**Building Department**
**400 Park Ave.**
**River Forest, IL 60305**

# Resource Guide
## Single Family Residence Electric Vehicle Charger

This guide shall cover the code requirements needed to provide a compliant Electric Vehicle (EV) charger in a Single Family Residence as covered per the International Residential Code.

This guide focuses on adding an Electric Vehicle charger to an existing residence that was built prior to the Electric Vehicle Charging Act (765 ILCS 1085).

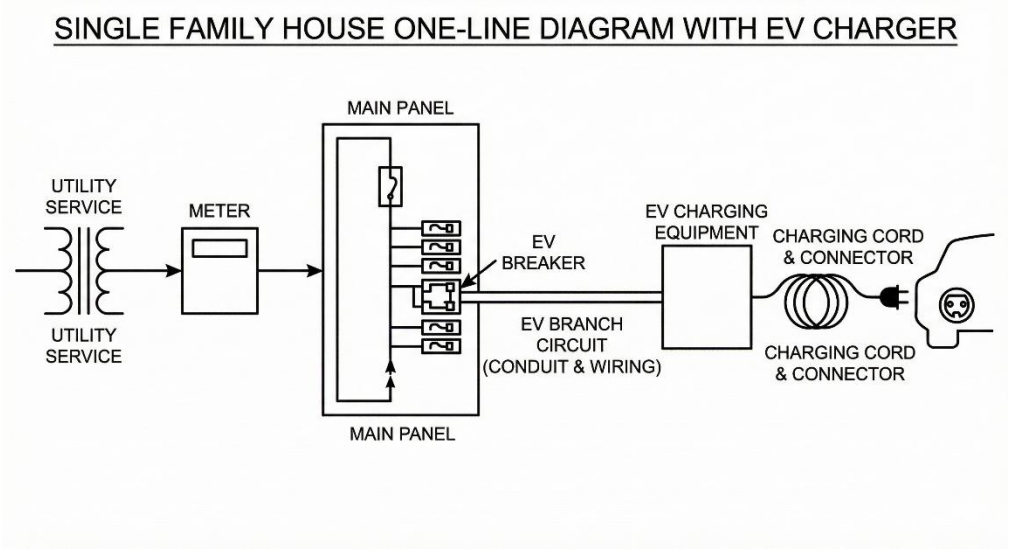
## Permit Submittal Documents

- Completed permit application form
- Technical Documents that provide:
  - Conductor information (size and material)
  - Raceway information (conduit type and size)
- Electrical load calculations
- Equipment specification sheet or cut sheet for the EVSE unit
- Acknowledgement of bringing smoke and carbon monoxide alarms up to current code

## Inspections

This is a list of inspections for a typical project with this scope of work.

- Rough electrical inspection (if new wiring is concealed prior to cover)
- Final electrical inspection
- Final building inspection



## Code Requirements

This is a summary of key code requirements that are to be addressed within the technical documents.

| Code Requirement | IRC 2021 & NEC 2020 | IRC 2024 & NEC 2023 |
|---|---|---|
| The residential code requires construction documents that sufficiently detail the scope of work and detail how the provisions of the code and standards will be met. | R106, R106.1.1 | R106, R106.1.1 |
| Wall penetrations shall be sealed with appropriate materials. Typically fire stopping and fire blocking materials shall be sufficient. | R302.5.1, R302.11 | R302.5.1, R302.11 |
| Smoke Alarms and Carbon Monoxide shall be provided as for new construction. If primary power is not available per alarm or detector location and cannot be otherwise accessed and not exposed during the construction battery power is permitted. | R314.2.2, R314.6, R315.2.2, R315.6 | R10.2.2, R310.6, R311.2.2, R311.6 |
| Interconnection of smoke alarms and carbon monoxide alarms is required | R314.4, R315.5 | R310.4, R311.5 |
| EV branch circuit shall be dedicated to only EV charging equipment. | E3702.13, NEC 625.40 | E3702.14, NEC 625.40 |
| EV branch circuit shall be considered to be a continuous load | E3702.13, 625.42 | E3702.14, 625.42 |
| Electrical load calculations shall be the chargers rating. The 2024 IRC and 2023 NEC require a minimum of 7.2KW in the calculations. | E3704.2, NEC 220.40 | E3704.2, NEC 220.57 |
| EV charging coupling (the whip and plug) must be mounted at least 18” above the finished floor while inside and 24” outside | NEC 625.50 | NEC 625.50 |
| Cord and plug EV chargers are required to be provided power from a GFCI outlet | NEC 210.8 | NEC 210.8 |