



Solar Permit Submittal Checklist:

The following items are required for submittal. Incomplete submittals will not be accepted.

- Completed Application.
 - Commercial Application [indep.us/commercial building permit application](http://indep.us/commercial_building_permit_application)
 - Residential Application [indep.us/residential building permit application](http://indep.us/residential_building_permit_application)
- 1 complete paper set of plans and specifications.
 - Include site plan showing location of major components on the property. This drawing need not be exactly to scale, but it should represent relative location of components and show elevation. The site plan must also show compliance with International Fire Code minimum access and pathways. *Additionally, include a photo that shows the proposed access point to verify compliance with IFC 605.11.3.1.*
 - Include electrical diagram showing PV array configuration, wiring system, overcurrent protection, inverter, disconnects, required signs, and AC connection to building.
 - Include specification sheets and installation manuals (if available) for all manufactured components including, but not limited to PV modules, inverter(s), combiner box, disconnects, and mounting system.
- 1 CD or thumb drive containing plans and specifications in expandable pdf format.
- Solar Permit Information pages (3-5).
- Net Metering Agreement. [indep.us/net metering agreement](http://indep.us/net_metering_agreement)
- Permit fee. Phone payments are not accepted.

Please contact bpermits@indepmo.org or 816-325-7401 for the current submittal method.

Permit Fees: Permit fee calculations are based on the **total value** of work.

Commercial Solar

Value	Base Fee		Fee per thousand in value
\$1 - \$50,000	\$90 Base Fee	+	\$12.75 per thousand of total valuation.
\$50,001 - \$500,000	\$345 Base Fee	+	\$7.75 per thousand of total valuation.
Over \$500,000	\$845 Base Fee	+	\$6.75 per thousand of total valuation.

Residential Solar

<u>Value</u>	<u>Base Fee</u>		<u>Fee per thousand in value</u>
\$1 - \$50,000	\$60 Base Fee	+	\$9.25 per thousand of total valuation.
\$50,001 - \$500,000	\$200 Base Fee	+	\$6.25 per thousand of total valuation.
Over \$500,000	\$700 Base Fee	+	\$5.25 per thousand of total valuation.

Electrical fees are calculated individually based on the value of electrical work.

<u>Value</u>	<u>Base Fee</u>		<u>Fee per thousand in value</u>
\$1 - \$500	\$40		N/A
\$501 - \$1,000	\$50		N/A
\$1,001 - \$5,000	\$65		N/A
Over \$5,000	\$80 Base (1 st \$5,000) +		\$12 per thousand of remaining value.

Licensing Requirements: Proper licensing will be required before the permit will be issued. Contractors must have the following licenses:

- General Contractor License. Class A or B is acceptable. The license may be applied for online at indep.us/contractor_license_online_application. This may be required for commercial solar permits.
- Trade Contractor License Class D Master Electrical. The license may be applied for online at indep.us/contractor_license_online_application.
- Business License. A general business license is required for all General and Trade Contractors, and may be applied for online at indep.us/general_business_license_online_application.

Reviewing Departments: The following departments review the permit once the application is accepted.

- **Building Review** – 816-325-7401. The Building Permits Division reviews solar permits to verify any structural elements of the installation are done to the current adopted code.
- **Engineering Review** – 816-325-7591/7044. Engineering reviews solar permits (on ground) for encroachments or placement over critical infrastructure.
- **Fire Department** – 816-325-7132. The Fire Department reviews solar permits to verify the installation meets the current adopted fire code.
- **Zoning** – 816-325-7421 or 816-325-7823. Zoning reviews solar permits for proper height, setbacks, and overall design aesthetics.
- **Independence Power & Light** – 816-325-7492. Power & Light reviews the required net metering agreement. Additional steps will need to be taken once the final inspection has passed.
 1. Notify electric utility when inspection is passed.
 2. Electric utility will schedule its inspection and meter exchange.
 3. Electric utility will provide Permission to Operate (PTO).
- **Historic Preservation** – 816-325-7419. Historic Preservation reviews applications to ensure compliance with the Independence Historic Preservation guidelines, should the guidelines apply to your project.

SOLAR PERMIT INFORMATION

Structural Review of PV Array Mounting System:

Roof Information:

This section is for evaluating roof structural members that are site built. This includes rafter systems and site built trusses. Manufactured trusses and roof joist systems, when installed with proper spacing, meet the roof structure requirements as well.

1. Is the array to be mounted on a defined, permitted roof structure? Yes No
2. Roof Age: Structure: < 5 yrs 5-10 yrs 10-20 yrs 20-30 yrs
Covering: < 5 yrs 5-10 yrs 10-20 yrs 20-30 yrs
3. Is the roofing type lightweight: Yes No
(Yes = composition, lightweight masonry, metal, etc., No = heavy masonry, slate, etc.)
4. Does the roof have a single covering? Yes No
5. Provide method and type of weatherproofing roof penetrations (e.g. flashing, caulk) _____
6. Roof Construction: Rafters Trusses Other: _____
7. Describe rafter or truss system.
 - a. Rafter size: _____ x _____ inches.
 - b. Rafter spacing: _____ x _____ inches.
 - c. Maximum unsupported span: _____ x _____ inches.
8. Are rafters or trusses in good condition, i.e. have not been adversely altered and no visible damage? Yes No
9. Is the rafter or truss design unusual or abnormal? Yes No
10. Are the rafters or trusses made out of non-standard materials? Yes No
11. Have the rafters or trusses been modified in any way (e.g. drilled holes, etc.)
 Yes No

Need a structural engineer's stamp: If you answered "No" to question #8 or "Yes" to any of the questions numbered 9-11, a structural engineer's stamp will be required. A framing plan is also required if strengthening the rafters/trusses is necessary.

Structural Review of PV Array Mounting System - continued

Mounting System Information:

This section provides information on how the PV modules will be mounted to the roof. It is very important to have enough attachment points to adequately spread the dead load across as many roof-framing members as needed so that the point loads created at attachment points account for additional snow load (the Kansas City region has a 20 psf ground snow load).

12. Is the mounting structure an engineered product designed to mount PV modules with no more than an 18" gap beneath the module frames? Yes No

If you answered "No" to question #12, a structural engineer's stamp will be required. Must include design for uplift; including system to rafter detail as well as a framing plan if strengthening the rafters/trusses is necessary.

13. Fill out information on the mounting system below:

- a. Mounting system manufacturer _____
Product name & model# _____
- b. Total weight of PV modules and rails _____ lbs
- c. Total number of attachment points _____
- d. Weight per attachment points ($b \div c$) _____ lbs
- e. Maximum spacing between attachment points on a rail _____ inches

See product manual for maximum spacing allowed based on maximum design wind speed. To ensure proper weight distribution: For each successive rail, attachment points should occur on rail ends and then should be staggered based on 16" or 24" on center rafter spacing.

- f. Total surface area of PV modules (square feet) _____ ft²
- g. Distributed weight of PV module on roof ($b \div f$) _____ lbs/ft²
- h. Mounting frame to rafter framing: Self-ballasted Penetrating

If penetrating, please provide for fasteners:

Type: _____ Size: _____ Number: _____ Spacing: _____ (inches)

14. Additionally, please attach a cross-section detail that shows rafter size, spacing, number of attachment points, span dimensions, and approximate roof slope.

Structural Review of PV Array Mounting System - continued

Electrical Review of PV System (Calculations for Electrical Diagram)

In order for a PV system to be processed using this application, the following must be true:

1. PV modules, utility-interactive inverters, and combiner boxes are identified for use in PV systems.
2. The PV array is composed of 4 series strings or less per inverter.
3. The AC interconnection point is on the load side of service disconnecting means (690.64(B)).
4. A standard electrical diagram can be used to accurately represent the PV system.

I, _____ have read the Structural Review of PV Array Mounting Systems information pages and acknowledge that all required documents have been provided. I understand that omissions in the required information will result in delays in the review process.

Signature: _____ Date: _____