

GENERAL REQUIREMENTS

APPLICATION AND PERMIT

1. Application will expire on ____/____/____.
Permit needs to be obtained prior to expiration date.
(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. A separate application and permit(s) is/are required for:
(106.1)
 - a. Demolition work
 - b. Retaining walls greater than four 4 feet in height measured from the bottom of the footing to the top of the wall OR supporting a surcharge.
 - c. Each separate structure
 - d. Fences greater than six (6) feet high
 - e. Swimming Pool(s)
 - f. Signs
 - g. Fire sprinkler system
 - h. Bridge
 - i. Electrical work
 - j. Mechanical work
 - k. Plumbing work
 - l. Storage Racks
 - m. Mechanical Hood
 - n. _____
4. Comply with protection of adjoining property by providing a written notice to the owners of adjoining buildings advising them that an excavation deeper than the foundation of the adjoining building and located less than excavation depth to the property line is to be made and that the adjoining buildings should be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavations. (California Civil Code, Section 832)
5. The permit application must be signed by the property owner, or licensed contractor, or authorized agent at the time the permit is to be issued:
 - a. For owner-builder permits: Owners' signature must be verified by notarization or personal identification.
 - b. For contractor building permits: Prior to the issuance of a building permit, the contractor shall have the following:
 - i. A certificate of workers Compensation Insurance made out to the Contractors State License Board.
 - ii. Notarized letter of authorization for agents.
 - iii. Copy of Contractors State License or pocket ID.

REFERRALS

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

6. Submit a geology report and soils report to Building and Safety for review.
(1802.2)
7. (Soil)(Foundation)(Geology) report(s) must be approved by the Geotechnical & Materials Engineering Division. Provide a copy of approved report and Department approval letter.
8. 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.
9. Rough grading approval is required before a building permit can be issued.
(Appendix J105.7)

SUPPLEMENTAL PLAN REVIEW COMMENTS/SHEETS

10. Refer to the attached sheets for supplemental plan review comments:
 - a. Very High Fire Hazard Severity Zone Requirements
 - b. Hillside Building Correction Sheet (slope > 33.3%)
 - c. Steel Moment Frame
 - d. Solid Waste Disposal
 - e. Accessibility Requirements:
 - i. Public Accommodations & Commercial Facilities
 - ii. Multi-Family Residential Accessibility
 - iii. SC#1 - Sanitary Facilities, Drinking Fountains, Telephones, Alterations and Wheelchair Lifts.
 - iv. SC#2 - Group A, E, H & I Occupancies.
 - v. SC#3 - Group B, M & S Occupancies.
 - vi. SC#4 - Group R Occupancies.
 - vii. SC#5 - Elevators, Egress, and Areas for Evacuation Assistance.

11. Photocopy/blueprint the following on the plans: (Do NOT staple to the plans)
 - a. Best Management Practice for Construction Activity (Attachment A) requirements.
 - b. Security Requirements
 - c. Structural Observation Program

ZONING

12. Submit a copy of the approved CUP or plot plan to Building and Safety Division. Show compliance with all applicable conditions on the plans.
13. Clearly show on the plot plan a paved parking area and driveway of 3 ½” of concrete or 1 ½” of asphalt on a 4” decomposed granite base (minimum requirements)

SITE PLAN

14. 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)
15. A complete plot plan showing property lines, lot dimensions, setbacks, street names and width, location of tanks and sewers, existing cesspools, septic tanks and sewage disposal systems. Proposed and existing buildings complete with their areas, occupancy groups, types of construction, distances between buildings, area separation walls, house number, north arrow, scale, parking layout, city/county boundary line, zone change boundary line, locations of all easements, highway dedication lines, street centerlines, storm drains, underground utilities, and overhead power lines are required. (106.4.3)
16. Show on site plans finish floor, finish surface, top of wall, and grade elevations, including contours and general drainage patterns. (106.4.3, 1803.3)
17. Construction in the Public Right Of Way and projection beyond the property lines or into the alleys shall comply with L.A. County Building Code Chapter 32.
18. Note on the plans: “Pedestrians shall be protected during construction, remodeling and demolition activities as required by L.A. County Building Code Chapter 33. (3306)
19. 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. (P.C. Appendix K Table K-1)
20. Show building or structure setbacks from the top and bottom of the slope. See Figure 18-l-1. (1806.5)
21. Provide temporary shoring plans for excavations that remove the lateral support from a public way or an existing building structure. Excavations adjacent to a public way require Public Works approval prior to issuance of a building permit. (3307)
22. Submit complete shoring plans for subterranean excavations, or provide a plan view and sections views showing temporary excavation slopes.

23. This site appears to contain high ground water, which must be lowered prior to construction. Provide plans showing the location of the proposed dewatering wells.
24. Show location and distance of active, abandoned or idle oil or gas wells with respect to building perimeters. Any wells within 25 feet of the building must have a report and plans prepared by a licensed Civil Engineer approved by Los Angeles County Department of Public Works Environmental Program Division. (110.4)

CHAPTER 3 USE AND OCCUPANCY

USE AND OCCUPANCY

25. Specify on floor plans uses of all rooms or areas.
26. The occupancy group specified for one or more areas within the building is incorrect. See plan check annotation on sheet _____.
27. One or more occupancy has been incorrectly categorized. Change occupancy designation as identified below:
 - a. A-1 occupancy - Theaters & assembly spaces for viewing performances
 - b. A-2 occupancy. Restaurants, bars, eating & drinking establishments with ≥ 50 occupants
 - c. A-3 occupancy. Churches, halls & recreational assembly or “other assembly”
 - d. B occupancy. Business type uses, assembly areas with < 50 occupants, outpatient clinics not classified as Group I-2.1
 - e. M occupancy. Mercantile
 - f. R-1 occupancy. Hotels and motels (transient) with < 30 day duration
 - g. R-2 occupancy. Apartments, condominiums, extended-stay hotels with ≥ 30 day duration
 - h. R-3 for townhouses
 - i. S-1 occupancy. Moderate hazard storage
 - j. S-2 occupancy. Low hazard storage
 - k. U occupancy. Utility and miscellaneous structures
 - l. _____ occupancy.

CHAPTER 4 SPECIAL DETAILED REQUIREMENTS

GROUP R USES

28. Group R-1 and R-2 dwelling requirements shall comply with 419.
 - a. Separation between individual dwelling units shall be a min. of 1-hr. fire partitions, except for fully sprinklered Type IIB, IIIB or VB buildings which may be reduced to 1/2-hr. fire partitions. (708.3)
 - b. Adjacent townhouse units shall be separated by two (2) 1-hr. fire-resistant rated assemblies or a single 2-hr. fire-resistance rated assembly. (419.4)

- c. A common 2-hr. fire-resistance rated assembly may not contain plumbing or mechanical equipment or ducts. Electrical installations shall be installed in accordance with the EC. Penetrations of electrical outlet boxes shall be in accordance with Section 712. Provide a note on plans. Applicant shall be responsible for coordinating this requirement with plumbing and mechanical design consultants. (419.4)
 - d. Separation between townhouse units shall extend to and through the roof in accordance with 419.4.2 and 419.4.3.
 - e. Each individual townhouse shall be structurally independent, except for foundations, common 2-hr. fire-resistance rated walls, and roof and wall sheathing attached to such common walls.
29. Atriums shall comply with 404.
- a. Except for areas that are specifically exempt, the entire building shall be provided with an automatic sprinkler system.
 - b. Provide areas adjacent to the atrium with a min. 1-hr. fire barrier separation with 3/4-hr. opening protectives, or justify omission of separation.
30. Combustible storage shall comply with 413.
- a. In other than R-3 and U occupancies, attics, under-floor and concealed spaces shall be protected by either an automatic fire sprinkler system within the concealed space or protection on the storage side by 1-hr. fire-resistance rated construction with noncombustible or 1-3/4" thick solid wood self-closing doors. (413.2)

OTHER USE AND OCCUPANCY

31. Motor-vehicle related occupancies shall comply with 406.
- a. Provide a min. 24" high vehicle barrier at all floor-elevation differentials greater than 1-foot. (406.2.4)
 - b. Vehicle ramps may not serve as exits unless a pedestrian walkway is also provided. Show dedicated area that will serve as the pedestrian walkway that is not part of the vehicle ramp. (406.2.5)
 - c. Vehicle ramps used for parking shall have a max. slope of 1:15. (406.2.5)
 - d. Slope all parking surfaces to a drain or the vehicle entrance. (406.2.6)
 - e. Open parking garages shall be of Type I, II or IV construction. (406.3.3)
32. High-rise buildings shall comply with 403.
- a. Provide note on plans that a sprinkler water-flow alarm and control valve shall be installed at the lateral connection to the riser at each floor. It shall be the applicant's responsibility to coordinate this requirement with the fire sprinkler design consultant. (403.2)
 - b. A reduction in the fire protection of structural frame elements is not allowed. (403.3.1, 403.3.2)

- c. A lobby is required for each elevator in accordance with 707.14.1
 - d. Provide note on plans that a smoke control system shall be installed. It shall be the applicant's responsibility to coordinate this requirement with the mechanical/ventilation consultant.
 - e. Exit enclosures require specific smoke protection as required by 909.20 and 1020.1.7
33. Underground buildings shall comply with 405.
- a. The building contains an occupied space (other than a parking garage or other use exempted by 405) that is more than (30') (60') below the lowest level of exit discharge.
 - b. Underground buildings shall be of Type I construction.
 - c. Provide an automatic sprinkler system from the highest level of exit discharge and throughout all level below.
 - d. This project includes an underground building lower than 60' below the lowest level of exit discharge. Provide smoke compartmentation in accordance with 405.4.
 - e. Provide smoke control. (405.5)
 - f. Provide a manual alarm system with an emergency voice/alarm communication system. (907.2.19)
 - g. Provide a min. of two exits, including at least one from each smoke compartment. (405.8.1)
 - h. Provide smokeproof enclosures for egress stairs. (405.8.2)
 - i. Provide emergency/standby power and standpipes.
34. The _____ (use) (building) (occupancy) shall comply with Section _____.

CHAPTER 5 GENERAL BUILDING HEIGHTS AND AREAS

HEIGHTS AND AREAS

- 35. On site plan, dimension distances from building(s) to all property lines, street center lines, and adjacent existing or proposed structures on the site.
- 36. On site plan show all interior assumed lot lines, any designated flood plains, open space easements or development restricted areas.
- 37. Show the size, use, occupancy, and type of construction of all existing buildings on the site.
- 38. Clearly show the max. height of the building as defined in 502.1
- 39. Clearly show if the lower level is a basement based on the definitions in 502.1.
- 40. On title sheet, show justification to exceed the basic allowable floor area listed in T-503.
- 41. On title sheet, show justification to exceed the number of stories or building height listed in T-503.
- 42. Provide calculations to justify increase in allowable area

43. When a new building is constructed adjacent to an existing building, show the required wall and opening protection requirements for the existing building will be maintained. (503.1.2, T-508.3.3, T-704.8, 704.3)
44. Identify "Grade Plane" elevation for this project. Show the grade plane reference datum on all elevation and section drawings.
45. Assumed "Grade Plane" elevation is incorrect. Grade plane is determined as the average elevation of the lowest points around the perimeter of the building within the space described in 502.1. Grade plane is not defined as the average of the highest and lowest points adjacent to the building. Justify the assumed grade plane for this project pursuant to 502.1.
46. For R-2 occupancy apartments and condominiums of Type VA construction, the sprinkler increase for height may not exceed 4-stories or 60'. (504.2)
47. Provide a note on plans that the automatic sprinkler system must comply with the provisions of 909.3.3.1.1 (NFPA-13) in order to achieve an increase in (height) (area). It shall be the applicant's responsibility to coordinate this requirement with the sprinkler design consultant.
48. When sprinkler increases are applied for an additional 20' in height or for an additional story in accordance with 504.2, sprinklers may not be used for an area increase in 506.3 for Group A, E, H, I, L, Occupancies and high-rises.
49. Building contains one or more of the following Group Occupancies: A, E, H, I, L, or R or is a high-rise building. Pursuant to 506.3, an automatic sprinkler system may be used for either an area increase or a height increase, but not both.
50. Justify the multiple-story increase in the allowable area for the building. The building contains one or more of the following Group occupancies: A, E, H, I, L, or R or is a high-rise building. Therefore, the allowable area for the building may only be doubled, and shall not be tripled. (506.4)
51. On site plan, clearly delineate any frontage used to justify allowable area increases per 506.2.
52. Justify area frontage increase factor (If). Ratio of W/30 shall be limited to a value of 1.0 unless the building meets the requirements for unlimited area except for the 60' wide yards.
53. Note on plans: "Frontage used for allowable area increases per 506.2 shall be permanently maintained". See attached "Yard Letter".
54. The area increases per 506.3 shall not apply where fire rating substitution of T-601, Note e is used.
55. For buildings equipped with an NFPA 13R or 13D sprinkler system, the area increases per 506.3 do not apply.
56. Unless considered a separate story, the floor area of a mezzanine shall be considered a part of the story in which it is located. (505.1)

MIXED OCCUPANCY

57. Where mixed occupancy buildings contain incidental use areas, the following shall apply:
 - a. Clearly identify on plans whether there are any incidental use areas that are separated from other portions of the building pursuant to T-508.2.
 - b. The protection used for incidental use areas may include automatic fire sprinklers, fire-resistance rated construction, or both. Identify such protection in the incidental use areas on each floor plan.
 - c. When T-508.2 allows incidental uses to be protected by an automatic fire sprinkler system without the construction of a fire-resistance rated wall or floor ceiling assembly, such area shall be separated from the remainder of the building by construction capable of resisting the passage of smoke such as a smoke barrier or smoke partition. (508.2.2.1)
58. Where mixed occupancy buildings contain nonseparated uses, the following shall apply:
 - a. Clearly identify on plans whether nonseparated uses will be utilized pursuant to 508.3.2.
 - b. The adjoining nonseparated uses must be clearly identified on all floor plans, including the boundary of such areas
 - c. The project must be designed to meet the requirements of the more restrictive occupancy for the following: (Area) (Height) (Egress) (Fire Sprinklers) (Other)
59. Where mixed occupancy buildings contain separated uses, the following shall apply:
 - a. Clearly identify on plans the boundary of each adjoining occupancy that will be separated pursuant to 508.3.3 and T-508.3.3
 - b. Fire-resistance rated walls used to separate adjoining occupancies shall be constructed as fire barriers; fire partitions shall not be allowed. (508.3.3.4.1)
 - c. Fire-resistance rated floor-ceiling assemblies used to separate adjoining occupancies shall comply with 711. (508.3.3.4.1)
60. Where mixed occupancy buildings contain accessory areas, the aggregate area of all accessory areas within a single occupancy shall not exceed 10% of the floor area of the primary occupancy. (508.3.1)
61. For buildings with mixed occupancies, the allowable area per story shall be based on the most restrictive provisions for each occupancy when the mixed occupancies are treated according to 508.3.2 (unseparated). If treated per 508.3.3 (separated) the max. total building area shall be such that the sum of the ratios for each of the actual to allowable are does not exceed 1.
62. Provide fire separation for incidental use area in the _____ in accordance with 508.2 and T-508.2.

CHAPTER 6 TYPES OF CONSTRUCTION

TYPES OF CONSTRUCTION

63. Exterior walls shall have a fire-resistance rating not less than that specified in T-601 and T-602. Provide details of its construction.
64. Structural elements in exterior walls required to be of fire-resistance-rated construction shall have fire-resistance rating equal to or greater than that required for an exterior bearing wall. (T-602)
65. Provide details, notes and specifications for the fire protection of building elements as required for the type of construction. (T-601, 602)

CHAPTER 7 FIRE-RESISTANCE-RATED CONSTRUCTION

EXTERIOR WALLS

66. Projections located where openings are required to be protected shall be non-combustible, heavy timber, or 1-hr. construction. (704.2)
67. Projections beyond the exterior wall shall not extend beyond (clearly show on elevations/cross section):
 - a. A point one-third the distance from an assumed vertical plane located where protected openings are required due to location on property. (704.2)
 - b. More than 12" into areas where openings are prohibited. (704.2)
68. When two or more buildings are on the same property and they are not analyzed to comply as one building, the building shall have an assumed property line between them for determining wall and opening protection, and roof cover requirements or treated as a single building per 704.3.
69. When a new building is constructed adjacent to an existing building, an assumed property line shall be placed between them such that the existing wall and opening protection requirements for the existing building will be maintained. (503.1.2, T-508.3.3, T-704.8, 704.3)
70. The fire resistance rating of exterior walls shall comply with the provisions of 704.5.
71. The max. area of exterior wall openings in any story shall not exceed that allowed in T-704.8.
72. Where both unprotected and protected openings are permitted, the total area is limited to Eq. 7-2. (704.8, T-704.8)
73. Exterior wall with a fire separation distance of ____ ft. or less shall be provided with a parapet not less than 30" height above roof (see 704.11 for exception). (704.11, T-704.8)
74. Parapets shall have the same fire-resistance rating as the wall supporting them. The uppermost 18" of the parapet wall facing the roof shall be of noncombustible face materials. (704.11.1)

75. Openings in exterior walls required to have protected openings shall have fire protection rating of (3/4) (1-1/2) hour assemblies. (704.12, T-715.4, T-715.5)

INTERIOR WALLS

76. Clearly label and identify on plans fire walls, fire barriers, fire partitions, shafts, smoke barriers, and smoke partitions, along with their fire-resistance ratings.
77. On site plan and floor plans, clearly show location of all fire walls as defined in 705.
78. Construct a fire wall at property lines or when separating a building into two or more separate areas per 705.1.
79. Provide details to show that fire wall complies with 705 including but not limited to:
 - a. Fire rating shall be ____-hour per T-705.4
 - b. Fire walls must remain structurally stable in the event of collapse of construction on either side during a fire. Provide a detail to show that joist supported by the fire wall is spliced and not continuous (plywood membrane may be continuous), or provide double fire walls or provide justification for any other method used. 705.2
 - c. Shall be noncombustible material, except in Type V Construction per 705.3
 - d. Shall have horizontal continuity per 705.5
 - e. Shall extend vertically from the foundation to a point 30" above the roof per 705.6
 - f. The area of each opening in fire walls is limited to 120 sq. ft. Total width of the openings is limited to 25% of the wall length in the story under consideration. (705.8)
 - g. All openings in fire walls shall be protected with fire assemblies having a fire-resistance rating of (1-1/2) (3) hours. (T-715.4)
 - h. Ducts and air transfer openings through fire walls should be avoided. If allowed, duct and air transfer opening penetrations shall be protected as required in 712 and 716. Dampers are required. (705.11)
 - i. Exits must be provided independently for each area bounded by fire walls except for horizontal exits per 1022.
80. No openings are allowed in the party wall per 705.1.1 when a wall is constructed on or near a property line.
81. Where separating areas of buildings for the purpose of sprinkler requirements, provide a 4-hr. fire wall per 705.1.2 since your project is subject to SFM amendments.
82. Fire walls terminating at exterior walls must comply with 705.5.1.
83. Fire-resistance-rated exterior wall construction shall be maintained through crawl spaces, floor framing, and attic spaces in accordance with 705.6.

84. Combustible members framed into hollow fire walls or fire walls of hollow units, hollow spaces shall be solidly filled for the full thickness of the wall and for a distance not less than 4" above, below and between the structural members, with noncombustible materials approved for fireblocking. (705.7)
85. Fire walls which are not party walls per 715.4 require openings to comply with 705.8.
86. A complete ____-hour separation is required between Group _____ and Group _____ occupancies. Separation walls shall to be fire barriers complying with 706. Horizontal assemblies shall comply with 711. Openings in the separation shall have ____-hour fire assemblies. (508.3.3, T-508.3.3, 706, 711, 715)
87. Fire barriers and horizontal assemblies separating single occupancies into different fire areas shall be ____-hour fire rated per T-706.3.9
88. Areas of each opening in fire barrier are limited 156 sq. ft. Total width is limited to 25% of the wall length in the story under consideration. (706.7)
89. Fire barrier continuity must be detailed in accordance with 706.5.
90. Fire barrier at vertical occupancy separations must have continuity and must extend through underfloor area, attic areas, and suspended ceiling areas. (706.5)
91. Openings in a fire barrier shall be protected in accordance with 715, limited to a max. aggregate width of 25% and no opening shall exceed 156 sq. ft. (706.7)
92. A ____-hour fire barrier is required between _____ occupancy and the _____ occupancy. (508.3.3, T-508.3.3, 706.3.8)
93. Provide a fire barrier in accordance with 706 for the:
- Shaft enclosure per 707.4.
 - Exit enclosure per 1020.1.
 - Exit passageway per 1021.1.
 - Horizontal exit per 1022.1.
 - Atrium per 404.5.
 - f. Incidental use area at the _____ per 508.2 and T-508.2.
 - Control areas per 414.2.3.
 - Occupancy separation per 508.3.2.
 - Fire area separation per 706.3.9.
94. The fire barrier or horizontal assembly, or both, separating a single occupancy into different fire areas shall have a fire resistance rating of not less than that indicated in T-706.3.9.
95. Provide ____-hour fire rated door assemblies in ____-hour fire barrier. (706.7 T-715.4)
96. Glazing and openings in fire barriers shall be limited to 25% of the wall area, no larger than 156 sq. ft. with unless tested to match wall rating. (706.7)
97. All structural elements supporting a fire barrier must have the same fire-resistance ratings as the required occupancy separation. (706.5)
98. Provide a fire partition in accordance with 708.1 for:
- Walls separating dwelling units.
 - Walls separating sleeping units in R-1, R-2 and I-1 occupancy groups.
 - Corridor walls.
 - Elevator lobby per 707.14.1.
99. Fire partition continuity must be detailed in accordance with 708.4.
100. Smoke barriers shall have a min. 1-hr. fire-resistance rating. (709.3)
101. Smoke barriers shall form an effective continuous barrier per the requirements of 709.4.
102. Smoke partitions shall comply with the requirements of 710.
103. Floor and roof assemblies required to have fire-resistance rating shall comply with the requirements of 711.
104. In 1-hr. fire-resistance-rated horizontal assemblies where unusable space occurs above or below the assembly, the membrane on the unusable side of the assembly is not required to be installed. (711.3.3)
105. Penetrations of fire-resistance-rated construction must comply with 712.
106. In fire-resistance-rated walls, detail through penetrations and membrane penetrations per 712.3.
107. Penetrations in fire-resistance-rated walls shall comply with 712.3. Through penetrations shall comply with 712.3.1.1 or 712.3.1.2, or as noted below: (712.3.1)
- Steel, ferrous or copper pipes may penetrate fire-resistance rated walls, provided the opening is protected as follows: (712.3.1 EX.)
 - Item penetrating concrete or masonry walls is a max. 6" nominal diameter and the area of the opening through the wall does not exceed 144 sq. in., concrete, grout or mortar is permitted where it is installed the full thickness of the wall or the thickness required to maintain the fire-resistance rating; or
 - When the annular space is protected with material that meets ASTM E 119.
 - Penetrations shall be fire-stopped by a system installed as tested in accordance with ASTM E 814 or UL 1479, and shall have an F rating of not less than the required fire-resistance-rating of the wall penetrated. (712.3.1.2)
 - Membrane penetrations of max. 2-hr. fire-resistance rated walls by steel electrical boxes are permitted, provided that each does not exceed 16 sq. in. in area and the total area of such openings does not exceed 100 sq. in. for any 100 sq. ft. of wall area, and the space between the wall membrane and the box does not exceed 1/8". Additionally, outlet boxes on opposite sides of the wall shall be separated by a horizontal distance of not less than 24". (712.3.2 EX. 1)

- d. Membrane penetrations by listed electrical boxes of any material are permitted provided such boxes have been tested for use in fire-resistance-rated assemblies, and the space between the wall membrane and the box does not exceed 1/8" unless listed otherwise. Additionally, outlet boxes on opposite sides of the wall shall be separated by a horizontal distance of not less than 24".
(712.3.2 EX. 2)
 - e. A fire sprinkler shall be permitted to be unprotected provided such space is covered by a metal escutcheon plate.
(712.3.2 EX. 3)
 - f. Where walls are penetrated by other materials or openings larger than those mentioned above, they must be qualified by tests in accordance with 703.2.
108. In fire-resistance-rated horizontal assemblies, detail through penetrations and membrane penetrations per 712.4.
109. Penetrations of fire-resistance-rated horizontal assemblies shall comply with 712.4. Through penetrations shall comply with 712.4.1.1.1 or 712.4.1.1.2, or as noted below: (712.4.1.1)
- a. Steel, ferrous or copper conduits may penetrate a single fire-resistance-rated floor assembly when the annular space is protected with material that meets ASTM E 119.
(712.4.1.1 EX. 1)
 - b. Penetrating items, as noted above, with a max. 6" nominal diameter shall not be limited to the penetration of a single fire-resistance rated floor assembly, provided that the area of the openings does not exceed 144 sq. in. in any 100 sq. ft. of floor area.
(712.4.1.1 EX. 1)
 - c. Penetrations shall be fire-stopped by a system installed as tested in accordance with ASTM E 814 or UL 1479. The system shall have an F rating and T rating of not less than 1-hr. but not less than the required fire-resistance rating of the floor penetrated.
(712.4.1.1.2)
 - d. Membrane penetrations by listed electrical outlet boxes are permitted provided such boxes have been tested for use in fire-resistance-rated assemblies, and the space between the ceiling membrane and the box does not exceed 1/8" unless listed otherwise.
(712.4.1.2 EX. 3)
 - e. A fire sprinkler shall be permitted to be unprotected provided such space is covered by a metal escutcheon plate.
(712.4.1.2 EX. 4)
110. Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected an approved fire-resistant joint system with a fire-resistance rating not less than that of the assembly in which it is installed. Provide details.
(713.1)
111. Fire-resistance-rated assemblies shall be supported with a structural system having an equivalent fire-resistance-rated protection.
(714.1)
112. Envelope ceilings cannot be used to provide fire protection for columns, girders, trusses, beams, lintels or other structural members supporting more than two floors or one floor and roof, or support a load-bearing wall or a non-load-bearing wall more than two stories high.
(714.2.1)
113. Where columns are required to be fire-resistance rated, the entire column, including its connections, shall be protected.
(714.2.2)
114. Where the fire protective covering of a structural member is subject to impact damage from moving vehicles, the handling of merchandise or other activity, the fire protective covering shall be protected by corner guards or by a substantial jacket of metal or other noncombustible material to a height adequate to provide full protection, but not less than 5' from the finished floor.
(714.4)
115. Opening protectives in firewalls must comply with 715 and T-715.4.
116. Fire door assemblies shall also meet the requirements for a smoke and draft control assembly.
(715.4.3.1)
117. Fire door assemblies in exit enclosures and exit passageways shall have a max. transmitted temperature end point of not more than 450° F (250° C) above ambient at the end of 30 minutes.
(715.4.4)
118. Fire doors and fire-protection rated glazing shall bear labels as required by 715.4.5 and 715.4.6.3.
119. Fire dampers shall have the min. fire protection rating specified in T-716.3.1 for the type of penetration.
(716.3.1)
120. Fire dampers, smoke dampers, combination fire/smoke dampers and ceiling radiation dampers shall be provided as prescribed in 716.5.1 through 716.5.5 and 716.6.
121. Fireblocking shall be installed in combustibile concealed locations in accordance with 717.2 in the following locations: (Provide Details)
- a. In concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:
 - i. Vertically at the ceiling and floor levels.
 - ii. Horizontally at intervals not exceeding 10'.
 - b. At all interconnections between concealed vertical stud wall or partition spaces and concealed horizontal spaces created by an assembly of floor joists or trusses, and between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, cove ceilings and similar locations.
(717.2.3)
 - c. In concealed spaces between stair stringers at the top and bottom of the run. Enclosed spaces under stairs shall also comply with 1009.5.3.
 - d. Where annular space protection is provided in accordance with 707.2 EX. 6, 712.4.1.2 EX. 1, or 712.4.2, fireblocking shall be installed at openings around vents, pipes, ducts, chimneys and fireplaces with an approved material to resist the free passage of flame and the products of combustion.
(717.2.5)

122. Draftstopping shall be installed in combustibles concealed locations in accordance with 717.3 and 717.4, respectively, at the following locations: (Provide Details)
- In floor-ceiling assemblies so that horizontal floor areas not exceed 1,000 sq. ft. (717.3.3)
 - In attics and concealed roof spaces, such that any horizontal area does not exceed 3,000 sq. ft. (717.4.3)
 - Show draft-stop construction on the plans. Draftstopping materials shall not be less than 1/2" gypsum board, 3/8" wood structural panel, 3/8" particleboard, 1" nominal lumber, cement fiberboard, batts or blankets of mineral wool or glass fiber, or other approved materials adequately supported. (717.3.1)
 - Openings in the partitions shall be protected by self-closing doors with automatic latches constructed as required for the partitions. (717.4.1.1)
123. Draft stop floor ceiling assemblies per 717.3.2 for R occupancies and 717.3.3 for all others.
124. Draft stop attics and mansards per 717.4.

CHAPTER 8 INTERIOR FINISHES

INTERIOR FINISHES

125. Where finish materials are applied on walls, ceilings or structural elements required to have a fire-resistance rating or to be of noncombustible construction, they shall comply with the requirements of 803.4.
126. Note on plans or finish schedule: "Wall, floor and ceiling shall not exceed the flame spread classifications in T-803.5".
127. Thermal and acoustical insulation shall comply with 719. (803.8)
128. Interior floor finish and floor covering materials shall comply with 804.2 through 804.4.1.
129. Combustible materials installed on or embedded in floors of buildings of Type I or II construction shall comply with 805.1.1 through 805.1.3.
130. Decorative materials and trim installed in buildings governed by the SFM shall comply with the provisions of 806.

CHAPTER 9 FIRE PROTECTION SYSTEMS

FIRE PROTECTION SYSTEM

131. Fire barriers separating fire areas shall be rated in accordance with 706.3.9. (901.7)
132. An automatic sprinkler system is required throughout all buildings with a Group "R" fire area. (903.2.7)

133. Exceptions to, or reductions in building code requirements based on the installation of automatic fire extinguishing system is not allowed when utilizing NFPA-13R type residential sprinkler system allowed for Group "R" occupancies. (903.2.7, 903.3.1.2.3, 504.2, 506.3, T-601).
134. An approved automatic sprinkler system is required throughout the (entire building) (fire area) where the (building) (fire area) contains the following: (903.2)
- Has a(n) _____ occupancy; and/or
 - Has a fire area over _____ sq. ft.; and/or
 - Has over _____ occupant load.
135. Building with floor areas over 1,500 sq. ft. shall be sprinklered where 20 sq. ft. of opening for every 50 ft of exterior wall length is not provided on at least one side. (903.2.10)
136. Add a note on plan: "This building must be equipped with an automatic fire extinguishing system complying with (NFPA-13) (NFPA-13R) (NFPA-13D). The sprinkler system shall be approved by _____ prior to installation." (903.3.1)
137. Class (I) (II) (III) standpipe (dry) (wet) (combination) systems are required in this building. Show the location of standpipe hose connections on the plans. (905.3 & 905.4)

138. Provide automatic sprinkler system at top of rubbish and linen chutes and in their terminal room. When extending through 3 or more floors, additional sprinkler heads shall be installed at alternate floors. (903.2.10.2)
139. A (manual) (automatic) fire alarm system is required as a condition for the _____ occupancy. (907.2)
140. Group R occupancies with smoke alarm systems, hard-wired smoke detectors with a battery back up, shall be provided in the following areas (show location on the plans): (907.2.10 & 907.2.10.5)
- Group R-1: sleeping areas, in every room in the path of egress from the sleeping room to the exit door, in each story within the sleeping unit, in enclosed common stairwells.
 - Groups R-2, R-3, R-3.1, R-4, and I-1: on the ceiling or wall outside of all sleeping areas, in each room used for sleeping purposes, in each story within a dwelling unit, in enclosed common stairwells, in Group R-3.1 in addition to the above throughout the habitable areas except the kitchen.
 - Power source shall be from the building wiring and shall be equipped with battery backup.

CHAPTER 10 MEANS OF EGRESS

EXITS

141. Submit an exit plan that labels and clearly shows compliance with all required egress features such as, but not limited to, common path of travel, required number of exits, occupant load, required width, continuity, travel distance, etc. (1001.1)

142. In a two-story building, two exits or more are required when occupant load exceeds 30 or, common path of egress travel exceeds 75'. (1019.1, T-1019.2.)
143. The number of exits shall comply with T-1015.1, T-1019.1 and T-1019.2.
144. Rooms with a common path of egress travel exceeding that allowed in 1014.3 shall have two separate and distinct means of egress.
145. When two exits are required from a building or area, they shall be separated by one-half (one-third if sprinklered throughout) the diagonal dimension of the building or area served. (1015.2.1)
146. Exit width shall be not less than permitted by 1005. The net dimension (clear width) shall be used in determining exit width.
147. In single-story buildings, two or more exits are required when criteria in T-1015.1, T-1016.1, T-1019.1 or T-1019.2 are exceeded. (1015, 1016, & 1019)
148. Two exits or more are required when occupant load of a room or space exceeds the criteria in T-1015.1 or T-1016.1. (1015 & 1016.)
149. Travel distance to reach an exit shall not exceed that allowed in T-1016.1.
150. Every room or space that is an assembly occupancy shall have the occupant load posted in a conspicuous place near the main exit of the room. (1004.3)

CORRIDORS

151. Corridor and exit balcony width shall be not less than (72") (44") (36") (24"). (1017.2)
152. Dead end corridors shall not exceed 20' (50') in length. (1017.3)
153. Provide a complete architectural section of 1-hr. corridor detailing fire-resistance-rated construction of the walls and ceilings. Detail all duct and other penetrations. (708.4, 1017.1, 715.1, T-715.4, 716.5.4)
154. Provide fire/smoke dampers at duct penetrations of 1 hr corridor walls. (716.5.4.1)
155. Glazed openings into 1-hr. corridors shall be protected per T-715.5. The total area of such openings shall not exceed 25% of the common wall with any room per 715.5.7.2.
156. Corridor walls may terminate at the ceiling, only if the entire ceiling is an element of 1-hr. floor or roof assembly. (708.4)
157. 1-hr. corridors and any enclosed ceilings within them shall not be used as an integral part of the duct system. (1017.4)
158. At rooms with exhaust fans adjacent to corridors, show how make up air is provided. No louvers shall be provided. (1017.4.d, 715.4.3.1)

DOORS

159. Two exits or exit access doors of egress shall be provided from boiler, incinerator, or furnace rooms which exceed 500 sq. ft. and any fuel fired equipment exceeding 400,000 BTU input capacity. One exit is permitted to be a fixed ladder or alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the max. horizontal dimension of room. (1015.3)
160. Each leaf of door in the means of egress shall provide 32" clear opening and a min. height of 6'-8", but in no case shall any swinging door leaf exceed 48". (1008.1.1)
161. Provide specifications for the door hardware (i.e., lever type, push-pull, panic, etc) to comply with disabled access requirements. (1133B.2.5.2)
162. Doors serving an occupant load of 50 or more or hazardous rooms or areas shall swing in the direction of exit travel. (1008.1.2)
163. All exit doors and gates from an _____ occupancy shall not be provided with a latch or lock, unless it is panic hardware. (1008.1.9)
164. Revolving, sliding or overhead doors shall not be used as exit doors. (1008.1.2)
165. The bottom 10" of all doors, except automatic and sliding, shall have a smooth, uninterrupted surface. (1133B.2.6)
166. Show that power operated doors are capable of being manually opened to permit exit travel in the event of a power failure. (1008.1.3.2)
167. When additional doors are provided, they shall conform to the provisions for exit doors. (1008.1)
168. Landings or floor level at doors shall not be less than 1/2" below the threshold. Raised thresholds and floor level changes greater than 1/4" at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal. (1008.1.6)
169. Door swinging over landing shall not reduce the width by more than 7" when fully open. When serving 50 or more, the door in any position shall not reduce the required width to less than one-half. (1008.1.5)
170. Doors opening into the path of egress travel shall not reduce the required width to less than one half during the course of swing. When fully open, the door shall not project more than 7" into the required width. (1005.2)
171. Doors and their frames opening into a 1-hr. corridor shall be labeled 20-minute assemblies with smoke and draft control assemblies with self or automatic closers. (715.4.3, 715.4.7)

STAIRWAYS

172. Stairs shall have a min. width of 44" (36"). (1009.1)
173. Straight run stairways shall be detailed as follows:
- a. Max 7.75" and min. 4" rise height. (1009.3)
 - b. Min. 11" tread depth. (1009.3)

- c. Min. 36" clear width. (1009.1)
 - d. Min. 6'-8" vertical headroom measured vertically from a line connecting the edge of the nosing. (1009.2)
 - e. Provide visual striping per 1133B.4.4.
174. Provide section and details of interior or exterior stairway showing:
- a. Max. tread rise of 7" (min. 4") and min. tread run of 11". (1009.3)
 - b. Min. headroom of 6'-8". (1009.2)
 - c. Enclosed usable under stairways require 1-hr. construction on enclosed side. (1009.5.3)
 - d. Provide visual striping per 1133B.4.4.
175. Curved stairways shall have a min. 6" tread depth with a min. 10" tread depth measured at right angle to the tread's leading edge at a point 12" from the side where the treads are narrower. (1009.3, 1009.7)
176. Submit shop drawings for spiral stairway showing compliance with 1009.8. Spiral stairways shall be detailed as follows:
- a. Min. 7.5" clear tread depth at a point 12" from the narrow edge.
 - b. Min. 6'-6" vertical headroom measured vertically from a line connecting the edge of the nosing.
 - c. Max. 9.5" riser height.
 - d. Min. 26" stairway width.
177. Provide a barrier from upper stairs, and stairs leading to the basement. (1020.1.5)
178. Stairs shall be enclosed with fire barriers per 1020.1. Enclosure shall conform to the following:
- a. 2-hr. fire-resistance-rated construction in all buildings 4 or more stories in height and 1-hr. for all other buildings less than 4 stories.
 - b. Only exit doors from habitable space and egress from the enclosure can open into exit enclosures.
 - c. Doors opening into exit enclosures shall be protected per 715.
 - d. Exit enclosures shall include an exit passageway of the same fire-resistance-rated construction as the enclosure leading to the outside of the building, including openings.
 - e. Useable space is not allowed under the stairs. (1009.5.3)
 - f. Exterior stairs shall be separated from the interior of the building with the same rating required for interior stairs. (1023.6)
179. Exterior stairs shall be separated from the interior of the building with the same fire-resistance-rated construction required for interior stairs. (1023.6)
180. In buildings 4 or more stories:
- a. One stair must extend to the roof. (1009.11)
 - b. Stairs must have a penthouse or a smoke hatch. (1009.11.1)
181. Stairs in buildings over 75' (55' due to local ordinance which may apply) in height shall be in a smoke proof enclosure or pressurized stairway per 909.20, 1020.1.7 and 202 high-rise definition.
182. Stair leading from an area of refuge requires a min. of 48" clear between handrails. (1007.3)
183. A min. of 2 areas of refuge with one at an elevator must be provided in accordance with Section 1007.1, 1007.2.1, 1007.4 and 1007.6 since your project is four or more stories above grade.

OTHER COMPONENTS

184. Handrails shall be detailed as follows: (1012)
- a. Handrail shall be continuous without interruption. (1012.4)
 - b. Min. 34" to max. 38" high above the stair tread nosing. (1012.2)
 - c. Min. 1.25" to max. 2" (for accessibility, 1-1/2" per 1133B.4.2.6) circular cross-section for handgrip portion of handrail. (1012.3)
 - d. Min. 4" to max. 6.25" perimeter dimension with max. 2.25" cross-section for non-circular handgrip portion of handrail. (1012.3)
 - e. Min. 0.01" radius for edge of handrail (i.e., no sharp corner). (1012.3)
 - f. Min. 12" horizontally extension beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser serving more than one dwelling unit or not within a dwelling unit. (1012.5)
 - g. The handgrip shall extend 12" beyond the top and 12" plus tread width beyond bottom tread and return the handrail to newel post or wall. (See Title 24 Disabled Access for additional requirements.) (1133B.4.2.2)
 - h. Min. 1-1/2" clear space between handrail and wall. (1012.6)
185. Guards shall be detailed as follows:
- a. Guards shall be located along open-sided walking surfaces, mezzanines, stairways, ramps and landings that are more than 30" above the floor or grade below. (1013.1)
 - b. Guard whose top rail does not serve as a handrail shall have a height of 42" high above the leading edge of the tread. (1013.2)
 - c. Guard whose top rail serves as a handrail shall have a height of 34" to 38" high above the leading edge of the tread. (1013.2)
 - d. Open guard shall not permit 4.375" diameter sphere to pass through any opening. (1013.3)
 - e. Triangular opening formed by tread, stair and bottom rail shall not permit 6" diameter sphere to pass through. (1013.3)

CHAPTER 12 INTERIOR ENVIRONMENT

INTERIOR ROOM, LIGHT AND VENTILATION

186. Guards shall be provided where the roof hatch opening or mechanical equipment is located within 10' of a roof edge or open side of a walking surface and such edge or open side is located more than 30" above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a 21" diameter sphere. (1013.6)
187. Provide emergency escape and rescue from sleeping rooms below the fourth story. Min. net clear opening dimensions of 24" height, 20" clear width, 5.7 sq. ft. area (5.0 sq. ft. at grade floor) and 44" max to bottom of clear opening is required. (1026)
188. Provide window wells at emergency escape and rescue opening with sill height located below ground level. Min. area of 9 sq. ft., min. 3' width, and provide fixed ladder for window wells with a max. vertical depth of 44". (1026.5)
189. Where elevation changes less than 12" occur in the means of egress, sloped surfaces shall be used. (1003.5)
190. Ramp slopes shall not exceed the following:
- a. Max. 1' in 12' (8%) if part of egress. (1010.2)
 - b. Max. 1' in 8' (12.5%) for all others. (1010.2)
 - c. Max. 1' in 48' (2%) for cross slope. (1010.3)
 - d. Max. 30" vertical rise. (1010.4)
191. Ramps with a rise greater than 6" shall have handrails on both sides. (1010.8)
192. Where an egress court serving a building or portion thereof is less than 10' in width, the egress court walls shall have not less than 1-hr. fire-resistance-rated construction for a distance of 10' above the floor of the court. Openings within such walls shall be protected by opening protectives having a fire protection rating of not less than 3/4-hr. (1024.5.2)
193. Exterior balconies, stairways and ramps shall be located at least 10' from adjacent lot lines and from other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with 704 based on fire separation distance. (1024.3)
194. Balconies used for egress purposes shall conform to the same requirements as corridors for width, headroom, dead ends and projections. (1014.5)
195. Exterior egress balconies shall be separated from the interior of the building by walls and opening protection as required by corridors. (1014.5.1)
196. The means of egress system shall be illuminated with at least one foot candle at the floor level. (1006.2)
197. Provide a separate source of power for exit sign illumination. (1011.5.3)
198. Exit signs are required when 2 or more exits are required. Show location of all exit signs. (1011.1)
199. Show conformance for floor-level exit signs and exit path marking in R-1 and R-2 occupancies per 1011.6 and 1011.7 as enforced by the SFM.
200. Show two sources of power for means of egress. (1006.3)
201. Provide a door and window schedule. Show type and size of each.
202. Show the following dimensions for each room or area:
- a. At least one room shall have a min. net area of 120 sq. ft. (1208.3)
 - b. Habitable areas shall have a min. net area of 70 sq. ft. (1208.3)
 - c. A kitchen shall have a min. gross area of 50 sq. ft. (1208.3 EX 1)
 - d. Habitable spaces shall not be less than 7' in any plan dimension. (1208.1)
 - e. Occupiable spaces, habitable spaces, hallways & corridors shall have a ceiling height of no less than 7'-6". (1208.2)
 - f. Bathrooms, toilet rooms, kitchens, storage rooms, & laundry rooms shall have a ceiling height of no less than 7'. (1208.2)
 - g. Kitchen shall have a clear passageway of not less than 3'. (1208.1)
 - h. A min. 15" clearance from center of water closet compartment to any side-wall or obstruction nor 30" clearance from center to center to any similar fixture and a min. 24" clear space in front of water closet. (PC 407.6)
203. Provide natural ventilation in habitable rooms or bathrooms by means of operable exterior wall openings with an area not less than 4% of the room floor area. This is deficient in _____; Mechanical ventilating systems may be permitted if designed in accordance with the Mechanical Code. (1203.4.1, 1203.1)
204. Provide natural ventilation for adjoining spaces. In order to consider any room as a portion of an adjoining room, opening shall be unobstructed and shall have an area of not less than 8% the floor area of the interior room or 25 sq. ft., whichever is greater. (1203.4.1.1)
205. Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated. Provide an exhaust fan with a min. capacity of 50 CFM. Ductless fans are unacceptable. (1203.4.2.1, MC T-4-4)
206. Provide natural light in habitable rooms by means of exterior glazed openings with an area not less than 8% of the room floor area. This is deficient in _____; (1205.2)
207. Provide natural light for adjoining spaces. 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 sq. ft., whichever is greater. Show that the common wall between _____ and _____ complies. (1205.2.1)

208. 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 sq. ft., 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 sq. ft. (1203.4.1.1 EX)
209. 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)
210. For the purpose of providing natural light or ventilation at exterior openings of buildings, a min. yard of 3' in width for one and two story building is required. For buildings more than two stories, the min. width of the yard shall be increased to 1 foot for each additional story. (1206.2)
211. For the purposed of providing natural light or ventilation at exterior openings on opposite sides shall not be less than 6' in width. Courts bounded on three or more sides by the wall of the buildings shall not be less than 10' in length, unless bounded one end by a public way or yard. For buildings more than two stories in height, the court shall be increased 1 foot in width and 2' in length for each additional story. (1206.3)
212. Porch over required windows at _____ must have a min. clear height of 7' with longer side at least 65% open and unobstructed. (1205.2.2 EX 1)
213. Toilet and bathing room floors shall have a smooth, hard, nonabsorbent surface such as Portland cement, ceramic tile or other approved material that extends upward onto the walls at least 6". (1210.1)
214. Walls within 2' of the front and sides of water closets shall have a smooth, hard, nonabsorbent surface of Portland cement, concrete, ceramic tile or other approved material surface to a height of 4', and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture. (1210.2)
215. All shower compartments, regardless of shape, shall have a min. finished interior area of not less than 1,024 sq. in. and shall be capable of encompassing a 30" circle. Shower doors shall swing out. The min. area and dimensions shall be maintained to a point 70" above the shower drain outlet. (PC 411.7)
216. Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth and nonabsorbent surface to a height not less than 70" above the drain inlet per 1210.3. Use of water-resistant gypsum backing board shall be per 2509.2.
217. Built-in tubs with showers shall have waterproof joints between the tub and adjacent wall. (1210.4)
218. Toilet rooms shall be provided with a fully openable exterior window with an area not less than 3 sq. ft. or a vertical duct not less than 100 sq. in. in area for the first water closet plus 50 sq. in. additional of area for each additional water closet, or a mechanically operated exhaust system capable of providing a complete change of air every 15 minutes. Such mechanically operated exhaust system shall be connected directly to the outside, and the point of discharge shall be at least 3' from any opening that allows air entry into occupied portions of the building.
219. Dimension a min. 15" clearance from center of water closet compartment to any side-wall or obstruction nor 30" clearance from center to center to any similar fixture and a min. 24" clear space in front of water closet for bathroom at _____.
(PC 407.6)
220. Occupancies and operations involving flammable or combustible hazards or other contaminant sources shall be designed in accordance with MC. (1203.5)
221. Provide min. 1 foot-candle of stairway illumination at tread runs. (1205.4)
222. Add the following notes to plans:
- a. Flush volumes for low-consumption and water-saver water closets shall be provided with a max. 1.6 gallons of water per flush. (PC 402.1, 402.2)
 - b. Water heater shall be strapped to wall at points within the upper 1/3 and lower 1/3 of its vertical dimensions with the lower a min. 4" above the controls. (PC 508.2.1)
 - c. Garage door extension springs shall be fabricated from either hard drawn-spring wire or oil-tempered wire and installed in accordance with the manufacturer's instruction. (1211)
223. This plan contains _____ courts. Provide details of the proposed wall construction, opening protection and stair protection.
(202, 1206.3, 1203.4.3 ,1024.5)
224. The width of courts shall meet the following: (1206.3)
- a. Not less than 3' in width
 - b. Not less than 6' in width where openings occur on opposite sides
225. Courts shall not be less than 10' in length. (1206.3)
226. Courts located in buildings more than 2-stories in height shall be shall be increased: (1206.3)
- a. 1' in width for each additional story
 - b. 2' in length for each additional story
227. Court access shall be provided at the bottom of courts. (1206.3.1)
228. Courts more than 2-stories shall be provided with horizontal air intake at the bottom not less than 10 sq. ft. and leading to the exterior of the building. (1206.3.2)
229. Courts shall be properly graded and drained to an approved disposal system. (1206.3.3)
230. The ventilating area in enclosed attics and rafter spaces shall be as follows: (1203.2)

- a. Show ventilation type, size, and location on the plans.
 - b. The net free ventilating area shall not be less than:
 - i. 1/150 of the attic space (approximately 10 sq. in. for each 10 sq. ft. of attic area), 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' 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" min. and 1/4" max. opening.
 - e. A min. of 1" airspace shall be provided between insulation and roof sheathing.
231. An opening not less than 20" x 30" shall be provided to any attic area having a clear height of over 30". Min. clear headroom of 30" in the attic space shall be provided at or above the access opening. (1209.2)
232. Under-floor vents shall meet the following requirements: (1203.3)
- a. Show ventilation type, size, and location on the plans.
 - 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 (approximately 10 sq. in. for each 10 sq. ft. of attic area).
 - d. Openings shall have corrosion-resistant wire mesh or other approved material with 1/8" min. and 1/4" max. opening.
233. Show min. 18" x 24" under floor access opening. (1209.1)
234. Access to mechanical appliances in under-floor areas, in attic spaces, and on roofs or elevated structures shall be in accordance with the Mechanical Code. (1209.3)
235. Sound Transmission. In Group R Occupancies, wall and floor- ceiling assemblies separating dwelling units or guest rooms from each other and from public space such as interior corridors and service areas shall provide airborne sound insulation for walls, and both airborne and impact sound insulation for floor-ceiling assemblies. All such separating walls and floor-ceiling assemblies shall provide an airborne sound insulation equal to that required to meet a sound transmission class (STC) of 50 (45 if field tested). All separating floor-ceiling shall provide impact sound insulation equal to that required to meet an impact insulation class (IIC) of 50 (45 if field tested). EXCEPTION: Impact sound insulation is not required for floor-ceiling assemblies over non habitable rooms or spaces not designed to be occupied, such as garages, mechanical rooms or storage areas. (1207.6.1, 1207.7, 1207.8)
- a. Identify all sound rated partitions on the floor plans.
 - b. Provide construction details for the following:
 - i. Sound rated wall assemblies.
 - ii. Sound rated floor-ceiling assemblies.
 - c. Detail all penetrations or openings into sound rated partitions or approved permanent resilient sealants.
 - d. All rigid conduits, ducts, plumbing pipes, and appliance vents located in sound assemblies shall be isolated from the building construction by means of resilient sleeves, mounts, or a min. 1/4" thick approved resilient material. Vents located in sound assemblies shall be isolated from the building construction by means of resilient sleeves, mounts, or a min. 1/4" thick approved resilient material.
 - e. An approved permanent and resilient acoustical sealant shall be provided along the joint between the floor and the separation walls. Floor-ceiling assemblies shall be sealed, lined or insulated with _____.
 - f. Carpets or similar surface material which are part of the floor-ceiling assembly must be installed and inspected before the Certificate of Occupancy is issued and may be replaced only by other floor covering that provides the required impact sound insulation. (1207.8)
 - g. The entrance doors to residential units from interior corridors are required to have a min. STC rating of 26. (Laminated 1-3/4" solid-core doors with resilient stops and gaskets or 18 gauge insulated steel slab doors with compression seals all around, including thresholds will meet this requirement). (1207.7)
 - h. Metal ventilating and conditioned air ducts located in sound assemblies shall be lined. (EXCEPTION: Ducts serving only exit-ways, kitchen cooking facilities, and bathrooms need not be lined).
 - i. Mineral fiber insulation shall be installed in joist spaces whenever a plumbing piping or duct penetrates a floor-ceiling assembly or where such unit passes through the plane of the floor-ceiling assembly from within a wall. The insulation shall be installed to a point 12" beyond the pipe or duct. This requirement is not applicable to fire sprinkler pipe, gas line or electrical conduit.
 - j. Electrical outlet boxes in opposite faces of separation walls shall be separated horizontally by 24" and note that back and sides of boxes will be sealed with 1/8" resilient sealant and backed by a min. of 2" thick mineral fiber insulation. (TV, telephone and intercom outlets must be installed in boxes accordingly.)
 - k. Wall mounted lavatories and toilets are not permitted on sound rated partitions.
236. Sound transmission requirements of BCM 1208 shall all apply in Group R occupancies where the structure is located within 1,000ft. of a freeway, major or secondary highway or within 420ft. of the CL of a railroad. (BCM 1208 A1)

CHAPTER 14 EXTERIOR WALLS

EXTERIOR WALLS

237. Provide veneer details. Show method of anchorage, size and spacing of anchors. Comply with the applicable requirements in 1405.

CHAPTER 15 ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

ROOF

238. The min. roof coverings installed on buildings shall comply with T-1505.1 based on the type of construction of the building. Roof covering shall be Class C rated or better or as required. (1505.1)

239. Identify on the plans the fire-retardant roof classification, manufacturer's name, and ICC/UL/SFM report number. (1506.3)

240. Provide specifications for roofing material and application.

241. Specify approved weatherproof walking surface material at decks and balconies.

242. Clay and concrete tile attachment shall comply with T-1507.3.7. Notes shall be provided on the plans to show compliance. (1507.3.7)

243. Roof slope shown on the plans is not adequate for the type of roof covering specified. The min. roof slope for _____ roof is _____.
(1502.1, 1507)

244. Built-up roofs shall have a min. slope of 1/4" per foot (2%) for drainage. (1507.10.1)

245. Show roof slope(s), drain(s) and overflow drain(s) or scupper(s) on the roof plan. Provide a detail of the roof drain and overflow system. Roof drainage system shall comply with the following requirements:
(1503.4, PC 1108)

- a. Size the roof drains and overflow drains in accordance with Chapter 11 of the PC. (1503.4)
- b. System shall be sized for min. rain intensity of 3" per hour.
- c. The roof drain and overflow drain must maintain independent lines to the yard box.
- d. Roof drainage is not permitted to flow over public property.
- e. Secondary roof drains having the same size as the primary roof drains shall be installed with the inlet flow line located a min. 2" above the low point of the roof.
- f. Scuppers through parapet walls adjacent to the low point of the roof may be used as secondary roof drainage. Scupper openings shall be a min. of 4" high and have a width equal to the circumference of the roof drain required for the area served.
- g. Overflow scuppers shall be designed in accordance to PC T-11-1.

246. Provide and detail access to equipment on roof per MC 904.10.3.

247. Show that the penthouse and/or roof structures satisfy the requirements of 1509. (1509)

CHAPTER 24 GLASS AND GLAZING

GLASS AND GLAZING

248. Each pane of safety glazing installed in hazardous locations shall be identified by a manufacturer's designation specifying who applied the designation, the manufacturer or installer and the safety glazing standard. The following shall be considered specific hazardous locations for the purposed of safety glazing. Glazing in: (2406)

- a. Swing doors.
- b. Fixed and sliding panels of sliding door assemblies and panels in sliding and bi-fold closet door assemblies.
- c. Storm doors.
- d. Unframed swinging doors.
- e. Doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs, and showers.
- f. Fixed or operable panels adjacent to a door where the nearest exposed edge of the glazing is within 24" arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60" above the walking surface. Read code for exceptions.
- g. Fixed or operable panel, other than described in items e and f, which meets all of the following conditions (read code for exception with special installation).
 - i. Exposed area of an individual pane greater than 9 sq. ft.
 - ii. Exposed bottom edge less than 18" above the floor.
 - iii. Exposed top edge greater than 36" above the floor.
 - iv. One or more walking surfaces within 36" horizontally of the plane of the glazing.
- h. Guards and railings regardless of area or height above a walking surface. Included are structural baluster panels and nonstructural in-fill panels.
- i. Walls and fences enclosing indoor and outdoor swimming pools and spas where all of the following conditions are present:
 - i. The bottom edge of the glazing is less than 60" above a walking surface on the pool or spa side of the glazing.
 - ii. The glazing is within 60" of a swimming pool or spa water's edge.
- j. Adjacent to stairways, landings and ramps within 36" horizontally of a walking surface; when the exposed surface of the glass is less than 60" above the plane of the adjacent walking surface (read code for exception with special installation).

- k. Adjacent to stairways within 60" horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60" above the nose of the tread (read code for exception with special installation).
249. For glass handrails and guards, the panels and their support system shall be designed to withstand the loads specified in Chapter 16. A safety factor of four shall be used. The min. nominal thickness of the glass shall be 1/4". Specify approved report number and manufacturer of glass panel guardrail on plans and/or detail. (2407)
250. Skylights set at an angle of less than 45 degrees from the horizontal plane shall be mounted at least 4" above the plane of the roof on a curb constructed as required for the frame. Except for R-3 occupancies, skylights without a curb shall be permitted on roofs with a min. slope of 14 degrees (3 units vertical in 12 units horizontal) per 2405.4 and 2610.2. Glass skylights shall comply with 2405. Plastic skylights shall comply with 2610.

CHAPTER 25 GYPSUM BOARD AND PLASTER

GYPSUM BOARD AND PLASTER

251. A corrosion resistant weep screed, min. 26 galv. sheet gage, is required below the stucco at the foundation plate line a min. 4" above earth or 2" above paved area with a vertical attachment flange of 3.5". Weep screeds shall be of a type which will allow trapped water to drain to the exterior of the building. Show these dimensions on a foundation detail drawing. (2512.1.2)
252. Cement, fiber-cement or glass mat gypsum backers in compliance with ASTM C1178, C1288 or C1325 shall be used as a base for wall tile in tub and shower areas and wall and ceiling panels in shower areas. Water-resistance gypsum backing board shall be used as a base for tile in water closet compartment walls when installed in accordance with GA-216 or ASTM C840. Regular gypsum wallboard is permitted under tile or wall panels in other wall and ceiling areas when installed in accordance with GA-216 or ASTM C840. Water-resistant gypsum board shall not be used in the following locations: (2509.2)
- Over a vapor retarder.
 - In areas subject to continuous high humidity, such as saunas, steam rooms or gang shower rooms.
 - On ceilings where frame spacing exceeds 12" O.C. for 1/2" thick and more than 16" O.C. for 5/8" thick.

STRUCTURAL REQUIREMENTS

253. Allowable values for structural design shall be per the 2008 Los Angeles County Building Code, including all call outs and references.
254. The required snow load for this area is _____ psf. The tributary live load reduction in section 1607.9 is not permitted.

255. For the design wind load in this area, use Basic wind speed of _____ mph (1609, ASCE7 Ch. 6)
256. Delete notes and details on sheets _____ that do not apply to this project. (106.4.3)
257. Key or identify all sections and details as to their location on the plan or elevation views. (106.4.3)
258. The live loads designed to exceed 50 psf for which commercial and industrial floors are designed shall be conspicuously posted by the owner in that part of each story. Clearly note on the plans and show the design live load on the structural plans. (1603.3, T1607.1)
259. Structures and all portions thereof shall resist the most critical effects from the basic load combinations specified in Section 1605 of the Building Code.
260. Indicate the grade and species of framing lumber, treated mudsills, strength of concrete, mix of mortar and grout, grade and weight of masonry units, grades of reinforcing steel, pipes, tubes and framing steel, design soil pressures, and _____.
261. Note on plans. "An AITC Certificate of Inspection for all glued laminated timber shall be submitted to the Building and Safety inspector prior to erection." (BCM)
262. NOTE ON THE PLANS: "The use of rolled steel sections and/or bolts manufactured outside the United States will require verification that the products comply with applicable ASTM Standards. Mill certificates will be required for all steel. Steel grades other than ASTM-A36 will require testing by an approved laboratory. All foreign bolts must be approved by L.A. County Building and Safety prior to their use."
263. Submit design and details of trussed rafters with a layout plan, complete calculations and connector plate design. (2303.4)
264. Fabricated wood trusses shall comply with the requirements of Section 2303.4. Submit attached "Certificate of Approval" to building inspector prior to framing inspection. (BCM 2311.6)
265. Plywood roof panels shall be bonded with exterior glue. (2304.7.2)
266. For wood structural panel roofs and floors, specify panel index no. _____, panel thickness, grades, nailing schedule and panel layout pattern. Note on the plans "Roof diaphragm nailing to be inspected before covering". Face grain of plywood shall be perpendicular to supports. Floors shall have tongue and groove or blocked panel edges. Wood structural panel spans shall conform to T-2304.7 (3) & T-2304.7 (5).
267. Studs in bearing walls are limited to 10-ft. in height unless an approved design is submitted. (T2308.9.1).
268. Provide details for the header support at the corner window(s) at _____. (106.4.3)
269. Studs supporting two floors, roof and ceiling, must be 3x4 or 2x6 studs at 16-in. O.C. max (T-2308.9.1). Submit calculations showing that the allowable stress in compression perpendicular to grain is not exceeded in the plates at the proposed stud spacing.

270. Provide details of the lateral support for the top and bottom of the interior non-bearing walls. (1607.13)
271. Clearly indicate on the plans all wood structural panel and drywall shear walls. All shear panels shall conform to the height width ratio per Table 2305.3.4 & 2305.3.4 of the Building Code. Provide complete nailing schedule for each, including connectors.
272. Provide shear transfer connection details, properly referenced at the top and bottom of all shear walls.
273. Note on the plans that hold-down connector bolts into wood framing require approved plate washers, and hold-downs shall be retightened just prior to covering the wall framing. (2305.3.7.1)
274. Where allowable 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 3-in. nominal or larger member. (2305.3.11 & T2306.4.1)
275. Portland cement plaster (stucco), gypsum lath and gypsum wallboard shear walls are not permitted below the top level of wood construction in a multilevel building. (2306.4.2)
276. Narrow shear panels, not meeting the height to width ratio of Table 2305.3.4, shall meet the following criteria:
- The panels shall only be installed on the first (lowest) story of light-framed construction on a concrete or CMU foundation /wall
 - All installations shall use the respective manufacturer's anchor bolt template, and otherwise be installed per the manufacturer's installation instructions and specifications.
 - The use of narrow shear panels in line with other types or widths of panels requires justification by a rigorous engineering analysis. The analysis must account for the nonlinear force displacement behavior of each panel assembly and the distribution of the lateral forces shall be in accordance with the relative rigidities of the panels at the design load.
 - The listed values of the panels shall be based on tests conducted in accordance with AC120 /SEAOCs protocol.
277. Provide referenced calculations showing the overturning moments in all shear wall segments (2305.3)
278. Show size, location and embedment length of hold-down anchors on the foundation plan. Note on the plans that hold-down hardware must be secured in place prior to foundation inspection. (ASCE7 12.8.5)
279. Provide details showing positive connection between beam ends, walls and supporting posts. (106.4.3)
280. Nominal shear values for shear walls framed with cold-formed steel studs other than 20 gauge shall be justified by complete analysis or tests. (2210.5)
281. Horizontal diaphragms shall not exceed a span to width ratio of 4 to 1. (2305.2.3)
282. Provide a diaphragm analysis to show diaphragm adequacy. (2305.2)
283. Masonry veneer details, anchors, backing, footings and support over openings are required. (2101.2.6)
284. This structure has exterior veneer on wood studs at heights exceeding 30-ft. Provide details complying with Section 1405.
285. Provide a vertical and longitudinal section through each glass block wall showing how it is supported at each edge and reinforced in each direction. Submit lateral calculations. (2110)
- Glass-block panels in exterior walls shall not exceed 100 sq. ft. of unsupported area nor 15-ft. in any dimension. (2110.3.4)
 - Every exterior glass-block panel shall be provided with a min. 3/8-in. expansion joint at the sides and top. Expansion joints shall be entirely free of mortar and shall be filled with a resilient material. Provide a detail on the plans. (2110.5)
286. Precast panels, exterior non-bearing, non-shear wall panels, or elements that are attached to or enclose the exterior shall be designed to resist the forces and connections shall be in compliance with ASCE 7 12.11.5.
287. Provide details, properly referenced, of the anchorage system between the wood roof and floor diaphragms and the concrete or masonry walls. Minimum design force shall be 280-lb/lf. (1604.8, ASCE7 12.11)
288. Provide calculations and details on the plans for the sub-diaphragm and continuous cross tie system required for all wood diaphragms providing lateral support to masonry or concrete walls. (1604.8)
- The wall anchorage shall provide a positive direction connection between the wall and floor or roof construction capable of resisting a horizontal force specified in Section 1604.8 & ASCE7 12.11.2. In addition, a diaphragm to wall anchorage using embedded straps shall have the straps attached to or hooked around the reinforcing steel or otherwise terminated to effectively transfer forces to the reinforcing steel.
 - Elements of the wall anchorage system shall be designed for the forces specified in Section 1604.8. The value of F_p used for the design of the elements of the wall anchorage system shall not be less than 280-lb/lf. of wall substituted for E.
 - When elements of the wall anchorage system are not loaded concentrically or are not perpendicular to the wall, the system shall be designed to resist all components of the forces induced by the eccentricity.
 - When pilasters are present in the wall, the anchorage force at the pilasters shall be calculated considering the additional load transferred from the wall panels to the pilasters. However, the minimum anchorage force at a floor or roof shall be that specified in "b" above. (ASCE7 12.11.2.2.7)
 - The strength design forces for steel elements of the wall anchorage system shall be 1.4 times the forces otherwise required above. (ASCE7 12.11.2.2.2).

- f. Floor and roof diaphragms shall be designed to resist the forces per ASCE7 12.10.1.
 - g. The maximum diaphragm shears used to determine the depth of the sub-diaphragm shall not exceed 300-lb./ft.
 - h. The maximum length-to-width ratio of the wood structural sub-diaphragm shall be 2-1/2:1 per ASCE7 12.11.2.2.1.
 - i. The wall anchorage shall not be accomplished by use of toenails or nails subject to withdrawal, wood ledgers or framing shall not be used in cross-grain bending or cross-grain tension.
 - j. Connections of a diaphragm to the vertical elements in structures having vertical irregularities of ASCE7 Table 12.3-2, shall be designed per the seismic design category application of the same table.
 - k. The structures having a horizontal structural irregularity of Type 2 in ASCE7 Table 12.3-1, diaphragm chords and drag members shall be designed considering independent movement of the projecting wings of the structure. Each of these diaphragm elements shall be designed for the more severe of the following two assumptions:
 - i. Motion of the projecting wings in the same direction.
 - ii. Motion of the projecting wings in opposing directions.
 - l. When designing the diaphragm to comply with the requirements stated above, the return walls, and fins/canopies at entrances shall be considered. Seismic compatibility with the diaphragm by either seismically isolating the element or by attaching the element and integrating its load into the diaphragm.
289. Masonry shear walls shall be designed for 1.5 times the required seismic force for Seismic Design Categories D, E, & F. (2106.5 & 2106.6)
290. Provide an analysis of all tilt up panels with openings. Show that the reinforcing in the panels, on each side of the openings, is adequate. (106.4.3)
291. For each of the metal decks provide the manufacturer and designation, height, complete welding information, reinforcing and thickness and type of fill. (106.4.3)
292. Bracing members and connections in steel braced frames shall be designed per AISC 341.
293. Concrete shear walls must be designed based on the requirements of Section 1908 & ACI 318.
294. Concrete shear wall reinforcement shall be terminated with required development length per ACI 318 beyond the boundary reinforcing at the vertical and horizontal end faces of wall sections.
295. Note on the plans: "Special Inspection by a Los Angeles County registered deputy inspector is required as per Tables 1704.3, 1704.4, 1704.5.1, & 1704.5.3." Provide inspections schedule. (1704, 19, 21, 22)
296. The architect or engineer of record shall list all the deferred submittals on the plans and shall submit the deferred submittal documents to the building official, prior to installation. (106.3.4.2)
- a. Note on the plans: "The deferred submittal items shall be submitted to the architect or engineer of record who shall review and approve them, and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and approved and that they have been found to be in general conformance with the design of the building. The deferred submittal items shall not be installed until their design and submittal documents have been approved by the building official. Provide ample time for the building official to review the documents."
297. Detail the proposed stepped footings. (1805.1)
298. Calculations are required for retaining walls over 4-ft. in height, measured from the bottom of the footing to the top of the wall, including walls less than 4-ft. high supporting a surcharge or sloping earth, or impounding Class I, II, or III-A liquids.
299. For masonry or concrete walls below grade designed as restrained at top. NOTE ON THE PLANS: "The perimeter walls are not to be backfilled until the floor slabs are poured and cured."
300. Foundation walls enclosing a usable space below finished grade shall be waterproofed or damp-proofed in accordance with Section 1807.
301. Structural observation per Section 1709 is required for this project. The engineer of record shall prepare an inspection program, including the name(s) of the individuals or firms who will perform the work. The inspection program shall be shown on the first sheet of the structural drawings. (See attached sheet)
302. Note on the plans: "Compaction report shall be submitted to the Building Inspector prior to footing inspection."
303. Specify on plans the soil bearing pressure used in the design. Submit copy of soils' report to justify. (T-1804.2)
304. Structures assigned to Seismic Design Category C, D, E, or F shall not have elements of structural plain concrete. (1908.1.1)
305. For masonry structures, Type N mortar shall not be used as part of the vertical or lateral-load resisting system. (T-2103.8)
306. The Architect or Engineer of record shall specify S_s & S_1 . (ASCE7 11.4.1)
307. In case of discontinuity at any portion of the lateral load resisting system, such as for vertical or irregularity concrete, masonry, steel, and wood elements supporting such discontinuous systems shall have the design strength to resist the maximum axial force that can develop in accordance with the load combinations with overstrength factor of ASCE7 Section 12.4.3.2. (1630.2.1)

