

B

RESIDENTIAL PHOTOVOLTAIC INSTALLATIONS



COMMUNITY DEVELOPMENT DEPARTMENT • 345 N EL DORADO STREET • STOCKTON, CA 95202 • (209) 937-8561
www.stocktonca.gov/buildinginspection

PERMIT REQUIREMENTS:

- A permit is required for the installation of a photovoltaic (PV) system on a residential property. All PV systems must be reviewed for code compliance, method of installation, and electrical safety.
- Permits are issued to either the property owner with a completed Owner/Builder form *or* to a California licensed **C-10**, **C-46**, **or B** contractor with a current City of Stockton Business License.
- **Residential solar permits are available to apply, pay, and receive online via our online permit portal at: <https://aca-prod.accela.com/STOCKTON>. A free user account must be created to use this service.**
- Permits can also be obtained at the Community Development Department Permit Center.
 - Located at 345 N. El Dorado St, Stockton, CA 95202
 - Office hours are from 8:00 a.m. to 4:30 p.m. Monday through Friday, closed alternate Fridays.
- Projects submitted in accordance with this handout *may* be approved over-the-counter.
 - PV systems over 15kw and/or including battery storage systems will require plan review.



Eligible residential solar projects are now available for automated review and instant permitting through the city's participation in SolarAPP+. Projects submitted through SolarAPP+ will receive instant permits from the city and the following requirements are not applicable. To learn more about this streamlined process, visit our website here: <http://www.stocktonca.gov/solarapp>

SUBMITTAL CHECKLIST:

- A. [Building Permit Application](#)
- B. Electronic Copies of PV plans – See below for plan requirements
- C. [Owner/Builder Form](#) (if applicable)
- D. Authorization Letter from the licensed contractor for the individual picking up the permit

PLAN REQUIREMENTS:

Plans need to be submitted containing the following items:

- Site plan showing the layout of the site.
- Plan view showing the location of the PV installation and layout of existing roof framing members that support the system, or a site plan if panels are not mounted on the roof.
- Details for mounting of PV modules, type and number of roof coverings, and subsequent weatherproofing of the roof.
- Electrical single-line diagram clearly identifying all devices installed in the PV system and indicating total kVA rating of the system.
- Clearly identify the point of interconnection with the utility supplied wiring system and provide details for main breaker, PV breaker, and rating of bussing.

- Indicate types and size of all conduit and conductors throughout the PV system.
- Provide manufacturer's cut-sheets and installation instruction for all PV modules, mounting systems, combiner boxes (if used), inverters, rapid shutdown devices, and disconnects.
- Provide structural calculations, prepared by a California licensed design professional, if the total weight of the PV system is over five pounds per square foot.
- The installation of the PV system shall conform to the requirements of CEC Article 690 and any other applicable articles or standards.
- The PV plans shall specify all Fire Department required signage.

GENERAL REQUIREMENTS:

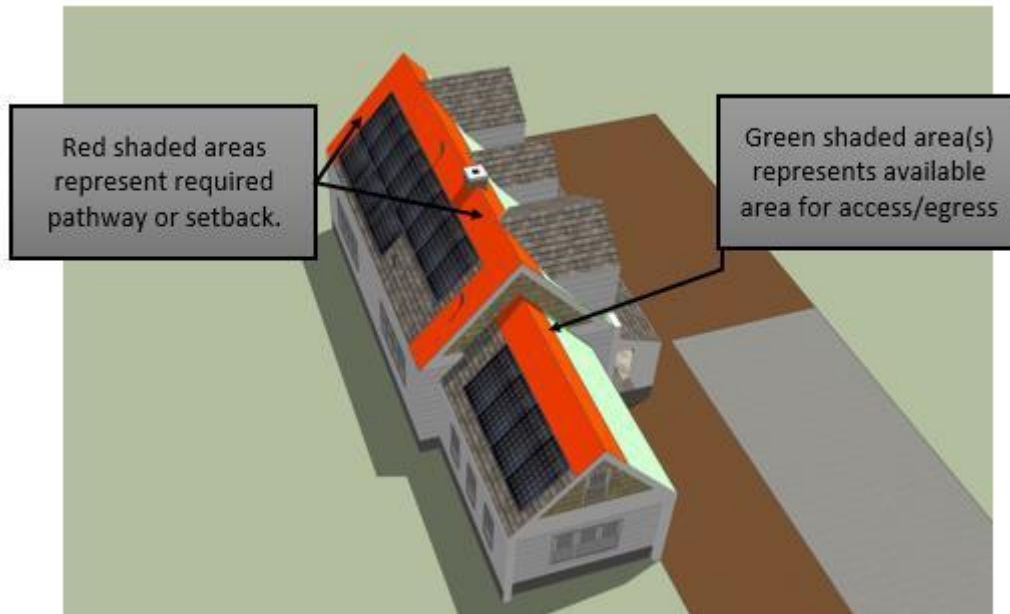
- **Drain Waste Vent System** – Modifications of any drain waste vent piping systems or ventilation penetrations will require inspections and approvals, and shall comply with the requirements of the current editions of the California Building, Plumbing, and Mechanical Codes.
- **Bedroom Egress Window Requirements** – Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36 inches wide shall be provided to the emergency escape and rescue opening. Every bedroom shall have at least one window for emergency egress. Photovoltaic modules shall not be located on any roof area that will impede any rescue efforts by emergency responders.
- **Exposed Cables on Roof** – All exposed wires/cables shall be in an approved conduit outside the perimeter of the branch/array and prior to entering the building.
- **Rough-In Inspection** – Contact the Stockton Building Division for inspection of all attic, wall cavity, and under floor rough wiring installations before drywall, flooring, or exterior wall coverings are applied.
- **Roof Smoke Venting Requirements** – See attached diagrams for approved photovoltaic panel installation locations. Other location designs may be approved prior to installation of photovoltaic panels by the Stockton Fire Prevention Department.
- **Subject to Field Approval** – Please note that all photovoltaic plan check approvals are subject to field inspection approvals.
- **Battery Storage Systems** – All systems that include the installation of Energy Storage Systems (ESS) shall comply with Section R328 of the CA Residential Code. ESS installed in the garage may require impact protection (i.e., bollard) based on the proposed location.

SIGNAGE REQUIREMENTS:

- Provide all signage required by the City of Stockton Fire Department in accordance with guidelines provided by the Office of the State Fire Marshall.
- Provide all signage as required by the California Fire Code and California Electrical Code.
- All warning signs shall conform to the following formatting requirements:
 - Shall be red background with white lettering
 - Minimum 3/8" letter height
 - All capital letters
 - Arial Font
 - Must be reflective, weather resistant material suitable for the environment

Rooftop Setback Requirements per CRC 324.6:

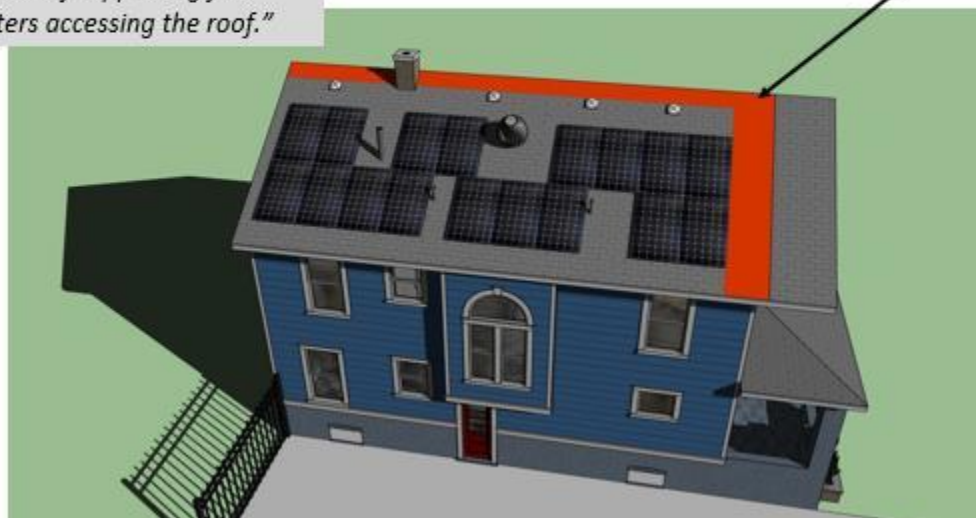
Pathway to Ridge



Structural Support of Pathways

"Pathways shall be over areas capable of supporting fire fighters accessing the roof."

Large roof overhang not well supported requires pathway to move over bearing wall.

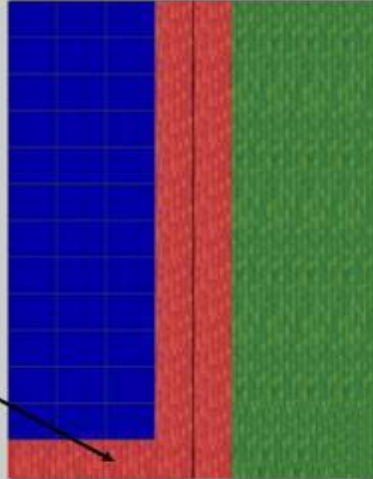


Rooftop Setback Requirements Continued:

Pathways to Ridge – Example 1

“Not less than two minimum 36 in. (914 mm) wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings.”

Pathway to Ridge

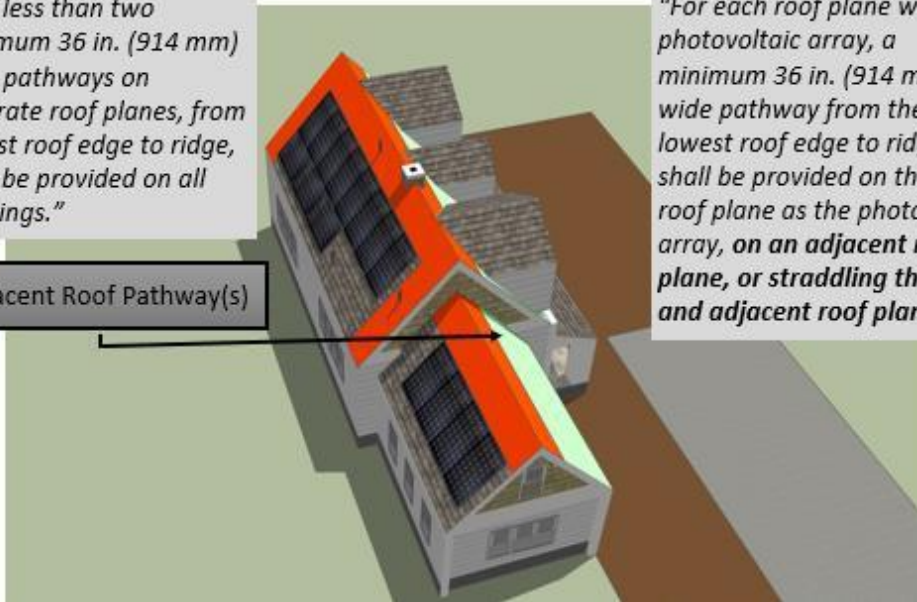


“For each roof plane with a photovoltaic array, a minimum 36 in. (914 mm) wide pathway from the lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes.”

Pathways to Ridge – Example 2

“Not less than two minimum 36 in. (914 mm) wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings.”

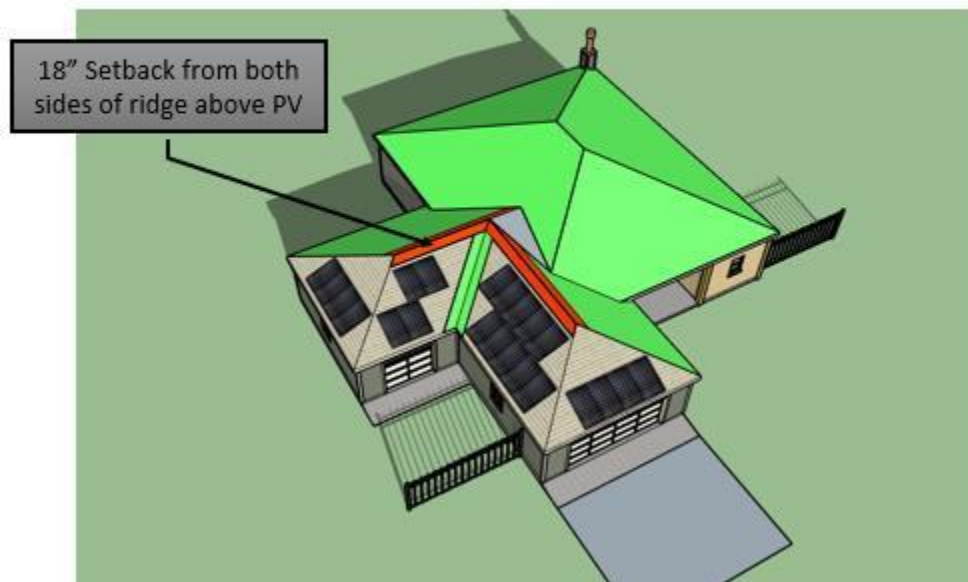
Adjacent Roof Pathway(s)



“For each roof plane with a photovoltaic array, a minimum 36 in. (914 mm) wide pathway from the lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes.”

Rooftop Setback Requirements Continued:

R324.6.2 Setback at ridge. For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear set back is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear set back is required on both sides of a horizontal ridge.

Ridge Setbacks – <33% Total Roof Area

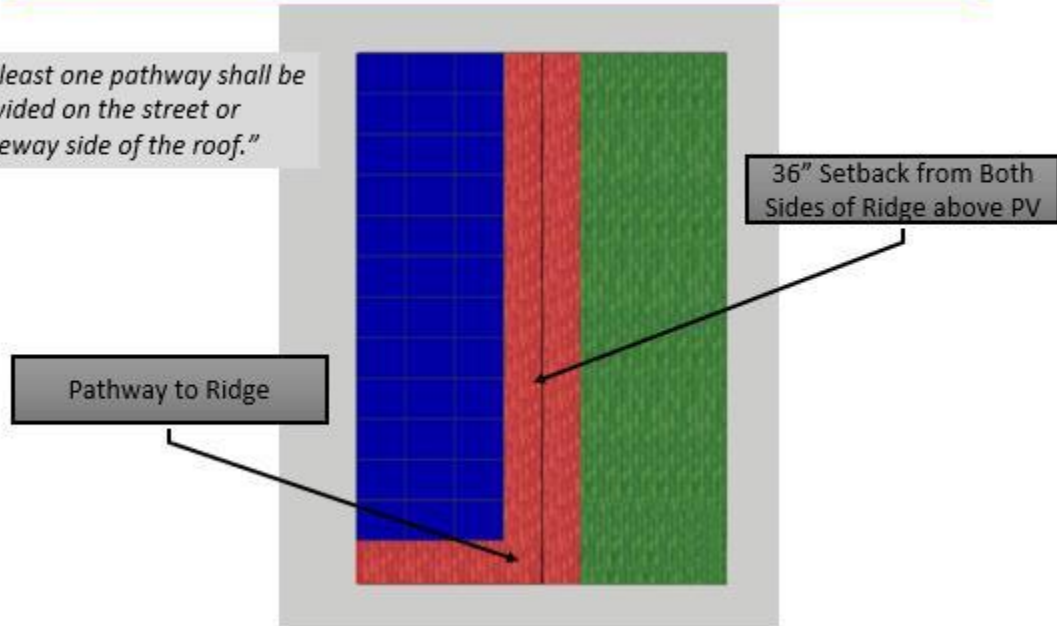
R324.6.2.1 Alternative setback at ridge. Where an automatic sprinkler system is installed within the dwelling in accordance with NFPA 13D setbacks at ridges shall conform with one of the following:

1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge.
2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36 inch (914 mm) clear setback is required on both sides of a horizontal ridge.

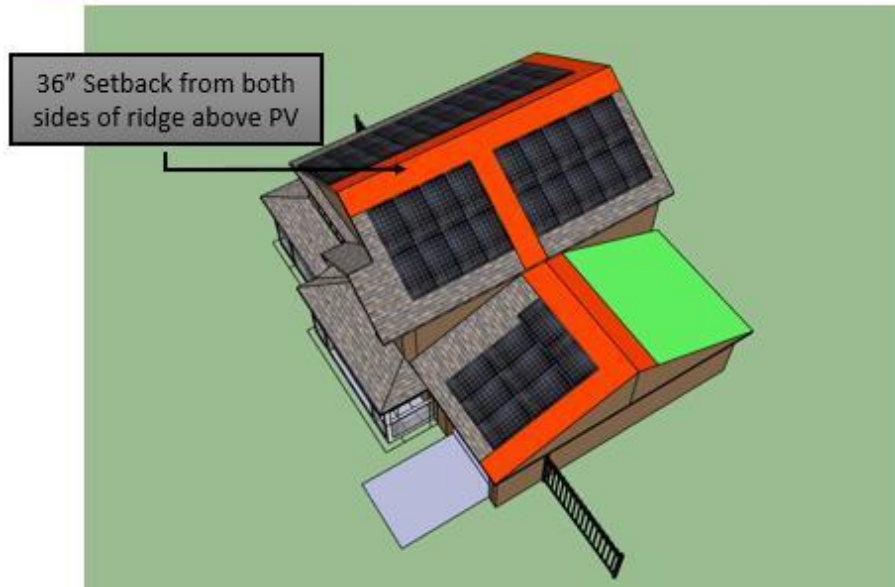
Rooftop Setback Requirements Continued:

Ridge Setbacks – >33% Total Roof Area

“At least one pathway shall be provided on the street or driveway side of the roof.”



Ridge Setbacks – >33% Total Roof Area



Rooftop Setback Requirements Continued:

R324.6.4 Emergency escape and rescue opening. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A 36-inch-wide (914 mm) pathway shall be provided to the emergency escape and rescue opening.



R324.7.3 Locations of DC conductors. Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.