



Installations

Contractors and Homeowners as General Contractors:

- Homeowners may obtain the building permit for solar systems when they are performing the work on their owner-occupied single-family lot.
- Any person hired to perform work must have the required City of Lakewood contractor registration to do work within the city limits.

Submittal Requirements:

- Provide a completed permit application through eTRAKiT. Use the permit type Alternative Energy. Separate registered contractors must be added to the permit to complete electrical or plumbing work.
- Structural analysis of the existing roof and calculations for the new installation must be performed by a registered Colorado Professional Engineer.
 1. Upload a complete set of the plans. Areas of exclusion must be shown per 2015 or 2018 International Fire Code.
 2. Provide layout of solar panels with structural connection footprint, total number of structural connections, and the total square feet of the panel array.
 3. Specify the existing roof covering materials, number of layers of roof covering, the roof pitch, and the pitch of the proposed solar panels.
 4. Provide details of structural attachment including the number and size of attachments, or the amount and location of ballasts.
 5. Provide cut sheets for all manufactured products including the solar panels, structural attachment system, standoff or other attachment and flashing, and all electrical equipment.
 6. PV electrical one-line diagram showing panel array electrical production in KW, conductor size, equipment ground and grounding electrode size. Designate inverter type and disconnecting equipment locations.
 7. Use the 2020 National Electrical Code for electrical design and specify on the plan.
 8. Electrical systems that involve an electrical service panel of over 200 amps must be designed and bear the seal and signature of a registered Colorado Professional Engineer.
 9. Solar water systems must include the location and type of storage tank, total installed and water-filled weight of the solar panels per square foot, the heat exchanger, a description of the heat transfer medium, all controls, shutoff valves, and the backflow protection device.
 10. For ground mounted solar systems you must also upload:
 - Plot Plan drawn to 1" = 30' or larger standard engineering scale. See page 3 of this handout for an example of the required plot plan.
 - You may draw a plot plan or you may use an Improvement Location Certificate (ILC) as your Plot Plan submittal. Make a copy of the ILC and add the required information. Draw the proposed solar panel location on the copy of the ILC using the same scale as the original.
 - Include north arrow and scale used.
 - Provide the property address and names of all adjacent streets.
 - Show all property lines and easements with dimensions.
 - Show footprint of existing home and the new solar panels.
 - Show all existing accessory buildings and label type and dimensions (e.g. 10' x 12' shed).



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- Show all walks, drives and patios.
- Provide dimensions on all sides from the new solar panels to property lines and other structures on the lot.

General:

- Structural connections must be directly connected to the roof framing through not more than one-layer of asphalt shingles. Special connection details will be considered by the Building Official as an alternate connection method. Connections cannot be made through tile or wood shingle roofs.
- The roof connection must be flashed with an approved system.
- A minimum of one lag screw 5/16" in diameter with 2" of thread embedded into the wood framing is required per structural connection.
- Connection to the roof sheathing only is not allowed. Structural connections must be to solid framing.
- There must be no fewer than 2 connections per solar panel.
- The panel systems cannot obstruct any plumbing or mechanical vents.

Inspections:

For most installations, the following inspections will be required:

- Framing inspections are only required when a roof structure is required to be upgraded.
- Rough electrical inspection is not required if all wiring is readily accessible.
- Rough plumbing may be required for hot water systems.
- Final inspection is required for all associated systems permits and the building permit. Safe access must be provided to the roof and applicable attic areas for inspections. Owner or contractor must provide a ladder to the attic and roof.
 - All equipment must be accessible for inspections.
 - Roof surfaces must be clear of snow, ice or debris.
 - The building permit and all approved plans must be available for all inspections.
 - In some commercial applications, third party special inspections may be required. These will be listed as conditions on the permit. Third-party inspections are required before the final inspection is scheduled and are at the cost of the applicant.

We are happy you are building in Lakewood and we want to provide you whatever information you require. Please call 303-987-7500 with any questions.



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SAMPLE PLOT PLAN

