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/](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](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/](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 (I_{sc}) 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

<table>
<thead>
<tr>
<th>ROOF SLOPE</th>
<th>RAFTER SPACING</th>
<th>16” O.C.</th>
<th>24” O.C.</th>
<th>32” O.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat to 6:12</td>
<td>0° to 26°</td>
<td>5'-4&quot;</td>
<td>6'-0&quot;</td>
<td>5'-4&quot;</td>
</tr>
<tr>
<td>7:12 to 24:12</td>
<td>27° to 63°</td>
<td>1'-4&quot;</td>
<td>2'-0&quot;</td>
<td>2'-8&quot;</td>
</tr>
</tbody>
</table>

**Photovoltaic Arrays (4 psf max)**

**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.
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.


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: ________________