

# SINGLE-FAMILY, DUPLEX & TOWNHOUSE PROJECTS - PLAN SET INSTRUCTIONS

THIS ALIGNS WITH  
the current California  
Building Code

*Clear, complete  
plans enable quicker  
permit issuance and  
inspections.*

*Check with staff at the  
San José Permit Center  
to understand what  
kinds of plans and  
documents your  
project may require.*

We'll answer your  
questions about permits.

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Contestaremos sus  
preguntas referente a  
permisos en Español.

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Chúng tôi sẽ trả lời thắc  
mắc về giấy phép của quý  
vị bằng tiếng Việt.

## Development Services Permit Center

San José City Hall  
200 E. Santa Clara St.  
San José, CA 95113  
408-535-3555

[www.sanjoseca.gov/permitcenter](http://www.sanjoseca.gov/permitcenter)

Below are the common documents, plans, details, and design considerations for single-family and duplex projects involving structural work. Note: This is not intended as a complete list, and it is the design professional's responsibility to ensure the project complies with current building codes.

### A. PLANS GENERAL INSTRUCTIONS:

- Recommended minimum size of plans in PDF format: 18" X 24" simpler projects may use smaller sheets
- Each plan sheet must be signed by the plan preparer. Business and Professions Code 5536.2
- Documents prepared by an architect shall bear his/her stamp with renewal date written or date printed over the stamp. Architects Practice Act
- Documents prepared by an engineer shall bear his/her stamp or seal and wet signature with date on at least the Cover Sheet, Title Sheet, or Signature Sheet 16 CCR 411

### B. CALCULATIONS IF REQUIRED *general instructions:*

- Preparer, Architect or Engineer is to sign and stamp all documents
- Required calculations may include Structural Calculations (vertical and lateral loads) and Title 24 Energy Forms: e.g. CF-1R, Mandatory Measures of Performance Analysis Summary, etc.

### TYPICAL PLAN SETS MAY INCLUDE:

#### A-1 COVER SHEET REQUIRED - Include these items:

- |  |
|--|
| 1. Preparer's Name, Title and Registration (if applicable), Address, Phone Number                                |
| 2. Project Name, Address, Assessor Parcel Number; Legal Property Owner's Name, Address, Phone Number             |
| 3. Scope of Work identifying all work proposed under this Permit   |
| 4. Occupancy Groups Classification (e.g., R3 and U) and Type of Construction (e.g., Type VB)                     |
| 5. Gross Area Per Floor and Building Height  |
| 6. Index of Drawings/Plans and Scale used for drawings and details   |
| 7. Applicable Codes and Editions e.g., CBC, CRC, CEC, CMC, CPC & California Building Energy Efficiency Standards |

#### A-2 PLOT PLAN REQUIRED - Draw to scale and include these items:

- |   |
|---|
| 8. Show full Parcel, Lot Dimensions, Property Lines, Interior Lot Lines if applicable, and Street Name/s. |
| 9. Show Building Footprint and Roof Line with all projections and dimensions to property lines.           |
| 10. Show small Vicinity Map including North Arrow.  |
| 11. Show any recorded Easements and Visible Utilities (meters for electric, gas, and water).              |
| 12. Show location of any existing and proposed Retaining Walls or Accessory Structures.                   |

#### A-3 ARCHITECTURAL AND STRUCTURAL PLANS TYPICALLY REQUIRED

- |  |
|--|
| 13. Foundation and Structural Floor Framing plans                        |
| 14. Existing and New Architectural Floor plans including adjoining rooms |
| 15. Demolition Plan showing existing portion of structure to be removed  |
| 16. Exterior Elevations  |
| 17. Structural Material Specifications                                   |
| 18. Structural and Architectural Details                                 |
| 19. Typical Cross Sections in each direction                             |

Continued >

## INSTRUCTIONS FOR SPECIAL INSPECTIONS

If a project requires special inspections, the licensed design professional shall create a complete, accurate list in one location on the plans identifying all work requiring special inspection. CBC CHAPTER 17

Submit a complete, signed **Special Inspection Form**.

For existing buildings:

[www.sanjoseca.gov/home/showdocument?id=25949](http://www.sanjoseca.gov/home/showdocument?id=25949)

For new buildings:

[www.sanjoseca.gov/home/showdocument?id=25951](http://www.sanjoseca.gov/home/showdocument?id=25951).

### NOTES

The Engineer of Record (EOR) may inspect retrofit holdown anchors. The EOR shall provide a letter to the City Inspector at the time of holdown inspection describing the results of the inspection/s. If this option is chosen, note this in the Special Inspection list on the plans.

City Inspectors may inspect retrofit holdown anchors for Conventional Alternate Braced Wall Panels with embedment and type of epoxy specified on the plans.

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20. Shear Wall and Holdown Plan including table of wall type, nailing, anchor bolts, sill nailing, transfer connections, holdowns and bolts

#### A-4 ROOFS AND TRUSSES as applicable

21. Roof Framing Plan showing layout of framing or trusses. Collector load must be specified on plans. Show support for girder trusses. Show all trusses including gable bracing and bridging
22. Truss Plans reviewed and stamped approved by responsible design professional, showing all truss calculations and details. All calculations and all details not transferred to the plans must be stamped and signed by an engineer or architect licensed by the State of California.
23. Detail of all truss splices, connections, plate sizes and hangers. Specify the truss manufacturer and truss identification numbers. Provide truss framing key plan that matches the room framing plans with all types of trusses identified on the plan. (CRC R802.10) Note: No deferred submittal of truss calculations/drawings will be allowed.

#### A-5 MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS as applicable

24. Location of HVAC equipment and size, noting BTU/HR output
25. Locations of plumbing fixtures, listing all required dimensions
26. Locations and sizes of outlets, fixtures, switches, smoke detectors, subpanels and main panels

#### A-6 GRADING PLAN as applicable

27. Show and specify that the finish grade around the structure shall slope away from the foundation at a minimum of 5% for at least 10 feet from the structure. CBC 1804.4 and CRC R401.3
28. On graded sites, the top of any exterior foundation shall extend a minimum of 12 inches plus 2% above the elevation of the street gutter at a point of discharge (or the inlet of an approved drainage device).

#### A-7 DETAIL SHEETS as applicable

**All details and sections should cross reference. Do not include any non-applicable details in the plan set.**

29. Window Schedule detailing egress, safety glazing, and any skylight-approved listing numbers
30. Door Schedule listing sizes and types
31. Aging-in-Place and Fall Prevention details as required by CRC R327
32. Flashing: Vertical and Vertical-to-Horizontal Junctures of Materials
33. Footing, Piers and Grade Beams: Detail all post-to-beam, post-to-footing and beam-to-beam connections or call out approved metal connectors.
34. Post and Girder Connections
35. Roof: Eaves, Overhangs, Rakes and Gables
- Dimension eave projections and their distance to property line. Verify that they conform to the limitations prescribed under CRC Section R302 and Tables R302.1(1) for non-sprinklered dwellings or Table R302.1(2) for sprinklered dwellings. See footnote in building codes for exceptions. Provide construction details for 1-hour fire protected eaves where they occur.
  - The projection of sills, eaves, belt courses, cornices, canopies and other architectural features can extend no further than 2 feet into the air space in any setback area. SPMC 20.30.400
36. Floor Changes such as wood-to-concrete flashing details
37. Structural Wall Sections with Details at Foundation, Floor and Roof Levels. Include a detailed exterior wall section showing a weather-resistant exterior wall envelope as required. Specify the construction including type of materials, thickness, sizes, spacings, etc. per CRC R703.
38. Shear Transfer Details and Holdown Bolt Details

#### TITLE 24 BUILDING ENERGY EFFICIENCY STANDARDS AND CALGREEN

39. Certificate of Compliance. For all buildings, the Certificate of Compliance Form (CF1R) shall be signed by the person who is eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design. The forms shall be incorporated into the plans.
40. For performance Compliance Method, all pages of the CF1R form must have the same "Report Generated" date and time. If HERS verification is required, the form must be registered with a HERS provider.
41. Provide the CALGreen checklist on the plans indicating all the 'green' features proposed; see: <https://www.hcd.ca.gov/building-standards/calgreen>. Where the addition or alteration increased the building's conditioned area, volume, or size, the requirements of CALGreen chapter 4 shall apply only to and within the specific area of the addition or alteration. (CALGreen 301.1.1)
42. Buildings finalized prior to January 1st, 1994 are subject to Civil Code Section 1101.3 for installation of water-conserving plumbing fixtures. CALGreen 301.1.1. For information and self-certification form, see: The Non-Compliant Plumbing Fixture Replacement Requirement Form.

Continued >

**SYMBOLS  
ABBREVIATIONS**

- ≥ greater than or equal to
- ≤ less than or equal to
- ≈ approximately
- I.D. identification
- sf square feet
- " inches
- ' feet

**TERMS**

**Glazing**

The use of glass in doors, windows, and operable panels.

**Glazing area**

The area of a room that is filled by windows.

**Habitable room or space**

Habitable space is defined as space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closet, halls, storage or utility spaces and similar areas are NOT considered habitable spaces.

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**DESIGN CONSIDERATIONS AND SPECIFICATIONS  
ITEMS YOU MAY NEED TO INCORPORATE IN YOUR PLANS AND DETAILS**

**BATHROOMS**

- 43. Each bathroom containing a bathtub or shower shall be mechanically ventilated to control humidity. Window operation is not a permissible method of providing humidity control in a bathroom. CMC CHAPTER 4, CRC R303.3.1
- 44. Clear space around a toilet shall measure a minimum 15" from centerline of toilet to wall or barrier on each side, and a minimum 24" in front of the toilet. CPC 402.5
- 45. Shower pan dimensions must be a minimum area of 1024 sq. inches and a minimum finish dimension of 30" in any direction. CPC 408.6
- 46. Shower doors shall open with a minimum 22" unobstructed opening for egress. CPC 408.5

**DOORS, STAIRWAYS, LANDINGS AND GUARDRAILS**

- 47. A landing or floor is required on each side of each exterior door. The landing width shall be equal or greater than the door width and 36" minimum in depth. Landings at required egress doors shall be no more than 1-1/2" lower than the top of the threshold. Exception: A door may open at a landing that is not more than 7-3/4" lower than the floor level if the door does not swing over the landing. CRC R311.3.1 AND R311.3.2
- 48. Show and specify structural framing details for landings, stairs and their supports per CRC R311.7.
  - Specify rise (maximum 7-3/4") and run (minimum 10") from nosing to nosing. Where tread depth is less than 11", a nosing of 3/4" minimum to 1-1/4" maximum is required.
  - Stairways shall have a minimum headroom clearance of 6'-8".
  - Locate handrails 34" minimum and 38" maximum from plane parallel to line at face of treads; return handrails to the wall or terminate at newel post.
  - Landings top and bottom of each stairway shall have a width perpendicular to the direct of travel no less than the width of the flight served and a depth in the direction of travel not less than 36 inches.
  - For interior stairs, use 1/2" gypsum board to protect walls and soffits on the enclosed side (e.g. closet, pantry, powder room, etc.) CRC R302.7
- 49. Guard Rails. Provide 42" minimum high guard rails at balconies and porches greater than 30" above finished grade, which is measured as much as 3 feet out. Specify distance between balustrade so that a 4-inch sphere cannot pass through. Provide structural details and calculations per CRC R312.

**DUPLEXES ONLY**

- 50. Specify the 1-hour fire rated construction at wall and floors separating dwelling units. CRC R302.3
- 51. Specify how noise attenuation will be provided between dwelling units. CBC 1206, 1206.2, AND CRC APPENDIX K

**TOWNHOUSES ONLY**

- 52. Walls separating townhouse units shall be two 1-hour fire-resistance-rated wall assemblies complying with CRC R302.2.1 or one rated common wall assembly complying with CRC R302.2.2.
- 53. Fire-resistance-rated walls or assemblies separating townhouse units shall be continuous from the foundation to the underside of the roof sheathing, deck, or slab per CRC R302.2.3
- 54. Parapets shall be constructed as extensions of exterior walls or common walls separating townhouse units per CRC R302.2.4 and R302.2.5.
- 55. Verify if structural independence of the townhouse units is required per CRC R302.2.6.

**FIRE PREVENTION SPECIFICATIONS**

- 56. Show and specify smoke alarms in the following locations CRC R314:
  - In each sleeping room
  - Outside each separate sleeping area in the immediate vicinity of the bedrooms
  - On every occupiable level of the dwelling including basements and habitable attics
  - In the bedroom where a fuel-burning appliance is located within it or its attached bathroom
- 57. Show and specify carbon monoxide alarms in the following locations CRC R315:
  - Outside each separate sleeping area in the immediate vicinity of the bedrooms
  - On every level of the dwelling including basements
- 58. All structural elements supporting the floor/ceiling assemblies used as a fire-rated separation shall have 1/2" gypsum board protection. CRC TABLE R302.6
- 59. Provide fire-blocking to cut off all concealed draft openings (vertical and horizontal) to form an effective fire barrier between stories and between a top story and the roof space. CRC R302.11

60. All new and existing fireplaces shall comply with City of San Jose Fire Place Ordinance Policy on Wood Burning Appliances. Specify the make and model number on the plans. If specifying a prefabricated fireplace, show approved listing number.
61. For complete rebuilds OR additions  $\geq 500$  sf that result in a total building area  $\geq 3,600$  sf, provide an automatic fire sprinkler system designed per NFPA 13D with San Jose amendments.

### FLOODPLAIN DESIGN CONSIDERATIONS as identified by the Department of Public Works

62. Specify and delineate the height of the floodplain on the building elevations.
63. Show on floor plan and building elevations the location of the electrical panel. All parts of it must be above the floodplain, have a 3 feet deep work surface measured from the face of the panel, and accessible by PG&E without going into the home. If an exterior raised platform and stairs are created, they cannot be in a zoning code setback area. CRC R322.1.6
64. Show the location of the gas meter and how the regulator will be above the flood plane. Coordinate with PGE if the meter can be below floodplain. R322.1.6
65. Enclosed spaces below floodplain are limited to storage and unfinished building access. An entry lobby is not allowed. (R322.2.2). Per R322.2.1, lowest floor must be above the floodplain; see CRC R322.1.5 for definition of the lowest floor.
66. Show the materials used for stairs. Framing and finish materials cannot be damaged by water. Show how they comply with CRC R322.1.8 and the referenced standards.
67. Show how wall finishes below floodplain meet CRC R322.1.8.
68. Note on plans that all conductors, devices, and fixtures below the floodplain must be GFI protected. Wiring must be UF cable.
69. Flood vents cannot be placed in the fire rated construction between the garage and living portion unless they have a listing for that application. Show how they comply with R302.5.
70. Provide information above the flood vents installed in the exterior walls at conditioned living space showing how they comply with door requirements of the energy code. See section 106 of the standards.
71. When an elevator is proposed, show the operation of the elevator and how all portions not designed for full emersion are above the floodplain. R322.1.6

### FOUNDATION, BEARING AND STEM WALLS, SLAB FLOORS, AND SOILS REPORT

72. Dimension continuous exterior and all interior bearing wall foundations.
- Specify minimum depth of footing in undisturbed natural soil. CRC R403.1.4
  - Specify minimum height above finished grade. CRC R317.1 & R404.1.6
  - Specify bearing width. CRC Table 403.1
  - Specify minimum stem wall width and footing thickness. CRC R404.1.4.2
73. Provide capillary break for slab-on-grade floors in conformance with CRC 506.2.3 and CALGreen 4.505: A 4-inch thick base of 1/2" or larger clean aggregate shall be provided with a 6 mil polyethylene or approved vapor retarder (lapped 6 inches minimum at edges), in direct contact with the concrete.
74. Specify the report number (e.g., ICC or IAPMO), name of manufacturer, size and minimum embedment of expansion anchors, epoxy anchors, or powder-driven pins. Show and specify the required edge and end distances, and spacing between fasteners. CRC R403.1.6 & R403.1.6.1).
- Provide calculation for epoxy holdown per ACI appendix D and dimension the side distance on the detail/s to accurately reflect the distance used in the calculation.
75. Provide a site specific soils report or specify how the project's foundation is designed using presumptive load-bearing values (for new construction projects only, see directive B-003). Specify minimum soil compaction requirements on the plans.
76. Where a soils report is required, provide a letter from the soils engineer in accordance with the soils report if review of foundation plans for general conformance with report is requested.

### GARAGES AND CARPORTS

77. To provide opening protection between the dwelling and an attached garage, show one of the following measures. Note that doors shall be self-closing and self-latching. CRC R302.5.1
- Solid wood doors not less than 1-3/8" thick;
  - Solid or honeycombed core steel doors not less than 1-3/8" thick; or
  - A 20-minute fire rated door
78. Provide occupancy separation between the dwelling and carport when:
- Enclosed uses are located above the carport; or
  - The carport is not entirely open on two or more sides. CRC R302.6
79. Use 1/2" gypsum board separation on the garage side of walls adjoining the dwelling. CRC TABLE R302.7

80. Use a minimum 5/8" Type X gypsum board or equivalent for separation between the garage or carport and any habitable rooms above the garage/carport. CRC TABLE R302.6

81. Garages are not permitted to open directly into a room used for sleeping purposes. CRC R302.5.1

**RETAINING WALLS** if retaining wall is not directly supporting a structure, this will be reviewed by Public Works and may require a special use permit from Planning

82. Provide engineering design calculations and complete details for all retaining walls:

- Indicate drainage
- Specify location and size of horizontal and vertical reinforcing
- Specify maximum height of retained soil, surcharges, and slope of fill behind wall

**ROOMS, WINDOWS, AND EGRESS**

83. Specify a minimum ceiling height of 7 feet for all habitable rooms. CRC R305.1 INCLUDES EXCEPTIONS.

84. No habitable room other than a kitchen shall be less than 7 feet in any dimension and less than 70 sf in area. CRC R304.1 AND R304.2

85. Exterior glazed opening area (window) must be at least 8% of the floor area of all habitable rooms. CRC R303.1 INCLUDES EXCEPTIONS.

86. Openable exterior opening area must be 4% of the floor area. CRC R303.1 See also Information on Plans for ASHRAE 62.2 for applicable Energy Compliance requirements.

87. Basements and sleeping rooms must have a window or exterior door for emergency exit or rescue that opens onto a yard, alley, or public way. The window shall have the bottom of the clear opening not greater than 44" above finished floor, 5.7 sf of openable area, 24" net clear opening height, and 20" net clear opening width. CRC R310.2.1 Exception: Grade floor openings may have a minimum net clear opening of 5 sf.

88. Habitable levels or basements located more than one story above or below an egress door are limited to a maximum travel distance of 50 feet from any occupied point to a stairway or ramp that provides egress from such habitable level or basement. CRC R311.4

89. Required egress doorways shall have a minimum 32" clear width (measured with door open 90° and not less than 6'-6" clear in height. CRC R311.2

90. SAFETY GLAZING. CRC R308.4 Specify locations where safety glazing is required, including:

- Glazing in all fixed and operable panels of swinging, sliding and bifold doors.
- Glazing in an individual fixed or operable panel adjacent to a door, where the bottom exposed edge of the glazing is less than 60 inches above the floor or walking surface and it meets either of the following conditions:
  1. Where the glazing is within 24 inches of either side of the door in the plane of door in a closed position.
  2. Where the glazing is on a wall perpendicular to the plane of the door in a closed position and within 24 inches of the hinge side of an inswing door. See R308.4.2 for exceptions.
- Glazing in an individual fixed or operable panel that meets ALL of the following conditions:
  - The exposed area of an individual pane is larger than 9 sf;
  - The bottom edge of the glazing is less than 18" above the floor;
  - The top edge of the glazing is more than 36" above the floor; and
  - One or more walking surfaces are within 36" of the glazing as measured horizontally.
- All glazing in guards or railings regardless of area or height above a walking surface. Included are structural baluster panels and nonstructural infill panels.
- Glazing enclosing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers, and indoor or outdoor swimming pools where the bottom exposed edge of the glazing is less than 60" measured vertically above any standing or walking surface.
- Glazing adjacent to stairways, landings and ramps within 60" horizontally of a walking surface when the exposed surface of the glazing is less than 36" above the plane of the adjacent walking surface.
- Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a 60 inch horizontal arc less than 180 degrees from the bottom tread nosing.

**ROOFS, SKYLIGHTS, RAFTERS, BEAMS AND OTHER STRUCTURAL ITEMS**

91. Show and specify a minimum roof slope of 1/4" in 12" for flat roofs. CRC R905.9.1, R905.11.1, R905.12.1, R905.13.1, R905.14.1, and R905.15.1. For metal roof panels, see CRC R905.10 for slope requirements.

92. Where the pitch is less than 3:12, design the ridge beams, hips and valleys as a vertical load carrying members. CRC R802.4.4

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93. Specify minimum class 'C' roofing on the plans. CRC R902.1.3. Specify on the plans that the fasteners for the roofing shall be corrosion resistant per CRC R905.2.5.
94. Delineate the roof drainage system and its discharge to 5 feet minimum from foundation to an approved drainage system.
95. Specify the make, model number, and approved listing number (e.g. ICC, IAPMO, etc.) of each skylight on the plans. Show and specify framing members around skylight openings. (CRC R802.9) Show and specify skylight installed on 4" minimum high curb when the roof slope is less than 3:12. CRC R308.6.8
96. Show and specify the size of the ridge, hip and valley beams to be not less in depth than the cut end of the rafters. Show adequate support for hips, valley beams, and ridge beams. (CRC R802.3)
97. Show and specify rafter ties or collar ties and their connectors for roof framing in accordance with the CRC Section R802.2 and Table R802.5.1(1).
98. Note on the plans: "Submit Certificate of Conformance indicating that the glue-laminated members conform to the requirements of ANSI/AITC A190-1 upon request of the City field inspector prior to installation." Provide glue-laminated specifications on the plans.
99. Provide metal tie straps centered on ridge and connected to rafters supported by a load-bearing ridge beam or collar ties located within upper third of the attic space. Maximum spacing is 4 feet. CRC R802.4.6
100. Where the uplift force is 200 lb.s or more, provide a tie-down clip (e.g., Simpson H2) between rafter to top plate. CRC R802.11
101. Specify how double-framing members are interconnected. CRC Table R602.3.1
102. Provide typical nailing schedule on the plans. CRC Table R602.3(1)
103. Bearing wall studs shall not exceed a height of 10 feet, unless they are in compliance with exception 2 of R602.3.1 or are justified by engineering analysis. CRC Table R602.3(5).
104. Specify on the plans the material properties or approved listing number for each type of structural framing element identified on the plans.
105. Provide structural design calculations for rafters, joists, beams, girders, headers, posts, columns, and their connections, for engineered structural framing systems, or use 2019 CRC tables for Conventional Light Frame Construction.
106. Show details of stone or masonry veneer walls. Indicate anchorage, maximum height, and required footings, as applicable. CRC R703.8
107. LATERAL BRACING. Show and specify Conventional Light-Frame Construction lateral bracing provisions per CRC R602.10 and SJMC 24.09.330: CRC R106.1.1
<input type="checkbox"/> Braced wall panel lengths and locations
<input type="checkbox"/> Type and thickness of panel sheathing, and connections to studs, sole plates and top plates
Where portions of the building do not satisfy the lateral bracing provisions:
<input type="checkbox"/> Provide structural calculations tracing the load path from roof to foundation. Design and detail all elements of the lateral force resisting system. Demonstrate continuous load path of each tie-down location to the foundation.
<input type="checkbox"/> Where beams support discontinuous load path from shear walls above, demonstrate adequate structural capacity of the elements and connections within the load path, through analysis and detailing. See ASCE 7-16 section 12.3.3.3.
<input type="checkbox"/> Specify the minimum length of each shear wall, or shear wall segment.
<input type="checkbox"/> Provide in-plane shear capacity check for walls with height to width ratios exceeding 2:1. AWC SDPWS-2015 Section 4.3.4
<input type="checkbox"/> Specify size, type and spacing of plywood nailing and sills connections
<input type="checkbox"/> Show and specify adequate footings under all shear walls and at ends of panels with holdowns.
<input type="checkbox"/> Specify size, embedment and distance from center of holdown anchors to edge and sides of foundations on the foundation plan. Note on the plan: "Holdown anchors to be tied in place prior to calling for foundation inspection.
<input type="checkbox"/> Show and specify all lateral force transfer details.
<b>VENTILATION AND ACCESS FOR ATTIC AND UNDER-FLOOR</b>
108. Show and specify attic access. Specify minimum dimensions: 22" x 30". CRC R807
109. Provide a cross section through the attic demonstrating how the air handling unit meets the requirements for access; passageway height, length and width; work platform; lighting and convenience outlet for furnace installation and maintenance. CMC 904.10
110. Show and specify under floor access. Specify minimum dimensions: 18" X 24". CRC R408.4

111. Provide the calculations for the minimum required under-floor ventilation and specify how cross ventilation will be accomplished. Typically, the net free area of ventilation openings shall not be less than 1/150 of the under-floor area. See CRC R408 for exceptions.
112. Provide calculations for the minimum required roof or attic ventilation and specify how it will be accomplished. Typically, the net free ventilating area shall not be less than 1/150 of the area of the space ventilation; see CRC R806.2 for exceptions. Verify that the ventilation calculations accurately reflect the ventilation shown on the plans.
- Where roof areas are isolated from adjacent roof areas, provide the required ventilation for each isolated area.
  - Show how the California framed portion of the roof is cross ventilated.
  - For additions, specify the size and location of all vents (new and existing to remain).
113. For new residences or additions greater than 1000 sf, show and specify the method of house ventilation that is required by Energy Compliance Standards Title 24, Part 6 #150(o) mandatory measures and the ASHRAE 62.2 standards.

### WATER HEATERS, FURNACES, AND CLOTHES DRYERS

114. Show location of water heater and forced air unit on the plans.
115. Show and specify how the water heater will be seismically braced per CPC 507.2. Water heaters in garages or adjacent spaces that open to the garage and are not part of the living space of a dwelling unit shall be installed so that the burners and burner-ignition devices are located not less than 18" above the floor, unless listed as flammable vapor ignition resistant. CPC 507.13
116. Water heater installations in bedrooms and bathrooms shall comply with CPC 504 options:
- Option #1 - Fuel-burning water heaters may be installed in a closet located in the bedroom or bathroom provided the closet is equipped with a listed, gasketed door assembly and a listed self-closing device that does not have a hold-open feature. The assembly shall be installed with a threshold and bottom door seal. All combustion air for such installations shall be obtained from the outdoors. The closet shall be for the exclusive use of the water heater.
  - Option #2: The water heater shall be of the direct vent type.
117. Central heating furnace installations or low-pressure boiler installations in bedrooms or bathrooms shall comply with CMC 904.1 options:
- Option #1: The furnace or low-pressure boiler may be installed in a closet located in a bedroom or bathroom, provided the closet is equipped with a listed, gasketed door assembly and a listed self-closing device that does not have a hold-open feature. The assembly shall be installed with a threshold and bottom door seal. All combustion air for such installations shall be obtained from the outdoors. The closet shall be for the exclusive use of the furnace or low-pressure boiler.
  - Option #2: The central heating furnace or low-pressure boiler shall be of the direct-vent type.
118. Show and specify a laundry tray or automatic washer standpipe for each dwelling unit. CPC Table 422.1.
119. Ventilation for mechanical clothes dryers shall be vented to the outside and comply with City of San Jose Building Division Directive M-001. See: Domestic Dryer Vent Length Limitations for more information.

### OTHER DOCUMENTS OR PLANS

Depending on the project, other documents or plans may be required. Examples include:

- Soils Report & Geologic Hazard Study if in a Geologic Hazard Zone
- Pools and Spas
- Demolition of Structures on Site

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