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PLAN CHECK REQUIREMENTS
SOLAR PHOTO-VOLTAIC

All plans for solar photovoltaic systems must include the following items:

1. A plan view showing the location of the PV installation and layout of existing roof framing members that support the system;
2. Details on mounting of PV modules, type and number of roof coverings, and subsequent weatherproofing of the roof;
3. Electrical single-line diagram clearly identifying all devices installed in the PV system and indicating total KVA rating of system;
4. Clearly identify the point of interconnection with the utility supplied wiring system and provide details on main breaker, PV breaker and rating of bussing;
5. Indicate type and size of all conduit and conductors throughout the PV system;
6. Provide manufacturer's installation cut-sheets and installation instructions for the photovoltaic panels, mounting system, combiner boxes (if used), inverters, and disconnects;
7. Provide structural calculations, prepared by a registered California design professional if the total weight of the photovoltaic system is over 5 pounds per square foot;
8. Include a note that all work will comply with the 2013 California Building Code and 2013 California Electrical Code Article 690.
9. Include a note that all new and existing service panels will be grounded per 2013 California Electrical Code Section 250.50. The interior water and gas piping will be required to be bonded at the water heater per 2013 California Electrical Code Section 250-104.
10. Include all required signage. See back of handout for examples.

CITY OF BURLINGAME

REQUIRED LABELING FOR PHOTOVOLTAIC SYSTEMS

Labeling shall comply with CEC Sections 690-5c, 690-10c, 690-17

Labels shall be printed or manufactured so as to be permanent and shall not discolor or be subject to deterioration from exterior / weather conditions.

Hand written marker pen labeling will not be allowed

THE WORD "WARNING" SHALL BE PRINTED IN RED INK

-WARNING-
SINGLE 120VOLT SUPPLY
DO NOT CONNECT MULTI-WIRE BRANCH CIRCUITS

SINGLE SOURCE
SYSTEMS ONLY

DISCONNECT
Photovoltaic system from utility

TO BE PLACED ON THE
PHOTOVOLTAIC SYSTEM
DISCONNECT TO THE MAIN
ELECTRICAL SERVICE

-WARNING-
ELECTRIC SHOCK
HAZARD

-Do not touch terminals-

Terminals on BOTH the line and load sides may be

TO BE PLACED ON THE
DISCONNECT FROM THE SOLAR
PANELS TO THE PHOTOVOLTAIC
SYSTEM

-WARNING-
MULTIPLE POWER SOURCES

A PHOTOVOLTAIC SYSTEM IS PRESENT.
120 VAC and / or 240VAC may be produced.
DC power circuits are present on this site.
Batteries may be present on this site.
Disconnect all power sources before servicing.

TO BE PLACED ON MAIN
ELECTRICAL PANEL
COVER.

PV MODULE RATING @ STC

MODULE MANUFACTURER _____
 MODULE MODEL # _____
 MAX POWER-POINT CURRENT (Imp) = _____ A
 MAX POWER-POINT VOLTAGE (Vmp) = _____ V
 OPEN-CIRCUIT VOLTAGE (Voc) = _____ V
 SHORT-CIRCUIT CURRENT (Isc) = _____ A
 MAX POWER (Pmax) = _____ W
 MAX SYSTEM VOLTAGE = _____ V
 V_{oc} TEMPERATURE COEFF. = _____

SYSTEM VOLTAGE AND CURRENT

MAX POWER-POINT CURRENT (Imp) = _____ A
 MAX POWER-POINT VOLTAGE (Vmp) = _____ V
 OPEN-CIRCUIT VOLTAGE (Voc) = _____ V
 SHORT-CIRCUIT CURRENT (Isc) = _____ A

SYSTEM VOLTAGE AND CURRENT INCLUDING CORRECTION FACTORS

OPEN-CIRCUIT VOLTAGE (Voc) = _____ V
 SHORT-CIRCUIT CURRENT (Isc) = _____ A

INVERTER RATING

INVERTER MODEL # _____
 MAX DC VOLT RATING = _____ V
 MAX POWER @ 40°C = _____ W
 NOMINAL DC VOLTAGE = _____ V
 MAX AC CURRENT = _____ A
 MAX OCPD RATING = _____ A

AC DISCONNECT RATING

DISCONNECT AMP RATING = _____ A
 DISCONNECT VOLT RATING = _____ V

DC DISCONNECT RATING

DISCONNECT AMP RATING = _____ A
 DISCONNECT VOLT RATING = _____ V

No. OF MODULES IN SERIES _____
 No. OF MODULES IN SERIES _____
 No. OF MODULES IN SERIES _____

SOURCE-CIRCUIT CONDUCTOR:
 CONDUCTOR SIZE: #12 AWG MIN
 CONDUCTOR TYPE: USE 2 OR PV WIRE/CABLE

J-BOX (IF USED)
 LISTED COMBINER BOX (Fuses as applicable)
 ROOF TOP JUNCTION BOX (NECA 3R MIN. REQUIRED WITH WATER-PROOF SPLICES OR OTHER APPROVED TERMINATION METHOD (NEC 110.14, 300.6, 314))

DC DISCONNECT (can be external box (provide model) or integrated inside the inverter)

UTILITY INTERACTIVE INVERTER

AC DISCONNECT(S) (SEPARATE EXTERNAL CONDUCTOR (#8 MIN) INSTALLED PER ART. 250.64)

GROUNDING ELECTRODE CONDUCTOR (#8 MIN) INSTALLED PER ART. 250.64

CIRCUIT CONDUCTOR:

CONDUIT SIZE AND TYPE: 3/8" MIN EMT
 CONDUCTOR TYPE: THWN-2, XHHW-2, OR RHW-2
 NUMBER OF CONDUCTOR: (____ Red, ____ White, 1 Green)

SERVICE PANEL RATING

BUS AMP RATING = _____ A
 SERVICE VOLTAGE = _____ V
 MAIN OCPD RATING = _____ A
 INVERTER OCPD RATING = _____ A

- Notes:
 1. For each inverter, supply breakers shall comply with 120% BUSBAR exception in 690.64(B)(2)(4)
 2. Supply side connection is not allowed

STANDARD ELECTRICAL DIAGRAM FOR SMALL SCALE, SINGLE-PHASE PV SYSTEMS

- NOTES:
 1. INSTALLER TO BE PREPARED TO PROVIDE PHYSICAL PROOF THAT PANELS INSTALLED IN FIELD MATCH THOSE SPECIFIED ON PLANS.
 2. AC & DC SIDE GROUNDING ELECTRODE CONDUCTOR TO BE BONDED PER ART. 690.47, AND MADE IN ACCORDANCE WITH ART. 250.64.
 3. BONDING JUMPER REQUIRED TO MAINTAIN CONTINUITY BETWEEN SOURCE OF OUTPUT CIRCUIT GROUNDING CONDUCTOR WHILE PV EQUIPMENT IS REMOVED PER ART. 690.49.
 4. PROVIDE SYSTEM LABELS AND WARNING FOR DC DISCONNECT, AC DISCONNECT AND INVERTER. LABELS TO BE AFFIXED PRIOR TO FINAL INSPECTION.
 5. ALL SYSTEMS INCLUDING SUPPORT FRAME SHALL BE GROUNDED IN ACCORDANCE WITH ART. 690.43. EQUIPMENT GROUNDING CONDUCTORS FOR PHOTOVOLTAIC MODULE SMALLER THAN A#6 SHALL COMPLY WITH ART. 250.120(C)

PV ARRAY LAYOUT & WIRING PLAN

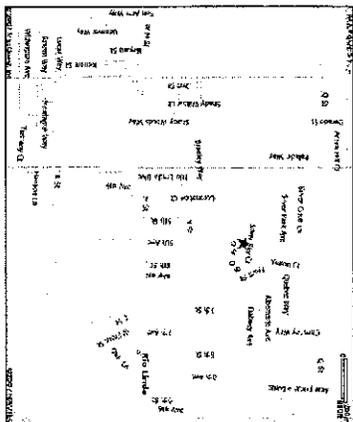
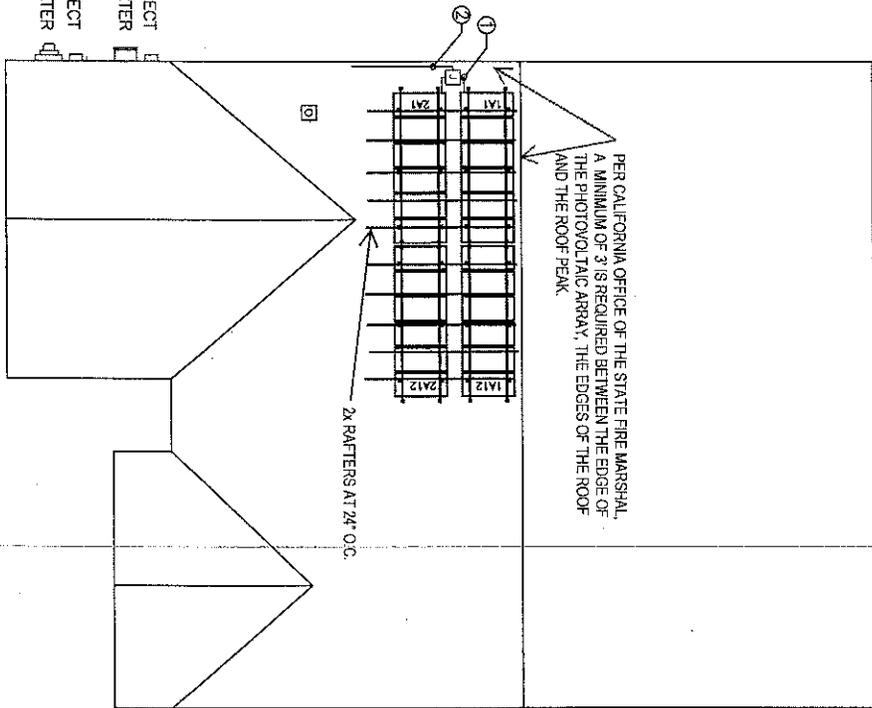
MOUNTING NOTES

1. PANELS MOUNTED ON ALUMINUM RACKING
2. PV ARRAY MOUNTS TO ROOF STRUCTURE WITH $\frac{1}{4}$ " LAGS EMBEDDED $\frac{3}{4}$ " INTO RAFTERS OR SEE NOTE 5 BELOW
3. PV PANELS ARE ANCHORED @ 48" O.C. TRUSSES / RAFTERS ARE 24" O.C. OR SEE NOTE 5 BELOW
4. WEIGHT OF PV MODULES AND ASSEMBLY LESS THAN 5 LBS PER SQUARE FOOT
5. ALL INSTALLATIONS MUST COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

ARRAY CONDUIT & WIRING ARRANGEMENT

1. FREE-AIR / $\frac{1}{2}$ " CONDUIT SLEEVE**
(2) #12 AWG, R, W
 2. TO DC DISCONNECT
 $\frac{1}{2}$ " CONDUIT
(4) #12 AWG, (2)R, (2)W
(1) #8 GND
- ** SLEEVE PROVIDES PROTECTION FROM PHYSICAL DAMAGE PER NEC 300.13 & 300.18

DC DISCONNECT
INVERTER
PHOTOVOLTAIC SYSTEM DISCONNECT
EXISTING SERVICE PANEL / NET METER



SITE MAP

CUSTOMER NAME		ADDRESS	
DRAWN BY		CHECKED BY	
SCALE		DATE DRAWN	
COMPANY LOGO		COMPANY NAME ADDRESS	