



## Typical TYPE V Residential Construction

(Common requirements to be incorporated in new portion of construction, unless noted otherwise)

Circled items pertain specifically to your project. See drawings attached for further requirements.

- 1) **Code / Authority:** All construction shall comply w/ California Building Code, Vol. 1 & 2, 2007 Ed.; California Plumbing Code, 2007 Ed.; California Electrical Code, 2007 Ed.; California Mechanical Code, 2007 Ed.; California Administrative Code, 2007 Ed.; 2007 Ed. of the California Fire Code, 2006 Ed. of the International Fire Code Standards, California Energy Code, 2007 Ed.; International Property Maintenance Code, 2006 Ed.. All codes w/ adopted local amendments per Santa Rosa Ord. **3851 & 3852** Dated 11/6/2007, Santa Rosa City Code (SRCC) and Zoning Code (SRZC).
- 2) **Plan Preparer:** All drawings shall include the plan preparer name, address and phone number. Plan preparer shall sign each drawing.
- 3) **Demolition Work:** Obtain a "J number" (demolition notification) from the Bay Area Air Quality Management District (415) 771-6000 prior to permit issuance. (This applies to projects where air quality issues such as asbestos may be involved.)
- 4) **Easements:** Show all easements on site plan. If none are present, provide a note on plans, "Site plan shows any and all setbacks, easements or other restrictions that may affect the construction of the project under this permit."
- 5) **Encroachment Permit:** An encroachment permit is required for all construction in the public right-of-way prior to permit issuance. Contact an encroachment officer at 543-3800. (Applications at 69 Stony Circle.)
- 6) **Illuminated Address:** Indicate the location of the illuminated address. For all new construction requiring a building permit, including but not limited to new buildings, additions, alterations, remodels, repairs or other work requiring a permit, buildings or tenant spaces shall have approved illuminated address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet letters. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 0.5 inch. SRCC Sec. 18-16.501.2, CBC Section 501.2
- 7) **Very High Fire Hazard Severity Zones:** All buildings or structures erected, constructed or moved into Very High Fire Hazard Severity Zones shall have at least a Class A roof covering assembly. Call out Class A roof on drawings, or, for special roofing applications, provide a current test report showing compliance for the required roof covering assembly. CBC Sec. 1505.1.1. **Also, increased fire resistive requirements per CBC Chapter. 7A will go into effect on July 1, 2008. These include no eave vents (unless specially designed), eave protection, deck construction requirements, roof and exterior material improvements, etc.**
- 8) **Fire Sprinklers:** Provide fire sprinklers. SRCC 18-16.903.2.18.1 "An approved automatic sprinkler system shall be installed and maintained in all newly constructed buildings. Exceptions:
  - A) Detached Group U occ. 1000 sq. ft. or less.
  - B) Agricultural buildings and private riding arenas as approved by the Fire or Building Official.
  - C) Detached pool houses up to 1000 sq. ft. in floor area and within 50 feet of the pool and limited to a single bathroom.
  - D) A room above a detached garage used for storage only that does not contain a bathroom, cooking or refrigeration facilities or connections for such facilities.
  - E) Detached non-combustible motor vehicle fuel dispensing canopies classified as Group M occupancy.
  - F) Carports of non-combustible construction

- 9) **Fire Sprinklers for Additions & Alterations:** Provide fire sprinklers. Additions to existing buildings that increase square feet (based on the following percentages calculated by the existing gross floor area, EGFA) shall meet the automatic fire sprinkler requirements for a newly constructed building. All areas listed may be limited by zoning codes. Section 903.2.3.18.2:

<u>Existing Gross Floor Area (EGFA)</u>	<u>Z is total addition area allowed w/o sprinklers</u>
0 sq. ft. - 1000 sq ft:	200% EGFA *2 = Z (or 3000 sq ft. total area of addition plus existing)
1001 sq. ft. - 4000 sq ft:	100% EGFA *1 = Z (or 8000 sq ft. total area of addition plus existing)
4001 sq ft < X :	50% EFGA *.50 = Z

Additions are accumulated from the initial total area legally permitted prior to ordinance coming into effect.

Per SRCC Section 18-16.903.2.18.3 "Alteration or Repairs. For alterations or repairs to existing building(s) involving demolition, removal, or repair of more than 50% of the structure, the building shall meet the automatic fire sprinkler requirements for a newly constructed building. Exception: Alterations or additions made solely for the purpose of complying with the A.D.A."

Note: Water meter and service laterals may need to be upgraded for sprinkler volume. Call Utilities at 543-4330

- 10) **Deferred Submittals for Roof Trusses:** Provide a note on the front sheet stating that roof trusses shall be a deferred submittal, and that two copies of the shop drawing layout plans and calculations, stamped and signed by a registered engineer or architect, and signed

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as approved by architect/engineer or designer of record to be in general conformance with the project design, will be submitted to the Building Division for review & approval prior to any work being done in relation to the deferred item. CBC Appendix Ch 1, Sec. 106.3.4.2.

- 11) **Deferred Submittals:** Owner - or - Architect/Engineer and general contractor shall complete, sign and return the deferred submittal form (enclosed). CBC Appendix Chapter. 1, Sec. 106.3.4.2.
- 12) **Special Inspection:** Owner, Architect/Engineer and Special Inspection Agency shall complete, sign and return the Special Inspection and Testing Agreement (enclosed). CBC Sec. 1701.
- 13) **AC Distance to Property Lines:** Show AC condenser pad. AC equipment must be 30" min. from property lines per SRZC Sect. 20-42.030-C-3 (6).
- 14) **Required parking spaces:** Show on plan the required \_\_\_\_\_ parking spaces as required by the SRZC.
- 15) **Parking Space Requirements:** Provide 19 ft min. clear from back of sidewalk or property line, whichever is more restrictive, to the Garage door. SRCC Table 2-4.
- 16) **Site Grading and Drainage:** Provide drainage gradient of 2 percent around structures to street or approved drainage system. Note that drainage shall not affect adjacent properties. CBC Sec. 1803.3. Exception: "A drainage system designed by a registered design professional based on recommendations provided by a soils/geotechnical engineer may be approved by the Building Official as meeting the intent of this section." SRCC Sec 18-16.1803.3 CBC 1803.3 and Appendix J Sec J106.4
- 17) **Drainage Slope Away from Building:** Provide 5 percent slope (or 2 percent if impervious surface is provided) away from buildings for 10 ft. minimum (or, if property line or obstructions prevent 10 feet, provide a 5 percent slope away from building to an approved alternative method of diverting water away from building. Swales used for this purpose shall be sloped 2 percent where within 10 feet of the building.) CBC Sec. 1803.3.
- 18) **Paving:** Driveways and parking areas shall be paved with concrete or asphalt. SRCC Sec. 20-36.070 L.
- 19) **In lieu of Soils Report:** The limit of additions without site specific soils report is 500 sq. ft. Provide existing foundation system on plans. Note on plans, "Existing foundation system has been verified and the new foundation system matches existing system. If, during construction, 1) the existing conditions are different, 2) any damaged, cracked, differential settling or otherwise overstressed foundations are discovered and 3) if new system does not match the existing system, then, a soils engineer shall provide a report approving the plans as permitted or provide recommendations for the new foundation systems and, in the case of damaged, cracked, differential settling or overstressed existing foundation system, a recommendation for the repair of said foundation system."
- 20) **Residence Wall protection:** 1 hour rated wall assembly and 25% max. opening at wall if closer than 5 feet from property line. CBC table 602, or 10'-0" from main dwelling. (Assume P.L. 5 ft. from main dwelling.) Note, if wall is closer than 3 ft. to P.L., openings are not permitted.
- 21) **Eaves:** Any portion of eaves on new or existing dwellings, within 36" from Property Lines, real or assumed, shall be of 1 hour construction. CBC Sec. 704.2.2 & 704.2.3. Eaves may not be closer than 24" to Property Line. Eaves on existing dwelling may need to be modified to conform. Garage eaves closer than 5 ft. from P.L. must be of 1 hr fire-rated construction.
- 22) **Min. Room Requirements for Dwellings:** Provide at least one room with a min. size of 120 sq. ft. All habitable rooms to be a min. of 70 sq. ft.. Kitchens require min. of 50 sq. ft. of area. CBC Sec. 1208.1 & 1208.3.
- 23) **Habitable spaces:** Habitable spaces, other than kitchens, shall not be less than 7 ft. in any plan dimension. Kitchens shall have an aisle of 36" min. clear. CBC Sec. 1208.1.
- 24) **Ceiling Heights:** Occupied spaces shall have a ceiling height of not less than 7 feet 6 inches, except that kitchens, bathrooms, toilet compartments, storage rooms, and laundry rooms may have a ceiling height of not less than 7 feet. Exceptions: Beams at 4 ft. min o.c. may be 6" lower, sloped ceilings must have the min. height for at least 1/2 the room area. Sec. 1208.2 & 505.1.
- 25) **Shower Doors:** Hinged shower doors shall open outward and maintain a 22" opening for egress. Shower and/or tub enclosures shall be tempered glazing or other approved shatter proof material specifically for the use. CBC Sec. 2406.3, & CPC 411.6
- 26) **Shower and Bath Enclosures:** Provide smooth, hard nonabsorbent surface to a height of not less than 70 inches above the drain inlet. CBC Sec. 1210.3, CPC Sec. 412.7. Provide cement, fiber-cement or glass-mat gypsum backing board for tiles at bath and shower enclosures. CBC Sec. 2509.2.
- 27) **Water Resistant Gypsum Board Limitations:** Water-resistant gypsum backing board shall not be used as tile backer for shower and tub enclosures or in places with high humidity or direct contact with moisture. Where W.R. Gyp. is used, it must be 5/8" thick at ceiling unless ceiling joists are at 12" o.c. CBC Sec. 2509.2 & 2509.3.
- 28) **Shower Size:** Shower compartments, regardless of shape, shall have a min. finished interior of 1024 square inches and shall also be capable of encompassing a 30" Ø circle. These dimensions to be kept for a min. 70" above the drain outlet. Show on plan. CPC 411.7
- 29) **Safety Glazing:** Indicate on the drawings the location of all windows requiring tempered or approved safety glazing. CBC Sec. 2406.3
  - A. Provide at fenestration within 24" arc of the door edge, unless:
    - A) There is an intervening wall between the door and glazing,
    - B) For doors to closets less than 3 ft. deep,
    - C) For glazing in walls perpendicular to the door if the door does not swing into the glazing.
  - B. 60" of a bath or shower drain
  - C. 18" from finished floor for a min. 9 sq. ft. panel
  - D. Within 36" of stair landing or 60" of bottom tread for glazing less than 60" above walking surface.
  - E. Fenestration within the door.
- 30) **Upper Floor Window Sill:** Windows with sill opening at 6'-0" or higher above grade, must have sill opening at least 24" above the floor or provide guard. CBC Sec. 1405.12.2.

- 31) **Door Landings:** Provide a min. of 36" landing in the direction of travel at all exterior doors. The landing shall be at least the width of the door and be no more than 7.75" below threshold of said doors as long as the door does not swing over the landing. For sliding doors, the threshold shall be 0.75" max. CBC Sec. 1008.1.5, 1008.1.4 (3), 1008.1.6, & 1121A.1. Doors shall not reduce the required landing width by more than 7 inches. CBC Sec. 1009.4 Exc.2.
- 32) **Water Closet Clearances:** The Water Closet shall be located in a space of 30" min. wide. A 24" min. clear space in front of the water closet shall be provided. CPC 407.6
- 33) **Smoke Alarms:** Smoke alarms (detectors) shall receive their primary power from the building wiring and shall be equipped with a battery backup. Smoke alarms (detectors) may be solely battery operated when installed in existing buildings. CBC Sec. 907.2.10.2.
- 34) **Smoke Alarms:** All Smoke Alarms (detectors) shall sound an alarm audible to all sleeping areas. CBC Sec. 907.2.10.3.
- 35) **Smoke Alarms:** A smoke alarm (detector) shall be located in the following locations:
- A. in each sleeping room
  - B. in each corridor outside of bedrooms, and
  - C. on each floor and basement. CBC Sec. 907.2.10.1.2.
- Exception: When the valuation of an addition, alteration or repair is \$1,000 or less, or repairs are limited to the exterior surfaces.
- 36) **Smoke Alarms:** Smoke alarms (detectors) shall not be installed within a 36 in. horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.

#### **GARAGE COMMENTS**

- 37) **Garage Wall Protection:** Garage walls closer than 5 ft. from the P.L. must be 1 hr. rated with 15% max. "protected" openings, (eg. 3/4 hr. rated door) per Table 602 & 715.4. The roof/ceiling construction to be 1 hr. fire-rated for a horizontal distance of 4 ft. per CBC sect. 704.11 exception 4.1. Note, if wall is closer than 3 ft. to P.L., openings are not permitted.
- 38) **Garage and Carport Floor Surface:** Specify non-combustible floor surface. Provide slope to drain or front opening and provide control joints as necessary (show on plans.) CBC 406.2.6.
- 39) **Garage Wall Separation:**
- A) Provide ½" min. gypsum wallboard from foundation to roof sheathing at the wall between garage & residence. CBC Sec. 406.1.4 (1).
  - B) Provide 5/8 inch Type 'X' gypsum wallboard on the garage ceiling where habitable rooms are above. Include supporting beams in the protected ceiling. CBC Sec. 406.1.4 (1).
  - C) When using engineered wood products; i.e. "Trus Joist", etc. provide a minimum of 5/8 inch Type 'X' gypsum wallboard on the garage ceiling, and, if required by manufacturer, additional ceiling protection for garage residence separation in accordance with manufactures requirements. Provide ICC report of specific requirements from manufacturer.
- 40) **Garage Door Separation:** Provide a self-closing, self-latching, tight-fitting solid-wood (or solid or honeycomb core steel) door 1-3/8 inch in thickness at the separation between garage and residence (or provide a 20 min. rated, self-closing door in accordance with Sec. 715.4.3). CBC Sec. 406.1.4 (1).
- 41) **Garage Door to Sleeping Room:** Doors from a garage directly into a sleeping room are not allowed. CBC Sec. 406.1.4 (1).
- 42) **Garage Ducts:** Ducts penetrating a private garage to residence separation wall or floor/ceiling assembly shall be constructed of 0.019-inch steel and have no openings in the garage. CBC Sec. 406.1.4 (2).

#### **ROOF PLAN / REFLECTED CEILING**

- 43) **Attic Access:** An attic access opening shall be provided to attics of buildings with combustible ceiling or roof construction where the vertical height is 30 inches or more at any point. The opening shall not be less than 20" X 30" and shall be located in a corridor, hallways or other readily accessible location. CBC Sec. 1209.2.
- 44) **Attic Access Headroom:** Provide unobstructed headroom of 30" minimum over attic access. CBC Sec. 1209.2.
- 45) **Attic Ventilation:** Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross-ventilation for each separate space by ventilating openings protected against the entrance of rain. The net free ventilating area shall not be less than 1/150 of the area of the space ventilated; and 50 percent of the required opening area is required to be located at least 3 ft. above the eave vents, with the balance in eave or cornice vents. 1/300 of the area to be ventilated may be used if an approved vapor barrier is installed on the warm side of the insulation. CBC Sec. 1203.2.
- 46) **Blocked Attic Ventilation:** If any attic vents are blocked due to new construction then provide an equal amount of vent area from existing roof volume to new roof volume.
- 47) **Attic Ventilation:** Provide a min. of 1 inch of air space between insulation and roof sheathing. CBC 1203.2.
- 48) **Roof Slope:** Indicate roof slope (min roof slope 1/4" per 12"). Asphalt shingles require 2:12 min and double underlayment if less than 4:12. Clay or concrete tiles require 2 1/2 : 12 min. and double underlayment if less than 4:12. CBC Chapter 15, 1507.2.2, & 1507.3.2
- 49) **Flashing:** Provide flashing and counter flashing per CBC chapter 15 Sec.1507.2.9 & 1507.3.9. Other CBC sections pertaining to specific type of roofing used may apply.
- 50) **Valley Flashing in HFSZ:** Provide double valley flashing in Very High Fire Hazard Zones per CBC 704A.1.3.
- 51) **Clay or Concrete Tile:** Provide a current ICC report of the proposed roof tile. Note on the drawings; The square weight of the tile and that clay or concrete tiles shall be installed in accordance with the manufacturer's instructions and Table 1507.3.7. Installation of tiles requires a licensed engineer to verify capacity of structure.
- 52) **Waterproofing:** Exterior decks and occupied roofs exposed to the weather and sealed underneath shall be waterproofed and sloped a minimum of 1/4 inch per ft. for drainage. CBC Sec. 1402.3. Specify materials and method (Manufacturer) on plans.

## OVERHANGS / PROJECTIONS

- 53) **Overhangs:** Roof overhangs shall not extend closer than 2 ft. to the property line. CBC Sec. 704.2.
- 54) **Projections:** Combustible projections located where openings are not permitted or where protection of openings is required shall be of one-hour fire-resistive construction. CBC Sec. 704.2.2 & 704.2.3.

## LIGHT AND VENTILATION COMMENTS

- 55) **Escape Windows:** Provide each bedroom below the 4<sup>th</sup> floor, & basements with an emergency escape opening. Minimum net clear opening area shall be 5.7 sq. ft. (or 5.0 sq. ft. for grade floor openings.) Opening height shall be 24" minimum clear and opening width shall be 20" minimum clear. Maximum opening sill height shall be 44 inches to actual window opening. CBC Sec. 1026
- 56) **Light:** Provide each habitable room with a natural light source with an area of not less than 8 percent of the floor area, or artificial light of 10 ft-candles at 30" above finished floor per Sec. 1205.3.
- 57) **Adjoining Space for light:** If adjoining space is used to provide natural light, the wall opening must be 1/2 of the wall and not less than 1/10 of the interior room floor area or 25 sq. ft. whichever is greater. Exception: for adjoining sunrooms, the opening may be 1/10 of the interior room or 20 sq. ft. whichever is greater. CBC Sec. 1205.2, 1205.3
- 58) **Ventilation:** Provide ventilation opening of not less than 4 percent of the floor area, or provide a mechanical system in accordance with CMC 402.3.
- 59) **Adjoining Space for Ventilation:** If adjoining space is used to provide natural ventilation, the wall opening must not less than 8% of the interior room floor area, but not less than 25 sq. ft. Exception: for adjoining sunrooms, the opening may be 8% of the interior room area, but not less than 20 sq. ft. CBC Sec. 1203.4.1, CMC 402.2.1 & 402.3.
- 60) **Bathroom and Laundry Room Ventilation:** Bathrooms, water closet rooms, laundry rooms and similar rooms shall be provided with natural ventilation by means of openable exterior openings with an area not less than 4% of the floor area of such rooms, or provide mechanical ventilation system connected directly to the outside capable of providing 50 cfm (25 cfm for continuous operation). CBC Sec. 1203.4.2.1 CMC Sec. 403.7 & Table. 4.4
- 61) **Wet Rooms Ventilation:** Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated. CBC Sec. 1203.4.2.1 CMC Sec. 403.7 & Table. 4.4

## STAIR AND GUARDRAIL

### 62) Stairways:

- A) **Width:** Stairways shall not be less than 36 inches in width. CBC Sec. 1009.1.
- B) **Stairway Headroom:** Provide section verifying required minimum headroom clearance of 6'-8". CBC 1009.2
- C) **Stair Rise and Run:** Private steps and stairways serving Group R-3 (single family dwellings), and Group U (Garages) that are accessory to R-3 may be constructed with a 7 3/4" inch maximum rise and 10 inch minimum tread. Provide 3/4" min. – 1 1/4" max. nosing if tread is less than 11" wide. CBC Sec. 1009.3 Exc. 4.
- D) **Stairway Handrails Location:** Within dwelling units and a handrail must be on one side and on any open sides. Handrails shall be on both sides for exterior locations. CBC Sec. 1012.1, 1012.2
- E) **Stairway Handrails:** Handrails are required at stairs with more than three risers. CBC Sec. 1009.10 Excep. 4.
- F) **Stairway Handrails:** For R-3 stairways where the guard top rail is also a handrail, the rail shall be between 34" to 38" above the stair nosing. CBC Sec. 1013.1 & 1013.2
- G) **Stairway Handrail Grip:** Circular handrails shall not be less than 1-1/4" Ø nor more than 2"Ø or shall provide an equivalent graspability. Non-circular handrails shall have a perimeter dimension of 4" min. to 6-1/4" max. and a max. width of 2 1/4". The handgrip portion of handrails shall have a smooth surface with no sharp corners (0.01" radius min.), and shall be 1.5" clear from the wall. CBC Sec. 1012.3 & 1012.6
- H) **Stairway Handrails Length:** Within dwelling units, handrails shall extend from the top riser to the bottom riser. Otherwise, handrails shall be continuous the full length of stairs and at least one handrail shall extend in the direction of the stair not less than one tread length beyond the top and bottom risers. Ends shall be returned to wall or shall have rounded terminations or bends. CBC Sec. 1012.5.
- I) **Guard Openings at Stairs:** Open guards at stairs shall have intermediate rails or an ornamental pattern such that a sphere 4 3/8" Ø cannot pass through. The triangular openings formed by the riser, tread and bottom element of a guardrail at the open side of a stairway may be of such size that a 6" Ø sphere cannot pass through. CBC Sec. 1013.3.
- J) **Stairway Landings:** Every landing shall have a dimension measured in the direction of travel not less than the width of the stairway. Such dimension need not exceed 48 inches where the stair has a straight run. CBC Sec. 1009.4. A landing is not required at the top of a stairway if the door does not swing over the stairs. CBC Sec. 1009.4 Exc. 4.

### 63) Guard (Guardrails):

- A) **Where Required:** Guards shall be provided for all elevations over 30" above the floor or grade below. Including screened porches per CBC 1013.4.
- B) **Heights:** The top of guards shall be at least 42 inches in height.
- C) **Guard Openings:** Open guards shall have intermediate rails or ornamental pattern such that a 4" Ø sphere cannot pass through. CBC Sec. 1013.3.
- D) **Railing Design:** Design for a 200 lb. point load in any direction. For one and two family dwellings, only the 200 lb. point load is required to be considered. CBC Sec. 1607.7
- E) **Intermediate Rail Design:** Intermediate rails, panel fillers and their connections shall be capable of withstanding a load of 50 lbs./sq. ft.. Provide details and calculations. CBC 1607.7

- 64) **Enclosed Usable Space Under Stairs:** The walls and soffits of enclosed usable space under stairs shall be protected on the enclosed side with 1/2" gypsum board. CBC Sec. 1009.5.3.

## FOUNDATION COMMENTS

- 65) **Foundation:** In lieu of soils report and an engineered design, show foundation as follows:
- A. **Depth:** Extend 12" into undisturbed soil, 18" to 24" into undisturbed soil if expansive soil is present. CBC 1805.2.3.
  - B. **Width:** Footing w/ 12" min width for 1 story structures and 15" for 2 story structures.
  - C. **Concrete Strength:** Indicate concrete strength (Min 2500 psi). CBC 1805.4.2.1.
  - D. **Stem Wall:** Provide 7 1/2" min. stem wall thickness. (6" thick stem wall may be allowed if engineered.) CBC 1805.2, Table 1805.4.2 & Sec. 1908.1.15
  - E. **Footing Thickness:** Provide 6" min. footing thickness (8" for three stories).
  - F. **Mudsill:** Indicate 2X (min.) pressure treated sill plate w/ 1/2" Ø min. anchor bolt (5/8" Ø A.B.'s are required for projects in seismic design category "E") spaced 6 ft o.c. for one story structure, 4 ft o.c. for two story structure. Extend anchor bolt 7" min. into concrete. Provide a min. of (2) anchor bolts per sill plate section and within 12" to 4" from ends. (CBC 2304.3.1, 2308.3.3, 2308.6 & 2308.12.9).
  - G. **Steel Washer:** Provide 3" X 3" X 1/4" (0.229") steel washer @ each anchor bolt. CBC 2305.3.11 & 2308.12.8
  - H. **Reinforcing:** Minimum #4 reinforcing bars at 3" from the bottom of the footing and 2" from the top of the stem wall. CBC 1805.5.1.2, Table 1805.5(5), 1908.1.15 and 1909.6.1
  - I. **Wood Clearance from grade:** Unless pressure treated or decay resistant, show wood clearance (including sheathing) above earth of 8" and 6" for wood siding. CBC 2304.11.2.2 & 2304.11.2.6.
  - J. **Seismic Ties for Isolated Footings:** Isolated footings in Seismic Design Category D, E or F, and soil defined as Site Class E or F per 1613.5.2 shall be tied together per CBC Sec. 1805.4.2.2.
- 66) **Existing Footing to New Footing Connection:** A min. of two shear pins shall be installed between existing footing and new footing. Shear pin shall consist of: Drill 5/8" diameter hole, 6" deep, clean hole place #4 X 36" long rebar with Simpson epoxy, **No** special inspection required.
- 67) **Underfloor Drainage:** Grade level underfloor shall not be lower than the exterior grade unless adequate drainage to a positive outflow is provided. Where any water will collect in the underfloor area, an approved drainage system shall be provided. A mechanical means of draining underfloor area is acceptable. CBC 1807.1.2, CPC 1102.3, 1102.4 & 1102.5.
- 68) **Stepped Foundations:** Foundation for all building where the surface of the ground slopes more than 1:10 shall be level or shall be stepped so that both the top and bottom of such foundation is level. CBC Sec. 1805.1. Also see 2308.11.3.2 for stepped footing in conventional construction.
- 69) **Piers:** Individual concrete or masonry piers shall projects at least 8 inches above exposed earth. CBC Sec. 2304.11.2.2 & 2304.11.2.7.
- 70) **Girders at Concrete or Masonry (stem) Walls:** Provide 1/2" min. air space end clearance from end of girders to concrete or masonry foundation walls unless approved wood of natural decay resistance or pressure treated wood is used. CBC Sec. 2304.11.2.5.

## FLOOR CONSTRUCTION

- 71) **Floor Construction:**
- A) **Floor Framing:** Floor framing members per CBC 2308.8. See attached span table.
  - B) **Floor framing girders:** 4 x 6 min. girder spanning 6' max and spaced no more than 8' per CBC 2308.7
  - C) **Floor Sheathing:** 5/8" for 16" o.c. framing, 3/4" for 24" o.c. framing. Floor sheathing shall comply with CBC 2304.7.1
  - D) **Blocking:** Provide blocking at all supports and at 8' max. O.C., per CBC 2308.8.5
- 72) **Under Floor Accessibility:** Accessible under-floor areas shall be provided with a minimum 18" X 24" opening unobstructed by pipes, ducts and similar construction. CBC Sec. 1209.1. No underfloor clean-out shall be located more than 20 feet from an access door, trap door or crawl hole. CPC Sec. 707.10.
- 73) **Under-Floor Ventilation:** Screened openings to under-floor areas shall have a net area of not less than 1 sq. ft. for each 150 sq ft of under-floor area. Provide a calculation showing the size and required number of vents. CBC Sec. 1203.3.1.
- 74) **Blocked Under-Floor Ventilation:** If any U.F. vents are blocked due to new floor system then provide equal area of any blocked under floor vents elsewhere at existing perimeter.
- 75) **Under-Floor Clearance:** Provide 18 inch minimum clearance between wood joists and exposed earth, and 12 inch minimum clearance between wood girders and exposed earth. CBC Sec. 2306.3. If clearance is not provided, pressure treated wood (including sheathing) may be allowed in some cases.
- 76) **Engineered wood products:** When using engineered wood products, such as TJI's, for floor framing dimensional lumber may not be used for blocking and rim joists. Engineered wood product must be used for blocking and rim joists per manufacturer's recommendations.
- 77) **Braced Panel Foundation:** Braced panels shall be supported on continuous foundations at max intervals of 50 ft. CBC 2308.3.4.
- 78) **Floor Framing to Wall Connection:** Show interconnection between wall and floor structure including blocking, double top plate, nailing, shear and transfer between floor diaphragm to wall sheathing.

## WALL CONSTRUCTION

- 79) **Cutting and Notching:** In exterior walls and bearing partitions any wood stud may be cut or notched to a depth not exceeding 25% of its width. Cutting and notching of studs to a depth not greater than 40% of the width is permitted in non bearing partitions supporting no loads other than the weight of the partition. CBC 2308.9.10.
- 80) **Bored Holes in Studs:** Bored holes not greater in diameter than 40% of the stud width may be bored in any wood stud. Bored holes not greater than 60% of the width of the stud are permitted in non-bearing partitions or in any wall where each bored stud is doubled, provided not more than two such successive doubled studs are so bored. In no case shall the edge of the bored hole be nearer than 5/8" to the edge of the stud. Bored holes shall not be located at the same section of the stud as a cut or a notch. CBC 2308.9.10.
- 81) **Chord Detail:** Indicate double top plate w/ 48" minimum lap and 8 -16d Nails. Lap corner and intersections and nail with 2 -16d.

- 82) Cripple walls over 14" in height:** For the purposes of braced walls and other seismic considerations, cripple walls, providing support base for story above, over 14" in height are considered a story.
- 83) Braced Wall Lines:** Floors and roofs must be supported on all edges by braced wall lines. Except where not supporting braced panels above, portion of the floor or roof may cantilever 6 feet max. The braced wall lines must occur in two perpendicular directions. CBC 2308.12.6.2. Show braced wall (B.W.) lines clearly on plans.
- 84) Braced Wall Length (Each Wall Panel):** Braced wall panels shall be 4 ft min. in length except for Alternate Braced Panels which may be 2'-8" min. in length or per CBC sec. 2308.9.3.
- 85) Braced Wall Line Length (Total Per Line):** The total length per line of braced walls shall be 12'-0" min. for plywood supporting no floors above. If a floor is above or cripple wall is over 14" in height then the total length required is 25'-0" on the lower story or cripple wall. CBC Table. 2308.12.4
- 86) Braced Wall Panels Location and Spacing:** Braced wall panels shall be within 8 ft of the ends of braced wall lines and 25 ft o.c. in both directions. CBC 2308.12.3.
- 87) Braced Line Footings and Sill Plate Nailing:** Exterior braced walls shall have continuous footings. The code requires interior footings for braced walls at 50' max. on center. Continuous footings are recommended by CBC Fig. 2308.9.3 at interior braced wall lines for buildings over one story. Also for buildings of one story with braced wall that are less than 50' apart, a braced wall footings are still preferred, but if not provided, parallel exterior cripple walls over 14" in height must be lengthened to 32' or strengthened with 4" nailing per CBC 2308.12.4. Nail sill plate to joist with 3 - 16d @ each joist (16" o.c. max.) per 2308.3.2. Provide details at base of all braced panels. CBC 2308.3.4.
- 88) Braced Panel Horizontal Offsets:** Braced panels in a single brace line (in plan view) may not be offset more than 4 ft perpendicular to the direction of the line. CBC 2308.9.3.
- 89) Braced Wall Lines, Vertical Offsets:** Exterior braced panels must be in one vertical plane unless supported by 2x10 min. @ 16" o.c. (max offset = 4x joist depth), 2:1 back span min, double joists at panel ends, continuous rim at cantilevers, and loads limited wall and roof above. CBC 2308.12.6.
- 90) Braced Wall Panel, 2nd Floor Extension:** Braced panels may extend not more than one foot beyond wall below, except when the opening in the floor below is less than 8 feet and a 4x12 or greater sized header is used. (CBC 2320.5.4.3)
- 91) Braced Panel Materials:** Braced panels must have fully blocked 3/8" min. plywood (or 5/8" thick T-1-11, or approved 1/2 struct. shtg.) nailed with 8d min. (10d recommended for 1/2" plywood.) at 6" o.c. for edges and 12" o.c. for field. Provide notes or details on plans. Provide nailing details, notes and/or schedule. CBC 2308.9.3 & 2306.3.1.
- 92) Alternate Braced Panels Materials:** Alternate braced panels (2'-8" by 10' max. tall) must have fully blocked 3/8" min. plywood, 2 A.B.'s at 1/4 points and two HD's > 1,800 lb. uplift. (For first story ABP supporting a second story, provide plywood both sides, 3 A.B.'s at 1/4 points, and two HD's > 3,000 lb. uplift.). Provide nailing, AB and hold-down details. CBC 2308.9.3.1.
- 93) Proprietary Shear Panels in Braced Wall Lines:** Proprietary braced wall panels (Simpson etc.) may be used in lieu of Alternate Braced Panels if supported by documentation that the proposed panel is equivalent to an alternate braced panel or a typical 4'-0" braced panel.
- 94) Bearing Walls:** Show loading conditions of bearing walls or posts to be supported on plans. Double parallel joists under bearing walls. Provide blocking between joists and under bearing walls perpendicular to joists. (Bearing walls may not be offset more than the depth of the joist from supporting wall below.) CBC 2308.8.4.

## **ROOF FRAMING PLAN**

- 95) Roof Framing:**
- A) Roof Rafters:** Roof Rafters sized per 2308.10
  - B) Ceiling joists:** Ceiling Joists sized per 2308.10
  - C) Premanufactured Roof Trusses:** Outline the path, working area and fau equipment on roof framing plan and provide note on plans, "Truss Manufacturer to provide clear indication of any structural elements that may prevent installation and maintenance of the path, working area and the HVAC equipment as required by code and equipment specifications."
  - D) Sheathing:** 1/2" thk. Roof sheathing including nailing. CBC Table 2304.7(3), Sec. 2304.7(5) & 1308.10.8.
  - E) Blocking:** Indicate blocking between rafters at all supports and at 8'-0" o.c. max. CBC 2320.10.6 & 2308.8.5.
  - F) Headers:** as long as no point load and max unsupported span is 20': 1 story:- 4 X opening width in inches up to ten foot opening, 2 story: 4 x opening width in inches plus 2"
- 96) Cutting, Notching and Holes:** Notching of and holes in ceiling joists shall be less 1/6 of the depth at the top or bottom and not allowed in the middle third of the span. Holes are not allowed within 2" of the top or bottom and less than 1/3 of the depth. CBC 2308.9.10.
- 97) Header/Trimmer Joists/Rafters:** Double trimmer and header ceiling joists and rafters at openings from 4 ft to 6ft max. CBC 2308.10.4.3.
- 98) Underlayment:** Indicate type of underlayment. CBC Chapter. 15.

## **DECAY/TERMITE AND MOISTURE PROTECTION**

- 99) Weather Exposure:** Approved wood of natural resistance to decay or treated wood shall be used for those portions of buildings, balconies, porches or similar permanent building appurtenances when such members are exposed to weather. CBC 2304.11.
- 100) Columns and Posts:** Columns and posts exposed to the weather or to water splash or in basements shall be supported by concrete piers projecting at least 6 inches above exposed earth, and at least 1 inch above concrete slabs. CBC Sec. 2304.11.2.2 & 2304.11.2.7.
- 101) Floor Dampproofing:** Provide dampproofing for concrete slab. 6 mil visqueen min. Joints in membrane shall be lapped and sealed in approved manner. CBC 1807.2.1.

**102) Floor Dampproofing at existing slab:** Provide dampproofing solution for existing concrete slab under converted area to habitable space. 6 mil polyethylene, mopped on bitumen or submit other approved method and/or material. Joints in membrane shall be lapped and sealed in approved manner. CBC 1807.2.1.

**103) Plates, Sills and Sleepers:** All foundation plates or sills and sleepers on a concrete slab, which is in direct contact with earth, and sills that rest on concrete foundations, shall be treated wood or foundation grade redwood. CBC Sec. 2304.11.2.4.

#### **FIRE-RESISTANT MATERIALS AND CONSTRUCTION**

**104) Fireblocking:** Provide fireblocking in concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor levels and at 10 foot intervals both vertical and horizontal. CBC Sec. 717.2.

**105) Fireblocking:** Provide fireblocking at all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceiling and cover ceilings. CBC Sec. 717.2.

#### **WALL FINISHES CONSTRUCTION**

**106) Weather-Resistive Barriers:** For stucco, when applied over wood base sheathing, the barrier shall include two layers of Grade D paper (or approved equivalent submitted with documentation). CBC Sec. 2510.6.

**107) Exterior Plaster:** Plastering with cement plaster shall not be less than three coats (7/8" total thickness) when applied over metal lath or wire fabric lath and shall not be less than two coats when applied over masonry, concrete or gypsum backing. CBC Sec. 2512.1 and by reference, ASTM C 926.

**108) Metal Plaster Weep Screed Bases:** A minimum No. 26 galvanized sheet gage corrosion-resistant weep screed with a minimum vertical attachment flange of 3-1/2 inches shall be provided at or below the foundation line on all exterior stud walls. The screed shall be placed a minimum of 4 inches above the earth or 2 inches above paved areas. CBC Sec. 2512.1.2.

#### **FIREPLACES**

**109) Factory-Built Fireplaces:** Note on the drawings that "factory-built fireplaces and chimneys shall be listed and installed in accordance with the terms of their listings and the manufacturer's instructions." Conform to manufacturer's clearance requirements to combustible materials, and provide screen and direct venting. CMC Sec. 908.2, 907.3.

**110) Prohibited Gas Fireplaces:** Gas fireplaces are not allowed in bedrooms or bathrooms unless listed and the room has the required volume of 50 Cu. Ft. per 1,000 BTU/Hr. or otherwise in accordance with CMC 701.2. CMC Sec. 908.1

**111) Hearth:** Specify hearth material and hearth extension dimensions at masonry and manufactured fireplaces. CBC Sec. 2111.9 & 2111.10.

**112) Prohibited Fireplaces:** It shall be unlawful to install a wood-burning fireplace that is not one of the following per SRCC Sec. 17-35:

- |   |   |
|---|---|
| <b>A.</b> A pellet-fueled heater;                               | <b>D.</b> Gas log fireplace; or             |
| <b>B.</b> An EPA Certified Phase II wood heater or newer;       | <b>E.</b> A fireplace certified by the EPA. |
| <b>C.</b> Solid fuel burning appliance certified by the NSCAPCD |   |

**113) Prohibited Fireplaces:** A non-certified (EPA or NSCAPCD) wood heater, freestanding or insert shall be removed when both of the following conditions occur:

- A.** Remodel or renovation work which requires a building permit and consists of the opening of a wall within 12" of the appliance and in the same room; and
- B.** The valuation of the remodel or renovation work exceeds \$2,500.
- C.** This section does not apply to fireplaces without an insert or to pellet-fueled heaters. Per SRCC Sec. 17-35.070.

**114) Prohibited Fireplaces:** As of June 1, 2004 it shall be unlawful to use or operate a non-certified (EPA or NSCAPCD) wood heater, freestanding or insert, on any property within the City of Santa Rosa. An exception may be granted for the following Per SRCC Sec. 17-35.080.

- A)** A residential sole source of heat;      **B)** A temporary sole source of heat; or      **C)** An inadequate alternate source of heat.

**115) Masonry Fireplaces and Chimneys:** For Masonry fireplaces and chimneys structural engineered drawings are required.

**116) Spark Arrester:** Chimneys attached to any appliance or fireplace that burns solid fuel shall be equipped with a City approved spark arrester. CBC Sec. 2113.9.1.

**117) Chimney Termination:** Chimneys shall terminate at least 2 feet above any part of a building within 10 feet. CBC Sec. 2113.9.

#### **ELECTRICAL NOTES**

**118) Service Panel:** Indicate main service and sub panel location and amperage. Panels are not allowed in closets, bathrooms and/or garage firewalls. Panelboards shall be grounded. CEC 240.24 (D) (E) & CBC Sec. 712.3.2. Provide a 30 inch wide x 3 ft deep with 6'-6" clear headroom working clearances at panel. CEC Sec. 110.26 (A) (1) (2)(3) & Table 110.26 (A)(1).

**119) Overcurrent Devices:** Overcurrent devices shall not be located in closets or bathrooms or not be installed in fire-resistive walls unless listed. CBC Sec. 240.24 (D) (E). and Sec. 712.3.2.

**120) Light Fixtures permitted in Closets:** Light fixtures permitted in closets are as follows, CEC Sec. 410.8(B):

- A)** A surface mounted or recessed incandescent fixture with a completely enclosed lamp.
- B)** A surface mounted or recessed fluorescent fixture.

**121) Arc-Fault Circuit Interrupter:** All branch circuits that supply 125-volt, single phase, 15 and 20 ampere outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit interrupter(s). CEC Sec. 210.12(B).

**122) GFCI Protection:**

- A) All bathroom receptacles shall have GFCI protection. CEC Sec. 210.8(A)(1).
- B) All readily accessible receptacles in garages shall have GFCI protection, except for receptacles dedicated for cord- and plug-connected appliances. CEC Sec. 210.8(A)(2).
- C) Receptacles in crawl spaces and unfinished basements shall have GFCI protection. CEC Sec. 210.8(A)(4) & (5).
- D) All receptacles installed to serve kitchen countertop surfaces shall have GFCI protection. CEC Sec. 210.8(A)(6).
- E) All readily accessible exterior receptacles shall have GFCI protection. CEC Sec. 210.8(A)(3). Enclosure in damp locations shall be weatherproof CEC Sec. 406.8.
- F) At least one GFI receptacle outlet shall be installed, in addition to any provided for laundry or any other equipment so located in garage. CEC Sec. 210.52(G).
- G) All 125V receptacles within 10 feet of the inside walls of the tub shall have GFCI protection. CEC Sec. 680.43(A).

**123) Electrical Receptacle Outlet requirements:**

- A) Dwelling units shall have receptacles located 12 ft o.c. maximum, and 6 ft. from the end of a wall. CEC Sec. 210.52(Z).
- B) Dwelling units shall have receptacles located in any wall 2 ft. or more in width and in halls where required if hall is longer than 10 feet. CEC Sec. 210.52(A) & (H).
- C) At least one receptacle outlet shall be installed within 36" of the outside edge of the basin. CEC Sec. 210.52(D). Receptacle outlets shall not be installed in a face-up position in the counter-tops or work area in a bathroom basin location. CEC Sec. 210.52(D).
- D) Provide receptacle outlets in kitchens at each wall counter space 12 inches or wider. Provide counter space receptacles at 4 feet o.c. maximum, and within 24" of every point along wall. CEC Sec. 210.52(C)(1).
- E) Provide a minimum of one receptacle at kitchen island counters. CEC Sec. 210.52(C)(2).
- F) Provide a minimum of one receptacle at kitchen peninsular counters. CEC 210.52(C)(3).
- G) At least one receptacle outlet shall be installed on the exterior at the front and back of a dwelling. Not more than 78" above grade. CEC Sec. 210.52(E).

**124) Branch Circuits:**

- A) Provide 2 or more 20-ampere small appliance branch circuits in kitchen, pantry, breakfast room, or dining room. CEC Sec. 210.52(B).
- B) **Laundry Branch Circuits:** Provide a minimum of one 20-ampere branch circuit for laundry receptacles. CEC Sec. 210.52(F).
- C) **Bathroom Receptacles:** Outlets shall be supplied by a least one 20-amp branch circuit. Such circuits shall have no other outlets. CEC Sec. 210.11(C)(3).

**125) Hydromassage Bathtubs:** Provide a current copy of the approved testing agency report. Note that the tub and associated electric components shall have GFCI protection. Suction fittings shall be safety type complying with listed standards per CPC Sec. 414.4.

**126) Light Fixtures:** Fixtures in bathtub or shower enclosures shall be marked "suitable for damp locations." CEC Sec. 410.4(A).

**127) Lighting Outlets Required:** At least one wall switch-controlled lighting outlet shall be installed in:, CEC Sec. 210.70(A)(1)(2):

- A. Every habitable room,
- B. Bathrooms, kitchens
- C. Attached garages
- D. Detached garages with electric power
- E. Hallways, and Stairways
- F. Exterior side of outdoor entrances or exits.

**128) Lighting Outlets Required:** At least one lighting outlet controlled by a light switch location shall be installed where these spaces are used for storage or contain equipment requiring servicing. The lighting outlet shall be provided at or near the equipment requiring servicing. CEC Sec. 210.70(A)(3) :

- A. Point of entry to an attic
- B. Underfloor space
- C. Utility room, and
- D. Basement

**PLUMBING NOTES**

**129) Water Closet Flush:** Water Closets, either flush tank, flushometer tank, or flushometer valve operated, shall have an average consumption of not more than 1.6 gallons of water per flush. CPC 402.2

**130) Gas Fired Equipment in Garage:** Provide for gas fueled equipment such as water heaters or appliances to be elevated 18" above floor and provided with a protective barrier., i.e. Concrete filled steel bollards. Or, by being elevated or located out of the normal path of the vehicles. CPC 508.14 and CMC 308.1

**131) Hose Bibs:** Provide Anti-siphon Device at all hose bibs. Hose Bibs shall be protected by a listed non-removable hose bib type back flow preventer or by a listed atmospheric vacuum breaker. CPC Sec. 603.2.3.

**132) Expansion Control:** Any water system provided with a check valve, back flow preventer or pressure regulating device which does not have a bypass feature at its source shall be provided with an approved, listed, adequately sized pressure relief valve or a means to control expansion. CPC 608.3 Provide a note on the drawings near the water heater that "an approved, listed expansion tank is required whenever a backflow prevention device is installed." CPC Sec. 608.3.

**133) Water Hammer:** Provide a note indicating the type of pressure-absorbing devices at the following quick-acting valves: dishwashers and washing machines in dwelling units. Pressure-absorbing devices shall be either air chambers or listed mechanical devices. CPC Sec. 609.10.

**134) Water Heater Strapping:** Provide seismic strapping at points within the upper 1/3 and lower 1/3. Straps shall be at least 4 inches from controls. CPC 508.2.

**135) Water Heater Combination Pressure and Temperature Relief Valves:** Relief valves shall extend to outside of the building (or to garage floor in area that will drain to outside) with the end of the pipe not more than 2 ft nor less than 6" above the ground and pointing downward. CPC Sec. 505.6 & 608.5.



- 136) Water Heater Prohibited Locations:** Per CPC Sec. 505.1, Water heaters which depend on the combustion of fuel for heat shall not be installed in a room used or designed to be used for
- A. Sleeping purposes
  - B. Bathroom
  - C. Clothes closets, or
  - D. Closet or other confined space opening into a bath or bedroom.
- Exception: Direct vent water heaters, or in exclusive closet with self-closing gasketed door per CPC 505.1(1) & (2).
- 137) Water Heater Access:** Opening or doorway to water heater shall not be less than required for water heater access for service and removal. UPC Sec. 505.3.
- 138) Water Heater Combustion Air:** Indicate method and size of openings for the required combustion air for fuel burning water heaters. CPC Sec. 507.0. (Or, if in garage, provide 50 cu. ft. of volume per ea. 1,000 BTU/Hr. CPC Sec. 507.0.)
- 139) Shower & Bathtub Water Temperature:** For showers, bathtubs and whirlpool baths, water discharge shall be limited to 120 degrees F. This provision shall not depend on the water heater thermostat adjustment. CPC Sec. 414.5 & 418.0.

### **MECHANICAL COMMENTS**

- 140) Heating:** Provide heating to maintain 68 degrees at 36" above floor level. Show means of attaining on plans. CBC 1204.1.
- 141) Furnace Replacement:** For new or replaced furnaces, conform to the 2007 HVAC requirements from the T-24 Energy Code.
- 142) Furnace – Prohibited Locations:** Warm-air furnaces shall not be installed:
- A. In a closet or alcove less than adequate clearance for the furnace(s). CMC 904.2.
  - B. In a room designed to be used as a bedroom, bathroom, closet or in any enclosed space with access only through such room. (Exception: direct vent furnaces, enclosed in exclusive closet with self-closing gasketed door per CMC 904.1.)
  - C. Outside of a building unless listed for exterior installation or enclosed in a weatherproof housing complying with CMC Sec. 904.10.1.1
- 143) Dryer Vent:** Provide dryer vent to outside air, it shall not exceed a combined horizontal and vertical length of 14 feet including up to two ninety degree angles, reduce allowed length by two feet for every 90 degree elbow beyond the allowed two. CMC 504.3 & 503.3.2.2. Flexible duct connectors of not more than 6 feet is allowed but shall not be concealed within construction." CMC 504.3.2.1.
- 144) Combustion Air:** Provide a minimum of two openings of 100 square inches each min. one within 12" from ceiling and one within 12" from floor, or upper opening per CMC 701.4.2 . Verify with manufacturer specs. CMC 701.2 through 701.8.3 & CPC 507.0.
- 145) Attic Furnaces:** Show on plans type of furnace to be provided. Comply to Section 304.1 & Section 904.11.1 & 931.0 of the CMC.
- A. **Opening Size:** The appliance space shall be provided with an opening or doorway of sufficient size to remove the largest piece of the furnace. In no case shall such an opening or doorway be less than 22" x 30" in width. Submit proof that largest piece of attic furnace can be removed through the attic opening. CMC 90.11.1.
  - B. **Passageway:** The passageway to furnace in attic shall have an unobstructed solid continuous flooring not less than 24" in width from the opening to the furnace. The passageway may not be more than 20' long. Show on framing plans. CMC 904.11.2 & 904.11.3.
  - C. **Structural Stability:** Provide structural calculations or/and detailing of members supporting maximum operating weight. Show on plans.
  - D. **Clearance To Combustible Materials:** Show on plans required distance to combustible materials or note on plans, "Provide required clearance to combustible materials as required by Section 304.0 and Table 3-2 of CMC"
  - E. **Seismic Anchorage:** Show on plans method of anchorage. CMC 304.4
  - F. **Head Clearance:** Show clearance required per CMC sec 904.11
  - G. **Level Working Platform:** Note on plans, "A level working platform not less than 30 inches in depth and width shall be provided in front of the entire firebox side of the warm air furnace and provide a continuous floor of not less than 24" in width from the platform to the location of other controls on the furnace" CMC 904.11.4.
  - H. **Electrical Outlet And Switch:** Show on plans a permanent electric outlet and lighting fixture, controlled by a switch located at the required passageway opening, at or near the furnace. CMC 904.11.5.

### **ENERGY EFFICIENCY STANDARDS**

- 146) Major Appliances, Plumbing and HVAC fixtures:** Locate all major appliances, plumbing and/or HVAC fixtures. Provide fuel type (Electric, Gas, Propane), and verify conforming to Title 24 requirements. If new HVAC system components are being added, conform to 2007 Energy Standards requirements (attached).
- 147) Title 24 Energy Calculations:** New, added to or altered Dwelling units, guest rooms and congregate residences shall be provided with complete Title 24 energy calculations for the proposed construction, including Forms CF-1R and MF-1R included as part of the Construction Documents. CBC 310.11
- 148) Fluorescent lighting in Kitchens:** Permanently installed lights in Kitchens shall be fluorescent fixtures (High Efficacy Luminaires, 40 lumens per watt). Up to 50% of total wattage can be incandescent lighting provided that the incandescent light fixtures are on a separate switch. The wattage of the fluorescent lights shall be the nominal rated wattage of the fixture. Lighting to rooms open to kitchen such as dining rooms and nooks are considered part of the kitchen lighting if the lighting is not on a separate switch. Wattage shall be defined per Section 130. A "WS-5R" form is required. 2007 Energy Efficiency Standards Sec. 150(k) (2).
- 149) Fluorescent Lighting in Restroom, Garages, Laundry Rooms, & Utility rooms:** Permanently installed lights in Restrooms, Garages, Laundry Rooms, & Utility rooms shall be fluorescent fixtures (High Efficacy Luminaires, 40 lumens per watt). Incandescent lighting fixtures are allowed provided that the fixtures are controlled by an occupant sensor certified to comply with Section 119(d) of the 2007 Energy Efficiency Standards. Such motion sensors may not have the capacity to be overridden manually to turn the light on or leave the light on indefinitely. 2007 Energy Efficiency Standards Sec. 150(k) (3).
- 150) Fluorescent Lighting in rooms other than Restroom, Garages, Laundry Rooms, & Utility rooms:** Permanently installed lights in rooms other than Restrooms, Garages, Laundry Rooms, & Utility rooms shall be fluorescent fixtures (High Efficacy Luminaires, 40 lumens per watt). Incandescent lighting fixtures are allowed provided that the fixtures are controlled by a dimmer switch – or - are controlled by an occupant sensor certified to comply with Section 119(d) of the 2007 Energy Efficiency Standards. Also, per exception 3,

permanently installed luminaires that are not high efficacy luminaires shall be allowed in closets less than 70 sq. ft. 2007 Energy Efficiency Standards Sec. 150(k) (4). (Exception: Closets under 70 S.F. – in which case lighting must still comply with CEC Sec. 410-8-d.)

- 151) Recessed Luminaires in Insulated Ceilings:** Luminaires recessed into insulated ceilings shall be approved for zero clearance insulation cover (IC) by U.L. or other testing lab recognized by Building Official, and shall be certified air tight to show air leakage less than 2.0 CFM at 1.57 psf in accordance with ASTM E283, and sealed with a gasket or caulk between housing and ceiling. 2007 Energy Efficiency Standards Sec. 150(k) (5).
- 152) Fluorescent Lighting for outdoor lighting:** Permanently installed lights on buildings on the same lot shall be fluorescent fixtures (High Efficacy Luminaires, 40 lumens per watt). Incandescent lighting fixtures are allowed provided they controlled by an occupant sensor with integral photocontrol certified to comply with Section 119(d) of the 2007 Energy Efficiency Standards. Permanently installed fixtures in or around swimming pools and water features need not be high efficiency. 2007 Energy Efficiency Standards Sec. 150(k) (6).
- 153) Efficacy:** Luminaires installed to meet the 40 lumens per watt requirements shall not contain medium base sockets (unless conforming to the exception in sec. 150 (k) 1) and shall be on separate switches from any incandescent lighting. 2007 Energy Efficiency Standards, Section 150(k) (1).
- 154) Pipe Insulation to Hot water lines to Kitchen:** Hot water pipes  $\frac{3}{4}$ " and greater leading to kitchen to be insulated. 2007 Energy Efficiency Standards, Section 150(k)(4).