



RESIDENTIAL SOLAR CHECKLIST

PERMIT APPLICATION & SUBMITTAL REQUIREMENTS

- Complete a building permit application online by visiting our [Online Permitting Portal](#)
- Electrical contractor shall provide a letter of intent and a copy of their electrical license.
- Copy of contract or proposal
- Submit a signed and stamped structural calculation report from a State of Illinois licensed structural engineer.
- Submit a signed and stamped solar array plan from a State of Illinois licensed electrical engineer which includes the following:
 - Distributed Generation Number
 - Fire access layout plan
 - Electrical one-line diagram
 - Solar equipment specifications
 - Labeling of all solar equipment
- Complete and submit the attached electrical panel schedule and load calculations, if using on the load side.
- The individual dwelling unit shall be equipped with carbon monoxide and smoke detectors located as required per the 2024 International Residential Code as amended by EGV.
 - **At least one (1) hardwired detector is required on the level of the home being modified within the general vicinity of the modification work. All other detectors are permitted to be battery operated and must be interconnected. One detector is required on each floor.**

Must comply with the following Codes:

- 2024 International Residential Code (IRC)
- 2024 International Fire Code (IFC)
- 2023 National Electrical Code (NEC)

INSPECTIONS:

Inspections are scheduled by calling (847) 357-4220 between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday. Please have the **permit number** and **site address** ready. In addition, please allow a minimum of 24 hours when scheduling an inspection.

- FINAL**

RESIDENTIAL SOLAR REQUIREMENTS

General:

- Modules conform to and are listed under UL 1703, per IRC Sect. R329.3.1.
- Racking conforms to and is listed under UL 2703.
- Inverters conform to and are listed under UL 1741, per IRC Sect. R329.3.1.
- Roof access and pathways, per IRC Sect. R329.6 and Local Elk Grove Village Amendments
- Solar PV System must comply with NEC Article 690.

Ridge Requirements:

- For photovoltaic arrays occupying thirty-three (33) percent or less of the plan view total roof area, a setback of not less than twenty-four (24") inches wide is required on both sides of a horizontal ridge.
- For photovoltaic arrays occupying more than thirty-three (33) percent of the plan view total roof area, a setback of not less than forty-eight (48") inches wide is required on both sides of a horizontal ridge.

Front Access Roof Requirements:

- Roof Pathway access labeled on the ground. (2024 IFC 1205.2.1.4 / 2024 IRC R329.6.5)
 - Roof pathway access from the front of the house shall be at least thirty-six (36") inches wide and that access area shall be labeled on the overhang fascia and shall have a Village issued sticker which is to be placed at this front access location so it will be visible at night when the roof access is greater than ten (10') feet. The location of the sticker will need to be specified on the plans. **Stickers will be provided by the Elk Grove Village inspector at the time of final inspection.**
- Roof pathway access (2024 IFC 1205.2.2.1 / 2024 IRC R329.6.6) Any roof pathway access shall not be above windows or doors.
- No hazards in pathways or setbacks. (2024 IFC 1205.2.1.1.1) Pathways and setbacks shall be located in areas with no obstructions, such as vent pipes, conduit or mechanical equipment.

Raceway Requirements:

Conduit Raceways shall be installed utilizing the following methods

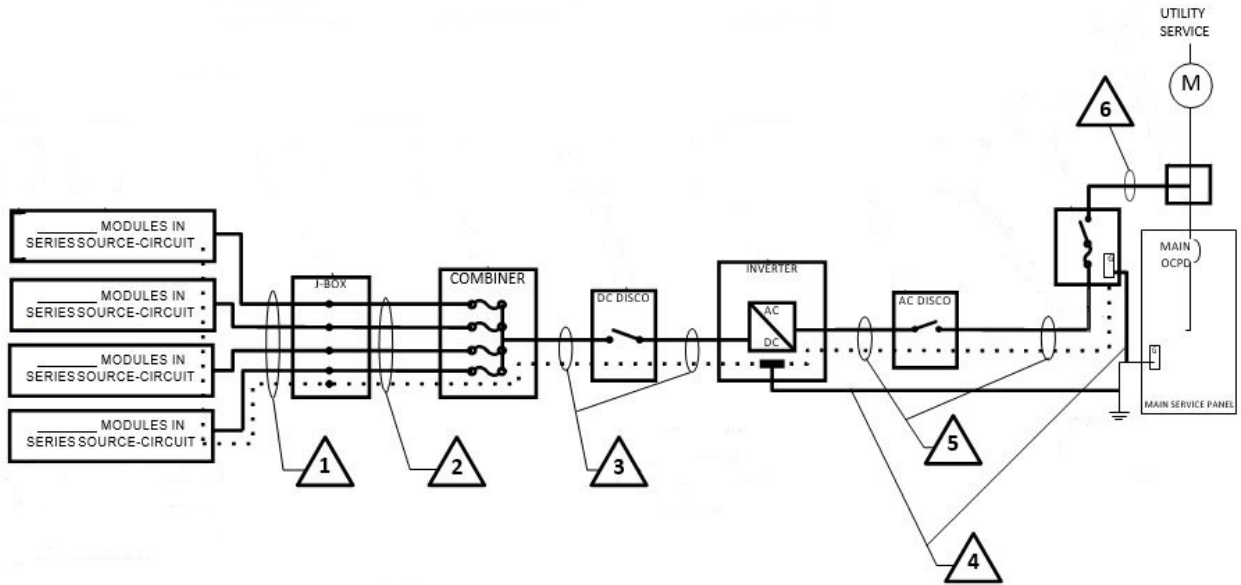
- The conduit raceway shall be completely concealed through the roof into the attic;
- The conduit raceway shall be completely concealed by installation internally under the solar array;
- Any exposed conduit raceway is required to have said raceway coated in an approved manner per manufacture specifications as to match the same color as the roofing; and
- The applied coating is required to be maintained as to have a uniform and resilient surface for the life of the solar array.

Electrical Energy Storage Systems (ESS):

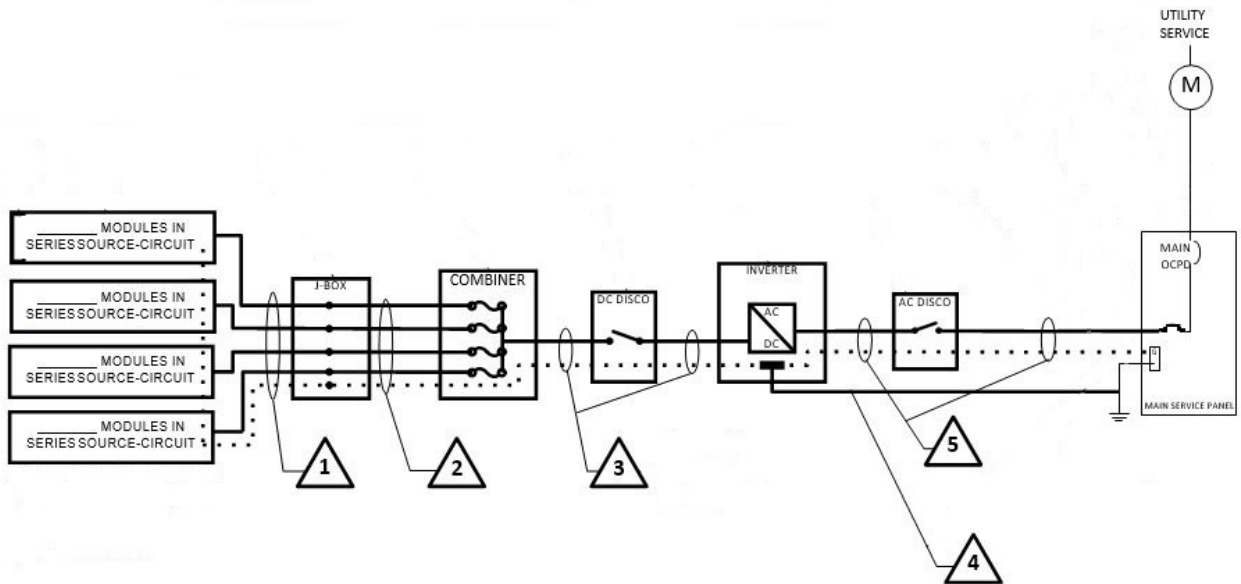
- Equipment conforms to and is listed under UL 9540 per IFC Sect. 1207.3.1 and IRC Sect. R330.2.
- Equipment shall be installed according to NFPA 855 and NFPA 70 (NEC Article 706) per IFC Sect. 1207.4 and IRC Sect. R330.6.
- Ventilation shall be in accordance with IFC Sect. 1207.6.1, IRC Sect. R330.9 and M1307.4.
- Fire-rated rooms will be required when battery storage exceeds amounts per IFC Sect. 1207.4.3.
- Where exposed to vehicle impact, vehicle impact protection shall be installed in accordance with IFC Sect. 312 per IFC Sect.1207.4.5 and IRC Sect. R330.8.
- Heat detection shall be installed in accordance with IRC Sect. R310 per IRC Sect. R330.7

Stationary Fuel Cell Power Systems:

- Equipment shall be listed and labeled in accordance with CSA FC 1, per IFC Sect. 1206.3 and IRC Sect. R332.1.
- Equipment shall be installed according to NFPA 2 and NFPA 70 (NEC Article 480) per IFC Sect. 1206.4 and IRC Sect. R332.1.
- Ventilation conforms to NFPA 853 per IFC Sect. 1206.11.
- Fire-rated rooms will be required for stationary fuel cell power storage per IFC Sect. 1206.6.2.
- Where exposed to vehicle impact, vehicle impact protection shall be installed in accordance with IFC Sect. 312 per IFC Sect.1206.7.



Line/Supply Side Connection System



Load Side Connection System

RESIDENTIAL - EXISTING PANEL LABEL _____ AMPS

PANEL SIZE (proposed): NEW REPLACEMENT
 100-AMP 200-AMP 400-AMP OTHER _____

VOLTAGE: 120/240 120/208 277/480

PHASE: 1-PHASE 3-PHASE

TYPE OF SERVICE: OVERHEAD UNDERGROUND

| CIRCUIT | CIRCUIT BREAKER SIZE | CIRCUIT DESCRIPTION | WIRE SIZE |
|---------|----------------------|---------------------|-----------|
| 1 | | | |
| 3 | | | |
| 5 | | | |
| 7 | | | |
| 9 | | | |
| 11 | | | |
| 13 | | | |
| 15 | | | |
| 17 | | | |
| 19 | | | |
| 21 | | | |
| 23 | | | |
| 25 | | | |
| 27 | | | |
| 29 | | | |
| 31 | | | |
| 33 | | | |
| 35 | | | |
| 37 | | | |
| 39 | | | |
| 41 | | | |

| CIRCUIT | CIRCUIT BREAKER SIZE | CIRCUIT DESCRIPTION | WIRE SIZE |
|---------|----------------------|---------------------|-----------|
| 2 | | | |
| 4 | | | |
| 6 | | | |
| 8 | | | |
| 10 | | | |
| 12 | | | |
| 14 | | | |
| 16 | | | |
| 18 | | | |
| 20 | | | |
| 22 | | | |
| 24 | | | |
| 26 | | | |
| 28 | | | |
| 30 | | | |
| 32 | | | |
| 34 | | | |
| 36 | | | |
| 38 | | | |
| 40 | | | |
| 42 | | | |

EXISTING DWELLING UNIT LOAD ADDITION NEC 220.83

| PANEL SIZE: | QTY | BREAKER | WATTAGE |
|--|-----------------------|---------|------------|
| Square Footage X (3): | | | |
| Kitchens: | 1 | | 3000 |
| Laundry Rooms: | 1 | | 1500 |
| Electric Dryers: 100% NP | | | |
| Electric ranges, ovens & cooktop | | | |
| Well 100% NP | | | |
| Pumps 100% NP | | | |
| Furnace(s) 100% NP | | | |
| AC unit 1: 100% NP | | | |
| AC unit 2: 100% NP | | | |
| AC unit 3: 100% NP | | | |
| AC unit 4: 100% NP | | | |
| Electric Water Heater 100% NP | | | |
| Garage Door opener 100% NP | | | |
| Fans/bath rm & ceiling 100% NP | | | |
| Garbage Disposal 100% NP | | | |
| Dishwasher 100% NP | | | |
| Trash Compactor 100% NP | | | |
| Microwave/built in 100% NP | | | |
| Welders/Compressors: 100% NP | | | |
| Jacuzzi 120V 100% NP | | | |
| Hot Tub 240V 100% NP | | | |
| Pool Equipment: 100% NP | | | |
| Steamer: 100% NP | | | |
| EV Charger 1 125% NP | | | |
| EV Charger 2 125% NP | | | |
| Electric Heat: 100% NP | | | |
| Other: 100% NP | | | |
| TOTAL VA: | | | |
| DEMAND FACTOR FIRST 8000 VA OF LOAD AT 100%: | | | -8000 |
| TOTAL VA: | | | |
| REMAINDER OF LOAD AT 40%: | | | |
| DEMAND FACTOR: | | | +8000 |
| TOTAL VA: | | | |
| DIVIDED BY VOLTAGE/ CALCULATED AMPS REQUIRED: | | | |
| | | | |
| EVSE CHARGER MUST BE ON A DEDICATED CIRCUIT | | | NEC 625.40 |
| EVSE IS RATED AT 125% AS A CONTINUOUS LOAD | | | NEC 625.42 |
| | | | |
| 20-AMP @ 125% = 6000 | 50-AMP @ 125% = 15000 | | |
| 30-AMP @ 125% = 9000 | 60-AMP @ 125% = 18000 | | |
| 40-AMP @ 125% = 12000 | | | |

SHALL COMPLY WITH THE VILLAGE OF ELK GROVE VILLAGE CURRENTLY ADOPTED 2023 EDITION OF
NFPA-70 – NATIONAL ELECTRICAL CODE