



**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 2017 edition of County of Los Angeles Building Code, Existing Building Code (E), Residential Code (R), Table (T), Plumbing Code (PC), Mechanical Code (MC), Electrical Code (EC), Building Code Manual (BCM), 2015 National Design Specifications (NDS), 2015 Special Design Provisions for Wind and Seismic (SDPWS), 2010 Minimum Design Loads for Buildings and Other Structures including Supplement No. 1 (ASCE7), ACI 318-14, TMS 402-13, TMS 602-13, AISC 360-10, AISC 341-10, AISI S 100-07/S2-10.  
 For County of Los Angeles Building Code Amendments and BCMs, visit [www.dpw.lacounty.gov/bsd/content](http://www.dpw.lacounty.gov/bsd/content)

**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 \$ \_\_\_\_\_. Pay a supplemental plan check fee of \$ \_\_\_\_\_ at the time of re-submittal. (107.2)
3. 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.
4. Separate permit(s) is / are required for accessory buildings, swimming pools, retaining walls, bridges not involving buildings, detached garages, demolition, \_\_\_\_\_. (106.1)

5. Show / correct address of the building on the permit application. (106.4.1)
6. A Certificate of Workers' Compensation insurance must be presented to the local Building and Safety Division Office before a permit can be issued.

## **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 (maybe) / (is required) per Appendix J103. 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. 2016 Energy Standards Correction Sheet (effective January 1<sup>st</sup> 2017)
  - b. Very High Fire Hazard Severity Zone Requirements
  - c. Hillside Structures Plan Review (slope > 33.3%)
  - d. Steel Moment Frame Plan Review
  - e. Residential Green Building Standards Code Plan Review
  - f. Multi-family Residential Accessibility 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 H T-H1.7)
23. Exterior walls of dwellings and accessory buildings less than 5-ft.(non-Sprinklered) / 3-ft.(Sprinklered) to the property line shall be 1-hour fire-resistance-rated construction. (T-R302.1(1) & (2))
24. No openings other than approved foundation vents shall be permitted in the exterior walls of dwellings and accessory buildings where the exterior wall is less than 3-ft. to the property line. (T-R302.1(1) & (2))

25. The area of exterior wall openings of non-sprinklered dwellings and accessory buildings located  $\geq$  3-ft. and  $<$  5-ft. to the property line shall be limited to 25% of the wall area. The area of exterior wall openings is unlimited when exterior walls are located  $\geq$  5-ft for non-sprinklered buildings and  $\geq$  3-ft. for sprinklered buildings. (T-R302.1(1) & (2))
26. Projections, including eaves, are not permitted within 2-ft. from the property line, except detached garages accessory to a dwelling are permitted to have 4-in. eave. Projections located  $\geq$  2-ft. and  $<$  5-ft.(non-sprinklered) / 3-ft.(sprinklered) to the property line shall be of at least 1-hour fire-resistance-rated on the underside. (R302.1, T-R302.1(1) & (2))
27. Buildings adjacent to ascending or descending slopes shall maintain setback according to the requirements of Section R403.1.7. (See Fig. R403.1.7.1)
28. For townhouses, 30-in. high parapets shall be constructed as an extension of common walls unless:
  - a. Roof surfaces adjacent to the wall(s) have different elevations of 30-in. or more (R302.2.2)
  - b. Roof is covered with a minimum Class C covering, and the roof sheathing is of noncombustible materials or approved fire-retardant-treated wood for a distance of 4-ft. on each side of the wall(s), or one layer of 5/8-in. Type X gypsum board installed directly beneath the roof sheathing with 2-inch ledger for a minimum distance of 4-ft. on each side of the wall(s) (R302.2.2 EX)
29. Townhouses with four or more dwelling units in a building shall meet the requirements of Chapter 11A of 2014 County of Los Angeles Building Code. (R320.1)

## **ROOF COVERING**

30. For roof covering specify:
  - a. Roof slope(s) of all areas on the roof plan. (R905)
  - b. Manufacturer and type of built-up roof. (R905.9)
    - i. Built up roof covering materials shall comply with the standards in Table R905.9.2
    - ii. Built-up roofs shall have a minimum slope of  $\frac{1}{4}$ -in. per foot (2%) for drainage (R905.9.1)
  - c. Type / manufacturer and I.C.C. / UL number of shingle / tile roof. (R905.2, R905.3)
  - d. Roof covering shall be Class C rated or better or as required. (R902.1)
31. Roof slope is not adequate for the type of roof covering specified. (R905)
32. 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. (R903.4.1)

## **DESIGN REQUIREMENTS**

33. An automatic residential fire sprinkler system in accordance with NFPA 13D or Section R313.3 shall be installed in one and two family dwellings or townhouses including attached garages. (R309.6, R313.1, R313.2,R313.3)
34. For duplexes provide the following:
  - a. Floors and walls separating dwelling units in two-family dwelling shall not be of less than one-hour fire-resistive rating or 1/2-hour fire-resistive rating when an automatic sprinkler system NFPA 13 is installed throughout. (R302.3, R302.3 EX 1)
  - b. Provide sound transmission ratings (STC) per Section 1207 of the LA County Building Code.
  - c. Wall assemblies shall extend from the foundation to the underside of the roof sheathing. (302.3)
  - d. Show draft separation for attic areas between units in a duplex. (R302.12.1)
35. Townhouses shall comply with Section R302.2.
36. Show the following on plans:
  - a. All habitable rooms with a minimum floor area of 70-SF, except kitchen. (R304.1)
  - b. Habitable spaces shall not be less than 7-ft. in any horizontal dimension, except kitchen. (R304.2)
  - c. Habitable space, hallways, bathrooms, toilet rooms and laundry rooms shall have a ceiling height of no less than 7-ft. (R305.1).
  - d. Bathrooms, toilet rooms & laundry rooms shall have a ceiling height of no less than 6-ft. 8-in. at the center of the front clearance area for fixtures. (R305.1)
  - e. Basement without habitable spaces shall have a ceiling height of no less than 6-ft. 8-in., except 6-ft. 4-in. is allowed under beams or ducts. (R305.1.1)
37. Where the opening of an operable window is located more than 72 inches above the finished grade or surface, the clear opening of the window shall be a minimum of 24 inches above the finished floor. Specify sill height of all operable windows. (R312.2)
38. Glazing at \_\_\_\_\_ is located at a hazardous location and shall be tempered. (R308.4)
39. Aggregate glazing area of habitable rooms must be minimum 8% of the room floor area. This is deficient in \_\_\_\_\_. (R303.1)
40. 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. (R303.2)
41. Sunrooms & patio covers next to required windows at \_\_\_\_\_ must have a minimum clear height of 7-ft. with longer side at least 40% open and unobstructed. (R303.8.1)

42. Minimum openable area of habitable rooms must be 4% of the floor area. (R303.1)
43. For light and/or ventilation purpose, the openable area between \_\_\_\_\_ and the sunroom or patio cover shall not be less than 1/10 of the floor area of the interior room or 20-SF, whichever is greater. (R303.2 EX)
44. Habitable rooms using artificial light shall comply with code requirements and method of compliance shall be clearly identified on plans. (R303.1 EX2)
45. The glazed area need not be openable where the opening is not required and a whole house Mechanical ventilation system installed per the Mechanical Code. (R303.1 EX 1)
46. Bathrooms, water closet compartments and other similar rooms shall be provided with minimum glazing area of 3-SF, one-half of which is openable. The glazed areas are not required where artificial light and a mechanical ventilation of 50-CFM intermittent or 20-CFM continuous ventilation are provided. (R303.3 EX)
47. In bathrooms containing a bathtub, shower, or tub/shower shall be mechanically vented for humidity control (R303.3.1)
48. Dimension on the plans the 30-in. clear width for water closets and 24-in. clearance in front of water closet for \_\_\_\_\_ bathroom. (PC 402.5)
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 408.6)
50. In every bedroom and basement, provide one openable escape window meeting all of the following: (R310.2.1, R310.2.2)
- A net clear opening area of not less than 5.7-SF. Ex. Grade floor net clear opening area not less than 5.0 sf
  - A minimum clear height of 24-in. and clear with 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: (R314)
- In each sleeping room.
  - Outside of each separate sleeping area in the immediate vicinity of the bedrooms
  - On each additional story of the dwelling, including basements and habitable attics, but not including crawl spaces and uninhabitable attics.
  - Not less than 3-ft from a door or opening outside of a bathroom that contains bathroom or shower unless it affects a-c. (R314.3.3)
  - Provide a note: "SMOKE ALARM shall be interconnected hard-wired with battery backup and shall be installed in accordance with NFPA 72."
  - Battery smoke alarm permitted in existing buildings where no construction is taking place.
52. For buildings with fuel-burning appliances and/or attached garages, provide an approved carbon monoxide alarm at: (R315)
- Outside of each separate sleeping area in the immediate vicinity of the bedrooms
  - On every level of a dwelling unit including basements
  - Where fuel-burning appliances are in bedroom or attached bathroom.
  - Provide a note: "CARBON MONOXIDE ALARM shall be interconnected hard-wired with battery backup."
  - Battery carbon monoxide alarm is permitted in existing dwelling units where no construction is taking place.
53. Show location of 22-in. x 30-in. attic access with 30-in. minimum headroom for attic greater than 30-SF. (R807.1)
54. Provide full height transverse and longitudinal building cross sections showing framing, plate heights, total heights, insulation, foundation, finish grade, etc. (106.4.3)
55. Finish materials including adhesives, sealants, caulk, paints & coatings, carpet systems, etc. shall meet the (VOC) emission limits per LACGBSC Chapter 4. (R330)

## **EXITS AND STAIRS**

56. Provide at least one side-hinged egress door from each dwelling unit not less than 3-ft. wide and 6-ft. 6-in. in height, with a minimum clear width of 32-in. Egress doors shall be readily openable from inside without the use of a key or special knowledge or effort. (R311.2)
57. Provide a minimum of 36-in. landing at \_\_\_\_\_. (R311.3)
58. Required egress doors at \_\_\_\_\_ shall not swing over a landing that is more than 1.5-in. in height below the threshold. (R311.3.1)
59. Door may open on an exterior landing, provided the door does not swing over the exterior landing and the landing is not more than 7.75-in. below the top of the threshold. (R311.3.1 EX, R311.3.2)
60. For habitable levels or basements located more than one story above or below an egress door, the travel distance from any occupied point to a stairway or ramp shall not exceed 50 feet. (R311.4)
61. Provide section and details of interior and exterior stairway showing:
- Maximum rise of 7.75-in. and minimum run (tread) of 10-in. with maximum 3/8-in. variance. (R311.7.5.1)
    - Where tread depth is < 11-in. a nosing is required (R311.7.5.3)
  - Minimum width of 36-in. (max. 4.5-in. handrail projection is permitted on each side) (R311.7.1)
  - Minimum headroom of 6-ft. 8-in. (R311.7.2)
  - Framing (stringer, landing, etc.) size, bracing, connections, and footings. (106.4.3)

- e. Stairways shall be positively anchored to the primary structure without the use of toenails or nails subject to withdrawal. (R311.5.1)
  - f. 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)." (R303.7)
62. Winder treads shall have a minimum tread depth of 10-in. @ a point 12-in. from the narrow side, and a minimum tread depth of 6-inches. (R311.7.5.2.1)
63. Spiral Stairways shall meet the following:
- a. Submit shop drawings for spiral stairway showing compliance with Section R311.7.10.1.
  - b. Provide spiral stairway column connections & footing details. (106.4.3)
64. Handrails shall satisfy the following:
- a. Provide a minimum of one continuous handrail on stairways with 4 or more risers and at all open sides. (R311.7.8)
  - b. Handrail height shall be 34 to 38 inches above the nosing of treads. (R311.7.8.1)
  - c. Openings between intermediate balusters shall not allow the passage of a 4-3/8-in. diameter sphere. The triangular openings formed by the riser, tread and bottom rail shall not allow the passage of a 6-in. diameter sphere. (R312.1.3 EX 1 & 2)
  - d. Handrail grips shall be either Type I or Type II specified in Section R311.7.8.3.
  - e. Return handrail(s) to newel post or wall. (R311.7.8.2)
65. Provide guards where the open side is more than 30-in. above the floor or grade below at any point within 36-in. horizontally to the edge of the open side. (R312.1.1)
- a. Guard height shall be a minimum of 42-in. (R312.1.1.2)
  - b. Required guards shall not have openings which allow passage of a sphere 4 inches in diameter. (R312.1.3)
66. Provide connection details of guardrail and/or handrail adequate to support a concentrated load of 200 pounds applied in any direction at any point along the top. (T-R301.5)

## **VENTILATION**

67. Attic Vents shall meet the following: (R806.1, R806.2)
- 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 Class I or II vapor retarder is installed on the warm side of ceiling in Climate Zones 14 and **OR**
    - iii. 1/300 provided at least 40% and not more than 50% of the required vent area is located within 3 feet below the ridge or highest point of the space, with the balance of the required ventilation provided by eave or cornice vents.

- c. Openings shall have corrosion-resistant wire mesh or other approved material with 1/16-in. minimum and 1/4-in. maximum opening.
  - d. A minimum of 1-in. airspace shall be provided between insulation and roof sheathing. (R806.3)
  - e. Unvented attic assemblies shall meet all the conditions in Section R806.4.
68. Under-floor vents shall meet the following requirements: (R408)
- a. Show ventilation type, size and location.
  - b. One ventilation opening shall be placed within 3-feet of each corner of the building
  - 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.
  - e. Unvented under-floor space shall comply with Section 408.3.
69. Window wells shall be designed for proper drainage by connecting to the building's foundation drainage systems required by section R405.1 or by an approved alternate method. (R310.2.3.2)

## **GARAGE AND CARPORT**

70. 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. (T-R302.6)
  - b. Provide minimum 1/2-in. gypsum board on the garage side of detached garages less than 3-ft. from a dwelling unit or structural members supporting floor or ceiling assemblies. (T-R302.6)
  - c. 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, unless the dwelling unit and the garage are protected by an automatic fire sprinkler system. Doors shall be self-closing and self-latching. (R302.5.1)
  - d. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. (R302.5.1)
  - e. Garage floor surfaces shall be of an approved noncombustible material, and the area used to park vehicles shall be sloped to a drain or toward the main vehicle entry. (R309.1)
  - f. Floors in garage/carport shall be designed to support a uniformly distributed load of 50-psf or concentrated live loads of 2,000-lbs acting on an area of 20-sq. in for elevated garage floors. (T-R301.5)

## **VENEER / FIREPLACE**

71. Specify and detail the veneer material, thickness, backing, anchorage, footings and support over openings in accordance with Section R703.8.3.

72. Wood burning fireplace within South Coast Air Basin is prohibited per AQMD's Rule 445. Any exemption to Rule 445 shall be approved by SCAQMD.
73. Masonry fireplaces and chimneys shall be constructed, anchored, supported, and reinforced as required per Sections R1003.3 and R1003.4.
74. All wood beams, joists, studs and other combustible material shall have a minimum clearance of 2 inches from the front and sides and 4 inches from the back faces of masonry fireplaces. (R1001.11)
75. For Factory-built steel fireplace specify manufacturer, model and I.C.C./UL number or other approved agency. (R1004.1)

## **STRUCTURAL**

76. Buildings and structures, and all parts thereof, shall be constructed to safely support all loads as prescribed in 2017 County of Los Angeles Residential Code. When a building contains structural elements exceeding the limits of or not conforming to the Residential Code, these elements shall be engineered in accordance with 2017 County of Los Angeles Building Code. (R301.1.3)
77. 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)
78. All one- and two-family dwellings and townhouses in Seismic Design Category D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub> shall comply with seismic provisions in Section R301.2.2.
79. Buildings in Seismic Design Category E determined per Table R301.2.2.1.1 shall be designed in accordance with 2017 County of Los Angeles Building Code, unless it can be reclassified to a lower SDC per Section R301.2.2.1. (R301.2.2.4)
80. A California licensed architect or civil/structural engineer shall approve and stamp construction documents of the following constructions, but not limited to: (R301.1.3.2, R301.1.3.3)
  - a. Wood frame construction more than one story in height or with a basement located in Seismic Design Category D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>
  - b. Cold-formed steel construction
  - c. Concrete construction
  - d. Masonry construction
81. Buildings including additions constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope) shall comply with of the 2017 County of Los Angeles Building Code. (R301.1.4)
82. Irregular buildings or portions of a building defined in Section R301.2.2.5 shall be designed by a registered design professional in accordance with 2017 County of Los Angeles Building Code. Design of the remainder of the building is permitted using the provisions of the Residential Code. (R301.2.2.2.5)

83. Cross-reference all calculations for joists, beams, shear walls, etc, to the structural framing floor plans. (106.4.3)
84. Submit structural calculations and or design details for the following: \_\_\_\_\_ (R301.1.3)
85. The Engineer or Architect of Record shall be designated on the building permit application. (106.4.3)
86. The Engineer or Architect of record shall review, approve and stamp truss design for loads, location, and suitability for intended use. (R802.10.2)
87. Provide a detailed schedule of "Statement of Special Inspections" on the plans complying with 1704.3.
88. Specify the roof and floor live loads, roof snow loads, wind design data including wind speed and exposure, and earthquake design data including Seismic Design Category and wall bracing method. Include references to design factors and span tables. (R301.1,1603.1)
89. Provide a note on the plans "Fasteners for preservative-treated or fire-retardant-treated wood shall be of hot dipped zinc-coated galvanized steel in accordance with ASTM A 153." (R317.3)

## **FOUNDATION**

90. The foundation plan does not comply with the soil report recommendation for this project. (106.4.3)
91. The design of foundation and retaining walls supporting backfills shall comply with Residential Code Manual R404 Art. 1.
92. 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)
93. Have the consulting soils/geotechnical engineer review and approve the foundation plans and foundation details. (106.4.3)
94. Soil bearing pressure is limited to 1,500-lbs/SF unless soils report recommends otherwise. (T-R401.4.1)
95. Call out foundation bolt size and spacing on foundation plan. The foundation bolts shall be 1/2-in. diameter for SDC D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>, 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. (R403.1.6, R602.11.1, 2308.6, 2308.12.9)
96. 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)
97. Concrete or masonry foundation walls shall be designed in accordance with Chapters 19 or 21, respectively.

98. For foundation supporting (1) / (2) floors, sections (12) / (15) inches wide, 6 inches thick and minimum 12 inches in depth below natural ground surface or certified fill grade are required. (T-R403.1 (1), T-1809.7)
99. Provide details for stepped footings when slope of bottom of footing exceeds 1:10 but less than or equal to 1:3. (R403.1.5)
100. Show minimum 18-in. underfloor clearance from grade to bottom of floor joists and minimum 12-in. clearance to bottom of girders. (R317.1)
101. 103. Specify that foundation sills shall be naturally durable or preservative-treated wood. Field-cut ends, notches and drilled holes of preservative-treated wood shall be field-treated per AWPA M4. (R317.1.1)
102. Provide a min. 26-gage weep screed for stucco at the foundation plate line a minimum of 4-in. above the earth or 2-in. above paved areas. (R703.7.2.1)
103. Wood sill plate shall be minimum 8-in. above adjacent grade. (R317.1)
104. Show location of underfloor access crawl hole (18 x 24 inches through a floor or 16 x 24 inches through a perimeter wall). (R408.4)
105. 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: (RCM 401.4 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."
108. The size of ridge board, valley, or hip members shall not be less than the cut end depth of the rafter. (R802.3)
109. 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. spaced not more than 4-ft. on center with an unbraced length not over 8-ft., and not flatter than 45 degrees from the horizontal, to bearing walls. (R802.5.1)
110. 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)
111. Ridge / hip / valley members shall be designed as vertical load carrying members when the roof slope is less than 3:12. Provide calculations. (R802.3)
112. Provide manufactured roof truss profiles, layout plan and calculations from truss manufacturer. (R802.10.1)
113. Wood Trusses shall be connected to wall plates by the use of approved connectors having min. uplift capacity of 200 lbs and shall be installed per manufacturer's specifications. (R802.11.1)
114. Show ceiling joist size, spacing, and direction on plans. (106.4.3)
115. The \_\_\_\_\_" x \_\_\_\_\_" ceiling joists at \_\_\_\_\_" O.C. over \_\_\_\_\_ exceed the allowable span. (R802.4 (1) & (2))
116. Rafter ties (min. of 2x4) are required immediately above ceiling joists, which are not parallel to the rafters. Connections shall be in accordance with Tables R802.5.1(9) or 2308.10.4.1 or equivalent capacities shall be provided. (R802.3.1, 2308.10.4.1)
117. For plywood roof diaphragms, specify thickness, grade, panel span rating, and nailing schedule. (R803)
118. Show blocking at ends of rafters and trusses at exterior walls, and at supports of floor joists. (R502.7, 2308.10.6, 2308.8.2)

#### Floors:

119. Show size, spacing and direction of floor joists. (106.4.3)
120. Joists under parallel bearing partitions shall be of adequate size to support the load. (R502.4)
121. The \_\_\_\_\_" x \_\_\_\_\_" floor joists at \_\_\_\_\_" O.C. at \_\_\_\_\_ exceeds the allowable span. (T-R502.3.1(1), T-R502.3.1(2))
122. The \_\_\_\_\_" x \_\_\_\_\_" floor girder / beam under \_\_\_\_\_ exceeds the allowable span. (T-R502.5(1), T-R502.5(2))

123. For structural wood panel floor diaphragm specify thickness, grade, T&G edges, panel span rating, nailing schedule, and panel layout pattern. (R503)

#### Walls:

124. Headers shall be provided over each opening in exterior and interior bearing walls.

## FRAMING

### Roof / Ceiling:

106. Specify the size, spacing and direction of rafters. (106.4.3)
107. The \_\_\_\_\_" x \_\_\_\_\_" rafters at \_\_\_\_\_" O.C. over \_\_\_\_\_ exceed the allowable span (T-R802.5.1(1)-(8))

- (TR602.7 (1)-(3), 2308.9.5)
125. The \_\_\_\_\_" x \_\_\_\_\_" header at \_\_\_\_\_ exceeds the allowable stress for \_\_\_\_\_ grade. (NDS T-4-A)
126. Detail is required for header support at the corner window(s) at \_\_\_\_\_ (106.4.3)
127. Studs in bearing walls are limited to 10-ft. in height unless an approved design is submitted. (T-R602.3.1)
128. Detail lateral support for the top of interior non-bearing walls when manufactured trusses are used. (1607.13)
129. Studs supporting two floors, ceiling, and roof must be 3x4 or 2x6 at 16-in. O.C. (T-R602.3(5), T-2308.9.1)
130. Note the use of full-length studs (balloon frame) on exterior walls of rooms with vaulted ceiling. (2308.9.1, T-2308.9.1)
131. Provide braced wall lines in accordance with Section R602.10.1. Braced wall panels shall be constructed in accordance with the intermittent bracing methods specified in Section R602.10.2 or the continuous sheathing methods specified in Section R602.10.4. (R602.10)
132. 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**
133. The lateral design shall be based on the most restrictive of either the wind or seismic forces per LACBC sections 1609 and 1613 respectively, and per R301.2.
134. Wind analysis that does not comply with the conditions of simplified procedure (ASCE 7-10, Chapters 26-31) shall comply with the Analytical procedure.
135. 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.
136. 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.
137. The Site Coefficients is  $F_a = \underline{\hspace{1cm}}$  and  $F_v = \underline{\hspace{1cm}}$  in ASCE7 Tables 11.4-1 & 11.4-2.
138.  $\rho = 1.3$  except where the conditions of ASCE7 12.3.4.2 are met.
139. Structural Observation is required per Section 1704.6. Photocopy/blueprint the attached L.A.Co. Structural Observation Program form on the plans.
140. 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)
141. When assuming flexible horizontal diaphragms for lateral force distribution, the base shear and lateral design shall meet the requirements of Section 1613.7 and ASCE7 12.3.1.
142. 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). (2306.3, SDPWS 4.3)
143. 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, ASCE7 T-12.12-1)
144. Portland cement plaster (stucco), gypsum lath and gypsum wall board shear walls shall not be permitted in Seismic Design Category E or F. These walls are only permitted at the top level of wood construction in Seismic Design Category D. (2306.7, T-2306.7)
145. Nominal shear values for shear walls framed with cold formed steel studs shall be justified by complete, accurate analysis or tests. (2210.6)
146. 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)
147. Provide referenced calculations showing the overturning moments in all shear wall segments. (SDPWS 4.3.6)
148. 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. (2305.5)
149. Note on the plans "Hold-down connector bolts into wood framing require 0.229-in. x 3-in. x 3-in. plate washers on the post opposite the hold-down," and "Hold-downs shall be tightened to finger tight plus one-half wrench turn just prior to covering the wall framing." (2305.5)
150. Detail the shear transfer connections that transfer lateral forces from horizontal diaphragms through intermediate elements and shear walls to the foundation. (106.4.3)
151. 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)
152. The maximum allowable shear for 3/8-in. structural panel resisting seismic forces is 200 lb/ft. (2306.3)
153. Wood structural panels in shear walls shall be at least 3/8-in. thick and studs spaced no more than 16-in. O.C. (2306.3)



- 154. 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)
- 155. Detail how the interior shear walls or lateral force resisting elements are connected to the roof / floor diaphragm(s). (106.4.3)
- 156. Provide a drag strut at \_\_\_\_\_. Show details of strut and top plate connections. (106.4.3)
- 157. For shear walls with openings design the force transfer around the openings per SDPWS Section 4.3.5.2.

**MECHANICAL/ELECTRICAL/PLUMBING**

- 158. Show location of Forced Air Unit (F.A.U.) / Return Air Grill / Water Heater on floor plan. (106.4.3)
- 159. 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)
- 160. 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 504.4.2)
- 161. 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 904.10)

- 162. 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)
- 163. 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)
- 164. 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)
- 165. 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)
- 166. Where the electrical service is located in / on the attached garage and a furred garage wall is the method used to run the non-metallic-sheathed cables to the residence thru the fire wall, provide a detail showing how the penetration will be fire stopped. (EC 300.21)
- 167. All showers and tub-showers shall have a pressure balance, thermostatic mixing valve, or a combination pressure balance/thermostatic mixing type valve. (PC 408.3)
- 176. All new, replacement and existing water heaters shall be strapped to the wall in two places. One in the upper 1/3 of the tank and one in the lower 1/3 of the tank. The lower point shall be a minimum of 4-in. above the controls. (PC 507.2)

**ADDITIONAL COMMENTS**

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