



PERMIT NO.: K20260####

DESCRIPTION:

ADDRESS:

OWNER:

DESIGNER:

DATE:

OCCUPANCY:

TYPE OF CONST:

REVIEW #:

Corrections listed below are to be made on plans before permit is issued. The approval of plans and specifications does not permit the violation of any section of the Building Code or other County Ordinance or State law. The following list does not necessarily include all errors and omissions.

PLAN CHECK COUNTER HOURS:

8:00 a.m. – 10:00 a.m. & 3:00 p.m. – 5:00 p.m.

MONDAY – FRIDAY

Plans have been checked in accordance with the 2025 California Building Code (CBC), the 2025 CalGreen Code, the 2025 California Energy Code and the Kern County Code of Building Regulations (KCCBR).

To facilitate rechecking, please identify next to each listed item below, the sheet of the plans upon which the corrections have been made. It is the applicant's responsibility to assemble and provide a complete set of plans for final approval.

The approval of plans and specifications does not permit the violation of any section of the Building Code or other County Ordinance or State law. The following list does not necessarily include all errors and omissions.

***Note: Additional time and material fees will apply after third plan review.**

BUILDING BUILT WITHOUT PERMIT

1. A California licensed engineer or architect is required to certify plans, calculations and all other documents. See CBC sections 107.1, 107.3.4 and CRC section R106.1
2. Any construction which the inspector cannot verify must be qualified by a California licensed engineer or architect to the satisfaction of the Building Official. This may require testing, please have the engineer of record submit a proposal for the qualification process. See CBC sections 104.4, 110.1, 110.6, 114.1 and CRC sections R104.7.2, R109.4 and R113.1.

GENERAL PLAN REQUIREMENTS

1. The nonstructural provisions of the CRC are applicable to this structure, NOT the CBC.
2. If the structure does not meet the prescriptive requirements of the CRC, an engineered design in accordance with the CBC is required. The prescriptive provisions of CBC Section 2308 are not acceptable.
3. Please update all notes and code sections to reflect the 2025 California Residential Code and the 2025 California Building Code where appropriate.
4. Per CRC Section R301.2.2 Structures in Seismic Design Category E shall be designed in accordance with the CBC and are required to be approved and stamped by a licensed architect or engineer.
5. The submitted plans show three stories for the proposed residence. However, three-story residences are prohibited in the Alquist-Priolo Fault Rupture Hazard Zone where this structure is to be located. **A complete plan check cannot be performed until this issue is addressed. DIRT FLOOR BASEMENT OK, FINISHED OR CONCRETE BASEMENT FLOOR COUNTS AS A STORY.**
6. Per California Business and Professions Code 5536.1, all persons preparing or being in responsible control of plans,

Checked by: PLAN CHECKER

Email: Planchecker@kerncounty.com

Tel: (661) 862-8650

Fax: (661) 862-8678



specifications, and instruments of service for others shall sign those plans, specifications, and instruments of service.
The designer must sign the plans.

7. Please submit **three (3) sets** of plans, calculations, energy documents, and any other required documentation. **(This is for FRAZIER PARK, LAKE ISABELLA and TEHACHAPI only)**
8. Please submit separate plans and calculations for all fences (over 7' tall only), pools, and retaining walls (over 4' tall only).
9. Note: Per Kern County Development Standards, one drive approach is allowed per lot.
10. Submit fully dimensioned plot plans drawn to scale and indicate North relative to the site. Show the location, size, and use of all structures on the lot. Properly identify property lines, lot dimensions, and distances between buildings. Show graphically (by arrows) drainage away from the building foundation.
11. Please specify on the plans the square footage of the different uses and provide a breakdown (i.e. dwelling unit, patio, porch, garage, etc.).
12. For newly constructed residential buildings, provide on the Cover Sheet number of solar panels and capacity of photovoltaic (solar) system in kilowatts (kW).
13. Per CRC Section R302.1 **for nonsprinklered buildings**, projections 2 to 5 feet from the property line require 1 hour fire resistance on the underside, heavy timber, or fire-retardant treated wood unless fireblocking is provided from the wall top plate to the underside of the roof sheathing. Walls with no separation to the property line must be 1 hour fire resistance rated in accordance with ASTM E119, UL 263, or Section 703.3 of the CBC with exposure from both sides. Openings in walls within 3 to 5 feet from the property line may be up to 25% maximum of the wall area. Openings in walls less than 3 feet are not allowed. Please see Table R302.1(1) for nonsprinklered buildings.
14. Per CRC Section R302.1 **for sprinklered buildings**, projections 2 to 3 feet from the property line require 1 hour fire resistance on the underside, heavy timber, or fire-retardant treated wood unless fireblocking is provided from the wall top plate to the underside of the roof sheathing. Walls less than 3 feet from the property line must be 1 hour fire resistance rated in accordance with ASTM E119, UL 263, or Section 703.3 of the CBC with exposure from the outside. Openings in walls less than 3 feet are not allowed. Please see Table R302.1(2) for sprinklered buildings.
15. Provide two sets of engineering calculations with 1st page stamped and signed by a California Registered Design Professional (RDP).
16. A California Registered Design Professional is required to stamp and sign all sets of the submitted plans.
17. All sheets of Standard Plans are required to be stamped and signed by a California licensed architect or engineer.
18. Per CRC Section R301.2.2.1, please provide complete and detailed calculations showing how the Seismic Design Category (SDC) was determined. Specify the SDC per Table R301.2.2.1.1 of the CRC. (applicable for Site Class A, B, C or D as determined by the building official).
19. Please specify on cover sheet of plans, the following structural information:
 - Floor and roof live load.
 - Ground snow load per Section 17.06.140 of the Kern County Code of Building Regulations.
 - Ultimate design wind speed in miles per hour, **and** wind exposure.
 - Seismic design category (SDC) **and** site class.
 - Flood design data, if located in flood hazard area established in Chapter 17.48 of the Kern County Code of Building Regulations.
20. Please specify, on plans, material specifications for the following:
 - Wood lumber species and grade
 - Steel specifications
 - Plywood grade and panel ratings
 - Glulam beam grade
 - Concrete compressive strength
 - Other materials specified on plans
21. A grading permit is required (please see the Grading Guidelines in the Documents Section for details). The following

work is exempt from a grading permit, all other work requires a grading permit:

- Building site excavation which:
 - i. Is less than 2 feet in depth; and
 - ii. Does not create a cut slope grader than 5 feet in height and steeper than 1½ horizontal to 1 vertical.
 - A fill not intended to support structures and which
 - i. Does not obstruct a drainage course; and
 - ii. Fill is to be placed on natural grade that has a slope flatter than 5 horizontal to 1 vertical; and
 - iii. Is less than 3 feet in depth, and does not exceed 50 cubic yards on any single lot.
22. Provide a statement of special inspections on the cover sheet, prepared by the RDP, in accordance with CBC Sec. 1704.3.
 23. Specify, on plans, special inspections per [Kern County Code of Building Regulations](#) (located in the Forms section, at the bottom of the webpage, under the Building Tab) Section 17.08.470 and CBC Sections 1705.5, 1705.11, and 1705.12.2 "Periodic special inspection is required for nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system, including wood shear walls, wood diaphragms, drag truss, braces, shear panels and hold-downs". Exception see CBC Section 17.05.12.1 and 1705.13.2.
 24. Submit a [written statement of responsibility from the contractor](#) (can be found under the Special Inspection Tab in the Forms section) to the building official and owner prior to issuance of the building permit in accordance with CBC Sec. 1704.4. If the contractor(s) is unknown prior to permit issuance, a statement shall be provided by the permit applicant on [the form provided by this department](#) (also found in same Tab). The contractor's statement shall be provided to the building official prior to commencement of work on the main wind or seismic force resisting system or components.
 25. Special inspection for structural steel shall be in accordance with the quality assurance inspection requirements of AISC 360.
 26. If the shop is to be considered an approved steel fabricator per CBC Section 1704.2.5, provide approval from a certified independent testing agency.
 27. Provide notes to require special inspections for high-strength field bolting per AISC 360 Tables N5.6-1, N5.6-2, and N5.6-3 and AISC 341 Tables J7-1, J7-2, and J7-3. Please add all these tables on the plans.
 28. Provide notes to require special inspections for field welding per AISC 360 Tables N5.4-1, N5.4-2, and N5.4-3 and AISC 341 Tables J6-1, J6-2, and J6-3. Please add all these tables on the plans.
 29. Per Kern County Building Inspection Division policy, standard plans are not permitted to have hand-written corrections. Any modifications require a new set of prints. Please run new prints wherever hand-written comments are found.
 30. On standard plans, all options and square footage must be listed on cover sheet.
 31. Only one (1) junior ADU is permitted and must comply with all the provisions of Government Code Section 65852.2 and 6582.22.
 32. Only one (1) ADU is permitted and it must comply with all the provisions of Government Code Section 65852.2.
 33. Please include a note on the plans stating that all fills under the new structure must be compacted to a minimum of ninety (90) percent of maximum density.
 34. Please furnish a tabulated percentage of walls to remain and new walls as reconstruction of 60% of existing structure will require a photovoltaic (solar) system and reconstruction of 90% of structure above foundation/slab requires an automatic fire sprinkler system per 2025 Kern County Building Code of Regulations Sections 17.04.030 and 17.06.172, respectively. Alternatively, on plans use different hatch patterns to prominently convey which walls are to remain and which walls are new. [Note: Roof accounts for 40% of the structure, exterior walls account for 30%, and the remaining 30% is plumbing, mechanical, and electrical]
 35. Please have Engineer or Architect of Record specify mechanical connectors (i.e. H2.5, H3, H6, etc) for truss members that have an uplift value greater than 500 pounds as noted in truss calculation package as uplift in certain truss members exceed the capacity of typical H1 connectors. The following truss members that exceed 500 pounds of uplift force include but are not limited to:

FOUNDATION REQUIREMENTS

Note: Where footings are located adjacent to a slope steeper than 1:3 (1 vertical to 3 horizontal), either at the top or the bottom, special clearances between the building and the sloping surfaces are required. Please provide clearances to ensure compliance with CRC Section R403.1.7 for protection against slope drainage, erosion and shallow failures.

1. Per the 2019 Kern County Code of Building Regulations Section 17.06.200, provide a minimum 2% slope away from building foundations a minimum of 10 feet or to an approved drainage discharge.
2. The maximum *prescriptive* value for allowable soil bearing pressure is 1500 psf if a soils investigation is not provided. Please provide a soils report for higher values or reduce the value used for allowable foundation pressure in the design calculations.
3. Per CRC Section R404.1.3.3.1, 3,000 psi concrete is required for basement and foundation walls in SDC D₀, D₁ and D₂. **(FOUNDATION WALLS ARE NOT SLAB ON GRADE FOOTINGS)**
4. Per CRC Section R403.1.6.1 and R602.11.1 / CBC 2308.3.1.1, 3"x3"x.229" steel plate washers are required on all anchor bolts in a braced wall line.
5. Add note on foundation plan: All hold downs must be tied in place prior to foundation inspection.
6. Per CRC Section R406, show how foundation walls enclosing interior spaces below grade are to be dampproofed or waterproofed.
7. Per CRC Section R304.1, wood framing members that rest on exterior foundation walls and are less than 8" from exposed earth shall be pressure treated
8. Per CRC Section R304.1, in crawl spaces or unexcavated areas located within the periphery of the building foundation, wood joists or the bottom of a wood structural floor where closer than 18 inches to exposed ground, wood girders, where closer than 12 inches to exposed ground, and wood columns were closer than 8 inches to exposed ground shall be preservative-treated.
9. Per CRC Section R304.1, specify on the typical footing detail treated wood or naturally durable wood for framing in contact with concrete or masonry that is in direct contact with earth.
10. Per CRC Section R304.1, wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather (e.g. balcony), such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier. This barrier shall provide positive drainage of water that infiltrates the moisture-permeable floor topping.
11. Per CRC Section R304.1, portions of wood structural members that form the structural supports of buildings, decks, balconies, porches or similar permanent building appurtenances where those members are exposed to weathering without adequate protection from a roof, eave, overhang or other covering that would prevent moisture or water accumulation on the surface or at joints between members shall be preservative-treated or naturally durable.
12. Per CRC Section R304.1, wood columns in contact with basement floor slabs unless supported by concrete piers or metal pedestals projecting not less than 1 inch above the concrete floor and separated from the concrete pier by an impervious moisture barrier must be preservative-treated or naturally durable.
13. Per CRC Section R304.1.2, wood embedded in concrete that is in direct contact with earth, or embedded in concrete that is exposed to the weather, or in direct contact with earth, shall be preservative treated wood
14. Per CRC Section R403.1.3 and the [Kern County Code of Building Regulations Section 17.06.222](#), all continuous footings shall have a minimum of one #4 bar at top and bottom or a single #5 bar in the middle third of the footing.
15. Per [Kern County Code of Building Regulations Section 17.06.222](#), structural plain concrete members are not permitted in Kern County except in certain circumstances. Please revise.
16. When under-floor clearances are required, the under-floor area shall be accessible through a minimum 18"x24" floor opening, or a minimum 16"x24" perimeter wall opening. Per CRC Section R408.4, all under-floor access openings shall be effectively screened or covered where the access opening opens to the exterior of the building.
17. Provide under floor ventilation per CRC Section R408.2 The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of under-floor space area, unless the ground surface is covered by a Class 1 vapor retarder material. When a Class 1 vapor retarder material is used, the minimum net area of ventilation openings shall not be less than 1 square foot for each 1,500 square feet of under-floor space area. In either case, one such ventilation opening shall be located within 3 feet of each corner of the building. All under floor openings shall be

covered as per CRC Section R408.2. Please show location and size of all vents on plans.

18. Show all pier sizes on the plans.
19. Specify maximum height of stem walls. Stem walls with pour joints shall be provided with #4 vertical rebar at 48" maximum spacing per CRC Section R403.1.3.1.
20. Specify maximum height of cripple wall. Cripple walls exceeding 4 feet in height shall be considered a story for purposes of stud sizing requirements per CRC Section R602.9.
21. Cripple wall bracing shall be in accordance with CRC Section R602.10.10. Additionally, cripple wall bracing in SDC D0 and D1 shall be WSP or CS-WSP.
22. Provide a step footing detail where slope exceeds 1:10 per CRC Section R403.1.5.
23. A **6-mil** vapor retarder is required under all slabs in heated buildings per CRC Section R506.3.3, and in attached unheated accessory structures, **including garages**, per [Kern County Code of Building Regulations](#) Section 17.06.261.
24. Per CRC Section R506.3.3.1 When a vapor retarder is required, a 4 inch thick capillary break shall be installed per CALGreen **Chapter 4, Division 4.5**. The vapor retarder shall be in direct contact with the concrete.
25. Dimension all exterior and bearing wall foundations.
26. Provide adequate footings under all bearing walls.
27. Show size, embedment, and location of all anchor bolts, washers and hold downs on foundation plan.
28. Per CRC Section R403.1.6, Foundation anchorage shall be located in the middle third of the width of the sill plate **and extend not less than 7 inches into concrete or grouted cells of concrete masonry units**.
29. Per CBC Section 2308.3.1.2, 5/8-inch diameter anchor bolts are required in Seismic Design Category E.
30. Per CRC Section R608.5.4.5, hooks for reinforcement in walls and foundations shall comply with CRC Figure R608.5.4(3).
31. Provide designs and details for caissons and grade beams.
32. Special inspection is required for post-tensioned foundations. Specify prominently on the foundation plan.
33. Per Simpson specifications for HDU hold downs, the *designer* must calculate and specify the anchor bolt type, length, and embedment for the HDU when not using the standard SSTB bolts. Please specify the SSTB bolts per the Simpson catalog listing for the HDU size on the plans, **OR** submit calculations and specifications for alternate anchorage type, length, and embedment. **SSTB BOLTS ARE FOR HOLD DOWN ANCHORS ONLY. TYPICAL SILL BOLTS ARE COMMON J-BOLTS.**

FRAMING REQUIREMENTS

1. Per CRC Section R301.3, the story height is limited to 11 feet 7 inches (measured from top of finished floor to top of finished floor or ceiling joist) when utilizing the prescriptive provisions of the CRC.
 - a. Exception: A story height not exceeding 13 feet 7 inches is permitted provide the maximum wall stud clear height does not exceed 12 feet, wall studs are in accordance with Exception 2 or 3 of Section R602.3.1 or an engineered design is provided.
2. Provide a complete roof-framing plan showing roof rafters, ceiling joists, trusses, bearing walls, purlins, collar ties, headers, posts, and beams.
3. For the cut & stack roof showing roof rafters and ceiling joists, please indicate if uninhabitable attics without storage or uninhabitable attics with limited storage. Ceiling joist size shall be sized based on the joist span in accordance with CRC Tables R802.5.1(1) and R802.5.1(2).
4. On the roof plan, specify grade, size, and nailing for the roof sheathing and indicate if blocking is required. Update nailing per CRC Table 602.3(1) items 31-33.
5. Per CRC Table R602.3(3) / CBC Table 2304.6.1, minimum nominal panel thickness of 7/16" wood structural panel exterior wall sheathing with 8d nailing shall be used in areas subject to a 115 mph or greater ultimate wind speed and exposure C if using a stud spacing greater than 16 inches on center.
6. Please provide a complete floor-framing plan showing floor joists, bearing walls, posts, and beams.

7. On the floor framing plan, specify the grade, size, and fastening for the floor sheathing and indicate if blocking is required.
8. (NEW) Per CRC Section R502.11, floor framing at open edges supporting required guards shall be designed and constructed to resist applicable guard loads. Guard support framing shall comply with Section R502.11.1 or R502.11.2 for guards not exceeding 44 inches in height or shall be designed by accepted engineering practice. Trusses or I-joists used as edge framing members shall be specifically designed to support guard loads.
9. In seismic design category D, E, or F, where the design shear value exceeds 350 pounds per linear foot, framing members receiving edge nailing from abutting panels shall not be less than 3" nominal members per CBC Table 2306.3(1), footnote g.
10. Provide a typical full-height framing cross section clearly showing top plate height, rafters, joists, beams, bearing walls, firestops, posts to foundation, footings, and foundation.
11. Detail all post-to-beam, all post-to-footing and post to girder connections to show positive connections.
12. Per CRC Section R502.4, bearing walls perpendicular to joists shall not be offset from supporting girders, walls, or partitions by more than the joist depth. Provide engineering calculations to support greater offsets.
13. Per CRC Section R602.9, exterior cripple walls having a stud height of 14" or less shall be sheathed on at least one side with wood structural panel, or the cripple walls shall be of solid blocking.
14. Per CRC Section R602.7, specify all header sizes for openings in walls.
15. Per CRC Section R602.7.5, the number of full height 'king' studs required at each end of headers must agree with CRC Table R602.7.5.
16. Per CRC Section R802.4.4, if a roof pitch is less than 3:12 (25% slope), the ridge, hips, and valleys must be designed as vertical load-carrying members (beams).
17. Per CRC Section R802.3, the depth of the cut end of the supported rafters shall not be greater than that of all ridge, hip, and valley framing. Ridge boards shall not be less than 1-inch nominal thickness.
18. Per CRC Section R802.4.3, the depth of the cut end of the supported rafters shall not be greater than that of all ridge, hip, and valley framing. Hips and valleys shall not be less than 2-inch nominal thickness.
19. Per CRC Section R802.5.2, provide rafter ties to rafters where ceiling joists are perpendicular to rafters. or the ridge shall be designed as a beam.
20. Per CRC Section R802.5.2, where the ceiling joists are installed above the bottom third of the rafter height, the ridge shall be designed as a beam.
21. Per CRC Section R802.4.5, brace ridge, purlins, hips, and valleys to interior bearing walls at a slope not less than 45 degrees from horizontal. Braces shall not be spaced more than 4 feet on center and unbraced lengths of braces shall not exceed 8 feet.
22. Please provide/update fastening schedule in conformance with CRC Table R602.3(1).
23. Per CEC Section 150.0(g), Class I or II vapor retarders are required on the conditioned space (interior) side of exterior walls, vented attics and unvented attics with air-permeable insulation in Climate Zones 14 and 16.
24. Per CRC Table R602.3(5), bearing walls supporting two floors, a roof, and a ceiling must be framed with 3x4 or 2x6 studs.
25. Per CRC Table R602.3(5) for bearing walls, the maximum unbraced height of laterally unsupported 2x4, 3x4, and 2x6 studs is 10'-0". Please provide engineering calculations to support greater heights.
26. Per CRC Table R602.3(5) for nonbearing walls, the maximum unbraced height of laterally unsupported 2x4 and 3x4 studs is 14'-0". Please provide engineering calculations to support greater heights.
27. Per CRC Table R602.3(5) for nonbearing walls, the maximum unbraced height of laterally unsupported 2x6 studs is 20'-0". Please provide engineering calculations to support greater heights.
28. _____ truss manufacturer is currently not a Kern County approved truss manufacturer. Please submit a copy of _____'s most current quality assurance/quality control report to Michael Jackson at atjacksonm@kerncounty.com or fax to (661)862-8661 to become an approved truss manufacturer.
29. In the case of Standard Plans, truss drawings and calculations may not be deferred. Please submit two copies of truss

calculations that have been reviewed and approved by the Engineer or Architect of Record. The truss submittal shall be from a Kern County approved truss manufacturer.

30. Provide two complete sets of truss drawings and calculations **OR** add the following note: ***Deferred truss submittal shall conform to CBC Section 107.3.4. Deferred items shall be submitted to the RDP in responsible charge who shall review & forward them to the building official with a notation and signature indicating that the items have been reviewed and found to be in general conformance to the design of the building, PRIOR TO INSTALLATION.***
31. Provide two complete sets of truss drawings and calculations with a notation and signature by the Engineer or Architect of Record indicating that the items have been reviewed and found to be in general conformance to the design of the building.
32. Although the truss submittal *may* be deferred, a schematic of the desired layout is required. Please indicate how the Registered Design Professional would like to achieve the roof configuration on the plans. Identify direction and orientation of all truss spans **for the entire roof**. Indicate drag trusses where required to carry entire wall line load across the diaphragm into shear walls below. Identify girder trusses where they are desired, and verify that both 2x framing @ 16" o.c. and continuous footings are sufficient to carry reaction loads. Where applicable, indicate additional truss support such as 4x posts on pad footings.
33. Provide a detail for roof trusses at nonbearing walls for perpendicular and parallel orientations. Specify ½" clearance between trusses and nonbearing walls (i.e. truss clips).
34. Please specify truss support for all girder trusses (i.e. 4x posts).
35. Please verify that all recommendations per the engineering calculations are reflected on the plans.
36. Show support for concentrated loads at...
37. Show support for ridge/hip/valley intersections.
38. Show truss or rafter uplift connectors to provide uplift resistance per CRC Table R802.11.
39. Show rafter tie connections per CRC Table R802.5.2(1) / CBC Table 2308.7.3.1 unless calculations are provided to justify otherwise.
40. Provide collar ties in upper third of attic space per CRC Section R802.4.6 and connected per Table R602.3(1).
41. Ridge straps shall be permitted to replace collar ties provided they comply with CRC Section R802.4.6
42. Prescriptive design of decks shall be in accordance with CRC Section R507.3-R507.9. Deck wood post sizes shall be in accordance with Table R507.4 Per CRC R507.5 Provide deck beam design in accordance with Tables R507.5(1)–R507.5(4) based on joist span and cantilever length. Beam plies shall be fastened with two rows of 10d nails at 16" o.c. per edge. Alternate beam materials shall be engineered per accepted engineering practice.
43. Deck ledgers shall be 2-inch by 8-inch nominal preservative treated and connected to the band or rim joist with ½" diameter hot-dipped galvanized lag screws in accordance with CRC Table R507.9.1.3(1), OR shall be designed by an engineer or architect.
44. (NEW) Per CRC Section R507.9.1.5, install flashing above deck ledgers attached to wood-frame construction. Flashing shall extend a minimum of 2 inches vertically above the ledger and not less than 4 inches horizontally beyond the ledger face, or extend to the ledger face and not less than 1/4 inch down the ledger face, to prevent water intrusion.
45. (NEW) Per CRC Section R507.9.1.6, the water-resistive barrier shall be lapped over the vertical leg of the ledger flashing or counterflashing a minimum of 2 inches, or the full height of the vertical flashing leg (whichever is less) and shall be continuous behind the ledger and ledger flashing in accordance with Section R703.2
46. (NEW) Per CRC Section R507.9.1.7, where deck ledgers are attached to existing walls without a water-resistive barrier, install a water-resistive barrier behind the ledger and ledger flashing extending to the top of the vertical leg of the flashing and a minimum of 1/2 inch beyond the sides and bottom of the ledger. Install a self-adhering membrane counterflashing lapped a minimum of 2 inches over the vertical flashing leg and a minimum of 2 inches onto the existing sheathing.
47. Per CRC Section R507.9.2 decks shall be attached to the main structure with not less than two hold-down tension devices (1500 lbs./ea.) spaced within 24-inches of each end of each deck per Figure R507.9.2(1), OR at four locations per deck with a minimum allowable stress design capacity of 750 lbs./ea. per Figure R507.9.2(2), OR shall

be designed by an engineer or architect.

STRUCTURAL/LATERAL REQUIREMENTS

1. If the electrical panel is to be positioned within a shear wall, engineering calculations and details must be provided. Please add the following note on the shear wall plan: The electrical panel may not be located within a shear wall.
2. Provide shear transfer detail and design for walls that do not stack up (two-story or split level).
3. Specify on plans the nail size and spacing for all shear walls/braced wall panels. Provide a shear wall schedule including grade and thickness of panels, anchorage, capacity, and other relevant information.
4. Indicate all walls that are balloon framed in rooms with sloped ceilings and in rooms with gabled walls.
5. For shear walls, provide shear transfer connection details at roof, floors, and foundation.
6. Please provide detail for shear transfer from roof to interior shear walls.
7. Shear walls may receive lateral loads from the opposite side of the structure from where they are located. Drag connections are required to transfer the full wall line load across the entire diaphragm (end to end). Provide design and detail for all drag connections (i.e. straps, fasteners, blocking, drag trusses, etc.).
8. Provide metal straps connecting to plate lines on each side of bay windows and other flush beams where the plate line is interrupted.
9. Please comply with all framing requirements as per CRC Chapter 6.
 - a. Stud sizing, height and maximum spacing shall be in accordance with CRC Table R602.3(5).
 - b. Provide calculations clearly showing the total length of wall bracing required per CRC Tables R602.10.3(1) and R602.10.3(3) and the applicable adjustment factors in Table R602.10.3(2) and R602.10.3(4) respectively.
 - c. **Per CRC Section R602.10.1**, wall braced wall panels and braced wall lines are to be clearly identified on plans.
 - d. Per CRC Table R602.10.1.3, braced wall lines shall not be spaced more than 25 feet on center and shall be in accordance with CRC Section R602.10.1.
 - e. Per CRC Section R602.10.2.2, the distance between adjacent edges of braced wall panels along a braced wall line shall be no greater than 20 feet.
 - f. Per CRC Section R602.10.2.3, braced wall lines greater than 16 feet shall have a minimum of two braced wall panels.
 - g. Per CRC Table R602.10.5, for methods DWB, WSP, SFB, PBS, PCP, and HPS, and a plate height of 10' or less, each braced wall panel shall be at least 48 inches in length. Please see the CRC for exceptions and make it clear on the plans or calculations which exceptions are being utilized.
 - h. Braced wall panels must begin at the end of the braced wall line. Wall bracing of WSP may begin no more than 10 feet from the end of the braced wall line but must comply with either condition 4 or condition 5 of Figure R602.10.7.
 - i. **Per CRC Section R602.10.1.2, each braced wall line shall be located such that no more than 2/3 of the required braced wall panel length is located to one side of the braced wall line. Braced wall panels shall be permitted to be offset up to 4 feet from the designated wall line.**
 - j. Braced wall panel connections shall be in accordance with CRC Section R602.10.8. Clearly show or note on the plans, and provide a connection detail.
 - k. Live loads shall not exceed 40 psf for floors.
 - l. Show a typical continuous footing beneath all braced wall panels unless the plan dimension does not exceed 50 feet, then continuous foundations are only required at the exterior walls per CRC Section R403.1.2.
10. Please maintain maximum diaphragm dimension ratios for shear walls per AF&PA SDPWS Table 4.2.4. Please maintain maximum shear wall aspect ratios per AF&PA SDPWS Table 4.3.4. For walls that do not initially meet the criteria, please indicate strapping at headers and sills to modify the bracing point of the wall – continuous sheathing is not enough. **Please also address SDPWS Section 4.3.5. The minimum length of a wall pier per SDPWS Section 4.3.5.2 is 2 feet.** Typically, a detail is provided showing straps to either side of the window header and to either side of the window sill plate and vertically at either side as well. Please provide an appropriate detail.

11. Per CRC Section R602.10.4.1 item #2, mixing intermittent bracing methods with continuously sheathed bracing methods is not permitted on the same floor (in SDC D and E). Please address.
12. Per CRC Section R602.10.4.1 item #3, mixed intermittent bracing methods are not permitted within the same braced wall line (in SDC D and E). Please address.
13. Comply with CRC wall bracing requirements OR engineering calculations per the CBC must be provided.

ROOFING REQUIREMENTS

1. Per CRC Chapter 9, roof pitch is not adequate for roof type specified. Provide minimum pitch of _____.
2. Please specify roof pitch.
3. Per CRC Section R905.2.8.5, a drip edge shall be provided at eaves and gables of shingle roofs. Adjacent pieces of drip edge shall be overlapped a minimum of 2 inches.
4. Per CRC Section R903.4, roof drains (if used) shall be sized and installed per the California Plumbing Code.
5. Specify required underlayment for roofing per CRC Section R905.1.1.

CALIFORNIA WILDLIFE-URBAN INTERFACE REQUIREMENTS

1. Please address the following Wildlife-Urban Interface Code requirements (Items 2-22 below) for the project located in a "XXXX Hazard Area." A pdf of all WUI requirements can be found [here](#) in the Documents section.
2. Per CWUI 504.2, roofs shall have a roof assembly that complies with a Class A fire classification when tested in accordance with ASTM E108 or UL790. (See exceptions CWUI 504.2)
3. Per CWUI 504.2.2, when installed, valley flashing shall be not less than 26 gage galvanized sheet metal installed over a minimum 36-inch-wide underlayment consisting of one layer of 72 pound mineral-surfaced nonperforated cap sheet complying with ASTM D3909 running the length of the valley.
4. Per CWUI 504.3, the exposed underside of enclosed roof eaves and soffits shall be protected on the exposed underside by one or more of the following:
 - Noncombustible materials
 - Ignition-resistant building materials
 - Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263.
 - 2-inch nominal dimension lumber.
 - 1-inch nominal fire-retardant-treated lumber or ¾ inch nominal fire-retardant-treated plywood, identified for exterior use and complying with CBC Section 2303.2
 - Boxed-in roof eave soffit assemblies with an underside that meets the performance criteria in Section 504.7.2 when tested in accordance with the test procedures set forth in ASTM E2957
 - Boxed-in roof eave soffit assemblies with an underside that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Facias are required and shall be ignition-resistant building materials, fire-retardant-treated wood labeled for exterior use and complying with CBC Section 2303.2, materials approved for not less than 1-hour fire-resistance-rated construction or 2-inch nominal dimension lumber.

5. Per CWUI 504.3.1, the exposed roof deck on the underside of unenclosed roof eaves shall consist of one or more of the following:
 - Noncombustible materials
 - Ignition-resistant building materials
 - Fire-retardant-treated wood labeled for exterior use and complying with CBC Section 2303.2
 - Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263.
 - 2-inch nominal dimension lumber.
 - One layer of 5/8 inch Type X gypsum sheathing applied behind an exterior covering on the underside of the roof deck
 - The exterior portion of a 1-hour fire-resistance-rated exterior assembly, as tested in accordance with ASTM E119 or UL263, applied to the underside of the roof deck designated for exterior fire exposure, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual

6. Per CWUI 504.4, gutters and downspouts shall be constructed of noncombustible material. Gutters shall be provided with an approved means to prevent the accumulation of leaves and debris in the gutter.
7. Per CWUI 504.5, exterior walls of buildings or structures shall be constructed with one or more of the following methods, unless they are covered with an exterior wall covering complying with Sections 504.5.2 or 504.2.1
 - 1-hour fire-resistance-rated construction on the exterior side
 - Noncombustible materials
 - Heavy timber
 - Log wall construction
 - Wall assemblies that have been tested in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1
 - Wall assemblies suitable for exterior fire exposure containing one layer of 5/8 inch Type X gypsum sheathing applied behind the exterior wall covering or cladding on the exterior side of the framing.
 - Wall assemblies suitable for exterior fire exposure with a 1-hour fire-resistance rating, rated from the exterior side, as tested in accordance with ASTM E119 or UL 263
 - Fire-retardant-treated wood labeled for exterior use and complying with CBC Section 2303.2
8. Per CWUI 504.5.1, a minimum of 6 inches of metal flashing or noncombustible material applied vertically on the exterior of the wall shall be installed at the ground, decking and roof intersections.
9. Per CWUI 504.5.2, exterior wall coverings shall comply with one more more of the following requirements:
 - a. Noncombustible material
 - b. Ignition-resistant building material labeled for exterior use
 - c. Fire-retardant-treated wood labeled for exterior use and complying with the requirements of CBC Section 2303.2
 - d. Fire-retardant-treated wood shingles and shakes which have been qualified in accordance with CBC Section 1505.6 for use as "Class B" roof covering shall be an acceptable alternative wall covering material where installed over solid sheathing.
10. Per CWUI 504.6, buildings and structures shall have underfloor areas enclosed to the ground with exterior walls in accordance with Section 504.5
 - a. Exception: complete enclosure shall not be required where the underside of exposed floors and exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction or fire-retardant-treated wood. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of CBC Section 2303.2.
11. Per CWUI 504.7, unenclosed accessory structures attached to buildings with habitable spaces and projections, other than decks, shall be heavy timber construction or constructed of one of the following:
 - a. Noncombustible materials
 - b. Fire-retardant-treated wood identified for exterior use and meeting the requirements of CBC Section 2303.2
 - c. Ignition-resistant building materials in accordance with Section 503.2
 - d. Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263
 - e. One layer of 5/8-inch Type X gypsum sheathing applied behind the exterior covering on the underside of the ceiling
 - f. The exterior portion of a 1-hour fire-resistance-rated exterior assemble, as tested in accordance with ASTM E119 or UL 263, applied to the underside of the ceiling assembly, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
 - g. The underside of a floor projection assembly that meets the performance criteria in Section 504.7.2 when tested in accordance with the test procedures set forth in ASTM E 2957.
 - h. The underside off a floor projection assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3
12. Per CWUI 504.7.1 the underside of projections shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall be protected by one or more of the following:
 - Noncombustible materials
 - Ignition-resistant building material shall be labled for exterior use and shall meet the requirements of Section 503.2

- Fire-retardant-treated wood shall be labeled for exterior use and shall meet the requirements of CBC Section 2303.2
- Materials approved for not less than 1-hour fire-resistance-rated exterior assembly, as tested in accordance with ASTM E119 or UL 263, applied to the underside of the floor, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
- The underside of a floor assembly that meets the performance criteria in Section 504.7.2 when tested in accordance with the test procedures set forth in ASTM E2957.
- The underside of a floor assembly that meets the performance criteria in accordance with the test procedures set for in SFM Standard 12-7A-3.

Exception: Structural columns and beams are not required to be protected in accordance with Section 504.7.1 when constructed with sawn lumber or glue-laminated wood with the smallest minimum dimension of 4 inches. Sawn or glue-laminated planks shall be splined, tongue-and-groove, or set close together and well spiked.

13. Per CWUI 504.7.3 the walking surface material of decks, porches, balconies and stairs shall comply with the requirements of Sections 504.7.3.1 through 504.7.3.4
14. Per CWUI 504.7.3.1 a minimum of a 6-inch metal flashing, applied vertically on the exterior of the wall, shall be installed at all deck-to-wall intersections.
15. Per CWUI 504.7.3.2 the walking surface material of decks, porches, balconies and stairs shall be constructed with any of the following materials:
 - Material that complies with the performance requirements of Section 504.7.3.3 when tested in accordance with ASTM E2632 and STM E2726
 - Ignition-resistant building material that complies with the performance requirements of Section 503.2.4
 - Material that complies with the performance requirements of both SFM Standard 12-7A-4 and Section 503.2.4
 - Fire-retardant-treated wood labeled for exterior use and complying with CBC Section 2303.2
 - Noncombustible material.
 - Any material that complies with the performance requirements of SFM Standard 12-7A-4A and any attached exterior wall covering that is noncombustible or ignition-resistant building materials (exception)
 - Any material that complies with the performance requirements of Section 504.7.3.4 when tested in accordance with ASTM E2632 and any attached exterior wall covering that is noncombustible or ignition-resistant building materials. (exception)
16. Per CWUI 504.8, exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be constructed of any of the following:
 - Multilayered glazed panels with at least one pane of tempered glass complying with CBC Section 2406
 - Glass block
 - Glazing with a fire-protection rating of not less than 20 minutes when tested according to NFPA 257 or UL 9, and shall be exempt from the hose stream test.
 - Glazing meeting the performance requirements of SFM Standard 12-7A-2
17. Per CWUI 504.8.1, the wall assembly behind structural glass veneer shall comply with Section 504.5
18. Per CWUI 504.8.2 operable skylights shall be protected by a noncombustible mesh screen and the dimensions of the openings in the screen shall not exceed 1/8 inch
19. Per CWUI 504.9, exterior doors shall be constructed in accordance with any of the following:
 - Noncombustible construction
 - Solid-core wood not less than 1 3/4 inch thick
 - The exterior doors shall be constructed of solid core wood that complies with the following requirements:
 1. Stiles and rails shall not be less than 1 3/8 inch thick
 2. Raised panels shall not be less than 1 1/4 inches thick, except for the exterior perimeter of the raised panel that shall be permitted to taper to a tongue not less than 3/8 inch thick.
 - Have a fire protection rating of not less than 20 minutes when tested according to NFPA 252, UL 10B or UL 10C

- The exterior surface or cladding meeting the performance requirements of Section 504.9.3 when tested in accordance with ASTM E2707
 - The exterior surface or cladding shall be tested to meet the performance requirements SFM Standard 12-7A-1
20. Per CWUI 504.9.1, automatic garage door openers for vehicle doors serving a residential building shall be equipped with a battery backup function. Per CWUI 504.9.2, exterior garage doors shall resist the intrusion of embers by preventing gaps between doors and door openings, at the bottom, sides and tops of doors, from exceeding 1/8 inch. Gaps between doors and door openings shall be controlled by one or more of the following methods:
- Weather-stripping products constructed of materials that comply with the following requirements:
 1. The tensile strength of the material shall be tested in accordance with ASTM D638 before and after exposure to ASTM G1555 for a period of 2,000 hours, and the maximum allowable difference in tensile strength values between exposed and nonexposed samples shall not exceed 10 percent.
 2. When tested to UL 94, the materials shall have a flammability rating of V-2 or better. Door overlaps onto jambs and headers.
 - Garage door jambs and headers covered with metal flashing.
21. Per CWUI 504.10, where provided, ventilation openings for enclosed attics, gable ends, ridge ends, under eaves and cornices, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation, foundations and crawl spaces, or any other opening intended to permit ventilation, either in a horizontal or vertical surface, shall be in accordance with Section 504.10.1 or Section 504.10.2 to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.
22. Per CWUI 504.10.1, ventilation openings shall be fully covered with Wildfire Flame and Ember Resistant vents approved and listed by the California State Fire Marshal, or WUI vents, tested in accordance with ASTM E2886, to demonstrate compliance with all the following requirements:
- There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
 - There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
 - The maximum temperature of the unexposed side of the vent shall not exceed 662° F
 - Per CWUI 504.10.2, vents that are installed on a sloped roof, such as dormer vents, shall comply with all of the following: Vents shall be covered with a mesh where the dimensions of the mesh therein shall be a minimum of 1/16 inch and shall not exceed 1/8 inch in diameter.
 - The vent and mesh material shall be noncombustible
 - The vent and mesh material shall be corrosion resistant
23. Per CWUI 504.10.3, gable-end dormer vents shall be located not less than 10 feet from lot lines. Underfloor ventilation openings shall be located as close to grade as practical.
24. Per CWUI 504.11, accessory buildings or miscellaneous structures that have the potential to pose a significant exterior fire exposure hazard during wildfires shall be constructed to conform to the ignition-resistance requirements of this section.
25. Per CWUI 504.11.2 Miscellaneous structures that require a permit, and accessory buildings of any size, when separated from the applicable building on the same lot by a distance of less than 3 feet, shall be constructed of noncombustible materials or ignition-resistant building materials as described in Section 503.2.4
26. Per CWUI 504.11.3, Accessory buildings that are greater than 120 square feet in size and separated from an applicable building on the same lot by a distance of 3 feet or more but less than 50 feet shall be constructed of noncombustible materials or of ignition-resistant building materials as described in Section 503.2.4
27. Per CWUI 504.11.4, where required by the code official, accessory buildings 120 square feet or less and separated from an applicable building on the same lot by a distance of 3 feet or more but less than 50 feet shall be constructed of noncombustible materials or of ignition-resistant building materials as described in Section 503.2.4
28. Per CWUI 504.11.5, where required by the code official, miscellaneous structures that require a permit and are separated from an applicable building on the same lot by a distance of 3 feet or more but less than 50 feet shall

be constructed of noncombustible materials or of ignition-resistant building materials as described in Section 503.2.4

29. Per CWUI 504.11.6, roof assemblies and roof coverings of accessory buildings required to be constructed entirely of noncombustible materials or of ignition-resistant building materials shall comply with Section 504.2 and 504.2.1. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions. Roof assemblies in Fire Hazard Severity Zones shall comply with a Class A fire classification when tested in accordance with ASTM E108 or UL 790.
30. A water tank must be supplied for fire protection. This tank shall have the following properties:
 - a. Water tank with a minimum capacity of 3,500 gallons, and
 - b. Tank must be within 200 feet of the structure, and
 - c. Tank must have a 2 ½" valved male outlet with fire hose threads (National Standard Thread) with an automatic fill device and level indicator, and
 - d. Fire vehicles must be able to drive to the hose connection on the tank, OR
 - i. Install a fire hydrant within 400 feet of the structure, and
 - ii. Minimum hydrant flow shall be 500 GPM at 20 PSIG
31. Alternatively, prove a fire department hydrant exists within 600 feet of the residence provided the residence has an approved sprinkler system installed.
32. Driveway to the structure and any applicable water supply must have the following attributes:
 - a. Minimum of 20 feet wide with minimum 13 feet-6inches feet of vertical clearance, and
 - b. Surfaced so as to provide all-weather driving capabilities - all-weather hard-surfaced.
 - c. Maximum slope of 10%, and
 - d. Provide an approved turnaround when a dead-end driveway exceeds 150 feet
33. Address numbers shall be posted and visible from the street prior to construction.
 - a. Address numbers shall be Arabic numbers or alphabetical letters, and
 - b. Each character shall be not less than 4 inches high with a minimum stroke width of ½ inch.

FIRE, SAFETY, AND EXIT REQUIREMENTS

1. Please note that 4030 "sliders" (horizontal and single hung) do not meet the 5.7 square feet minimum net clear openable area requirements for egress per CRC Section R319.2.1 Please revise these windows in the sleeping rooms and/or basement areas.
2. Per CRC Section R319 Emergency escape and rescue openings, sleeping rooms, habitable attics and basements shall have at least one operable window or door which shall open directly onto a public street, public alley, yard, or exit court. The egress openings shall fulfill all of the following requirements:
 - a. Minimum 5.7 square feet of net clear openable area (except grade floor openings may be 5 square feet).
 - b. Minimum 24" net clear openable height
 - c. Minimum 20" net clear openable width
 - d. Bottom of the opening not more than 44" above the floor (windows only), except in replacement windows, see R319.2.5
 - e. Under decks, porches and cantilevers, fully openable and path not less than 36" in height and 36" in width.
3. Per CRC Section R319.5, replacement windows are exempt from R319.2 and R319.4.4, provided the window is the manufacturer's largest standard size window that will fit in the frame and not a change of occupancy (Garage conversions are a change of occupancy)
4. Per CRC Section R310 for new construction, graphically show on plans and specify permanently wired smoke alarms with battery backup. They are required in each sleeping room; on the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms; on each story of a dwelling including basements and habitable attics, and in the hallway and in the room open to the hallway in dwelling units where the ceiling height of a room open to a hallway serving bedrooms exceed that of the hallway by 24 inches or more.

5. Per CRC Section R310 for new construction where there is an attached garage or fuel burning appliance or fireplace, graphically show on plans and specify permanently wired carbon monoxide alarms with battery back-up and complying with UL 2075. They are required outside of each sleeping area in the immediate vicinity of bedrooms; and on each level of a dwelling unit, including basement; and in bedrooms or its attached bathroom where a fuel burning appliance is located.
6. Per CRC Section R310.3.3 Smoke alarms and detectors must be a minimum of 20 feet from cooking appliance, 3 horizontal feet from bathroom door, 3 feet from air supply registers, and 3 feet from the tip of the blade of a ceiling fan.
7. For existing buildings that undergo alterations/repair/additions, graphically show on plans and specify smoke alarms and carbon monoxide alarms and their interconnectivity as applicable per CRC Section(s) R310 and/or R311.
8. Per CRC Section R311.5, where more than one carbon monoxide (CO) alarm is required to be installed within an individual dwelling unit in accordance with Section R311.3, the alarm devices shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of CO alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.
9. Per CRC Section R321.1, graphically show guards for open-sided walking surfaces, including floors, stairs, ramps, porches, decks, and landings that are located more than 30 inches above floor or grade. Specify maximum opening between railings as required.
10. Per CRC Table R301.5, guards shall support a 200 lb concentrated load. Please provide calculations.
11. Per CRC Section R302.11, provide horizontal firestops at 10'-0" maximum intervals, and vertical at ceiling and floor levels and elsewhere as required.
12. Per CRC Section R318.3, specify landings at all doors. The landing shall be at least as wide as the door and a minimum of 36" in length.
13. Per CRC Section R318.3.1, the landing on each side of the required egress door shall not be more than 1½ inches lower than the top of the threshold, except the exterior landing shall not be more than 7¾ inches below the threshold provided the door does not swing over the landing.
14. Per CRC Section R311.3.2, the landing on each side of doors other than the required egress door shall not be more than 7 ¾ inches below the threshold, except a landing is not required where a stairway of two or fewer risers is located at the exterior side of the door, and the door does not swing over the stairway.
15. Per CRC Section 318.8, Ramps serving the egress door shall have a slope of not more than 1:12. All other ramps shall have a maximum slope of 1:8.
16. Per CRC Section R318.7, provide stair and landing details reflecting the following:
 - a. The minimum clear width is 36" at all points above the handrail height.
 - b. The minimum headroom is 6'-8" (except spiral =78")
 - c. The rise is to be 7.75" maximum.
 - d. The run is to be at least 10".
 - e. The maximum vertical rise for a flight of stairs is 151 inches (12'-7") between floor levels or landings.
 - f. The run for winding stairs is to be at least 6" at the narrowest, and 10" at a point 12" from the narrowest.
 - g. The minimum landing depth must equal or exceed the stair width.
 - h. The handrails shall be between 34" and 38" above landings and the nosing of treads, CRC Section R311.7.8.1.
 - i. Structural details are required for top-of-stairway connections (hangers, blocking, fasteners, etc.)
 - j. Structural details are required for landing connections (hangers, blocking, fasteners, etc.)
 - k. Structural details are required for bottom-of-stairway connections (sill plate, fasteners, etc.)
 - l. Stairways within dwelling units shall have an illumination level on tread runs of not less than 1 foot-candle (11 Lux), with a wall switch at each floor level where the stairway has six or more risers, CRC Section R303.7.
 - m. Exterior stairways shall be provided with an artificial light source located at the top landing. If providing access to a basement from the outdoor grade level, an artificial light source shall be located at the bottom landing of the

stairway.

- n. Open risers are not permitted if greater than 30-inch above the floor or grade below unless the opening is small enough to prevent the passage of a 4-inch diameter sphere.
17. Per CRC Sections R318.7.12 and R318.7.13, provide alternating tread devices and ships ladders details reflecting the following:
 - a. Neither ladder is permitted as a means of egress. Exception(s) must comply with both of the following:
 - i. Alternating tread devices or ships ladders are allowed to be used as an element of a means of egress for lots, mezzanines and similar areas of 200 gross square feet or less
 - ii. Where such devices do not provide exclusive access to a kitchen or bathroom.
 - b. The minimum clear width is 20" at and below the handrails for both types of ladders.
 - c. The rise is to be 9.5" maximum for both ladder types.
 - d. Alternating tread devices shall have a tread depth of not less than 5 inches, a projected tread depth of not less than 8.5 inches, and a tread width of not less than 7 inches.
 - e. Ships ladders shall have a tread depth of not less than 5 inches. The tread shall be projected such that the total of the tread depth plus the nosing projection is not less than 8.5 inches.
 - f. Alternating tread devices shall result in an angle of ascent from horizontal between 50 and 70 degrees.
 - g. The handrail height is to be uniform and not less than 30" and not more than 34" for both ladder types.
18. Per CRC Sections R320, provide handrails details with the following:
 - The handrail projection shall not project more than 4 ½" on either side of the stairway, except in the following case:
 - Where nosing of landings, floors or passing flights project into the stairway reducing the clearance at passing handrails, handrails shall project not more than 6 ½" into the stairway, provided that the stair width and handrail clearance are not reduce to less than that required.
 - Handrails adjacent to a wall shall have a space of not less than 1 ½" between the wall and the handrails.
 - Handrails shall be continuous for the full length of the flight, form a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals.
19. Per CRC Section R318.7.11.1, spiral stairways shall have identical treads with a 6 ¾" minimum clear tread depth at the walkline. The walkline radius shall not be greater than 24 ½". The minimum stairway width shall be 26". Maximum rise shall be 9½" and 6'-6" minimum headroom.
20. Per CRC Section R302.7, specify ½-inch gypsum board to protect walls and soffits beneath stairs where enclosed usable space occurs below.
21. Per CRC Section R302.13 floor assemblies not required elsewhere in this code to be fire rated shall be provided with ½-inch gypsum wallboard membrane, 5/8-inch wood structural panel membrane on the *underside* of the floor framing member.
22. Per CRC Section R314, Mezzanines shall have a clear height above and below of not less than 7 feet, an aggregate area of not more than one-third of the floor area of the room in which it is located, provide a means of egress which complies with CRC Section R318, and be open and unobstructed to the room in which they are located. Exceptions to the aggregate area limitation, equipped with a fire sprinkler system in accordance with Section P2904, must meet the following:
 - Except for enclosed closets and bathrooms, the mezzanine is open to the room in which such mezzanine is located.
 - The opening to the room is unobstructed except for walls not more than 42 inches in height, columns and posts.
 - The exceptions to Section R314.5 ("Openness") are not applied.
23. Per CRC Section R807.1, graphically show a minimum 22"x30" rough attic access opening with 30" clear headroom clearance. For access to attic space other than above the garage, the attic access must be located within the residence.

24. Per CRC Section R324.1, safety glazing (tempered glass) is required for windows that are within 60" above the walking surface and either within 24" doors when within the same plane or less than 180 degrees from the plane of the door in a closed position and within 24" of the hinge of an in-swinging door. Also, specify safety glazing for doors and enclosures of hot tubs, whirlpools, saunas, steam rooms, bathtubs, and showers where the bottom exposed edge of the glazing is less than 60" above and within 60" measured horizontally in a straight line to a standing surface and drain inlet. (Note: see exceptions).

CODE REQUIREMENTS

1. Per CRC Section R309, an automatic fire sprinkler system shall be installed in every new one- and two-family dwelling unit. Please provide proof of permit from the fire department. **IF PART OF A STANDARD PLAN FIRE REQUESTS A MIRRORED ELECTRICAL PLAN FOR MIRRORED FLOOR PLANS TO MORE EASILY CHECK COMPLIANCE DURING INSPECTION, PLEASE PROVIDE. FIRE SPRINKLERS NOT REQUIRED FOR SECONDARY UNITS MEETING THE REQUIREMENTS OF CRC 309.2** (Fire sprinklers required for fire rehab over 90%)
2. Per CRC Section R321.2.1, in dwelling units, where the bottom of the clear opening of an operable window opening is located less than 24 inches above the finished floor and greater than 72 inches above the finished grade or surface below, fall protection is required. Please see the code for information regarding openings located within 24 inches of the finished floor.
3. Please specify how the windows are to open (i.e. slider, casement, single hung, etc.).
4. Please specify all door types (i.e. solid core, French, etc.).
5. Per CRC Section R312.1, habitable rooms, except kitchens, shall have a net floor area of not less than 70 sq. ft.
6. Per CRC Section R312.2, no habitable room, except a kitchen, shall be less than 7'-0" in any horizontal dimension. (Exception: limited-density owner-built rural dwelling (Section R301.1.1.1)
7. Per CRC Section R313.1, provide a minimum ceiling height of 7 feet for all habitable spaces and hallways. Bathrooms, toilet rooms, and laundry rooms must provide a minimum ceiling height of 6 feet 8 inches.
8. Per CRC Section R301.2.1.1.1, Sunrooms shall comply with AAMA/NPEA/NSA 2100 and shall be identified as one of five categories by the applicant, design professional, or the property owner or owner's agent in the construction documents.
9. Per CRC Table R302.1(1), provide a minimum of 5 feet between the exterior wall of the residence and the property line, or the exterior wall must be one-hour fire resistance rated construction with exposure from both sides. Please verify the distance to the property line. Openings are prohibited if less than 3 feet from property line. Openings are limited when located between 3 feet and 5 feet from the property line.
10. Per CRC Table R302.1(2), when the building is equipped with an automatic fire sprinkler system, provide a minimum separation of 3 feet between the exterior wall of the residence and the property line, or the exterior wall must be one-hour fire resistance rated construction. Obtain Planning Department approval if less than 5 feet from property line. Please verify the distance to the property line. Openings are prohibited if less than 3 feet from property line.
11. Per CRC 302.2.1, each Townhouse Unit shall be separated by two 1-hour fire-resistance-rated wall assemblies.
12. Per CRC section R302.3 Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E119, UL 263 or Section 703.3 of the California Building Code. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing. Provide details and listed fire rating assembly. **This applies to attached ADU's as well per the interpretation of the Building Official** (see exceptions)
13. Per CRC section R302.4.1.1 Penetrations shall be installed as tested in the approved fire resistance-rated assembly. Provide details and listed fire rated assembly. **This applies to attached ADU's as well per the interpretation of the Building Official**
14. Per CRC section R302.4.1.2 Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E814 or UL 1479, with a positive pressure differential of not less than 0.01 inch of water (3 Pa) and shall have an F rating of not less than the required fire-resistance rating of the wall or floor-ceiling assembly penetrated. Provide details and listed fire rated assembly. **This applies to attached ADU's as well per the interpretation of the Building Official**
15. Per CRC section R302.4.2 Membrane penetrations shall comply with Section R302.4.1. Where walls are required to have a fire-resistance rating, recessed fixtures shall be installed so that the required fire-resistance rating will not be reduced. **(this applies to attached ADU's as well per the interpretation of the Building Official)** (see exceptions)

16. Per CBC Section 717.5.2, ducts and air transfer opening in Fire rated assembly shall be protected with approved fire dampers installed in accordance with their listing. **This applies to attached ADU's as well per the interpretation of the Building Official.**
17. Per CBC Section 1206, include requirements for walls, partitions, and floor/ceiling assemblies separating dwelling units, by showing a minimum sound insulation rating of STC=50 for common wall assemblies and reference a tested assembly by a recognized agency. **This applies to attached ADU's as well.**
18. Per CRC Section R325.4.1, mechanical and gravity outdoor air intake openings shall be located a minimum of 10 feet from any hazardous or noxious contaminants, such as chimneys, vents, plumbing vents, streets, alleys, parking lots and loading docks.
19. Per CRC Section R325.1.1, provide an aggregate glazing area for all habitable rooms equal to at least 8% of the room floor area. Artificial light is allowed but calculations will be required.
20. Per CRC Section R325.1.2, natural ventilation shall be through operable exterior openings must be equal to at least 4% of the room floor area. Mechanical ventilation is allowed but calculations will be required.
21. Per CRC Section R325.1.3, walls between __ and __ shall be at least 50% open to meet light and/or ventilation requirements. The opening must be at least one-tenth of the floor area served but not less than 25 square feet.
22. Per CRC Section R325.8, interior habitable spaces shall be provided with heating system capable of maintaining a minimum indoor temperature of 68° F at a point of 3 feet above floor and 2 feet from exterior walls.
23. Per CRC Section R328.1, newly constructed dwellings are required to have aging-in-place and fall prevention ready. Please add reinforcement for future grab bar in at least one bathroom on the entry level. Reinforcement shall not be less than 2x8 nominal lumber located between 32 inches and 39¼ inches above the finished floor flush with the wall framing.
24. Per CRC Section 328.1.2, electrical receptacle outlets, switches and controls (including controls for heating, ventilation and air conditioning) intended to be used by occupants, shall be located no more than 48" from the top of the outlet box and not less than 15" from the bottom of the outlet box above the finish floor. See exceptions.
25. Per CRC Section R328.1.3, provide at least one bathroom and one bedroom door with a net clear opening of not less than 32".
26. Per CRC Section R328.1.4, doorbell buttons or controls, when installed, shall not exceed 48" above exterior floor or landing.
27. Per CRC Section R703.7.3.1, in Dry (B) climate zones ([here](#)), water-resistive barriers shall be 2 layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of water resistant barrier complying with ASTM E2556, Type I or water resistance barrier shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of a water resistive barrier complying with ASTM E2556, Type II. (Stucco only)
28. Per CRC Section R703.2, provide not fewer than one layer of water-resistive barrier over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer and behind deck ledgers. The barrier shall be: 15# felt, type I; ASTM E2556, Type I or II; Foam plastic insulating sheathing water-resistive barrier system; or ASTM E331 in accordance with Section R703.1.1 Barrier to be applied horizontally with the upper layer lapped over the lower layer not less than 2", and where joints occur, not less than 6" lapping. (Siding, wall veneer, deck)
29. Per CRC Section R806.2, the minimum net free venting area for attics is 1/150th of the area of the space ventilated. Please show attic ventilation calculations on plans (i.e. total area to be ventilated, typical eave vent and number of eave vents required, etc.).
30. Per CRC Section R806.2, the minimum net free venting area for attics may be reduced to 1/300th of the area of the space ventilated, provided that at least 40% but not more than 50% of the required area is located in the upper portion of the space to be ventilated at least 3 feet below the ridge or highest point of the space with the balance made up in the bottom one-third of attic space (e.g. provided by eave or cornice vents). Please show attic ventilation calculations on plans (i.e. total area to be ventilated, typical eave vent and number of eave vents required, etc.), AND graphically indicate the general location of upper ventilation (i.e. dormer vents) on the roof plan.
31. Ventilation for Exterior Balconies and elevated walkway surfaces, per CRC Section R304.1.3, enclosed framing in exterior balconies and elevated walking surfaces that are exposed to rain, snow or drainage from irrigation shall be provided with openings that provide a net free cross-ventilation area not less than 1/150 of the area of each separate space.
32. Per CRC Section R703.7.2.1, specify a weep screed a minimum 4" above earth and 2" above paved areas.

33. Per CRC Section R703.7.2, stucco shall be applied with three coat applications where applied over metal or wire lath unless proven by manufacturer or ICC report.
34. Per CRC Section R702.4.2 and CRC Table R702.4.2, specify Glass mat gypsum backing panel (ASTM C1178), Fiber-reinforced gypsum panels (ASTM C1278), Nonasbestos fiber-cement backer board (ASTM C1288 or ISO 8336, Category C), or Nonasbestos fiber mat reinforced cementitious backer units (ASTM C1325) as a base for wall tiles in tub and shower areas.
35. Per CRC Section R806.3, provide a minimum of 1 inch of air space between the insulation and the roof sheathing at vents.

CALIFORNIA ENERGY CODE REQUIREMENTS

1. Per the Energy Commission, all permits applied for after 1/01/2026 must use CBECC-2025-2.0.1EnergyPro 10.0. Provide updated energy forms.
2. Per Title 24, Part 1, Section 10-103(a)2A, the Energy Document shall be incorporated into the building design plans.
3. Energy Special Features shall be listed on the first page.
4. Please indicate how energy compliance will be met (prescriptive Package A or performance method). Energy requirements will be checked after this has been addressed.
5. Please provide a complete copy of the 2025 Single Family Residential Mandatory Measures Summary. A pdf copy can be found on the California Energy Commission website [here](#). A copy of this document is required to be attached to or included as part of the plans.
6. Please verify that what is graphically shown on the plans agrees with the items listed in the Single Family Residential Mandatory Measures Summary.
7. Package A may require continuous insulation (foam) on exterior walls and possibly a high-performance attic.
8. Completed CF-1R forms are to clearly show the compliance option chosen, be fully signed and made a permanent part of the plans.
9. Building orientation in compliance documents must be consistent with plot plan and floor plan.
10. When continuous insulation is to be installed per CEC requirements, please show a typical ICC approved one-coat stucco system. If a typical 7/8" three-coat stucco application is proposed, please use the performance method to verify the exclusion of continuous insulation.
11. Verify the fenestration surfaces values as it does not appear that the rough opening size for French doors was used. The energy model programs include a glazing obstruction factors inherent in the program to account for sashes, mullions, frames, etc. as found on the typical window and French door. The actual glazing area plus a 2" perimeter allowance can be input when the door in question is less than 50% glass. Please address.
12. The fenestration surfaces shown on the CF-1R form should coordinate with all the rough opening sizes for glazing at the perimeter of the structure. Please verify.
13. The CF-1R must be registered with a California approved ECC provider,
CHEERS (<http://www.CHEERS.org>)
14. Please indicate the location of the water heater on the plans.
15. Please verify the number of water heaters and coordinate with the number shown on the plans.
16. Show wall, attic, ceiling, raised floor, and/or slab perimeter insulation per the energy documentation. Per Energy Commission, references such as "see Title 24" are not in compliance with Title 24, Part 1, Section 10-103(a)2A.
17. Please specify duct insulation R-value on the plans.
18. Please see CEC Table 150.0-A for more information regarding the classification of high efficacy light sources.
19. Where the U-factor or SHGC of fenestration is unknown, please use the applicable default values in Table 110.6-A and 110.6-B.
20. Electric-resistance water heaters, in a residence less than 500 sq ft, are permitted prescriptively Please specify alternative means or provide an energy performance analysis.
21. Per CEC Section 150.1(c)12, where a whole building ventilation system is required, one or more whole house fans (WHFs) shall be installed whose total air flow CFM is listed in the CEC Directory is at least 1.5 CFM/ft² of conditioned floor area and shall have at least 1 square foot of attic vent free area for each 750 CFM of rated whole house fan air

flow CFM. Provide homeowners who have WHFs with a one page "How to operate your whole house fan" informational sheet. **This is the WHOLE HOUSE FAN REQUIREMENT**

ENERGY STORAGE SYSTEM (ESS) REQUIREMENTS

1. ESS equipment installed shall be listed per UL 9540 per CRC R330.2
 - a. Exception: Where approved, repurposed unlisted battery systems from electric vehicles are allowed to be installed outdoors or in detached sheds located not less than 5 feet from exterior walls, property lines and public ways.
2. Per CRC R330.3.1 individual units shall be separated from each other by not less than 3 feet except where other separation distances are specified by the ESS listing and the manufacturer's installation instructions.
3. Per CRC R330.4 ESS shall only be installed in the following locations:
 - a. Detached garages and detached accessory structures.
 - b. Attached garages separated from the dwelling unit living space in accordance with Section R302.6. (Please see Kern County approved battery list)
 - c. Outdoors or on exterior side of exterior walls located not less than 3' from doors and windows directly entering the dwelling unit, except where smaller separation distances are permitted by the UL 9540 listing and manufacturer's installation instructions.
 - d. Enclosed utility closets, basements, storage or utility spaces within dwelling unit with finished or non-combustible walls and ceiling. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than 5/8 Type X gypsum board. Openings into the dwelling shall be equipped with solid wood doors not less than 1 3/8 inches in thickness, solid or honeycomb-core steel doors not less than 1 3/8 inches in thickness, or doors with a 20-minute fire protection rating. Doors shall be self-latching and equipped with a self-closing or an automatic-closing device. Penetrations through the required gypsum wallboard into the dwelling shall be protected as required by Section 302.11, Item 4.
4. Per CRC R330.5 Individual ESS units shall have a maximum rating of 20 kWh. The ratings of the ESS in each location shall not exceed the ratings in Table R330.5. The total aggregate ratings of ESS on the property shall not exceed 600 kWh.
5. Per CRC R330.8 ESS installed in a location subject to vehicle damage shall be provided with impact protection in accordance with Section 328.8.2.
6. Per CRC R330.9 Mechanical ventilation shall be provided if ESS units produce hydrogen or other flammable gases during charging.

PHOTOVOLTAIC (SOLAR) REQUIREMENTS

1. Per Section 150.1(c)14 of the Energy Code, All low-rise residential buildings shall have a photovoltaic (PV) system meeting the minimum qualification requirements as specified in Joint Appendix JA11.
2. Photovoltaic (PV, otherwise known as Solar) Systems shall be designed and installed in accordance with Sections R329.3.1 through R324.7.1 and the California Electrical Code.
3. Equipment shall be listed per CRC Section R329.3.1.
 - a. Photovoltaic (Solar) panels and modules shall be listed and labeled in accordance with UL 1703 or with both UL 61730-1 and UL 61730-2.
 - b. Inverters shall be listed and labeled in accordance with UL 1741.
 - c. Systems connected to the utility grid shall use inverters listed for utility interaction.
4. Per CRC Section R329.4.1, rooftop-mounted photovoltaic systems shall be designed to structurally support the system and withstand applicable gravity loads in accordance with Chapter 3. The roof on which these systems are installed shall be designed and constructed to support the loads imposed by such systems in accordance with Chapter 8.
5. Per CRC Section R329.4.2, fire classification of rooftop-mounted photovoltaic systems shall have the same fire classification as the roof assembly required in Section R902.
6. Per CRC Section R329.4.3, roof penetrations shall be flashed and sealed in accordance with Chapter 9.
7. Per CRC Section R329.5, buildings that intend to utilize photovoltaic systems to also serve as roof coverings shall be designed and installed in accordance with Section R905. Photovoltaic shingles shall comply with Section R905.16.

These systems shall also have a fire classification in accordance with Section R902.3.

8. Per CRC Section R329.6, roof access, pathways and setback requirements shall be provided in accordance with Sections R329.6.1 through R329.6.2.1. Access and minimum spacing shall be shown graphically 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.
9. Per CRC Section R329.6.1 through R329.6.3, the house or structure shall comply with this Section in regard to pathways. Provide details that comply with the following:
 - a. Not fewer than two pathways, on separate roof planes from lowest roof edge to ridge and each 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.
 - b. 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.
 - c. Pathways shall be over areas capable of supporting fire fighters accessing the roof.
 - d. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.
 - e. 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
10. For setbacks at the ridge, Per CRC Section R329.6.2, photovoltaic arrays occupying less 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. If a building or home has an automatic sprinkler system installed, alternate setback(s) at ridge shall comply with one of the following:
 - a. 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.
 - b. 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.
11. Per CRC Section R329.7, Ground-mounted photovoltaic systems shall be designed and installed in accordance with Section R301. Ground-mount photovoltaic (solar) systems shall also comply with the following:
 - a. Per Section R329.7.1, such systems shall be subject to fire separation distance requirements determined by the enforcing agency.
 - b. Per Section R329.7.2, Ground mounted photovoltaic arrays shall comply with this section and the California Electrical Code. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3048 mm) shall be required for ground-mounted photovoltaic arrays.
 - c. Locations of DC conductors shall comply with CRC Section R324.7.3.
12. Per CRC Section R329.7.1, Elevated PV support structures with PV panels installed over open grid framing or over a noncombustible deck shall have PV panels tested, listed and labeled with a fire type rating in accordance with UL 1703 or with both UL 61730-1 and UL 61730-2. Photovoltaic panels marked "not fire rated" shall not be installed on elevated PV support structures.
13. Per CRC Section R329.7.2, Elevated PV support structures with a PV panel system installed over a roof assembly shall have a fire classification in accordance with Section R324.4.
14. Plans shall provide PV (solar) system on site plan, all sections and details shall be included to comply with all the sections described in this checklist and as applicable per the 2025 California Electrical, Mechanical, Energy, Building and Residential Codes. Items required, but not limited to the following:
 - a. Location of main service or utility disconnect
 - b. Total number of modules, number of modules per string, and the total number of strings
 - c. Make and model of inverter(s) and/or combiner box, if used
 - d. One-line diagram of PV (solar) system. One-line diagram must be stamped and signed by a licensed B, C10, or C46 contractor, or a licensed RDP.

- e. Grounding/bonding, conductor type and size, conduit type and size and number of conductors in each conduit
- f. Equipment data sheets including inverters, modules, AC and DC disconnects and combiners
- g. Labeling of equipment as required by CEC Sections 690 and 705
- h. Sheets in Plans in regard to PV systems are to be signed by an appropriately licensed contractor or registered design professional. All sheets shall include both a signature and contractor license number or registered design professional stamp.

15. Per the California Energy Commission (CEC) 2025 Building Energy Efficiency Standards, Subchapter 8, All Single-Family residential buildings shall have a Solar (PV) system meeting the minimum capacity requirements, with annual electrical output equal to or greater than the dwelling's annual electrical usage as determined by Equation 150.1-C:

EQUATION 150.1-C ANNUAL PHOTOVOLTAIC ELECTRICAL OUTPUT

$$kW_{PV} = (CFA \times A)/1000 + (N_{DU} \times B)$$

- kW_{PV} = kWdc size of the PV system
- CFA = Conditioned floor area
- N_{DU} = Number of dwelling units
- A = Adjustment factor from Table 150.1-C
- B = Dwelling adjustment factor from Table

Table 150.1-C – CFA and Dwelling adjustment Factors
(for Kern County)

Climate Zone	A – CFA	B – Dwelling Units
13	0.894	1.51
14	0.741	1.26
16	0.590	1.22

16. Per the CEC 2025 Building Energy Efficiency Standards, Subchapter 9, additions and alterations to existing Single Family residential buildings shall comply with Section 150.2. Additions and alterations are not required to have photovoltaic systems installed.

LIGHTING REQUIREMENTS

1. Per the California Electrical Code Section 210.70(A)(1), at least one wall switch-controlled lighting outlet shall be installed in every habitable room, kitchen, laundry area and bathroom. See exception.
2. Per the California Electrical Code Section 210.70(A)(2)(2), at least one wall switch-controlled lighting outlet shall be installed to provide illumination on the exterior side of outdoor entrances or exits with grade level access. A vehicle door in a garage shall not be considered as an outdoor entrance or exit.
3. Per CEC 150.0(k)1A, All installed luminaires and light sources shall comply with Reference Joint Appendix JA8 and shall be certified and marked as required by JA8. See exceptions.
4. Per CEC 150.0(k)1C, Recessed downlights shall be insulation contact rated and shall not contain screw based sockets, and meet the clearance and installation requirements of the CEC Article 410.116.
5. Per CEC 150.0(k)1D, Enclosed and recessed luminaires shall be in compliance with the JA8 elevated temperature requirements, including marking requirements.
6. Per CEC 150.0(k)1E, The number of blank electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device shall be no greater than the number of bedrooms. The electrical boxes must be served by a dimmer, vacancy sensor control, low voltage wiring or fan speed control.
7. Per CEC 150.0(k)2D, No controls shall bypass the functions of a dimmer, occupant sensor or vacancy sensor
8. Per CEC 150.0(k)2E, In bathrooms, garages, laundry rooms, utility rooms, and walk-in closets, at least one luminaire must be controlled by a vacancy sensor.
9. Per CEC 150.0(k)2G, Lighting integrated with the exhaust fans shall be controlled independently from the fans.
10. Per CEC 150.0(k)2Gi, Undercabinet, undershelf, display cabinets or switched outlets lighting shall be controlled separately from ceiling-installed lighting
11. Per CEC 150.0(k)3A, Outdoor lighting permanently mounted to a residential building or to other buildings on the same lot must be controlled by a manual on/off switch and one of the following:
 - a. Photocell with motion sensor or
 - b. Photocell and automatic time switch control or
 - c. Astronomical time clock control

12. Per CEC 160.5(b)4, **Graphically show** all lighting in the common areas of multifamily buildings. The design and installation shall comply with the applicable provisions of CEC160.5(b)1 through 160.5(b)4.

PLUMBING, MECHANICAL AND ELECTRICAL REQUIREMENTS

1. Per CPC Section 402.5, no water closet or bidet shall be set closer than 15 inches from its center to a side wall or obstruction. The clear space in front of a water closet, lavatory or bidet shall be not less than 24 inches.
2. Per CPC Section 408.7, shower compartments shall have a finished interior not less than 1024 square inches and capable of encompassing a 30 inch circle.
3. Per CMC Section 304.4, access shall be provided for mechanical equipment in the attic to allow for inspection, service, repair, and replacement without removing permanent construction – specify a minimum 22"x30" opening, provided the largest piece of equipment can be removed through the opening. Per Section 304.4.1, show the access no more than 20' from the equipment.
4. Per CMC Section 304.4.2, The passageway to mechanical equipment shall be unobstructed, and have solid flooring not less than 24" wide from the entrance opening to the appliance.
5. Per CMC Section 304.4.3, for attic-installed appliance, specify an equipment platform at least 30" in depth and width, and verify increased load capacity for the ceiling framing members (i.e. double joists/trusses under platform). See exception.
6. Per CMC Section 304.4.4, A permanent 120-volt receptacle outlet and lighting fixture shall be installed near the appliance with the switch controlling the lighting fixture located at the entrance to the passageway.
7. Show the dryer vented to exterior per CMC Section 504.4.2
8. Provide a 1 automatic clothes washer connection per Table 422.1 of the CPC.
9. Per CMC Section 504.4.2.1, dryer moisture exhaust duct shall not exceed a total combined horizontal and vertical length of 14 feet, including two 90-degree elbows. The location of the dryer near the ridge, combined with a minimum 10' plate height and the roof pitch, indicates that the 14' allowable exhaust duct length will be exceeded. Please address. See exception.
10. Per ASHRAE Section 5.1, please provide mechanical ventilation for bathrooms (exhaust fan with capacity of 50 CFM intermittent or 20 CFM continuous) and kitchens (exhaust fan with capacity of 110 CFM intermittent or 5 air changes per hour [ach] continuous, for electric ranges based on kitchen volume [CEC Table 150.0-G]; 180 CFM, minimum for gas ranges).
11. Per the Energy Code Section 150.0(o), all new buildings are required to meet Ventilation and Acceptable Indoor Air Quality per ASHRAE Standard 62.2-. Per CEC 150.2(a)C, All additions or conversions to existing buildings over 1,000 ft² (original building must be included in sizing the fan once addition exceeds 1,000 ft²) are required to meet Ventilation and Acceptable Indoor Air Quality per ASHRAE Standard 62.2. *Please note that local exhaust fan may also be utilized to fulfill the WBV, however when this is done, the most stringent requirements will apply.*

Air moving equipment used to meet either the whole building ventilation requirement or the local ventilation exhaust requirement shall be rated in terms of airflow and sound.

- a. *All continuously operating fans shall be rated at a maximum of 1.0 sone.*
 - b. *Intermittently operated whole-building ventilation fans shall be rated at a maximum of 1.0 sone.*
 - c. *Intermittently operated local exhaust fans shall be rated at a maximum of 3.0 sones.*
 - d. *Remotely located air-moving equipment (mounted outside of habitable spaces) need not meet sounds requirements if there is at least 4' of ductwork between the fan and the intake grill.*
12. Local ventilation exhaust (kitchen and bath exhaust fans) must be exhausted to the outside, with properly sized fans, and attached to properly sized ducts per Table 5.3 of ASHRAE 62.2-.
 - a. 50 CFM exhaust fan in each bathroom regardless of windows.
 - b. 110 CFM to 160 CFM in the kitchen for electric ranges; 180 CFM to 280 CFM for gas ranges

Please see the examples below:

NOTE of ALL bathroom fans:

This fan is to be used for **Local Ventilation Exhaust**. Minimum 50 CFM fan tested at a static pressure of .25 wc and rated @ 3 sones or less required to be installed.

Fan must be attached to a minimum 4" duct and no longer than 56' of **flex** duct. Subtract 15' of allowed length for each elbow.

NOTE of ALL kitchen range hoods:

This fan is to be used for **Local Ventilation Exhaust**. Minimum 110 CFM or 180 CFM fan tested at a static pressure of .25 wc and rated @ 3 sones or less required to be installed.

Fan must be attached to a minimum 5" **smooth** duct and no longer than 91'. Subtract 15' of allowed length for each elbow.

13. Kitchen Range Hood sizes:

Dwelling Unit Floor Area (ft ²)	Hood Over Electric Range	Hood Over Natural Gas Range
> 1500	50% CE or 110 cfm	70% CE or 180 cfm
> 1000 – 1500	50% CE or 110 cfm	80% CE or 250 cfm
750 – 1000	55% CE or 130 cfm	85% CE or 280 cfm
< 750	65% CE or 160 cfm	85% CE or 280 cfm

14. Whole Building Ventilation (WBV) or Indoor Air Quality (IAQ) is one fan, vented to the outside, expected to be left on at all times, uses normal on/off switch, and provides a calculated amount of air brought into the dwelling. The WBV shall be sized per equation 4.1 of ASHRAE Standard 62.2-to provide CFM ventilation for the entire house. Please see below for equation 4.1 and an example.

Equation 4.1: $Q_{fan} = 0.03(A_{floor}) + 7.5(N_{beds} + 1)$

Where: Q_{fan} = Required Ventilation (CFM)

A_{floor} = conditioned Floor Area (ft²)

N_{beds} = Number of Bedrooms (must be at least 1)

Example: 2,500 ft² home with 5 bedrooms

$$Q_{fan} = 0.03(A_{floor}) + 7.5(N_{beds} + 1)$$

$$Q_{fan} = 0.03(2,500) + 7.5(5 + 1)$$

$$Q_{fan} = 120 \text{ CFM}$$

15. The plans shall specify which fan(s) will be used for WBV/IAQ and a note block must be provided. See an example below:

NOTE:

This fan is to be used for **Whole Building Ventilation**. Minimum 120 CFM fan tested at a static pressure of .25 wc and rated @ 1 sone or less required to be installed.

Fan must be attached to a minimum 6" duct and no longer than 91'. Subtract 15' of allowed length for each elbow.

Switch for fan must be labeled to indicate the fans required function such as "fan is to be left on to ensure indoor air quality."

16. Per CEC Section 230.79 and 230.79(C), the service panel shall have a rating not less than the calculated load to be carried, determined in accordance with Part III, IV, or V of Article 220 of the CEC and minimum busbar rating of 225-amperes.
17. Per CEC Section 240.24 (B) Each occupant shall have ready access to all overcurrent devices protecting the conductors supplying that occupancy.
18. Per CEC section 240.24 (D) Overcurrent devices shall not be located in the vicinity of easily ignitable material, such as in clothes closets.

19. Per CEC 150.0(s), provide a dedicated conduit from the main service panel to a subpanel located in the garage with a minimum of four branch circuits supplying to the following:
1. Refrigerator
 2. One lighting circuit near the primary egress
 3. One outlet circuit supplying a sleeping room
 4. At least one other location.

All branch circuits are permitted to be supplied by the main service panel prior to the installation of an ESS. Conduit shall be not less than one inch in diameter. The subpanel supplying the branch circuits must be labeled "Subpanel Shall Include All Backed-Up Load Circuits"

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 backup power source.

20. Per CEC Section 150.0, single-family dwelling units providing natural gas water heating systems, HVAC systems, and/or appliances must be electric ready. Graphically show required electrical components per the California Electrical Code.

Gas Range (§150(u)): Provide a dedicated 240 V 50 amp branch circuit within 3 feet of the range with a blank cover labeled "240V READY"

Gas Furnace (§150(t)): Provide dedicated 240V 30 amp branch circuit within 3 feet of furnace with blank cover labeled "240 V READY"

Gas Clothes Dryer (§150(v)): Provide dedicated 240 V 30 amp branch circuit within 3 feet of dryer with a blank cover labeled "240 V READY"

21. Per CEC Section 150(n), designate a space at least 2.5 feet by 2.5 feet wide and 7 feet tall suitable for the future installation of a heat pump water heater (HPWH) by meeting either A or B below:
- a. If the designated space is within 3 feet from the water heater, then this space shall include a dedicated 125 V 20 amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit with both ends of the unused conductor shall be labeled with the word "SPARE" and be electrically isolated; and reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "FUTURE 240V USE"
 - b. If the designated space is more than 3 feet from the water heater, then this space shall include a dedicated 240 V 30 amp branch circuit which shall be installed within 3 feet from the designated space with a blank cover identified as "240 V READY" and a reserved space to allow the installation of the double pole circuit breaker for a future HPWH permanently marked as "FOR FUTURE 240V USE"
22. Per CEC Section 210.8(A), graphically show GFCI outlets in bathrooms, kitchen countertops, garages, basements, outdoors, bathtubs or shower stalls, laundry areas and within 6' of sinks.
23. Per CEC Section 210.8(C), GFCI protection shall be provided for lighting outlets not exceeding 120 volts installed in crawl spaces.
24. Per CEC Section 210.52(D), at least one receptacle outlet shall be installed in bathrooms within 3 feet of the outside edge of each basin. The receptacle outlet shall be GFCI protected.
25. Per CEC Section 210.52(E)(3), graphically show at least one GFCI outlet installed at attached balconies, decks, and porches that are accessed from the dwelling. (20 sq. ft. or less areas are exempt.)
26. Per CEC Section 210.52(E)(1), graphically show at least one GFCI outlet installed at the front and at the back of single-family dwellings.
27. Per CEC Section 210.52(A)(1), in every kitchen, family room, dining room, living room, parlor, library, den, sunroom, bedroom, recreation room, or similar room or area of dwelling units, receptacle outlets shall be installed at a maximum of 12 feet on center along the wall.
28. Per CEC Section 210.52(C)(1), kitchen countertop and work surface outlets shall be installed at a maximum of 4 feet on center.
29. Per CEC Section 210.52(C)(2), if receptacle outlets are installed to serve an island or peninsula countertop or work surface, it shall be installed in accordance with 210.52(C)(3) which states the outlet must be installed on or above (not more than 20" above) a countertop or work surface. Please remove the outlets from the sides of the island or

peninsula and install on or above the countertop.

30. Per CEC Section 210.12(A), specify on electrical sheet: AFCI breakers are required for all dwelling unit ***kitchens***, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas and similar spaces.
31. Per CEC Section 210.11(C)(2), specify on electrical sheet: Dedicated 20-amp circuit to Laundry for appliance outlets.
32. In the San Joaquin Valley, per the San Joaquin Valley Air Pollution Control District [Rule 4901](#) Section 5.3.1, no person shall install a wood burning fireplace in a new residential development with a density greater than two (2) dwelling units per acre. If a fireplace is desired, it cannot be wood-burning (i.e. specify wood-pellet or other gas-fueled type and provide appropriate ICC documentation). Cookstoves defined by the Code of Federal Regulations 60.531 are exempt.
33. In the San Joaquin Valley, per the San Joaquin Valley Air Pollution Control District [Rule 4901](#) Section 5.3.3, no person shall install more than one wood burning fireplace or wood burning heater per dwelling unit in any new residential development with a density equal to or less than two dwelling units per acre. If a fireplace is desired, it cannot be wood-burning (i.e. specify wood-pellet or other gas-fueled type and provide appropriate ICC documentation). Cookstoves defined by the Code of Federal Regulations 60.531 are exempt.
34. In areas outside the San Joaquin Valley within Kern County, per Kern County Air Pollution Control District [Rule 416.1](#), wood burning heaters may not be installed in residential subdivisions which will consist of 10 or more dwelling units. If a wood burning heater is desired, it must be **U.S. EPA Certified** or specify wood-pellet, otherwise it cannot be wood-burning (i.e. specify other gas-fueled type and provide appropriate ICC or UL documentation). Cookstoves defined by the Code of Federal Regulations 60.531 are exempt.
35. Please specify ICC approved fireplace on the plans for all premanufactured fireplaces.
36. Please provide UL listing for wood stoves.
37. Per CRC R1003.9, Please show chimney on elevation views, and specify a 2'-0" vertical clearance from the chimney to the nearest point 10'-0" away. Alternately, specify a direct-vent fireplace.

CALGREEN REQUIREMENTS

NOTE: Per CalGreen Section 101.3 and Section 301.1.1, the requirements listed below shall apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure, unless otherwise indicated, throughout the state of California as well as all additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements for additions and alterations shall apply only to and/or within the specific area of the addition or alteration.

1. Please complete the [Kern County Landscape Water-Efficiency Forms](#) for this project. If (a) less than 500 sq. ft. of new landscaping, or (b) less than 2,500 sq. ft. of rehabilitated landscaping, or (c) no water using landscaping is proposed, only the first page must be filled out. The form can be found on our website on the "Bulletins/Documents/Forms" page, under the "Forms" section, in the "Green Building Standards" tab. This form is intended to be filled out on a computer.
2. Please provide a complete copy of the 2025 CALGreen Residential Mandatory Measures. A copy of this document must be included as part of the plans.
3. The following are necessary to fulfill the requirements of the 2025 CALGreen Code. [These forms](#) can be found on the Kern County Building Inspection Department website in the "Bulletins/Documents/Forms/Archive" page in the "Forms" area under "Green Building". These forms will be required at final inspection and must be included with your plan set. CWM Plan (first page of the forms package) must be completed and submitted at plan check for approval. If this item is to be deferred, add the following note to the cover sheet of the plans: "Construction Waste Management (CWM) compliance forms and worksheets are a deferred submittal per CBC Section 107.3.4.1. All documents, including waste-separation methods and diversion rates, CWM Acknowledgment, and finish material certificates, will be provided by the contractor prior to construction."
 - CWM Plan – Only portion that must be completed at plan check for approval
 - CWM Worksheet
 - CWM Acknowledgement

GARAGE/CARPORT REQUIREMENTS

1. Per CRC Section R302.5.1, please specify solid wood or solid or honeycomb core steel door not less than 1 3/8" thick, or 20 minute rated between garage and residence. Door shall be self-latching and equipped with a self-closing or automatic-closing devise. If the garage and dwelling contain an automatic fire sprinkler system, the door need only

be self-closing and self-latching.

2. Per CRC Section R302.5.1, garages are never permitted to open into rooms used for sleeping purposes. Please address.
3. Per CRC Section R302.5.2, ducts in the garage and penetrating the walls or ceilings separating the dwelling unit from the garage shall be a minimum of 26 gage steel (0.019-inch sheet steel) and shall have no opening into the garage.
4. Per CRC Table R302.6 and the [Kern County Code of Building Regulations](#), please specify 5/8" Type "X" gypsum board from floor to roof sheathing on the garage and/or carport side of common walls with the residence, or on the garage side of common walls, ceiling, and structural members supporting the ceiling. If the garage and dwelling contain an automatic fire sprinkler system, 1/2" regular gypsum board may be used on the vertical surfaces.
5. Per CMC 305.1/307.1, heating and cooling equipment located in a garage and that generates a glow, spark or flame shall be installed so that the pilots and burners or heating elements and switches at least 18" above the floor level. Specify a minimum 18" platform for water heaters in the garage.
6. Per CMC 305.1.1, please specify protective barriers for appliances located in the garage that may be subject to mechanical damage. Provide a detail if necessary (i.e. bollard).
7. Per CRC Section R317.1, the area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway. Please note or graphically show with arrows, the intended garage floor slope.
8. Per CRC Section R609.4.1, garage doors shall be labeled with a permanent label provided by the garage door manufacturer. The label shall identify the garage door manufacturer, the garage door model/series number, positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard. Garage doors shall be installed in accordance with the manufacturer's installation instructions.

STORMWATER BEST MANAGEMENT PRACTICES

1. Please see the Building Inspection Department [website](#) for guidelines regarding stormwater best management practices and provide an appropriate plan for this project. See "Best Management Practices" in the Bulletins, Policies & Guidelines