



CITY OF STOCKTON
 Building Division
 345 N El Dorado St.,
 Stockton CA 95202
 (209) 937-8561 • Fax (209) 937-8893

PHOTOVOLTAIC SUPPLEMENTAL INFORMATION
 Residential, Roof-mounted, Grid-Connected, PV Systems

This permit application applies to roof-mounted, grid-connected, residential photovoltaic (PV) Systems. Provide completed Building Permit Application along with plan submittal. Building Permit application can be found at www.stocktongov.com Community Development/Building Dept. Brochures and Forms.

1. PROPERTY OWNER INFORMATION

Property Owner

1. Name: _____
2. Installation address: _____

2. SITE PLAN

Attach a site plan showing the structure that supports the PV system and the system's location on that structure. The plans must be on 11 x 17 or larger paper. Three sets of plans and calculations. The plans shall include name, address, and phone number of person that drew plans. Designer shall sign all plan sheets. Contractor's name, address, phone number on plans. Property owner's name, address and phone number on plans.

3. STRUCTURAL INFORMATION

3.1 Roof Design

1. Weight of array: _____ lbs.
2. Array load concentration: _____ PSF
3. Dead load per support point: _____ lbs. (not to exceed 40 lbs.)
4. Roofing type (material): _____
5. Roof construction **Rafters** **Trusses** **Other:** _____
 If trusses or roof joist system are manufactured, skip to **Section 3.2.**
6. Rafter Size: _____ x _____ inches
7. Rafter Spacing: _____ inches
8. Maximum unsupported span: _____ feet, _____ inches
9. Are the rafters over-spanned? **No** **Yes**

(See CBC 2007 Section 2308.10.3 Rafter Spans or www.stocktongov.com CDD/Bldg., Brochures and Forms (Span Tables for New Structures & Additions))

If **No**, skip to **Section 3.2.**
 If **Yes**, complete the rest of this section.

10. If the rafters are over-spanned or the array is over 4 PSF, it is recommended that you provide one of the following:

- a. A framing plan that shows details for how you will strengthen the rafters.
- b. Confirmation from a professional engineer that the roof structure will support the array.

3.2 Wind Design

1. Is the PV system building integrated (BIPV)? Yes No
If **Yes**, skip to **Section 4**.
If **No**, complete the rest of this section.
2. Attach one of the following to show that the PV system can support the wind load:
 - a) A cut sheet of the roof-mounting system
 - b) Calculations of the wind load uplift resistance for the mounts and/or mounting details.
3. Is the PV system tilted over 18 inches above the roof? Yes No
If **Yes**, complete the rest of this section.
If **No**, skip to **Section 4**.
3. Wind load: _____ PSF
4. Total wind load on array: _____ lbs.
5. Maximum uplift per support connection: _____ lbs.

4. SYSTEM COMPONENTS

Component	Units	Manufacturer and Model Number
1. Photovoltaic Modules:	_____	_____
2. Inverter:	_____	_____
3. Roof-Mounting System:	_____	_____
4. AC Disconnect Switch:	_____	_____
5. DC Disconnect Switch:	_____	_____
6. Attach PV module and inverter cut sheets. Attach cut sheets or a detail plan of the mounting system.		

5. ELECTRICAL INFORMATION

1. Attach a wiring diagram for the PV system.
2. Complete the following information for EACH inverter with a unique configuration of solar modules.

5.1 Array Electrical Specifications

1. Maximum Power point Current (at STC) Produced by Array: _____ A
2. Short Circuit Current Produced by Array: _____ A
3. Maximum Power Point Voltage (at STC) Produced by Array: _____ V
4. Open Circuit Voltage Produced by Array: _____ V refer to CEC 690.7
5. STC Watts Produced by Array: _____ W (DC)
6. PTC Watts Produced by Array: _____ W (AC)

5.2 Array Wiring and Calculations (DC)

1. Wire type / Size: _____ / _____ AWG
2. Temperature Derated Ampacity of Wire*: _____ A
3. NEC-Required Wire Ampacity: _____ A
4. Equipment-Grounding Conductor Size: _____ AWG (refer to CEC 2007 Table 250.122)

5.3 Source Circuits to Inverter Wiring and Overcurrent (DC)

1. Number of Wires / Type / Size: _____ / _____ AWG
2. Temperature Derated Ampacity of Wire*: _____ A
3. CEC-Required Wire Ampacity: _____ A
4. Fuse Size (if applicable): _____ A
5. Equipment-Grounding Conductor Size: _____ AWG (refer to CEC 2007 Table 250.122)

5.4 Inverter to Grid-Tie Wiring and Overcurrent (AC)

1. Wire type and wire size: _____ / _____ AWG
2. Working Voltage: _____ V
3. Temperature Derated Ampacity of Wire*: _____ A
4. CEC-Required Wire Ampacity: _____ A
5. Overcurrent Protection (AC breakers) Size: _____ A
6. Equipment grounding conductor size: _____ AWG (refer to CEC 2007 Table 250.122)

5.5 Maximum System Voltage Calculations

1. Lowest Ambient Temperature for Site: _____ °C
2. Low Temperature Voltage Multiplier (per CEC): _____ % (refer to CEC 2007 Table 690.7)
3. Maximum Voltage (DC) Produced by Array (VOC at STC): _____ V
4. Maximum System Voltage (DC) at Low Temperature: _____ V
5. AC Grounding Electrode Conductor Size: _____ AWG
6. DC Grounding Electrode Conductor Size: _____ AWG

*Refer to CEC 2007 Tables 310.16 or 310.17, CEC 2007 690.31(A), CEC 2007 Table 310.15 (B)(2)(a), CEC 2007 310.10 FPN No. 2

City of Stockton Additional Information Required on Plans for Photovoltaic Systems Submittal.

1. PHOTOVOLTAIC MOUNTING RACK INSPECTION IS REQUIRED BEFORE THE PHOTOVOLTAIC PANELS ARE INSTALLED.
2. NO MORE THAN TWO FEET OF EXPOSED CABLE FROM PHOTOVOLTAIC PANEL TO THE JUNCTION BOX ON ROOF IF APPLICABLE.
3. ALL WIRING INSIDE ATTIC AND BUILDING WALL CAVITIES REQUIRE INSPECTION PRIOR TO INTERIOR WALL COVERINGS OR EXTERIOR WALL COVERINGS ARE INSTALLED (ROUGH-IN INSPECTION) IF APPLICABLE. PER CEC 2007 SECTION 630.31 (E) DOES NOT ALLOW THE USE OF METAL CLAD CABLE (MC) OR ARMORED CABLE (AC) FOR DIRECT-CURRENT.
4. A DISCONNECT IS REQUIRED BY THE CITY OF STOCKTON FIRE DEPARTMENT AT PANEL ARRAY THAT WILL DISCONNECT ALL D.C. SOURCE CIRCUITS PRIOR TO ENTERING THE STRUCTURE. OTHER OPTIONS MAY BE CONSIDERED ONLY AFTER REVIEW BY STOCKTON FIRE DEPARTMENT. ADDITIONAL SIGNAGE REQUIRED AT THE ELECTRICAL MAIN SERVICE INDICATING A DISCONNECT IS LOCATED AT PANEL ARRAY IF REQUIRED. PROVIDE CLEAR PATHS OF TRAVEL FOR ROOF VENTING LOCATIONS. QUESTIONS CONCERNING DISCONNECT OR VENTING LOCATION MAY BE ADDRESSED TO FIRE DEPARTMENT CONTACT, ROBERT KUBENA AT (209) 937-8835. IF NO ANSWER, CALL PHIL SIMON AT (209) 937-8315.
5. MECHANICAL GROUNDING LUGS SHALL BE STAINLESS STEEL OR APPROVED FOR UNDERGROUND DIRECT BURIAL.
6. A GROUNDING ELECTRODE CONDUCTOR IS REQUIRED FROM EACH INVERTER 'GFP' TERMINAL TO THE NEW/EXISTING BUILDING ELECTRICAL MAIN SERVICE GROUNDING ELECTRODE
7. PROVIDE ALL SIGNAGE AT EQUIPMENT PER SECTION VI. MARKING, 690-51-690-54.
8. IF AT TIME OF FIELD INSPECTION IT IS DETERMINED THAT THE CALCULATIONS FOR INSTALLATION METHODS USED DO NOT MEET THE REQUIREMENTS OF THE 2007 CALIFORNIA ELECTRICAL CODE ARTICLE 690 PERTAINING TO CONDUIT SIZE/TYPE OR FILL, WIRE SIZE OR TYPE. ADDITIONAL INFORMATION/PLANS MAY BE REQUIRED BY THE FIELD INSPECTOR.
9. PROVIDE CALCULATIONS ON PLANS FOR DERATING CONDUIT FILL AND WIRE SIZING FOR ROOF/ATTIC WIRING. USE TABLE 310.16 "CORRECTION FACTORS" (123-131 DEG. (F)).
10. THE MODIFICATION OF ANY DRAIN WASTE VENT SYSTEMS OR ROOF VENTILATION REQUIREMENTS SHALL COMPLY WITH 2007 CALIFORNIA BUILDING CODE. 2007 CALIFORNIA MECHANICAL CODE AND 2007 CALIFORNIA PLUMBING CODE. IF YOU HAVE ANY QUESTIONS CONTACT RAY JIMENEZ, SUPERVISING MECHANICAL/PLUMBING INSPECTOR AT (209) 639-8642.