COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY DIVISION

SOLAR ENERGY SYSTEM
PLAN REVIEW LIST

GENERAL PROJECT INFORMATION

PLAN CHECK NO. _____ DISTRICT NO _____ INITIAL VALUATION ____

JOB ADDRESS _____ CITY _____ ZIP _____

APPLICANT _____ TELEPHONE (___) _____ Email: _____

PROJECT INFORMATION

USE ZONE ____ CLIMATE ZONE ____ VHFHSZ: ☐YES ☐NO FLOOD ZONE: ☐YES ☐NO

BUILDING ELEMENT	SQ. FT.	NO. OF STORIES	CONSTR. TYPE	OCC. GROUP	$ / SQ. FT.	$ VALUE
				New Valuation:		

PLAN CHECK ENGINEER AND CORRECTION INFORMATION

REVIEWED BY _____ DATE _____ TELEPHONE _____

RECHECKED BY _____ DATE _____ TELEPHONE _____

RECHECKED BY _____ DATE _____ TELEPHONE _____

Your application for a permit, together with plans and specifications, has been examined and you are advised that the issuance of a permit is withheld for the reasons hereinafter set forth. The approval of plans and specifications does not permit the violation of any section of the Building Code, or other local ordinance or state law.

NOTE: Numbers in the parenthesis () refer to sections of the 2026 edition of the County of Los Angeles Building Code, Existing Building Code (E), Residential Code (R), Table (T), Plumbing Code (PC), Mechanical Code (MC), Electrical Code (EC), and Building Code Manual (BCM).

For County of Los Angeles Building Code Amendments and BCMs, visit www.dpw.lacounty.gov/bsd/content

INSTRUCTIONS

- Corrections with circled item numbers apply to this plan check. **Note:** Per section 107.2 of the LAC Building Code, additional fees may be charged for plan checks required after the second plan check.
- In the left-hand margin of the circled corrections, please indicate the sheet number and detail or note number on the plans where the corrections are made. Resubmit marked original plans and two corrected sets of plans, calculations and this plan review list.
- Incomplete, unclear, or faded drawings or calculations will not be accepted.
- The plan check engineer will be available for conference and telephone calls between the hours of _____ and _____ on the following days: _____. **Appointments are recommended**.

APPLICATION AND PERMIT

1. Application will expire on ____/____/____.

   Permit needs to be obtained prior to expiration date otherwise the application shall expire. (106.4.1.1)

2. A Certificate of Worker's Compensation Insurance must be presented to the local Building and Safety Division Office before a permit can be issued.

REFERRALS

ALL AGENCY APPROVALS are required prior to permit issuance. Please see the attached agency referral sheet for details.

SUPPLEMENTAL PLAN REVIEW COMMENTS/SHEETS

3. Attach and sign "Best Management Practice for Construction Activity" (Attachment A) to plans.

SITE PLAN / ROOF PLAN

4. The address of the building, and the name and address of the owner(s), and person(s) preparing the plans are required on the first sheet of the plans. (106.4.3)

5. Provide a roof plan projected on a site plan. Show street name(s) and north arrow. (106.4.3)

6. Show the locations and dimensions of all solar photo-voltaic (PV) arrays and equipment. Depict the array(s) with roof access and pathways per Section 3111.3.4 or R329.6.
7. Specify roof fire classification, roofing material, number of layers, slope(s) on roof plan and height of the parapet walls.
8. Attach all manufacturer specification sheets, installation instructions, certificates of compliance (if applicable) and UL listings to the plans.

GENERAL DESIGN REQUIREMENTS FOR ROOF MOUNTED SYSTEM

9. Detail anchor connections of solar PV system and equipment to roof rafters. Provide flashing and water proofing details at system supports.
10. Structural plans and calculations signed by a licensed architect or civil engineer shall be submitted for the solar PV system showing supporting member sizes, dimensions, materials and the loads imposed on the roof structure. For one- and two-family dwellings, structural plans and calculations shall be submitted as described above, unless all of the following conditions are met:
    a. The existing roofing is either of wood shingle, asphalt shingle, or rolled/torch-down with two layers maximum.
    b. The solar PV system weighs not more than 4 psf.
    c. The maximum concentrated load imposed by a solar PV system support onto the roof structure is 40 lbs.
    d. The solar PV panels are installed with no portion thereof more than 18 in. above the roof immediately below.
    e. Maximum spacing for supports of the solar PV system on wood-framed construction shall be 48 in. on center, and shall be anchored to roof rafters or to solid blocking with a minimum of one 5/16 in. diameter lag screw embedded a minimum of 2 1/2 in. or as recommended by the manufacturer, whichever is more stringent.
11. Alterations resulting from solar PV system installation that increase the lateral force of the building by more than 10 percent cumulative since the original construction, shall not be permitted unless the entire lateral-force-resisting system is determined to conform to ASCE 7 for new structure. (E503.4)
12. Existing gravity load-carrying structural members which a solar PV system installation will increase design gravity load by more than 5 percent shall be strengthened, replaced, or otherwise altered as needed to carry the increased gravity load. (E503.3)
13. The dead load of the solar PV system shall be indicated on the construction documents. (1603.1.8.1)
14. For one- and two-family dwellings, the roof member design shall include the roof live load, Lr, in areas not covered by panels, and in load cases where the solar PV system loads aren't present. (R301.6)
15. For nonresidential and multifamily structures, the roof member design shall include the roof live load, Lr, in areas not covered by panels or where the clear space between the panels and the rooftop is greater than 24 in. (1607.14.3.1)
16. Independent structures where the solar PV panels are designed to act as the roof and which have accessible/occupied space underneath shall have the panels and all supporting structures designed to support a roof PV live load in combination with other applicable loads. (1607.13.3.3)
17. Note on plans: Do not cover mechanical and plumbing vents at roof with solar PV panels.
18. Utilize the solar access roof area (SARA) multipliers for steep-sloped and low-sloped roofs to determine the required solar PV size in kW for a given square foot area of SARA roof space. (150.1(c)14)
19. For prescriptive path compliance, a Solar PV with module pitches greater than 2:12, or 10 degrees, must be installed with an azimuth between 90 to 300 degrees measured clockwise from true north.

ADDITIONAL REQUIREMENTS FOR BALLASTED (ANCHORED / UNANCHORED) SYSTEM

20. Provide a seismic design based on SEAOC PV1-2017 report.
21. Provide a wind design based on SEAOC PV2-2017 report.
22. Provide a wind tunnel test report in accordance with Chapter 31 of ASCE 7. Comply with either Option A or B:
    a. Option A with peer review – Provide peer review report and peer reviewer's qualification.
    b. Option B without peer review – A minimum wind design of not less than 65 percent of the value obtained from the prescriptive wind analysis based on SEAOC PV2-2017 report. Provide a comparison table clearly demonstrating compliance with this ratio.
23. A Research Request with a filing fee is required for ballasted system design based on wind tunnel test, in accordance with Section 31.6 of ASCE 7. (104.2.7)
24. Specify the following reference document information on the plans:
    a. Wind tunnel laboratory, report number and date.
    b. Modular load sharing test (if applicable).
    c. Friction test laboratory, report number and date (if applicable).
25. Specify the module tilt angle on the plans.
26. Specify the following fastener information on the plans (if applicable):
    a. Roof decking material (plywood, OSB, corrugated steel, etc.).
    b. Show all fastener locations per calculations.
    c. Fastener size/diameter, length, and minimum embedment.

d. Fasteners shall be positively anchored into roof sheathing or framing member.
e. Justify fastener allowable capacity.

27. Provide a complete lateral and/or uplift analyses based on wind and seismic forces. The most restrictive analyses for wind and seismic forces shall govern the final ballast design.
28. Solar PV panels with ballasted system shall comply with the following conditions:
    a. Maximum slope of the roof shall be less than 7 degrees and mean roof height of the building
    h < 60 ft.
    b. Depict the array(s) distances from the roof edges, minimum 4 ft. setback from the roof edge are required per SEAOC PV2-2017, or as required by wind tunnel testing or other agencies.
    c. The ballasted system shall be designed to resist sliding and uplift resulting from lateral and vertical load combinations as required by Section 1605.
    d. For fully unattached arrays, the system shall be designed to accommodate seismic displacement determined by prescriptive design method of SEAOC PV1-2017, nonlinear response-history analysis, or shake-table testing, using input motions consistent with ASCE 7 lateral and vertical seismic forces for non-structural components on roofs.
    e. When the roof live load, Lr, applies to the full member span, the structural supports of the roof under a ballasted system shall be checked for deflection (1604.3.6) and if required ponding (1611.2).
29. Provide a friction test report per ASTM G115 conducted in an approved City of Los Angeles or IAS test laboratory to justify the coefficient of friction. Friction test report shall be submitted to Research Section for review and approval.
30. Specify the roof material (and padding material at the foot of the ballasted frames, if applicable) and coefficient of friction on the plans and calculations.
31. The block layout and quantity on the plans shall be consistent with the design calculations.

DESIGN REQUIREMENTS FOR GROUND MOUNTED SYSTEM

32. Structures adjacent to ascending or descending slopes shall maintain setbacks according to the requirements of Section 1808.7. Structural plans and calculations are required for foundations situated in slopes steeper than one unit vertical in three units horizontal (33.3- percent slope).
33. Detail solar PV panel connections to equipment supports, and equipment supports to foundation.
34. Structural plans and calculations shall be submitted for ground mounted solar PV system including materials specifications, supporting member sizes, foundation dimensions, and the loads imposed on the foundation.

    Exception: For one- and two-family dwellings, a site review and electrical plan check are required when no portion of the system is greater than 72 inches above grade not to exceed 3:1 slope.
35. Provide a raceway/enclosure for the PV source conductors OR provide a fence detail to guard the perimeter of the array. If the fence is metallic, additional bonding requirements may apply based on the specific fence design.
36. Provide a wind tunnel test report in accordance with Chapter 31 of ASCE 7. Comply with either Option A or B:
    a. Option A – A minimum wind design of not less than 80% of the value obtained from Chapter 27, Part 1, Chapter 28, Part 1, or Chapter 30, Zone 1 for roofs and Zone 4 for walls. Provide a comparison table clearly demonstrating compliance with this ratio.
    b. Option B – The limiting value of 80% may be reduced to 50% for the main force wind resisting system and 65% for components and cladding if a peer review of the wind tunnel testing is provided. The peer review report shall include the peer reviewer's qualifications, and shall demonstrate compliance with one of the conditions of ASCE 7 Section 31.4.4. Provide a comparison table clearly demonstrating compliance with this ratio.
37. A Research Request with a filing fee is required for ground mounted system design based on wind tunnel test in accordance with Chapter 31 of ASCE 7.

ELECTRICAL REQUIREMENTS FOR SOLAR PHOTO VOLTAIC SYSTEM

38. Provide electrical drawings to show compliance with the applicable provisions of the 2026 Los Angeles County Electrical Code. Drawings shall bear the signature and license information of the person preparing the documents.
39. Show the location of the main electrical service, AC/DC disconnects all solar photovoltaic equipment, and PV arrays on the roof plan.
40. Single Line Diagram: Show array configuration, conduit and conductor sizes with derating calculations. (See Standard Electrical Diagram.)
41. Inverter Information: Show model number, specification cut sheets, and maximum D.C. input.
42. PV Module Information: Show model number, specification cut sheet, open circuit voltage (VOC), short-circuit current (ISC), and max series fuse.
43. Array Information: Show number of modules in series, number of parallel source circuits.
44. Wiring and Overcurrent Protection: Show conductor ampacities, adjusted with all derating factors. Show rating and location of all overcurrent Devices (OCD).
45. System Labels and Warnings: Show required signage on the plans per 2025 CEC Article 690.13. Show directory placard denoting all power sources and disconnects on the site.
46. Grounding Details: Show complete system grounding

and bonding interconnections including equipment ground conductor, ground electrode conductor from inverter to ground rod or ufer ground. Show equipment and method of bonding of all non-current carrying parts of the system, OR use a Los Angeles County-recognized UL 2703 racking system.

47. Disconnects: Show AC/DC disconnects at inverter that are grouped together and identified. AC disconnects required to be within sight of the inverter and readily accessible.
48. Arc-Fault Protection: Show on the plans that proper arc-fault protection is provided for photovoltaic systems operating at 80 volts DC or greater between any two conductors per 2025 CEC Article 690.11.
49. System Calculations: Show (VOC) x (temperature correction factor based on the lowest recorded temperature). (ISC) calculated x 125% (NEC 690) x 125% (UL 1703), OR (ISC) after the application of adjustment and correction factors. Size the PV circuit conductors to carry not less than the larger of the two. Overcurrent devices shall be rated to carry not less than (ISC) x 125%.
50. Clearly identify the point of interconnection with the utility supplied wiring system and provide details on main breaker, PV breaker and rating of bussing. Service and distribution panels shall comply with the interconnection requirements of 2025 CEC Article Sect. 705.12(B)(3)(1) through (6). Show compliance with one of these methods on the plans.
51. Main Service Equipment: Clearly identify if the main service equipment is new or existing and identify the ratings of the main service panel and the service disconnecting means.
52. Rapid Shutdown: Provide a rapid shutdown function that controls specific conductors in accordance with 2025 CEC Article 690.12(A) through (D).

ELECTRICAL REQUIREMENTS FOR SOLAR ENERGY STORAGE SYSTEMS

53. All energy storage system equipment shall be listed by a Nationally Recognized Testing Laboratory either individually or as a complete, self-contained system. Applicable standards/outlines of investigation include, but are not limited to, UL 1973, UL 1989, and UL 9540. Section R328.2. Residential ESS shall be listed and labeled in accordance with UL9540. Provide supporting documentation that verifies certification of the ESS equipment.
54. Provide protection if the energy storage equipment is subject to physical damage. 110.27(B) Prevent Physical Damage: where electrical equipment is likely to be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent such damage
55. Point of Connection: Service and distribution panels shall comply with the interconnection requirements of 2025 CEC Article Sect. 705.12(B)(3)(1) through (6). Show compliance with one of these methods on the plans.
56. ESS Disconnecting Means: Provide a disconnecting means for all ungrounded conductors derived from the energy storage system per 2025 CEC Article 706.15(A)-(D). A disconnecting means shall be readily accessible and located within sight of the ESS. The disconnecting means shall be lockable in the open position in accordance with Section 110.25. For one-family and two-family dwellings, a disconnecting means shall be located at a readily accessible location outside the building.
57. Identify the area/room that the ESS unit is installed in. Section R328.4 only permits non-habitable locations within a residence for ESS (such as a garage or utility room for example).
58. Provide a fused disconnect or circuit breaker at the ESS if the ESS conductors pass through a wall, ceiling, or floor. Where circuits from the input or output terminals of energy storage components in an ESS pass through a wall, floor, or ceiling, overcurrent protection shall be provided at the energy storage component end of the circuit. Section 706.31(F)
59. Provide supporting documentation that the indicated equipment is listed as a Power Control System. Section 705.13 Power Control Systems. A power control systems (PCS) shall be listed and evaluated to control the output of one or more power production sources, energy storage systems, and other equipment. The PCS shall limit current and loading on the busbars and conductors supplied by the PCS.
60. Identify on the plans the setting of the PCS for this installation. Section 706.13(B) PCS Settings. The sum of all PCS-controlled currents plus all monitored currents from other sources of supply shall not exceed the ampacity of any busbar or conductor supplied by the power production sources. Where the PCS is connected to an overcurrent device protecting any busbar or conductor not monitored by the PCS, the setting of the PCS controller shall be set within the ratings of that overcurrent device
61. Show samples of all relevant ESS signage and labels in the plans. Identify locations for each. Articles 480, 690, 705, and 706.
62. Battery Energy Storage Systems (BESS) apply to all newly constructed single-family buildings with one or two dwelling units that have electrical service greater than 125 amps. (Section 150.0(s))
63. The BESS shall be tested in accordance with the applicable requirements specified in UL 1973 and UL 9540. Inverters used with BESS shall be tested in accordance with the applicable requirements in UL 1741 and UL 1741 Supplement SA, or UL1741 Supplement SB.
64. A specification sheet information showing usable capacity, compliance cycling capacity, roundtrip efficiency and an identification as a field assembled or integrated BESS shall be submitted to the Energy Commission for JA12 certification.

65. BESS ready requirements do not apply if a BESS is actually installed. The following requirements must be met to be BESS ready:

- Either a. or b. (or both) shall be provided:
  a. BESS ready interconnection equipment with a minimum backed-up capacity of 60 amps and a minimum of four BESS-supplied branch circuits specified in Section 150.0(s)2; or

  b. A dedicated 1" minimum raceway from the main service to a subpanel that supplies the branch circuits specified in Section 150.0(s)2. The subpanel must be labeled "Subpanel shall include all backed-up load circuits." All branch circuits are permitted to be supplied by the main service panel prior to the installation of a BESS.
- A minimum of four branch circuits shall be identified and have their source of supply collocated at the subpanel specified in1. b. above to be supplied by the BESS. At least one circuit must supply the refrigerator. One lighting circuit must be located near the primary egress. At least one circuit shall supply a sleeping room receptacle outlet. Other circuits may serve any purpose.
- The main panelboard shall have a minimum busbar rating of 225 amps.
- Sufficient space shall be reserved to allow future installation of a system isolation equipment/transfer switch within 3 feet of the main panelboard. Raceways shall be installed between the panelboard and the system isolation equipment transfer switch location to allow the connection of a backup power source.

66. JA12 specifies that the BESS must meet or exceed the following specifications for performance approach:

• Usable capacity of at least 5 kWh.

• Energy capacity retention of 70 percent of nameplate capacity after 4,000 cycles covered by a warranty, or 70 percent of nameplate capacity under a 10-year warranty.

And the following specifications for prescriptive approach: • The single AC-to-AC charge-discharge cycle (round-trip) efficiency of the BESS must be at least 80 percent.

SOLAR READY REQUIREMENTS

67. The solar-ready provisions are mandatory for single-family residences without a Solar PV located in subdivisions of 10 or more residences. Often, these residences do not have a Solar PV due to an exception to the prescriptive Solar PV requirements in Section 150.1(c)14.

68. Solar readiness requires that a portion of the roof or overhang of the building is reserved as a solar zone where solar panels can be installed in the future at the owner's discretion. The area must comply with access, pathway, ventilation, and spacing regulations specified in the California Residential Code (Title 24, Part 2.5, Section R329.3) and other local jurisdictional requirements.

69. The solar zone must also adhere to size and azimuth requirements (Section 110.10(b)1A - Section 110.10(b)2). It must be free from solar obstructions, such as vents, chimneys, architectural features and roof mounted equipment. The solar zone must be clearly indicated on construction documents, which must also include structural design loads of the roof. This documentation is required so that at the time of a future solar PV installation, the structural design loads of the roof at the time the building was permitted are known. The Energy Code does not require estimating the structural loads of possible future solar equipment. (Section 110.10(b)3 - (Section 110.10(b)4).

70. Also, all buildings that comply by designating a solar zone must indicate on construction documents a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone plan for connecting a future Solar PV system. Alternatively, construction documents can indicate a pathway for routing of plumbing from the solar zone to a solar water-heating system (SWH) (Section 110.10(c)1, Section 110.10(c)2). In addition, the main electrical service panel shall have a minimum busbar rating of 200 amps and shall have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation (Section 110.10(e)).

71. There are six allowable exceptions to the solar zone area requirements that reduce or remove the need to reserve a portion of the roof area as a solar zone. (Section 110.10(b)1A, Exception 7 - 20 1-6) These exceptions allow alternate efficiency measures instead of establishment of a solar zone, so the requirements for zone shading, azimuth, design load, interconnection pathways, owner documentation, and electric service panel do not apply

ADDITIONAL COMMENTS