



SUBMITTAL REQUIREMENTS FOR EXPEDITED SOLAR PERMITTING

- If submitting in person, through mail, or by fax completed permit application:
<https://kernpublicworks.com/building-and-development/building-inspection/>
- Complete the "Eligibility Checklist for Expedited Permitting" form, attached.
- Provide three copies of the plans showing:
 - Total number of collectors and area
 - Make, model and collector certification number
 - System certification number
 - Solar storage tank name, model, insulation and capacity
 - Heat exchanger make and model (if applicable)
 - Specification of heat transfer fluid (if applicable)
- Roof plan showing:
 - Roof layout
 - Solar collectors with attachment details
 - System schematic including major components
 - Approximate location of roof access points
 - Equipment cut sheets, including collectors, controller, storage tank/heat exchanger (if applicable)
- Complete the "Structural Criteria for Residential Roof-Mounted Solar Arrays" form, attached.
 - For non-qualifying systems, provide structural drawings and calculations stamped and signed by a California licensed Civil Engineer, Structural Engineer, or Architect.
- Payment of fees as follows. Additional fees may apply at the time of application.
 - **Fee information goes here.**
- If applying for your permit online, please go to <https://accela.co.kern.ca.us/CitizenAccess/KERNCO.aspx>, sign-up or login, and begin your permit by choosing "Create an Application" from the building tab at the top. Please read submittal requirements at <https://kernpublicworks.com/electronic-document-review/> prior to submitting.
- If applying for your permit online or by fax submittal documents must include the "Eligibility Checklist for Expedited Permitting" form (attached), the Plans as described above, the Roof Plan as described above, and the "Structural Criteria for Residential Roof-Mounted Solar Arrays" form (attached).

Job Address: _____ Permit #: _____

Contractor/Installer: _____ License # & Class: _____

Signature: _____ Date: _____



ELIGIBILITY CHECKLIST FOR EXPEDITED ROOFTOP SOLAR PERMITTING
for One- and Two-Family Dwelling Units

This checklist must be completed by the contractor or an authorized agent of the contractor in order to determine if the rooftop solar project is eligible for expedited solar permitting.

General Requirements

- 1. System size is 10 kW AC CEC rating or less. Yes No
- 2. The solar array is roof-mounted on a one- or two-family dwelling. Yes No
- 3. The solar system is utility interactive and without battery storage. Yes No
- 4. The solar panel/module arrays will not exceed the maximum legal building height. Yes No
- 5. A minimum clear space of three feet is provided on the control side of roof mounted HVAC equipment. Yes No
- 6. If applying in person or through mail, the permit application is completed and attached. Yes No

Roof Requirements

- 1. The roof has a single roof covering without a reroof overlay. Yes No
- 2. The roof structure has been verified to be structurally sound, without signs of alterations or significant structural deterioration or deflection. Yes No

Fire Safety Requirements

- 1. Access pathways at least three feet in width are provided on gable roofs from the eave to the ridge. Panels shall be located at least 18 inches from a hip or valley if located on both sides of a hip or valley. Yes No
- 2. To allow for smoke ventilation, there is a minimum of three feet between the ridge and the panels. Yes No
- 3. There are no conductors within the three foot area between the panels and the ridge. Yes No
- 4. The panel fire classification is provided and meets the rating required for the structure. Yes No
- 5. The plans include a sheet showing the location and verbiage of the required labels. Yes No

Solar Array Requirements

- 1. The distance between the underside of modules and the roof surface is at least two inches but not greater than 10 inches. Yes No
- 2. The plane of the modules (panels) is parallel to the plane of the roof. Yes No
- 3. The layout of the modules is designed to not overhang any ridges, hips, gable ends, or eaves. Yes No
- 4. The weight of the modules plus support components has been verified to weigh no more than 4 psf for photovoltaic arrays or 5 psf for solar thermal arrays. Yes No
- 5. The support component manufacturer's **project-specific worksheets and tables** are completed with relevant information identified. Yes No
- 6. The roof plan of the module and anchor layout is included in the plans. Yes No

Electrical Requirements

- 1. For central/string inverter systems, strings are not combined prior to the inverter Yes No
- 2. PV module short circuit current (Isc) is less than 13 amps. Yes No
- 3. System does not utilize storage batteries, charge controllers or trackers. Yes No
- 4. PV system is not a hybrid or bipolar system. Yes No
- 5. For central/string inverter systems, no more than two inverters are utilized. Yes No
- 6. The PV system is interconnected to a single-phase AC service panel of nominal 120/220 VAC system with a bus rating of 225 amps or less. Yes No

Notes and Other Information

- 1. Clearly illustrate, with dimensions, required setbacks at the ridge, valley, and eave roof lines.
- 2. Provide a detailed legend denoting all vent stacks, mechanical vents, B-vents, fire places, cupolas, dormers, etc.
- 3. Plot plan shall be legible and to scale.
- 4. Provide a one-line diagram illustrating disconnects, AC/DC, wiring sizing, panel size, hot tap, and side line taps.
- 5. Size of existing service main:
 - 100 amp 125 amp 200 amp other: _____
- 6. If the service main is being upgraded and/or replaced, what size will the new service be?
 - 100 amp 125 amp 200 amp other: _____
- 7. For projects with less than a 200 amp main, if there is a pool or other electrical demands other than the residence, please provide electrical load calculations.
- 8. All existing mechanical or plumbing vents will not be altered or covered.
- 9. The certification form for smoke alarms and carbon monoxide alarms will be required at the time of final inspection. The contractor is to verify alarms are properly installed and working.

Permit Issuance Requirements

If any items are checked NO, the project is not eligible for expedited solar permitting and must go through the standard application process.

Agreement

As the responsible contractor or authorized agent for the project, I understand that I am responsible for the accuracy of all information provided in this application. I also understand that revisions to this project will result in a revised application and plan review submitted to the building inspection division which will not be eligible for expedited solar permit issuance.

Job Address: _____ Permit #: _____

Contractor/Installer: _____ License # & Class: _____

Signature: _____ Date: _____ Phone: _____



STRUCTURAL CRITERIA FOR RESIDENTIAL ROOF-MOUNTED SOLAR ARRAYS

ROOF CHECKS

1. Visual review/contractor's site audit of existing conditions:
 - a. Is the roof a single roof without a reroof overlay? Yes No
 - b. Does the roof structural appear structural sound, without signs of alterations or significant structural deterioration or sagging, as illustrated in Figure 1? Yes No

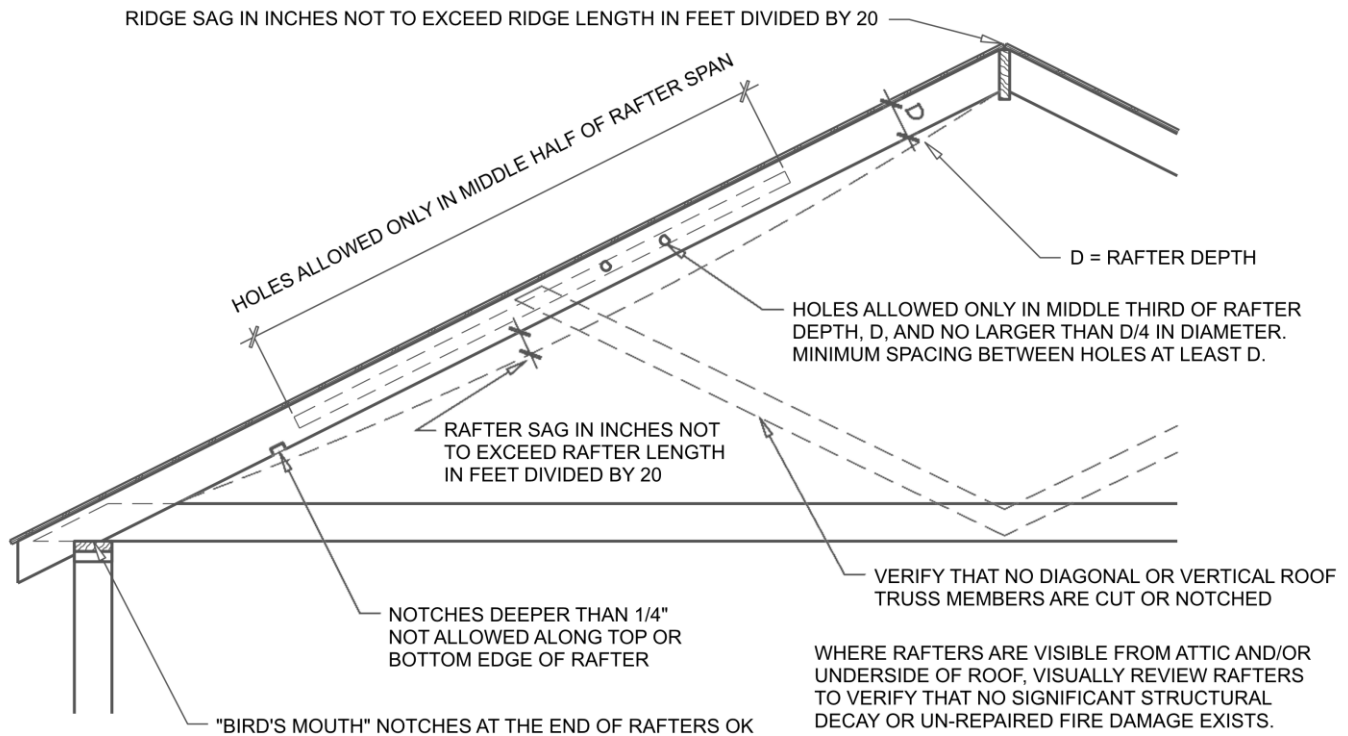


FIGURE 1. ROOF VISUAL STRUCTURAL REVIEW OF EXISTING CONDITIONS

The site project superintendent/contractor should verify the following:

1. No visually apparent disallowed rafter holes, notches, and truss modifications as shown above
2. No visually apparent structural decay or un-repaired fire damage
3. Roof sag, measured in inches, is not more than the rafter or ridge beam length in feet divided by 20

Rafters that fail the above criteria should not be used to support solar arrays unless they are first strengthened.

2. Roof Structure Data:
 - a. Measured roof slope (e.g. 4:12) _____:12
 - b. Measured rafter/truss spacing (center-center): _____ inches
 - c. Type of roof framing (rafter or manufactured truss): Rafter Truss
 - d. Roofing material Tile Comp Other _____

SOLAR ARRAY CHECKS

1. Flush-mounted solar array:
 - a. Is the plane of the modules (panels) parallel to the plane of the roof? Yes No

- b. Is there a 2" to 10" gap between the underside of the module and the roof surface? Yes No
- c. Modules do not overhang any roof edges (ridges, hips, gable ends, eaves, etc.). Yes No
2. Do the modules plus support components weigh no more than 4 psf for photovoltaic arrays or 5 psf for solar thermal arrays? Yes No
3. Does the array cover no more than half of the total roof area (all roof planes)? Yes No
4. Are solar support component manufacturer's project-specific completed worksheets, tables (with relevant cells circled), or web-based calculator results attached? Yes No
5. Is a roof plan of the module and anchor layout attached? (see Figure 2) Yes No
6. Downward load check (anchor layout check):
- a. Proposed anchor horizontal spacing (see Figure 2): _____ ft. _____ in.
- b. Horizontal anchor spacing per Table 1: _____ ft. _____ in.
- c. Is proposed anchor horizontal spacing equal to or less than Table 1 spacing? Yes No
7. Wind uplift check (anchor fastener check, see Figure 3):
- a. Diameter of lag screw, hanger bolt, or self-drilling screw _____ inch
- b. Embedment depth of rafter _____ inch
- c. Number of screws per anchor (typically one): _____
- d. Are 5/16" diameter lag screws with 2.5" embedment into the rafter used, OR does the anchor fastener meet the manufacturer's guidelines? Yes No

TABLE 1. MAXIMUM HORIZONTAL ANCHOR SPACING				
ROOF SLOPE		RAFTER SPACING		
		16" O.C.	24" O.C.	32" O.C.
Photovoltaic Arrays (4 psf max)				
Flat to 6:12	0° to 26°	5'-4"	6'-0"	5'-4"
7:12 to 24:12	27° to 63°	1'-4"	2'-0"	2'-8"
Solar Thermal Arrays (5 psf max)				
Flat to 6:12	0° to 26°	4'-0"	4'-0"	5'-4"
7:12 to 12:12	27° to 45°	1'-4"	2'-0"	2'-8"
13:12 to 24:12	46° to 63°	Calculation Required		

Table 1 Notes:

1. Anchors are also known as "stand-offs," "feet," "mounts," or "points of attachment." Horizontal anchor spacing is also known as "cross-slope" or "east-west" anchor spacing (see Figure 2).
2. If anchors are staggered from row-to-row going up the roof, the anchor spacing may be twice that shown above, but no greater than 6'-0".
3. For manufacturer plated wood trusses at slopes of flat to 6:12, the horizontal anchor spacing shall not exceed 4'-0" and anchors in adjacent rows shall be staggered.
4. This table is based on the following assumptions:
 - a. The roof structure conformed to building code requirements at the time it was built
 - b. Mean roof height is not greater than 40 feet.
 - c. Roof sheathing is at least 7/16" thick oriented strand board (OSB) or plywood. 1x skip sheathing is acceptable.
 - d. If the dwelling is in Wind Exposure Category B (see CRC Section R301.2.1.4), no more than one of the following conditions apply:
 - i. The dwelling is located in a Special Wind Region with design wind speed between 115 mph and 130 mph per Kern County Code of Building Regulations Figure R301.2(5)A. 1.
 - ii. The dwelling is located on the top half of a tall hill, provided average slope is less than 15%.
 - e. If the dwelling is in Wind Exposure Category C (see CRC Section R301.2.1.4), all of the following conditions apply:
 - i. Design wind speed is 110 mph or less per Kern County Code of Building Regulations Figure R301.2(5)A. 1.
 - ii. The dwelling is not located on the top half of a tall hill.
 - f. The solar array displaces roof live loads (temporary construction loads) that the roof was originally designed to carry.
 - g. Please refer to the Structural technical Appendix of the California Solar Permitting Guidebook for additional information and requirements http://opr.ca.gov/docs/20190226-Solar_Permitting_Guidebook_4th_Edition.pdf

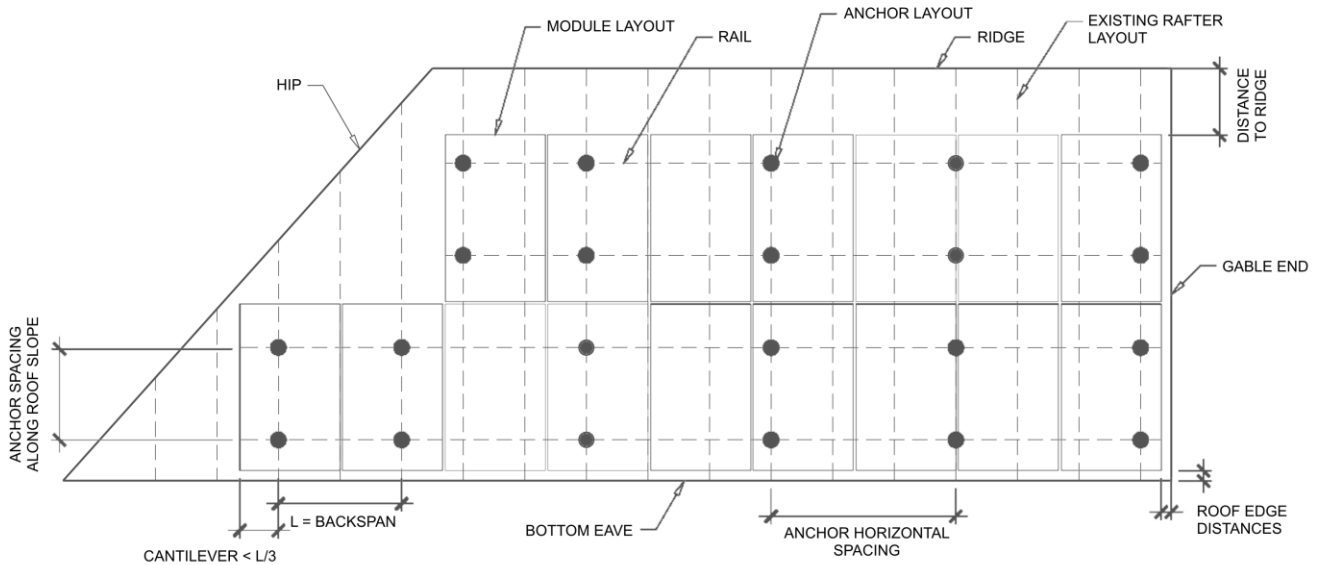


FIGURE 2. SAMPLE SOLAR PANEL ARRAY AND ANCHOR LAYOUT DIAGRAM (ROOF PLAN)

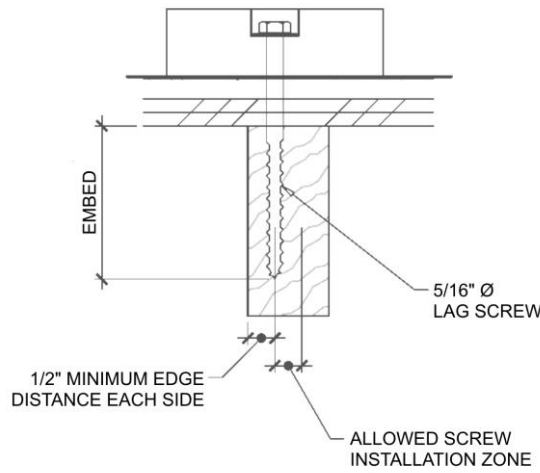


FIGURE 3. TYPICAL ANCHOR WITH LAG SCREW ATTACHMENT

SUMMARY

If all items above are checked YES, no additional calculations are required. If one or more items are checked NO, project-specific drawings and calculations stamped and signed by a California registered Civil or Structural Engineer or licensed Architect are required.

Note: The California Solar Permitting Guidebook provides additional information about installations and analysis requirements. Please visit <http://opr.ca.gov/docs/20190226-Solar Permiiting Guidebook 4th Edition.pdf>

INSPECTION AGREEMENT

As the responsible contractor or authorized agent for the project, I understand that California Law only allows one site inspection to verify the installation of residential rooftop solar system. Based on this limitation, some or all of the framing and most, if not all, of the anchors will not be visible to the inspector. Therefore, I certify that the roof support structure will be in compliance with this application and the anchors, attachments and flashing will be installed as required by the manufacturer’s installation instructions and the California Residential Code.

Job Address: _____ Permit #: _____

Contractor/Installer: _____ License # & Class: _____

Signature: _____ Date: _____ Phone: _____