TOWN OF LOOMIS
Community Development

3665 Taylor Road
Loomis, CA 95650
(916) 652-1840

fax (916) 652-1847

"Attention Solar Contractors"

Due to changes in the 2019 California Residential Code, the following information must be included on all residential solar plan submittals:

- Competition of the Town of Loomis solar packet
- Plan identifying Roof access & pathways
- Identify if the building is sprinklered or not
- Identify the percentage of the roof covered by solar system
- Identify the setback on both sides of the ridge
- Identify any emergency egress and escape routes

Please contact our office at 916-824-1513, if we can be of any assistance.

TOWN OF LOOMIS
Building Department
3665 Taylor Road
Loomis, CA 95650
(916) 652-1840 fax (916) 652-1847

RESIDENTIAL PHOTOVOLTAIC (PV) PACKET

Contents of packet:

Photovoltaic Checklist (2 pages - complete and submit with permit)
Sample One-Line Diagram for PV System
Sample Site Diagram
Solar Panel Dead Weight Loading Calculation (complete and submit with permit)
Verification of Wire Size for PV System Calculation form (complete and submit with permit)
CEC Table 310.16 (included for reference)
Town of Loomis Signage Requirements

RESIDENTIAL PHOTOVOLTAIC (PV) PACKET

ALL PV Project Applicants:
The Town of Loomis requires all PV systems to comply with the requirements of:

REQUIRED APPLICATIONS:

- Town of Loomis Building Permit – SUBMITTAL REQUIRED

Contents of Packet:

- Photovoltaic Checklist (2 pages – complete and submit with permit)
- Sample One-Line Diagram for PV System
- Sample Site Diagram
- Solar Panel Dead Weight Loading Calculation (complete and submit with permit)
- Verification of Wire Size for PV system Calculation form (complete and submit with permit)
- CEC Table 310.16 (included for reference)
- Town of Loomis Solar Signage Requirements

If you have any questions regarding your PV system permit, please call the building department at (916) 652-1840.

☐ Electrical Schematic:

_____System inter-tie with utility company or stand alone

_____ Indicate the system KW rating

_____ Indicate if the system has battery backup

_____ Single line drawing of electrical installation which includes:

- _____ Array - detailed
- _____PV power source short circuit rating
- _____ Conductor size and type
- _____ Conductor locations and runs
- _____ Equipment bonding points and sizes – Per *CEC 250.122
- _____ Inverter location
- _____ AC & DC disconnect locations – Per *CEC 690.14 (5)
- _____ Batteries; number, size and locations (if applicable)
- _____Point of connect to existing electrical service panel
- _____size and number of electrical service meters – Per *CEC 690.64(B)(2) exception
- _____Location of required signage

☐ Proper Signage and Labeling:

Indicate system type below and show location of each required sign on one line diagram (see electrical):

- ☐ SINGLE PV ARRAY SYSTEM
- ☐ PV ARRAY SYSTEM W/ BATTERY BACKUP
- ☐ MULTIPLE PV ARRAY SYSTEMS

☐ Fees and Plan Review Information:

Fees are based on Contract Valuation (Example)

Contract Valuation	$50,000.00			
Plan Check	$50,000.00	X	.0025=	$125.00
Building Permit	$50,000.00	X	.0045=	$225.00
SMIP	$50,000.00	X	.0001=	$ 5.00
Building Standards fee	$1 for each $25,000 of value		=	$ 2.00
			TOTAL =	$357.00

*CEC 690.17 - Switch or Circuit Breaker. The disconnecting means for ungrounded conductors shall consist of a manually operable switch (es) or circuit breaker(s) complying with all of the following requirements:

(1) Located where readily accessible

(2) Externally operable without exposing the operator to contact with live parts

(3) Plainly indicating whether in the open or closed position

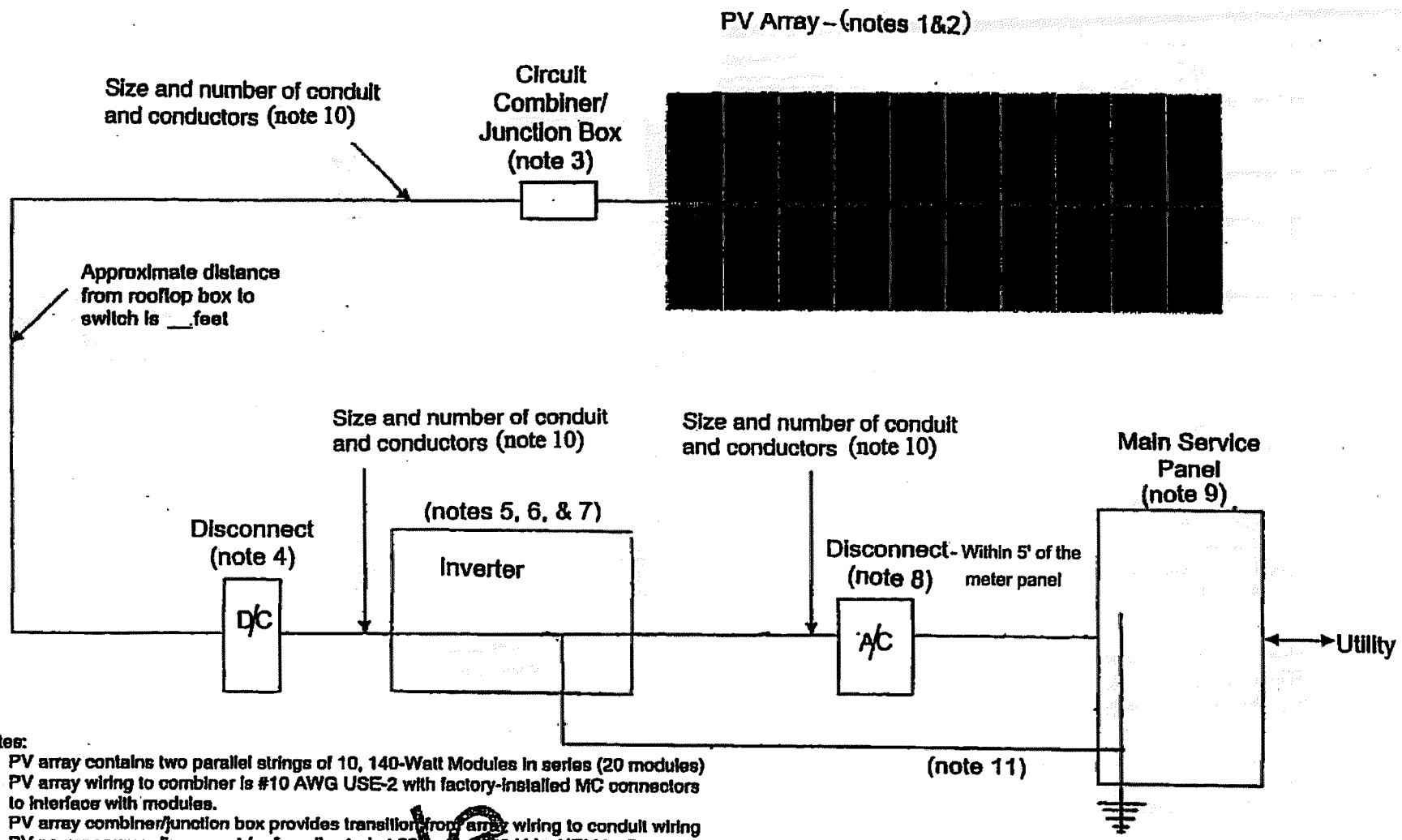
(4) Having an interrupting rating sufficient for the nominal circuit voltage and the current that is available at the line terminals of the equipment.

*CEC 250.122 – Size of Equipment Grounding Conductors. Copper, aluminum, or copper-clad aluminum equipment grounding conductors of the wire type shall not be smaller than shown in Table 250.122 but shall not be required to be larger than the circuit conductors supplying the equipment.

*CEC 690.46(C) – Grounding for AC/DC Systems.

*CEC 690.14 (5) – Grouping. The photovoltaic system disconnecting means shall be grouped with other disconnecting means for the system to comply with 690.14(C)(4). A Photovoltaic disconnecting means shall not be required at the photovoltaic module or array location.

*CEC 690.64(B)(2) exception – Load Side. A photovoltaic power source shall be permitted to be connected to the load side of the service disconnecting means of the other source(s) at any distribution equipment on the premises, provided that (exception) the sum of the ampere ratings of the overcurrent devices shall not exceed 120% of the rating of the busbar or conductor.



Notes:

1. PV array contains two parallel strings of 10, 140-Watt Modules in series (20 modules)
2. PV array wiring to combiner is #10 AWG USE-2 with factory-installed MC connectors to interface with modules.
3. PV array combiner/junction box provides transition from array wiring to conduit wiring
4. PV power source disconnect (unfused) rated at 30-amps, 600 Vdc, NEMA 3R rainproof.
5. Ground Fault Protection provided in inverter.
6. Inverter is SB2500UL model rated at 2.5kW AC output and is rated to provide 10.4 amps at 240-Volts at 40 C.
7. Inverter is Listed to UL 1741 "Utility-Interactive"
8. Inverter output disconnect rated at 30-amps, 240Vac, NEMA 3R (Req. by Roseville Electric)
9. 100-Amp Main Service Panel with 15-Amp Two-Pole circuit breaker for point of connection (must exceed 120% of busbar rating – CEC 690.64 (B) (2) exp)
10. Equipment grounding conductors on AC and DC side sized according to CEC 250.122.
11. Negative pole of PV array referenced to ground at the inverter.

Sample

COMPANY NAME: Project Address:	
Title: Sample One-Line Diagram for PV System	
Drawn By:	Date:
Checked By:	
Scale: NTS	DWG NO. EX-1
Material:	Related Dwgs: EX-2

SOLAR PANEL DEAD WEIGHT LOADING CALCULATION

System:

Solar panel consists of _____ solar modules

Mounting system has _____ points of connection with the roof

Panel Weight Calculation:

Solar Module Weight = _____ lbs.

Mounting System Weight = _____ lbs.

Total Panel Weight = ((# of modules)x(module wt.))+(mounting system wt. = ([ ] x [ ]) + [ ] = [ ] lbs.

Point Load Calculation:

Point Load = (total panel wt.) / (# of points of connection) = [ ] / [ ] = [ ] lbs.

Distrubuted Load Calculation:

Solar Module Area = length" x width" / 144 = [ ] x [ ] / 144 = [ ] ft2

Total Solar Module Area = (# of modules) x (solar mod. area) = [ ] x [ ] = [ ] ft2

Inter-module Spacing = [ ] in.

Total Spacing Area = (# spaces bet. modules) x (inter-mod spacing) x (panel length or width) / 144 = [ ] x [ ] x [ ] / 144 = [ ] ft2

Total Panel Area = (total solar modular area) + (total spacing area) = [ ] + [ ] = [ ] ft2

Distributed Load = (total panel wt.) / (total panel area) = [ ] / [ ] = [ ] lbs./ft2

The point loading and distributed loading should be below building department requirements for structural analysis.

Distributed loading - Max. 5 lbs/ft2

Verification of Wire Sizes for PV System Calculation Form

Checking the wire size from the modules to the inverter (D/C):

Total PV System Rating: = (module wattage off cut sheet)x(# of modules in array) = [ ] x [ ] = [ ] Watts

Max. PV System Voltage: = (Voc(V) off cut sheet) x (# of modules) x CEC factor = [ ] x [ ] x 1.13 = [ ] Volts

Max. Circuit Current: = CEC factor x (total system wattage / total system voltage) = 1.25 x [ ] / [ ] = [ ] Amps

Using CEC Table 310.16: In temperature column copper, 75 ° C, find the amperage allowed, then read over to the size column for the minimum wire size

Min. wire size from Table 310.16 # [ ]

Checking the wire size from the inverter to the service panel (A/C):

Max Inverter AC Power Output: = (Max AC power output off cut sheet) = [ ] Watts

Max. Service Voltage: = 110/240 V = 240 Volts

Max. Circuit Current: = CEC factor x (max inverter AC power output /240) = 1.25 x [ ] / 240 = [ ] Amps

Using CEC Table 310.16: In temperature column copper, 75 ° C, find the amperage allowed, then read over to the size column for the minimum wire size

Min. wire size from Table 310.16 # [ ]

Note: The smaller the wire size number the larger the wire thickness.

Table 310.16 Allowable Ampacities of Insulated Conductors Rated 0 Through 2000 Volts, 60°C Through 90°C (140°F Through 194°F), Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried), Based on Ambient Temperature of 30°C (86°F)

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.13(A)]						Size AWG or kcmil
	60°C (140°F)	75°C (167°F)	90°C (194°F)	60°C (140°F)	75°C (167°F)	90°C (194°F)	
	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, USE, ZW	Types TBS, SA, SIS, FEP, FEPB, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, ZW-2	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, USE	Types TBS, SA, SIS, THHN, THHW, THW-2, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, ZW-2	
	COPPER			ALUMINUM OR COPPER-CLAD ALUMINUM			
18	—	—	14	—	—	—	—
16	—	—	18	—	—	—	—
14*	20	20	25	—	—	—	—
12*	25	25	30	20	20	25	12*
10*	30	35	40	25	30	35	10*
8	40	50	55	30	40	45	8
6	55	65	75	40	50	60	6
4	70	85	95	55	65	75	4
3	85	100	110	65	75	85	3
2	95	115	130	75	90	100	2
1	110	130	150	85	100	115	1
1/0	125	150	170	100	120	135	1/0
2/0	145	175	195	115	135	150	2/0
3/0	165	200	225	130	155	175	3/0
4/0	195	230	260	150	180	205	4/0
250	215	255	290	170	205	230	250
300	240	285	320	190	230	255	300
350	260	310	350	210	250	280	350
400	280	335	380	225	270	305	400
500	320	380	430	260	310	350	500
600	355	420	475	285	340	385	600
700	385	460	520	310	375	420	700
750	400	475	535	320	385	435	750
800	410	490	555	330	395	450	800
900	435	520	585	355	425	480	900
1000	455	545	615	375	445	500	1000
1250	495	590	665	405	485	545	1250
1500	520	625	705	435	520	585	1500
1750	545	650	735	455	545	615	1750
2000	560	665	750	470	560	630	2000

CORRECTION FACTORS

Ambient Temp. (°C)	For ambient temperatures other than 30°C (86°F), multiply the allowable ampacities shown above by the appropriate factor shown below.						Ambient Temp. (°F)
21–25	1.08	1.05	1.04	1.08	1.05	1.04	70–77
26–30	1.00	1.00	1.00	1.00	1.00	1.00	78–86
31–35	0.91	0.94	0.96	0.91	0.94	0.96	87–95
36–40	0.82	0.88	0.91	0.82	0.88	0.91	96–104
41–45	0.71	0.82	0.87	0.71	0.82	0.87	105–113
46–50	0.58	0.75	0.82	0.58	0.75	0.82	114–122
51–55	0.41	0.67	0.76	0.41	0.67	0.76	123–131
56–60	—	0.58	0.71	—	0.58	0.71	132–140
61–70	—	0.33	0.58	—	0.33	0.58	141–158
71–80	—	—	0.41	—	—	0.41	159–176

* See 240.4(D).

REQUIRED LABELS FOR SOLAR ELECTRIC (PV) SYSTEMS W/ BATTERY BACK-UP <10KW

(SEE DRAWING PV-2)

- LABELS SHALL BE MADE OF RED PLASTIC MATERIAL WITH ENGRAVED WHITE LETTERS.
- LETTERS SHALL BE A MINIMUM 3/8" IN SIZE.
- THE LABELS SHALL BE PERMANENTLY ATTACHED TO THE APPROPRIATE PANEL.
- AC & DC CONDUIT, RACEWAY, ENCLOSURES, CABLE ASSEMBLIES AND JUNCTION BOXES SHALL BE OR RED BACKGROUND MATERIAL WITH WHITE LETTERING MADE OF DURABLE ADHESIVE, REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT; TO ALERT FIRE SERVICE TO AVOID CUTTING THEM OFF.

WARNING!
DUAL POWER SUPPLY
SOLAR ELECTRIC SYSTEM
CRITICAL LOAD MUST BE
DISCONNECTED SEPARATELY

THIS TAG IS TO BE ATTACHED TO METER PANEL

WARNING!
DUAL POWER SUPPLY SOLAR
ELECTRIC SYSTEM
DISCONNECT

THIS TAG IT TO BE ATTACHED TO PV DISCONNECT DEVICE

CAUTION:
SOLAR ELECTRIC CIRCUIT

THIS TAG TO BE ATTACHED TO AC AND DC CIRCUIT EQUIPMENT

CRITICAL LOAD DISCONNECT

THIS TAG TO BE ATTACHED TO BATTERY BANK DISCONNECT

DRAWING PVT-2

R324.4

Rooftop-Mounted Photovoltaic Systems

CHANGE TYPE: Modification

CHANGE SUMMARY: Structural requirements for rooftop-mounted photovoltaic panel systems have been revised and consolidated in Section R324.4.

2019 CODE: **R324.4 Rooftop-mounted photovoltaic systems.** Rooftop-mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with ~~Section R907~~ this section.

~~R909.2~~ R324.4.1 Structural requirements. Rooftop-mounted photovoltaic panel systems shall be designed to structurally support the system and withstand applicable gravity loads in accordance with Chapter 3. The roof ~~upon~~ on which these systems are installed shall be designed and constructed to support the loads imposed by such systems in accordance with Chapter 8.

~~R324.4.1~~ R324.4.1.1 Roof ~~live~~ load. ~~Roof structures that provide support for photovoltaic panel systems shall be designed for applicable roof live load. The design of roof structures need not include roof live load in the areas covered by photovoltaic panel systems. Portions of roof structures not covered by photovoltaic panels shall be designed for roof live load. Roof structures that provide support for photovoltaic panel systems shall be designed for live load, LR, for the load case where the photovoltaic panel system is not present.~~ Portions of roof structures not covered with photovoltaic panel systems shall be designed for dead loads and roof loads in accordance with Sections R301.4 and R301.6. Portions of roof structures covered with photovoltaic panel systems shall be designed for the following load cases:

R324.4 continues

divanov/Shutterstock.com

Rooftop-mounted photovoltaic panels

R324.4 continued

1. Dead load (including photovoltaic panel weight) plus snow load in accordance with Table R301.2(1).
2. Dead load (excluding photovoltaic panel weight) plus roof live load or snow load, whichever is greater, in accordance with Section R301.6.

~~R907.2~~ R324.4.1.2 Wind ~~resistance~~ load. No significant change to text.

~~R907.3~~ R324.4.2 Fire classification. No significant change to text.

~~R909.3~~ R324.4.3 ~~Installation~~ Roof penetrations. ~~Rooftop-mounted photovoltaic systems shall be installed in accordance with the manufacturer's instructions.~~ Roof penetrations shall be flashed and sealed in accordance with ~~this chapter~~ Chapter 9.
(Portions of Section R324.4 are not shown for brevity and clarity.)

CHANGE SIGNIFICANCE: In the 2016 CRC, information on photovoltaic (PV) panels resided in both Chapters 3 and 9. Requirements for structural loads on roofs were partially covered in Sections R324.4, R907and R909, were not prescriptive and were confusing. The 2019 CRC consolidates the structural load requirements for rooftop-mounted PV panel systems in Section R324.4. New Sections R324.4.2 and R324.4.3 were previously found in Chapter 9 and serve as pointers to the general provisions of Chapter 9 for fire classification and flashing requirements for roof coverings.

Roof loads, when PV panels are present, include the physical weight of the roof (dead load) and a snow load, rain load or roof live load (temporary additional load when reroofing or doing maintenance) plus the weight of the panels. In theory a rain load could be larger than the roof live load or snow load, but typically in the North, snow loads control and in the South the 20 pound per square foot (psf) roof live load, a maintenance or construction load, controls.

New Section R324.4.1.1 now considers two ways to look at the loads on a roof. The first considers the weight of the PV panels, the weight of roof members, plus the weight of snow on top of the panel, on the roof and potentially drifted against the panels. This subsection references the snow load from Table R301.2(1). What the section does not do is give a prescriptive route to determining loads like snow drift. It only considers the physical weight of the panel plus the ground snow load converted to a roof snow load. If drifts are likely, then an engineering analysis should be done on the roof to determine what extra load or weight should be considered on the roof. Across how wide an area should that additional weight be assumed to exist during a winter storm on the roof?

For stick-built roofs, this engineered design would come from a design engineer. For trusses, the truss company may be considering drifts in their design. It is important that the builder or designer check with a truss company to determine whether snow drifts have been considered. When in an area without a snow load, just the PV panel weight plus the typical roof dead load would be considered.

The second way to look at the load on the roof is to consider the dead load of the roof, plus the roof live load or snow load. This is the total load assumed in every section of the CRC dealing with roofs. Chapters 8 and 9 assume this roof load. Chapter 3 limits the dead load allowed on a roof before an engineered design is required in high seismic regions. Basically,

asphalt shingle roofs are allowed in any seismic region without engineered design. Clay tiles or slate roofs require an engineered design in Seismic Design Category (SDC) D_0, D_1 or D_2 regions and for townhouses in SDC C regions.

In summary, PV panel weight is considered in the dead load for the first case required in this section; the second case only considers the dead weight of the roof.

Thoughts about loads (engineering, kind of . . .)

An asphalt shingle roof plus ceiling assembly will weigh less than 15 pounds per square foot. Add PV panels that are less than 10 pounds per square foot and the only additional consideration in Chapter 3 will be for increased wall bracing in SDC C-D_2 as required by Section R301.2.2.2 Exception 1. This requirement deals with increased lateral loads rather than with gravity loads.

In Chapter 8, rafter span tables, Tables R802.5(1)–R802.5(8) assume a dead load of 20 pounds per square foot. If we again assume an asphalt shingle roof with a dead load of 15 pounds per square foot, then the PV panels would need to weigh 5 pounds per square foot or less, or an engineered design would be needed. Since the table assumes a snow load as well, could we go to a higher snow load to offset a higher dead load?

Snow loads are a temporary load while dead loads are a permanent load. The National Design Specification for Wood Construction (NDS) allows an increase of load by 15% for temporary loads like snow loads. Thus, dead loads can't be traded for snow loads pound for pound. It would be conservative to say that 15 pounds of PV dead load could be considered approximately equivalent to 20 pounds of snow load. Therefore, going to the next column in the rafter tables would be an acceptable alternative.

R324.6

Roof Access for Photovoltaic Solar Energy Systems

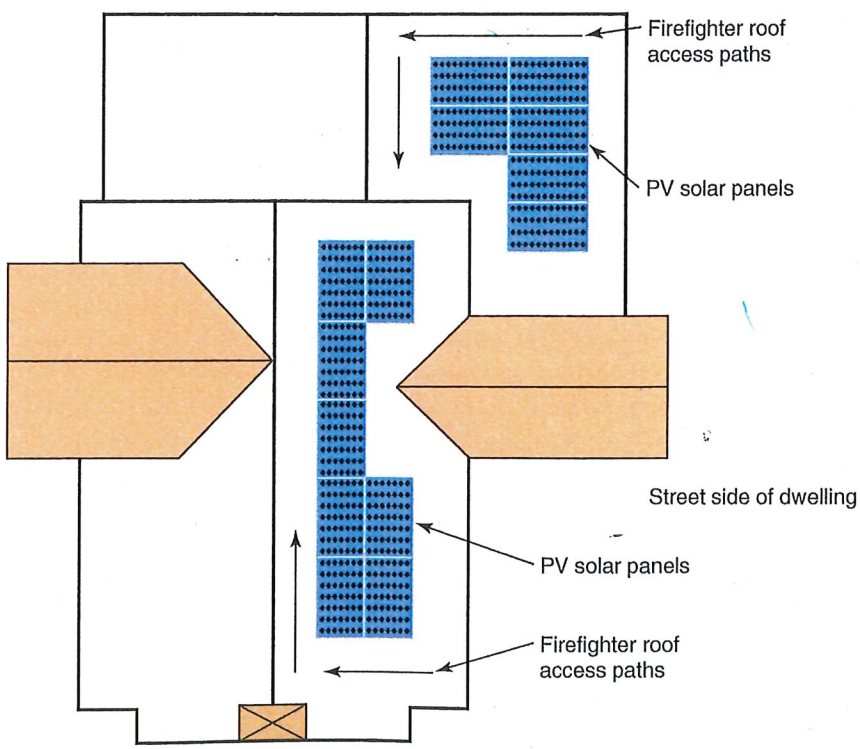
CHANGE TYPE: Addition

CHANGE SUMMARY: Requirements for roof access and pathways for firefighters have been introduced into the CRC provisions for rooftop-mounted photovoltaic solar energy systems.

2019 CODE: **R324.6 Roof access and pathways.** Roof access, pathways, and setback requirements shall be provided in accordance with Sections R324.6.1 through R324.6.2.1. Access and minimum spacing shall be required to provide emergency access to the roof, to provide pathways to specific areas of the roof, provide for smoke ventilation opportunity areas, and to provide emergency egress from the roof.

Exceptions:

1. Detached, nonhabitable structures, including but not limited to, detached garages, parking shade structures, carports, solar trellises, and similar structures shall not be required to provide roof access.
2. Roof access, pathways, and setbacks need not be provided where the *enforcing agency* has determined that rooftop operations will not be employed.
3. These requirements shall not apply to roofs with slopes of 2 units vertical in 12 units horizontal (17-percent slope) or less.



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Required roof access and pathways for firefighters for roof-mounted PV solar systems

R324.6.1 Pathways. Not fewer than two pathways, on separate roof planes from lowest roof edge to ridge and not less than 36 inches (914 mm) wide, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, a pathway not less than 36 inches wide (914 mm) shall be provided from the lowest roof edge to ridge on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.

R324.6.2 Setback at ridge. For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge.

R324.6.2.1 Alternative setback at ridge. Where an automatic sprinkler system is installed within the dwelling in accordance with NFPA 13D or Section R313, setbacks at ridges shall comply with one of the following:

1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge.
2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge.

CHANGE SIGNIFICANCE: Photovoltaic (PV) solar energy systems offer property owners the ability to generate their own electricity and, in many cases, sell excess electricity back to the utility provider. These PV systems have proliferated in the past decade and are now commonly seen on rooftops of residential buildings in some areas of the country. Lack of roof access and clear pathways can present a hazard to firefighters during rooftop operations. For example, PV arrays may cover a large area of a building's roof, which complicates performing vertical ventilation of a structure fire.

The roof access and pathway provisions for firefighters first appeared in the 2013 edition of the *California Fire Code* (CFC) and have since been modified in the 2015 and 2019 editions of the CFC. The new provisions in the 2019 CRC mirror the latest edition of the CFC, except only those provisions that apply to one- and two-family dwellings and townhouses appear in the CRC. Pathways are provided so firefighters can perform manual ventilation by cutting one or more holes in a building roof. Section R324.6 states that the purpose of the new provisions is to provide:

- Emergency access to the roof
- Pathways to specific areas of the roof
- Smoke-ventilation opportunity areas
- Emergency egress from the roof

R324.6 continues

R324.6 continued

The provisions do not apply to detached garages and similar buildings or to dwellings with low-slope roofs of 2:12 or less. There is also a provision that exempts dwellings where the building official has determined that the fire department will not perform rooftop operations for that property.

Pathways must be at least 36 inches wide, extend from the roof edge to the ridge and be arranged to avoid obstacles such as plumbing or gas vents. The minimum number of pathways is:

- Two per building on separate parts of the roof
- One on the street or driveway side of the dwelling
- One on each roof plane with a PV array (or adjacent roof plane)

Setbacks on both sides of horizontal ridges are also required to provide firefighters with an area to cut ventilation openings. The minimum setback dimensions depend on the total area of the PV arrays in relation to the roof area and the presence of an automatic fire sprinkler system. As an incentive, the installation of a sprinkler system allows for a smaller setback and a greater area for the PV solar arrays. As stated by the code change proponent, this benefit is based on an analysis that 87% of all fires in residential housing are controlled by the fire sprinkler activation. The effectiveness of fire sprinkler systems greatly reduces the need for firefighters to access the roof when responding to a house fire. See Table 3-1 for the ridge setback requirements.

TABLE 3-1 Minimum Ridge Setback

Array Percent of Roof Area	Fire Sprinkler System	Minimum Setback on Both Sides of Ridge (inches)
≤ 33 %	No	18
> 33%	No	36
≤ 66 %	Yes	18
> 66%	Yes	36

R324.6.2.2

Solar Panels near Emergency Escape and Rescue Openings

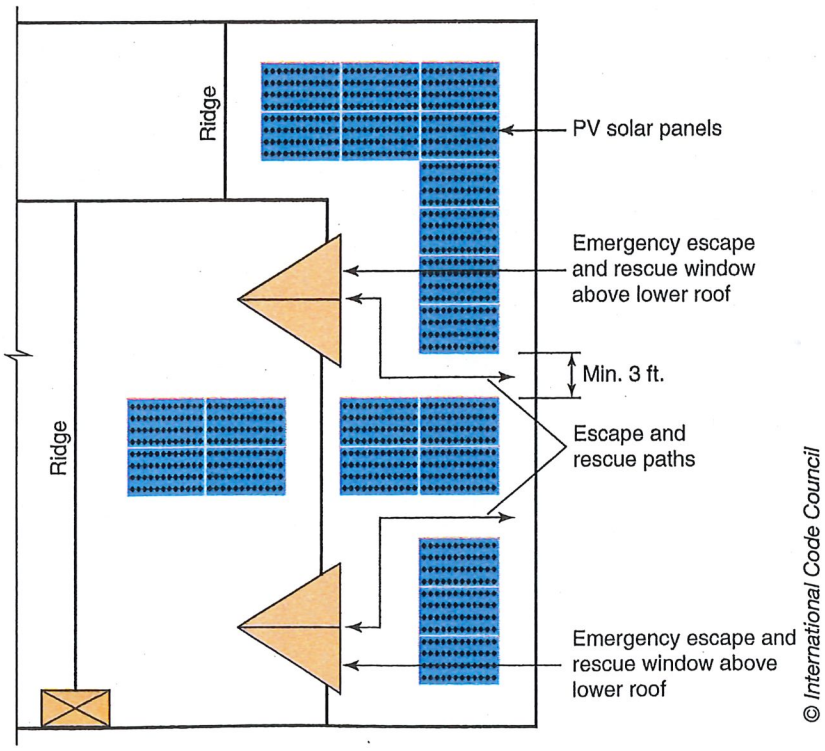
CHANGE TYPE: Addition

CHANGE SUMMARY: Rooftop-mounted photovoltaic solar energy panels and modules are not permitted to be installed directly below emergency escape and rescue openings.

2019 CODE: **R324.6.2.2 Emergency escape and rescue opening.** Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36-inches (914 mm) wide shall be provided to the emergency escape and rescue opening.

CHANGE SIGNIFICANCE: As covered in Section R310, an emergency escape and rescue opening is required in every bedroom, basement and habitable attic to provide occupants a way out of the dwelling in case fire, smoke or other emergency blocks the means of egress path. The code also provides minimum net dimensions for the escape opening as well as operational criteria for windows and coverings. To ensure a path from the escape opening to a public way or yard that opens to a public way, the CRC spells out window well and area well requirements and requires a path not less than 36 inches high when the opening is under a deck or porch. Similarly, new language in the photovoltaic (PV) solar energy provisions is concerned with providing a safe path for

R324.6.2.2 continues



A 36-inch-wide pathway is required for emergency escape and rescue openings above roof-mounted PV solar panels.

R324.6.2.2 continued

the occupant climbing out of an emergency escape and rescue opening that is above a roof. Installing a PV solar panel below the escape opening would cause an unsafe condition in an emergency situation. The required clear path must be at least 36 inches wide to provide emergency escape from the roof as well as emergency access to the roof as stated in Section R324.6.