



TOWN of CARY

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# RESIDENTIAL SOLAR PHOTOVOLTAIC SYSTEMS PERMITTING and INSPECTIONS GUIDE

This guide is designed to assist those who wish to install (PV) Photovoltaic Systems, on residential sites.

## FREQUENTLY ASKED QUESTIONS

### **Why are permits required for Residential Solar (PV) Photovoltaic Systems**

State law (NCGS 160d-1110) requires the permit, and obtaining the proper permits and inspections helps ensure that the equipment is properly installed to protect the health, safety, and welfare of our citizens.

### **Where can I find the rules for installing Residential Solar (PV) Photovoltaic Systems?**

Rules for the installation of PV Systems can be found in the latest edition of the North Carolina Electrical Code (the National Electrical Code (NEC) with North Carolina Amendments). Roof-mounted systems require Building Permits. If the installation requires work done in another trade—such as plumbing for alteration of rooftop vent terminations—that work must be done in accordance with the applicable NC Code.

## HOW TO APPLY FOR A PERMIT

Apply for a permit in just two simple steps:

### **Have Your Equipment Plan**

- Equipment layout design.
- Equipment specifications and details (including manufacturer's instructions).
- Instructions for the rapid shutdown of the system at the roof.
- Inverter location.
- Type and size of conductors to be used.
- How the metal frame(s) and the PV electrical system is to be grounded.
- Details on panel and rail mounting.
- All labeling required by Articles 690 and 705 must be shown in the project plans. Only labels specifically applicable to the proposed project should be shown in the project plans.

**Remember:** All project plans and details must be address/project specific.

### **Complete Permit Application:** <https://townofcary.idtplans.com/secure/>

- Enter all pertinent plan and equipment details in the "Notes" section of the online application.
- Payment is required prior to permit issuance for all Residential (PV) Photovoltaic Systems.

**IMPORTANT:** See the NC Department of Insurance OSFM memorandum: "**Statewide Uniform Requirement of Inspection Procedures for Solar Photovoltaic Systems Installed on Residential Rooftops**" (April 23, 2019) for additional details on permitting requirements.

## PROCESSING TIME

Processing time for online permit applications is approximately **3 business days** from the submittal date of a complete and accurate application. Upon approval, your permit will be emailed to you.

## INSPECTIONS and DESIGN REQUIREMENTS

### GENERAL INFORMATION

For your safety, PV System installations are inspected to ensure that they are done in compliance with the applicable NC Codes and manufacturer's instructions. Inspections are required for:

- (1) Electrical work
- (2) Building work (for rooftop or structure-mounted installations)
- (3) Plumbing work (if applicable)
- (4) Mechanical work (if applicable)

The required inspections may vary depending upon the specific equipment and installation. The required inspections shall be determined by the plan review staff and listed on the permit documents at issuance.

It is the responsibility of both the owner and contractor to ensure that the installation is done in compliance with all applicable laws and regulations.

#### IMPORTANT!

- All electrical equipment must be listed and labeled by an approved testing agency.

### ELECTRICAL INSPECTIONS for Residential PV Systems

Electrical work must comply with Article 690 of the National Electrical Code. Typical inspections are listed below. Other inspections may be required depending upon the specific equipment and installation instructions.

The Department of Insurance OSFM has detailed PV Inspection procedure in a memorandum titled: ***“Statewide Uniform Requirement of Inspection Procedures for Solar Photovoltaic Systems Installed on Residential Rooftops”*** (April 23, 2019). It provides two options for inspection procedures. The permit holder may choose either option, but the permit holder must be prepared to meet all of the requirements of the chosen inspection option.

**Electrical Rough-in Inspection:** Is required for Option #1 only. See the NCDOT memo noted above.

**Electrical Final Inspection:** Is required for Option #1 and Option #2. See the NCDOT memo noted above.

- For all PV System installations, provide the project plans and documents onsite at the time of the inspection(s).

Please Note: An Electrical Rough-In Inspection is required if the items above would not be visible and accessible at the time of a final inspection. If you have any questions about what inspections your particular installation may require, please refer to the plan review comments.

### BUILDING INSPECTIONS for Residential PV Systems

Building (Structural) work must comply with the current North Carolina Residential Code.

**Building Final Inspection:** In lieu of a building inspection by a Code Official, the permit applicant shall supply a summary letter signed and sealed by a North Carolina licensed design professional which shall state that the equipment will not create a negative impact on the building's structural design, including any additional loads imposed (dead, snow, wind) and the installation is in compliance with current NC Residential Code.

## PLUMBING INSPECTIONS for Residential PV Systems

Plumbing work must comply with the current North Carolina Residential Code. Typical inspections are listed below. Other inspections may be required depending upon the specific equipment and installation instructions.

**Plumbing Final Inspection** includes, but is not limited to:

- Completed relocation or and alteration of plumbing vent terminations made non-compliant due to the PV equipment installation. All plumbing work must be in compliance with the current NC Residential Code.

Please Note: A Plumbing Rough-In Inspection is required if the items above would not be visible and accessible at the time of a final inspection. If you have any questions about what inspections your particular installation may require, please refer to the plan review comments.

## MECHANICAL INSPECTIONS for Residential PV Systems

Mechanical work must comply with the current North Carolina Residential Code. Typical inspections are listed below. Other inspections may be required depending upon the specific equipment and installation instructions.

**Mechanical Final Inspection** includes, but is not limited to:

- Completed installation of all equipment and components of any ducted ventilation or exhaust system in accordance with the manufacturer's installation instructions and the current NC Residential Code.

Please Note: A Mechanical Rough-In Inspection is required if the items above would not be visible and accessible at the time of a final inspection. If you have any questions about what inspections your particular installation may require, please refer to the plan review comments.

## Fees

- Fees for Residential PV Systems are \$150.00.

## Scheduling Inspections

- Two Options:
  - [Online](#) through the Click2gov portal
  - Call 311 or (919) 469-4046 weekdays from 7 a.m.-7 p.m.

## Inspection Day

- Visit [Who's My Inspector?](#) or use the search bar on the Town of Cary website to find your assigned inspector and cell phone number.
- Call your inspector between 7:00 a.m. and 7:30 a.m. to get an ETA or discuss time restrictions and/or Live Remote Inspection options.