Development Services Department
Building Division
311 Vernon Street
Roseville, California 95678-2649
(916) 774-5332 • Fax (916) 774-5394

Residential Photovoltaic (PV) Packet

The Roseville Municipal Code and Roseville Electric require all PV systems to comply with the requirements of:

- City of Roseville Permit **– PERMIT SUBMITTAL REQUIRED**
- Roseville Electric Residential Renewable Energy Program **– SYSTEM INTERCONNECTION APPLICATION REQUIRED**
- Design & Construction to comply with Roseville Electric 'Specifications for Residential Construction' Section 8.2 (and) Rule 21.

Systems may not offset more than 100% of the customer's historical annual load.

Contents of Packet:

If you have any questions regarding your PV system permit, please call the building department at (916) 774-5332.

If you have any questions regarding the Roseville Electric Residential Renewable Energy program, please call Roseville Electric at (916) 79-POWER.

Development Services Department
Building Division
311 Vernon Street
Roseville, California 95678-2649
(916) 774-5332 • Fax (916) 774-5394

Residential Photovoltaic Requirements

Based on the 2025 California Residential Code (CRC) and the 2025 California Electrical Code (CEC) Article 690, Roseville Electric, and Roseville Fire Departments

Residential PV system shall be installed in accordance with the current adopted edition of the (CRC) and CEC Article 690 and any other applicable articles or codes adopted by the jurisdiction.

☐ **Simple plot plan showing:**

_____Lot lines
_____Structure locations
_____Main service panel location
_____PV module array configuration shown on a roof layout (or lot if ground mounted system)
_____% of coverage of roof area (If more than 50% a review by the fire department is required)
_____Distance from ridge to array(s)
_____Distance from valley/ hip to array(s)
_____PV equipment locations, Solar arrays, DC combiner boxes, conduit and conductor location, Inverter, AC combiner box.

☐ **Roof Information (for roof mounted systems):**

_____Type of roof structure and slope. If rafters, provide size and spacing of existing roof framing members.
_____Existing roofing material

☐ **PV Equipment Manufacturer's Specifications:** Provide cut sheets on all components including but not limited to those shown below; including make, model, listing, size, weight, etc. *Highlight project specific information on the cut sheets.*

_____PV modules UL 1703 listed Inverter with GFCI & AFCI protection
_____
_____Mounting System (if using substitution parts to any listed/certified system, or mixing components of different mounting systems, additional engineering shall be required addressing the withdrawal and lateral capacities).
_____Disconnects
_____Combiner Box (if used) AC and DC Combiner boxes.

☐ **Inverter:**

_____Model number
_____Integrated disconnect – Equipped with rapid shutdown.

☐ **Mounting System for Panel Installation:** *Highlight project specific information on the cut sheets*

_____Indicate the style, diameter, length of embedment of bolts into framing members and location of attachments.
_____Indicate number of bolts per panel.
_____Provide mounting details and certified engineering or listed mounting installation.
_____Complete "Solar Panel Dead Weight Loading Calculation" form.

_____If ground mounted, provide details for the foundation.

☐ **Photovoltaic Modules:**

_____Open-circuit voltage (Voc) from listed cut sheet
_____Maximum system voltage from listed cut sheet
_____Short-circuit current (Isc) from listed cut sheet
_____Maximum fuse rating from listed cut sheet
_____Maximum power- panel wattage from listed cut sheet

☐ **Electrical Schematic:**

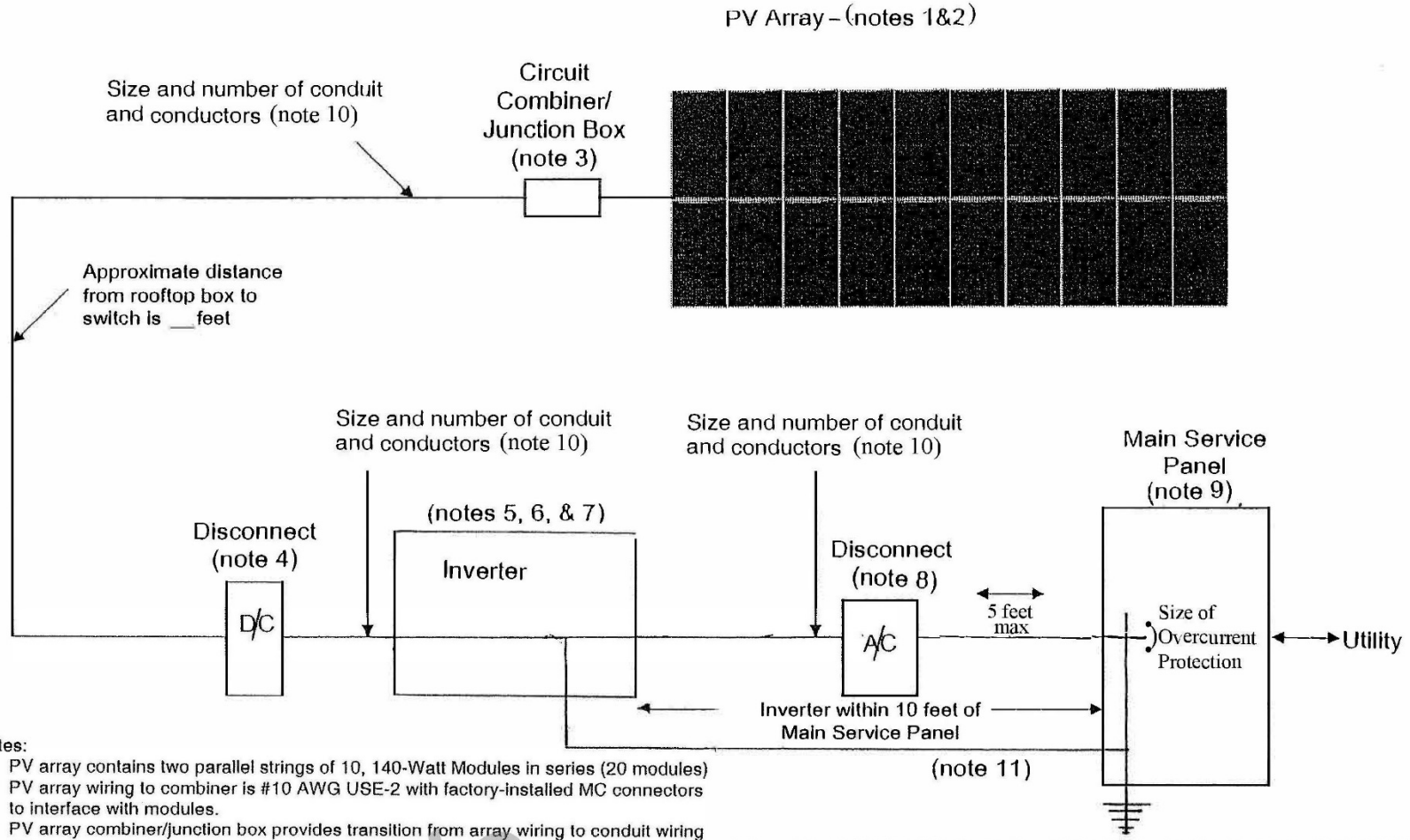
_____System inter-tie with utility company (load side connection only) or stand alone
_____Indicate the system KW rating
_____Indicate if the system has battery backup
_____Single line drawing of electrical installation which includes:
- _____Array
- _____PV power source short circuit rating
- _____Conductor size and type
- _____Conductor locations and runs
- _____Equipment bonding points and sizes
- _____Inverter location
- _____AC & DC disconnect locations
- _____Batteries; number, size and locations (if applicable)
- _____Point of connect to existing main electrical service panel
- _____Size and number of electrical service meters
- _____Location of required signage per Roseville Electric specifications (see page 7))
- _____Provide completed 'Verification of Wire Sizes' worksheet
- _____Provide Rapid Shutdown of PV

☐ **Proper Signage and Labeling:** Signage required per Roseville Electric handout (see page 7)

Indicate system type below and show location of each required sign on one line diagram (see page 4 for an example):

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

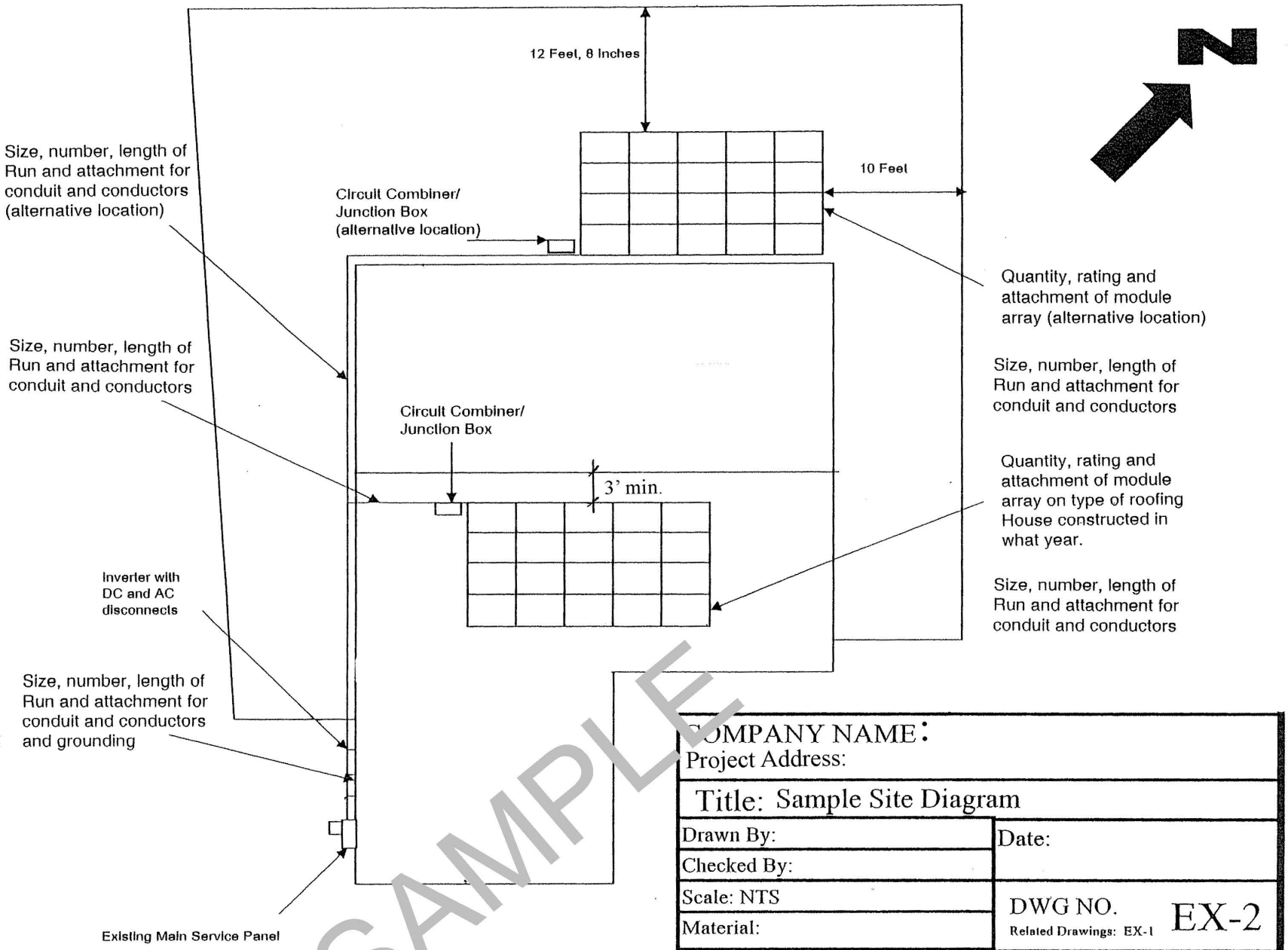
☐ **Please contact City of Roseville for current fees.**



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 2.5 kW 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 (not to 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.

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



COMPANY NAME: Project Address:	
Title: Sample Site Diagram	
Drawn By:	Date:
Checked By:	
Scale: NTS	DWG NO. EX-2
Material:	Related Drawings: EX-1

Table 310.16 Ampacities of Insulated Conductors with Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried)

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.4(1)]						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, XHWN, USE, ZW	Types TBS, SA, SIS, FEP, FEPB, MI, PFA, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, XHWN, XHWN-2, XHHN, Z, ZW-2	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, XHWN, USE	Types TBS, SA, SIS, THHN, THHW, THW-2, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, XHWN, XHWN-2, XHHN	
	COPPER			ALUMINUM OR COPPER-CLAD ALUMINUM			
18*	—	—	14	—	—	—	—
16*	—	—	18	—	—	—	—
14*	15	20	25	—	—	—	—
12*	20	25	30	15	20	25	12*
10*	30	35	40	25	30	35	10*
8	40	50	55	35	40	45	8
6	55	65	75	40	50	55	6
4	70	85	95	55	65	75	4
3	85	100	115	65	75	85	3
2	95	115	130	75	90	100	2
1	110	130	145	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	195	230	260	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	350	420	475	285	340	385	600
700	385	460	520	315	375	425	700
750	400	475	535	320	385	435	750
800	410	490	555	330	395	445	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	525	625	705	435	520	585	1500
1750	545	650	735	455	545	615	1750
2000	555	665	750	470	560	630	2000

Notes:

1. Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F).
2. Section 310.15(C)(1) shall be referenced for more than three current-carrying conductors.
3. Section 310.16 shall be referenced for conditions of use.

*Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere in the *Code*.

REQUIRED LABELS FOR RESIDENTIAL ELECTRIC (DG) SYSTEMS

- 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 RED BACKGROUND MATERIAL WITH WHITE LETTERING MADE OF DURABLE ADHESIVE, REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT PER UL 969; TO ALERT FIRE SERVICE TO AVOID CUTTING THEM OFF.

WARNING!
DUAL POWER SUPPLY
GENERATION ELECTRIC SYSTEM

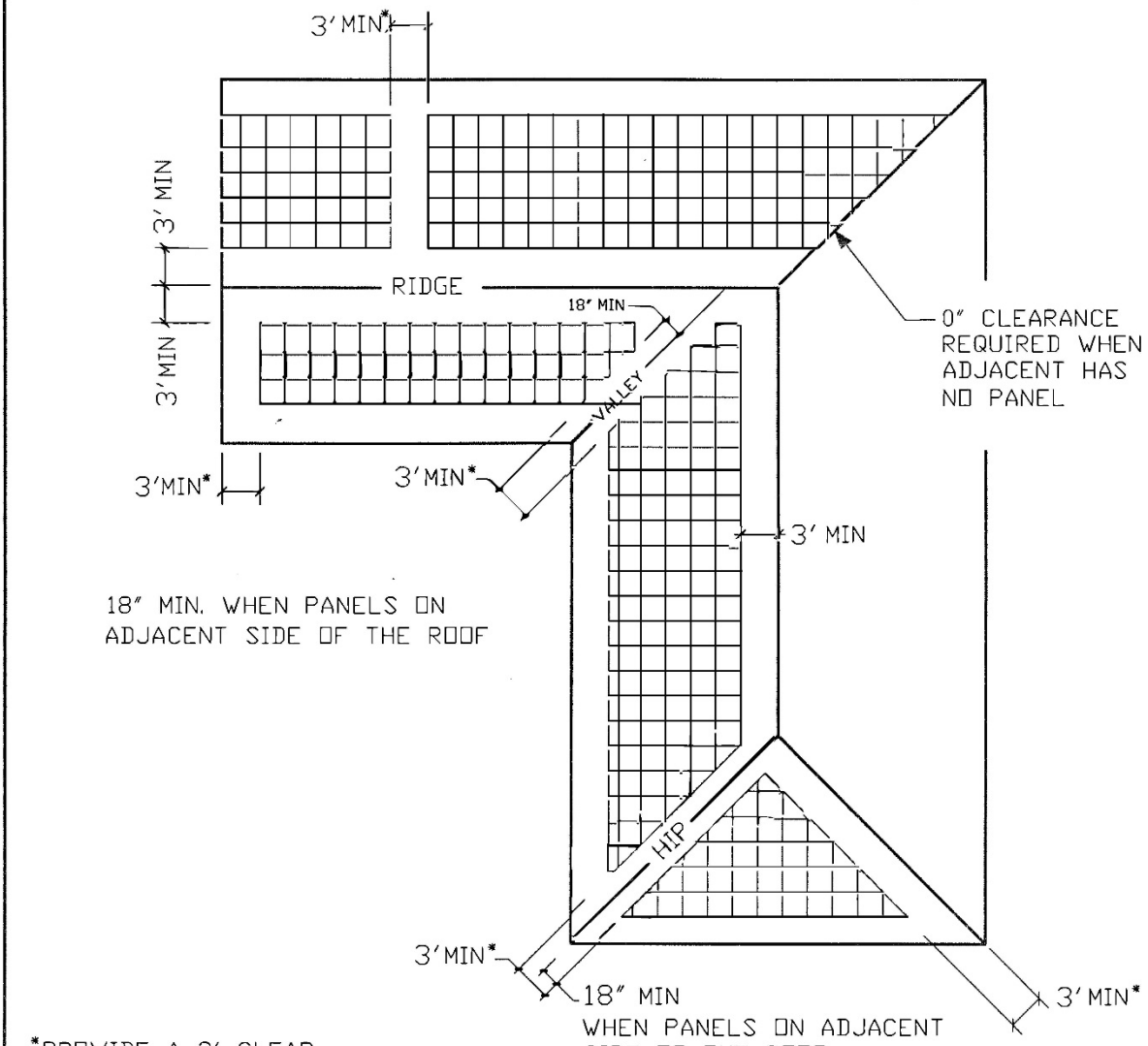
THIS LABEL TO BE ATTACHED TO METER PANEL

CAUTION:
GENERATION ELECTRIC CIRCUIT

THIS LABEL TO BE ATTACHED TO AC AND DC CIRCUIT EQUIPMENT

ENGINEERING MANAGER OPERATIONS MANAGER ENG. TECH. SUPERVISOR	RESIDENTIAL CUSTOMER OWNED INTERCONNECTED GENERATION REQUIREMENTS - LABELS REVIEW COMMITTEE	CITY OF ROSEVILLE ROSEVILLE ELECTRIC CONSTRUCTION STANDARD DATE 07/12/23 DR.NO. PAGE 8.2.3

Residential Photovoltaic



*PROVIDE A 3' CLEAR ACCESS PATHWAY FROM THE EAVE TO THE RIDGE ON EACH ROOF SLOPE WHERE PANELS ARE LOCATED

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT
BUILDING INSPECTION DIVISION
311 Vernon Street, Roseville, CA 95678
PHONE 916.774.5332 FAX 916.774.5394

FORM NO.	BUILDING CODE
B23.S	2016-CRC
REV. DATE	R 324.7
04-07-2017	
DRAWN BY	CAD FILE
CF	B23-SA.DWG