Residential Solar Energy Systems
Requirements for Building Permit Application

Application Submittal

Complete and thorough applications for small rooftop solar PV permits will be processed in 1 – 3 business days.

For the approval and issuance of permit(s) for solar thermal/photovoltaic energy installations, the following information is required to be submitted for review (Please note that additional information may be requested):

General Information

1. A fully completed building permit application, providing the following information:
    - Project Address
    - Owner's name, address, phone number
    - Plan preparer's name, address, phone number
    - Description of proposed work, including both solar equipment installation and all associated construction
2. Contractor's name and license #:_____
3. Name of installation company:_____
4. System information
    - For electric (photovoltaic) systems:
      System's kW rating (DC):_____
      System designation: (circle one) inter-tie stand alone
      Does the system include battery backup or an uninterrupted power supply (UPS)?
      (circle one) **Yes** **No**
      If Yes, give number, size and location of the batteries:
      _____
    - Solar Energy systems are required to meet minimum standards outlined by the International Electrotechnical Commission (IEC), the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), ASTM International, British Standards Institution (BSI), International Organization for Standardization (ISO), Underwriters Laboratory (UL), and the Solar Rating and Certification Corporation (SRCC). There may be other requirements as specified by City Building Official. Have you met these minimum requirements to the best of your knowledge?
      (circle one) **Yes** **No**

Roof-Mounted Solar Installations

1. Roof type: (circle one)

   Flat roof (nominal pitch) Sloped; identify pitch: _____

2. Existing roofing type (shingles, tile, metal, ballasted, membrane, etc.):_____
3. Number of roofing layers that will be under panels (no more than 2 layers of roof shingles are allowed): _____
4. Age and condition of roofing material:_____
   Has the homeowner been made aware of the lifespans of the existing roof and a new solar installation? (circle one) **Yes** **No**
5. Is the equipment to be flush-mounted to the roof (such that the collector surface is parallel to the roof?) (circle one) **Yes** **No**
   If Yes,
   Does the roof structure use a 2 x 4 or large rafters, spaced no wider than 24 inches on center? (circle one) **Yes** **No**
6. Roof decking and structural supports should all be in good condition without visible roof sag/deflection. Is the roof structure in good condition, having no visible sag, cracking or splintering of rafters, or other potential structural defects?
   (circle one) **Yes** **No**
7. Provide a study or statement regarding the proposed solar installation and all proposed structural modifications as required and approved (stamped) by Minnesota licensed/certified structural engineer.
   - Provide construction plans denoting the roof structure and any modifications to the structure if required, as well as the method of installation of solar collector on the subject property.
     -or-
   - Provide a letter from the engineer specifically addressing the subject property, explaining its roof structure, any required modifications, as well as the method of installation of the solar collector on the subject property.

Required Drawings and Plans*: (See next three pages for examples)

8. Building cross detail (see example) with complete notation of method of fastening equipment to the roof of subject property, including the following details.
   - Identification of rafter size, spacing, and span dimension
   - Approximation of roof slope
   - Identification of style, diameter, length of embedment of bolts (i.e. 5/16th" lags with minimum 3" embedment into framing, blocking, or bracing)

   Is the system to be mounted according to panel and rack manufacturer's instructions?
   (circle one) **Yes** **No**
   ***Please include the manufacturer's specifications for all equipment along with the building permit.

9. Elevation of structure illustrating the appearance of the proposed solar installation (see example) indicating the finished height of the system above roof surface.
   ***Please note that residential roof mounted systems must not exceed a height 18 inches above the rooftop to which it is attached, and must be installed parallel to the rooftop.
10. Site plan indicating the buildings and featured of the property (see example). The site plan shall show the following:
    - Property line locations
    - Location of all structures
    - Setback from property lines
    - Location of solar panel installations
    - Solar panel setback dimensions from the peak and all edges of the roof (to avoid turbulence and uplift, the suggested setback from edges/ridges is 2" per 1" lift from the roof surface. E.g., for an array which is mounted 4" off the roof surface, there would be an 8" setback)
    - Main service location
    - Solar easement across adjoining properties (of applicable)

* Required drawings shall be scaled and dimensioned, readable, and legible

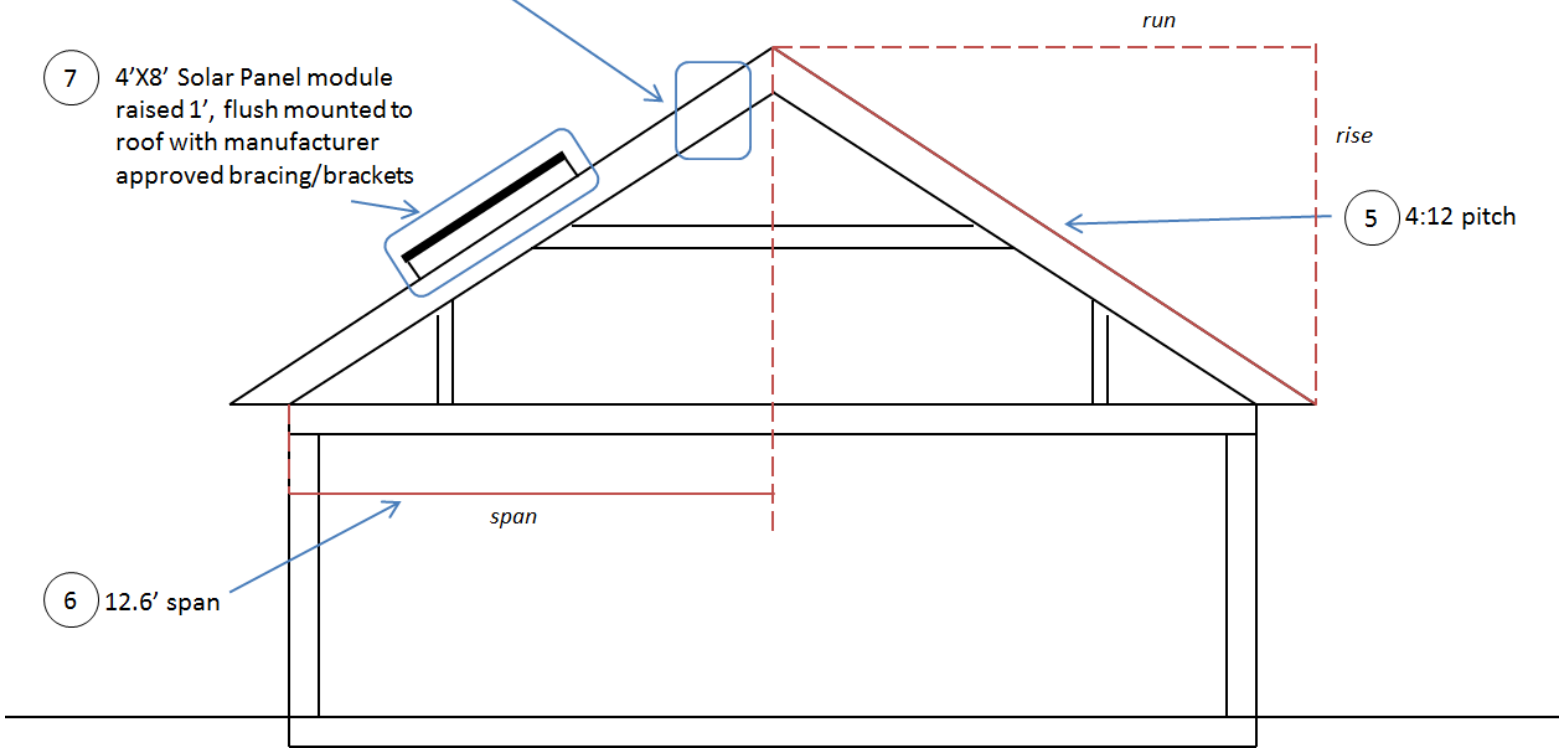
BUILDING CROSS SECTION

(1) Roof construction
(2) Rafter size
(3) Rafter spacing
(4) Bolt style, diameter, and embedment length
(5) Rafter span dimension
(6) Approximate roof slope
(7) Mounted solar system

(1, 2, 3, 4)

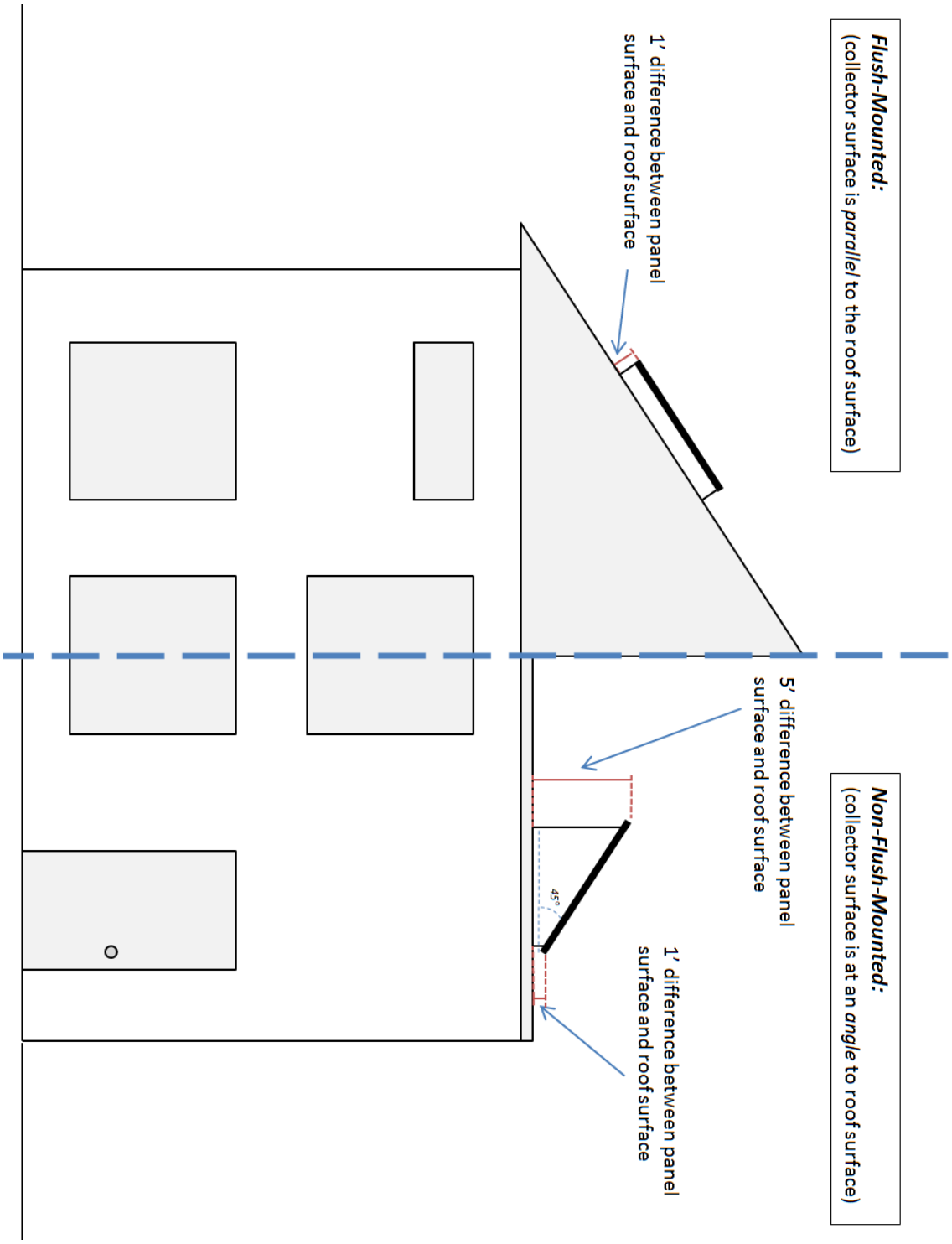
Rafters: 2X4 rafters, spaced 16" on center;
Decking: 5/8" plywood;
Roof Cover: one layer asphalt shingles;
Lag Bolts: ¼" bolts with 2 ¼ " length

(7) 4'X8' Solar Panel module raised 1', flush mounted to roof with manufacturer approved bracing/brackets



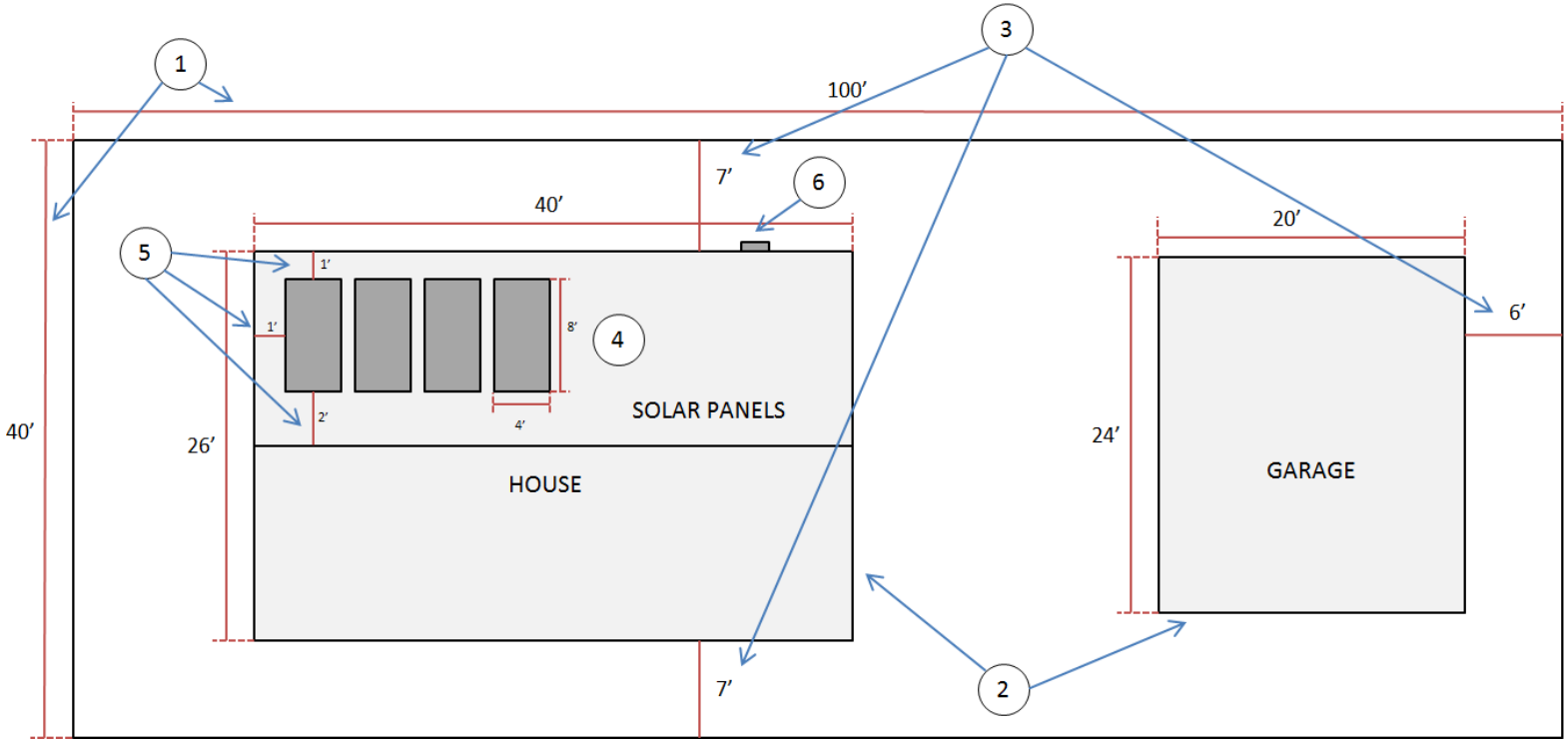
(5) 4:12 pitch

(6) 12.6' span


ELEVATION
Flush-Mounted:
(collector surface is parallel to the roof surface)
1' difference between panel surface and roof surface
Non-Flush-Mounted:
(collector surface is at an angle to roof surface)
5' difference between panel surface and roof surface
1' difference between panel surface and roof surface
45°

SITE PLAN

(1) Property line locations
(2) Location of all structures
(3) Setback from property lines
(4) Location of solar panel installations
(5) Solar panel setback dimension from roof peak and edges
(6) Main service location



Additional Information

- In addition to the building permit, an electrical permit will be required. Electrical permits are issued by the State of Minnesota, Department of Labor and Industry's Electrical Division. For more information, call (651) 284-5026 or go to http://www.dli.mn.gov/CCLD/etrakit_electrical.asp. Further permitting may be required.

- Building integrated solar installations, where the solar collector replaces or substitutes for an architectural or structural component of a building, such as a roof, shingle, or awning, do not require completion of this checklist separately from the permit application for the building, structure, or building modification.

Ground-Mounted Solar Installations

For ground-mounted solar energy systems, the installation must meet property line setback standards for solar accessory structures, as identified in the Jordan Zoning Code section 154.394 – Solar Energy Systems.

Required Drawings and Plans: (see previous examples)

1. Elevation of structure illustrating the appearance of proposed solar installation (see example) indicating the finished height if the system above ground.
2. Site plan indicating the buildings and features of the property (see example). The site plan shall show the following:
   - Property line locations
   - Location of all structures
   - Setback from property lines
   - Location of panel installations
   - Main service location
3. Property lines and setbacks are required to be verified.
   - Provide a completed survey
     -or-
   - Denote *property pins* on site plan, as located by homeowner or contractor.