

AGING-IN-PLACE DESIGN AND FALL PROTECTION

- At least one bathroom on the entry level shall be provided with grab bar reinforcement. Reinforcement shall be nominal 2x8 lumber and shall be located between 32 inches and 39.5 inches above the finished floor. Water closet reinforcement shall be installed on both side walls of the fixture, or on the side wall and the back wall. Shower reinforcement shall be continuous where wall framing is provided. Bathroom and combination bathtub/shower reinforcement shall be continuous along the bathtub and the back wall. Back wall reinforcement for a lower grab bar shall be provided with the bottom edge located no more than 6 inches above the bathtub rim. Information identifying the location of the reinforcement shall be placed in the operations and maintenance manual. (CRC R327.1.1)

- Electrical receptacles outlets, switches and controls shall be located not more than 48 inches measured from the top of the outlet box and not less than 15 inches measured from the bottom of the outlet box above the finished floor. (CRC R327.1.2)

- Effective July 1st, 2024, at least one bathroom and one bedroom on the entry level shall provide a doorway with a net clear opening of not less than 32 inches measured with the door open at a 90-degree angle. (CRC R327.1.3)

- Doorbell buttons shall be installed not more than 48" above the finished floor measured to the top of the button. (CRC R327.1.4)

GENERAL

- Provide each bedroom, basement, and habitable attics with a minimum of one exterior window with a 44" maximum clear opening height, 5.7 sq. ft. minimum clear operable area (minimum 5.0 sq. ft. at grade floor openings), 24" minimum clear operable height and 20" minimum clear width, or an operable exterior door. (CRC R310.2.1 and CRC R307.2.2) Window wells, landings, and steps shall comply with CRC R310.2.2. Bars, grilles, covers, and screens shall be released or removed from the inside without the use of a key, tool, special knowledge, or force greater than 15lbs to operate the emergency escape and rescue openings. (CRC R310.4.4) Photovoltaic panels and modules shall not be below an emergency escape and rescue opening within 36". (R324.6.3)

- Each bathroom containing a bathtub, shower or tub/shower combination shall be mechanically ventilated with Energy Star approved equipment (minimum 50cfm) with an integral humidistat installed. (CRC R303.3.1)

- Provide attic cross ventilation: 1/150 of attic area or 1/300 with at least 40% but not more than 50% of vents are a maximum 3 ft. below the ridge or highest space in the attic and the balance is provided in the lower third of the attic space (not limited to eaves or cornice vents). Baffles are required for insulation. Provide minimum of 1" inch of air space between insulation and roof sheathing. (CRC R806.2)

- Enclosed rafter spaces shall have a 1-inch clear cross ventilation. (Properly sized rafters for insulation) (CRC R806.1)

- Under floor cross ventilation: minimum 1.0 sq. ft. for each 150 sq. ft. of under floor area. When a class 1 vapor retarder is installed on the ground surface the minimum area of ventilation may be limited to 1sq.ft. for each 1,500 square feet of under-floor space. One ventilation opening shall be within three (3) feet of each corner of the building (CRC R408.1). Unvented crawl spaces shall comply with CRC R408.2. Unvented crawl space added option for dehumidification of 70 pints moisture per day per 1,000 sq ft to requirement for exemption. (R408.3)

- Exterior balconies and elevated walking surfaces exposed to water, where structural framing is protected by an impervious moisture barrier require construction documents with manufacturer's instructions. (R106.1.6) Must be inspected and approved before concealing barrier. (R109.1.5.3)

- Enclosed framing in exterior balconies and elevated walking surfaces exposed to rain, snow or drainage from irrigation shall be provided with cross-ventilation area of at least 1/150. (R317.1.3)

- Provide landings and a porch light at all exterior doors. Landings are to be minimum 3 ft deep x width of door. Landings at required egress doors may step down a maximum of 7.75 inches when the door does not swing over the landing and 1.5 inches when door swings onto the landing. Other than egress doors, a landing may have a threshold of 7.75 inches maximum; a landing is not required if a stair with two or fewer risers is located on the exterior side and the door does not swing over the stairway. (CRC R311.3-R311.3.2)

- Mezzanines shall not be greater than 1/3 of the story unless fire sprinklers are installed then the area can be 1/2 of the story. (CRC 325.3)

- At least one egress door shall be provided for each dwelling unit, the egress door shall be side hinged with a minimum clear width of 32 inches; the minimum clear operable height shall be 78 inches minimum (other doors shall not be required to comply with these dimensions). Egress doors shall be readily operable from the inside without the use of a key, special knowledge, or effort. (CRC R311.2)

- Operable windows more than 72" above finish grade with a clear opening height less than 24" shall have openings not more than 4" apart or needs a compliant guard. (R312.2)

- The following windows shall be fully tempered. (CRC R308.4)

- Sliding/swinging glass doors

- Glazing in walls and enclosures facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and swimming pools where the glazing is less than 60 inch-es above the standing surface within the compartment and within 60 inches horizon- tally of the water's edge (CRC R308.4.5)

- Glazing within a 24" arc of a door that is less than 60 inches above the floor. Safety glazing required on a wall less than 180 degrees from the plane of the door in a closed position and within 24" of hinge side of an in-swinging door. (R308.4.2)

- Glazing where the exposed area is greater than 9sq.ft, bottom is less than 18 in. and at least 36 in. above the floor, and adjacent to a walking surface.

- Within 60in. of the bottom tread of a stairway and less than 36in. above the landing

- Glazing in guards and railings

- Glazing adjacent to stairways, landings, and ramps within 36in. horizontally of the walking surface less than 36in. above the walking surface

FOUNDATIONS & CONCRETE SLABS

- Slope drainage 6" within the first 10ft. from the foundation wall. If physical obstructions or lot lines prohibit the 10ft distance, a 2-5 percent slope to the nearest accessible alternative method of diverting the water away from the foundation. Impervious surfaces shall also be sloped a minimum of 2 percent for 10ft away from structures to an approved drainage way. (CRC R401.3)

- Footings shall extend at least 12 inches into the undisturbed ground surface. (CRC R403.1.4)

- Stepped footings shall be used when slope of footing bottom is greater than 1 in 10 (V: H). Step footing detail shall be shown on building elevations and foundation plan. (CRC R403.1.5)

- Concrete slabs: 3 1/2" minimum (CRC R506.1). Slabs under living areas and garages shall be reinforced with wire #4 x 6", 10-gauge x 10 gauge welded mesh or equivalent steel reinforcement and 4" thickness of 3/8 minimum gravel under the concrete slab. Separate from soil with a 10-mil polyethylene vapor retarder with joints lapped not less than 6 inches in living areas. A capillary break shall be installed when a vapor retarder is required.

- Site excavation and grading shall comply with Paradise Municipal Code 15.02.100 Sections J101.1 thru J110.4.

- Provide an 18" x 24" under-floor access, unobstructed by pipes or ducts and within 5' of each under-floor plumbing cleanout and not located under a door to the residence, is required. Provide a solid cover or screen. (CRC 408.4 & CPC 707.9)

- Minimum sill bolting: 1/2" anchor bolts or approved anchors at 6 ft. o.c. maximum for one-story. (CRC R403.1.6) Use anchor bolts at 4 ft. o.c. maximum for three story construction. Embed bolts shall be placed in the middle third of the width of the plate. Locate end bolts not less than 7 bolt diameters, nor more than 12" from ends of sill members. In SDC D0 and above: Provide 3"x3"x0.229 plate washers on each bolt at braced or shear wall locations, standard cut washers shall be permitted for anchor bolts not located in braced/shear wall lines. (CRC R403.1.6.1 & R602.11.1)

CLEARANCES AND TREATMENT FOR WOOD FRAMING

- Weather exposed glu-lam, beams and posts shall be pressure treated or shall be wood of natural resistance to decay (CRC R317.1.3 & 5)

- Columns exposed to the weather or in basements when supported on concrete pier or metal pedestals shall be pressure treated or natural resistance to decay unless the pier/pedestals support 1" above concrete or 6" above earth and the earth is covered by an approved impervious moisture barrier. (CRC R317.1)

- Columns in enclosed crawl spaces or unexcavated areas located within the periphery of the building shall be pressure treated or natural resistance to decay unless the column is supported by a concrete pier or metal pedestal of a height 8" or more and the earth is covered by an impervious moisture barrier. (CRC R317.1)

- Deck posts supported by concrete piers or metal pedestals projecting not less than 1" above a concrete floor or 6" above exposed earth. (CRC R317.1)

FLOORS

- Under-floor areas with storage, fuel-fired equipment or electric-powered equipment with less than 2x10 solid joists shall be protected on the underside by half-inch sheet- rock or a sprinkler system. (R302.13)

- Balconies must be designed for a minimum live load of 60lbs per square foot. (CRC T-R301.5)

WALLS

- Specify post to beam connections. Positive connection shall be provided to ensure against uplift and lateral displacement. (CRC R502.9 & CBC 2304.10.7)

- All fasteners used for attachment of siding & into pressure treated lumber shall be of a corrosion resistant type. (CRC R317.3)

- Fire-block in concealed spaces of fire walls/partitions, vertically at ceiling/floor levels, & horizontally at 10ft. intervals. Fire-block at soffits, drop ceilings/similar locations & in concealed spaces at the top/bottom of stair stringers. (CRC R302.11)

- Provide approved building paper under the building siding and approved flashing at exterior openings. (CRC R703.2) Specify a minimum of 2 layers of Grade D paper under stucco and 2 layers of 15lb felt (or equivalent) under stone veneer.

- Stucco shall have a minimum clearance to earth of 4 inches and 2 inches to paved surfaces with an approved weep screen. (CRC R703.2.1) Masonry stone veneer shall be flashed beneath the first course of masonry and provided with weep holes immediately above the flashing. (CRC R703.8.5 and R703.8.6)

ROOF

- Roof sheathing can only cantilever 9 inches beyond a gable end wall unless supported by overhanging framing. (CRC 803.2.3)

- Provide a minimum 22" x 30" access opening to attic (CRC R807.1); may be required to be 30"x30" to remove the largest piece of mechanical equipment per the California Mechanical Code.

- Roof drains/gutters required to be installed per the California Plumbing Code with leaf/debris non-clog also installed.

- Roof construction and coverings shall comply with CRC Chapters 8, 9 and local ordinance. All roofing shall be tested/listed Class A minimum.

- Asphalt shingles with sloped roofs 2/12 to <4/12 shall have two layers of underlayment applied per CRC R905.2.2.

- Roof sheathing fasteners shall be 6-inches on center in field and at panel edges [Table R602.3(1)].

GARAGE AND CARPORT

- Garage shall be separated from the dwelling unit & attic area by 1/2 inch gypsum board applied to the garage side. Garage beneath habitable rooms shall be separated by not less than 5/8" type X gypsum board. Structure supporting floor/ceiling assemblies used for required separations shall have 1/2" gypsum board installed minimum. Door openings from the garage to the dwelling shall be solid wood/steel doors or honeycomb steel doors not less than 1 3/8" thick or a 20-minute rated fire door. Doors shall be self-closing & self-latching. No openings directly into a sleeping room from the garage. When the dwelling and garage has fire sprinklers installed per R309.6 and R313, doors into the dwelling unit from the garage only need to be self-closing and self-latching. (CRC R302.5.1 & R302.6)

- Ducts penetrating the garage to dwelling separation shall be a minimum of 26 gauge with no openings into the garage. (CRC R302.5.2)

- Penetrations through the garage to dwelling separation wall (other than ducts as listed above) shall be fire-blocked per CRC Section R302.11, item #4.

- Garage and carport floor surfaces shall be non-combustible material and slope to drain towards the garage door opening. (CRC R309.1)

- Appliances and receptacles installed in garage generating a glow, spark or flame shall be located 18" above floor unless it is listed as flammable vapor ignition resistant. (CMC 305-1) Provide protective post or other impact barrier from vehicles. (CMC305.1.1)

- Appliances in private garages and carports shall be installed with a minimum clearance of 6ft above the floor unless they are protected from vehicular impact. (CBC 406.2.9.3)

STAIRWAYS & RAMPS

- Stair landings required every 127" of vertical rise. (CRC R311.7.3)

- Exterior stair stringers must be naturally resistant to decay or pressure treated. (CRC R317.1)

- Rise shall be maximum 7.75"; Run shall be 10" minimum; headroom 6'-8" minimum; with 36" minimum, 31.5" between a handrail on one side and 2" with handrails on both sides. Varies with 3/8" maximum nosing. A nosing not less than .75 inches but not more than 1.25 inches shall be provided on stairways with solid risers where the tread depth is less than 11 inches. The leading edge of treads shall project not more than 1.25 inches beyond the tread below. Open risers are permitted, provided the opening between the treads does not permit the passage of a 4" sphere. (Openings are not limited when the stair has a rise of 30" or less). (CRC R311.7.5.1)

- Stairways with 4 or more risers shall have a handrail on one side 34" to 38" above the tread nosing. Circular handrails shall have an outside diameter of 1.25"-2"; if not circular, it shall have a perimeter dimension of 4"-6.25" with a maximum cross-sectional diameter of 2.25". See R311.7.5.2 for type II handrails with a perimeter over 6.25". A minimum clearance of 1.5" shall be maintained from the wall or other surface. Handrails shall be returned, terminate in newel posts, or safety terminals. (CRC R311.7.8.4)

PLUMBING

- Underfloor cleanouts shall not be more than 5' from an underfloor access, access door or trap door. (CPC 707.9)

- Kitchen sinks require a cleanout above the floor level of the lowest floor of the building.

- ABS piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paints. (CPC 906.1) PVC piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paint, .04" thick wrap or otherwise protected from UV degradation. (CPC 605.12)

- Underground water supply lines shall have a 14 awg blue tracer wire. (CPC 604.10.1)

- The entire floor space in a room containing a shower without thresholds shall be considered a "wet location" when using the CRC, CBC, and the CEC. (CPC 408.5)

- Showers compartments, regardless of shape, shall have a minimum finished interior of 1024 square inches (32" by 32") and shall also be capable of encompassing a 30" circle. The required area and dimensions shall be measured at the highest point to the top of the threshold and shall be maintained to a point of not less than 70" above the shower drain outlet. (CPC 408.6) Provide curtain rod or door a minimum of 22" in width. (CPC 408.5) Showers and tubs with showers require a non-absorbent surface up to 6" above the floor. (CRC R307.2) Minimum shower receptor slope is 1/8" per foot. (408.5)

- Show location and size of the water heater on plans. Provide pressure relief valve with drain to outside for water heater. (CPC 504.6) Provide seismic strapping in the upper & lower third of the water heater a minimum of 4" above controls. (CPC 507.2) The water heater shall be an instantaneous type, or the following shall be provided (new construction only) (CEC 150.(n)):

- A 120V receptacles provided within 3ft
- A category III or IV vent, or a straight (without bends) Type B vent
- Condensate drain that is not more than 2 inches higher than the base of the water heater
- Gas supply line with a minimum 200,000 Btu/hr dedicated capacity for the water heater
- A dedicated 120/240, 3 wire circuit with 10AWG wire to a receptacle out- let within 3' of the water heater. The unused conductor shall be electrically isolated and have a reserved circuit breaker space. Both ends of the conductor shall be labeled "spare" and be electrically isolated. A reserve single-pole circuit breaker space near this circuit labeled "Future 240V Use." (CEC 150.(n))

- Water heaters using gas or propane shall designate a space 2.5 feet by 2.5 feet and 7 feet tall suitable for future installation of a heat pump water heater. Additional features are required. (California Energy Code 150.(o)(1))

- Thermal expansion tank shall be installed on all tank water heaters with closed plumbing water heating systems. (CPC 608.3, CMC 1005.0)

- Domestic hot water lines shall be insulated. Insulation shall be the thickness of the pipe diameter up to 2" in size and minimum 2" thickness for pipes larger than 2" in diameter. (CPC 609.12)

- A 3-inch gravity drain shall be provided at the low point of the space, installed which provides 1/4-inch per foot openings and terminate at an exterior point of the building protected from blockage. The opening shall be screened with a corrosion-resistant wire mesh with mesh grade of 1/4-inch in dimension. Lengths of the gravity drains over 10 feet in length shall be first approved by the Building Official. (L-V 8.8)

- Water heaters located in attics, ceiling assemblies and raised floor assemblies shall show a water-tight corrosion resistant minimum 1 1/2" deep pan under the water heater with a minimum 1/4" inch drain to the exterior of the building. (CPC 507.5)

- Isolation water valves required for instantaneous water heaters 6.8kBTU/hr and above. Valves shall be installed on both cold and hot water lines. Each valve will need a hose bib or other fitting allowing for flushing the water heater when the valves are closed. (CEC 110.3(c)(6))

- Water closet shall be located in a space not less than 30" in width (15" on each side) and 24" minimum clearance in front. (CPC 402.5)

- Indicate on the plans that the maximum hot water temperature discharging from a bathtub or whirlpool bathtub filler shall not exceed 120 degrees F. (CPC 408.3.2)

- Provide anti-siphon valves on all hose bibs. (CPC 603.5.7)

- Floor drains shall be provided with a trap primer. (CPC 1007)

- Clearly label on the plans the maximum water flow rates per the (CGBCS 4.303.1):

- Water Closets: 1.28gpf
- Urinals: 125gpf
- Kitchen Faucets: 1.8gpm @ 60psi
- Lavatory Faucets: 1.2gpm @ 60psi
- Showerheads: 1.8gpm

- Surge protection device (SPD) required for all services supplying dwelling units. The SPD shall be an integral part of the service equipment or shall be located immediately adjacent thereto. The SPD shall be a Type 1 or Type 2 SPD. (CEC 230.67)

MECHANICAL

- All newly installed gas fireplaces shall be direct vent and sealed-combustion type. (CMC 912.2)

- Any installed wood stove or pellet stove must meet the U.S. EPA New Source Performance Standard emission limits and shall have a permanent label certifying emission limits. (CRC R337.7.3.1)

- Top chimney must extend a minimum of 2 ft. above any part of the building within 10 ft. (CMC 802.5.4)

- Fireplaces shall have closable metal or glass doors, have combustion air intake drawn from the wall end. Walls longer than two feet shall have a receptacle. Hallway walls longer than 10 ft shall have a receptacle in hallways. (CEC 210.52(A))

- Stairways with 6 or more risers shall have wall switch at each floor level at the stair landings. (CEC 210.70(A)(2))

- Receptacles shall not be installed within or directly over a bathtub or shower stall. (CEC 410.10(D))

- All lighting/fan fixtures located in wet or damp locations shall be rated for the application. (CEC 410.10)

- GFCI outlets are required: for all kitchen receptacles that are designed to serve countertop surfaces, dishwashers, bathrooms, in under-floor spaces or below grade level, in unfinished basements, crawl space lighting outlets, in exterior outlets, within 6' of a laundry/utility/water bar sinks, indoor damp locations, mud rooms, finished basements, laundry areas and in all garage outlets including outlets dedicated to a single vehicle or garage door opener. (CEC 210.8)

- Carbon-monoxide alarms shall be installed in dwelling units with fuel-burning appliances or with attached garages (CRC R315.3):

- Outside of each separate sleeping area in the immediate vicinity of bedrooms
- On every level of a dwelling unit including basements
- Alterations, repairs, or additions exceeding 1,000 dollars (May be battery operated)

- Smoke alarms shall be installed (CRC R314.3):

- In each room used for sleeping purposes.
- Outside of each separate sleeping area in the immediate vicinity of bedrooms.
- In each story, including basements.
- At the top of stairways between habitable floors where an intervening door or obstruction prevents smoke from reaching the smoke detector.
- Shall not be installed within 20ft horizontally of cooking appliances and no closer than 3ft to mechanical registers, ceiling fans and bathroom doors with a bathtub or shower unless this would prevent placement of a smoke detector (314.3(4)).
- Alterations, repairs, or additions exceeding 1,000 dollars. (May be battery operated.)

- All smoke and carbon-monoxide alarms shall be hardwired with a battery backup (no smoke alarms shall have a 10-year sealed battery). (CRC R314.4 & R315.1)

- Smoke detectors within 10 feet to 20 feet of the stove shall be ionization type with alarm silencing switch. CRC R314.3.3.

- All 15/20 ampere receptacles in wet locations shall have in-use (bubble) covers installed. All receptacles in wet locations shall also be listed weather-resistant type. (CEC 406.9(B)(1))

ENERGY STORAGE SYSTEMS

- Energy storage systems shall only be installed in detached garages and accessory structures, attached garages, outdoor not less than 3' from door and windows and enclosed utility closets, basements, storage or utility closets within dwelling units with finished or noncombustible walls and ceiling. (CRC R328.4)

- Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating of the ESS shall not exceed 40 kWh within utility closets, basements and storage or utility spaces, 80 kWh in attached or detached garages or detached accessory structures, 100 kWh on exterior walls and 80 kWh outdoors on the ground. (CRC R328.5)

- Rooms and areas within structures in which ESS are installed shall be protected by smoke alarms. A heat detector shall be installed in locations within structures where smoke alarms cannot be installed based on their listing. (CRC R328.7)

- ESS installed in locations subject to vehicle damage shall be provided with impact protection. (CRC R328.8)

TITLE 24 ENERGY

- All ducts in conditioned spaces must include R-4.2 insulation. (150.1(c)9) Minimum heating and cooling filter ratings shall be MRV 13 (150.(m)12)

- Provide compliance documentation for mandatory measures to shown throughout the plans. All ducts in conditioned spaces must include R-4.2 insulation. (California Energy Code 150.1(c)9) Minimum heating and cooling filter ratings shall be MRV 13. (California Energy Code 150.(m)12)

- Isolation water valves required for instantaneous water heaters 6.8kBTU/hr and above. Valves shall be installed on both cold and hot water lines. Each valve will need a hose bib or other fitting allowing for flushing the water heater when the valves are closed. (California Energy Code 110.3(c)(6))

- Energy storage system (ESS) ready. At least one of the following shall be provided:

- ESS ready interconnection equipment with a minimum backed-up capacity of 60 amps and a minimum of four ESS-supplied branch circuits, or
- A dedicated raceway from the main service panel to a panelboard (subpanel) that supplies the following branch circuits: refrigerator, lighting circuit near primary egress door, sleeping room receptacle and

- The main panelboard shall have a minimum busbar rating of 225 amps. Space shall be reserved to allow future installation of a system isolation equipment/transfer switch within 3 feet of the main panelboard. Raceways shall be installed between the panelboard and the system isolation equipment to allow the connection of backup power source.

- Heat pump space heater ready. Systems using a gas or propane furnace shall include a dedicated 240-volt branch circuit with 3 feet of the furnace. The branch circuit shall be rated at 30 amps minimum. The main electrical service shall have a reserved space to allow for the installation of a double pole circuit breaker. The reserved space shall be permanently marked as "For future 240V use." (California Energy Code 150.(o)(1))

- Electric cooktop ready. Systems using a gas or propane cooktop shall include a dedicated 240-volt branch circuit with 3 feet of the cooktop. The branch circuit shall be rated at 50 amps minimum. The main electrical service shall have a reserved space to allow for the installation of a double pole circuit breaker. The reserved space shall be permanently marked as "For future 240V use." (California Energy Code 150.(o)(1))

- Electrical clothes dryer ready. Systems using a gas or propane dryer shall include a dedicated 240-volt branch circuit with 3 feet of the clothes dryer. The branch circuit shall be rated at 30 amps minimum. The main electrical service shall have a reserved space to allow for the installation of a double pole circuit breaker. The reserved space shall be permanently marked as "For future 240V use." (California Energy Code 150.(o)(1))

- ALL luminaires must be high efficacy (150.(o)(k)1A)

- Luminaires recessed in insulated ceilings must meet five requirements (150.(o)(k) 1C):

- They must be rated for direct insulation contact (IC).
- They must be certified as airtight (AT) construction.
- They must have a sealed gasket or caulking between the housing and ceiling to prevent flow of heated or cooled air out of living areas and into the ceiling cavity.
- They may not contain a screw base sockets
- They shall contain a JAS compliant light source

- In bathrooms, garages, walk-in closet, laundry rooms, and utility rooms, at least on luminaire in each of these spaces shall be controlled by a vacancy sensor or occupant sensor provided the occupant sensor is initially programmed like a vacancy sensor (manual-on operation). (150.(o)(k)2)

- They must be rated for direct insulation contact (IC).

- They must have a sealed gasket or caulking between the housing and ceiling to prevent flow of heated or cooled air out of living areas and into the ceiling cavity.

- They may not contain a screw base sockets

- They shall contain a JAS compliant light source

- In bathrooms, garages, walk-in closet, laundry rooms, and utility rooms, at least on luminaire in each of these spaces shall be controlled by a vacancy sensor or occupant sensor provided the occupant sensor is initially programmed like a vacancy sensor (manual-on operation). (150.(o)(k)2)

- Lighting in habitable spaces, including but not limited to living rooms, dining rooms, kitchens and bedrooms, shall have readily accessible dimming control. (California Energy Code 150.(k) 2F)

- Joint Appendix A (JAS) certified lamps shall be considered high efficacy. JAS compliant light sources shall be controlled by a vacancy sensor or dimmer. (Exception: <70sf closets and hallway) (150.(o)(k)2K)

- Under-cabinet lighting shall be switched separately from other lighting systems. (150.(o)(k)2L)

- All exterior lighting shall be high efficacy, be controlled by a manual on/off switch and have one of the following controls (the manual switch shall not override the automatic control device): (150.(o)(k)3A)

- Photo-control and motor sensor
- Photo-control and automatic time switch control
- Astronomical time clock control turning lights off during the day

- All high efficacy light fixtures shall be certified as "high-efficacy" light fixtures by the California Energy Commission.

- Contractor shall provide the homeowner with a luminaire schedule giving the lamps used in the luminaires installed. (10