



**COUNTY OF LOS ANGELES  
DEPARTMENT OF PUBLIC WORKS  
BUILDING AND SAFETY DIVISION**

**ONE & TWO FAMILY  
DWELLING  
PLAN REVIEW LIST**

**GENERAL PROJECT INFORMATION**

PLAN CHECK NO. \_\_\_\_\_ DISTRICT NO \_\_\_\_\_ INITIAL VALUATION \_\_\_\_\_  
 JOB ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ ZIP \_\_\_\_\_  
 OWNER \_\_\_\_\_ TELEPHONE (\_\_\_\_) \_\_\_\_\_  
 ARCH/ENG \_\_\_\_\_ TELEPHONE (\_\_\_\_) \_\_\_\_\_  
 APPLICANT \_\_\_\_\_ TELEPHONE (\_\_\_\_) \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ ZIP \_\_\_\_\_

**PROJECT INFORMATION**

USE ZONE \_\_\_\_\_ CLIMATE ZONE \_\_\_\_\_ VHFHSZ: YES NO FLOOD ZONE: YES NO

BUILDING ELEMENT	SQ. FT.	NO. OF STORIES	CONSTR. TYPE	OCC. GROUP	\$ / SQ. FT.	\$ VALUE
<b>New Valuation:</b>						

**PLAN CHECK ENGINEER AND CORRECTION INFORMATION**

REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_ TELEPHONE \_\_\_\_\_  
 RECHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_ TELEPHONE \_\_\_\_\_  
 RECHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_ TELEPHONE \_\_\_\_\_

Your application for a permit, together with plans and specifications, has been examined and you are advised that the issuance of a permit is withheld for the reasons hereinafter set forth. The approval of plans and specifications does not permit the violation of any section of the Building Code, or other local ordinance or state law.

NOTE: Numbers in the parenthesis ( ) refer to sections of the 2008 edition of the Los Angeles County Building Code, Table (T), Plumbing Code (PC), Mechanical Code (MC), Electrical Code (EC), Building Code Manual (BCM), 2005 National Design Specifications (NDS), 2005 Minimum Design Loads for Buildings and Other Structures including Supplement No. 1 (ASCE7).

**INSTRUCTIONS**

- Corrections with circled item numbers apply to this plan check.
  - In the left-hand margin of the circled corrections, please indicate the sheet number and detail or note number on the plans where the corrections are made. Resubmit marked original plans and two corrected sets of plans, calculations and this plan review list.
  - Incomplete, unclear, or faded drawings or calculations will not be accepted.
  - The plan check engineer will be available for conference and telephone calls between the hours of \_\_\_\_\_ and \_\_\_\_\_ on the following days: \_\_\_\_\_. **Appointments are recommended.**
- Incorporate all comments as marked on checked set of plans and calculations and these correction sheets.

**APPLICATION AND PERMIT**

1. Application will expire on \_\_\_\_/\_\_\_\_/\_\_\_\_. Permit needs to be obtained prior to expiration date otherwise the application shall expire. (106.4.1.1)
2. Valuation is low. It should be \$\_\_\_\_\_. Correct the application and pay a supplemental plan check fee of \$\_\_\_\_\_ at the time of re-submittal. (107.2)
3. Separate permit(s) is / are required for accessory buildings, swimming pools, retaining walls, bridges not involving buildings, detached garages, demolition, \_\_\_\_\_. (106.1)
4. Show / correct address of the building on the permit application. (106.4.1)
5. A Certificate of Workers' Compensation insurance must be presented to the local Building and Safety Division Office before a permit can be issued.

6. At final submittal, two complete sets of plans are required and one additional architectural set that includes: a) a site plan, b) dimensioned floor plans, and c) elevations. The final three sets of plans shall be wet stamped and signed by the California registered architect or engineer when appropriate.

## **REFERRALS**

**ALL AGENCY APPROVALS are required prior to permit issuance. Please see the attached agency referral sheet for details.**

7. Approval is required by the City of \_\_\_\_\_ for \_\_\_\_\_. (106.5.1)
8. (Soil) (Foundation) (Geology) report(s) must be approved by Geotechnical & Materials Engineering Division. Provide a copy of approved report and Department approval letter.
9. A Grading Permit (may be) / (is required) and a separate grading permit application may need to be processed. Contact Drainage & Grading Section of Building and Safety Division to determine if a grading permit is required. (Appendix J103)  
A grading permit is required for the following:
  - a. All excavations exceeding 2-ft. in depth (except for footings, basements and retaining walls). Note: the placement of excess material from such excavations may require a grading permit.
  - b. All fills:
    - i. Intended to support structures.
    - ii. That obstructs or diverts a drainage course.
    - iii. One foot or more in depth placed on natural slopes steeper than 5 units horizontal to 1 unit vertical.
    - iv. 3-ft. or more in depth at its deepest point and greater than 50 cubic yards.
    - v. 5-ft. or more in depth at its deepest point and greater than 20 cubic yards.
  - c. The grading of access roads or pads for exploratory excavations.
10. Rough grading approval is required before a building permit can be issued. (Appendix J105.7)

## **SUPPLEMENTAL PLAN REVIEW COMMENTS/SHEETS**

11. Refer to the attached sheets for supplemental plan review comments:
  - a. 2005 Energy Standards Correction Sheet
  - b. Very High Fire Hazard Severity Zone Requirements
  - c. Hillside Structures Plan Review (slope > 33.3%)
  - d. Steel Moment Frame Plan Review
12. Photocopy/blueprint the following on the plans: (Do NOT staple to the plans)
  - a. Residential Plan General Notes Requirements
  - b. Best Management Practice for Construction Activity (Attachment A) requirements.
  - c. Structural Observation Program

13. The address of the building, and the name and address of the owner(s), and person(s) preparing the plans are required on the first sheet of the plans. (106.4.3)
14. Delete notes and details that do not apply to this project. (106.4.3)
15. Indicate detail and section references as to their appropriate location on plan views. (106.4.3)
16. Provide existing and proposed contours / spot elevations to indicate general site slope and drainage pattern. (106.4.3)
17. Specify finish floor elevation of first floor and elevation difference to adjacent grade at all doors. (106.4.3)

## **ZONING/PLANNING REQUIREMENTS**

18. Approval from the Regional Planning Department is required for:
  - a. Residential use in \_\_\_\_\_ zone / establishing the property as a legal building site / a land use zone that is not in compliance with the General Plan.
  - b. Residential use on a lot less than 5,000-SF.
19. Locate the building to comply with \_\_\_\_\_ ft. front yard, \_\_\_\_\_ ft. side yard and \_\_\_\_\_ ft. rear yard setback lines.
20. Provide a garage or carport for two automobiles with paved driveway (3½-in. concrete or 1½-in. asphalt on 4-in. base). Minimum required area is 8½-ft. x 18-ft. per parking space.

## **SITE PLAN / BUILDING SITING**

21. Provide a complete plot plan showing: Lot dimensions / yard setbacks / street name(s) / north arrow / existing building(s) to remain / distance between buildings / location of private sewage disposal system including expansion areas / utilities / easements / \_\_\_\_\_. (106.4.3)
22. Maintain 5-ft. clearance between septic tank(s) and seepage pit(s) and minimum clearances to buildings and property lines of 5-ft. for the septic tank and 8-ft. for the seepage pit. (PC Appendix K T-K-1)
23. Exterior walls of dwellings, guesthouses, garages, carports and/or accessory structures closer than 5-ft. to the property line shall be 1-hour fire-resistance-rated construction. (T-602)
24. No openings shall be permitted in the exterior walls, including vents, of Group R-3 & Group U Occupancies where the exterior wall is 3-ft. or closer to the property line. (T-704.8)
25. Where the exterior wall of Group R-3 is located > 3-ft. and ≤ 5-ft. to the property line, the area of openings is limited to 25% of the wall area, including vents. (704.8 & T-704.8)

26. Where the exterior wall of Group U is located > 3-ft. and ≤ 5-ft. to the property line, the area of protected openings is limited to 15% of the wall area, including vents. (704.8, T-704.8, T-715.4)
27. 30-in. Parapet walls shall be provided at the following locations except where the structure is ≤ 1,000-SF on any floor:
  - a. Group R-3 where the exterior walls are 3-ft. or closer to the property line. (704.11, T-704.8)
  - b. Group U where the exterior walls are closer than 5-ft. to the property line (704.11, T-704.8)
28. Projections, including eaves, are not permitted in Group R-3 @ 2-ft. or closer to the property line. Projections located > 2-ft. and ≤ 3-ft. to the property line shall be of at least 1-hour fire-resistance-rated construction. (704.2, 704.2.3)
29. Projections, including eaves, are not permitted in Group U @ 3.4-ft. or closer to the property line. Projections located > 3.4-ft. and ≤ 5-ft. to the property line shall be of at least 1-hour fire-resistance-rated construction. (704.2, 704.2.3)
30. Buildings adjacent to ascending or descending slopes shall maintain setback according to the requirements of Section 1805.3. (See attached sketch sheet)
31. Exterior stairways serving as an element of a required means of egress are not permitted closer than 10-ft. to the property line, otherwise exterior stairways are not permitted closer than 3-ft. to the property line. (704.2, T-704.8, 1024.3)

## **ROOF COVERING**

32. For roof covering specify:
  - a. Roof slope(s) of all areas on the roof plan. (1502)
  - b. Manufacturer and type of built-up roof. (1506.3)
    - i. Built up roof covering materials shall comply with the standards in Table 1507.10.2.
    - ii. Built-up roofs shall have a minimum slope of ¼-in. per foot (2%) for drainage (1507.10.1)
  - c. Type / manufacturer and I.C.C. / UL number of shingle / tile roof. (1506.3)
  - d. Roof covering shall be Class C rated or better or as required. (T-1505.1)
33. Roof slope is not adequate for the type of roof covering specified. (1502.1)
34. Show sizes/locations of the roof/deck drains and overflows on the plans. Roof drainage systems shall be designed in accordance with Ch. 11 of the PC for minimum rain intensity of 3-in./hr. Scupper openings used as overflows shall be a minimum of 4-in. high and have a width equal to the circumference of the roof drain required for the area served and located a minimum of 2-in. above the roof surface. (PC 1101.11.2)
35. Specify approved weatherproof walking surface material at decks and balconies. (2304.11.5)

## **DESIGN REQUIREMENTS**

36. For duplexes provide the following:
  - a. Floors and walls separating dwelling units in the same building shall not be of less than one-hour fire-resistive construction. (419.2, 419.3)
  - b. Provide sound transmission ratings (STC) per Section 1207.
  - c. Townhouses shall comply with Section 419.4.
  - d. Show draft separation for attic areas between units in a duplex. (717.4.2)
37. Show the following dimensions for each:
  - a. At least one room with a minimum net area of 120-SF. (1208.3)
  - b. Habitable areas shall have a minimum net area of 70-SF. (1208.3)
  - c. A kitchen shall have a minimum gross area of 50-SF. (1208.3 EX 1)
  - d. Habitable spaces shall not be less than 7-ft. in any plan dimension. (1208.1)
  - e. Occupiable spaces, habitable spaces, hallways & corridors shall have a ceiling height of no less than 7-ft. 6-in. (1208.2)
  - f. Bathrooms, toilet rooms, kitchens, storage rooms, & laundry rooms shall have a ceiling height of no less than 7-ft. (1208.2)
  - g. Kitchen shall have a clear passageway of not less than 3-ft. (1208.1)
38. Where openings below grade provide required natural ventilation, the outside horizontal clear space measure perpendicular to the opening shall be 1-1/2 times the depth of the opening measured from adjoining ground level to the bottom of the opening. (1203.4.1.2)
39. Tempered glazing shall be provided at hazardous locations as identified in Section 2406.3 & 6714.
40. Exterior glazed openings of habitable rooms must be minimum 8% of the room floor area. This is deficient in \_\_\_\_\_.(1205.2)
41. In order to consider any room as a portion of an adjoining room, at least 1/2 of the common wall area shall be open and unobstructed and shall provide an opening of not less than 1/10 the floor area of the interior room or 25-SF, whichever is greater. Show that the common wall between \_\_\_\_\_ and \_\_\_\_\_ complies. (1205.2.1)
42. Porch over required windows at \_\_\_\_\_ must have a minimum clear height of 7-ft. with longer side at least 65% open and unobstructed. (1205.2.2 EX 1)
43. Openable ventilation area of habitable rooms must be 4% of the room floor area. (1203.4.1)
44. Openings required for natural light and ventilation shall be permitted to open into a thermally isolated sunroom or patios provided that:
  - a. For natural light a glazed area of not less than 1/10 of the floor area of the interior room or 20-SF, whichever is greater (1205.2.1 EX)

- b. For natural ventilation an area of not less than 8% of the floor area of the interior room or space, but not less than 20-SF. (1203.4.1.1 EX)
45. In lieu of exterior openings for habitable rooms, a mechanical ventilating system meeting the requirements of the MC may be provided. Submit to the Mechanical Section for plancheck. Approval required prior to permit issuance. (1203.1)
46. Rooms containing bathtubs, showers, spas and similar fixtures shall be provided with an exhaust fan with a minimum capacity of 50 CFM. Ductless fans are unacceptable. (1203.4.2.1, MC T-4-4)
47. Dimension on the plans the 30-in. clear width for water closets and 24-in. clearance in front of water closet for \_\_\_\_\_ bathroom. (PC 407.6)
48. Wall covering of showers or tubs within showers shall be of cement plaster, tile, or approved equal, to a height of not less than 70-in. above drain inlet. (1210.3)
49. Shower doors shall swing out. Net area of shower receptor shall be not less than 1,024 sq. in. of floor area, and encompass 30-in. diameter circle. (PC 411.7)
50. In every bedroom and basement, provide one openable escape window meeting all of the following: (1026.1, 1026.2, 1026.2.1, 1026.3)
- A net clear opening area of not less than 5.7-SF.
  - A minimum clear height of 24-in.
  - A minimum clear width of 20-in.
  - The bottom of the clear opening not greater than 44-in. measured from the floor.
51. Show location(s) of interconnected hard-wired "SMOKE ALARM" with battery backup in the following:
- Each sleeping room.
  - On the ceiling or wall outside of each separate sleeping room.
  - Each story or basement.
  - On the upper level of split level stories and both levels if sleeping area is on lower level.
  - In the vicinity of the stairway.
  - Provide a note: "SMOKE ALARM shall be interconnected hard-wired with battery backup."
  - Battery smoke alarm permitted in existing unmodified construction only.
52. Show location of 22-in. x 30-in. attic access with 30-in. minimum headroom. (MC 904.11)
53. Provide a full height cross section showing framing, plate heights, total heights, insulation, foundation, finish grade, etc. (106.4.3)
57. Door may open on the top step of a flight of stairs or an exterior landing, provided the door does not swing over the top step or exterior landing and the landing is not more than 7.75-in. below the top of the threshold. (1008.1.4 EX 1, EX 3, 1008.1.6 EX)
58. Provide a minimum of two stairways where the gross floor area of the 2nd story or above exceeds 2,000-SF and shall be placed a distance apart equal to not less than 1/2 the length of the maximum overall dimension of the building. (T-1004.1.1, T-1015.1, 1015.2.1)
59. Provide section and details of interior and exterior stairway showing:
- Maximum rise of 7.75-in. and minimum run (tread) of 10-in. (1009.3 EX 4)
  - Where tread depth is < 11-in. a nosing between .75-in. & 1.25-in. shall be provided. (1009.3 EX 4)
  - Minimum width of 36-in. (1009.1 EX 1)
  - Minimum headroom of 6-ft. 8-in. (1009.2)
  - Framing (stringer, landing, etc.) size, bracing, connections, and footings. (106.4.3)
  - Stairways shall be positively anchored to the primary structure without the use of toenails or nails subject to withdrawal. (2308.12.7)
  - Enclosed usable spaces under a stairway require 0.5-in. gypsum board. (1009.5.3)
  - Provide a note on the plans "All Stairways shall have an illumination level on tread runs of not less than 1 foot-candle (11 lux)." (1205.4)
60. Winder treads shall have a minimum tread depth of 10-in. @ a point 12-inches from the narrow side, and a minimum tread depth of 6-inches. (1009.3 EX 4)
61. Spiral Stairways shall meet the following:
- Submit shop drawings for spiral stairway showing compliance with Section 1009.8
  - Provide spiral stairway column connections & footing details. (106.4.3)
62. Handrails shall satisfy the following:
- Provide a minimum of one continuous handrail on stairways with 4 or more risers and at all open sides. (1009.10)
  - Handrail height shall be 34 to 38 inches above the nosing of treads. (1012.2)
  - Openings between intermediate balusters shall preclude the passage of a 4-3/8-in. diameter sphere. The triangular openings formed by the riser, tread and bottom rail shall preclude the passage of a 6-in. diameter sphere. (1013.3 EX 5)
  - Handrail graspability: (1012.3)
    - Handrail with circular cross-sections shall have a diameter of 1.25 to 2 inches.
    - Handrails with other than circular cross-sections shall have a perimeter dimension of 4 to 6.25 inches with a maximum cross-section of 2.25-in.
  - Return handrail(s) to newel post or wall. (1012.4)

## **EXITS AND STAIRS**

54. Provide a minimum of one exit doorway not less than 3-ft. wide and 6-ft. 8-in. in height, and shall provide a minimum clear width of 32-in. (1008.1.1, 1018.2)
55. Landings length shall be a minimum of 36-in. in the direction of travel. (1008.1.5)
56. A door may swing over a landing that is not more than 0.5-in. in height below the threshold. (1008.1.6)

63. Guardrail shall meet the following:
- a. Provide guardrails where the open side is more than 30-in. above the floor or grade below. (1013.1)
  - b. Guardrail height shall be a minimum of 42-in. (1013.2)
  - c. Openings between intermediate balusters shall preclude the passage of a 4-in. diameter sphere. (1013.3)
64. Provide connection details of guardrail and/or handrail adequate to support a concentrated load of 200 pounds applied at a right angle to the top rail. (1607.7.1.1)

### **VENTILATION**

65. Attic Vents shall meet the following: (1203.2)
- a. Show ventilation type, size, and location.
  - b. The net free ventilating area shall not be less than:
    - i. 1/150 of the attic space **OR**
    - ii. 1/300 provided a vapor retarder is installed with a transmission rate not exceeding 1 perm meeting ASTM E96.
  - c. 50% of the required ventilation area must be located at least 3 feet above eave or cornice vents with the balance provided by eave or cornice vents.
  - d. Openings shall have corrosion-resistant wire mesh or other approved material with 1/8-in. minimum and 1/4-in. maximum opening.
  - e. A minimum of 1-in. airspace shall be provided between insulation and roof sheathing.
66. Under-floor vents shall meet the following requirements: (1203.3)
- a. Show ventilation type, size and location.
  - b. Openings shall be placed so as to provide cross ventilation of the under-floor space
  - c. The net free ventilating area shall not be less than 1/150 of the crawl-space area.
  - d. Openings shall have corrosion-resistant wire mesh or other approved material with 1/8-in. minimum and 1/4-in. maximum opening.

### **GARAGE AND CARPORT**

67. The following is required for the separation of the private garage from the dwelling unit:
- a. Garages beneath habitable rooms shall be separated by no less than 5/8-in. Type X gypsum board. Provide minimum 1/2-in. gypsum board on the garage side elsewhere. (406.1.4 #1)
  - b. Doors to the dwelling unit shall be solid wood or solid or honeycomb core steel and not less than 1-3/8-in. thick, or 20 minute rated. Doors shall be self-closing and self-latching. (406.1.4 #1)
  - c. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. (406.1.4 #1)

- d. Private garage/carport floor surfaces shall be of concrete or similar noncombustible and nonabsorbent material. The automobile parking floor area shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway. (406.1.3)
- e. Floors in garage/carport shall be designed to support a uniformly distributed load of 40-psf or concentrated live loads of 3,000-lbs acting on an area of 4.5-in. by 4.5-in. (T-1607.1)

### **VENEER / FIREPLACE**

68. Specify and detail the veneer material, thickness, backing, anchorage, footings and support over openings. (1405)
69. For the fireplace / chimney specify the following:
- a. Chimney shall extend at least 2-ft. higher than any portion of the building within 10-ft., but shall not be less than 3-ft. above the highest point where the chimney passes through the roof. (2113.9)
  - b. Provide a spark arrestor to meet all the requirements per Section 2113.9.1.
  - c. Masonry or concrete chimneys shall be constructed, anchored, supported, and reinforced as required per Section 2113.3.
70. For Factory-built steel fireplace specify the following:
- a. Manufacturer, model and I.C.C./UL number or other approved agency (2111.13.1)
  - b. Note on the plans: "Exterior combustion air ducts shall be listed components of the fireplace, and installed according to the fireplace manufacturer's instructions." (2111.13.1)

### **STRUCTURAL**

71. The allowable values used in the structural design shall be per the 2008 Los Angeles County Building Code. (106.4.3)
72. Specify grade and species of framing lumber, type and grade of plywood, design strength of concrete and masonry units, the mix of mortar and grout, the strength of steel, glued-laminated timbers, ASTM designation of structural steel shapes and (106.4.3)
73. Light-frame construction of unusual shape, size, split-level, or more than one story shall be designed to resist lateral forces. Submit calculations for the design of the lateral forces. (2308.1.1)
74. Structural design is not in compliance with the conventional light-frame construction provisions per Section 2308, therefore submit calculations to be sealed and signed by an architect or civil/structural engineer licensed in the State of California. (106.4.3)
75. Cross-reference all calculations for joists, beams, shear walls, etc, to the structural framing floor plans. (106.4.3)

76. Submit structural calculations and or design details for the following: \_\_\_\_\_ (106.4.3)
77. The Engineer or Architect of Record shall be designated on the building permit application. (106.4.3)
78. The Engineer or Architect of record shall review, approve and stamp truss design for loads, location, and suitability for intended use. (106.4.3)
79. Provide a detailed schedule of "Statement of Special Inspections" on the plans complying with 1704.1.1.
80. Construction document (plans) shall contain the floor and roof live loads, roof snow loads, wind design data, earthquake design data and flood design data. (1603.1)
81. Provide a note on the plans "Fasteners for preservative- treated wood shall be of hot dipped zinc-coated galvanized steel in accordance with ASTM A 153." (2304.9.5)

## **FOUNDATION**

82. The foundation plan does not comply with the soil report recommendation for this project. Please review the report and modify design, notes and details as required to show compliance with \_\_\_\_\_ (106.4.3)
83. The soils report requires foundation excavations to be reviewed by the soils engineer. Note on the foundation plan "Prior to requesting a Building Department foundation inspection, the soils engineer / geotechnical consultant shall inspect and approve the foundation excavations". (106.4.3)
84. Have the consulting soils/geotechnical engineer review and approve the foundation plans and foundation details. (106.4.3)
85. Soil bearing pressure is limited to 1,500-lbs/SF unless soils report recommends otherwise. (1804.2, T-1804.2)
86. Call out minimum thickness of concrete slab on grade, reinforcement, and moisture barrier on foundation plan. (1910.1)
87. Call out foundation bolt size and spacing on foundation plan. The foundation bolts shall be 1/2-in. diameter for SDC D or 5/8-in. diameter for SDC E or F. Foundation bolts shall be embedded at least 7-in. into the concrete or masonry foundation spaced not more than 6-ft. apart and provided with 0.229-in. x 3-in. x 3-in. plate washers. (2308.6, 2308.12.9, 2305.3.11)
88. Foundation sill bolts require steel plate washers of size and thickness as specified by Section 2305.3.11.
89. Detail (and reference location on foundation plan) typical foundation sections for: perimeter walls, interior bearing walls, depressed slabs, foundation common to dwelling and garage, garage entrance, spread and/or post pads. (106.4.3)
90. Concrete or masonry foundation walls shall be designed in accordance with Chapters 19 or 21, respectively.

91. For foundation supporting 1/2/3 floors, sections 12/15/18 inches wide, 6 inches thick and 12 inches in depth below natural ground surface or certified fill grade are required. (T-1805.4.2)
92. Provide details for stepped footings when slope of bottom of footing exceeds 1:10, and adjacent hillside is 33.3% slope or less. (1805.1)
93. Show minimum 18-in. underfloor clearance from grade to bottom of floor joists and minimum 12-in. clearance to bottom of girders. (2304.11.2.1)
94. Specify that foundation sills shall be naturally durable or preservative treated wood. A foundation cripple wall over 14-in. in height shall be framed of studs having the size required for an additional story; cripple walls shall be framed and sheathed per Section 2308.9.4. (2304.11.2.4)
95. Provide a weep screed for stucco at the foundation plate line a minimum of 4-in. above the earth or 2-in. above paved areas. (2512.1.2)
96. Wood sill plate shall be minimum 8-in. above adjacent grade. (2304.11.2.2)
97. Show location of underfloor access crawl hole (18 x 24 inches). (1209.1)
98. Foundation and floor slabs shall conform to the following requirements, unless an approved soils report indicates that soil is not expansive by the Expansion Index Test method, or recommends other details: (BCM 1805.8 Art. 1)
- Continuous footings under exterior walls and interior bearing walls extending below grade 24-in. and 18-in. respectively and below foundation wall crawl hole. Piles or piers are permitted without interconnected grade beams to support first floor loads only. Pad footing located under a reinforced slab within the confines of a perimeter footing need not be connected by a grade beam.
  - Four continuous #4 bars, two 4-in. from bottom and two 4-in. from top of foundation.
  - Floor slab 4-in. thick over two layers of a 2-in. fill of sand and a moisture barrier membrane (6 mils thick) sandwiched between the two layers of fill and reinforced with #4 bars at 16-in. O.C. each way. Reinforcement to be placed at center of slab.
  - Saturate the soil 18-in. deep before placing the concrete slab.
  - Provide #4 dowels at 16-in. O.C. bent 2-ft. into slab and 1-ft. into footing. Dowels may be omitted when slab is a "monopour" or designed as an independent "floating slab."

## **FRAMING**

### **Roof / Ceiling:**

99. Specify the size, spacing and direction of rafters. (106.4.3)

100. The \_\_\_\_\_" x \_\_\_\_\_" rafters at \_\_\_\_\_" O.C. over \_\_\_\_\_ exceed the allowable span for \_\_\_\_\_ grade. (T-2308.10.3)
101. The size of ridge board, valley, or hip members shall not be less than the cut end depth of the rafter. (2308.10.4)
102. Roof purlins shall not be smaller than the rafter they support. The maximum span for 2x4 / 2x6 in. roof purlins is 4 / 6 ft. respectively. For purlin supports provide struts not smaller than 2x4 in. with an unbraced length not over 8-ft., and not flatter than 45 from the horizontal, to bearing walls or partitions. (2308.10.5)
103. Provide designed ridge beams (4 x min.) for open beam vaulted ceilings, or when ceiling joists or rafter ties are not provided. (106.4.3)
104. Ridge / hip / valley members shall be designed as vertical load carrying members when the roof slope is less than 3:12. Provide calculations. (2308.10)
105. Provide manufactured roof truss profiles, layout plan and calculations from truss manufacturer. (2303.4.3)
106. Wood Trusses shall be designed in accordance with Section 2303.4.
107. Show ceiling joist size, spacing, and direction on plans. (106.4.3)
108. The \_\_\_\_\_" x \_\_\_\_\_" ceiling joists at \_\_\_\_\_" O.C. over \_\_\_\_\_ exceed the allowable span for \_\_\_\_\_ grade. (T-2308.10.2 (1) or T-2308.10.2 (2))
109. Rafter ties spaced 4-ft. (max.) O.C. are required immediately above ceiling joists, which are not parallel to the rafters. Connections shall be in Accordance with Table 2308.10.4.1 & 2304.9.1 or equivalent capacities shall be provided. (2308.10.4.1)
110. For plywood roof diaphragms, specify thickness, grade, panel span rating, and nailing schedule. Minimum 8d common nails shall be used. (T-2306.3.1)
111. Show blocking at ends of rafters and trusses at exterior walls, and at supports of floor joists. (2308.10.6, 2308.8.2)

#### Floors:

112. Show size, spacing and direction of floor joists. (106.4.3)
113. Beams, girders, doubled joists, walls or other bearing partitions are required under parallel bearing partitions. (2308.8.4)
114. The \_\_\_\_\_" x \_\_\_\_\_" floor joists at \_\_\_\_\_" O.C. at \_\_\_\_\_ exceeds the allowable span for \_\_\_\_\_ grade. T-2308.8(1) or T-2308.8(2)
115. The \_\_\_\_\_" x \_\_\_\_\_" floor girder / beam under \_\_\_\_\_ exceeds the allowable stress for \_\_\_\_\_ grade. (NDS T-4A)
116. For structural wood panel floor diaphragm specify thickness, grade, T&G edges, panel span rating, nailing schedule, and panel layout pattern. (106.4.3)

#### Walls:

117. Headers shall be provided over each opening in exterior and interior bearing walls. (2308.9.5)
118. The \_\_\_\_\_" x \_\_\_\_\_" header at \_\_\_\_\_ exceeds the allowable stress for \_\_\_\_\_ grade. (NDS T-4-A)
119. Detail is required for header support at the corner window(s) at \_\_\_\_\_. (106.4.3)
120. Studs in bearing walls are limited to 10-ft. in height unless an approved design is submitted. (T-2308.9.1)
121. Detail lateral support for the top of interior non-bearing walls when manufactured trusses are used. (1607.13)
122. Studs supporting two floors, ceiling, and roof must be 3x4 or 2x6 at 16-in. O.C. (T-2308.9.1)
123. Note the use of full-length studs (balloon frame) on exterior walls of rooms with vaulted ceiling. (2308.9.1, T-2308.9.1)
124. Bracing of exterior / main cross walls of Conventional Framing shall conform with methods and locations as specified in Section 2308.12, Table 2308.12.4 and Figure 2308.9.3
125. Call out for all post sizes. Elements supporting concentrated loads which transfer forces to members below should be shown as "Post Above" on the second story framing plan and foundation plan. Call out for their locations, connection hardware, and provide applicable details.

#### LATERAL DESIGN

126. The lateral design shall be based on the most restrictive of either the wind or seismic forces per sections 1609 and 1613 respectively.
127. Wind analysis that does not comply with the conditions of simplified procedure (ASCE 7-05, section 6.4) shall comply with the Analytical procedure. (ASCE7 6.5)
128. Seismic analysis that does not comply with the conditions of simplified base shear design (ASCE7 12.14) must comply with equivalent lateral force procedure as set forth in ASCE7 12.8.
129. Provide mapped spectral acceleration (MCE) for short periods  $S_s = \underline{\hspace{1cm}}$  and at a one second  $S_1 = \underline{\hspace{1cm}}$  as determined in accordance with ASCE7 11.4.
130. The Site Coefficients is  $F_a = \underline{\hspace{1cm}}$  and  $F_v = \underline{\hspace{1cm}}$  in ASCE7 Tables 11.4-1 & 11.4-2.
131.  $\rho = 1.3$  except where the conditions of ASCE7 12.3.4.2 are met.
132. Indicate on framing plans that fasteners for wood structural panel sheathing on shear walls and diaphragms shall be common nails with full heads unless otherwise approved. (2306.2)
133. Structural Observation is required per Sections 1709.2 & 1709.3. Photocopy/blueprint the attached L.A.Co. Structural Observation Program form on the plans.

134. The \_\_\_\_\_ is inadequate to resist lateral forces / uplift wind pressure. Show roof/floor diaphragm nailing, wall bracing, shear connections, tie down hardware and hold-down anchors. Submit lateral design. (1609, 1613)
135. When assuming flexible horizontal diaphragms for lateral force distribution, the base shear and lateral design shall meet the requirements of Section 1613.6 and ASCE7 12.3.1.
136. Walls braced to resist wind and seismic forces shall not exceed the following height to width ratios: 2 to 1 for wood structural panels; 1-1/2 to 1 for gypsum wallboard and portland cement plaster (stucco). (2305.3.4, T-2305.3.4)
137. Wood structural panel shear walls shall meet the story drift limitation of ASCE7 12.12.1. Conformance shall be determined by testing or calculations. Calculated deflection shall be determined according to Section 2305.3. (ASCE7 12.12.1, T-12.12-1)
138. Lumber and structural wood panel diaphragms shall not be considered as transmitting lateral forces by rotation. (2305.2.5)
139. Portland cement plaster (stucco), gypsum lath and gypsum wall board shear walls are not permitted below the top level of wood construction in a multilevel building. (2306.4.5, T-2306.4.5)
140. Nominal shear values for shear walls framed with cold formed steel studs other than 20 gauge shall be justified by complete, accurate analysis or tests. (2210.5)
141. If required by structural calculations, show size, location and embedment length of hold-down anchors on foundation plan. Note on the plans "Hold-down hardware must be secured in place prior to foundation inspection." (106.4.3)
142. Provide referenced calculations showing the overturning moments in all shear wall segments. (2305.3.7)
143. The capacity of hold-down connectors that do not consider cyclic loading of the product shall be reduced to 75% of the allowable earthquake load values. (2305.3.7.1)
144. Note on the plans "Hold-down connector bolts into wood framing require approved plate washers on the post opposite the hold-down," and "Hold-downs shall be tightened just prior to covering the wall framing." (2305.3.7.1)
145. Where design shear values exceed 350 pounds per foot, foundation sill plates and all framing members receiving edge nailing from abutting panels shall be not less than a single 3x or 2-2x nominal or larger member. (2305.3.11, T-2306.4.1)
146. Detail the shear transfer connections that transfer lateral forces from horizontal diaphragms through intermediate elements and shear walls to the foundation. (106.4.3)
147. Specify on the framing plans the shear wall material and thickness and the size and spacing of fasteners and sole plate nailing. Call out anchor bolt spacing that is compatible with the shear wall capacity. (106.4.3)
148. The maximum allowable shear for 3/8-in. structural panel resisting seismic forces is 200 lb/ft. (T-2306.4.1)
149. Wood structural panels in shear walls shall be at least 3/8-in. thick and studs spaced no more than 16-in. O.C. (T-2306.4.1)
150. Columns, beams, trusses or slabs supporting discontinuous walls or frames of structures having horizontal irregularity Type 4 per ASCE7 T-12.3-1 or vertical irregularity Type 4 per ASCE7 T-12.3-2 shall have the design strength to resist the maximum axial force that can develop in accordance with overstrength factor of ASCE7 12.4.3.2. (ASCE7 12.3.3.3)
151. Detail how the interior shear walls or lateral force resisting elements are connected to the roof / floor diaphragm(s). (106.4.3)
152. Provide a drag strut at \_\_\_\_\_. Show details of strut and top plate connections. (106.4.3)
153. For shear walls with openings design the force transfer around the openings per section 2305.3.8.

#### **MECHANICAL/ELECTRICAL/PLUMBING**

154. Show location of Forced Air Unit (F.A.U.) / Return Air Grill / Water Heater on floor plan. (106.4.3)
155. F.A.U. is not permitted in attic of prefabricated trusses unless required F.A.U. clearances are clearly detailed on the plans. (106.4.3)
156. Clothes dryer moisture exhaust duct must be 4-in. in diameter and length is limited to 14-ft. with 2 elbows. The duct length shall be reduced by 2-ft. for every elbow in excess of two. (MC 504.3.2)
157. Show location of the attic appliances (furnace, fan, coil,...) and passageway 24-in. wide of solid continuous flooring from access to equipment and it's controls. Length of the passageway shall not exceed 20-ft. (MC 904.11)
158. Show how appliances (water heater, clothes dryer, furnace,...) installed in garage will be protected from automobile damage (wheel blocks are not sufficient). (MC 308.1)
159. Heating appliances (water heater, furnace,...) located in garage which create a glow, spark or flame shall be installed at least 18-in. above the floor. (MC 308.1)
160. For open top broiler / barbecue unit, show details of mechanical exhaust system (hood, duct and one-hour shaft), when penetrating ceiling or floor. (MC 920)
161. Specify total load of new service panel. Electrical plan check is required if service or load exceeds 400 amps, 120/240 V, single phase. Electrical panel shall not be installed in required shear wall. Show location on site and floor plans. (ECM 82.8)

