



Permit checklist: Residential

Solar Energy Systems

(Single Family Residential and Open Space Zoning Districts)

Ground Mounted Building Mounted Building Integrated

Required Documents for Permit Application:

- 1) A **Site Plan** is required showing all dimensions of the proposed project. (See attached example).
- 2) A **Panel Elevation** indicating all system dimensions including the height and width of the panels, degree of tilt and maximum distance of the system measured from the ground or roof surface. Systems mounted on a sloped roof must also indicate slope of roof surface. (See attached example).
- 3) A copy of the **Interconnection Agreement** from the utility company or written confirmation that the system is an off-grid system.
- 4) **Connection Details** for connection to the roof and information confirming that the roof system is designed to carry the additional load of the solar energy system for building mounted systems or **Foundation Details** for the supporting structure of a ground mounted system.

Required Checklist: Review the following list and check each box indicating that you understand and will comply with all applicable requirements.

- A) All Solar Energy Systems:
 - d) Installation must be done according to manufacturer's recommendations. All work must be completed according to the applicable building, fire and electric codes. All electrical components must meet code recognized test standards.
 - b) No more than one system may be placed on any lot unless otherwise specifically approved by the City Council. In no case shall a system or the total of multiple systems exceed the nameplate rated capacity of fifteen (15) kW or fifty (50) KBTU. The system shall supply electrical power or thermal energy solely for use by the owner on the site.
 - c) All components of the system shall be a neutral color. All surfaces shall be non-reflective to minimize glare that could affect adjacent or nearby properties.
 - d) No lighting other than required safety lights or indicators shall be installed on the system.
 - e) No advertising or signage other than required safety signage and equipment labels shall be permitted on the system.
 - f) The location of the system shall not result in the net loss of required parking.
 - g) If interconnected to a utility grid, the system shall meet the requirements for interconnection and operation as set forth by the utility and the Iowa Utilities Board.
 - h) A clearly marked and easily accessible shut off for any system that generates electricity will be required as determined by the Fire Marshal. (Indicate location on the site plan.)
 - i) Systems shall be well maintained in an operational condition that poses no potential safety hazard. If the system remains nonfunctional or inoperative for a continuous period of one year, the system shall be deemed to be abandoned. The owner/operator shall remove the abandoned system at their expense.
 - j) No system shall be constructed within 20 feet laterally of an overhead electrical power line. (Excluding secondary electrical service lines or service drops).



B) Building Mounted Solar Energy Systems:

- a) The system shall be setback not less than one (1) foot from the exterior perimeter of the roof for every one (1) foot the system extends above the parapet wall or roof surface. (Building Integrated Systems are not required to be setback from roof edge.) Access pathways shall be provided in accordance to all applicable building, fire and safety codes. (Indicate and dimension setback or access pathway on the site plan.)
- b) Should the system be mounted on an existing structure that does not conform to current setback requirements, the solar energy system shall be installed to meet the current setback requirements applicable to the receiving structure.
- c) Panels shall be located in such a manner that fall protection railings are not required or are not visible from the public thoroughfare.
- d) All components of the system shall be designed to minimize their visual presence to surrounding properties and public thoroughfares. Panel arrangement shall take in account the proportion of the roof surface and place the panels in a consistent manner without gaps unless necessary to accommodate vents, skylights or equipment. (Indicate panel arrangement on the site plan.)
- e) The collector panel surface and mounting system shall not extend higher than eighteen (18) inches above the roof surface of a sloped roof or higher than seven (7) feet above the roof surface of a flat roof.
- f) The collector panel surface of a building integrated system shall maintain a uniform profile or surface with the building's vertical walls, windows, or roofing.
- g) Other than building integrated systems, the system can only be installed on the building roof. Size will be determined by the available roof area subject to the installation minus the required setbacks or access pathways.



C) Ground Mounted Solar Energy Systems:

- a) The system shall be located in accordance to the regulations for detached accessory structures in Chapter 14 (Accessory Structures) of the Zoning Ordinance or not less than one (1) foot from the property line for every one (1) foot of the system height measured at its maximum height, whichever is most restrictive. (Indicate and dimension setback from appropriate property lines or easements on the site plan.)
- b) A system cannot be located in front of the rear wall of the primary structure, even if it meets the front yard setback requirements.
- c) No system shall obstruct vision between a height of thirty inches (30") and ten feet (10') on any corner lot within a vision triangle of twenty five feet (25') formed by intersecting street right of way lines
- d) No part of a system shall be located within or over drainage, utility or other established easements, required buffers, or on or over property lines. The system shall be setback from underground electric distribution lines by at least five feet. (Indicate any easements or utility lines on the site plan.)
- e) The maximum height of the system shall not exceed ten (10) feet in height as measured from the existing grade.
- f) The system is restricted in size to no more than the allowed area for detached accessory structures on the specific property. The system will be included in the collective total of all detached accessory structures.



D) Screening of Solar Energy Systems:

- a) Ground mounted solar energy systems should be located to visually mitigate undesirable features that are visible at grade from surrounding properties and public thoroughfares. Should the existing site conditions or needs for solar exposure make it impossible to orient a system to hide its undesirable features such as the structural elements, rear face of the collector panels, mechanical equipment and accessories, the following options are acceptable methods of screening the view of these undesirable features:

- i) An enclosure or a freestanding screen wall or fence of an opaque design built out of materials consistent with the architecture and materials of the principal building. Landscape plantings may be implemented in combination with the screen enclosure, fence or wall to soften the appearance of the installation. (Indicate screen wall/fence on site plan and panel elevation and provide details of the design and materials of the wall/fence.)
- ii) Landscape plantings that are composed of evergreen materials to provide year-round screening may be implemented in lieu of screen enclosure, fence or wall. Plant material shall be of sufficient height and size at the time of installation to fully screen the undesirable features of the system. (Indicate landscaping on site plan including size and height of plant material.)
- b) Building mounted systems do not require screening, however the structural elements, equipment and accessories related to a system mounted on a flat roof that are visible shall be selected to be a similar color to the roof surface or adjacent building materials.
- c) Wall or ground mounted mechanical equipment related to solar energy systems will require screening as noted in Chapter 10 (Performance Standards), Section 4 (Specific Use Regulations) of the Zoning Ordinance (Title 9). Screening of wall or ground mounted mechanical equipment is not required for single-family detached and bi-attached residential uses.



E) The property owner or installer will be responsible for verification that the proposed project complies with existing property restrictions such as association requirements and regulations.



Drawing Details for Solar Energy Systems

See following pages for examples

Required Information for Site Plan Drawings:

- Property Address and Legal Description
- Property Owner name and contact information
- Contractor or Installer name and contact information
- Date
- Location Map
- North Arrow
- Drawing Scale
- Zoning for the property
- Property lines and dimensions
- Adjacent streets and sidewalks
- Location and type of any easements or buffers
- Lot size
- Array size (collector surface area)
- Location of system and any buildings or structures
- Location of meter and emergency shut-off
- Location of adjacent utility lines (overhead or underground)

Ground Mounted Systems Only:

- Details on methods of screening
- Required front, rear and side yard setbacks adjacent to system
- Length and width of system footprint (will be different than collector surface area if panels are tilted)
- Distance of the system from property lines and other adjacent structures (measured from the edge of the collector panels)
- Maximum allowed system size and size of any other accessory structures on site. Provide combined size of all primary building footprints on site for non-single family projects.

Building Mounted Systems Only:

- Location and dimensions of required roof edge setbacks and access pathways
- Panel arrangement and individual panel sizes if system is not installed as a contiguous array
- Required front, rear and side yard setbacks for receiving structure

Required Information for Panel Elevation Drawings:

- Property Address and Legal Description
- Property Owner name and contact information
- Contractor or Installer name and contact information
- Date
- Length and width of system (collector surface area)
- Degree of panel tilt. Systems mounted on a sloped roof must also indicate slope of roof surface
- Array height (highest point measured from the ground for ground mounted systems or from the roof surface for building mounted systems)
- Color of structural elements, equipment and accessories for all systems and the color of roof surface or adjacent building materials for building mounted systems.



Property Address:

Legal Description:

Owner:

Contractor/Installer:

Zoning:

Lot size (square feet):

Array size (square feet):

Maximum height above
roof surface
(height = setback):

**Rooftop
Sample**

Drawing Scale:

Date:

ROOFTOP SAMPLE

Address:

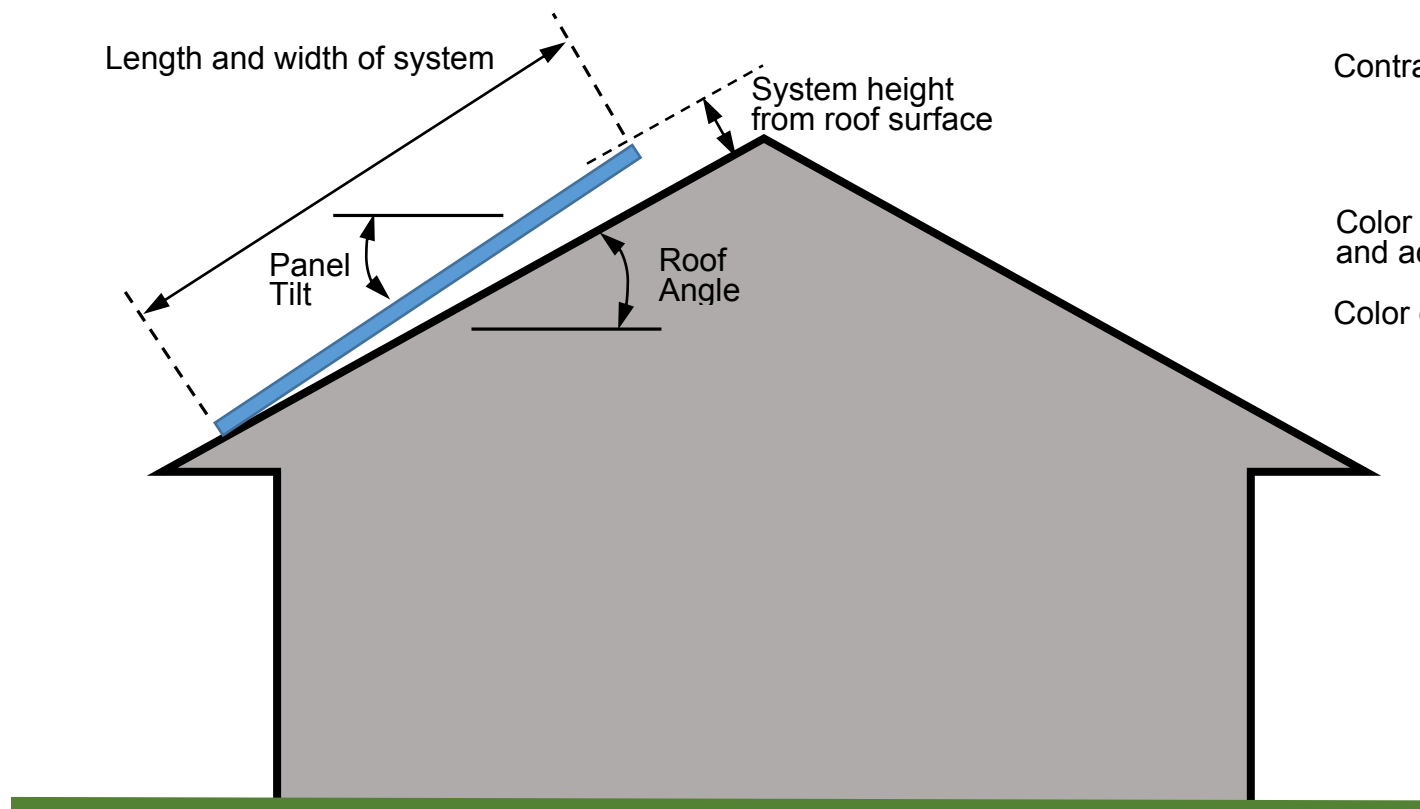
Legal Description:

Property Owner:

Contractor/Installer:

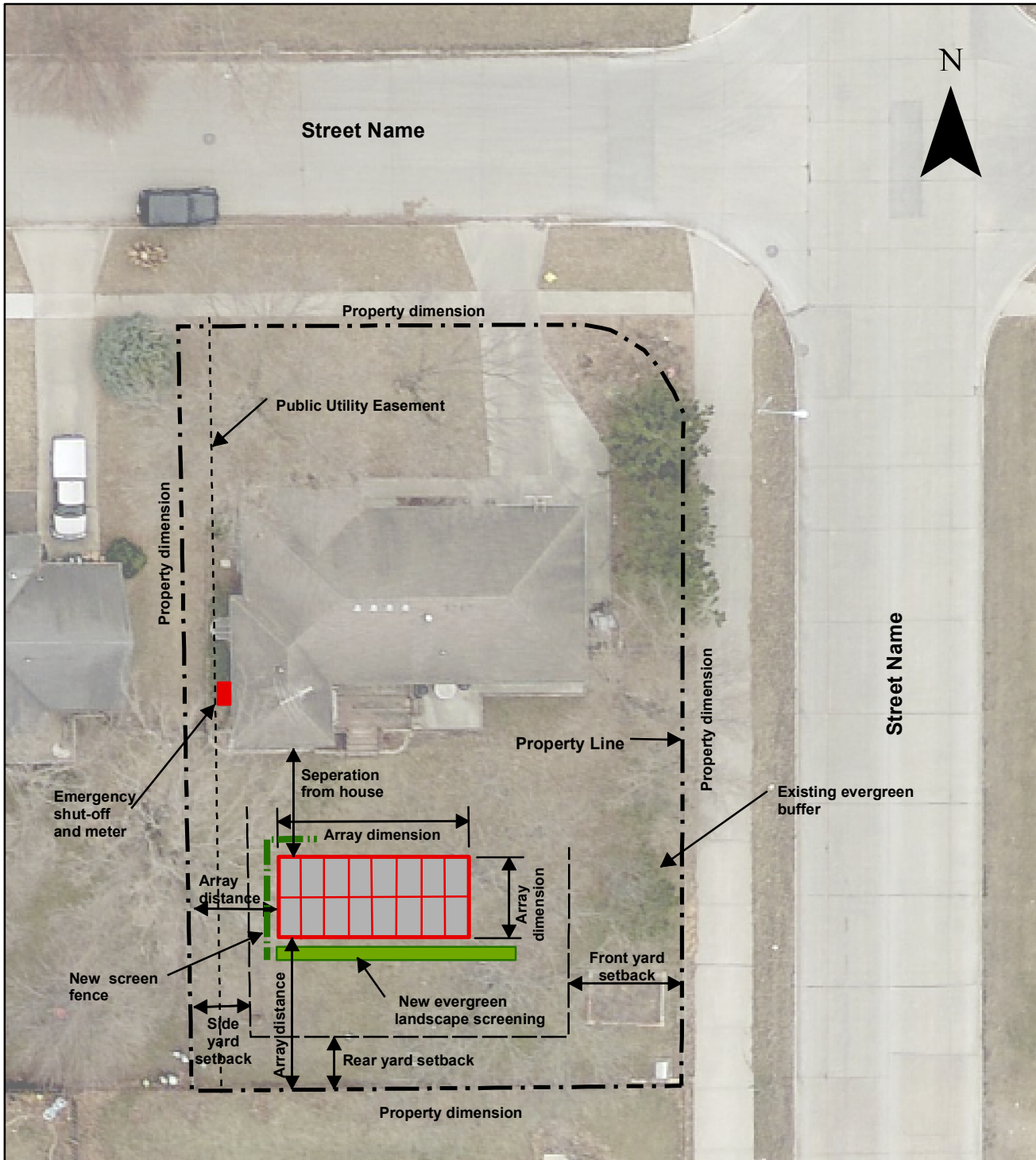
Color of equipment
and accessories:

Color of roof materials:



Drawing Scale:

Date:



Property Address:

Owner:

Contractor/Installer:

Zoning:

Lot size (square feet):

Array size (square feet):

Total size of all
accessory structures
(square feet):

Maximum allowed size
of system (square feet):

Details on methods of screening:

**GROUND
MOUNT
SAMPLE**

Drawing Scale:

Date:

GROUND MOUNT SAMPLE

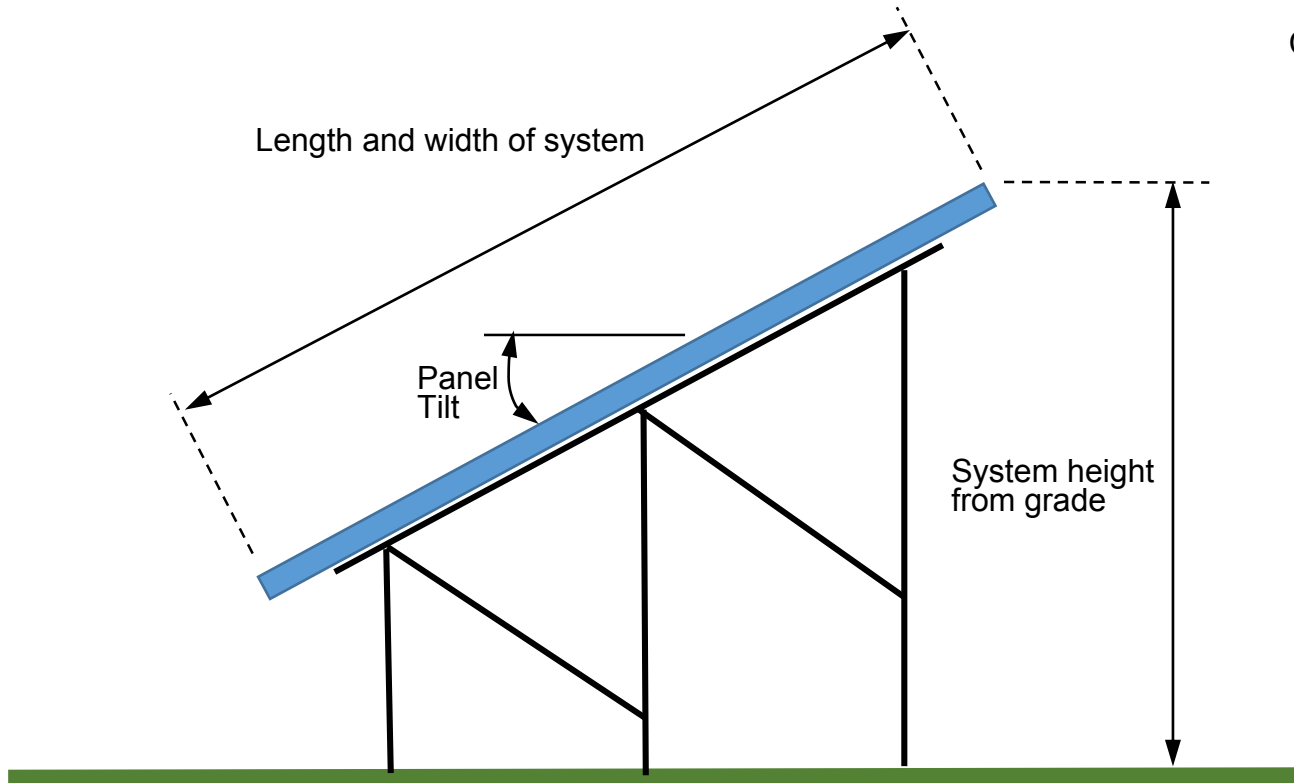
Address:

Legal Description:

Property Owner:

Contractor/Installer:

Color of equipment
and accessories:



Drawing Scale:

Date: