



COMMUNITY DEVELOPMENT
 2660 CIVIC CENTER DR. • ROSEVILLE, MN 55113
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ONLINE PERMITS
www.cityofroseville.com/epermits

ROOFTOP SOLAR PV PANEL PERMIT CHECKLIST

Checklist

- Building Permit ([Online Portal](#))
- Electrical Permit. Submit with Building Permit. ([Online Portal](#))
- Basic site plan and details of location on roof or property (see Appendix 1 for examples)
- Engineering documentation for structural load and wind resistance.
- Proof of Structural Compliance.
 - MN Department of Labor & Industry: “[Standardized Load Tables Characterizing Residential Solar Thermal and Solar Electric Installations For Residential Structures in Minnesota](#)” ▪
 See Appendix 2 “Structural Review of PV Installation Mounting System & Roof”
- Process and application for conditional use permits may be found [here](#).

Application Submittal. Complete and thorough applications for small rooftop solar PV permits will be processed in 1 – 3 business days. The permit application may be submitted for review via online.

- **Online Portal:** www.cityofroseville.com/epermits

The city accepts payments in the form of Check / eCheck / Credit Card.

Building Permit Fee: The building permit is 1.28% of the job valuation or a minimum of \$160.00.

Electrical Permit Fee: The electrical permit is a minimum of \$50.00, but changes upon the amount of service necessary for the system (based on amps), and the inspection fees.

Electrical Permit Service Fee: The City of Roseville works with an Electrical Inspector on contract, and their service fees are shown below.

<u>Contract Electrical Inspector Fees</u>	<u>Current Amount</u>
0 – 5 kW	\$ 90.00
5.1 – 10 kW	\$ 150.00
10.1 – 20 kW	\$ 225.00
20.1 – 30 kW	\$ 300.00
30.1 – 40 kW	\$ 375.00
40.1 kW and larger	\$ 25.00 for each additional 10 kW

<u>Electrical Permit Fee Description</u> <i>(Services, changes for services)</i>	<u>Current Amount</u>
Minimum fee	\$ 50.00
0 – 300 amp	\$ 55.00
<i>Add \$16 for every additional 100 amps</i>	

Appendix 1: Basic Site Plan and Location Details

BUILDING CROSS SECTION

1, 2, 3, 4

Rafters: 2X4 rafters, spaced 16" on center;
 Decking: 5/8" plywood;
 Roof Cover: one layer asphalt shingles;
 Lag Bolts: 1/2" bolts with 2 1/4" length

- (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

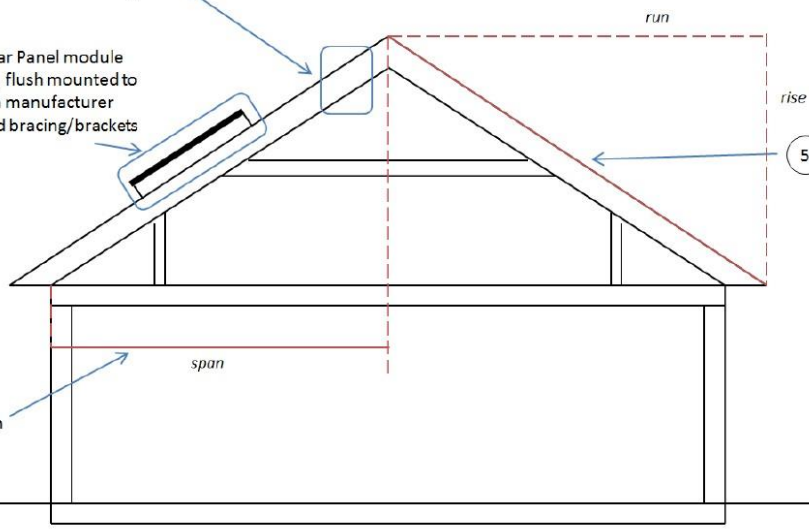
7

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

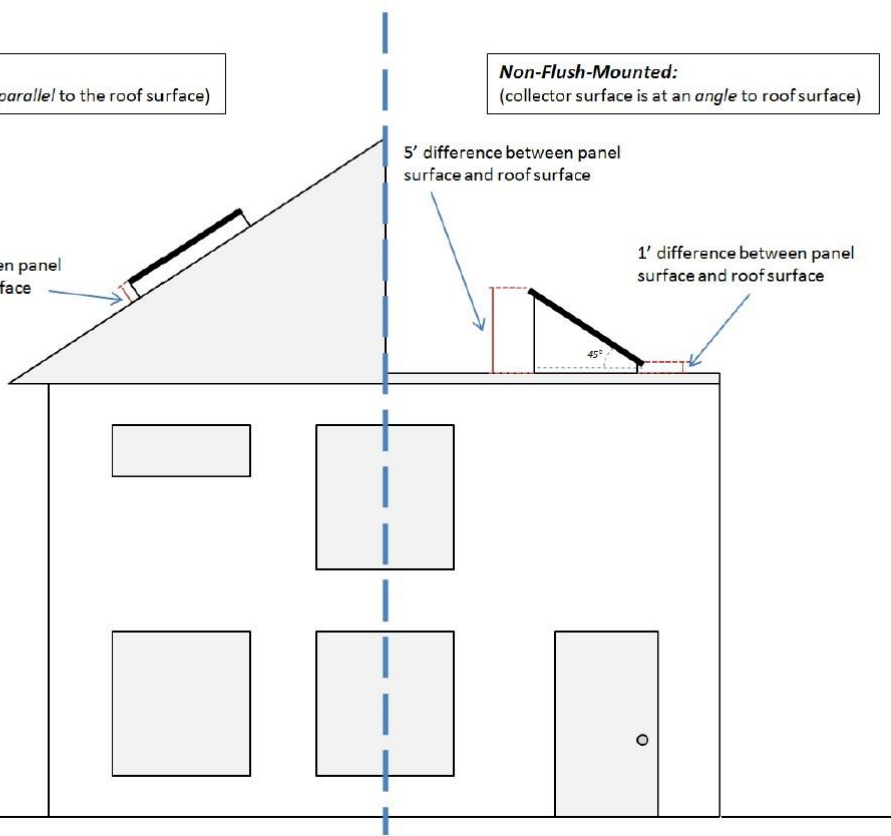
Flush-Mounted:
 (collector surface is *parallel* to the roof surface)

Non-Flush-Mounted:
 (collector surface is at an *angle* to roof surface)

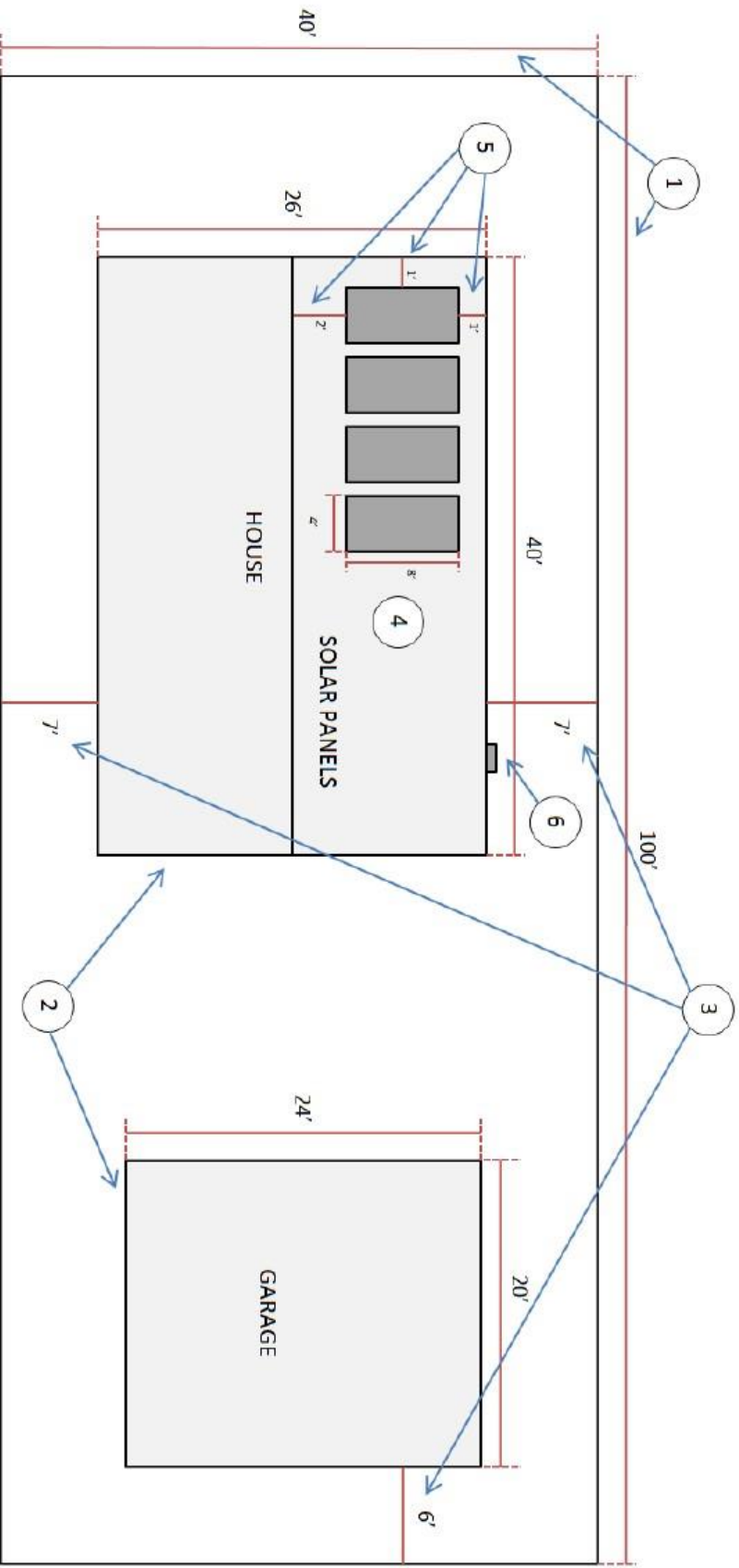
1' difference between panel surface and roof surface

5' difference between panel surface and roof surface

1' difference between panel surface and roof surface



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

Appendix 2

Structural Review of PV Installation Mounting System & Roof

(MN DoLI - Great Plains Institute's "Solar Permitting Toolkit for MN Municipalities")

1. Is the roof supporting the installation a pitched roof in good condition, without visible sag or deflection, no cracking or splintering of support, or other potential structural defect? YES NO

2. Is the roof a rafter system*? YES NO

3. Is the equipment to be flush-mounted to the roof such that the collector surface is parallel to the roof?
 YES NO

**For truss systems, additional information may be needed to establish the truss' design loads. The SolarStruc Tool (<https://www.growsolar.org/wp-content/uploads/2012/06/Solarstruc-2.2.xls>) allows contractors to calculate truss capacity for solar installations. Contact building official for standards on when structural analysis will be needed.*

4. Is the roofing type lightweight? YES (composition, lightweight masonry, metal, etc...) NO

5. Does the roof have a single layer roof covering? Yes No

- If "No" to any of questions 1 -4 above, additional documentation may be required. Documentation may need to demonstrate the structural integrity of the roof and all necessary structural modifications needed to maintain integrity. A statement stamped by a Minnesota licensed/certified structural engineer certifying integrity may be needed. Contact the building official to determine submittal requirements.

6. Identify method and types of weatherproofing for roof penetrations (e.g. flashing, caulk):

7. Is the mounting structure an engineered product designed to mount PV modules with no more than an 18" gap beneath the module frames? YES NO

- If No, provide details of structural attachment certified by a design professional. Manufacturer's engineering specifications are sufficient to meet this requirement.

8. For manufactured mounting systems, fill information on the mounting system below**:

a. Mounting System Manufacturer _____

b. Product Name and Model # _____

c. Total Weight of PV Modules and Rails _____ lbs

d. Total Number of Attachment Points _____ (attachment points must be equally distributed across the array) e. Weight per Attachment Point (c÷d) _____ lbs

f. Maximum Spacing between Attachment Points on a Rail _____ inches (see product manual for maximum spacing allowed based on maximum design wind speed).

g. Total Surface Area of PV Modules (square feet) _____ ft²

h. Distributed Weight of PV Module on Roof (c÷g) _____ lbs/ft² ○

○ If the outcome of e. is greater than 45 lbs or h. is greater than 5 lbs/ft², a study or statement demonstrating the structural integrity of the installation, or a statement stamped by a Minnesota licensed/certified structural engineer, may be required. Contact the building official to determine requirements

**Attaching the rail to each rafter or truss that passes under the array, or to blocking installed between each support, may serve to mitigate for any structural uncertainties on older roofs or wind loading concerns. This approach was used by Minneapolis and Saint Paul based upon engineering studies conducted with their building stock. Contact the building official to determine requirements.