ATHOL FIRE DEPARTMENT 

2251 Main St.

 Athol, Ma. 01331

 (978)249-8275 TEL

 (978) 249-4200 FAX

 **Application for Photovoltaic Plan Review**

**Joseph Guarnera**

**Fire Chief**

***On December 9th, 2022 Massachusetts adopted NFPA 1, 2021 Edition, with Massachusetts Amendments. There were significant changes made to Chapters 11 and 52 regarding Photovoltaic (PV) Systems both with and without battery storage. ALL PV systems permitted after 12/9/22 shall follow this code and are to be reviewed by the AHJ of the Fire Department before installation.***

**Below is a list of all applicable fire code references from the 2021 edition of NFPA 1 with Mass Amendments.**

**11.12.3 Rooftop Access and Ventilation.**

**11.12.3.1 General.**

**11.12.3.1.1**

Access pathways, setbacks, and spacing requirements shall be required to provide emergency access to the roof, provide pathways to specific areas of the roof, provide for smoke ventilation opportunity areas, and to provide emergency egress from the roof.

**11.12.3.1.2**

The AHJ shall be permitted to reduce or modify roof access based upon fire department ventilation procedures or alternative methods that ensure adequate fire department access, pathways, and smoke ventilation.

**11.12.3.1.3**

The AHJ shall be permitted to reduce or modify roof access for BIPV systems installed as the roof covering when they are listed in accordance with 690.12(B)(2) of *NFPA 70*.

**11.12.3.2 One- and Two-Family Dwellings and Townhouses.**

**11.12.3.2.1**

Photovoltaic systems installed on one- and two-family dwellings and townhouses shall provide roof access in accordance with [**11.12.3.2**](https://link.nfpa.org/publications/1/2021/chapters/11#ID000010016859).

**11.12.3.2.2**

Designation of ridges shall not apply to roofs with 2 in 12 or less pitch.

[**11.12.3.2.3\***](https://link.nfpa.org/publications/1/2021/annexes/A/groups/11#ID000010019684)**Access Pathways.**

**11.12.3.2.3.1**

Not less than two 36 in. (914 mm) wide access pathways on separate roof planes, from gutter to ridge, shall be provided on all buildings.

**11.12.3.2.3.2**

One access pathway shall be provided on the street or driveway side of the roof.

**11.12.3.2.3.3**

For each roof plane with a PV array, a 36 in. (914 mm) wide access pathway from gutter to ridge shall be provided on the same roof plane as the PV array, on an adjacent roof plane, or straddling the same and adjacent roof planes.

**11.12.3.2.3.4**

Access pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.

**11.12.3.2.4 Setbacks at Ridge.**

**11.12.3.2.4.1**

For PV arrays occupying up to 33 percent of the plan view roof area, a minimum 18 in. (457 mm) setback shall be provided on either side of a horizontal ridge.

**11.12.3.2.4.2**

For PV arrays occupying more than 33 percent of the plan view roof area, a minimum of 36 in. (914 mm) setback shall be provided on either side of a horizontal ridge.

**11.12.3.2.5 Alternative Setbacks at Ridge.**

**11.12.3.2.5.1**

For one- and two-family dwellings with an automatic sprinkler system installed within the dwelling in accordance with [**13.3.2.19**](https://link.nfpa.org/publications/1/2021/chapters/13#ID000010002465), for PV arrays occupying up to 66 percent of the plan view roof area, a minimum 18 in. (457 mm) setback shall be provided on either side of a horizontal ridge.

**11.12.3.2.5.2**

For PV arrays occupying more than 66 percent of the plan view roof area on sprinklered one- and two-family dwellings, a minimum 36 in. (914 mm) setback shall be provided on either side of a horizontal ridge.

**11.12.3.3 Buildings Other Than One- and Two-Family Dwellings and Townhouses.**

**11.12.3.3.1 Roof Access.**

**11.12.3.3.1.1**

Photovoltaic systems installed on any building other than one- and two-family dwellings and townhouses shall provide roof access in accordance with [**11.12.3.3**](https://link.nfpa.org/publications/1/2021/chapters/11#ID000010016862).

**11.12.3.3.1.2**

Where the AHJ determines that the roof configuration is similar to a one- and two-family dwelling or townhouse, the AHJ shall allow the roof access requirements of [**11.12.3.2**](https://link.nfpa.org/publications/1/2021/chapters/11#ID000010016859).

**11.12.3.3.1.3**

Detached, nonhabitable structures, including, but not limited to, parking shade structures, carports, solar trellises, and similar structures, shall not be required to provide roof access.

**11.12.3.3.2 Perimeter Pathways.**

**11.12.3.3.2.1**

A minimum 48 in. (1219 mm) wide perimeter pathway shall be provided around the edges of the roof for buildings with a length or width of 250 ft (76.2 m) or less along either axis.

**11.12.3.3.2.2**

A minimum 6 ft (1829 mm) wide perimeter pathway shall be provided around the edges of the roof for buildings having length or width greater than 250 ft (76.2 m) along either axis.

**11.12.3.3.3 Other Pathways.**

Pathways shall be over areas capable of supporting firefighters accessing the roof and shall be provided between array sections as follows:

* (1)

Pathways shall be provided in a straight line 48 in. (1219 mm) or greater in width to all ventilation hatches and roof standpipes.

* (2)

Pathways shall be provided 48 in. (1219 mm) or greater in width around roof access hatches with at least one 48 in. (1219 mm) or greater in width pathway to the parapet or roof edge.

* (3)

Pathways shall be provided at intervals no greater than 150 ft (46 m) throughout the length and width of the roof.

**11.12.3.3.4 Smoke Ventilation.**

**11.12.3.3.4.1**

A minimum 48 in. (1219 mm) wide pathway shall be provided bordering all sides of non-gravity-operated smoke and heat vents and bordering at least one side of gravity-operated smoke and heat vents.

**11.12.3.3.4.2**

Ventilation options between array sections shall be at least one of the following:

* [**(1)\***](https://link.nfpa.org/publications/1/2021/annexes/A/groups/11#ID000010019707)

A pathway 96 in. (2438 mm) or greater in width

* [**(2)\***](https://link.nfpa.org/publications/1/2021/annexes/A/groups/11#ID000010019708)

A pathway 48 in. (1219 mm) or greater in width and bordering on existing roof skylights at intervals no greater than 150 ft (46 m) throughout the length and width of the roof

* [**(3)\***](https://link.nfpa.org/publications/1/2021/annexes/A/groups/11#ID000010019709)

A pathway 48 in. (1219 mm) or greater in width and bordering 48 in. (1219 mm) by 96 in. (2438 mm) with venting cutouts options every 20 ft (6096 mm)

**11.12.3.3.5 Minimizing Obstructions in Pathways.**

Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment to reduce trip hazards and maximize ventilation opportunities.

**11.12.3.4 Emergency Escape and Rescue Openings.**

**11.12.3.4.1**

Where rooftop-mounted PV systems or BIPV systems installed as the roof covering are installed on a roof plane directly below an emergency escape and rescue opening, a minimum 36 in. (914 mm) wide access pathway shall be provided to at least one emergency escape and rescue opening for each sleeping room.

**11.12.3.4.2**

The AHJ shall be permitted to reduce or exempt access pathways at emergency escape and rescue openings for BIPV systems installed as the roof covering when they are listed in accordance with 690.12(B)(2) of *NFPA 70*.

**11.12.4 Ground-Mounted Photovoltaic System Installations.**

Ground-mounted photovoltaic systems shall be installed in accordance with [**11.12.4.1**](https://link.nfpa.org/publications/1/2021/chapters/11#ID000010001817) and [**11.12.4.2**](https://link.nfpa.org/publications/1/2021/chapters/11#ID000010001818).

[**11.12.4.1\***](https://link.nfpa.org/publications/1/2021/annexes/A/groups/11#ID000010013632)**Clearances.**

A clear area of 10 ft (3048 mm) around ground-mounted photovoltaic installations shall be provided.

[**11.12.4.2\***](https://link.nfpa.org/publications/1/2021/annexes/A/groups/11#ID000010013633)**Vegetation Management Plan.**

A vegetation management plan or noncombustible base acceptable to the AHJ shall be approved and maintained under and around the installation where required by the AHJ.