



# NEW SINGLE-FAMILY RESIDENCE

This handout addresses the information that needs to be provided on the plans for a new single-family detached residential building. There are additional requirements for attached and for multi-family residential buildings. See the “*General Residential Architectural Plan Check List*” for these additional requirements, especially regarding separation of mixed uses, building area and heights, fire walls and rated construction, egress, accessibility, and elevators.

Building, mechanical, plumbing and electrical permits are required for all new residential projects. Most projects will also require grading and site improvement permits and may require a demolition permit. Off-site permits may also be required from the Engineering Department and a fire protection system permit from the Fire Department. In order to expedite the issuance of your permits, 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 Building & Safety Department 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.**

## 1. PLAN REQUIREMENTS:

- ❑ **Plan Size:** Prepare plans on paper that is at least 22 inches x 17 inches in size.
- ❑ **Sets of Plans:** Submit five (5) complete sets of plans.
- ❑ **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"
- ❑ **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.

**Note:** All projects located in the Hillside must be designed by a California Licensed Civil Engineer, Structural Engineer or Architect licensed to practice in the State of California.

- ❑ **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 new residence per each story, the garage, and the total area.
- ❑ **Deferred Submittals:** List all proposed deferred submittals (e.g. roof trusses, pre-fab stairs, etc.). Deferred submittal documents shall be reviewed by the Architect or Engineer of record with a notation indicating that the documents have been reviewed and are in general conformance with the design of the building prior to being submitted to the City for approval.
- ❑ **Building Codes:** All work must comply with the 2016 California Residential Code (CRC) or 2016 California Building Code, 2016 California Electrical Code (CEC), 2016 California Mechanical Code (CMC), 2016 California Plumbing Code (CPC), 2016 California Energy Code, 2016 California Green Building Code, and the Milpitas Municipal Code (MMC).

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

- ❑ **Site (Plot) Plan:** Show the property lines and the location of the proposed new building, other structures on the site, location of easements and overhead utilities, and locations of adjacent streets or alleys.
  - Show front, side and rear setback dimensions, dimensions to easements, and dimensions between buildings, if there is more than one building on the site.
  - Show finish floor elevations, elevations of finish grade adjacent to buildings, established street grades, drainage patterns, locations, and gradients of cut or fill slopes.
  - Prior to issuance of building permit, all the easements including private storm drain easement through adjacent parcels shall be recorded.
  - The developer shall provide interim erosion control provisions (BMP's) and schedules in the construction plans prior to submittal for construction and areas which will not have permanent erosion control features installed and maintained (such as landscaping) prior to occupancy so that erosion and sediment control can be sustained through the rainy season per MMC II-13-11.
- ❑ **Floor Plan:** The Floor Plan must show all rooms, their dimensions and the use of each room shall be labeled.
  - The buildings shall not exceed 3 stories per CRC Section 1.1.3.
  - Provide automatic residential fire sprinkler system per CRC Section R313.2.
  - Provide 1-hour rated construction for exterior walls less than 5 feet from property line for non-sprinklered building per CRC Table R302.1(1) and for exterior walls less than 3 feet from property line for sprinklered building per CRC Table R302.1(2).
  - Openings are not permitted in exterior walls 3 feet or less from the property line for buildings with or without automatic sprinklers. For non-sprinklered buildings, openings cannot exceed 25% of wall area greater than 3 feet to 5 feet from the property line per CRC Table R302.1(1).

- Projections beyond the exterior wall shall not extend closer than 2 feet from the property line per CRC Table R302.1(1) & R302.1(2). Provide 1-hour rated construction on the underside of the projection extending closer than 5 feet from the property line for non-sprinklered buildings and 3 feet for sprinklered buildings.
- Provide a minimum of 7 ft dimension (in any direction) in all habitable rooms other than kitchen per CRC Section R304.3. At least one room shall have a minimum of 120 sq. ft. net floor area and all other habitable rooms a minimum of 70 sq. ft. per CRC Section R304.1 & R304.2.
- Provide door and window schedule including hardware.
- At least one side-hinged exterior door shall be provided for egress purposes with a minimum clear opening of 32" wide and 78" high per CRC Section R311.2.
- Indicate size and elevation of landings at all exterior exit doors as per CRC Section R311.2 & R311.3.
- 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 as per CRC Section R311.3.
- The floor or landing shall be provided on each side of the exterior door at max. 1.5" below the top of threshold for egress doors and max. 7.75" for non-egress doors per CRC Section R311.3, except:
  - Exterior egress doors may have exterior landing not more than 7.75" below the top of the threshold provided the door does not swing over the landing, except storm and screen doors.
  - 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.
- Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort per CRC Section R311.2.
- 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 per CRC Section R310.1. An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall have window wells and comply with CRC Section R310.2. 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.
- Provide safety glazing in the locations as described in CRC Section R308.4. Refer to the "Window and Door Replacement" handout for additional information.
- Provide detailed information for stairway and landing construction. Indicate clear width (36" minimum per CRC Section R311.7.1), rise (4" minimum and 7.75" maximum per CRC Section R311.5.4.1), run (10" minimum per CRC Section R311.5.4.2), headroom (minimum 80" per CRC Section R311.7.2), landings (36" minimum length in travel direction and width not less than the stairway width per CRC Section R311.7.6).
- Accessible spaces underneath interior stairways shall be protected with a minimum of ½" gypsum board on walls and under-stair surface and any soffits (CRC Section R302.7).
- Stairways shall have a minimum of one handrail of each continuous run of treads or flight of stairs with four or more risers installed in accordance with CRC Section R311.7.8
- Provide guards at open-sided walking surfaces, including stairs, ramps, landings and balconies, which are more than 30" above grade or floor below per CRC Section R312.1. Guards shall be not less than 42" in height, except where the top rail also serves as a handrail where the guard shall have a height of not less than 34" and not more than 38" per CRC Section R312.2.
- Open guards shall have intermediate rails or an ornamental pattern such that a sphere 4" in diameter cannot pass through, except openings in guards on the sides of stair treads where the sphere shall not exceed 4 3/8". The triangular opening formed by the riser, tread and bottom rail at the open side of a stairway shall be of a maximum size such that a sphere of 6" in diameter cannot pass through the opening as per CRC Section R312.1.3.
- For all occupied spaces, provide exterior openings for natural light (8% of floor area) per CRC Section 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 per CRC Section R303.1 Exception 2.
  - An artificial light source shall be provided in the immediate vicinity of each landing of interior stairways and at top landing of exterior stairways per CRC Section R303.7.
  - Provide natural ventilation (4% of floor area) or a mechanical system for all habitable rooms per CRC Section R303.1.
  - Indicate the location of crawl space access with a minimum of 18”x24” floor opening or 16”x24” wall opening per CRC Section R408.4.
  - Provide cross ventilation for the space between the bottom of floor joists and the earth underneath the building per CRC Section 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 with min. one opening within 3 ft of each corner of the building. The total area of ventilation openings may be reduced to 1/1500 where the ground surface is treated with an approved vapor retarder material. Openings shall be covered with the materials as listed in CRC Section R408.2.
  - Provide a clear space of 24” in front of the water closet and a minimum 15” from its center to side wall or obstruction and a minimum of 30” center to center to any similar fixture per CPC Section 402.5.
  - Showers and walls above bathtubs with showerheads shall be finished with a non-absorbent surface to a height not less than 6 ft above the floor per CRC Section R307.2.
  - Shower stalls shall have a clear interior finish area of 1,024 square inches and be able to accommodate a minimum 30” circle at the threshold level. These clearances shall be maintained up to a height of 70” above shower drain per CPC Section 408.6.
  - In enclosed private garages attached to residences, provide a minimum of 1 sq. ft of ventilation directly communicable with the exterior at lower 12” of garage wall per Milpitas Municipal Code Section II-3.5-2.03. Openings shall not be installed in fire rated walls.
  - Private garages shall be separated from the dwelling unit and its attic area by a minimum of ½” gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8” Type X gypsum board. Door openings between a private garage and the dwelling unit shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1 3/8” inches thick. Doors shall be self-closing and self-latching. Doors between a sleeping room and a garage are not permitted. CRC Section R302.5 & R302.6.
  - Only gas fireplaces, pellet-fueled devices or E.P.A. certified wood-burning devices may be installed in new construction (MMC II-15.2.01). A list of EPA approved devices can be found at <https://www.epa.gov/burnwise>.
- **Ceiling Plan:** Provide either on the Floor Plan or on a separate Ceiling Plan all ceiling heights, finishes, location of electrical and mechanical work/devices.
- Minimum ceiling height is 7’-0” in habitable spaces, hallways, bathrooms, toilet rooms, laundry rooms (CRC R305.1).
  - For each separate combustible framed attic, provide 22”x30” accesses opening with a minimum of 30” clear headroom (CRC R807.1). Where mechanical equipment is installed in attic, Provide 22”X30” minimum opening with size of opening being not less than the largest piece of mechanical equipment (CMC 904.10).
- **Roof Plan:** Show a plan view of the roofs.
- Indicate roof slope, roof slope direction, proposed roofing material and its fire-resistive classifications.
  - Roofing on houses in “Hillside Areas” must be Class A or B and designed to 95 mph wind speed, exposure C, standards per MMC II-3.5-2.03 & 2.06. All others must be a minimum of Class C or Class B when required by CRC Section R902.1 based upon fire hazard zone.

- Show the location and curb 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.
  - Enclosed attic & enclosed rafter spaces shall have cross ventilation not be less than 1/150 of the area of the ventilated space per CRC Section R806.2. A minimum of 1” airspace shall be provided between insulation and the roof sheathing per CRC Section 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.
- ❑ **Elevations:** Show elevations or views of all sides of the building.
- Clearly show the maximum building height based on the definition in CRC Section R202.
  - Indicate if the lower level is a basement or story, based on the definitions in CRC Section R202.
  - Provide building with a weather-resistant exterior wall envelope per CRC Section R703.1. The exterior wall envelope shall include flashing as described in CRC Section R703.8. Specify the proposed exterior wall finish, material and thickness.
- ❑ **Cross Sections:** At least one (1) detailed cross section is required. Provide additional sections where needed to fully explain the intended construction. Provide the important details of the relationship of foundations, floors walls, ceilings, roof and other construction. Be sure to indicate cross section cut lines on the Floor Plan.
- ❑ **Energy Compliance:** Provide California Energy Standards required Documentation per 2016 Building Energy Efficiency Standards 10-103(a), and Performance, Prescriptive, and Mandatory details per CEnC 150.0 and 150.1.
- ❑ **Green Building:** Construction documents and other data shall be submitted with each application for a permit (CGBSC 102.1). Construction documents shall be of sufficient clarity to indicate the location, nature, and scope of the proposed green building features and show that it will conform to the provisions of the code and other relevant laws, ordinances, rules and regulations as determined by the enforcing agency (CGBSC 102.2). Provide details for Residential Mandatory Measures as per CGBSC Chapter 4.
- ❑ **Details and Notes:** Include all construction details of the foundation, floor, walls, ceilings, roof and how each system is connected (Nailing Schedule, etc.), details of fireplaces, handrails, guardrails, and stairs (including rise and run). Provide all necessary notes to explain the planned construction.
- The top of any exterior foundation shall extend above the elevation of the street gutter at point of discharge at the inlet of an approved drainage device a minimum 12 inches plus 2% per CRC Section R403.1.7.3. Provide elevations on the site plan to show compliance.
  - Provide a minimum of 18” clearance between wood joists and 12” between wood girders and exposed earth, otherwise wood shall be naturally durable or preservative-treated wood per CRC Section R317.1.
  - Provide/detail draft stops in floor/ceiling spaces above per CRC Section R302.12.
  - Indicate the exterior finishes including the water-resistive barrier and all flashings. Refer to CRC Chapter 7 for specific requirements.
  - Indicate two layers of Grade D paper between plywood and exterior lath per CRC Section R703.6.3.
  - Provide details for a corrosion-resistant weep screed on all exterior stud walls at or below the foundation plate line a minimum of 4” above grade, or 2” above paved areas per CRC Section R703.6.2.1.
  - Provide veneer design and installation details: thickness, anchors, backing, lintels and support systems.

**4. STRUCTURAL PLANS:** The following are minimum structural plan requirements for most projects based on CRC:

- ❑ **Foundation Plan:** Indicate the type of foundation, and size and depth of footings. Include a dimensioned foundation plan with sufficient details to clearly show foundation construction. Include details of the floor to foundation connection and footing reinforcement details. All foundation designs for new residences shall be designed and prepared by a civil or structural engineer licensed in the State of California and require a soils report. Provide a letter from Soils Engineer confirming that the foundation plan, grading plan and specifications have been reviewed and it has been determined that the recommendations in the soil report are properly incorporated in the plans.
- ❑ **Floor Framing Plan:** Provide type, size, grade, spacing, and direction of floor beams or joists; include sub-floor sheathing and fastening. Indicate on plans any required hangers, straps, etc.
- ❑ **Roof Framing Plan:** Show type, size, grade, and location or spacing of roof beams, roof rafters and ceiling joist spans, overhangs, and details including hangers and strapping.
- ❑ **Pre-Fabricated Floor/Roof Trusses:** If trusses are to be used, provide 2 copies of the truss shop drawings, layout plan, calculations, and method to be used to counter truss uplift with the engineers stamp and wet signature, reviewed and signed approved by the project architect or engineer. If shop drawings are not submitted for review prior to issuance of the building permit, it shall be noted on the first page of the drawings that the truss shop drawings will be a deferred submittal. The deferred submittal will require payment for an additional two hours of plan check review time. Submit the truss drawings for review at least two weeks prior to fabrication of the trusses. Trusses shall not be placed on building without City approved truss plans.
- ❑ **Wind and Seismic Bracing/Shear.** Indicate on the plans how the construction is to be braced (and methods used) against wind and seismic forces, either by conventional construction means or by engineered shear walls. If bracing is by engineered shear walls, dimension the length of each shear wall and show the structural sheathing material, nailing, sill bolting and hold downs where needed. Wind and seismic bracing calculations are required for "Hillside Area" houses. Design for a basic wind speed of 95 mph and exposure C. All structures located in the Hillside shall conform to minimum requirements of CRC802.11.
- ❑ **Structural Details and Notes:** Provide structural details such as post-to-beam connections, framing details and nailing schedule, shear transfer details, material notes and specifications.
  - 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 Section R317.1 (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 per CRC Section R317.1(2).
  - Provide 1/2" anchor bolts embedded a minimum of 7" into the concrete spaced a maximum of 6 feet apart per CRC Section R403.1.6 with 0.229" x 3" x 3" plate washer per CRC Section R602.11.1, or as engineered.
  - Lots shall be graded to drain surface water away from foundation walls with grade falling a min. of 6" within the first 10 feet. Impervious surfaces within 10 feet of the building foundation should be sloped a min. of 2 percent from the building per CRC Section R401.3.
- ❑ **Structural Calculations:** Structural calculations are required for building components, including vertical load carrying members and the lateral force resisting system, which do not meet "Conventional Construction" provisions as defined in the California Building Code and the Milpitas Municipal Code. If calculations are required, they must be stamped and signed by a California licensed architect or registered engineer. Calculations must be numbered by page and indexed for complex projects.

## 5. MECHANICAL, ELECTRICAL and PLUMBING PLANS:

Mechanical, plumbing and electrical 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 system and how the electrical energy is distributed and connected to the building power system.

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 mechanical work. NOTE: All equipment weighing more than 400 pounds requires structural calculations for lateral bracing and anchorage. All equipment designed to be fixed in place shall be secured per manufacturer's installation instructions.
  - 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 R303.9) (CEnC 150.0(h)2).
  - Building heating and cooling loads shall be determined by a method shown in CEnC 150.0(h).
  - 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. Sizing of ductwork shall be as per standards listed in chapter 17 (CMC 601.2).
  - Whole-Building ventilation for Indoor Air Quality shall be provided per CEnC Section 150(o). Field verification and diagnostic testing shall be provided in accordance with CEnC 150.0(o)1A.
  - 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" x 30" minimum working platform in front of the service side of the appliance per CMC Section 904.10. 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 504.3.1), 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. Chimney termination shrouds shall be listed for use with the manufacturer's chimney installed (CMC 802.5.4.3).

- **Electrical Plans:** Show on the plans the installation of all electrical work.
  - 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.).
  - All new electrical services shall be underground as per MMC II-6-2.02 and minimum 200 Amp rated busbar Service Panel per CEnC 110.10(e).
  - Provide Solar Ready plan details per CEnC 110.10.
  - 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 as per MMC Section II-6-2.04.
  - 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 all areas excepting garages, bathrooms, attics, and the exterior of the building is installed; the branch circuits 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 branch circuit
  - Receptacles install outdoors in wet locations shall have a listed weatherproof in-use cover.
  - All 120-volt, 15 and 20 amp non-locking receptacles 5 ½ feet or lower to finished floor shall be listed tamper-resistant (CEC 406.12).
  - 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 (fluorescent or LED) or controlled by a motion sensor in addition to one of the following: a photocontrol, astronomical time clock or Energy management control system (EMCS). Photocontrol, astronomical clock and EMCS shall not have an override or bypass switch (CEnC sec.150 (k)).
  - Lighting installed in bedrooms, living rooms, home offices, dining rooms & nooks (if switched separately from kitchens), hallways, attic spaces and closets 70 sf and larger shall be high-efficacy or low-efficacy controlled by a vacancy sensor or low-efficacy controlled by a dimmer switch. These options may be used in combination with one another, for example high-efficacy downlights and dimmable low-efficacy track lights.
  - All lighting must have readily accessible manual controls, allowing occupants easy control of lighting in the space. (CEnC 150.0(k)2)
  - High-efficacy lighting must be switched separately from low-efficacy lighting. Additionally, each lighting layer that serves a unique function should operate independently. (CEnC 150.0(k)2)
  - Lighting that is integral to exhaust fans must be separately switched from the exhaust fan or be able to be manually switched off while the exhaust fan continues to operate for an extended period (CEnC 150.0(k)2).
  - Lighting installed in garages, laundry rooms and utility rooms are required to be high-efficacy and controlled by a vacancy sensor
  - Lighting integral to garage door openers do not have to be high-efficacy when there are no more than two screw-base sockets and the lights automatically turn ON and OFF.



- 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)8).
  - Electric Vehicle (EV) Charging Infrastructure: EV infrastructure shall be provided in new dwellings per CRC R309.8, CEC 210.17, and CGBSC Chapter 4 Division 4.1.
  - A list of High efficacy lighting certified as meeting the requirements of the Energy Code is available at [www.appliances.energy.ca.gov](http://www.appliances.energy.ca.gov).
- **Plumbing Plans:** Show on the plans the installation of all plumbing work.
- 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. All fixtures must comply with maximum flow rates per the Green Building Code Chapter 4 Division 4.3. Refer to the CGBSC or "*Kitchen Remodel*" and "*Bathroom Remodel*" handouts for maximum flow rates for fixtures.
  - Provide isometric 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 isometric 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 isometric 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).
  - Show the location, material types 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.
  - Show the requirement for installation of gas seismic and excess flow shut-off devices per the Milpitas Municipal Code. Refer to the "*Natural Gas Line*" handout for more information.
  - Where a fixture 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 (CPC 710.1). Fixtures located above such location shall not be discharged through the backwater valve. Cleanouts upstream of backwater valves shall be clearly identified and permanently labeled "Backwater Valve Downstream".

#### **SMOKE ALARMS, CARBON MONOXIDE ALARMS & SPARK ARRESTERS:**

- Show the location of all smoke alarms, carbon monoxide alarms. Alarms must be hard-wired and interconnected. Refer to the "*Smoke Alarms, Carbon Monoxide Alarms & Spark Arrester Certificate*" handout for detailed information, also CRC R314, CRC R315, and Milpitas Municipal Code.

#### **7. ENERGY REQUIREMENTS:**

- All new buildings shall comply with with the California Energy Code. Due to the complexity of the many code requirements and the requirement that Compliance forms be registered with a HERS Provider, an energy consultant should be employed to assist with the design of a new residence.
- For addition information, visit [www.energy.ca.gov/title24/2016standards/](http://www.energy.ca.gov/title24/2016standards/).

## **7. GREEN BUILDING STANDARDS REQUIREMENTS:**

- ❑ All new buildings shall comply with the California Green Building Standards Code. The following are general guidelines to prepare plans to show compliance with the mandatory requirements in Chapter 4. Also provide details as elsewhere indicated in the code.
- ❑ **Site Development:**
  - Indicate one of the following measures used to manage storm water drainage during construction:
    - Retention basins of sufficient size to retain storm water on the site
    - Filter water by use of a barrier system, wattle or other approved method when storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal method
    - Compliance with a lawfully enacted storm water management ordinance
  - Indicate how the site grading or drainage system will keep surface water from entering buildings.
  - Provide Electric Vehicle (EV) Charging Infrastructure.
- ❑ **Energy Efficiency:**
  - See “Energy Requirements” above.
- ❑ **Water Efficiency and Conservation:**
  - Provide a schedule of plumbing fixtures and fixture fittings to demonstrate an overall reduction of potable water use by one of the 2 methods in Cal Green Sec. 4.303.
  - Automatic irrigation system controllers for landscaping installed at the time of final inspection shall be:
    - Weather or soil moisture-based controller that automatically adjust irrigation based on plants’ needs; OR
    - Weather-based controller connected with separate rain sensor
- ❑ **Material Conservation and Resource Efficiency:**
  - Recycle and/or salvage for reuse a min. of 65% of the non-hazardous construction and demolition debris, or meet the City construction and demolition waste management ordinance.
  - Provide an operation and maintenance manual in the building at the time of final inspection.
- ❑ **Environmental Quality:**
  - Finish materials such as adhesives, sealants, caulks, paints, coatings, carpet, composite wood products, and resilient flooring shall comply with the pollutant limits per Cal Green sec. 4.504.
  - All duct openings and mechanical equipment shall be covered and protected during construction (CGBSC 4.504.1).
  - Bathroom exhaust fans shall be ENERGY STAR compliant and ducted to outside and shall be controlled by a humidity control capable of adjustment between 50 to 80 percent relative humidity (internal or external) unless functioning as a whole house ventilation system.
  - Interior Moisture Control: Provide details for complying with CGBSC 4.505.
  - Heating and air-conditioning systems shall be sized, designed and selected using one of the methods in Cal Green sec. 4.507.2.

## **8. OTHER DRAWINGS:**

- ❑ **Grading Plans:** Separate permits are required for the grading. The on-site grading work can be included with the construction drawings or submitted separately. If the off-site grading is minor it may be included with the on-site, otherwise an off-site grading plan must be submitted separately directly to the Engineering Department. Please contact the Engineering Department for the submittal requirements for off-site grading.
  - Show all existing and proposed grades, finish floor elevations, elevations of finish grade adjacent to buildings, established street grades, drainage patterns, locations, and gradients of cut or fill slopes.

- The top of any exterior foundation detail shall extend above the elevation of the street gutter at point of discharge at the inlet of an approved drainage device a minimum 12 inches plus 2% as per CRC Section R403.1.7.3. Provide elevations on the site plan to show compliance.
  - Specify size of storm drain piping at rainwater leaders (RWL) as per CPC Section 1106.2.
  - Indicate size, material and invert elevations of site drainage system. Show site drainage system connections to public storm drainage system unless shown on the off-site grading plan.
  - The slope of drainage piping shall be ¼” per foot minimum as per CPC Section 708.0. For slopes less than ¼” per foot and not less than 1/8” per foot, submit Alternate Method application for approval by Chief Building Official.
  - A Soil Report shall be provided when applying for a grading permit.
  - Provide letter from Soil Engineer confirming that grading plans and specifications have been reviewed and it was determined that the Soils Report recommendations are properly incorporated in the plans.
  - Erosion and sediment control plan shall be submitted when applying for grading permit as per MMC II-13-10.
  - All Grading, Excavation and Erosion Control shall comply with MMC Title II, Chapter 13.
- **Site Improvement Plans:** Separate permits are required for the site improvements. The on-site improvements can be included with the construction drawings or submitted separately. If the off-site improvements are minor it may be included with the on-site, otherwise an off-site improvement plan must be submitted separately directly to the Engineering Department. Please contact the Engineering Department for the submittal requirements for off-site improvements.
- Show all property lines, easements and utilities, all existing and proposed structures, paving, setback dimensions, adjacent streets with improvements.
  - Show location of all utilities and provide trench details.
  - Paving of driveways and private streets shall comply with MMC Title II, Chapter 13.
  - Special inspection for pavement is required. Sign and return special inspection forms prior to obtaining site improvement permit.
  - Verify that pervious paving shall meet minimum Traffic Index requirements as per MMC II-13-18.
  - Indicate width and maximum slope of sidewalks and walkways on private streets as per CBC Section 11B-403.
  - Provide curb cut details as per CBC Section 11B-406 at intersection of walkways with sidewalks and other site curbs at private streets.
  - As a minimum, flat cement work for garage or carport floors and patio slabs shall have a minimum thickness of 3-1/2 inches and shall be installed over 4 inches of an approved aggregate base (6x6x10x10 woven wire mesh laid within the slab may be used in place of the approved aggregate base). Other flat cement work, except walkways, having any minimum dimension of 6 feet and a minimum area of 64 square feet shall be installed in a like manner. [MMC II-13-17.05]
  - All site structures over 120 square feet, such as detached garages, sheds, trellises, arbors, etc. shall be designed, detailed and shown on the plans.
  - All concrete and masonry fences, pilasters and retaining walls over 4 feet tall shall be designed and detailed by a Civil/Structural Engineer or Architect as per City policy BDP-BLG01.
  - Provide complete landscape drawings with planting and irrigation meeting CGBSC Chapter 4, Division 4.3.
  - Provide letter from Soil Engineer confirming that the site improvement and paving plans and specifications have been reviewed and it was determined that the Soils Report recommendations are properly incorporated in the plans.
- **Demolition Plans:** A separate permit is required for the demolition of any existing structures. Refer to the “Demolition” handout for additional information.

- ❑ **Swimming pool and/or Spa Plans:** New pools and/or spas require a separate permit. Pool and spa drawings can be included with the construction drawings or submitted separately. Refer to the “*Pool and Spa Requirements for Single Family Residence*” handout for additional information.

## **9. OTHER APPROVALS:**

- ❑ **Engineering Department:** Prior to completion of any plans, the Engineering Department should be contacted at (408) 586-3329 to find out the requirements due to the location and any easements, and if the property is located in a special flood hazard area.
- ❑ **Planning Department:** Prior to completion of any plans, the Planning Department should be contacted at (408) 586-3279 to find out the requirements for the proposed location and type of the project.
- ❑ **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.
- ❑ **Santa Clara County Environmental Health Department:** Homes may be subject to Health Department review and approval if connection to a private sewage disposal system (septic) is to be made or if an on-site water well must be capped or relocated. If required, drawings approved by the Health Department must be submitted prior to permit issuance.
- ❑ **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.
- ❑ **School District:** All new residential buildings require payment of school impact (developer) fees. Refer to the handout “*School Impact Fees*” for additional information.

## **NOTES:**

- ❑ If one or more of the required items mentioned above are omitted from the submittal plans, the application may be considered as incomplete and not ready for checking or approving.
- ❑ **Revisions:** Once the permit has been issued, any changes in the design must be approved by the City prior to construction of the change. 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.