



COMMERCIAL/INDUSTRIAL SOLAR ENERGY SYSTEM APPLICATION

Implementation standards for commercial and industrial solar energy systems are set forth in this application.

1.0 OWNER INFORMATION

1.1a Property owner name(s): _____ 1.1b Phone number: _____

1.2a Business owner name(s): _____ 1.2b Phone number: _____
(If different than Property owner listed in Item 1.1a above)

1.3 Property address: _____

2.0 SOLAR ENERGY SYSTEM INFORMATION

2.1 Name of contractor/ entity performing work: _____ 2.2 State license #: _____

2.3 City business license #: _____ 2.4 Contact name: _____

2.5 Complete the solar energy system details requested below.

Proposed use for solar energy system:	<input type="checkbox"/> Electricity	<input type="checkbox"/> Water heater	
	<input type="checkbox"/> Pool/spa	<input type="checkbox"/> Other (specify): _____	
	<input type="checkbox"/> Space Heating		
Solar energy system manufacturer:	Solar energy system unit name:	Existing roof area: _____ sq. ft.	Size of solar energy system: _____ sq. ft.

3.0 REQUIRED PLAN SPECIFICATIONS

Check the boxes below to acknowledge the submittal, with this completed application, of **three (3) copies** of plans as specified below (including all listed details):

- 3.1 Site plan (minimum 11" x 17") showing:
 - 3.1a: Property address
 - 3.1b: North arrow
 - 3.1c: Scale
 - 3.1d: Roof plan
 - 3.1e: Solar panel location, with dimensions from roof edges and panel dimensions
 - 3.1f: Dimensioned depiction of all disconnects and other equipment on the roof
 - 3.1g: The path of all wiring

Property address: _____
(same as item 1.3 on page 1)

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- 3.1h: Dimensioned depiction and of all conduits, piping, or wiring on the roof, subject to the following guidelines:
 - » Visible conduits, piping, or wiring shall be minimized to the extent feasible.
 - » Generally, wiring shall be routed under the panel into the roof and through the attic or building interior.
 - » For sloping roofs:
 - No conduit, piping, or wiring shall be permitted to extend across the roof more than 5'-0".
 - No conduit, piping, or wiring shall be permitted to extend over a roof ridge.
 - If there is no attic, then panels shall be sited to minimize conduit runs across the roof to the extent feasible, with no conduit runs greater than 5'-0" across the roof.
 - No conduit shall be permitted to wrap around a roof eave; instead, conduits shall be routed through the roof eave to the vertical wall below.
 - » All conduits permitted in the guidelines above shall be painted to match the color of the surface on which they are mounted.
- 3.1i: Location of adjacent buildings
- 3.1j: Location of trees on the subject property

- 3.2 Complete building elevations (minimum 11" x 17") showing:
 - 3.2a: All affected elevation views (minimum 3 out of 4 elevation views) drawn to scale
 - 3.2b: Scale
 - 3.2c: Dimensioned profile of the solar panels
 - » For flat roofs:
 - Generally, solar panels shall be wholly screened behind and below the height of the building parapet.
 - If there is no existing parapet or if the solar panels are visible from a public street, architecturally compatible screening shall be added to the design.
 - » For sloping roofs:
 - Generally, panel installations shall have a low-profile, flush-mounted design.
 - The smallest gap feasible is encouraged between the solar panel and the roof material, and said gap shall be a maximum of 6".
 - Generally, the portion of the roof under the solar panels shall not be changed to a different material than the remainder of the roof. Include a depiction and clear written indication that the roof material shall remain consistent across the entire roof.
 - If a different roof material is needed under the solar panels, it shall not be visible. Provide documentation explaining why the different roof material is needed and apply for a separate re-roof permit. The property owner will be required to record a covenant requiring the restoration of said roof material to its original style and color if the solar panel is ever removed in the future.
 - Include a depiction and clear written indication that portions of the mounting hardware that are visible shall be painted to match the adjoining equipment (specify the color). Unpainted or reflective metal shall be prohibited.

Property address:

(same as item 1.3 on page 1)

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- 3.2d: Dimensioned depiction of all electrical panels, meters, and other equipment associated with the solar energy system, subject to the following guidelines:
 - » Generally, electrical panels, meters, and other equipment shall be painted to match the color of the surface on which they are mounted.
 - » If any equipment cannot be painted:
 - Provide documentation explaining why it cannot be painted, and
 - Indicate the actual color in which it will be installed.
 - 3.2e: Dimensioned depiction of all conduits, piping, or wiring on exterior walls, subject to the following guidelines:
 - » Vertical conduit runs shall be sited and located in such a manner to minimize visibility from public streets and, if feasible, from adjacent properties, along an architectural projection, along a rain gutter, or at the intersection of two building planes. To the maximum extent feasible, conduits shall not run vertically across the middle of a flat stucco plane, but rather at the plane edges or at prominent architectural transition areas. If no such architectural transition areas exist, the conduit shall be run across the shortest vertical distance.
 - » Horizontal conduits that connect the vertical conduit to electrical panels shall run along the base of the building above the weep screed or, if infeasible, as low as possible below the height of any perimeter screen walls.
 - » All conduits shall be painted to match the exterior walls on which they are mounted.
- 3.3 Solar panel installation details showing:
- 3.3a: Manufacturer's specifications
 - 3.3b: Panels, pins/posts, mounting hardware, and electrical connections drawn to scale
 - 3.3c: Dimensioned depiction of the panel mounting
 - 3.3d: Roof materials and connections
 - » See item 3.2c above for detailed requirements for flat roofs and sloping roofs.
- 3.4 Equipment floor plan (minimum 11" x 17") showing:
- 3.4a: Dimensions and location of any associated equipment to be installed on the property, drawn to scale
 - 3.4b: Label the room(s) or space where the equipment is installed
 - 3.4c: Equipment mounted on the face of exterior walls of the building shall be no higher than 6'-0" from the finish grade and shall be painted to match the exterior wall color.
 - If any equipment cannot be painted:
 - Provide documentation explaining why it cannot be painted, and
 - Indicate the actual color in which it will be installed.
- 3.5 Aerial photograph of the existing building and property
- 3.5a: Photograph image must be minimum 5" x 7", but may be printed directly on the minimum 11" x 17" sheet.
- 3.6 Current photographs of the affected roof areas and walls
- 3.6a: Photograph images must be minimum 5" x 7", but may be printed directly on the minimum 11" x 17" sheet.
- 3.7 Completed standard electrical diagram for small-scale, single-phase PV systems:
- 3.7a: Two (2) pages, attached to this application
 - 3.7b: If the system is larger in scale, provided separate electrical drawings.

Property
address: _____

(same as item 1.3 on page 1)

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A/P# _____

(Project Reference Number)

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4.0 BUILDING AND SAFETY APPLICATIONS

A Building/Plumbing/Electrical/Mechanical Permit Application from the Cerritos Building and Safety Division will also be required together with this Commercial/Industrial Solar Energy System Application. This application is available for download from the City of Cerritos website at www.cerritos.us under **BUSINESSES » Planning and Building Permits » Building and Safety Permit Applications and Information.**

5.0 ACKNOWLEDGEMENT

By signing below, I acknowledge an understanding of the following declarations:

- 5.1 Review of Requirements. I declare, under penalty of making a false statement, that I have read and understand the statements and requirements of this application.
- 5.2 Conditions of Approval. I understand and will comply with the following conditions of approval, and I understand that the solar energy system will not receive a final approval until all of the said requirements and conditions have been completed:
 - 5.2a: The requirements of Section 3 of this application are hereby incorporated as conditions of approval, unless expressly and individually waived in writing by the City of Cerritos.
 - 5.2b: The solar energy system shall conform to the provisions and requirements of the County of Los Angeles Building, Electrical, Mechanical, and Plumbing Codes.
- 5.3 Construction. Hours and days of construction are limited to the following:
 - Monday to Friday: 7am to 6pm
 - Saturday: 10am to 5pm
 - Sunday/City-Observed Holiday: No Work
- 5.4 Permit and Plan Adherence.
 - 5.4a: No work of any type shall take place unless all required permits are issued.
 - 5.4b: The undersigned warrant that the plans submitted for review in connection with this application are complete and accurate. Approval of the submitted plans is subject to the applicant having submitted accurate dimensions and information. If, during construction, it is found that the approved plans did not have accurate dimensions and/or information, the City of Cerritos may require the work to cease until revised, accurate plans are submitted to the Department of Community Development for review in accordance with the requirements set forth herein.
 - 5.4c: All improvements shall be constructed in accordance with the approved plans. If, during construction, modifications or deviations from the approved plans are deemed necessary, any and all such modifications shall be submitted in the form of revised plans to the Department of Community Development for review in accordance with the requirements set forth herein. No modification or deviation shall proceed without prior written approval by the Department of Community Development. If these requirements are violated, the City of Cerritos may require the work to be completely removed and reconstructed in accordance with the approved plans.
- 5.5 Penalties for Violation. A violation of the statements and requirements of the Municipal Code may constitute an infraction punishable pursuant to Section 1.08.020 of the Cerritos Municipal Code.

Property address: _____
(same as item 1.3 on page 1)

<p>FOR OFFICE USE ONLY</p> <p>A/P# _____ <i>(Project Reference Number)</i></p>

I acknowledge and understand declarations 5.1 through 5.5 above.

5.6 Property Owner's signature: _____ Date: _____

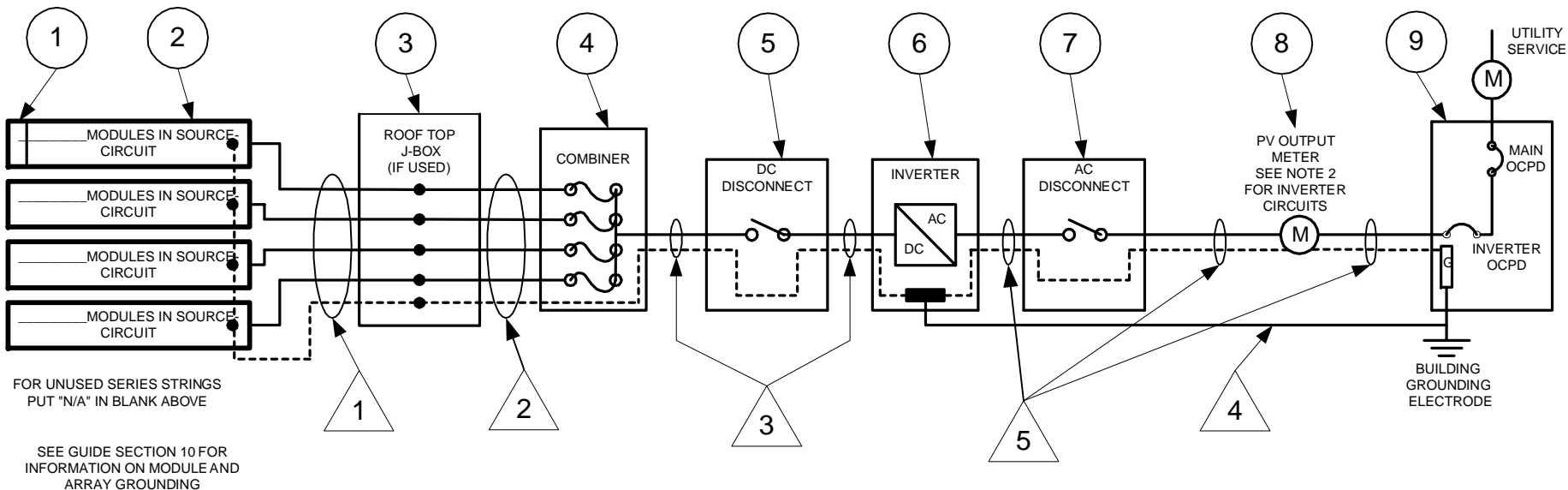
5.7 Business Owner's signature (if different than Property Owner above): _____ Date: _____

5.8 Contractor's signature: _____ Date: _____

5.9 Property address: _____
(same as item 1.3 on page 1)

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<p><u>Planner check</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Signature of both property owner and contractor are provided, as well as business owner, if applicable <input type="checkbox"/> Review aerial photo and submitted photos to check proposal against existing conditions <input type="checkbox"/> Project complies with application requirements <input type="checkbox"/> Computer permit entry: <ul style="list-style-type: none"> <input type="checkbox"/> Check cases for existing notes <input type="checkbox"/> Check for expired permits requiring resolution <input type="checkbox"/> Check that a permit is not already entered for this application and property <input type="checkbox"/> Computer codes: OVRTHECNTR » SLRENE <input type="checkbox"/> Property owner information is current (GIS); if not, request a copy of the grant deed to confirm ownership as a condition of permit issuance <input type="checkbox"/> Enter permit data <p>Project Reference Number:</p> <p>A/P# _____</p> <ul style="list-style-type: none"> <input type="checkbox"/> Sign and date approval area <input type="checkbox"/> Refer to Building and Safety Division for permit 	<p style="text-align: center;"><u>City of Cerritos Planning Approval</u></p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p style="text-align: center;">Staff Signature</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p style="text-align: center;">Date</p> <p style="font-size: small;">Issuance of the permit shall not be construed as final approval of this installation. No final shall be issued unless all conditions of approval above have been completed.</p>

EQUIPMENT SCHEDULE			
TAG	DESCRIPTION	PART NUMBER	NOTES
1	SOLAR PV MODULE		
2	PV ARRAY		
3	J-BOX (IF USED)		
4	COMBINER (IF USED)		
5	DC DISCONNECT		
6	DC/AC INVERTER		
7	AC DISCONNECT (IF USED)		
8	GEN METER (IF USED)		
9	SERVICE PANEL		



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

SITE NAME:

SITE ADDRESS:

SYSTEM AC SIZE:

CONTRACTOR / ENG. NAME:

CONTRACTOR / ENG. ADDRESS:

CONTRACTOR / ENG. LIC # : **EXPIRATION DATE:**

DRAWN BY: **DATE:** **DRAWING NO:**

CONDUIT AND CONDUCTOR SCHEDULE					
Δ TAG	DESCRIPTION OF CONDUCTOR TYPE	Cond. Gauge	# of Conductors	Conduit Type	Conduit Size
1	USE-2 OR PV WIRE(UF, SE, USE)				
	BARE COPPER EQ. GND. COND.(EGC)				
2	THWN-2 OR XHHW-2 (circle one)				
3	THWN-2 OR XHHW-2 (circle one)				
	INSULATED EGC				
4	DC GROUNDING ELECTRODE COND.				
5	THWN-2 OR XHHW-2 (circle one)				
	INSULATED EGC				

PV MODULE RATINGS	
MODULE MAKE	
MODULE MODEL	
MAX. POWER POINT CURRENT (Imp)	
MAX. POWER POINT VOLTAGE (Vmp)	
OPEN-CIRCUIT VOLTAGE (Voc)	
SHORT-CIRCUIT CURRENT (Isc)	
MAX. SERIES FUSE (OCPD)	
MAX. POWER (Pmax)	
MAX. VOLTAGE (TYP 600 VDC)	

NOTES FOR ALL DRAWINGS

OCPD=OVERCURRENT PROTECTION DEVICE

NATIONAL ELECTRICAL CODE REFERENCES SHOWN AS (NEC XXX.XX)

INVERTER RATINGS

INVERTER MAKE	
INVERTER MODEL	
MAX. DC VOLT RATING	
MAX POWER @40°C	
NOMINAL AC VOLTAGE	
MAX AC CURRENT	
MAX OCPD	

SIGNS

SIGN FOR DC DISCONNECT	
PHOTOVOLTAIC POWER SOURCE	
RATED MPP CURRENT	
RATED MPP VOLTAGE	
MAX. SYSTEM VOLTAGE	
MAX CIRCUIT CURRENT	
WARNING ELECTRICAL SHOCK HAZARD-LINE AND LOAD MAY BE ENERGIZED IN OPEN POSITION	
SIGN FOR INVERTER OCPD AND AC DISCONNECT (IF USED)	
AC POINT OF CONNECTION	
AC OUTPUT CURRENT	
NOMINAL AC VOLTAGE	

NOTES FOR ARRAY CIRCUIT WIRING

1) LOWEST EXPECT AMBIENT TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION. LOWEST EXPECTED AMBIENT TEMP 0 °C

2) HIGHEST CONTINUOUS AMBIENT TEMPERATURE BASED ON ASHRAE HIGHEST MONTH 2% DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. HIGHEST CONTINUOUS TEMPERATURE 34 °C

3) 2005 ASHRAE FUNDAMENTALS 2% DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE UNITED STATES (PALM SPRINGS, CA IS 44.1°C). FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF-MOUNTED SUNLIT CONDUIT AT LEAST 1/2" ABOVE ROOF AND USING THE OUTDOOR DESIGN TEMPERATURE OF 47°C OR LESS (ALL OF UNITED STATES),

a) 12 AWG 90°C CONDUCTORS ARE GENERALLY ACCEPTABLE FOR MODULES WITH Isc OF 7.68 AMPS OR LESS WHEN PROTECTED BY A 12 AMP OR SMALLER FUSE

b) 10 AWG 90°C CONDUCTORS ARE GENERALLY ACCEPTABLE FOR MODULES WITH Isc OF 9.6 AMPS OR LESS WHEN PROTECTED BY A 15 AMP OR SMALLER FUSE

NOTES FOR INVERTER CIRCUITS

1) IF UTILITY REQUIRES A VISIBLE-BREAK SWITCH, DOES THIS SWITCH MEET THE REQUIREMENT? YES / NO (CIRCLE ONE)

2) IF GENERATION METER REQUIRED, DOES THIS METER SOCKET MEET THE REQUIREMENT? YES / NO (CIRCLE ONE)

3) SIZE PHOTOVOLTAIC POWER SOURCE (DC) CONDUCTORS BASED ON MAX CURRENT ON 690.53 SIGN OR OCPD RATING AT DISCONNECT (IF SUPPLIED)

4) SIZE INVERTER OUTPUT CIRCUIT (AC) CONDUCTORS ACCORDING TO INVERTER OCPD AMP RATING

5) TOTAL OF ___ INVERTER OCPD(S), ONE FOR EACH INVERTER. DOES TOTAL SUPPLY BREAKERS COMPLY WITH 120% BUSBAR EXCEPTION IN 690.64(B)(2)(a)? YES / NO (CIRCLE ONE)

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

SITE NAME:

SITE ADDRESS:

SYSTEM AC SIZE:

CONTRACTOR / ENG. NAME:

CONTRACTOR / ENG. ADDRESS:

CONTRACTOR / ENG. LIC # :

EXPIRATION DATE:

DRAWN BY:

DATE:

DRAWING NO: