



# PLAN REVIEW REQUIREMENTS FOR RESIDENTIAL CONSTRUCTION

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Adopted Building Codes 2016 CRC, CBC, CEC, CMC, CPC, CA Energy Code and Santa Cruz Municipal Codes, Title 18 & 19 for Building and Fire Code amendments and modifications

Construction drawings of your projects are necessary for you to obtain a building permit. As the property owner, you may prepare plans for buildings for your own use or occupancy, including single family dwellings of wood frame construction, not over two stories in height and a basement. An architect or engineer, registered in the State of California, must prepare plans and specifications for any other project. For irregular shape or designs not in conformance with conventional prescriptive provisions, the Building Official may require plans and specifications to be prepared and designed by an architect or engineer. Only complete construction drawings will be accepted for review. The items listed below must be included for your building permit application to be accepted for review and approval. A plan review fee will be required at the time of permit application and plan review submittal.

Your completed building permit application will be reviewed by the appropriate City agencies. You will be advised by electronic correspondence of any deficiencies in your plans. Any deficiencies noted must be corrected, revised plans submitted for additional compliance review and approval before the building permit will be issued. Upon completion, you will be notified by email of approval and remaining fees due.

One copy of the approved plans, with corrected information and requirements noted, will be returned to you with your building permit. The plans and permit must be available on the job site **at all times** during Inspection and construction. Information concerning inspection requirements will be given to you with your permit and approved plans. The City is employing a multi-distribution process for permit processing in which each division, department or agency receives a copy of the plans and reviews them concurrently. Generally, for new dwellings this involves minimum seven sets of plans, two of which are signed by the designer. You need only supply two sets of calculations, specifications or special product Information. (Be sure all calculations are signed and sealed by the engineer.) You should verify with the building counter exactly how many sets are needed for your project before applying.

## **ZONING REQUIREMENT:**

Your project may require design review by the Zoning Section prior to application for a building permit. You are advised to make contact with the Zoning Counter prior to design and submittal to ascertain whether or not this applies to your case.

## **FLOOD PLAIN MANAGEMENT:**

If your structure is located within a flood plain/way FEMA regulations may apply. Extensive remodeling or additions may require the entire structure be elevated above the base flood elevation. New construction must be elevated above the base flood elevation and an elevation certificate provided to the building department.

## **RESIDENTIAL FIRE SPRINKLERS:**

As of March 1988, new dwellings are required to be fitted with a residential fire sprinkler system. This generally consists of a 2" lateral from the street main through a dual meter system and into an NFPA 130 residential system. As of March 1992, additions in excess of 50% and remodels/alterations in excess of 75% of the existing structure will mandate the installation of a full residential sprinkler system. Details are available from Fire Department.

**GENERAL REQUIREMENTS:**

- Seven (or appropriate number of) copies of plans, plus two sets of structural and energy calculations, brochures with listings, etc.
- All drawings must be legible and of sufficient clarity to indicate the scope and location of work to be performed
- Indelible reproductions only, no originals
- Good grade of single sheet plain white paper for plans (no tape)
- No red ink or pencil marks on plans
- Signature of designer (and stamp, if licensed) on two sets of plans. All signatures must be in ink, no copies
- Signature and stamp of engineer on calculations and/or engineered sheets of drawings. All signatures to be in ink, no copies
- Minimum sheet size 11" X 17" (calculations and specs may be 8 1/2" X 11")

**FOR ADDITIONS AND REMODELS:**

- Clearly distinguish between new and existing construction on plot plan, elevations, floor plan, foundation, framing details, structural details

**PLOT PLAN:**

- Scale 1" = 10' or 20'
- Entire property shown with dimensions of boundaries (property lines, easements, etc.) locations of existing and proposed buildings with required setbacks to each other
- Building setbacks from property lines, % of lot coverage
- North arrow
- Topographic contours in vicinity of improvements building, driveway, street & sidewalk (you may use base elevation of 100') contour intervals normally 2' unless otherwise directed by Planning staff
- Off street parking, driveways, walkways (include driveway profile)
- All rights-of-way and easements
- Proposed location of on-site sewer, lateral, clean-outs, manholes connections to street lateral, etc.
- Indicate curbside improvements (sidewalk, gutter, etc.)
- Existing Right-of-Way and pavement width of street(s) fronting the lot
- lot drainage method or system (see erosion control plan requirements)

**ELEVATIONS:**

- Scale 1/4" = 1'- 0"
- Four elevations, labeled North, South, East, West
- Relative ground elevations, including natural and finished grades
- Height of structure, (highest, lowest projections and plate elevations)
- Illustrate roofing material (Class B minimum), exterior finish, height of chimney above and horizontal distance from combustible materials, trim, gutters, downspouts, velocity dissipaters; handrails, guardrails, etc.

**EROSION CONTROL PLAN:**

- Scale: same as plot plan (may be included on plot plan)
- Details of existing and proposed drainage patterns
- Proposed run-off control measures
- Re-vegetation proposal for all disturbed slopes

- Sediment containment measures and special precautions for winter grading operations (October 15<sup>th</sup> to April 15<sup>th</sup>)
- General landscaping and irrigation plan

#### **FLOOR PLANS:**

- Scale 1/4" = 1' - 0"
- Width of walls and partitions delineated (single lines indicating walls are unacceptable) Illustrations and/or details of listed fire-rated floor-ceiling and roof-ceiling assemblies, party walls, property line walls and eave overhang assemblies
- Dimension lines must clearly demonstrate termination of dimension such as outside, inside or centerline of partition. Use feet and inches normally, inches only on small distances
- Typical wall section Illustrating foundation type, wall framing, insulation, weather resistive barrier and exterior wall finish type
- Dimensions and arrangement of rooms and partitions on each floor, including basement
- Square footage of heated, unheated, covered and uncovered spaces
- Label doors and windows with identifying symbols and sizes
- Indicate finish of floors countertops, vanities, etc.
- Splash protection type for showers and bath tubs (doors or curtains) Indicate glass doors as "Type II tempered glass"
- Location of smoke detectors, carbon-monoxide alarm(s), fans and skylights
- Indicate hand rails and guard rails with minimum required heights and maximum allowable openings
- Illustrate stair locations with minimum required width, minimum required tread depth and maximum allowable riser heights
- Identify all required landings at doors and stairs with minimum required dimensions
- Indicate water heater, furnace and dryer appliance types. If gas, call out Btu/hr Input rating, make and model. (Units must be CA Energy Code approved) Note minimum required elevation of all devices that generate a spark, glow or flame for furnace or water heater in garage
- Note minimum fire-resistive construction requirements for house/garages separation, property line walls and eave overhangs, under stair storage \_areas, etc.
- Wood stoves, fireplaces (Note: if using manufactured stove or fireplace include make, model and manufacturer's brochure if available and listing. If masonry fireplace, detail design, (Masonry Design Handbook is acceptable)

#### **ELECTRICAL PLAN:**

- Scale 1/4" = 1' -0"
- May be included on floor plan
- Legend of electrical terms and symbols
- Location of all outlets, switches, lights, fans, smoke detectors, sub-panels (w/rating), service equipment (w/rating), electrical appliances
- Identify location of all required GFCI protected outlets CEC 210.8
- Identify location of all required AFCI protected outlets CEC210.12
- Indicate specialized circuits (i.e., kitchen small appliance, dedicated laundry, dishwasher/garbage disposal, etc.)

**PLUMBING PLAN:**

- Scale 1/4" = 1'-0"
- May be included on floor & site plans
- Location of all fixtures. Location of hose bibs (approximate)
- Location of required back flow preventers and backwater valves
- Location of gas meter
- Size, material and approximate location of gas lines serving fuel burning appliances
- Size, material and approximate location of water supply piping
- Size, material and approximate location of DWV piping

**MECHANICAL PLAN:**

- Scale 1/4" = 1' - 0"
- May be included-on floor plan
- Equipment location(s), Btu/hr input ratings, make and model of HVAC unit(s) with listing.
- Location of ductwork and floor registers, incl. size and material
- Location, size and material of return air register and duct.
- Location of fire dampers and/or protection of fire wall penetration
- Identify combustion air sources and minimum required opening for all fuel burning equipment or appliances within the space or area

**FOUNDATION PLAN:**

- Scale: 1/4" = 1'- 0"
- layout of foundation walls, footings, piers and grade beams w/ dimensions and any required hold downs
- Referenced illustrated details of foundation, footing/stem walls/slab design & connections to include sill plate material, 5/8" anchor bolts w/ 3"x3"x1/4" washers (include size/spacing and embed requirements), minimum foundation reinforcement of (1) #4 rebar @ top & bottom of footing w/ 3" minimum concrete cover
- Note indicating minimum fc' for concrete (ultimate compressive strength 2500 psi min.)
- Note all required hold downs to be tied in-place prior to requesting a foundation inspection
- Location and dimensions of required-crawl space vents, under floor access opening, heating duct layout
- A soils report is required unless waived by the Building Official
- Under slab plumbing and electrical runs

**FRAMING PLAN:**

- Scale: 1/4" = 1'- 0"
- Separate floor, loft, deck and roof plans required
- Indicate member type and location, framing direction (for repetitive members) species and grade, size (nominal unless engineered member then actual) and spacing of all wood members
- Complete typical cross section of each major framing type (use section lines on floor and framing plans to identify section location). At least one longitudinal and one transverse cross section shall be provided
- Note all hardware types such as hold downs, joists hangers, straps, etc. and manufacturer's

installation requirements

- Crawlspace, ceiling and attic heights (show on section drawings) All floor, wall, ceiling & roof framing with size and spacing of members, Information may be included in the typical cross sections
- Braced wall applications (CRC R602.10 for seismic design category D2) shall include the following; braced wall method, all braced wall lines, minimum braced wall lengths and locations and all required attachments at foundation, 1st to 2nd story and 2nd story to roof
- Engineered shear wall designs shall include the following; all shear wall locations, lengths, identification of type (referenced to shear wall schedule), referenced load transfer details, drags and out-of-plane shear transfer methods. Shear wall schedules shall include the following for each type of shear wall assembly; maximum allowable adjusted loads, nailing schedule, sill plate attachments, load transfer methods or devices
- Minimum roof/floor sheathing thickness and nailing pattern
- Insulation type (R-value) and location roof, ceiling or floor, can be incorporated in typical sections
- Show how positive cross-flow ventilation of under floor, attic, cathedral ceiling, flat roof areas will be achieved through ventilation calculations for under floor and attic spaces

**FOR ADDITIONS:**

- Show adequate cross ties between new and existing work. Call out straps, braces, nailing, etc. Complete framing details are required for major connection points
- Additions over 50% and alterations over 75% of the existing structure will necessitate installation of a residential fire sprinkler system as approved by the Fire Marshal

**SPECIAL INSPECTIONS AND FORMS:**

- Post installed anchors – expansion, concrete screw and epoxy
- High-load shear walls and diaphragms
- Structural steel, high-strength bolted and welded connections
- Concrete foundation designs with f'c exceeding 2500psi
- Driven piles, cast-in-place deep and helical pile foundations
- Soil fill compaction and placement when required by soils report
- Special cases when required by the Building Official or manufacturer's installation Instructions or conditions of listing

**ENERGY CONSERVATION REQUIREMENTS:**

- Basic energy standards for residential buildings shall be the current Title 24 standards for new residential buildings, additions and alterations as adopted by the California Energy Commission (CEC)
- Compliance forms are required to be reproduced onto the plan set, all signatures must be original and affixed on the documents before issuance of permit

**ENGINEERING:**

- Engineering calculations, (be sure they're signed and sealed)
- Retaining walls over 4 feet high or supporting a surcharge
- Load bearing beams including engineered members
- High strength timber connections
- Non-conventional foundation designs
- Any span exceeding 25 feet

- All engineered truss designs (sealed calculations required at time of plan submittal with engineer of record review letter)
- Buildings over two stories in height
- Buildings employing steel frame components (those portions only)
- Buildings of adobe, hollow unit or brick masonry or concrete
- Swimming pools and spas, unless pre-manufactured and portable)
- Buildings of other than conventional prescriptive design or when considered irregular shape or size
- Lateral analysis is required on all exposure "C" (high wind) structures
- Elevation certificates are required for structures in flood plain