enclosure in close proximity to the proposed EV space
- Service panel and/or subpanel shall provide capacity to install a 40-amp minimum dedicated branch circuit



# EV Charging Infrastructure

## Multifamily Residential (3 of 3)

### EV spaces when EV chargers are installed

- In private multifamily residential facilities:
  - EV space shall be located adjacent to an accessible parking space with shared access aisle, or
  - EV space shall be accessible according to the specified requirements in CALGreen and located on an accessible route to the building
- In multifamily public housing facilities, EV spaces shall be provided in a public use and/or common use area and accessible according to California Building Code (CBC) Chapter 11B scoping and technical requirements



# EV Charging Infrastructure

## Nonresidential (1 of 3)

### 2016 CALGreen EV Spaces Required

Parking Provided	Mandatory Measures: EV Spaces Required	Voluntary Measures: EV Spaces Tier 1	Voluntary Measures: EV Spaces Tier 2
0 – 9	0	0	1
10 – 25	1	2	2
26 – 50	2	3	4
51 – 75	4	5	6
76 – 100	5	7	9
101 – 150	7	10	12
151 – 200	10	14	17
201 and over	6% of spaces	8% of spaces	10% of spaces





# EV Charging Infrastructure

## Nonresidential (2 of 3)

### Mandatory Measures for infrastructure:

- Type and location of EVSE
- Raceway shall originate at the main service or subpanel and terminate in an enclosure in close proximity to the proposed charging equipment
- Design shall be based upon 40-amp minimum branch circuits and have sufficient capacity to support future EVSE and be able to charge all required EVs at full rated amperage



# EV Charging Infrastructure

## Nonresidential (3 of 3)

### Design of EVCS (EV space and EV charger)

- EVCS shall be accessible according to CBC Chapter 11B
- Use CBC 11B-228.3 provides scoping requirements to determine the required number of accessible EVCS
- Design of EVCS shall be according to CBC 11B-812 technical requirements for the three types of accessible EV spaces: van, standard, and ambulatory accessible

# EV Charging Facility Planning

## Site planning accessibility considerations include:

- Location of EVCS proximity to electrical service and EVSE
- Location of EVCS due to site topography in consideration of the requirements for:
  - Accessible route from the EVCS to the building entrance
  - Accessible route from EVCS to the site boundary (where not serving a particular building or facility)

# EV Charging

## Federal Accessibility Requirements ( 1 of 3)

### Private Multifamily Residential Facilities

- Facilities covered by the Fair Housing Act are required to have public and common use areas that are readily accessible and usable by people with disabilities.
  - Fair Housing Act requires accessible and usable public and common use facilities to be on an accessible route from covered dwelling units
  - Although required to be accessible, no requirements specific to EVCS are specified in federal standards; guidance requires using ANSI A117.1 accessibility standards

## Federal Accessibility Requirements (2 of 3)

### State and Local Government Facilities, Public Accommodations, and Commercial Facilities, under the Americans with Disabilities Act (ADA)

- If available for use by the general public, then the EVCS must be accessible to individuals with disabilities
  - ADA Title II requires access to programs and services; such as EVCS provided by a state or local government or EVCS provided in housing by, for, or on behalf of a public entity
  - ADA Title III requires access to goods and services, such as EVCS provided by privately owned public accommodations

# EV Charging

## Federal Accessibility Requirements (3 of 3)

### State and Local Government Facilities, Public Accommodations, and Commercial Facilities, under the Americans with Disabilities Act (ADA)

- No federal accessibility standards specific to the design of EVCS, even though accessibility to EVCS is required.
- Legal precedents specify that lack of explicit scoping or technical requirements does not relieve ADA Title II and Title III entities from obligation to provide access.

# EV Charging

## California Accessibility to EVCS (1 of 3)

### Public Housing, Public Accommodations, Commercial Facilities, and Public Buildings covered by the California Building Code (CBC)

California determines that in order to ensure access to EV charging, regulations were needed. DSA convenes a working group of stakeholders to address accessibility concerns regarding EVCS, from which accessibility regulations in the CBC would be developed. By providing specific scoping and technical requirements, jurisdictional agencies could review for compliance to ensure access to new EVCS was provided.

# EV Charging

## California Accessibility to EVCS (2 of 3)

EVCS Working Group of Stakeholders included the following:

Individuals with disabilities

Disability advocates

Access professionals

Building officials

Architects

State agencies

EV charger manufacturers

Electric utility companies

Building industry representatives

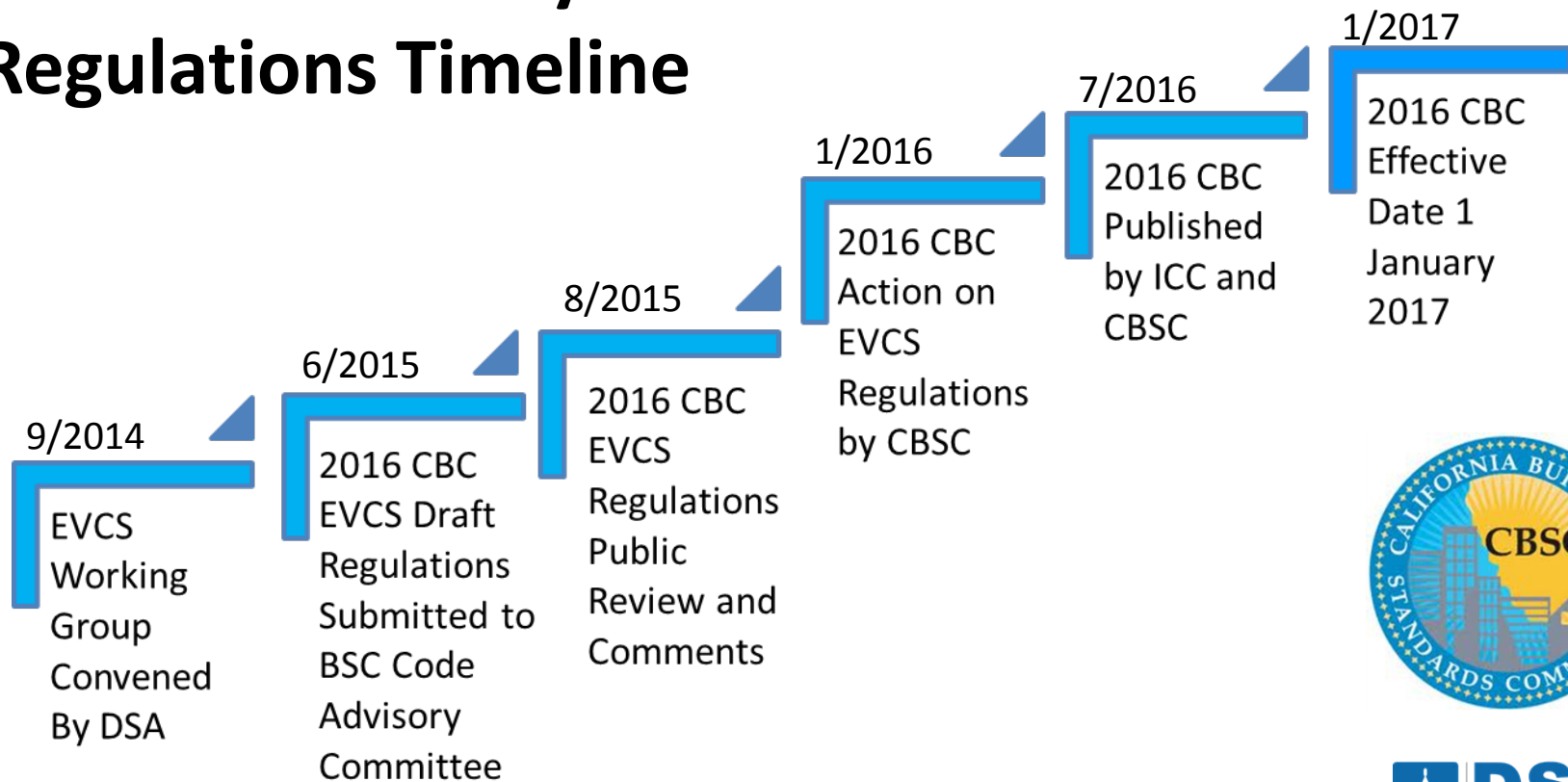
EV advocates



# EV Charging

## California Accessibility to EVCS (3 of 3)

### EVCS Accessibility Regulations Timeline



# EV Charging

## CBC Accessibility Regulations



California's accessibility regulations for EVCS in  
**Public Housing, Public Accommodations,  
Commercial Facilities, and Public Buildings**  
are in the  
2016 California Building Code

**Effective January 2017.**



# EV Charging Stations

## CBC Accessibility Regulations

### Definitions applicable to EVCS

- Chapter 2, Section 202 Definitions

### Scoping: What type and how many?

- Chapter 11B, Division 2  
Section 11B-228.3 Electric Vehicle Charging Stations

### Technical: Where located and how to make accessible?

- Chapter 11B, Division 8  
Section 11B-812 Electric vehicle charging stations



# EV Charging Stations

## CBC Definitions

### Chapter 2 definitions in CBC that apply to EV charging:

- DRIVE UP ELECTRIC VEHICLE CHARGING STATION
- ELECTRIC VEHICLE (EV)
- ELECTRIC VEHICLE (EV) CHARGER
- ELECTRIC VEHICLE CHARGING SPACE (EV SPACE)
- ELECTRIC VEHICLE CHARGING STATION (EVCS)
- ELECTRIC VEHICLE CONNECTOR (EV CONNECTOR)



# EV Charging Stations

## Understanding Scoping (1 of 3)

CBC Scoping provisions are consistent with the following guidance provided by the United States Access Board:

- An EV does not need to charge every time it's parked; therefore public and common use EVCS are charging spaces and not parking spaces.
- While an EV needs to be in a parked state to charge; charging, and not parking, is the primary purpose of an EVCS.
- **EV charging is a service** provided by the facility owner or public entity, and therefore must be accessible to individuals with disabilities.



# EV Charging Stations

## Understanding Scoping (2 of 3)

- Local zoning codes may vary, and some jurisdictions may permit a facility owner to meet parking requirements with a combination of parking and charging stations; however, the accessibility requirements to parking and EVCS under the CBC are separate and different.
- Scoping provisions for parking are in CBC 11B-208.  
Scoping provisions for EVCS are in CBC 11B-228.3.
- Technical provisions for parking are in CBC 11B-502.  
Technical provisions for EVCS are in CBC 11B-812.



# EV Charging Stations

## Understanding Scoping (3 of 3)

### **Public Housing, Public Accommodations, Commercial Facilities, and Public Buildings covered by the California Building Code (CBC)**

- Accessibility regulations do not require EVCS to be installed. As previously stated, CALGreen requires EV infrastructure to be provided and the EVCS to be planned, but not installed.
- When EVCS are installed, accessible EVCS shall be provided for common use/public use in accordance with the scoping and technical provisions.



# EV Charging Stations

## CBC 11B-228.3 Scoping (1 of 4)

### Two exceptions to providing accessible EVCS

- EVCSs not available to general public and intended for use by a designated vehicle or driver (example: public or private fleet vehicles and EVCS assigned to an employee)
- In public housing facilities, EVCS intended for use by an EV owner or operator at their residence (space can be provided and assigned to the EVCS owner)





# EV Charging Stations

## CBC 11B-228.3 Scoping (2 of 4)

**TABLE 11B-228.3.2.1**

Total Number of EVCS at a Facility <sup>1</sup>	Minimum Number (by type of EVCS Required to Comply with Section 11B-812: <sup>1</sup> Van Accessible	Minimum Number (by type of EVCS Required to Comply with Section 11B-812: <sup>1</sup> Standard Accessible	Minimum Number (by type of EVCS Required to Comply with Section 11B-812: <sup>1</sup> Ambulatory
<b>1 to 4</b>	1	0	0
<b>5 to 25</b>	1	1	0
<b>26 to 50</b>	1	1	1
<b>51 to 75</b>	1	2	2
<b>76 to 100</b>	1	3	3
<b>101 and over</b>	1, plus 1 for each 200, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

<sup>1</sup> 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.



# EV Charging Stations

## CBC 11B-228.3 Scoping (3 of 4)

### New Construction and Alterations of EVCS

- When new EVCS are added to a site with existing EVCS, the total number of new and existing EVCS is used to determine the number of accessible EVCS per Table 11B-228.3.2.1.
- Technical provisions apply only to new and altered EVCS; the CBC does not require existing EVCS to be altered to meet the new technical requirements.
- Operable parts on **all** new and altered EV chargers must comply with the requirements of CBC 11B-309.4.



# EV Charging Stations

## CBC 11B-228.3 Scoping (4 of 4)

Table 11B-228.3.2.1. addresses four (4) types of accessible EVCS for determination on number/type per facility:

- Van Accessible
- Standard Accessible
- Ambulatory
- Drive-up

EVCS technical requirements are in CBC 11B-812.



# EV Charging Stations

## CBC 11B-812 Technical (1 of 11)

### Van accessible EV space

Similar configuration to van accessible parking space

- 12 feet (144 inches) minimum width
- 18 feet (216 inches) minimum length
- Access aisle 5 feet (60 inches) minimum width located on passenger side with head-in parking
- Surface marking 12" high letters "EV CHARGING ONLY"

9 feet stall/8 feet access aisle is not permitted for EV space



# EV Charging Stations

## CBC 11B-812 Technical (2 of 11)

### Standard accessible EV space

Similar configuration to standard accessible parking space:

- 9 feet (108 inches) minimum width
- 18 feet (216 inches) minimum length
- Access aisle 5 feet (60 inches) minimum width located on passenger or driver side of EV space
- Surface marking 12" high letters "EV CHARGING ONLY"



# EV Charging Stations

## CBC 11B-812 Technical (3 of 11)

### **Ambulatory accessible EV space**

No comparable requirement in accessible parking

- 10 feet (120 inches) minimum width
- 18 feet (216 inches) minimum length
- No access aisle required
- Surface marking 12” high letters “EV CHARGING ONLY”

Additional width of space provides increased access for individuals with limited or temporary mobility challenges.



# EV Charging Stations

## CBC 11B-812 Technical (4 of 11)

### Drive-up accessible EV space

Analogous to motor fuel pump island at filling stations

- 17 feet wide (204 inches)
- 20 feet long (240 inches)
- No access aisle required, and no surface markings to define space
- All drive-up EVCS must meet the specified accessibility requirements

Per Chapter 2 Definition, use of a drive-up accessible EV is limited to 30 minutes maximum.



# EV Charging Stations

## CBC 11B-812 Technical (5 of 11)

### Access aisle requirements

- Must extend to full length of EV space minimum
- Access aisle can be shared by two accessible EV spaces
- Painted borderline around the perimeter of the access aisle, hatch lines 36" on center maximum within, and "NO PARKING" in 12" high letters visible from the adjacent vehicular way
- Markings must contrast to vehicle surface, and the blue color required for identification of access aisles in accessible parking shall **not** be used.





# EV Charging Stations

## CBC 11B-812 Technical (6 of 11)

### Accessible route requirements

- An accessible route shall be provided connecting the EV space to the EV charger that serves it.
- EVCS shall be designed so accessible routes are not obstructed by cables or other elements.
- EVCS that serve a particular building or facility shall be located on an accessible route to an accessible entrance.
- Where EVCS do not serve a particular building or facility, EVCS shall be located on an accessible route to an accessible pedestrian entrance of the EV charging facility.



# EV Charging Stations

## CBC 11B-812 Technical (7 of 11)

### EV Charger requirements

Operable parts and charging cord storage shall comply with requirements for:

- Clear floor space at EV charger
- Reach range requirements
- Operable parts requirements (EV connectors are not required to meet 5-pound activating force requirements)

Point-of-sale devices must comply with the required accessibility features.



# EV Charging Stations

## CBC 11B-812 Technical (8 of 11)

### EV Charger requirements

#### Location requirements:

- Adjacent to, and within the projected width of, the EV space it serves (if EV charger has one EV connector)
- Within the combined projected width of the EV spaces it serves (if EV charger has multiple EV connectors)
- Where EV space is parallel to vehicular way, EV charger shall be adjacent to, and 48" maximum from the head end or foot end of the EV space it serves



# EV Charging Stations

## CBC 11B-812 Technical (9 of 11)

### Identification for accessibility

#### Installations of 1-4 EVCS

- No identification signs required
- While an accessible EV space is designed for accessibility, its use is available to everyone and not limited to those with access license plates or placards

#### Installations of 5-25 EVCS

- One van accessible EV space shall be identified with an ISA; the standard accessible EV space shall not be required to be identified with an ISA



# EV Charging Stations

## CBC 11B-812 Technical (10 of 11)

### Identification for accessibility

Installations of 26 or more EVCS

- All required van accessible and all required standard accessible shall be identified by an ISA

Ambulatory EVCS

- Not required to be identified with an ISA

Drive-up EVCS

- Not required to be identified with an ISA



# EV Charging Stations

## CBC 11B-812 Technical (11 of 11)

### Identification for accessibility

- ISA sign shall be reflectorized with a minimum area of 70 square inches
- Location of sign adjacent to EV space or at head end of EV space, mounted 60" AFF to bottom of sign, may be mounted on wall, or mounted 80" AFF if in accessible route
- When signs are required, and if EV space is van accessible, then a sign stating "van accessible" shall be provided

# EV Charging Stations

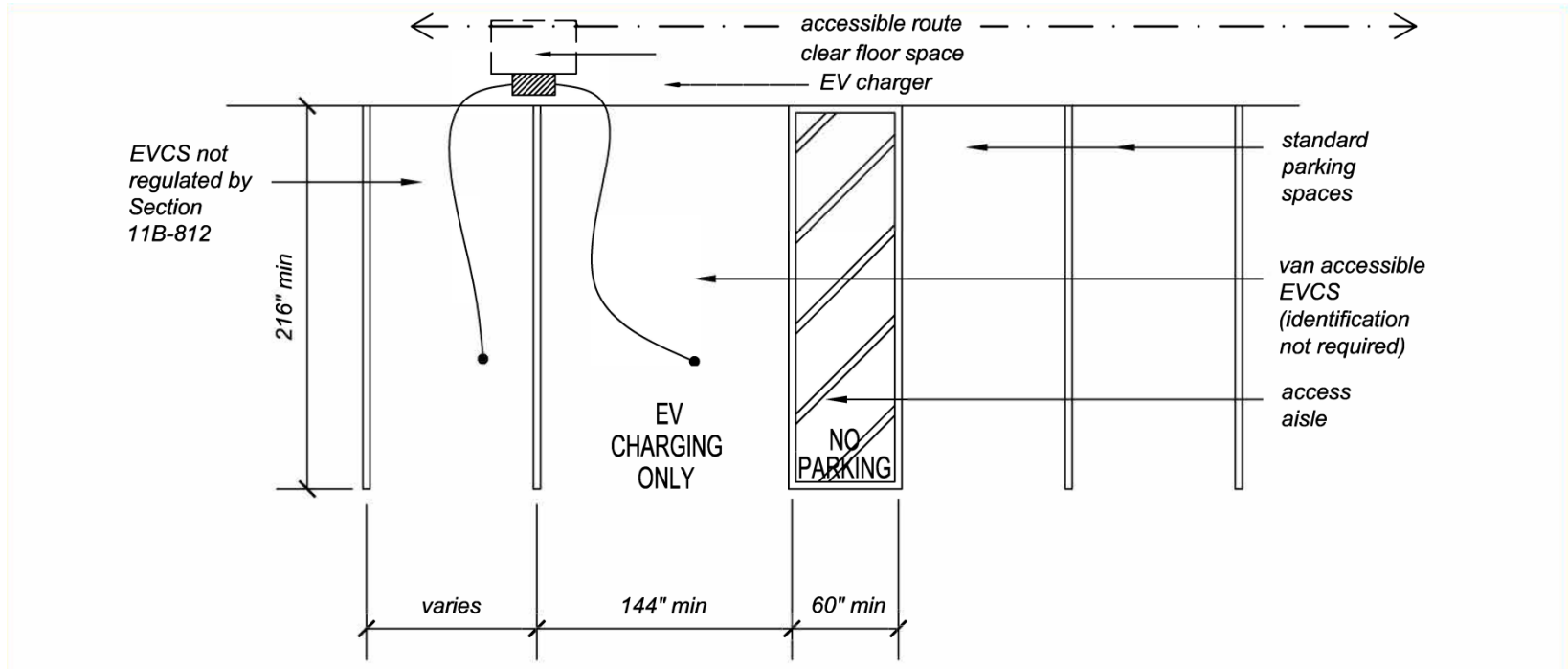
## Time Limits for Charging

If properly signed per local ordinance, EV charging time limits can be applied to **all** users:

- Per the California Department of Motor Vehicles, EVCS are “zones reserved for special types of vehicles,” in which right to park for unlimited periods of time does not apply.
- Vehicles displaying accessible license plates or placards may **not** park for unlimited periods of time in an accessible EVCS identified by an ISA where the length of time is restricted or metered.

# EV Charging Stations

## Sample Layout (1 of 3)

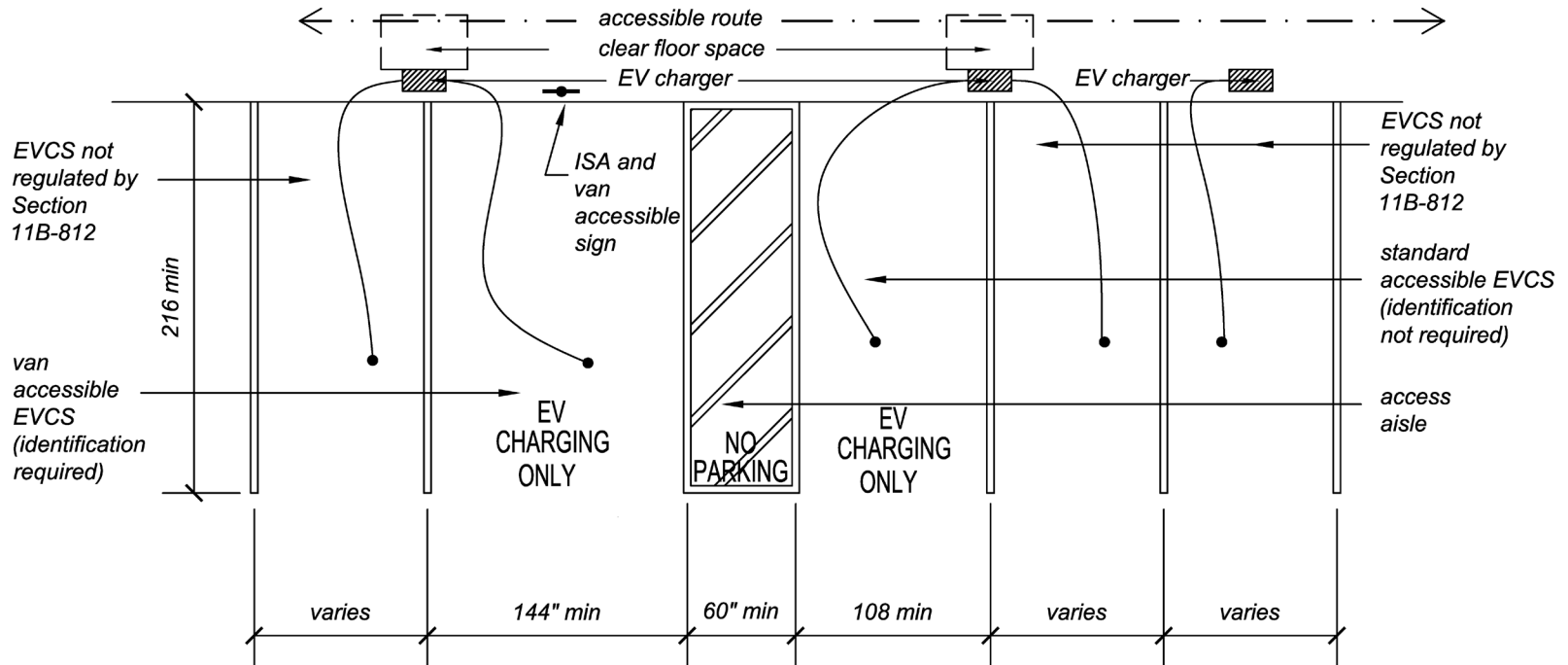


**Two EVCS: one van accessible EV spaces required**



# EV Charging Stations

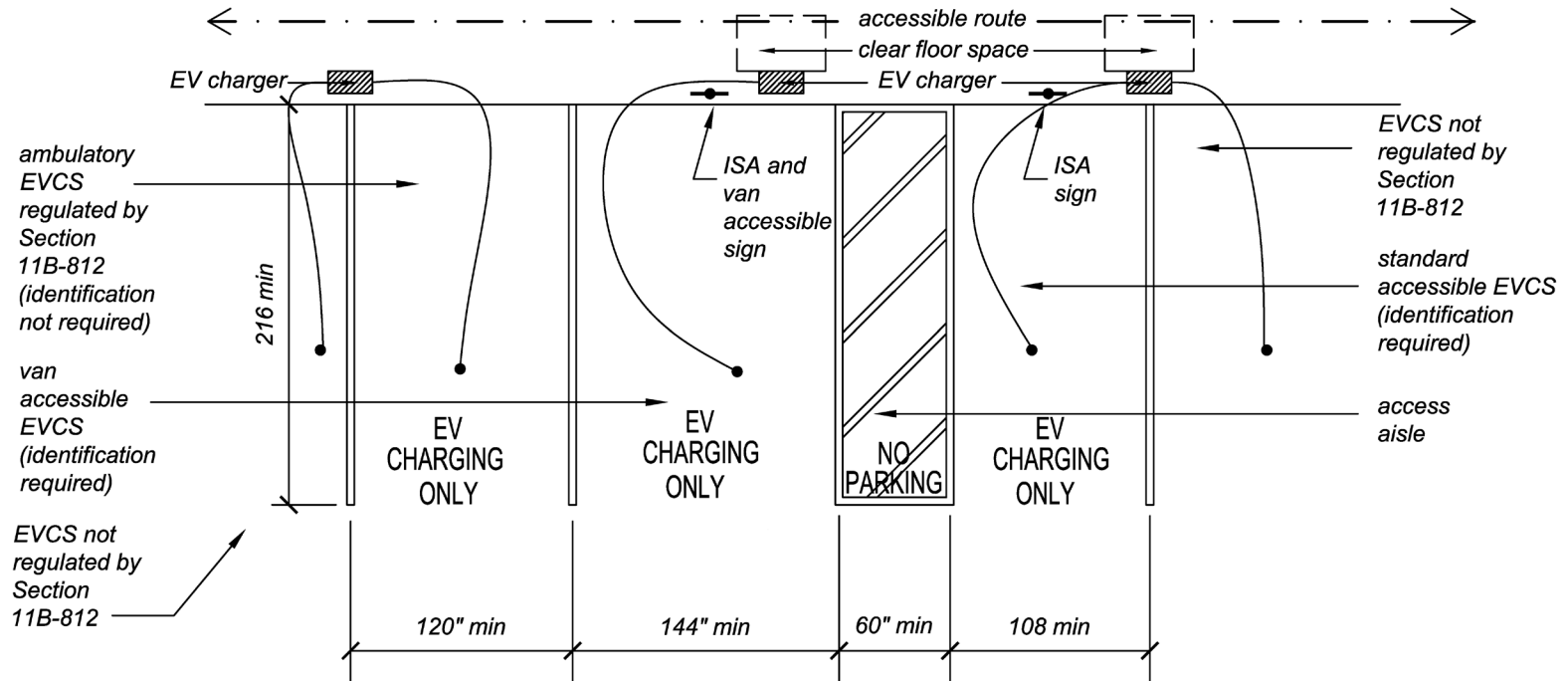
## Sample Layout (2 of 3)



**Five EVCS: two accessible EV spaces required**

# EV Charging Stations

## Sample Layout (3 of 3)



**26 EVCS: three accessible EV spaces required**

## 2016 CALIFORNIA BUILDING CODE

CALIFORNIA CODE OF REGULATIONS  
TITLE 24, PART 2, VOLUME 1 OF 2

Based on the 2015 International Building Code®

California Building Standards Commission



# EV Charging Stations Alterations

An alteration, by definition in the CBC, is a change, addition or modification in construction, change in occupancy or use, or structural repair to an existing building or facility.

According to CBC 11B-202.4, when alterations or additions are made to existing buildings or facilities, an accessible “*path of travel*” to the specific area of alteration or addition shall be provided.

While installing EVCS is an electrical project, it is **not** considered exempt from *path-of-travel* requirements, because EVCS affect the “usability” of the facility.



# EV Charging Stations

## *Path of Travel* Improvements (1 of 3)

The primary accessible *path of travel* (POT) includes the following elements serving the area of alteration:

- A primary entrance to the building or facility (including from site arrival points, by definition)
- Toilet and bathing facilities
- Drinking fountains
- Public telephones
- Signs (California requirement)

If POT is compliant, no additional work required.



# EV Charging Stations

## *Path of Travel* Improvements (2 of 3)

### **CBC 11B-202.4 Exception 10:**

- When installing new EVCS at existing facilities where vehicle fueling, charging, parking or storage is a primary function, POT improvements are limited to 20% of cost of work directly associated with the installation of EVCS.  
(example: EVCS in a parking structure when the parking structure does not serve a specific building)
- Alterations where installing new EVCS at existing facilities where vehicle fueling, charging, parking or storage is **not** a primary function; POT improvements are not required.  
(example: EVCS serving a specific building)



# EV Charging Stations

## *Path of Travel* Improvements (3 of 3)

CBC Scoping provisions are consistent with the following guidance provided by the United States Access Board:

- While an EV needs to be in a parked state to recharge; charging is the primary purpose of an EVCS. EVCS are not parking spaces; therefore, EVCS are not considered a “site arrival point.”
- Other alteration projects on a site do not trigger an improvement to existing EVCS under CBC 11B-202.4 as a *path of travel* element.



# EV Charging Stations

## EVCS Installations

Installations of EVCS in existing facilities may be affected by technical infeasibility, when applicable.

*Unreasonable hardship* does not apply to *path of travel* improvements triggered by EVCS installations in existing facilities, because *path of travel* improvements, when applicable, are already limited to 20% of the adjusted construction cost.

It can only be a *technically infeasible* to provide the required access to EVCS, when applicable. *Unreasonable hardship* can never be applied to providing the required access to EVCS.



# EV Charging Stations

## *Technical Infeasibility* (1 of 2)

Technical infeasibility may apply to a new EVCS installation in an existing facility on a case-by-case basis.

*Technically infeasible* means an alteration of a building or a facility, that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features that are in full and strict compliance with the minimum requirements necessary to provide accessibility.





# EV Charging Stations

## *Technical Infeasibility* (2 of 2)

Providing the necessary accessibility to EVCS installations in existing facilities may be *technically infeasible* on a case-by-case basis. A finding of technical infeasibility requires a site-specific assessment of constraints or complications regarding the planned scope of work.

When *technically infeasible* to provide full compliance, the alteration shall provide equivalent facilitation or comply with the requirements to the maximum extent feasible.

Details of any finding of technical infeasibility shall be recorded and entered into the files of the enforcing agency.



Please direct questions regarding this presentation to:

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