



RESIDENTIAL ENERGY STORAGE SYSTEMS (ESS)

(The information provided in this document is general in nature and intended as a guide for ESS installation in R-3 and R-4 occupancies. Each project is unique and additional requirements may apply as deemed appropriate.)

Plan Submittal Requirements:

Residential ESS submittals are required to be submitted to the City of Rocklin Permit Center for review by the Building Division and the Rocklin Fire Department. Please reference the Building Division Energy Storage System (ESS) Plan Submittal requirements for the required application documents and to ensure that your plan submittal is complete:

https://www.rocklin.ca.us/sites/main/files/file-attachments/ess_submittal_checklist_2019.pdf

References:

2022 CBC, CRC, CEC, CFC and the following:

- UL 9540 ESS Fire Test Performance Requirements
- UL 9540A ESS Large-Scale Fire Test Performance Requirements

Permit Fees:

Permit fees shall be assessed in accordance with the Permit Fee Schedule as adopted by the City of Rocklin when plans are submitted. The Fire inspection fee is \$235.00, but additional Building permit fees also apply. <https://www.rocklin.ca.us/pod/fee-schedule>

Plan Submittal and Inspection Procedure:

Plans shall include, but not be limited to the following:

- A detailed site plan showing the location of the ESS unit(s) and all related electrical equipment. Equipment shall be labeled as “existing” or “proposed”. The distance between the ESS unit(s) and doors or windows which lead directly into the dwelling unit shall be noted on the plans for all ESS proposed for installation on an exterior wall.
- A detailed floor plan showing the location of the ESS unit(s), related electrical equipment, the location of any required smoke alarm or heat alarm, vehicle impact protection, designated working clearances from electrical equipment and distances between ESS unit(s) and all doors or windows leading directly into the dwelling unit.

- A detailed elevation for each wall on which an ESS unit(s) or related electrical equipment is proposed for installation. The clear height of the vehicle garage opening shall be noted. The distance from the ceiling/top of wall and floor/ground to the ESS unit(s) and the distance between each ESS unit(s) shall be noted on the elevation. ESS unit(s) and related electrical equipment shall be labeled as “existing” or “proposed”. Show the location of all related disconnects for the ESS and/or solar photovoltaic equipment.
 - If the ESS unit(s) is installed on an exterior wall on which the gas meter is located, note the distance in feet between the ESS unit(s) and the gas meter.
- Specification sheets for all ESS equipment and related equipment, including solar photovoltaic equipment, if applicable. Include the specification sheet and OSFM Listing Service sheet for any new smoke alarm and heat alarm.

A final Fire inspection is required prior to final inspection by the Building Division. A minimum of 48 hours is required for the inspection request. Call Rocklin Fire Department Fire Prevention Bureau at 916.625.5300 to schedule the Fire inspection.

Plan Review Information:

1. Equipment Listings: ESS shall be listed and labeled in accordance with UL 9540.
2. Installation and Spacing: ESS shall be installed in accordance with the manufacturer's instructions and their listing (CFC1207.11.2).
 - Individual units shall be separated from each other by at least 3 feet of spacing unless smaller separation distances are documented to be adequate based on large-scale fire testing complying with CFC Section 1207.1.5 (CFC 1207 11.2.1).

NOTE: Installation of individual ESS units using separation distances less than 3 feet, or unit “stacking,” under Section 1207.1.5, must be in accordance with UL9540A testing. A copy of the large-scale fire testing report and installation guidelines must be provided to Rocklin Fire Department for review and approval on a case-by-case basis. Confirmation of the UL 9540A test must be listed in the testing laboratory’s online database.

The review of UL 9540A testing data will be conducted separately from individual plans submitted for review and may cause a delay in permit issuance for a specific project.

3. Location: ESS shall be installed only in the following locations:
 - Detached garages and detached accessory structures.
 - Attached garages separated from the dwelling unit living space and sleeping units by not less than ½ inch gypsum board or equivalent applied on the garage side.
 - Outdoors or on the exterior side of the exterior walls located not less than 3 feet from doors and windows directly entering the dwelling unit. **Note: A 3 foot minimum clearance between ESS units/electrical equipment and any vegetation is required.**
 - Enclosed utility closets, basements, storage or utility spaces within dwelling units with finished or noncombustible walls and ceilings. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than 5/8-inch Type X gypsum wallboard.

ESS shall not be installed in sleeping rooms, closets, spaces opening directly into sleeping rooms or in habitable spaces of dwelling units. (CFC 1207.11.3)

4. Energy Ratings: Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating structure shall not exceed:
 - 40 kWh within utility closets and storage or utility spaces.
 - 80 kWh in attached or detached garages and detached accessory structures.
 - 80 kWh on exterior walls.
 - 80 kWh outdoors on the ground.

ESS installations exceeding the permitted individual or aggregate ratings shall be installed in accordance with Sections 1207.1 through 1207.9 of the California Fire Code. (CFC 1207.11.4)

5. Electrical Installation: ESS shall be installed in accordance with the California Electrical Code. Inverters shall be listed and labeled in accordance with UL 1741 or provided as part of the UL 9540 listing. Systems connected to the utility grid shall use inverters listed for utility interaction (CFC 1207.11.5.)

NOTE: The ESS disconnecting means shall be located within five feet of the main service panel on the exterior of the dwelling.

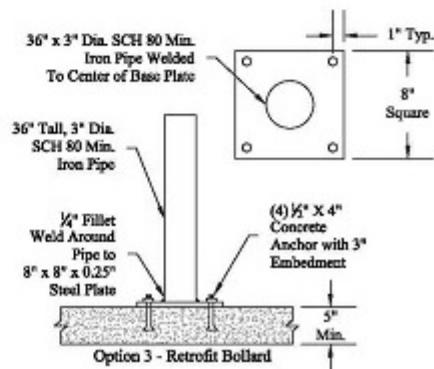
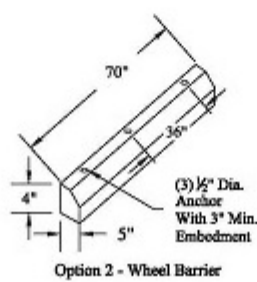
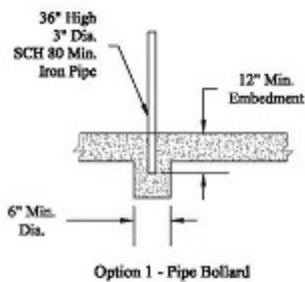
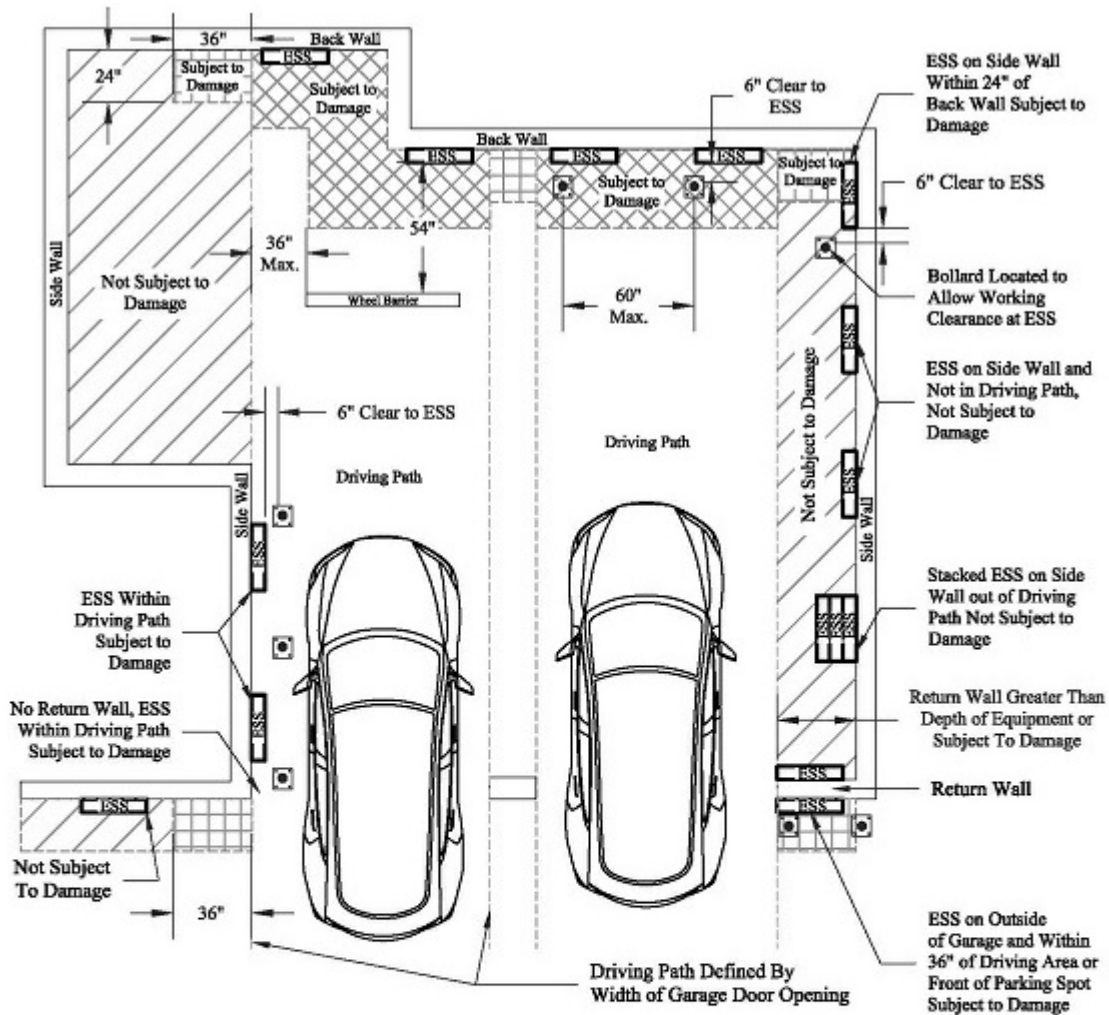
6. Fire Detection: ESS installed in Group R-3 and R-4 residential occupancies shall comply with the following:

- Rooms and areas within dwellings units, sleeping units, basements and attached garages in which ESS are installed shall be protected by smoke alarms in accordance with Section 907.2.11.
- A listed heat alarm ***interconnected to the smoke alarms*** shall be installed in locations within dwelling units, sleeping units and attached garages where smoke alarms cannot be installed based on their listing. (CFC 1207.11.6)

NOTE: A California OSFM-approved heat alarm, listed for use without a fire alarm panel, is required for installation in garages in which ESS are located. If the existing dwelling is not equipped with interconnected smoke alarms, one California OSFM-approved, listed smoke alarm, which is interconnected to the heat alarm in the garage, will be required in the dwelling unit in an approved location.

7. Protection From Impact: See CFC Figure 1207.11.7.1 below for required locations of vehicle impact protection. The floor plan must clearly show the information necessary to determine if vehicle impact protection is required. If vehicle impact protection is required, the type and location of vehicle impact protection devices must be noted on the plans.

Exception: Where the clear height of the vehicle garage opening is 7 feet 6 inches (2286 mm) or less, ESS installed not less than 36 inches (914 mm) above finished floor are not subject to vehicle impact protection requirements. (CFC 1207.11.7.1)



CFC Figure 1207.11.7.1