



Land Use Services Department Building and Safety Division

(SAMPLE TEMPLATE)

Residential Code - Plan Review Comments

Project Description:

Application #:

Site Address:

APN:

Occupancy Group:

No. Stories:

Application Date:

Construction Type:

Floor Area:

Expiration Date:

Applicant/Contact:

Applicant Phone:

Applicant Email:

Plan Check Engineer:

Phone:

Email:

1st Review:

2nd Review:

3rd Review:

Note: Plans have been reviewed for Building Codes only. Contact the County for separate review for compliance with the San Bernardino Development Code and other agencies' requirements.

The project plans were reviewed for compliance with the following codes and standard:

2019 CRC; 2019 CBC; 2019 CPC; 2019 CEC; 2019 CMC; 2019 California Energy Code; 2019 California Green Building Standards Code (CG) & San Bernardino County (County) Code of Ordinances, unless stated otherwise.

Your application for a permit, together with plans and specifications, has been examined and you are advised that the issuance of a permit is withheld for the reasons hereinafter set forth. The approval of plans and specifications does not permit the violation of any section of the building code, or other County of San Bernardino ordinances or laws.

STANDARD

- Please group all related sheets into a **single** file (i.e. Plans Package, Calcs Package) for resubmittal. Noncompliance **may** result in delays in the plan review process.
- Provide a written response indicating how each comment was resolved on the plans, reference notes and details where applicable. Be as specific as possible, especially if the revisions are not clouded. Failure to submit a detailed response letter will delay the review of your project. **It is highly recommended the designer include a response letter with the corrections in order to expedite the recheck process.**
- Plan Review fee includes one (1) initial review and one (1) re-submittal check. Additional **Plan Review Fees** for subsequent submittals (after 1st re-submittal) will be assessed.
- Building Plan Reviews shall expire **180 days** from the date of filing.

(SAMPLE TEMPLATE)

- Comply with all comments on the marked plans, County Development Code plan review comment list and consultant plan review comment list as listed below. Additional comments and clarifications may apply following review of the revised plans, calculations and related documents.
- Final drawings approved for permit issuance, shall be signed by appropriate California licensed design professional(s). Electronic signatures are acceptable.
- The plan checker is available by phone or email at the phone number and email listed above. **Please contact the plan check engineer if you have any questions.**

APPLICATION AND PERMITS

1. The plans submitted do not represent the proposed work. Please see the required revisions and.....**Add commentary.**

GENERAL REQUIREMENTS

2. The first sheet of the plans must:
 - a. Contain the name and address of the owner and designer, site address and list all consultants (engineer, energy, soils, etc.), associated with the project. (CBC 106)
 - b. Show applicable building data including floor area, classification of each occupancy group, type of construction, area of each story, area of addition, number of stories, building height and applicable codes. Indicate if sprinklered. Provide assessor's parcel number (APN) if new area is proposed.
 - c. List the systems that are deferred submittals. Note the following on plans: "Deferred submittals shall be reviewed by architect or engineer of record prior to submittal to the Building Official."
3. If plans and calculations are prepared by or under the supervision of a registered engineer or licensed architect, the first sheet of calculations and each sheet of plans containing structural notes, plans, or details must bear the seal (including expiration or renewal date) and original signature of the responsible Engineer/Architect. (CA B&P code)
4. If a project is designed per soils/geology report's recommendation, provide soils engineer or geologist's review stamp on foundation plans and details.
5. Structural observation is required for any structures in Seismic Design Category E and greater than two stories above grade plane. Note on plans. (CBC 1704.6.2, Item 2)
6. Please submit design and plans based on the 2019 CBC, CRC, CPC, CMC, CEC, and CGBC, 2019 T-24 Energy Standards and include the San Bernardino County Amendments.
7. Identify current code years on the first sheet of the plans. 2019 CBC, CRC CMC, CPC, CEC, CGBC, 2019 T-24 Energy Standards and include the San Bernardino County Amendments.
8. Provide an index of drawings on the cover sheet of the plans.
9. Please reference all applicable details on the plans and omit those that do not apply (*be specific*).
10. Comply with protection of adjoining property by giving a thirty (30) day written notice (by certified mail) by attaching a letter to adjacent property owners of intent to excavate where excavation is deeper than the foundation of adjoining building and located closer to property line than the depth of excavation.
11. Provide temporary shoring plans for excavations that remove the lateral support from a public way or an existing building. Excavations adjacent to a property line approval prior to issuance of building permit.

(SAMPLE TEMPLATE)

SITE PLAN / BUILDING SITING

12. Exterior walls of dwellings and accessory buildings less than 5 ft. (non-sprinklered) / 3 ft. (sprinklered) to the property line shall be 1 hour fire-resistance-rated construction. Provide 1 hour rated wall details and reference the details on the plan. (T-R302.1(1) & (2))
13. No openings other than approved foundation vents shall be permitted in the exterior walls of dwellings and accessory buildings where the exterior wall is less than 3 ft. to the property line. (T-R302.1(1) & (2))
14. The area of exterior wall openings of non-sprinklered dwellings and accessory buildings located ≥ 3 ft. and < 5 ft. to the property line shall be limited to 25% of the wall area. The area of exterior wall openings is unlimited when exterior walls are located ≥ 5 ft. for non-sprinklered buildings and ≥ 3 ft. for sprinklered buildings. (T-R302.1(1) & (2))
15. Projections, including eaves, are not permitted within 2 ft. from the property line, except detached garages accessory to a dwelling are permitted to have 4-in. eave. Projections located ≥ 2 ft. and < 5 ft. (non-sprinklered) / 3 ft. (sprinklered) to the property line shall be of at least 1 hour fire-resistance-rated on the underside. (R302.1, T-R302.1(1) & (2))
 - a. Provide a section specifying eave length, distance to property line and protection detail.
 - b. Show how roof drainage will not be directed over the property line onto adjacent property.
16. Buildings adjacent to ascending or descending slopes shall maintain setback according to the requirements of Figure R403.1.7.1. Provide sections through the slope to show how slope setback requirements are met. (R403.1.7)

Alternate: Engineer of Record may field verify requirements of Section R403.1.7. Field verification form shall be completed by the Engineer of Record and submitted to Building Inspector prior to foundation inspection.

17. Provide a Site Drainage plan of the entire site and indicate the existing and proposed contours/spot elevations to show the general site slope and drainage pattern. Provide existing and proposed contours/spot elevations to indicate general site slope and drainage pattern. (R300.2)
18. Specify finish floor elevation of first floor and elevation difference to adjacent grade at all doors.

ROOF COVERING

19. Roof covering shall be a minimum Class (A, B, or C) assembly in accordance with ASTM E 108 or UL 790. Roof coverings within the Fire Safety Overlay District shall be a fire retardant roof covering that is a minimum Class A assembly in accordance with ASTM E 108 or UL 790. This requirement shall be required in all reroofs or additions where there is 50% or more of a roof being removed. (R902.1.1) Wood is not permitted to be used as a roof covering material. Provide roofing material ICC/UL number.
20. For roof covering specify:
 - a. Roof slope(s) of all areas on the roof plan. (R905)
 - b. Manufacturer and type of built-up roof. (R905.9)
 - i. Built-up roof covering materials shall comply with the standards in Table R905.9.2
 - ii. Built-up roofs shall have a minimum slope of 1/4 in. per ft. (2%) for drainage. (R905.9.1)
21. Roof slope is not adequate for the type of roof covering specified. (R905)
22. Show sizes/locations of the roof/deck drains and overflows on the plans. Roof drainage systems shall be designed in accordance with Ch. 11 of the CPC for minimum rain intensity of 3.0 in. /hour. Scupper openings used as overflows shall be a minimum of 4 in. high and have a width equal to the circumference of the roof drain required for the area served and located a minimum of 2 in. above the roof surface. (R903.4.1)

(SAMPLE TEMPLATE)

23. Specify make, model and ICC number for skylight(s). (R308.6)

DESIGN REQUIREMENTS

24. An automatic residential fire sprinkler system in accordance with NFPA 13D or Section R313.3 shall be installed in one and two family dwellings or townhouses including attached garages. (R309.6, R313.1, R313.2)
25. For duplexes provide the following:
- Floors and walls separating dwelling units in two-family dwelling shall not be of less than one-hour fire-resistance rating or 1/2 hour fire-resistance rating when an automatic sprinkler system NFPA 13 is installed throughout. (R302.3, R302.3 EX 1)
 - Provide sound transmission ratings (STC) per Section 1207.
 - Wall assemblies shall extend from the foundation to the underside of the roof sheathing.
 - Show draft separation for attic areas between units in a duplex. (R302.12)
26. Townhouse separation shall comply with Section R302.2.
27. Floor Plans:
- Habitable rooms shall have a minimum floor area of 70-SF, except kitchens. (R304.1)
 - Habitable spaces shall not be less than 7 ft. in any plan dimension, except kitchens. (R304.2)
 - Habitable space, hallways and portions of basements containing these spaces shall have a ceiling height of not less than 7 ft. (R305.1)
 - Bathrooms, toilet rooms and laundry rooms shall have a ceiling height of not less than 6 ft. 8 in. (R305.1)
 - The ceiling height above bathroom and toilet room fixtures shall be such that the fixture is capable of being used for its intended purpose. A shower or tub equipped with a showerhead shall have a ceiling height of not less than 6 ft. 8 in. above an area of not less than 30 in. by 30 in. at the showerhead. (R305.1, Ex 2)
 - Portions of the basement without habitable space or hallways shall have a ceiling height of not less than 6 ft. 8 in., except 6 ft. 4 in. is allowed under beams, girders, or ducts. (R305.1, Ex 3)
28. Where the opening of an operable window is located more than 72 in. above the finished grade or surface, the clear opening of the window shall be a minimum of 24 in. above the finished floor. Specify sill height of all openable windows. (R312.1.1)
29. Tempered glazing shall be provided at hazardous locations as identified in R308.4. Note and show all required locations on plans. Hazardous locations include, but are not limited to the following:
- Glazing in all doors
 - Glazing in bath and shower enclosures
 - Glazing within a 24-in. arc of a door edge
 - Panels over 9 sq. ft. having the lowest edge less than 18 in. above the finish floor and having a top edge greater than 36 in. above the floor
 - All glazing in guardrails
 - Glazing 5 ft. from top or bottom of stairways with bottom edge less than 60 in. above walking surface
30. Aggregate glazing area of habitable rooms must be minimum 8% of the room floor area. This is deficient in _____. (R303.1)
31. In order to consider any room as a portion of an adjoining room, at least 1/2 of the common wall area shall be open and unobstructed and shall provide an opening of not less than 1/10 the floor area of the interior room or 25 sq. ft., whichever is greater. Show that the common wall between _____ and _____ complies. (R303.2)

(SAMPLE TEMPLATE)

32. Sunrooms and patio covers next to required windows at _____ must have a minimum clear height of 7 ft. with longer side at least 40 % open and unobstructed. (R303.8.1)
33. Minimum openable area of habitable rooms must be 4% of the floor area. (R303.1)
34. For light and/or ventilation purpose, the openable area between _____ and the sunroom or patio cover shall not be less than 1/10 of the floor area of the interior room or 20 sq. ft., whichever is greater. (R303.2 EX)
35. Habitable rooms using artificial light shall be capable of producing an average illumination of 6-ft. candles (65 lux) over the area of the room at a height of 30 inches above the floor level. Comply with Code requirements and the clearly identify the method of compliance on the plans. (R303.1 EX 2)
36. The glazed area need not be openable where the opening is not required and a whole house Mechanical ventilation system is installed per the Mechanical Code. (R303.1 EX 1)
37. Bathrooms, water closet compartments and other similar rooms shall be provided with minimum glazing area of 3 sq. ft., one-half of which is openable. The glazed areas are not required where artificial light and a mechanical ventilation of 50-CFM intermittent or 20-CFM continuous ventilation is provided. (R303.3 EX)
38. Bathrooms containing a bathtub shower, or tub/shower shall be mechanically vented for humidity control. (R303.3.1)
39. Dimension on the plans the 30 in. clear width for water closets and 24-in. clearance in front of water closet for _____ bathroom. (PC 402.5)
40. Bathtub and shower floors, walls above bathtubs with a showerhead and shower compartments shall be finished with a nonabsorbent surface extending to a height of not less than 6 ft. above the floor. (R307.2)
41. Shower doors shall swing out. Net area of shower compartment shall be not less than 1,024 sq. in. of floor area and encompass 30 inches diameter circle. (PC 408.6)
42. In every bedroom, habitable attic and basement, provide one openable escape window meeting all of the following: (R310.2.1 & R310.2.2)
 - a. A net clear opening area of not less than 5.7 sq. ft. (except grade floor net clear opening area shall not be less than 5.0 sq. ft.).
 - b. A minimum clear height of 24 in.
 - c. A minimum clear width of 20 in.
 - d. The bottom of the clear opening not greater than 44 in. measured from the floor.
43. Show location(s) of interconnected hard-wired "SMOKE ALARM" with battery backup in the following: (R314 & R314.6)
 - a. In each sleeping room.
 - b. Outside of each separate sleeping area in the immediate vicinity of the bedrooms
 - c. On each additional story of the dwelling, including basements and habitable attics, but not including crawl spaces and uninhabitable attics.
 - d. Not less than 3 ft. from a door or opening outside of a bathroom that contains a bath or shower unless it affects a-c. (R314.3.3)
 - e. Provide a note: "SMOKE ALARM shall be interconnected hard-wired with battery backup and shall be installed in accordance with NFPA 72."
 - f. Battery smoke alarm permitted in existing buildings where no construction is taking place.
44. For buildings with fuel-burning appliances or fireplace(s) and/or attached garages, provide an approved carbon monoxide alarm at: (R315)
 - a. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.

(SAMPLE TEMPLATE)

- b. On every level of a dwelling unit including basements.
 - c. Where fuel-burning appliances are in a bedroom or an attached bathroom, install a carbon monoxide alarm within the bedroom.
 - d. Provide a note: "CARBON MONOXIDE ALARM shall be interconnected hard-wired with battery backup."
 - e. Battery carbon monoxide alarm is permitted in existing dwelling units built prior to January 1, 2011 where no construction is taking place.
45. Show location of 22 in. x 30 in. attic access with 30-in. minimum headroom for attic greater than 30 sq. ft. (R807.1)
46. Provide full height transverse and longitudinal building cross sections showing framing, plate heights, total heights, insulation, foundation, finish grade, etc.
47. Specify type, manufacturer and ICC number (or submit other approved testing agency report) for elastomeric weatherproof walking surface material to be used on all exterior decks and balconies over enclosed construction. Minimum slope 1/4 in./ft. is required for drainage.
48. Show location of Forced Air Unit (F.A.U.)/Water Heater on plans.
49. F.A.U. is not permitted in attic of prefabricated trusses unless required F.A.U. clearances are clearly detailed on the plans.
50. Clothes dryer moisture exhaust duct must be 4 in. in diameter and length is limited to 14 ft. with 2 elbows. The duct length shall be reduced by 2 ft. for every elbow in excess of two. (CMC 504.4.2.1)
51. Show location of the attic appliances (furnace, fan, coil, etc.) and passageway 24 in. wide of solid continuous flooring from access to equipment and its controls. Length of the passageway shall not exceed 20 ft. (CMC 904.11)
52. Heating appliances (water heater, furnace, etc.) located in garage that creates a glow, spark or flame shall be installed at least 18 in. above the finished floor. (CMC 305.1.1)
53. All new, replacement and existing water heaters shall be strapped to the wall in two places. One in the upper 1/3 of the tank and one in the lower 1/3 of the tank. The lower point shall be a minimum of 4 in. above the controls. (CPC 508.2)

EXITS AND STAIRS

54. Provide at least one side-hinged egress door from each dwelling unit not less than 3 ft. wide and 6 ft. 6 in. in height, with a minimum clear width of 32 in. Egress doors shall be readily openable from inside without the use of a key or special knowledge or effort. (R311.2)
55. Provide a minimum of 36-in. landing at _____ . (R311.3)
56. Required egress doors at _____ shall not swing over a landing that is more than 1.5 in. in height below the threshold. (R311.3.1)
57. Door may open on an exterior landing, provided the door does not swing over the exterior landing and the landing is not more than 7³/₄ in. below the top of the threshold. (R311.3.1 EX, R311.3.2)
58. For habitable levels or basements located more than one story above or below an egress door, the travel distance from any occupied point to a stairway or ramp shall not exceed 50 ft. (R311.4)
59. Provide section and details of interior and exterior stairway showing:
 - a. Maximum rise of 7.75 in. and minimum run (tread) of 10 in. with maximum 3/8 in. variance. (R311.7.5.1 & R311.7.5.2)

(SAMPLE TEMPLATE)

- b. Where tread depth is < 11 in. a nosing between .75 in. & 1.25 in. shall be provided. (R311.7.5.3)
 - c. Minimum width of 36 in. (maximum 4.5 in. handrail projection is permitted on each side). (R311.7.1)
 - d. Minimum headroom of 6 ft. 8 in. (R311.7.2)
 - e. The maximum vertical rise between floor levels or landings is 151 in. (R311.7.3)
 - f. Framing (stringer, landing, etc.) size, bracing, connections and footings. (R311.5)
 - g. Stairways shall be positively anchored to the primary structure without the use of toenails or nails subject to withdrawal. (R311.5)
 - h. Provide a note on the plans "Interior stairways shall be provided with an artificial light source, capable of illuminating treads and landings to levels of not less than 1-foot candle (11 lux) as measured at the center of treads and landings. There shall be a wall switch at each floor level to control the light source where the stairway has six or more risers." (R303.7)
 - i. Exterior stairways shall be provided with an artificial light source located at the top landing of the stairway. (R303.8)
 - j. Exterior stairways providing access to a basement from the outdoor grade level shall be provided with an artificial light source located at the bottom landing of the stairway. (R303.8)
60. Winder treads shall have a minimum tread depth of 10 in. at a point 12 in. from the narrow side and a minimum tread depth of 6 in. (R311.7.5.2.1)
61. Spiral Stairways shall meet the following:
- a. Submit shop drawings for spiral stairway showing compliance with Section R311.7.10.1.
 - b. Provide spiral stairway column connections & footing details.
62. Handrails shall satisfy the following:
- a. Provide a minimum of one continuous handrail on stairways with 4 or more risers and at all open sides. (R311.7.8)
 - b. Handrail height shall be 34 to 38 in. above the nosing of treads. (R311.8.3.1)
 - c. Openings between intermediate balusters shall not allow the passage of a 4 3/8-in. diameter sphere. The triangular openings formed by the riser, tread and bottom rail shall not allow the passage of a 6-in. diameter sphere. (R312.1.3 EX 1 & 2)
 - d. Handrail grips shall be either Type I or Type II specified in Section R311.7.8.5.
 - e. Return handrail(s) to newel post or wall. (R311.7.8.4)
63. Guards shall meet the following:
- a. Provide guards where the open side is more than 30 in. above the floor or grade below at any point within 36 in. horizontally to the edge of the open side. (R312.1.1)
 - b. Guard height shall be a minimum of 42 in. (R312.1.1.2)
 - c. Required guards shall not have openings that allow passage of a sphere 4 in. in diameter. (R312.1.3)
64. Provide connection details of guardrail and/or handrail adequate to support a concentrated load of 200 pounds applied in any direction at any point along the top. (T-R301.5)
65. Ramps serving the egress door shall have a slope of not more than 1:12 (8.3 percent). All other ramps shall have a maximum slope of 1:8 (12.5 percent). Provide ramp details, including slope, landings, hand rail where required, etc. (R311.8)
66. Provide dimensions at proposed window well. Minimum width is 36 in. and horizontal area is 9 sq. ft. (R310.2.3)
67. Window well vertical depth is greater than 44 in. Provide details at required permanently affixed ladder or steps, including width (12 in. min), projection (3 in. maximum) and rung vertical spacing (18-in. maximum). (R310.2.3.1)

(SAMPLE TEMPLATE)

68. Window wells shall be designed for proper drainage by connecting to the building's foundation drainage systems required by Section R405.1 or by an approved alternate method. (R310.2.3.2)

VENTILATION

69. Attic vents shall meet the following: (R806.1, R806.2)
- Show ventilation type, size and location.
 - The net free ventilating area shall not be less than:
 - 1/150 of the attic space **OR**
 - 1/300 provided a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling in Climate Zone 14 and 16 **OR**
 - 1/300 provided at least 40% and not more than 50% of the required vent area is located within 3 ft. below the ridge or highest point of the space, with the balance of the required ventilation provided by eave or cornice vents.
 - Openings shall have corrosion-resistant wire mesh or other approved material with 1/16-in. minimum and 1/4-in. maximum opening.
 - A minimum of 1-in. airspace shall be provided between insulation and roof sheathing. (R806.3)
 - Unvented attic assemblies shall meet all the conditions in Section R806.5.
70. Under-floor vents shall meet the following requirements: (R408)
- Show ventilation type, size and location.
 - One ventilation opening shall be placed within 3 ft. of each corner of the building
 - The net free ventilating area shall not be less than 1/150 of the crawl-space area.
 - Openings shall have corrosion-resistant wire mesh or other approved material with 1/8 in. minimum and 1/4-in. maximum opening.
 - Unvented under-floor space shall comply with Section 408.3.

GARAGE AND CARPORT

71. The following is required for the separation of the private garage from the dwelling unit:
- Garages or carports beneath habitable rooms shall be separated by no less than 5/8 in. Type X gypsum board. Provide minimum 1/2 in. gypsum board on the garage side elsewhere. (T-R302.6)
 - Provide minimum 1/2 in. gypsum board on the garage side of detached garages less than 3 ft. from a dwelling unit or structural members supporting floor or ceiling assemblies. (T-R302.6)
 - Doors to the dwelling unit shall be solid wood or solid or honeycomb core steel and not less than 1 3/8 in. thick, or 20 minute rated, unless the dwelling unit and the garage are protected by an automatic fire sprinkler system. Doors shall be self-closing and self-latching. (R302.5.1)
 - Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. (R302.5.1)
 - Garage floor surfaces shall be of an approved noncombustible material and the area used to park vehicles shall be sloped to a drain or toward the main vehicle entry. (R309.1)
 - Floors in garage/carport shall be designed to support a uniformly distributed load of 50 psf or concentrated live loads of 2,000 lbs. acting on an area of 20 sq. in. for elevated garage floors. (T-R301.5, Footnote a)

WOOD BURNING DEVICES (FIREPLACES)

72. Wood burning devices are prohibited for properties located in the South Coast Air Quality Management District (SCAQMD) or the non-desert areas (Rule 445).

NOTE: ALL wood burning devices (masonry, factory built, woodstove or pellet stove) shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. (CGBSC 4.503.1)

OR

(SAMPLE TEMPLATE)

Wood burning devices are permitted for properties located in the Mohave Dessert Air Quality Management District (MDAQMD) or the desert areas.

NOTE: ALL wood burning devices (masonry, factory built, woodstove or pellet stove) shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. (CGBSC 4.503.1)

73. **VENEER / FIREPLACE** Specify and detail the veneer material, thickness, backing, anchorage, footings and support over openings in accordance with Section R703.8.
74. Masonry fireplaces and chimneys shall be constructed, anchored, supported and reinforced as required per Sections R1001 and R1003.
75. All wood beams, joists, studs and other combustible material shall have a minimum clearance of 2 in. from the front and sides and 4 in. from the back faces of masonry fireplaces. (R1001.11)

CALIFORNIA GREEN CODE REQUIREMENTS

GENERAL REQUIREMENTS

Newly constructed low-rise and high-rise residential buildings/structures AND additions or alterations to residential buildings where the addition or alteration increases the building's conditioned area, volume or size shall comply with the following requirements. (301.2)

76. Comply with 2019 CBSC with San Bernardino County Amendments. Provide completed "**MANDATORY REQUIREMENTS CHECKLIST FOR RESIDENTIAL BUILDINGS**" on the plan.
77. Replace non-compliant plumbing fixtures with water-conserving plumbing fixtures prior to final inspection addition and alteration project (CGBC 4.303)
 - a. Water Closets – 1.28 GPF
 - b. Wall Mount Urinals – 0.125 GPF and all other Urinals – 0.5 GPF
 - c. Single showerhead – 1.8 GPM at 80psi
 - d. Multiple showerheads – 1.8 GPM at 80psi for all combined showerheads
 - e. Lavatory faucets – 1.2 GPM at 60psi
 - f. Lavatory faucets in public use areas – 0.5 GPM at 60psi
 - g. Metering faucets – 0.20 gallons per cycle
 - h. Kitchen faucets – 1.8 GPM at 60psi

(SAMPLE TEMPLATE)

PLANNING AND DESIGN

78. For future installation of electric vehicle supply equipment (EVSE) in each one- and two-family dwellings and townhouses:
- Show on plans that a minimum 1 in. (inside diameter) listed raceway is installed for each unit to accommodate a dedicated 208/240 volt branch circuit. The raceway shall originate at the main service or a subpanel and terminate in close proximity to the proposed location of the charging system into a listed cabinet, box or enclosure.
 - Add note to plans: "The panel or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device."
 - Add note to plans: "The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as *EV CAPABLE*. The raceway termination location shall be permanent and visibly marked *EV CAPABLE*." (4.106.4.1)
79. Where multi-family dwellings and R occupancies other than one and two-family dwellings and townhouses are constructed on a building site, 3% of the total parking spaces, but not less than one, shall be electric vehicle charging spaces (EV spaces) capable of supporting future electric vehicle supply equipment (EVSE). Calculations for the required number of EV spaces shall be rounded up to the nearest whole number. Show on plans that the following are provided:
- Where only one EV space is required, install a minimum 1 in. (inside diameter) raceway to accommodate a dedicated 208/240 volt branch circuit. Raceway shall originate at the main service or subpanel and terminate in close proximity to the EV space into a listed cabinet, box or enclosure.
 - Where multiple charging spaces are required, show raceway termination points.
 - The minimum length of each EV space shall be 18 ft.
 - The minimum width of each EV space shall be 9 ft.
 - For buildings with 17 or more dwelling units, at least one of the required EV spaces shall be located in common use areas, equipped with an EV charging station and available for use by all residents.
 - For buildings with 17 or more dwelling units, one in every 25 EV spaces, but not less than one, shall also comply with the following:
 - 8 ft. wide aisle next to the 9 ft. wide EV space or a 5 ft. wide aisle next to a 12 ft. wide EV space.
 - The surface slope for this EVCS and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) on any direction.
 - The EV space shall either be located adjacent to an accessible parking space meeting the requirements of CBC Chapter 11A to allow the use of the EV charger from the accessible parking space, or be located on an accessible route to the building as defined in Chapter 2 of the CBC.
 - Add note to plans: "The electrical system shall have sufficient capacity to simultaneously charge all designated EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. A separate electrical permit is required."
 - Add note to plans: "The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as *EV CAPABLE* in accordance with the CEC." (4.106.4.2)

(SAMPLE TEMPLATE)

WATER EFFICIENCY AND CONSERVATION

80. Provide a schedule of plumbing fixtures and fixture fittings on the plans that comply with the following flow rates (CGBC 4.303):
 - a. Water Closets – 1.28 GPF
 - b. Wall Mount Urinals – 0.125 GPF and all other Urinals – 0.5 GPF
 - c. Single showerhead – 1.8 GPM at 80psi
 - d. Multiple showerheads – 1.8 GPM at 80psi for all combined showerheads
 - e. Lavatory faucets – 1.2 GPM at 60psi
 - f. Lavatory faucets in public use areas – 0.5 GPM at 60psi
 - g. Metering faucets – 0.20 gallons per cycle
 - h. Kitchen faucets – 1.8 GPM at 60psi
81. Provide automatic irrigation system controller: weather or soil moisture based controllers prior to the final inspection.

MATERIAL CONSERVATION & RESOURCE EFFICIENCY

82. Provide a note on the floor plans indicating that annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar methods. (CGBSC 4.406.1)
83. Provide Building Operations and Maintenance at the time of final inspection and placed in the building. (CGBSC 4.410.1)

ENVIRONMENTAL QUALITY (California Green Building Standards Code as the reference)

84. Fireplaces shall be direct vent sealed combustion-type. Indicate on the plans the manufacturer name and model number. (4.503.1)
85. Provide the following notes on the plans:
 - a. At the time of rough installation, or during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal, or other acceptable methods to reduce the amount of water, dust and debris that may enter the system. (4.504.1)
 - b. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Insulation products that are visibly wet or have high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. (4.505.3)
 - c. All mechanical exhaust fans in rooms with a bathtub or shower shall comply with the following:
 - i. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
 - ii. Fans must be controlled by a humidity control capable of adjustment between relative humidity ranges of $\leq 50\%$ to a maximum of 80% unless functioning as a component of a whole house ventilation system. (4.506.1)
86. Provide the following notes on the plans regarding finish material pollutant control. Verification of compliance with these sections must be provided at the time of final inspection and shall be documented on the *Building Operations and Maintenance Manual*.
 - a. Adhesives, sealants and caulks shall meet or exceed the standards outlined in Section 4.504.2.1 and comply with the VOC limits in Tables 4.504.1 and 4.504.2 as applicable. (4.504.2.1)
 - b. Paints and coatings shall meet or exceed the standards outlined in Section CGBSC 4.504.2.2 and comply with the VOC limits in Table 4.504.3. (4.504.2.2)
 - c. Aerosol paints and coatings shall meet or exceed the standards outlined in Section 4.504.2.3. (4.504.2.3)

(SAMPLE TEMPLATE)

- d. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:
 - i. Carpet and Rug Institute's Green Label Plus Program **OR**
 - ii. California Department of Public Health Standard Method for the testing of VOC Emissions (Spec 01350) **OR**
 - iii. NSF/ANSI 140 at the Gold Level **OR**
 - iv. Scientific Certifications Systems Indoor Advantage Gold (4.504.3)
- e. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label Program. Carpet adhesives shall not exceed a VOC limit of 50 g/L. (4.504.3.1, 4.504.3.2)
- f. A minimum of 80% of floor area receiving resilient flooring shall comply with one or more of the following:
 - i. VOC emission limits defined in the CHPS High Performance Products Database **OR**
 - ii. Products compliant with CHPS criteria certified under the Greenguard Children & Schools program **OR**
 - iii. Certification under the RFCI FloorScore Program **OR**
 - iv. Meet the California Department of Public Health Standard Method for the Testing of VOC Emissions. (405.4.4)
- g. Composite wood products (hardwood plywood, particleboard and MDF) installed on the interior or exterior of the building shall meet or exceed the standards outlined in Table 4.504.5. Verification of compliance with these sections must be provided at the time of inspection. (4.504.5)

ENERGY REQUIREMENTS

- 87. The plans must show conformance with the latest State (2019) Title 24 Energy Standards. Energy calculations must be submitted. Forms CF-1R and MF-1R, completed and signed by the document author and the owner/designer, are to appear on the submitted plans. Show all of the required insulation and other mandatory features on the plans either by notes or details. *Where calculations indicate, "HERS Verification Required," such calculations shall be registered and submitted to an approved agency (such as CalCERTS). The resulting "registered" calculations will include a registration number in the page footer and a watermark across the page. Calculation pages bearing these identification marks shall be permanently attached to the documents.*
- 88. Show how dwelling is provided with comfort heating facilities capable of maintaining 68°F at 3 ft. above the floor. (R303.10)
- 89. Provide fluorescent lighting in bathrooms and kitchen for general lighting. Locate switch and lighting fixture to show compliance. [Title 24-150k]
- 90. Indicate that windows are dual glazed and labeled. Window frames shall be consistent with those indicated in the energy calculations. (U-values & SHGC factors)
- 91. Provide minimum stud/rafter sizing to accommodate insulation. Provide 1-in. minimum clearance between insulation and roof sheathing for rafter space ventilation. (R806.3)
- 92. Show and specify local and whole house fans, including kitchen: 100 CFM, non-recirculating, 3 zones maximum; bathroom 50 CFM; and whole house fan per calculation based on sq. ft. and number of bedrooms, continuous, labeled if switched, 1 zone maximum. Comply with ASHRAE Standard 62.2 mandatory measures.

CONSTRUCTION/STRUCTURAL REQUIREMENTS

GENERAL REQUIREMENTS

(SAMPLE TEMPLATE)

93. Buildings and structures, and all parts thereof, shall be constructed to safely support all loads as prescribed in 2019 CRC. When a building contains structural elements exceeding the limits of or not conforming to the Residential Code, these elements shall be engineered in accordance with 2016 CBC with San Bernardino County Amendments. Provide a statement to clearly identify which portion of structural design conform to the (R301.1.3) / (CBC 2308.1.1).
94. List required special inspections per CBC 1704 on the first sheet of the plans.
95. Structural observation is required for this project. Note on the first sheet of the plans. Specify all stages at which structural observation is to be performed, what is to be observed, when structural observation reports will be submitted. (CBC 1704.6)
96. Indicate grade and species of framing lumber, glu-lam beams, treated sill plates, specifications of concrete, mortar and grout, grade of masonry units, structural steel specifications and grade of reinforcing steel. (CBC 1903&4, CBC 2203&2303) (R402.2, R502.1, R602.1)
97. Cross-reference all calculations to structural elements (joists, beams, shear walls, etc.) on framing plans or provide calculation key plan sketch.
98. Details and sections are required where indicated on plan check set.
99. Delete and/or cross out or mark "Not Used" notes and details that do not apply.
100. Reference/key/identify all sections and details as to location on plans, elevations, sections and detail sheets.
101. Clearly show and indicate all new, existing and removed walls and construction.
102. Structural and architectural plans shall be consistent.
103. Provide retaining wall calculations at all configurations, including all loading conditions (seismic loading, vehicular loading, adjacent surcharge, etc.)
104. THE FOLLOWING DESIGN LOADS AND OTHER INFORMATION PERTINENT TO THE STRUCTURAL DESIGN REQUIRED BY CBC 1603.1.1 THROUGH 1603.1.8 SHALL BE INDICATED ON THE CONSTRUCTION DOCUMENTS: (CBC 1603.1)
 - a. Floor dead load and live load.
 - b. Roof dead load and live load.
 - c. Wind design data:
 - i. Basic wind speed in M.P.H.
 - ii. Wind importance factor, I, and risk category.
 - iii. Wind exposure.
 - iv. Internal pressure coefficient.
 - d. Earthquake design data:
 - i. Seismic importance factor, I, and risk category.
 - ii. Mapped spectral response accelerations, SS and S1.
 - iii. Site class.
 - iv. Spectral response coefficients, SDS and SD1.
 - v. Seismic design category.
 - vi. Basic seismic-force-resisting system(s).
 - vii. Design base shear.
 - viii. Seismic response coefficient(s), CS.
 - ix. Response modification factor(s), R.
 - x. Analysis procedure used.
 - xi. Redundancy factor used.

(SAMPLE TEMPLATE)

Foundation Requirements

105. The project is located in a Geologic Hazard Zone. Please address items outlined under the County's Development Code – Plan Review Comments.
106. The structure is located in FEMA Flood Zone ____; therefore, finish floor shall be ___ ft. above adjacent grade.
107. Concrete and masonry foundations and walls shall be designed in accordance with the approved Soils Report, the approved Alternate Materials and Methods of Design and Construction - Residential Foundation form, or Information Bulletin 005.
108. Project soils engineer/geologist to sign and stamp foundation plans and details.
109. Provide the following note on plans: "All foundation excavations must be observed and approved by the Project Engineering Geologist and/or Project Geotechnical Engineer prior to inspection of reinforcing steel."
110. Provide/verify by calculations that existing/proposed foundation system is adequate to support the applied vertical loads at 1,500 psf. soil bearing pressure or per soils report. (CBC 1806.2, Table 1806.2)
111. Specify slab-on-grade thickness, reinforcing and underlayment. (CBC 1907.1)
112. Provide design for foundation piers. Design/calculations are required to justify pad footings supporting posts.
113. Unless a soils report specifies otherwise:
 - a. Use a maximum soil bearing pressure of 1,500 psf. (CBC 1806.2, Table 1806.2)
114. Show foundation sections 12"/15"/18" wide, 6" thick and 12" deep and indicate below undisturbed ground surface (or engineered compacted fill and submit soils report). (CBC Table 1809.7)
115. Buildings/foundations must be setback from adjacent slopes per CBC Figure 1808.7.1 OR CRC Figure 403.1.7.1 and/or directed by Geotechnical Report. Show sections to verify.
116. Show the locations of all hold-down hardware on foundation plan per structural calculations. Note on plans: "All hold-down hardware is to be secured in place prior to foundation inspection."
117. Show foundation anchor bolt size and spacing on foundation plan. Note or show the following on plans:
 - a. Minimum of ½ in. diameter A.B. at SDC D or 5/8 in. at SDC E or F embedded 7 in. into footing and spaced 6 ft. o.c. (maximum). (CBC 2308.2, CRC 403.1.6)
 - b. Minimum two bolts per piece of sill plate and one located within 12 in. and not less than 7 bolt diameter or 4 ¾ in. of each end of each sill plate.
 - c. Sill bolt diameter and spacing for three-story raised floor buildings shall be specifically designed.
 - d. 3 in. x 3 in. x 0.229 in. plate washer shall be used on each anchor bolt.
118. Specify size, spacing, ICC, number and manufacturer of expansion, wedge, or adhesive anchors to be used on existing footing. Provide justification for use including noting edge distance and embedment depth on plans.
119. Minimum clearance of untreated wood members above earth is 12 in. for girders and 18 in. for joists. Show and dimension. (R317.1, Item 1)

(SAMPLE TEMPLATE)

120. Exterior foundations supporting wood shall be minimum 8 in. above from the exposed earth or 6 in. above from at least 18 in. wide asphalt or concrete slab. Alternatively, wood framing members, including sheathing to be of naturally durable or preservative-treated wood. (CBC 2304.11.2.2) / (R317.1, Item 2)
121. Show detail on plan for posts or columns that are exposed to weather shall be at least 1 in. above the floor/slab or 6 in. above exposed earth and earth is covered by impervious moisture barrier. (R317.4, Ex 1 & R317.1 Item 5)
122. Show/detail on plan for posts or columns in enclosed crawl spaces or unexcavated area shall be at least 8 in. above from the exposed earth and earth is covered by impervious moisture barrier. (R317.1.4, Ex 2)
123. Provide detail for stepped footings when slope of the footing exceeds one in ten. (R403.1.5)
124. Foundation walls and retaining walls shall be designed to resist lateral soil loads. Soil loads specified in Table 1610.1 shall be used as the minimum design lateral soil loads unless determined otherwise by a geotechnical investigation in accordance with Section 1803. (R404.4)
125. Foundation walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure. Retaining walls free to move and rotate at the top shall be permitted to be designed for active pressure. (CBC 1610.1)
126. Design lateral pressure from surcharge loads shall be added to the lateral earth pressure load. Design lateral pressure shall be increased if soils at the site are expansive. (CBC 1610.1)

Framing Requirements (Vertical Loads)

127. Include a vertical snow load of ___ psf in the design.
128. Provide design for combined loading (DL+LL+WIND) on exterior wall studs and posts spanning over 10 ft. where indicated on plan. Wall studs are to run continuous without intermediate plate (i.e., full height, balloon framing) unless calculations are provided for an alternate design. Note the use of full-length studs (balloon frame) on exterior walls of rooms with vaulted ceiling. (CBC Table 2308.5.1)
129. Pre-fabricated trusses: Provide truss plans, roof and floor, for all portions of the proposed structure(s). Plans shall include design for each individual truss, an overall truss layout plan and erection details. Plans shall be stamped, signed and dated by an engineer registered in the State of California. (R802.10.2) / (CBC 2303.4.1.4.1).
130. The design for the transfer of loads and anchorage of each truss to the supporting structure is the responsibility of the registered design professional. (CBC 2303.4.4)
131. If plans are designed under the provisions of conventional construction and pre-fabricated trusses are included in the design, the bearing and connection between the pre-fabricated trusses and the conventional construction are required to be prepared by or under the supervision of a registered engineer or licensed architect, the first sheet of calculations and each sheet of plans containing structural notes, plans, or details, must bear the seal (including expiration or renewal date) and original signature of the responsible Engineer/Architect. (CA B&P code) (R301.1.3.1)/(CBC 2303.4.4)
132. Submit design/details for trussed rafters, or add the following "Deferred Submittal" note on the first sheet of the plans: "Truss calculations and layout plan will be reviewed by the Arch/Engineer of record and submitted to the Building Department prior to installation." (R802.10.1) / (CBC 2303.4.4)

(SAMPLE TEMPLATE)

133. Alterations to trusses: Truss members and components shall not be cut, notched, spliced or otherwise altered in any way without approval of professional. Alteration resulting in the addition of load that exceed the design load for the truss shall not be permitted without verification that the truss is capable of supporting the additional loading. (R802.10.4) / (CBC 2303.4.5)
134. Provide nailing schedule per CBC table 2304.10.1 or CRC table 603.2.1.
135. For roof and floor diaphragms specify structural panel thickness, grade, span rating or panel index, nailing schedule and panel layout. (CBC Table 2306.2)
136. Specify the size, spacing and direction of roof rafters (CBC Table 2308.7.2), ceiling joists (CBC Table 2308.7.1) and/or floor joists (CBC Table 2308.4.2.1).
137. Beams, girders, doubled joists, walls, or other bearing partitions are required under parallel bearing partitions. (R502.4)
138. Solid blocking or cross bridging of floor joists exceeding a nominal 2 inch x 12 inch is required in accordance with CRC 502.7.1. Show compliance on plans.
139. Show size(s) of all headers over openings. [CRC 502.5 & Table 602.7(1)]
140. Detail lateral support for the top of interior non-bearing walls to resist the loads to which they are subjected to but not less than horizontal load of 5psf. (CBC 1607.5)
141. Where the roof slope is less than three units vertical in 12 units horizontal (25-percent slope), members supporting rafters and ceiling joists such as ridge board, hips and valleys shall be designed as beams. (R802.4.4)
142. Roof purlins may be used to reduce the span of rafters within the allowable limits. Purlins to be at minimum same size as rafters, the maximum span for 2x4/2x6 is 4 ft. /6 ft., with braced struts not over 8 ft. in unbraced length and not less than 45 degrees from horizontal to a bearing wall or partition. (R802.4.5)
143. Provide rafter ties, design and support ridge/hips/valleys as beams, or provide other design for roof support when ceiling joists are not parallel to roof rafters. (R802.4.6)
144. Positive connections shall be used for all connections to ensure against uplift and lateral displacements. Show and detail. (R502.9)
145. Specify studs size, height and spacing. [CRC R602.3.1 & Table R602.3(5)]

Framing Requirements (Lateral Loads)

146. Details: Detail all shear resistive elements on plans. Include nailing, blocking, hold-downs, shear anchors/nails, opening reinforcement, drag ties, floor/roof diaphragms, shear walls, drag ties, chord splices and continuity ties, etc. Provide calculations to verify size, spacing and force to be transferred.
147. Note on the plans: Hold-downs shall be re-tightened just prior to covering the wall framing.
148. Braced wall lines shall be supported by continuous foundations. (R403.1.2, R602.10.8.1 & R602.11.1)
149. The lateral design is to be based on the most restrictive of either the wind or seismic forces per CBC 1609 and 1613, respectively.
150. Wind analysis that does not comply with the conditions of ASCE 7-16, Section 6.4, Simplified Procedure, shall comply with the Analytical Procedure. (ASCE 7-16 6.5)
151. Seismic analysis that shall comply with the procedure of ASCE 7-16 12.14, Simplified Base Shear Design, OR with the Equivalent Lateral Force Procedure per ASCE 7-16 12.8.

(SAMPLE TEMPLATE)

When assuming flexible horizontal diaphragms for lateral force distribution, the base shear and lateral design shall meet the requirements of CBC 1613.6 and ASCE 7-16 12.3.1.

152. Show location of project on seismic maps to identify seismic design coefficients to be used. Alternatively, you may choose to use <https://hazards.atcouncil.org> and print out the design values and submit a copy with your resubmittal.
153. Provide overturning calculations for all shear wall panels. Detail how all overturning loads are carried down to foundation through intermediate elements.
154. Provide grade beam calculations and details where proposed or existing foundations resist overturning moments or as indicated. Justify use of existing foundation to resist overturning forces. (CBC 1604.4)
155. Provide details of the construction of wood shear walls and diaphragms:
 - a. Collector members (drag struts) shall be designed and detailed to transmit tension and compression forces into lateral resisting elements. (ASCE 7-10 12.10.2)
 - b. Perimeter members at floor/roof openings shall be detailed to distribute the shearing stresses.
 - c. Diaphragm chord and tie members shall be in the plane of the diaphragm. Detail nailing and connection of diaphragm to chord and ties.
 - d. All parts of structure shall be tied and interconnected. (ASCE 7-10 11.7.3. & 4)
 - e. Note on plans: "All diaphragm and shear wall nailing shall utilize common nails with full heads." CBC table 2304.10.1 note 9
 - f. Limit braced walls to the following height to width ratios: 2:1 wood structural panels, 2:1 gypsum wallboard and Portland cement plaster (stucco). (SDPWS Table 4.3.4)
 - g. Double sided panels and panels with allowable shear exceeding 350 plf. require 3 in. minimum framing members and staggered nailing for all members receiving edge nailing. Detail anchor bolts and sole plate nailing. (CBC 2306.3 and NDS Table 4.3A)
 - h. Specify on plans, the required nail penetration depth of sole plate nailing along lines of shear walls. Where 3 in. nominal sole plates are required, provide calculation to justify nailing. Lag screws may be required.
156. Specify on the plans all shear walls, sheathing materials (stucco, gyp. bd. and plywood) including thickness and grade and spacing of fasteners. Reference walls with key to nailing schedule. Show length of shear walls on the plans.
157. Use details and sections to show how lateral shear is transferred from diaphragms through intermediate elements to shear walls and to the foundation. All blocking, nailing and fasteners at intermediate elements shall be detailed to have a minimum capacity of the shear wall below. Note on plans: "Shear walls shall run continuously from foundation to roof/floor framing."
158. Detail how interior shear walls are connected (through the floor or ceiling/attic space) to the floor/roof diaphragm above.
159. Show the location of all upper-floor hold-down hardware on the appropriate plan(s).
160. Redundancy Factor for structures assigned to Seismic Design Category D, E, or F, ρ shall be 1.3 unless one of the two conditions is met, whereby ρ is permitted to be taken as 1. (ASCE 7-10 12.3.4.2)
161. Provide interaction details between new and existing framing to have an integral unit in resisting seismic forces unless separated structurally by a distance sufficient to avoid damaging contact per ASCE 12.12.3.
162. At discontinuities in the lateral resisting system, check-supporting beams are adequate to resist overturning, including omega factor. (ASCE 7-10 12.3.3.3)

(SAMPLE TEMPLATE)

163. Walls braced to resist wind and seismic forces shall not exceed height to width ratios of 3½:1 and 2:1 respectively for wood structural panels and 1½:1 for gypsum wallboard and Portland cement plaster (stucco). (R301.1 & CBC 2305 / AF&PA SDPWS TABLE 4.3.4-2008)

FIRE SAFETY OVERLAY ZONE:

Buildings/structures erected, constructed, altered, repaired or moved within or into the **Fire Safety Overlay Zone** shall comply with the following requirements. (701A.3; R337.1.3)

Paints, coatings, stains or other surface treatments are NOT AN APPROVED method of protection required in CBC Chapter 7A and CRC Section R337. (703A.5.3; R337.3.5.3).

ROOFING - Fire Safety Overlay Zone

164. Roof covering shall be Class A as specified in Section 1505.2/R902. (705A.2; R337.5.1).
165. Detail the space between the roof covering and roof decking; the spaces shall be constructed to resist the intrusion of flames and embers, or provide one layer of 72 lbs. mineral-surfaced non-perforated cap sheet meeting ASTM D3909. (705A.2; R337.5.2)
166. Wood-shingle and wood-shake roofs are PROHIBITED regardless of classification. (705A.2; R337.5.2)
167. Valley flashings shall be not less than 0.019 in. (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a 36 in. wide underlayment consisting of one layer of 72 pound mineral-surfaced non-perforated cap sheet meeting ASTM D3909 running the full length of the valley. (705A.3; R337.5.3)
168. Note on the plans: "Roof gutters shall be designed to prevent the accumulation of leaves and debris." (705A.4; R337.5.4)

VENTS - Fire Safety Overlay Zone

169. Vent openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces and underfloor vents shall resist building ignition from the intrusion of burning embers and flame through the vent openings. Vent openings shall comply with one of the following: (706A.2; R337.6.2)
- a. Listed vent complying with ASTM E2886 **OR**
 - b. Protected by corrosion resistant, noncombustible wire mesh with minimum 1/16" and maximum. 1/8 in. openings.
170. Vents shall NOT be installed on underside of eaves and cornices unless the conditions set forth in Section 706A.3 or R337.6.3 are met. (706A.3; R337.6.3)

EXTERIOR WALLS - Fire Safety Overlay Zone

171. Exterior wall covering or wall assembly shall comply by meeting one of the following:
- a. Noncombustible construction **OR**
 - b. Ignition resistant material **OR**
 - c. Heavy Timber construction **OR**
 - d. Log wall construction **OR**
 - e. Complies with SFM 12-7A-1. (707A.3; R337.7.3)

(SAMPLE TEMPLATE)

OPEN ROOF EAVES - Fire Safety Overlay Zone

172. Exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:
- Noncombustible material **OR**
 - Ignition-resistant material **OR**
 - One layer of 5/8" Type X applied behind an exterior covering on the underside exterior of roof deck **OR**
 - Exterior portion of a 1-hr fire resistive exterior wall assembly applied to the underside of roof deck designed for exterior fire exposure per Gypsum Association Fire Resistance Design Manual. (707A.4; R337.7.4)

ENCLOSED ROOF EAVES AND ROOF EAVES SOFFITS - Fire Safety Overlay Zone

173. Exposed underside shall be protected by one of the following:
- Noncombustible material **OR**
 - Ignition-resistant material **OR**
 - One layer of 5/8" Type X applied behind an exterior covering on the underside of the rafter tails or soffit **OR**
 - Exterior portion of a 1-hr fire resistive exterior wall assembly applied to the underside of rafter tails or soffit per Gypsum Association Fire Resistance Design Manual **OR**
 - Boxed-in roof eave soffit assemblies complying with SFM 12-7A-3 or ASTM E2957. (707A.5; R337.7.5)

EXTERIOR PORCH CEILINGS - Fire Safety Overlay Zone

174. Exposed underside shall be protected by one of the following:
- Noncombustible material **OR**
 - Ignition-resistant material **OR**
 - One layer of 5/8" Type X applied behind an exterior covering on the underside of the ceiling **OR**
 - Exterior portion of a 1-hr fire resistive exterior wall assembly applied to the underside of the ceiling assembly per Gypsum Association Fire Resistance Design Manual **OR**
 - Porch ceiling assemblies with a horizontal underside complying with SFM 12-7A-3 or ASTM E2957. (707A.6; R337.7.6)

FLOOR PROJECTIONS / UNDERFLOOR PROTECTION / UNDERSIDE OF APPENDAGES - Fire Safety Overlay Zone

175. Exposed underside shall be protected by one of the following:
- Noncombustible material **OR**
 - Ignition-resistant material **OR**
 - One layer of 5/8" Type X applied behind an exterior covering on the underside of the floor projection **OR**
 - Exterior portion of a 1-hr fire resistive exterior wall assembly applied to the underside of the floor assembly per Gypsum Association Fire Resistance Design Manual **OR**
 - Underside of a floor assembly complying with SFM 12-7A-3 or ASTM E2957 **OR**
 - Heavy timber structural columns and beams are allowed for underfloor protection and underside appendages only. (707A.7-9; R337.7.7-9)

EXTERIOR WINDOWS, SKYLIGHTS AND DOORS - Fire Safety Overlay Zone

176. Exterior glazing shall be MULTI-PANE units with a minimum of ONE TEMPERED PANE, or glass block units, or minimum 20 minimum rated or complies with SFM 12-7A-2. (708A.2.1; R337.8.2.1)
177. Exterior doors shall meet one of the following:
- Noncombustible material **OR**
 - Ignition-resistant material **OR**

(SAMPLE TEMPLATE)

- c. Solid core wood having stiles and rails not less than 1 3/8 in. thick with interior panel thickness not less than 1 1/4 in. thick. **OR**
- d. Minimum 20 minimum rated **OR**
- e. Complies with SFM 12-7A-1. (708A.3; R337.8.3)

DECKING - Fire Safety Overlay Zone

178. Walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials when any portion of such surface is within 10 ft. of the building:
- a. Material that complies with the performance requirements of Section 709A.4 when tested in accordance with both ASTM E2632 and ASTM E2726.
 - b. Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723.
 - c. Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5.
 - d. Exterior fire retardant treated wood
 - e. Noncombustible material
 - f. Any material that complies with the performance requirements of SFM Standard 12-7A-4A when attached exterior wall covering is also composed of noncombustible or ignition-resistant material.
 - g. Any material that complies with the performance requirements of Section 709A.5 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only noncombustible or ignition-resistant materials.

ACCESSORY STRUCTURES - Fire Safety Overlay Zone

179. When any portion of an attached or detached accessory structure (trellises, arbors, patio covers, carports, gazebos and similar structures of an accessory or miscellaneous character) lies within 50 ft. of an applicable building shall be constructed of:
- a. Noncombustible materials **OR**
 - b. Ignition-resistant materials **OR**
 - c. Heavy timber construction. (710A; R337.10)

(SAMPLE TEMPLATE)



2016 California Green Building Standard Code San Bernardino County Amendments

MANDATORY REQUIREMENTS CHECKLIST FOR RESIDENTIAL BUILDINGS (COMPLETE AND INCORPORATE THIS FORM INTO THE PLANS)

ITEM #	CODE SECTION	REQUIREMENT	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A)
PLANNING AND DESIGN				
1	4.106.2	Storm water drainage and retention during construction		
2	4.106.3	Grading and paving		
3	4.106.4	Electrical vehicle (EV) charging for new construction		
ENERGY EFFICIENCY				
4	4.210.1	Meet California Energy Code		
WATER EFFICIENCY & CONSERVATION				
5	4.303.1	Water conserving plumbing fixtures and fittings		
6	4.303.1.1	Water Closets		
7	4.303.1.2	Urinals		
8	4.303.1.3	Showerheads		
9	4.303.1.4	Faucets		
10	4.304.1	Outdoor potable water use in landscape areas		
MATERIAL CONSERVATION & RESOURCE EFFICIENCY				
11	4.406.1	Rodent proofing		
12	4.408.1	Construction waste reduction of at least 65%		
13	4.408.2	Construction waste management plan		
14	4.408.3	Waste management company		
15	4.408.4	Waste stream reduction alternative [LR]		
16	4.410.1	Operation and maintenance manual		
17	4.410.2	Recycling by occupants		
ENVIRONMENTAL QUALITY				
18	4.503	Fireplaces		
19	4.504.1	Covering of duct openings and protection of mechanical equipment during construction		
20	4.504.2.1	Adhesives, sealants, caulks		
21	4.504.2.2	Paints and coatings		
22	4.504.2.3	Aerosol paints and coatings		
23	4.504.2.4	Verification		
24	4.504.3	Carpet systems		
25	4.504.3.1	Carpet cushion		
26	4.504.3.2	Carpet adhesive		
27	4.504.4	Resilient flooring systems		
28	4.504.5	Composite wood products		
29	4.505.2.1	Capillary break		
30	4.505.3	Moisture content of building materials		
31	4.506.1	Bathroom exhaust fans		
32	4.507.2	Heating and air-conditioning system design		

(SAMPLE TEMPLATE)

TABLE 4.504.3/TABLE 5.504.4.3 VOC CONTENT LIMITS FOR ARCHITECTURAL COATING^{2,3} Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds			
COATING CATEGORY	VOC LIMIT	COATING CATEGORY	VOC LIMIT
Flat coatings	50	Magnesite cement coatings	450
Nonflat coatings	100	Mastic texture coatings	100
Nonflat high-gloss coatings	150	Metallic pigmented coatings	500
SPECIALTY COATINGS		Multi-color coatings	250
Aluminum roof coating	400	Pretreatment wash primers	420
Basement specialty coatings	400	Primers, sealers, and undercoaters	100
Bituminous roof coatings	50	Reactive penetrating sealers	350
Bituminous roof primers	350	Recycled coatings	250
Bond breakers	350	Roof coatings	50
Concrete curing compounds	350	Rust preventative coatings	250
Concrete/masonry sealers	100	Shellacs:	
		Clear	730
		Opaque	550
Driveway sealers	50	Specialty primers, sealers and undercoaters	100
Dry fog coatings	150	Stains	250
Faux finishing coatings	350	Stone consolidants	450
Fire resistive coatings	350	Swimming pool coatings	340
Floor coatings	100	Traffic marking coatings	100
Form-release compounds	250	Tub and tile refinish coatings	420
Graphic arts coatings (sign paints)	500	Waterproofing membranes	250
High-temperature coatings	420	Wood coatings	275
Industrial maintenance coatings	250	Wood preservatives	350
Low solids coatings ¹	120	Zinc-rich primer	340
1. Grams of VOC per liter of coating, including water and including exempt compounds. 2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table. 3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.			

(SAMPLE TEMPLATE)

TABLE 4.504.1/TABLE 5.504.4.1 ADHESIVE VOC LIMIT^{1,2} Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds	
ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet pad adhesives	150
Wood flooring adhesives	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives	50
SPECIALITY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80
1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed. 2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168	

(SAMPLE TEMPLATE)

TABLE 4.504.2/TABLE 5.504.4.2 SEALANT VOC LIMIT	
Less Water and Less Exempt Compounds in Grams Per Liter	
SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous	500
Marine deck	760
Other	750
<small>Note: For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.</small>	

TABLE 4.504.5/TABLE 5.504.4.5 FORMALDEHYDE LIMITS¹	
Maximum Formaldehyde Emissions in Parts per Million	
PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard ²	0.13
<small>1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E 1333. For additional information, see <i>California Code of Regulations</i>, Title 17, Section 93120 through 93120.12.</small>	
<small>2. Thin medium density fiberboard has a maximum thickness 5/16 inch (8mm).</small>	