Department of
CITY PLANNING

OFFICE OF BUILDINGS
55 Trinity Avenue, Suite 3900
Atlanta, Georgia 30303
Tel: 404.330.6907
Email: express-oob@atlantaga.gov

EXPRESS SOLAR PANEL INSTALL DRAWING CHECKLIST

Cover Sheet of the Project Plans: - *(See Sample Plan Illustrations on Main Express Webpage)*

☐ Project Name
☐ Project Owner
☐ Project Address
☐ Scope of Work
☐ Applicable Codes listed – *(See Standard Construction Codes on Main Express Webpage)*
☐ Drawing INDEX

SCOPE:

The express permitting process for solar residential and commercial roof installations is for projects that are ≤ 25 kW and mounted on the structure. The installation of solar photovoltaic on a roof of a structure can be simple to complex. There are several items needed when submitting for a solar photovoltaic roof permit to determine that the finished project complies with the minimum requirements of the Current International Residential Code (IRC) and National Electrical Codes (NEC).

Photovoltaic applications for this process are only applicable to roof mounted residential systems.

PRE-SUBMITTAL CHECKLIST

1. Items for consideration when submitting for a photovoltaic panel array on a roof.

✓ No shadows will be cast on the array from trees, other buildings, etc. The trimming or removal of trees in order to provide an area that affords you direct sunlight must involve the Arborist Division of Office of Buildings.

The Arborist Division may be reached at (404) 330-6874 or via email: arborist.dpcd@atlantaga.gov

✓ Roof decking is solid sheathing of ½" or greater thickness;

NOTE: Structures have more than one-layer of roofing materials will require a re-roof permit independent of this application

2. Eligibility for Express Permitting Process requires the following:

✓ The array is mounted on a code-compliant structure;

✓ The mounting structure is an engineered product designed to mount photovoltaic modules with no more than an 18-inch gap beneath the module frames;

- The array has a distributed weight of less than 5 lbs./ft. and less than 45 lbs. per attachment;

✓ The mounting hardware shall indicate that it is rated for 90-mph wind speeds and can resist a minimum of 40 lbs. of uplift;

EXPRESS LANE PERMIT PROCESS

Submit to:

➢ Express Lane – Monday through Friday, 8:15 AM to 3:00 PM.

Required approvals, as applicable to your scope of work:

➢ Zoning

➢ Building

➢ Electrical

➢ **Arborist – If no trees are destroyed or impacted, submit a completed Arborist Photovoltaic Tree Affidavit. If trees are destroyed, impacted or need to be pruned more than 20% of the live canopy, follow the requirements in #8 below.**

Required Inspections:

➢ Final Electrical

- Structural modifications and attachments to roof system;
  - Provide line of sight for inspection of attachments
- All conduit in place, with all junction boxes open
- Installation complete. The roof properly flashes and sealed to prevent water intrusion
- Photovoltaic System complete, with all signage required by the latest applicable International Fire Code and National Electrical Code in place.

Permits required:

➢ Electrical Permit: Permit fee will be a minimum of $175. Fee is based on valuation of the project.

PERMIT SUBMITTAL REQUIREMENTS:

The customer must provide a minimum of two (02) complete plan sets, with the following:

1. **Submit an Arborist Photovoltaic Tree Affidavit:**

- This form is notarized and affirms that the contractor recognizing that no tree will be removed and/or that no more than 20% of the live canopy will be removed as part of the installation. For a copy of this form, please see the last sheet within this packet.

2. **Plan Cover Sheet, with:**

- Project Address;
- Homeowner's name and contact information;
- Scope of project in the form of a brief narrative;
- Applicable codes, as adopted and amended by the State of Georgia;
- Contractor's name and contact information;

3. **Roof Plan showing the layout of the photovoltaic panel array, with the following:**

- Indicate the roof pitch (Ex: 4:12, 6:12, etc.)
- Indicate the roof sheathing type and thickness
- Indicate if the roof is convention framing or pre-engineered trusses
- Dimension the separation distance between panels
- Show location of any roof mounted disconnecting means

NOTE: Pre-engineered trusses may require plant details from a Georgia licensed Professional Engineer for structural modifications to the roof system.

4. **Electrical One-Line Diagram** – This is a line drawings, which shows the components of the system, and their relationship to each other in the installation. This is not a scaled drawing, but is merely a conceptual representation of the system design used to verify compliance.

Include the following:

- The photovoltaic panels make and model,
- Conduit sizes and types,
- Conductor sizes and types
- Over Current Protection Device (OCPD) type rating and size (circuit breaker, fuse, etc.)
- The inverter type and rating;
- The type and size of all system batteries, if provided

NOTE: Indicate if the photovoltaic panels will be wired in series (voltage multiplied – individual module multiplied by the voltage) or parallel (circuit multiplied – individual module multiplied by the ampere). If this information is not provided, staff will assume that modules are wired in parallel.

5. **Provided a Load Calculation of the total ampere and voltage generated by the photovoltaic array.**

NOTE: A 125% short circuit increase is required on the photovoltaic array, and a further 125% increase is required on the conductor size. (SEE LATEST NEC CODE)

6. **Provide a minimum of two (02) complete bound or stapled sets of the Manufacturer's Specifications for:**

- AC Voltage electrical equipment and/or panels,
- Inverter
- Photovoltaic,
- DC Voltage equipment and/or panels
- Over Current Protection Devices (OCPD)
- Panel mounting hardware.

NOTE: Photovoltaic Systems on buildings shall include a rapid shutdown function that controls specific conductors, Once the rapid shutdown is initiated, the conductors shall be limited to not more than 30 Volt – Amperes within 10 – seconds (SEE LATEST NEC CODE)

7. **A minimum of two (02) sets of structural design details, sealed by a Georgia licensed Professional Engineer for any required structural modifications to the existing roof system _ IF REQUIRED.**

   - These may on 8-1/2 x 11 paper, showing the necessary structural design changes to the pre-engineered trusses.

8. Arborist Review Requirements

Roof mounted photovoltaic system

- If 20% or less of a tree's canopy will be pruned, complete the statement on page six of six in this application, and submit with the application in Accela.

Ground mounted photovoltaic system

- If the photovoltaic system or parts of the system will be ground mounted, provide the following information on the site plan.
- Show and label the proposed location of ground mounted system
- Show and label all trees on property whose critical root zone is impacted by limits of land disturbance.
  - label species (hardwood or pine) of existing trees, indicate diameter at breast height.
- Show the critical root zone (CRZ) of trees which extend into the limit of disturbance. Calculate the % of impact to CRZ.
- If no trees are in or around the area of the proposed work provide two different photos of the site which clearly shows no trees will be impacted and "No Trees Impacted Statement". This form is located here, https://www.atlantaga.gov/government/departments/city-planning/zoning-development-and-permitting-services/applications-forms-and-checklists

Plan Review and Inspection Checklist for Photovoltaic Systems:

NOTE: This is not an all-inclusive list of items inspected. These items may or may not apply to your project. This list is to be used as a guide only.

1. Arrays are to be 5 lbs./sf or 45 lbs./attachment
2. Modules, inverters and combiners shall be listed and labeled
3. Maximum of 4 series strings per inverter
4. AC connection point shall be on load side of service disconnect.
5. Inverters and combiners shall be listed per UL 1741
6. NMC is to be stapled every 4'-6" and within 12" of boxes, cabinets, conduit or terminations.
7. Bending radius of USE-2 or PV cable should be no less than 5x the cable diameter.
8. Minimum #8 copper shall be used for the grounding conductor
9. Grounding rod shall be as close to the array as possible.
10. All stainless steel shall be bonded to aluminum
11. Adjustment factors shall be used for sunlit raceways more than 10' or 10% of length**.**
12. All Bonding/grounding materials and methods shall be listed, labeled and identified in accordance with UL 2703.
13. Operating current signage should read, "System Maximum Power Current"
14. Operating voltage signage should read. "System Maximum Power Voltage"
15. PV with battery backups should be marked with, "Maximum Operating Voltage," equalization Voltage and polarity of grounded conductors.
16. The inverter maximum operating voltage rating shall be as high as maximum voltage of the PV system.
17. The source circuit over current protection for the PV system shall be sized per the minimum fuse rating

***** Electrician or authorized representative of the contractor is responsible for installing all components per most recent applicable building codes and must present at the time of the inspection. Homeowners authorized by the contractor may serve as that representative. *****

Department of
CITY PLANNING

Office of Buildings – Arborist Division
55 Trinity Avenue, Suite 3800
Atlanta, Georgia 30303
Tel: 404.330.6874
Email: arborist.dpcd@atlantaga.gov

PHOTOVOLTAIC TREE STATEMENT

Date: _____

Property Owner(s): _____

Project Address: _____

The undersigned acknowledges the Arborist Requirements for photovoltaic installation

- ✓ I certify that no trees will be removed for the installation of photovoltaic systems.
- ✓ I understand that tree pruning, if required, is regulated by the COA Tree Ordinance:
  - Pruning is limited to 20% (twenty percent) of the live canopy.
  - Pruning must not make the canopy lopsided or unbalanced.
  - Pruning cuts must be made in accordance to ANSI standards
- ✓ If there are any questions or concerns about completing this document or impacts to trees due to the installation of photovoltaic cells, please contact the Arborist Division at arborist-oob@atlantaga.gov or 404-330-6874.

NOTE: The City of Atlanta Ordinance Section 158-26, which regulates trees, requires a permit for the removal of hardwood trees 6" (six inches) DBH and/or pines 12" (twelve inches) and larger. The tree ordinance prohibits injury to a protected tree. To find out more about the City of Atlanta tree ordinance go to: http://www.atlantaga.gov/index.aspx?page=339, or call the Arborist Division at (404) 330-6874.

I understand that if I provide false or misleading information in this form, I will be in violation of the Atlanta Tree Protection Ordinance and will be subject to the payments and penalties set forth therein.

Signature: _____

Print your name: _____

Relationship to project (Check One): ( ) Property Owner ( ) Contractor ( ) Architect