

Supplement - Protocol for Photovoltaic (PV) Plans - January 30, 2024

Please reference this document when preparing photovoltaic (PV) plans.

(1) PERMIT APPLICATION FORM (ONLY APPLICABLE FOR PV PLANS STEP 3D.)

Complete the Permit Application for Roof-Mounted Solar Photovoltaic (PV) Systems. This must be done online, by going to the link below:

<https://dbiweb02.sfgov.org/SolarPDFGenerate/>

JOB: Enter only the address number and street where the work will be performed. (Please do not write out city, state, zip – this field is for just the street address)

OWNER NAME: Provide the name of the property owner.

OWNER PHONE: Provide a phone number for the property owner.

CONTRACTOR LICENSE #: Provide the contractor's California state license number.

LICENSE CLASS: Provide the letter and number class of the contractor's license.

BUSINESS LICENSE #: Provide the contractor's San Francisco business license number.

CONTRACTOR/APPLICANT NAME: Provide the name of the business entity requesting the permit, or the contractor's personal name.

APPLICANT PHONE: Enter a phone number where the applicant may be reached.

APPLICANT CELL PHONE: Please provide the cell phone number for applicant.

APPLICANT ADDRESS: Provide the business address of the contractor.

APPLICANT EMAIL ADDRESS: Provide an email address where the Applicant may be contacted. Be sure to set spam filters to allow messages from DBI.PVPLANS@SFGOV.ORG

Place a check mark in the appropriate box for RESIDENTIAL or NON-RESIDENTIAL. Be advised that multi-unit buildings or other than single family homes may be considered by fire personnel to be non-residential, subject to the size of the building and type of construction.

Enter the quantity of modules (PV panels) and the rating of the modules in Watts. The System Size, in kilowatts (kW) is calculated automatically from these entries.

If your project will also include a service or subpanel change, or includes batteries, place a check mark in the box adjacent these items where indicated. If there are other unusual features of your system, check the "other" box and briefly describe where indicated (i.e., adding to existing PV system, revision with fees paid (provide permit number), or other unusual items. Do not use this field to enter extraneous comments.

When all items are completed, generate the Application by selecting the bar at the bottom of the form; "Generate Solar Permit Application".

(2) SIGNATURES ON APPLICATIONS (ONLY APPLICABLE FOR PV PLANS STEP 3D.)

Scans of applications will not be accepted.

You may complete the signing section near the bottom of the form or have your authorized agent sign when picking up the permit. Be advised that only an agent authorized by you, and whose name is on file at the Department of Building Inspection may sign for you.

If you need help using the PDF signing function, go to:

<http://helpx.adobe.com/acrobat/using/filling-pdf-forms.html>

Attach the generated application to your emailed submission as described below in section **(6)**.

(3) DBI RESPONSES TO SUBMISSIONS (ONLY APPLICABLE FOR PV PLANS STEP 3D.)

When the submission is received, a plan reviewer will verify the application, plans and specification sheets are included for review. Once the documents are verified, a **Plan Number will be assigned**, and the plan will be added to the review queue. **Please refer to the Plan Number in any correspondence and when picking up approved plans.**

An email will be sent to the email address used for the submission, with a subject line that includes some identifiers such as, the **Plan Number**, the key word "RECEIVED", date sent, and initials of the reviewer who received the plan.

This does not mean the plan has been reviewed; it is just to acknowledge receipt and will contain the submitted attachments for verification.

A submittal is considered not complete if a drawing or document is not legible, or if there is missing information. The email sent for incomplete submittals will have a subject line as described above, except it will contain key words that describes an action required. Instructions will be written in the body of the email message. It is very important that you save this message and keep track of it for your subsequent response.

We may attempt to call or email you about issues. Conversations are generally less time consuming than extensive email exchanges. It is very important that you provide a phone number where you can be reached, and an email address that is checked regularly. Be advised that many of our phone numbers are blocked, so be sure you can receive blocked calls. If your inquiry call is not answered, be sure to leave a message; your call will be returned promptly.

When corrections are issued, the changes to the plans will involve the alteration of one or more of the files you originally submitted. Respond to the required action as follows:

[A] Locate the email sent to you requesting the changes or corrections.

[B] REPLY ALL to the email sent to you by: DBI.PVPLANS@SFGOV.ORG

[C] Attach the revised files to the message.

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[D] You may include brief notes in the body of the email relevant to your response.

[E] Do not alter the subject line; doing so will cause delays. **SEND** your message.

When the plans are approved, they will be printed with numbered attention notes. A coversheet will be added that describes the numbered attention notes. The application and coversheet will be stapled to the plans set. An emailed response will be sent to the original applicant used for the submission with a subject line as described above except with the word, "APPROVED", and with instructions in the message for picking up plans and obtaining a permit.

(4) TIME LIMIT FOR RESPONSES (ONLY APPLICABLE FOR PV PLANS STEP 3D.)

If the submission is not approved upon review, and a response is sent requiring some action, resubmission must be made within ten (10) business days to retain the position in the review queue. If a resubmission is not made within thirty (30) days the project will be considered abandoned, and the submission will be deleted.

Plans that are not picked up within thirty (30) Days will be placed in locked storage. To pick up plans that have been left for over thirty days, be advised to call in advance and arrange to have them available for pickup. Plans not picked up within six months of approval will not be retained.

(5) REQUIREMENTS FOR COMPLETE PLAN SUBMISSION (APPLICABLE FOR PV PLANS STEP 3D. AND BUILDING PERMIT 3A.)

Submit plans in unlocked PDF file type and formatted for 11x17 size sheets.

[A] Almost any plan can be provided on 11x17 sheets regardless of system kW size, by dividing plans into sections. Plan notes, captions, inserted tables, or charts must appear in type size not smaller than 10-point. Drawings in color are welcome and preferable when color will make plans easier to understand. **All drawings must be to scale with dimensions.**

[B] One or more sheets of the roof plan showing perimeter, pitched roof particulars including ridges, hips and valleys, or flat roof and parapets, and all important features such as vents and skylights, including cardinal direction orientation of property, adjacent street, for corner lots also intersecting street, location of modules, racking orientation relative to modules, attachment points to roof, junction or combiner boxes, disconnects, conduit routing plan, location of inverters, location of electrical service, any associated subpanels relevant to the PV installation.

[C] Provide at least one elevation view of arrays relative to the structure mounted on. Include one or more elevation views of the building if it has unusual features that might make it difficult to interpret how fire personnel will have required access. Include elevations of the building if there are multiple roof levels in a pathway. When sections are indicated on plan views, provide correctly referenced elevation views.

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- [D]** Have at least one view that shows the details of the method of attachment of the arrays to the roof. Tilt-up racking must include a basic uplift calculation if you are submitting a reverse tilt array (i.e., North side of sloped roof near ridge). Low slope arrays will usually be accepted if provided on racking made by accepted, listed manufacturers. Customized components may need separate approval.
- [E]** One sheet with the electrical wiring diagram, that may be single or multiple line as needed. Include all relevant information regarding modules, inverters, switches, panels, wire types and sizes, ampacity calculations including temperature derations, etc.
- Pictures of the existing service equipment with wide views is highly encouraged prior to receiving plan review.
 - When a tap is proposed on the supply or load side of the service equipment, pictures are to be included along with the plan submittal. The single line diagram should indicate the length of the tap along with the specification sheets for the splicing device.
 - The electrical functionality of the power control systems, batteries and other electrical equipment shall be shown on the plans, including but not limited to the breakers, lugs, autotransformers, grid isolators and any other components therein.
- [F]** Most up-to-date versions of Data sheets or so called "cut sheets" for major components of the system including modules, inverters, racking, roof attachment components, and grounding components. Provide current PDF downloads from manufacturer websites, and do not include scans of old data sheets, or copies from catalogues.
- [G]** One Sheet with updated warning label and signage for service personnel and emergency responders, per CEC Article 690 Part 6.
- ONLY provide such data sheets, and do not include installation instruction guides or manuals, certificates of compliance, generic pages of tables, multiple-page program generated calculation reports, or components of monitoring systems, or catalogue pages for standard electrical equipment (i.e., disconnects).
- Manufacturer information is regularly reviewed by plan review staff in depth. Data sheets must be included so field inspectors can readily identify that installations comply with approved plans. If additional information is needed it will be requested after initial review.
- [H]** Larger PV systems, particularly those placed on buildings other than a one- or two-family dwelling units will be required to be reviewed by the DBI structural team. Plans submitted with structural analysis and stamped by the Architect or Professional Engineer will expedite our review. Please see step **(7)** for additional requirements for PV in commercial, non-residential, and ballasted systems.
- [I] APPLICATION FOR PERMIT** - All submissions must include one copy of the Application, provided as described above in Section (2). Complete the Application using the fillable-field form as described and save as a PDF type file for attachment to email.

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(6) SUBMITTING PLANS BY EMAIL (ONLY APPLICABLE FOR PV PLANS STEP 3D.)

Submitting plans by email saves the applicant time and money on trips to DBI and decreases environmental impacts from travel. Please submit original CAD plans, saved as PDF file type, and unlocked for annotation. Approved plans will be printed in color and constitute the Field Copy.

Approved plans must be picked up in person to obtain a permit.
The Approved Plans are required to be on site for inspections.

[A] In your computer's email program Open a New Message.

[B] In the **Send TO:** field enter the following email address: DBI.PVPLANS@SFGOV.ORG

[C] In the Subject line write: New PV Application from (Your Name or Project Name)

[D] Attach files to this email as follows:

(1) Plan Drawings – As described above in Section (6). Compile a PDF type file to include all pages of your plan and formatted for printing on 11x17 size sheets. Attach this file to the email message.

(2) Data Sheets – As described above in Section (6). Compile the file to include all the data sheets if possible and formatted for printing on 8.5x11 size sheets, or if composed two-up per sheet, formatted for 11x17 size sheets. Also attach this file to the email message.

(3) You may combine two-up compiled data sheets into the same file with your plan's drawings, provided everything is formatted for 11x17 size printing.

(4) Attach the saved, completed Application from Section (2) above. Do not combine this form with any other files. It must be provided separately.

(5) You may add a brief description of your submission in the Body of the email message. After all attachments have been placed with the message, open them one at a time to verify that they are correct and complete.

(6) When complete and ready, select **SEND**.

[E] If you have any questions regarding how to compose and send emails, or regarding anything in this protocol, please email the PV plans inbox at: DBI.PVPLANS@SFGOV.ORG

(7) STRUCTURAL INFORMATION REQUIRED (APPLICABLE FOR PV PLANS STEP 3D. AND BUILDING PERMIT 3A.)

Non-R-3 projects, ground-mounted arrays, and ballasted systems will require structural review. Before receiving structural review, please complete the following table and have the following table copied onto the plans:

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Requirements	Location of detail including detail no. and drawing sheet. (DO NOT LEAVE BLANK)
1) Evaluate existing roof framing system for the addition of solar array system: <ul style="list-style-type: none"> a) Recommendation of maximum array size b) Clarify if localized strengthening is required (or not) c) State if you do or, do not recommend solar 	Example: PV-1, note 1
2) Provide the following building information on the cover page: <ul style="list-style-type: none"> a) Type of construction b) Building height c) Occupied/Unoccupied roof 	Example: PV-1, notes 2-4
3) Provide Wind Criteria for structural design: <ul style="list-style-type: none"> a) Wind Speed b) Wind Exposure c) Risk Category 	Example: PV-2, detail 3
4) Provide Seismic Criteria: <ul style="list-style-type: none"> a) Site classification 	Example: PV-2, detail 4
5) Provide roof dead loads: <ul style="list-style-type: none"> a) Roof building materials b) Occupied roof finishes (as applicable) c) Miscellaneous loads 	Example: PV-2, detail 5
6) Provide roof live loads: <ul style="list-style-type: none"> a) Unoccupied b) Private c) Public/assembly roof deck 	Example: PV-2, detail 6
7) Provide roof live load deflection: Identify the ceiling finish to determine the required live load deflection limits. <ul style="list-style-type: none"> a) Roof members b) Supporting plaster or stucco c) Supporting non-plaster ceiling d) Not supporting ceiling e) Floor members 	Example: PV-2, detail 7
8) Provide roof joist properties: <ul style="list-style-type: none"> a) Strength factors b) Adjustment factors 	Example: PV-2, detail 8
9) Dimensioned roof framing plan: <ul style="list-style-type: none"> a) Setbacks from roof edge b) Total roof coverage c) Size of roof joist d) Length of roof joist e) Spacing of roof joist f) Direction of joist span 	Example: PV-3
10) Weight of solar panels in lb./ft ² on the plans. <ul style="list-style-type: none"> a) Weight of solar in pounds per square foot (PSF) b) Spacing of solar panel supports c) Concentrated loads based on spacing of solar supports multiplied by PSF. 	Example: PV-3, detail 4 and cutsheet page 3
11) Provide attachment detail between roof and rails.	Example: Cutsheet – racking.pdf
12) Provide structural calculations for the attachment between rail and roof member.	Example: Attached document structural.pdf

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(8) License requirements

The San Francisco Department of Building Inspection considers solar photovoltaic installations to be specialty electrical work. Therefore, electrical permits for solar photovoltaic installations shall be issued to contractors that are licensed by the State of California, Contractors State License Board, in one of the following classifications: Class A, Class C10, and Class C46. An exception may be considered for issuing an electrical permit to a Class B licensed contractor if the solar photovoltaic installation is associated with the construction or a major remodel of a building. The Electrical Inspection Division will consider such exceptions on a case-by-case basis.