



**Community Development Department**  
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Building Division  
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## **Residential Construction Information**

The following items must be provided and/or SHOWN on the five sets of plans that are submitted. This is a comprehensive (but not complete) list of items to be shown on plans; some of these items may not be applicable to your particular situation and style of construction. All other code compliance items will be reviewed at the time of plan check and during construction by the field inspectors. NOTE: Writing "will comply with C.R.C. Section \_\_\_\_\_" is inadequate and will not be accepted.

1. Completed and signed permit application.
2. Submit two sets of Energy Compliance forms with wet signature of document author, designer, and owner on Energy Form CF-1R.
3. Submit site/plot plans showing the following:
  - a. Minimum setbacks and property line dimensions.
  - b. Dimension actual distance of floors to all property lines.
  - c. Dimension length and width of driveway.
  - d. Project address, lot number, and wet signature of person responsible for site/plot plan.
  - e. North arrow showing the North direction.
  - f. Provide scale (i.e., 1/8", 1/4", etc.)
  - g. Show location of any existing buildings and dimension distance to new structure.
  - h. Show location and dimension of any easements.
  - i. Show all grades and contours. Contours shall be shown at intervals of two feet or less, and shall extend across adjoining streets when said streets are unimproved. Specify source of topography (i.e., improvement plans, survey).
  - j. Show elevations at the following points: finish curb at points of the extension of lot lines and curb return points; finish and existing grade elevations at each corner of the lot; finish and existing grades at each principal corner for the structure and points of significant change of slope and the garage and floor elevations.
  - k. Show location and grade of proposed driveway(s), and disposition of surface and roof drainage (i.e., drainage inlet, yard drain, swale). Note that roof drainage must be connected to an approved storm drainage system. Provide detail of swale, yard drains, French drains, etc., if any is to be installed.
  - l. Show location of sewer laterals. Specify type of material, size of lines, depth below grade and minimum slope of pipe.

- m. Show location of all utility meter locations (i.e., electrical, water and gas meters).
  - n. If retaining wall is installed, provide complete plans and show subsurface drains. Subsurface drains must be connected to approved storm drainage system.
  - o. Provide erosion control plan.
  - p. Indicate pad elevation on site plan.
  - q. Indicate any new or existing frontage improvements (curb, streetlight, etc.)
  - r. Show location of all finished surfaces (concrete, asphalt concrete, etc.)
  - s. Show On-Site surface drainage patterns (including adjacent parcels and street frontages).
  - t. Show storm drain pipe (including type and size of pipe and discharge location).
  - u. Indicate boundary information including property line bearings and distances (reference source of boundary information shown).
  - v. Add note to plans, "All on-site swales shall be designed, constructed and permanently maintained by homeowners such that they function properly and no lot to lot drainage occurs."
  - w. Add note to plans, "All work within the public right of way requires an Excavation Permit."
4. Submit five complete sets of plans with wet signature of person responsible for plans on all plan sheets.
5. Submit two sets of structural calculations, if other than conventional construction, i.e.:
- a. heavy or unusually loaded beams
  - b. Glu-Lam beams
  - c. Lateral bracing, if compliance to C.R.C Section R 60210.1 through 602.10.1.4.1 cannot be met.
  - d. Truss calculations, details, and layout plan
6. Submit completed Elevation Certificate if located in flood plain.
7. Submit two sets of soils reports, as per C.R.C. Section 1803A.1.

## GENERAL INFORMATION

- G1 All construction shall conform to the 2010 California Residential Code based on the 2009 International Residential Code (IRC), 2010 California Mechanical Code based on the 2009 Uniform Mechanical Code (UMC), 2010 California Plumbing Code based on the 2009 Uniform Plumbing Code (UPC) by I.A.P.M.O. and the 2010 California Electrical Code based on the 2008 National Electrical Code (NEC)
- G2 Specify type, grade and species of all lumber and plywood to be used.

- G3 Provide a floor plan showing the following: complete dimensions; show location, size, and label use of each room; show location and size of all windows and doors; show location of electrical receptacles, switches, lights, service panel (and size), and smoke detectors; show location and label all plumbing and heating and cooling fixtures; show location and size of beams, Glu-Lams, and post.
- G4 Provide foundation plan; dimension plan including interior and exterior footings. Provide footing for masonry fireplace and dimensions. Label and locate porches, patios, planters, garage, etc. Locate all hold-downs, "PA" straps, etc. Show the location of shear walls and provide nailing schedule.
- G5 Provide a minimum of four elevations showing all openings, wall finish material, original and finished grade, roof pitch, total height of building, roof covering, window and door locations and sizes.
- G6 Provide complete framing plans for floor, wall, ceiling, roof, decks (balcony), patio covers, and trellis, etc.
- G7 Provide a cross-section view(s) through the building showing structural elements, fireplace section, stairs, ceiling changes, floors, ceiling heights, interior finishes, etc. Minimum 2 required, one in each direction. Provide additional cross-section views to show interior changes within the dwelling unit.
- G8 Provide details of foundation, floor, walls, roof and ceiling. Show connections of foundation to post, post to beam or header, rafters to beam or wall, rafters to rafters, beam to beam, ledger to house, etc.
- G9 Provide wet signature of person responsible on all plan sheets. All attachments to the plans require wet signature. California architects are required to stamp and sign plans and specifications. Structural calculations require wet signature and if a structural engineer is responsible for calculations, provide engineer's stamp, expiration date, and wet signature on calculations. When an architect or an engineer is required to stamp and sign the plans, two complete sets must be stamped and wet signed by such architects.
- G10 Provide North arrow and project address on all plan sheets.
- G11 Provide at least one 3'0" x 6'8" exit door per C.R.C. R-311.2
- G12 Provide two complying exits if over 3,000 square feet of living area per C.R.C. 1015.1.

## FOUNDATIONS, SLABS AND FLOORS

- F1 A soil report will be required for all new single-family dwelling units. The report of the investigation, which shall include, but need not be limited to, the following information:
  - a. A plot showing the location of all test borings and/or excavations.
  - b. Descriptions and classifications of the materials encountered.
  - c. Elevation of the water table, if encountered.
  - d. Recommendations for foundation type and design criteria, including bearing capacity, provisions to mitigate the effects of expansive soils, provisions to mitigate the effects of liquefaction and soil strength and the effects of adjacent loads.
  - e. Expected total and differential settlement.
- F2 Foundations shall comply with Chapter 4 of the C.R.C. Show on plans requirements from soils report and/or engineer.
- F3 Concrete must be used must have a minimum of 2500 p.s.i. Concrete having p.s.i. greater than 2500 will require a special inspection per C.R.C. 1704A.4 and Table 1704A.4.

- F4 Concrete or masonry walls over four feet in height measured from bottom of footing to top of wall are to be designed showing engineering and calculations. Wood retaining walls over two feet in height require a building permit.
- F5 Concrete slabs supported directly on the ground will be 3.5" minimum thickness per C.R.C. R506.1. Refer to area soils report for your location for other requirements.
- F6 Stepped footings shall be used when slope of footing bottom is greater than 1 in 10 (V:H). Stepped footing details shall be shown on building elevations, and foundation plan shall show step location per C.R.C. 403.1.5.
- F7 Horizontal reinforcing (footing and stem wall): one ½" rebar 1-1/2" below top of stem wall and one ½" rebar 3" above bottom of footing and at 18" o.c. maximum horizontal spacing. Add vertical rebar at 18 inches o.c. when stem wall exceeds 24 inches in height or when construction joints occur.
- F8 Provide reinforcement for concrete slabs under living area and in garages. Welded wire fabric is not acceptable for concrete slabs. Separate from soil with a waterproof membrane in living areas per C.R.C. 2304.11.
- F9 Minimum sill bolting: 1/2" x 10" A.B. at 6' o.c. for one story per C.R.C. 403.1.6. Locate end bolts not less than 4", nor more than 12", from ends of sill and splices. Use A.B. at 4' o.c. maximum for two stories. Extend sill bolts 7" minimum into foundations. (Note: two pour or non-monolithic pour will require longer anchor bolts). Plate washers a minimum of 3 inch by 3 inch by ¼ inch thick shall be used on each bolt at braced wall lines. C.R.C. 602.15.1.
- F10 Provide engineers calculation for pier and grade beams.
- F11 Specify foundation grade redwood or pressure treated wood, for sill plates, sleepers or blocking in contact with concrete or masonry foundations per C.R.C. 317.1.
- F12 Specify all wood, including posts, within 8" of ground to be pressure treated or foundation grade redwood per C.R.C. 317.1.
- F13 Provide ½" air space on top, sides and ends of girders entering concrete or masonry; or use pressure treated wood or specify girder hangers per C.R.C. 317.1(4).
- F14 Maintain 18" clearance to earth under floor joists and 12" under girders per C.R.C. 317.1.1.
- F15 Show floor joist size, grade, spacing and span direction, spans to comply with C.R.C. Table R502.3.1.
- F16 Provide one square foot vent area per 150 square feet of under floor area for cross-ventilation per C.R.C. 408.1 Show method of venting, location and size of vents.
- F17 Provide 18" x 24" foundation access within 20 feet of plumbing cleanout per C.R.C. 408.1.
- F18 Provide positive under floor drainage to the outside, as per City Ordinance. Foundation walls shall have a 3" (minimum) diameter through wall pipe to conduct under floor water to the outside of the building. Under floor area shall be graded to the thru-wall pipe and exterior grading shall be sloped away from the building. Grade level in under floor areas shall not be lower than exterior grade unless adequate drainage to a positive outfall is provided. Where any water will collect in the under floor area, an approved drainage system shall be provided.
- F19 Solid block all joists at ends and supports, or use other approved connection. Use double rim joists parallel to floor joist per C.R.C. 502.7 and 502.4.

- F20 Double joists under bearing partitions parallel to joist partitions per C.R.C. 502.4.
- F21 Bearing partitions perpendicular to joists shall not be offset from supporting girders, walls or partitions more than the joist depth or provide calculations for joist size per C.R.C. 502.4
- F22 Show connection and/or support of all girders, beams, Glu-Lam beams, etc.
- F23 Show connection, support, and size of the following:
  - a. beam to girder
  - b. beam to beam
  - c. Glu-Lam to beam, joist, etc.
  - d. Joist to supports
  - e. Post to beams, girders, etc.
- F24 R 317.1.4 Wood Columns. Wood columns shall be approved wood of natural or decay resistant or approved pressure preservative-treated wood.
- F25 Foundation cripple walls framed of studs shall have a minimum length of 14 inches or shall be framed of solid blocking or plywood shear panel per Table R602.3(1),
- F26 If a truss floor system is to be used, provide truss type, series model, spacing, spans, calculations, details, layout plans, etc.
- F27 Non-monolithically poured slabs/foundations require additional reinforcement, both vertical and horizontal, or approved ties/mechanical fasteners or other engineered design connections.

## WALLS

- W1 R 602.3.1. Size, height, and spacing of wood studs must comply with C.R.C. Table R 602.5.5(5) or provide structural calculations. Show and/or specify stud size, height and spacing.
- W2 Show size of each header for all openings per C.R.C. 602.7 Table 502.5(1).
- W3 Show method of providing lateral bracing as per C.R.C. 602.1.0.
- W4 Show all of the structural engineer's requirements on plans.
- W5 Show type, grade, and thickness of exterior wall covering as per C.R.C. 703.
- W6 Show and specify interior wall covering as per C.R.C. R 702.
- W7 Show location, size and nailing of siding or plywood used for shear walls.
- W8 Show all windows sizes and specify those which may be opened and size of operable portion as per C.R.C. 310.1.
- W9 Provide approved building paper under lapped and vertical siding. Provide flashing at exterior openings per C.R.C. 703.2.
- W10 Provide exterior plaster weep screeds per C.R.C. 703.6.2.1.
- W11 Provide 2 layers of type D paper over plywood and under stucco, for all stucco applications, complying with C.R.C. 703.6.3.

## ROOF

- R1 Show roof rafter size, grade, spacing and span direction, spans to comply with C.R.C. Tables R 802.5.1(1) through R 802.5.1(8).
- R2 Show ceiling joist size, grade, and spacing and span direction. Show spans to comply with C.R.C. Tables R 802.4(1) and R 802.4(2).
- R3 Roof rafters, roof trusses, and ceiling joists shall be supported laterally to prevent rotation and lateral displacement per C.R.C. R 802.8
- R4 Provide rafter ties where ceiling joist and rafters are not parallel. If rafter ties cannot be used (i.e., vaulted ceilings), provide a functional bearing ridge beam and supports. Use rafter crossties at four feet on center maximum and in lower 1/3 of rafter per C.R.C. R 802.3.1. If rafter ties or a ridge beam is not used then engineering method and calculations will be required.
- R5 When the roof slope is less than 3:12, members supporting rafters and ceiling joists, such as ridge board hips and valleys shall be designed as beams. Provide structural calculations as per C.R.C. 802.3.
- R6 Show that ridge, valley, hip, and board(s) are not less in depth than the cut of the rafters per C.R.C 802.3.
- R7 Show type of roof covering and roof sheathing.
- R8 Show location and dimension attic access per C.R.C. 807.1. If mechanical equipment is located in attic, provide a 30" x 22" minimum attic access per C.M.C. 904.11.
- R9 Provide attic ventilation. Show the size and number of vents to be used along with the square footage of attic area to be vented to comply with C.R.C. 806.2. For enclosed rafter spaces, show the size and number of openings to be used at each end per C.R.C. 806.1. Note a minimum of 1 inch of air space shall be provided between the insulation and roof sheathing.
- R10 Provide skylight-framing details and show compliance to C.R.C. 308.6.1 through 308.6.8. Show location of skylight(s) on floor plan, elevations, and roof framing plan. Specify type of skylight, glass or plastic.
- R11 Show connection, support, and size of the following:
- a. beam to beam
  - b. Glu-Lam to beam, rafters, joist, etc.
  - c. Post to footings
  - d. Post to beams
  - e. First story roof rafters to second story walls
  - f. Rafters to ledgers
  - g. Multi-hips, valleys, ridge connections
  - h. Show support of beams, Glu-Lam, etc.
- R12 Add note to plans: "Provide Mill certificate of Glu-Lam to field inspector at time of frame inspection."
- R13 Provide vaulted, coffered, dropped and Fur-Down ceiling framing plans.
- R14 When California framing, provide a 2x flat on top of the lower sheathing, as a valley to carry and distribute the load.

- R15 Provide truss calculations, details and layout plans to Building Inspector at time of roof nailing inspection, if plate truss is used. Note that plans must show a number or letter must identify truss shape, location, and truss type. If other than plate truss is to be used, provide truss type, series model, spacing, calculations, layout plan, and details at the time of plan check.
- R16 Show on truss calculations all additional loads to be placed on truss (i.e., California framing, mechanical equipment, fire sprinklers).
- R17 Truss layout plan to show layout difference for attic access (i.e., extra spacing for 30" x 30").
- R18 Provide "STC" truss clips at non-bearing walls and "H" truss clips at bearing walls.
- R19 If truss roof assembly is to have something other than plywood roof sheathing, provide method and calculations for providing lateral bracing of truss roof assembly. (Truss manufacturer does not provide this).
- R20 Dimension all overhangs. See Table 302.1(1).
- R21 Provide structural calculations for the following items: heavy or unusually loaded beams, Glu-Lam, etc.
- R22 If wood shakes or wood shingles are to be used, they must be Class B type per City ordinance.
- R23 Provide exposure 1 plywood on exposed locations and overhangs.

### **FIREPLACES**

- FP1 If masonry fireplace is to be built, provide masonry fireplace construction details.
- FP2 Fireplace footing shall extend a minimum six inches beyond fireplace wall. Show on foundation plan as per C.R.C. R 1001.2.
- FP3 Provide reinforcing for fireplace footing including # 4 vertical steel for masonry. Show on foundation plan per C.R.C. 1003.2 through 1003.3.1.
- FP4 Show on plans that masonry fireplace hearth will extend 16 inches in front of and 8 inches to each side of fireplace opening per C.R.C. 1001.10. If opening is larger than six square feet, provide 20 inches in front of and 12 inches to each side.
- FP5 On elevations, show that chimneys will extend 2 feet above any point of the building or roof within 10 feet, but not less than three feet above the roof, per C.R.C. 1003.9.
- FP6 Add note to plans: "Metal prefab fireplaces or wood stoves to be installed per manufacturer's specifications."
- FP7 Provide manufacturer's make, model number, and I.C.B.O. number of metal prefab fireplace.
- FP8 Provide an approved spark arrester per C.R.C. 1003.9.1.
- FP9 Add note to plans that "An approved wood burning appliance shall comply with the City of Petaluma Ordinance No. 1881 N.C.S." Copy of ordinance is available at the Building Division Office.

## STAIRWAYS

- S1 Show stairway detail. Show the following (per C.R.C. R 311.7 - stairways):
- a. Minimum width of stairways shall not be less than 36 inches (finished dimension).
  - b. Maximum rise of steps is 7 ¾ inches.
  - c. Minimum run of steps is 10 inches.
  - d. Minimum headroom clearance of 6'8".
  - e. Handrails to be placed not less than 34" or more than 38" above the nosing of treads.
  - f. Handrail ends shall be returned or shall terminate in newel posts or safety terminals.
  - g. The handgrip portion of handrails shall be not less than 1-1/2" or more than 2" in cross-sectional dimension.
  - h. Landing dimensions.
  - i. The mounting of handrails shall be such that the completed handrail and supporting structure are capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.
  - j. All materials for stair construction.
  - k. Structural support calculations and details.
  - l. Rise and run of steps shall not vary more than 3/8 inch.
- S2 Check C.R.C. Section R 311.7 for circular, spiral and winding stairs requirements.
- S3 Provide ½ inch gypsum board on walls and ceilings of enclosed usable space under stairs per C.R.C. 302.7.
- S4 If prefab stairs are to be used, submit plans to the Building Division prior to issuance of permit.

## DECKS

- D1 Provide details showing the following:
- a. Complete framing plan.
  - b. Guardrail connections.
  - c. Provide guardrail having a minimum height of 42".
  - d. Open guardrails shall have intermediate rails or an ornamental pattern such that a sphere 4" in diameter cannot pass through.
  - e. Balcony railings and guardrails must be able to withstand a minimum lateral load of 200 pounds applied in any direction at any point on the rail.
  - f. Intermediate rails, panel fillers, and their connections shall be capable of withstanding a load of 25 pounds per square foot applied horizontally at right angles over the entire tributary area, including openings and spaces between rails.
  - g. See C.R.C. 1012 & 1013 for complete requirements.
  - h. Show details for steps and points of connection.
- D2 Provide treated wood or redwood at exposed decks and stairs per C.R.C. 317.1.6.
- D3 Specify treated post or elevate all exterior posts one inch above concrete per C.R.C. 317.1.4.

## GARAGE AND CARPORT

- GC1 Garage and carport floor surfaces shall be non-combustible or asphaltic pavement per C.R.C. 309.1. Specify on plans floor surface material.
- GC2 No opening from garage into sleeping area is allowed per C.R.C. 302.5.1
- GC3 Provide a one-hour fire resistive separation between garage and dwelling per C.R.C. 302.6.

- a. Common walls between garage and dwelling (from floor to roof sheathing) and any other garage walls, if supporting a floor over the garage, shall have ½" gypsum board installed on garage side.
  - b. If common floor/ceiling between garage and dwelling unit, provide the following:
    - 1. One layer 5/8" type X sheetrock on garage side if floor members are 16" on center.
    - 2. Two layers 5/8" type X sheetrock on garage side if floor members are 24" on center.
  - c. All structural members supporting living space over garage must be one-hour fire resistive, i.e., post, beams, Glu-Lam, columns, etc.
  - d. If garage ceiling is to be one-hour fire resistive, provide the following: (see C.R.C. 302.6)
    - 1. One layer 5/8" type X sheetrock on garage side if 2x joist is 16" on center, and two layers of 2x joist is 24" on center.
    - 2. If truss system is used and lower cord is to be one-hour fire resistive, provide two layers of 5/8" type X sheetrock.
    - 3. Note that attic access cannot be located in a one-hour fire resistive garage ceiling unless a one-hour rated access door assembly is installed.
- GC4 Provide platform for gas appliances installed in a garage when a glow, spark or flame is generated. The glow, spark or flame is to be located a minimum of 18" above floor per C.P.C 508.14.
- GC5 Provide protection for gas appliances located in garage per C.P.C. 508.14.2. See City of Petaluma approved detail. Units must also be strapped in place per C.P.C. 508.2.
- GC6 Provide a self-closing, tight-fitting solid wood door, 1-3/8" in thickness, or 20-minute tight-fitting, self-closing door between garage and dwelling per C.R.C. 302.5.1.

## LIGHT, VENTILATION, AND MINIMUM ROOM DIMENSIONS

- LV1 Show all locations and dimension of all windows.
- LV2 Show operable portion of all windows or label as fixed windows.
- LV3 Provide tempered glass at all hazardous locations per C.R.C. 308.4.
- a. doors, including storm doors
  - b. sliding glass doors
  - c. tub/shower enclosures (except windows 60" or more above the tub walking surface)
  - d. glazing within 24" of door and within 60" of floor walking surface
  - e. windows in excess of 9 square feet and within 18" of floor
  - f. wardrobe doors
  - g. glazing in walls and fences used as a barrier for pools and spas
  - h. glazing in railings
  - i. glazing in walls enclosing stairway landings or within 5' of the bottom and top of stairs
- LV4 Habitable rooms other than a kitchen shall not be less than seven feet in any dimension per C.R.C. 304.3.
- LV5 Show or specify all ceiling heights. Minimum ceiling height is 7'0" in habitable and 7'0" in kitchens, halls, bathrooms and toilet compartments. Sloped ceiling 7'0" for a minimum of 50% of room areas per C.R.C. 304.4. See section 305.1 for complete requirements.

- LV6 Provide an aggregate glazing area of not less than 8 percent of the floor area and operable glazing of 4 percent of the floor area. Per C.R.C. 303.1
- LV7 All habitable rooms shall have an aggregate glazing area of not less than 8 percent of the floor area. Provide natural ventilation of not less than 4 percent of the floor area. Per C.R.C. 303.1.
- LV8 Provide at least one operable window or door, approved for emergency escape or rescue, which shall open directly into a public street, public alley, yard or exit court, for every sleeping room below the fourth story to include basement per C.R.C. 310. Opening shall comply with the following:
- a. Maximum finished sill height of not more than 44 inches above the finished floor.
  - b. Shall have a minimum net clear operable area of 5.7 square feet.( at grade floor 5 square feet)
  - c. The minimum net clear operable height dimension shall be 24 inches.
  - d. The minimum net clear operable width dimension shall be 20 inches.

## MECHANICAL

- M1 Provide a vent for clothes dryer to the outside and show compliance to length limitation per C.M.C. 504.3.2.2.
- M2 Indicate the location of FAU and AC units.
- M3 Indicate the size and location of combustion air vents per C.M.C. 701.1.
- M4 Dimension FAU door size and show walls to be insulated and sheetrock and door to be tight-fitting and weather-stripped.
- M5 Provide a weatherproof GFCI electrical receptacle within 25' of AC unit per C.M.C. 308.0 & CEC 210.8 (B) (3).
- M6 Gas appliances are prohibited in bathrooms or closet, or a room readily usable as a bedroom or in a room, compartment or alcove opening directly in to any of these C.M.C. 907.1.
- M7 Provide 30" working space in front of gas appliances per C.M.C.904.11.4.1.
- M8 If a warm-air furnace is installed in the attic, show the following (per C.M.C. 904.11):
- a. An access opening large enough to remove the largest piece of equipment, but not less than 30 inches by 22 inches.
  - b. An unobstructed passageway which:
    - 1. Is large enough to remove the largest piece of equipment but not less than 30 inches wide,
    - 2. Is no more than 20 feet in length when measured along the center line of the passageway from the access opening to the equipment, and
    - 3. Has continuous solid flooring not less than 24 inches wide throughout its length; and
  - c. A level service space at least 30 inches deep and 30 inches wide located at the front or service side of the equipment.
  - d. Provide a permanent electric outlet and lighting fixture controlled by a switch located at the required passageway opening at or near the furnace as per C.M.C.904.11.5.
- M9 Provide working platform and a 42-inch high guardrail for roof steeper than 4:12 and HVAC installed per C.M.C. 904.10.2.2.

## PLUMBING

- P1 Show type of wall protection at shower per C.R.C. 307.2 or show fiberglass shower.
- P2 Specify tempered glass for shower/tub doors and enclosures per C.R.C. 308.4.5.
- P3 Provide a minimum width of water closet space to be not less than 30" (15" from center to each side) minimum clear space in front of water closet must be 24" per C.P.C. 407.5.
- P4 Provide a shower that shall have a minimum finished interior of 1024 square inches and shall also be capable of encompassing a 30" circle per C.P.C. 411.7.
- P5 Provide a threshold for shower door of sufficient width to accommodate a minimum 22" door per C.P.C. 411.6.
- P6 Provide anti-siphon valves on all hose bibs per C.P.C. 603.4.7.
- P7 Add note to plans, "Ultra-low flush water closet require."
- P8 Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third (1/3) and lower one-third (1/3) of its vertical dimensions. At the lower point, a minimum distance of four inches shall be maintained above the controls with the strapping. See C.P.C. section 508.2.
- P9 Water heaters must be installed per the 2010 C.M.C. Chapter 3, 7, 8 and 10 and the 2010 C.P.C. Chapter 5. See above chapters for complete water heater requirements.

## ELECTRICAL

- E1 Provide electrical receptacle per C.E.C. 210-52.
  - a. Receptacle shall be installed in any wall space 24" or wider.
  - b. Receptacles must be installed so that no point along the floor line in any wall space is more than six feet.
  - c. Countertops. In the kitchen and dining rooms of dwelling units, receptacle outlets for counter spaces shall be installed in accordance with the following items:
    - 1. **Wall counter space.** A receptacle outlet shall be installed at each wall counter space 12 inches or wider. Receptacle outlets shall be installed so that no point along the wall line is more than 24 inches measured horizontally from a receptacle outlet in that space.
    - 2. **Island counter spaces.** At least one receptacle outlet shall be installed at each island counter space with a long dimension of 24 inches or greater and a short dimension of 12 inches or greater.
    - 3. **Peninsular counter space.** At least one receptacle outlet shall be installed at each peninsular counter space with a long dimension of 24 inches or greater and a short dimension of 12 inches or greater. A peninsular countertop is measured from the connecting edge.
    - 4. **Separate spaces.** Countertop spaces separated by range tops, refrigerators, or sinks shall be considered as separate countertop spaces in applying the requirements of 1, 2 and 3 above.
    - 5. **Receptacle outlet location.** Receptacle outlets shall be located not more than 20" inches above the countertop. Receptacle outlets shall not be installed in a face-up position in the work surfaces or countertops. Receptacle outlets

rendered not readily accessible by appliances fastened in place or appliances occupying dedicated space shall not be considered as these required outlets.

- d. **Dwelling Unit Bedrooms.** All 120 volt, single phase, 15- and 20- Amp branch circuits supplying outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways or similar rooms or areas shall be protected by a listed arc-fault circuit interrupter, combination type installed to provide protection of the branch circuit.
  - e. In bathrooms, at least one GFCI protected wall receptacle outlet shall be installed within 3' feet of the outside edge of each basin and supplied by one 20 ampere dedicated branch circuit.
  - f. For a one-family dwelling and each unit of a two-family dwelling that is at grade level, at least one GFCI protected receptacle outlet accessible at grade level and not more than 6 feet, 6 inches above grade shall be installed at the front and back of the dwelling.
  - g. In dwelling units, at least one receptacle outlet shall be installed for the laundry and it must be on a dedicated 20 amp circuit.
  - h. At least one receptacle outlet, in addition to any provided for laundry equipment, shall be installed in each basement and in each attached garage and in each detached garage with electric power.
  - i. A receptacle shall be installed in all hallways having a length of 10 feet or more.
- E2 Provide a switch operated light at every exit per C.E.C. 210-70.1
- E3 Show compliance to C.E.C. 410.16 for lights installed in clothes closets.
- E4 Specify that lighting fixtures, when installed in damp or wet location, be listed for damp or wet locations per C.E.C.410.10
- E5 Show location and size of electric service panel.
- E6 Provide smoke detector for each floor with a sleeping area. Add or relocate to comply with C.R.C. 314.1
- E7 Carbon Monoxide Detectors required on each floor, preferably outside sleeping areas, for each single family home with attached garage or a fossil fuel source.
- E8 Provide electrical receptacles installed in bathrooms, kitchens (receptacles that are installed to serve the counter top surfaces), garages, and exterior with grade level access with GFCI protection per C.E.C. 210-8.
- E9 Provide at least one wall switched light in every habitable room; bathrooms, hallways, stairways, at outdoor entrances or exits, attached garages and detached garages with electric power, as per C.E.C. 210-70.
- E10 Provide a minimum of two 20-ampere small appliance branch circuits. These branch circuits shall serve all receptacle outlets, including refrigeration equipment, in the kitchen, pantry, breakfast room, or similar area of a dwelling unit. For additional information, see C.E.C. 220.1 and C.E.C. 210.52.3.
- E11 Where the receptacles are installed to serve the countertop surfaces of wet bar sinks are located within 6 feet of the outside edge of the bar sink that must have G.F.C.I. protection.

## ENERGY

- EN1 Provide project address on energy calculations.

- EN2 Provide wet signature of document author, designer, and owner on energy calculations.
- EN3 Show on plans insulation R-values per energy calculations.
- EN4 Provide heat loss and gain calculations.
- EN5 Label and show on plans all areas and square footage of each area(s) that has been claimed as credit on energy calculations.
- EN6 Provide water heater calculations when there is to be installed more than one water heater, a water heater larger than 50 gallons, or an electric water heater.
- EN7 Luminaries for general lighting in kitchens shall have lamps with an efficacy of not less than 40 lumens per watt (fluorescent). General lighting must provide a sufficient light level for basic kitchen tasks and provide a uniform patten of illumination. A luminaire(s) that is (are) the only lighting in a kitchen will be considered general lighting. General lighting shall be controlled by a switch on a readily accessible lighting control panel at an entrance to the kitchen.
- EN8 Bathroom lighting requirements are as follows: Each room containing a shower or bathtub shall have at least on luminaire with lamp(s) with an efficacy of 40 lumens per watt or greater (fluorescent).
- EN9 Luminaries installed to meet the 40 lumens per watt requirements shall not contain medium base incandescent lamp sockets, and shall be on separate switches from any incandescent lighting.
- EN10 All incandescent lighting fixtures recessed into insulated ceilings shall be approved for zero-clearance insulation cover (IC) by Underwriters Laboratories or other testing/rating laboratories recognized by the International Conference of Building Officials.
- EN11 Provide energy forms CF-1R and MF-1R on one sheet of the plans.