CITY OF MILPITAS
Office of Building Safety
455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240
www.milpitas.gov

RESIDENTIAL GARAGE CONVERSION

A combination (building, mechanical, plumbing and electrical) permit is required for all residential garage conversions. Some projects may require a separate fire protection system permit from the Fire Department. To expedite the issuance of your permit, submit complete sets of plans, including all related disciplines. Incomplete submittals will cause delay in the approval of your project. If you have any questions, contact Office of Building Safety staff at City Hall or at the phone number listed above.

The following are guidelines for preparation and submittal of your plans. Specific plan requirements will depend largely upon the extent, nature and complexity of the work to be done. Some items listed below may not be required for your specific project. BE SURE TO INCLUDE ALL OF THE PERTINENT INFORMATION AND DRAWINGS:

Home Owners Association: If the property is regulated by a Home Owners Association, any exterior work must have approval of the Association. It is the property owner's responsibility to obtain the approval.

Before saw cutting or breaking a slab-on-grade, verify if it is a post tension slab. Cutting a tendon in these slabs can be very dangerous and expensive to repair.

Refer to *"Design Guidelines for Residential Garage Conversion"* for sample of the plans required for a residential garage conversion project.

1. PLAN REQUIREMENTS:

- ❑ **Plan Size:** Prepare plans on paper that is at least 17 inches x 11 inches in size.
- ❑ **Sets of Plans:** When submitted over the counter, bring one (1) complete set of printed plans and one complete set of digital plans in PDF format.
- ❑ **Clarity:** All plans shall be prepared to be sufficiently readable and clear for creating a digitized record. Plans shall be quality blue or black ink line drawings with uniform light (white) background color. Pencil drawings are not acceptable, but copies of pencil drawings can be submitted provided copies are readable with good contrast.
- ❑ **Dimensions:** Plot Plans, Floor Plans and other plan view drawings shall be fully dimensioned and shall have a north arrow.
- ❑ **Scale:** All drawings shall be drawn to an adequate scale with scale indicated. Recommended scales for drawings are:

Plot Plans:	1/8" = 1'-0", 1"=10' or 1"=20'	Floor and Roof Framing:	1/4" = 1'-0" or 1/8" = 1'-0"
Floor Plans:	1/4" = 1'-0"	Building Cross Sections:	1/4" = 1'-0" or 1/2" = 1'-0"
Foundation Plans:	1/4" = 1'-0" or 1/8" = 1'-0"	Exterior Elevations:	1/8" = 1'-0" or 1/4" = 1'-0"

- ❑ **Existing (E) and New (N) Construction:** Throughout the plans, be sure to label all new (N) and existing (E) construction, components and fixtures to distinguish between new work to be done and the existing work.

- ❑ **Completeness:** Please remember, the more complete and accurate the drawings and submittal documents, the sooner your permits can be issued.

- ❑ **Signature:** The person who prepared the plans must sign each sheet. If any of the plan sheets are prepared by a licensed architect or registered engineer, that individual must stamp and sign at least two copies of each of the sheets he or she has prepared in accordance with the California Business and Professions Code prior to plan approval. Plans for elements of the structure designed by others must be reviewed and signed by the Engineer or Architect of record. (California Business and Professional Code 5536.1, 6735)

2. PROJECT INFORMATION - On the first sheet of the plans, provide the following information:

- ❑ **Name of Architect, Engineer or Designer:** The printed name, address and telephone number of the person who prepared the plans.
- ❑ **Address and Owner:** List the street address of the property and the name of the legal owner of the property.
- ❑ **An Index of the Drawings:** List each sheet number and a description in an Index of the Drawings.
- ❑ **Scope of Work:** State the complete scope of work to be performed under this permit.
- ❑ **Building Area:** State the area in square feet of the existing house, the garage to be converted and the total of the existing and new areas.
- ❑ **Building Codes:** All work must comply with the California Residential Code (CRC) or 2022 California Building Code, 2022 California Electrical Code (CEC), 2022 California Mechanical Code (CMC), 2022 California Plumbing Code (CPC), 2022 California Energy Code, 2022 California Green Building Code and 2023 Milpitas Municipal Code (MMC).

3. ARCHITECTURAL PLANS - The following are minimum architectural plan requirements for most projects based on CRC:

- ❑ **Site (Plot) Plan:** Show the location of existing buildings, other structures on the site, property lines and locations of adjacent streets or alleys.

  - Show dimensions between existing garage walls and property lines.
  - Show the direction of true North.
  - Show the existing and any proposed new parking. **NOTE**: Planning requires the following off-street parking:
    3 bedrooms or less – 2 parking spaces.
    4 or more bedrooms – 3 parking spaces plus 1 space for each additional bedroom exceeding 4.
  - ADU Requirements
    - Provide notes for Address Signage:
      1. Address numbers for both main house as well as ADU shall be illuminated (external or internal) and placed at the front of the structure facing the street, as per Fire Code
      2. Address numbers shall be minimum 4"high with 1/2"stroke
    - Provide 48” wide aisle with 36” paved walkway from the front of the property (or public sidewalk) to the entrance door of the ADU. Localized obstruction such as tree or gas meters, etc. may protrude into the 48” aisle width provided min. 36” clear aisle width is provided at the localized obstruction. Access shall not be through the existing home. If there are gates along the way, specify the gates shall be not less than 36” in width.
    - If there are independent PG&E service, such services shall be labelled with permanent tags to identify which dwelling unit it serves.
    - Specify location of existing gas and water meter.
    - Specify location of service panel and any subpanels. Specify size of panels.

- ❑ **Floor Plan:** The Floor Plan must show all existing rooms in the house and new rooms in the converted garage. Label the use of each room. Provide all information necessary to explain what, where and how the work will be done. Refer to the "*Bathroom Remodel*" handout for detailed information pertaining to new bathrooms.

  - Provide a minimum of 7 ft dimension (in any direction) in all habitable rooms other than kitchen (CRC R304.3). Habitable rooms shall have a minimum of 70 sq. ft. (CRC R304.2).
  - There shall be a floor or landing on each side of a door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 2% slope. (CRC R311.3)
  - The floor or landing shall be provided on each side of the exterior door at maximum 1.5" below the top of threshold for egress doors and maximum 7 ¾" for non-egress doors, except: (CRC R311.3)
    - Exterior egress doors may have exterior landing not more than 7 ¾" below the top of the threshold provided the door does not swing over the landing, except storm and screen doors. (CRC R311.3.1 exc)
  - A landing is not required where a stairway of two or fewer rises is located on the exterior side of the non-egress door, provided that the door does not swing over the stairway. (CRC R311.3.2 exc)
  - Each bedroom shall have an emergency egress and rescue window or door with a clear net opening of 5.0 square feet if located on a floor at grade level, and 5.7 square feet on all other floors. The window or door shall have a minimum clear opening height of 24", a minimum clear opening width of 20" and shall be installed so the bottom of the clear opening is not greater than 44" above the finished floor. (CRC R310.1)
  - Bars, grilles, grates or similar devices installed on rescue windows, window wells or exits shall be equipped with approved release mechanisms in compliance with CRC Section R310.4.4.
  - For all occupied spaces, provide exterior openings for natural light (8% of floor area) (CRC R303.1).
  - Artificial lighting may be provided in-lieu of natural lighting to provide average of 6 foot-candles over the area of the room at a height of 30" above floor level (CRC R303.1 Exception 3).
  - An artificial light source shall be provided in the immediate vicinity of each landing of interior stairways and at top landing of exterior stairways (CRC R303.7).
  - Provide natural ventilation (4% of floor area) or a mechanical ventilation system capable of producing 0.35 air changes per hour in the habitable rooms installed (CRC R303.1 and R303.1 exc 1).
  - ADU Requirements
    - Provide a full height fire and sound rated wall assembly from foundation to roof sheathing as the dwelling unit separation separating the garage ADU from the main home. Fire rating shall be 1-hr min. STC 45 rating min. CBC 420.2, CBC 708 and CRC AK102.1
    - Provide rated horizontal separation (rated floor ceiling assembly) for garage ADU located below dwelling unit. Fire rating shall be 1-hr min. STC 45 rating min. CBC 420.3, CBC 711 and CRC AK102.1.
    - Provide fire and sound rated wall and floor/ceiling assembly detail. A complete assembly description shall be provided. Indicate assembly number. Qualifying assemblies can be found through UL or Gypsum Association.
    - Provide rated fire penetration details.
    - Separate entry door that swings is required. Sliding door is not allowed. (CRC R311.2)

- ❑ **Ceiling Plan:** Either on the Floor Plan or a separate Ceiling Plan should show all ceiling heights, finishes, electrical and mechanical.

  - Minimum ceiling height is 7'-0" in habitable spaces, hallways, bathrooms, toilet rooms, laundry rooms (CRC R305.1).
  - Provide attic accesses with a minimum of 22"x30" opening and minimum 30" clear headroom (CRC R807.1).

- ❑ **Roof Plan:**

  - Enclosed attic & enclosed rafter spaces shall have cross ventilation not be less than 1/150 of the area of the ventilated space (CRC R806.2). A minimum of 1" airspace shall be provided between insulation and the roof sheathing (CRC R806.3). Where vapor retarder is used to reduce the ventilating area to 1/300 of ventilated space, indicate on the building section that the location of vapor retarder to be on the warm side of the attic insulation. The ventilating area may also be reduced to 1/300 provided 50%-80% is provided by ventilators

installed at least 3 ft. above eave or cornice vents with the balance of the required area provided by eave or cornice vents.

- Show the location and construction details of all skylights. Construction shall comply with CRC R308.6. Include skylights in the Title 24 Energy Compliance Reports. Refer to the "*Residential Skylights*" handout for additional information.
- When the value of the work exceeds $1,000, a spark arrester must be installed on fireplace chimneys if one does not exist per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CRC Section R1003.9.2.

❑ **Elevations:** Show exterior elevations or views of all sides of the building that will have new doors, windows, siding or other new construction.

❑ **Details and Notes:** Include all details necessary to show the construction including changes in floor elevation (raised floor) or change from concrete to wood floor, filling in of the existing garage door, and new windows and doors in existing walls.

- Sleepers and sill plates on concrete or masonry in direct contact with the earth shall be of naturally durable or preservative-treated wood per CRC R317.3.
- Wood framing members, including wood sheathing, that rest on exterior foundation walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood (CRC R317.1).
- If a raised floor is proposed, comply with the following:
  - When the crawl space houses utilities such as plumbing, electrical conduits, etc., the minimum clearance between the bottom of wood joists or the bottom of a wood structural floor without joists to the exposed ground or slab shall be 18", or 12" to the bottom of wood girders.
  - When the crawl space does not house utilities such as plumbing, electrical conduits, etc., the floor assembly (including posts, girders, joists and subfloor) shall be naturally durable or preservative-treated wood, where bottom of wood joists are closer than 18", or wood girders are closer than 12", to the exposed ground or slab.
  - In a garage conversion, the requirement of minimum clearance may be waived provided the minimum under floor ventilation as required by CRC R408.1 is met and floor joists, sleepers or sill plates and interior partitions sill plates are naturally durable or preservative-treated wood.
  - The space underneath the floor joists shall be ventilated as required by CRC R408.1. The net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of crawl-space area. The total area of ventilation openings may be reduced to 1/1500 where the ground surface is treated with an approved vapor retarder material and the required openings are placed to provide cross ventilation. Openings shall be covered with corrosion-resistant wire mesh, with the least dimension not exceeding 1/8 inch, or one of the other methods in accordance with CRC R408.2.
  - If the minimum distance between the joists and the ground has not been reduced, indicate the location of crawl space access with a minimum of 18"x24" opening per CRC R408.4.
- To fill in the existing garage door opening, between driveway and Garage, follow the detail included in the Design Guideline for Garage conversions or provide structural details of an alternate design.
- Show new ceiling joist size and spacing.
- A minimum 10-mil vapor retarder conforming to ASTM E1745 Class A requirements with joints lapped not less than 6" shall be placed above the concrete floor slab. CRC R506.2.3.

4. ELECTRICAL, MECHANICAL and PLUMBING:

Plans shall include all information necessary to show how the space is to be heated, cooled and ventilated, how the plumbing fixtures are connected to plumbing systems and how the electrical energy is distributed and connected to the building power system. This can be done on the architectural drawings or on separate plans.

Specific mechanical, plumbing and electrical plan requirements will depend largely upon the extent, nature and complexity of the work to be done. The following are general guidelines for preparation and submittal of these plans.

- **Mechanical Plans:** Show on the plans the installation of all new mechanical work and existing mechanical in the converted garage. NOTE: All new equipment weighing more than 400 pounds requires structural calculations.

  - If existing ducts will be extended into the garage to serve the converted space, ducts must be a minimum 8" diameter back to the furnace.
  - If existing furnace is to remain in the converted garage, show how outdoor combustion air will be provided through openings to the outdoors per CMC Section 701.5.
  - All habitable rooms must have a heating system capable of maintaining a room temperature of 68° F at a location of 3 feet above the floor and 2 feet from exterior walls. Portable heaters shall not be used for compliance. Indicate on the plans the heating system or method to be used. CRC Section R303.10.
  - Show the location of all new HVAC equipment. Provide a one-line layout of the proposed duct and register system. Include duct length, size, register/boot size, and cold air return location.
  - Whole-Building ventilation for Indoor Air Quality shall be provided for additions over 1,000 square feet per CEnC section 150(o).
  - Where ventilation system is provided for IAQ, a manual switch for the ventilation shall have a label: "This switch controls the indoor air quality ventilation for the home. Leave it on unless the outdoor air quality is very poor" per CEnC sec. 150.0(o)1.I.
  - If existing equipment will serve the new Conditioned Floor Area (CFA), and the new CFA is more than 20% of the existing CFA, provide Performance Title 24 Calculations to show the existing equipment is adequate.
  - If central heating is specified, the plan shall show location of supply registers. If mini-split heat pumps are specified, the plan shall show the location of the heat pump outdoor unit and the mini-split indoor unit.
  - Provide an equipment schedule with all specifications noted.
  - Specify and note how condensate drains are routed and discharged via an indirect waste pipe to an approved location.
  - For attic installed equipment, provide a section through the attic showing the location, size and weight of all equipment, details of equipment anchorage, how equipment is being supported, size and location of access opening, distance from opening to equipment, size and location of platforms and walkways, and required headroom and clearances.
  - The walkway to attic appliance shall not exceed 20 ft unless the attic height exceeds 6 ft and it shall have solid flooring not less than 24" wide. There shall be a 30"x30" minimum working platform in front of the service side of the appliance per CMC Section 304. There shall be a 120 volt receptacle outlet and a light fixture installed near the appliance and the light switch shall be near the attic access entrance.
  - Ducts in a private garage and ducts penetrating the walls or ceilings separating the dwelling unit from the garage shall be constructed of a minimum 0.019 inch (no. 26 gage) sheet steel and shall have no openings into the garage per CRC Section R302.5.2.
  - Provide aggregate glazing area in windows of at least 3 sq ft, ½ of which must be openable in bathrooms, water closet compartment and other similar rooms per CRC Section R303.3, unless exhaust fan directly vented to outside is provided. When exhaust fan is provide, provide fan location, and size fan a minimum of 20 cfm for continuous system operation with a maximum of 1 sone per CEnC. For intermittent bath fan operation, provide minimum ventilation airflow of 50 cfm and maximum of 3.0 sone rating per CEnC.
  - Provide dryer duct layout, size and length. If duct size or length does not comply with minimum code requirements (CMC Section 504.4.2.1), provide booster fan or engineering justification.
  - Factory-built fireplaces shall be installed in accordance with their listing and the manufacturer's installation instructions. Chimneys shall extend a minimum of 3 feet above the highest point where it passes through a roof and at least 2 feet higher than any portion of a building within a horizontal distance of 10 feet per CMC Section 802.5.4. The manufacturer's instructions must be present on the job site for the installer and the inspector.
  - Refer to the "*Air-conditioning & Furnace*" handouts for more information.
  - ADU Requirements
    - Separate HVAC system required if ducted system is used (return air shall not be discharged to adjacent unit per CMC 311.4 and CMC sec 403.9). Shared heat pump minisplit system may be used, but direct

access shall be provided for main dwelling and ADU/JADU. Each dwelling unit shall have its own thermostat and controls. CRC R303.9.
  - Bathroom exhaust fan with humidistat controls are required for bathrooms with showers. CalGreen 4.506. Exhaust fan shall be separately switched from lights. CEnC 150.0(k)2G.
  - Kitchen hood shall meet CEnC 150.0(o)1G and Table 150.0-G. Unless it can be shown otherwise, specify 85% capture efficienty (C.E.) or 280 cfm.

- ❑ **Electrical Plans:** Show on the plans the installation of all new electrical work and existing electrical in the converted garage. Refer to the "*Lighting, Switches and Receptacles*" handout for more information.

  - Show on the plans the size and location of electrical service, any other panels, all switches, lights, receptacles, smoke detectors, and any equipment requiring electrical connections (ranges, furnaces, etc.).
  - Provide panel schedules and load calculations to verify service is adequate for the loads.
  - New electrical panels shall be installed in accordance with CEC Article 230.70, Article 240.24, and MMC Section II-6-2.03. Refer to the "*Electrical Panel*" handout for more information.
  - Grounding electrode systems in all new buildings shall be an electrode encased by at least two inches of concrete located within and near the bottom of a concrete foundation or footing that is in direct contact with earth. The electrode shall consist of at least 20 feet of one or more steel reinforcing bars or rods, of not less than ½ inch diameter. The connection side of this concrete-encased electrode shall be located remotely away from the main electrical service equipment per MMC Section II-6-2.03.
  - Provide drawing showing branch circuit layout.
  - Note when receptacles are Ground-Fault Circuit-Interrupter (GFCI). GFCI protected receptacles shall be installed in bathrooms, garages, outdoors, crawl spaces, kitchen, unfinished basements and receptacles within 6 ft of the outside edge of laundry, utility and wet sinks. (CEC 210.8).
  - Where branch-circuit wiring supplying 120-volt 15 and 20-ampere outlets in family rooms, dining rooms, living rooms, parlors, libraries, dens bedrooms, sunrooms, recreation rooms, closets, hallways or similar rooms is modified, replaced or extended, the branch circuit shall be protected as per CEC 210.12(B) by:
    1) A listed combination AFCI located at the origin of the branch circuit, or
    2) A listed outlet branch-circuit AFCI located at the first receptacle outlet of the existing branch circuit
  - Receptacles install outdoors shall have a listed weatherproof cover.
  - All 120-volt, 15 and 20 amp receptacles shall be listed tamper-resistant.
  - Every room, kitchen and living space of dwelling units shall be provided with receptacle outlets installed so that no point along the floor line in any wall space is more than 6 ft from a receptacle outlet per CEC Section 210.52. Refer to the "*Kitchen Remodel*" and *"Bathroom"* handouts for additional requirements.
  - Provide a wall switch controlling exterior light at all exterior entrances or exits per CEC 210.70. Exterior lights shall be high efficacy (LED) and shall be controlled by a manual ON and OFF switch that does not override to ON the automatic actions of photocell/motion sensor or time control system. (CEnC sec.150.0(k)3).
  - All installed lighting shall be high luminous efficacy light source or Joint Reference Appendix JA8-certified light source. CEnC Table 150.0-A.
  - All lighting must have readily accessible manual controls, allowing occupants easy control of lighting in the space. (CEnC 150.0(k)2)
  - Lighting that is integral to ceiling fans must be separately switched from the exhaust fan (CEnC 150.0(k)2G).
  - Lighting installed in bathrooms, garages, laundry rooms, utility rooms and walk-in closets are required to be controlled by a vacancy sensor. CEnC 150.0(k)2E
  - Lighting in habitable spaces shall have dimming controls. CEnC 150.0(k)2F
  - Fixtures recessed into ceilings shall be listed for zero clearance insulation contact (IC), have a label that certifies that the fixture is airtight with air leakage less than 2.0 CFM at 75 Pascal's (AT), be sealed with a gasket or caulk between the luminaire housing and ceiling, and shall have all air leak paths between conditioned and unconditioned spaces sealed with a gasket or caulk (CEnC 150.0(k)1C).
  - If sub-panel is installed, specify size on plan and provide working space clearances. CEC 110.26
  - Bathroom electrical outlet shall not be within 3 ft of shower. CEC 406.9C.

- ADU Requirements
  - Direct access shall be provided to electrical sub panel/disconnect and service panel serving the ADU and main home to each respective dwelling unit.
  - Provide electrical load calculation for main house and sub-panel serving ADU.

❑ **Plumbing Plans:** Show on the plans the installation of all new plumbing work and existing in the converted garage.

- Show on the plans the location of all plumbing fixtures, hose bibbs and water heaters.
- Include a complete list of fixtures and their gas/water demands. Refer to the *"Kitchen Remodel"* and *"Bathroom Remodel"* handouts for maximum flow rates for fixtures.
- Provide one line layout drawing for the proposed waste (drain) and vent system, including fixture count, pipe size and length, fixture location, clean-out locations, slope and connection to existing lateral location. Justify size of drainage piping as per CPC Section 703.
- Provide one line layout drawing for the proposed water system, including total developed length (meter to most remote fixture), service and meter size, branch lengths, total fixture units, branch fixture units, pipe size and length, and indicate method used for sizing (CPC 610.0).
- Provide one line layout drawing of the proposed gas piping system, including total developed length, total demand (BTU & CFH), appliance location with BTU/CFH listed for each appliance, and branch length and pipe size, and indicate method used for sizing (CPC 1216.0). If the new gas piping is not installed back to the meter, include all existing appliances and pipe length and sizes.
- Show the location, materials and installation requirements of all piping located outside the building.
- Note the dimensions where minimums must be met at fixtures (toilets, lavatories, shower stalls, etc.).
- Detail the installation of the water heater including seismic bracing. Refer to the "*Residential Water Heater*" handout for more information.
- If existing water heater is to remain in the converted garage, show how outdoor combustion air will be provided through openings to the outdoors per CMC Section 701.5.
- If existing temperature & pressure (T&P) valve terminates inside the garage, it must be extended to the exterior of the building. Piping must slope to drain and terminate facing towards the ground.
- Show the requirement for installation of gas seismic and excess flow shut-off devices. Refer to the "*Natural Gas Line*" handout for more information.
- Where a toilet is installed on a floor level that is lower than the next upstream manhole cover of the public sewer, or the building cleanout, an approved type of backwater valve shall be installed.
- Provide automatic seismic shut off valve or excess flow gas shut off valve at the gas meter for new or altered gas line. (CPC 1211.7)
- Installing a new water heater or moving existing water heater will trigger requirement to provide provisions for future Heat Pump Water Heater. CEnC 150.0(n)
- ADU Requirements:
  - If the water heater is serving both the main house and the ADU, the water heater shall be located to allow direct access for both units.
  - Water submeter. If a water submeter will be installed, please indicate location of water submeter. Water submeter shall be readily accessible to tenant, regardless of age and physical ability, at or near eye level and without additional tools such as ladders, mirrors and cameras. Please contact the County regarding the proposed submeter installation.

5. ENERGY REQUIREMENTS:

❑ **Insulation:** Indicate on the plans the exterior wall, ceiling and under floor insulation type and thickness. Minimum insulation required:

- Extensions of existing wood-framed walls may retain the dimensions of the existing walls and shall install cavity insulation of R-15 in a 2x4 framing and R-21 in a 2x6 framing.
- For additions of conditioned space that are 700 sq ft or less, ceiling insulation is required to be R-38.

- Additions of conditioned space that are greater than 700 sq ft require a roof rafter shall be insulated R-11 under deck sheathing and ceiling instulation is required to be R-30.
- Raised wood floors requires a U factor of 0.037 or R-19 insulation.

❑ **Radiant Barrier:** A radiant barrier above the attic space is required for all additions and whenever existing roof sheathing is removed.

❑ **Windows:** Indicate the size and type of all new windows and note the U-factor and SHGC ratings. Maximum U-factor is 0.30 and maximum SHGC is 0.23.

- Additions 400 sf or less are allowed a total glazing area up to 75 sf or 30% of the CFA, whichever is greater, and have up to 60 sf west-facing glazing. (CEnC 150.2(a)1B)
- Additions greater than 400 sf and no more than 700 sf are allowed a total glazing area up to 120 sf or 25% of the CFA, whichever is greater, and have up to 60 sf of west-facing glazing. (CEnC 150.2(a)1B)
- Additions greater than 700 sf and less than 1,000 sf are allowed a total glazing area up to 175 sf or 20% of the CFA, whichever is greater, and have up to 70 sf or 0.5% of the CFA of west-facing glazing, whichever is greater. (CEnC 150.2(a)1A)
- Note the total allowed fenestration and west-facing glazing include skylights.

❑ **Water Piping:** All new hot water piping must be insulated per CEnC Section 150.0(j)2. See *"Water Piping"* handout for specific requirements.

❑ **Lighting:** See Electrical Plans above for lighting and switching requirements.

❑ **Equipment:** Equipment shall meet California Energy Code requirements. A list of equipment certified as meeting the requirements of the Energy Code is available at www.appliances.energy.ca.gov. Indicate on the mechanical drawings the AFUE or HSPF ratings of heating equipment and SEER or EER rating of cooling equipment.

- Minimum 81% AFUE (Annual Fuel Utilization Efficiency) for all new weatherized gas fueled furnaces and 80% for all new non-weatherized gas fueld furnaces with output capacity less than 225,000 Btu/hr (except wall and floor furnaces and room heaters).
- Minimum 8.2 HSPF (Heating Seasonal Performance Factor) for split heat pumps less than 65,000 kBtuh.
- Minimum 8.0 HSPF for packaged heat pumps less than 65,000 kBtuh.
- Minimum 14 SEER/12.2 EER for split system central air conditioners less than 45,000 kBtuh.
- Minimum 14 SEER/11.7 EER for split system central air conditioners greater than 45,000 kBtuh.
- Minimum 14 SEER/11.0 EER for packaged systems.
- Note: See tables 110.2 for other equipment types.

❑ **Thermostat:** Setback thermostats that comply with CEnC 110.2(c) (programmable for 4 periods within 24 hours) shall be installed with all new or modified space heating systems.

❑ **Load calculations:** Load calculations per ASHRAE SMACNA or ACCA is required whenever heating/cooling equipment or area of conditioned spaced served is changed.

❑ **Ventilation:** Additions greater than 1,000 sf must meet Package A whole house fan requirements [CEnC 150.2(a)].

❑ **Ducts:** Indicate on the mechanical drawings the duct insulation type and thickness, and if HERS testing of the duct sealing is required. Minimum duct insulation is R-6. HERS testing is required any time more than 40 lf of duct is added or replaced. [CEnC 150.0(m)1B].

- ❑ **Title 24 Energy Compliance Reports:** Provide all appropriate Compliance Forms. Forms may be obtained at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-2

The following Prescriptive Compliance forms may be required at time of permit application:

- CF1R-NCB-01-E Newly Constructed Buildings, also for additions over 1,000 sq. ft.
- CF1R-ADD-01-E Additions 1,000 sq. ft. or Less.
- CF1R-ALT-01-E Residential Alterations.
- CF1R-ALT-02-E Alterations to Space Conditioning Systems.

The following Installation forms may be required to be completed and presented to the Building Inspector at time of final inspection:

- CF2R-ENV-01-E Fenestration Installation.
- CF2R-ENV-02-E Envelope Air Sealing.
- CF2R-ENV-03-E Insulation Installation.
- CF2R-ENV-04-E Roofing-Radiant Barrier.
- CF2R-LTG-01-E Lighting-Single Family Dwellings.
- CF2R-MCH-01-E Space Conditioning Systems Ducts and Fans.
- CF2R-PLB-02-E Single Dwelling Unit Hot Water System Distribution.

6. SMOKE ALARMS, CARBON MONOXIDE ALARMS & SPARK ARRESTERS:

- ❑ In single family and multi-family residences (including townhomes, condominiums and apartments), installation of smoke alarms, carbon monoxide alarms and spark arresters on all chimneys is required prior to the final inspection. Refer to the *"Smoke Alarm, Carbon Monoxide Alarm and Spark Arrester Certificate*" attached for detailed information.

7. OTHER APPROVALS:

- ❑ **Engineering Department:** If the property is located in the special flood hazard area contact Engineering at (408) 586-3329 prior to beginning plan preparation.

- ❑ **Planning Department:** Prior to completion of any plans, the Planning Department should be contacted at (408) 586-3279 to find out the requirements due to the location and type of the proposed project, and off-street parking requirements.

- ❑ **Fire Department:** Fire protection systems for homes in "Hillside Areas" and all homes provided with fire sprinklers or fire alarms shall have separate approval by the Fire Department. Contact the Fire Department for more information at (408) 586-3365.

- ❑ **Home Owners Association:** If the property is regulated by a Home Owners Association, any exterior work must have written approval of the Association and the written approval must be submitted to the City at time of permit application.

NOTES:

- ❑ **Revisions:** Once the permit has been issued, any changes in the design must be approved by the City. Submittal documents shall be reviewed by the Architect or Engineer of record with a notation indicating that the changes have been reviewed and are in general conformance with the design of the building prior to being submitted to the City for approval. Additional fees will be due for each revision at time of submittal.