

Photovoltaic Installations - Residential

CITY OF NEWARK, CALIFORNIA

BUILDING INSPECTION DIVISION

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General

This informational bulletin covers residential roof mounted photovoltaic installations. Code standards can be found in Article 690 of the 2010 California Electrical Code and the Solar Photovoltaic Installation Guideline published by the California State Fire Marshal.

Permits Required

An electrical permit must be obtained from the City Building Inspection Division prior to starting any installation of a photovoltaic system. The permit fees vary depending on the scope of the installation. The fees shown were accurate when this bulletin was written but may have changed. Please contact the Building Inspection Division office for current fees. Typical review time for these plans is 2 City working days.

Standard System = \$360.20

(Application=42, Elect permit=242, Minor plan check=51, Record Auto=24.20, Bldg commission=1)

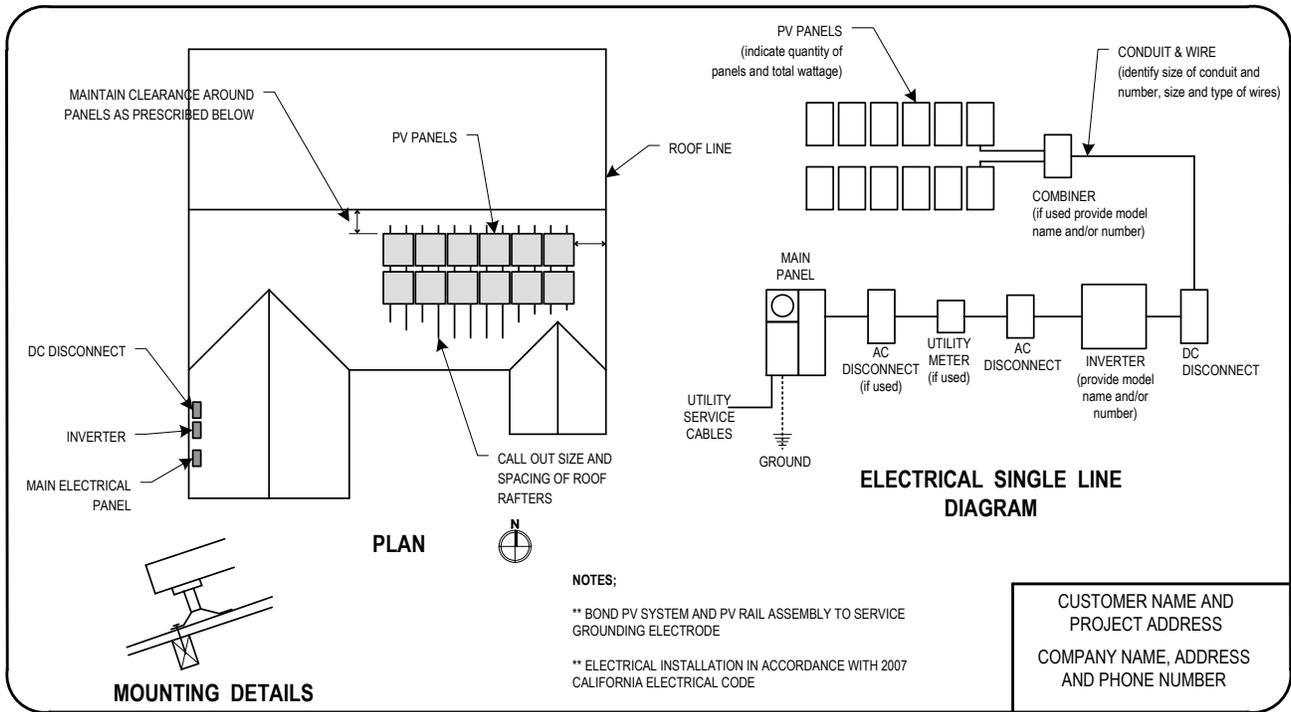
Standard System with Roof Strengthening = \$493.30

(Application=42, Elect permit=242, Minor plan check=51, Bldg permit=121, Record Auto=36.30, Bldg commission=1)

Plans Required

Plans describing the installation shall be provided for review and approval prior to obtaining a permit. The plans must contain the following items.

- Plan view showing location of the PV installation and layout and size of existing roof framing members that support the system
- Details on 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 system.
- Clearly identify the point of interconnection with the utility supplied wiring system and provide details on main breaker, PV breaker and rating of bussing.
- Indicate type and size of all conduit and conductors throughout the PV system.
- Provide manufacturer's cut-sheets and installation instructions for all PV modules, mounting systems, combiner boxes (if used), inverters, and disconnects.
- Provide structural calculations, prepared by a registered California 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 Article 690 of the 2010 California Electrical Code and the Solar Photovoltaic Installation Guideline published by the California State Fire Marshal.



Sample Drawing Showing Information That Should Be Included On Applicant's Submittal
(Actual information must be specific to the actual project)

CAUTION : SOLAR CIRCUIT

All conduit, raceways, enclosures, cable assemblies, and junction boxes shall be labeled at minimum 10 foot intervals. Labels shall be reflective with red background and minimum 3/8" white letters.

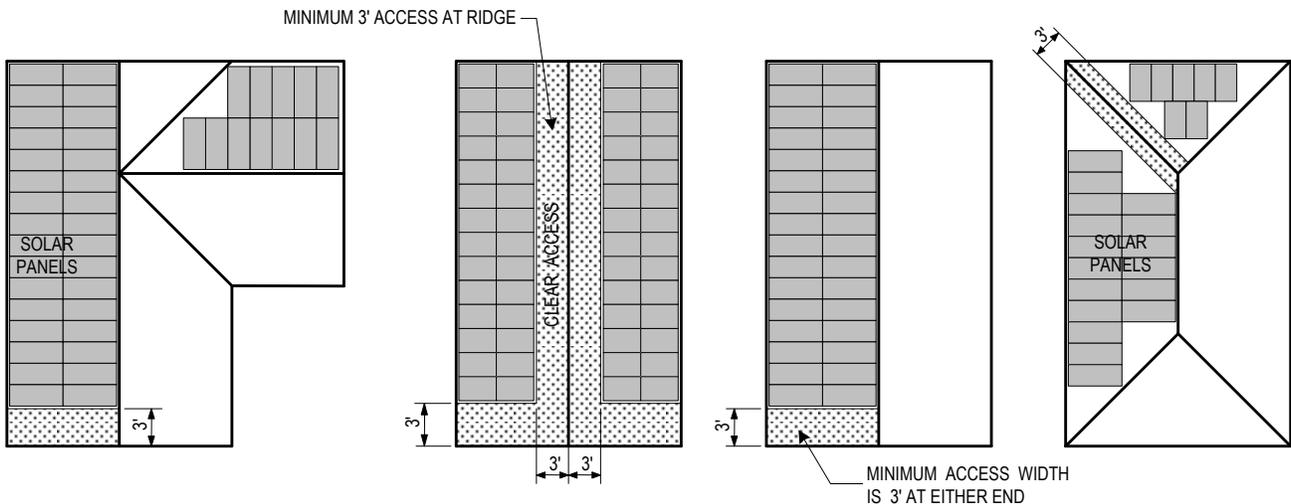
CAUTION : SOLAR ELECTRIC SYSTEM

The electrical main service disconnect shall be marked with a label reading "CAUTION - SOLAR ELECTRIC SYSTEM". Labels shall be reflective with red background and minimum 3/8" white letters.

WARNING
ELECTRIC SHOCK HAZARD
IF A GROUNDED FAULT IS INDICATED,
NORMALLY GROUNDED CONDUCTORS
MAY BE UNGROUNDED AND ENERGIZED

The inverter shall be marked with a label having the text shown above. Labels shall be reflective with red background and minimum 3/8" white letters.

Typical Labels



Cross Gable Roof

Full Gable Roof
 WITH PANELS ON BOTH SIDES

Full Gable Roof
 WITH PANELS ON ONE SIDE ONLY

Full Hip Roof

Typical Emergency Fire Department Access For Roof Mounted Solar Panels

OTHER CONFIGURATIONS CAN BE USED PROVIDED FIRE DEPARTMENT HAS ACCESS TO ROOF AND THE ABILITY TO VENT ROOF