



City of Los Angeles LARUCP COMMERCIAL PLAN REVIEW LIST



PLAN CHECK NO. _____ PLAN CHECK EXPIRATION DATE: 18 months from submittal date
 PCIS# (s): _____ JOB ADDRESS: _____
 APPLICANT _____ TEL. NO. _____
 LENGTH _____ WIDTH _____ HEIGHT _____ NO. OF STORIES _____
 FLOOR AREA _____ OCCUPANCY GROUP _____ TYPE OF CONSTRUCTION _____
 USE ZONE _____ PARKING: REQUIRED _____ PROVIDED _____ FIRE DISTRICT _____ FLOOD ZONE _____
 BUILDING SPRINKLERS THROUGHOUT? YES / NO METHANE ZONE? YES / NO METHANE BUFFER ZONE? YES / NO

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 parenthesis refer to Code sections of the 2001 edition of the California Building Code, (T=Table), Information Bulletin (IB), Plumbing Code (P.C.), Mechanical Code (M.C.) or Fire Code (F.C.). N.D.S. refers to The National Design Specifications. (*) Corrections used by the City of Los Angeles that may not be used by other municipalities.

Project applicants/representatives are advised to initiate the sign-off processes for the required clearances, listed in the Clearance Summary Worksheet, as soon as possible. The time to obtain the sign-off from some departments, i.e., Department of City Planning, may be time-consuming.

If you cannot comply with the plan check corrections circled under PLANNING & ZONING of this correction sheet, and instead, wish to obtain a discretionary approval from the Department of City Planning, please initiate the request for discretionary approval as soon as possible as the process may be time-consuming due to the probable requirement of a public hearing.

INSTRUCTIONS

- Los Angeles Department of Building and Safety (LADBS) documents may be downloaded from: WWW.LADBS.ORG.
- Corrections with circled item numbers apply to this plan check.
- Incorporate all comments as marked on checked set of plans and calculations and this corrections sheet. 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. Once all the circled corrections and additional corrections have been addressed, **contact the plan check engineer to schedule a verification appointment** to demonstrate compliance with all the corrections.

PLAN CHECK ENGINEER _____ TEL. NO. () _____
 E-MAIL: _____@LACITY.ORG WEBSITE: WWW.LADBS.ORG

Should you have any questions or need clarification pertaining to the corrections, you may contact the plan check engineer by telephone from _____ to _____ on M T W TH F.

- Bring the original checked set of plans and calculations along with this correction sheet to the verification appointment. Do not schedule a verification until all corrections have been addressed.
- Incomplete, indefinite or faded drawings or calculations will not be accepted.
- You may be charged additional plan check engineers' time at \$75 per hour for verifying corrections which you fail to address repeatedly. LAMC 91.0107.3.1.4 and 98.0415(e).

PART I: GENERAL REQUIREMENTS

A. APPLICATION AND PERMITS

1. Provide fully dimensioned plot plan to scale, in ink, or copied to the application plot plan sheet provided. This plot plan must agree with plot plan shown on plans.
2. Valuation is low. It should be \$ _____. Pay a supplemental plan check fee of \$ _____.
3. Arts Development Fees are applicable to this project, as required by Section 107.4.6
4. Provide complete and correct legal description (Tract, Lot, Block, Grant Deed). Provide complete information for applicant, owner, engineer, architect, and contractor.
5. A separate application and permit(s) is/are required for:
 - a. Retaining walls
 - b. Grading (backfill/site grading/removal and recompaction)
 - c. Block walls
 - d. Signs
 - e. Swimming pools
 - f. Fire sprinkler systems
 - g. Each separate structure
 - h. Electrical work
 - i. Mechanical work
 - j. Plumbing work
 - k. Shoring
 - l. Demolition
6. Obtain proof of **lot cut date** prior to _____ (After 6-1-46 comply to zone minimums.) (After 7-29-62 obtain Certificate of Compliance from City Planning.)
7. A recorded affidavit is required for: _____. The affidavit must be approved by the plan check engineer prior to recording.
8. Provide copies of the following documents which appear on this parcel: (_____)

For information on how to obtain copies of affidavits, please call Building and Safety Records Section, Metro office (213) 482-6899 or Van Nuys Office (818) 374-4390. For all other City Planning documents contact the Department of City Planning at (213) 978-1259, or fax request to (213) 978-1263. Additional corrections and/or Clearances may follow upon review of the documents.
9. Provide a copy of the **Certificate of Occupancy** and/or building permit with plot plan showing the permitted use and required parking.
10. **NOTE ON THE PLANS:** "No Alcoholic beverages are permitted." Conditional use is required.
11. **Where there is an excavation** of a greater depth than are the walls or foundation of an adjoining building or structure and located closer to the

property line than the depth of the excavation, the owner shall provide the Department of Building and Safety with evidence that the adjacent property owner(s) have been given a 30-day written notice of such intent to make an excavation. This notice shall state the depth of such excavation and when it will commence. This notice shall be by certified mail, return receipt requested.

(3301.2.1)(IB: P/BC 2002-060)

12. 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:** Owner's 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. 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.
 - iv. Copy of City of Los Angeles business tax registration certificate or a newly paid receipt for one.
13. (Soil)(Foundation)(Geology) report(s) must be approved by the Grading Section. Provide copy of approved report and Department approval letter. Show compliance with all the requirements of the reports and the approval letter conditions.
- *14. Provide temporary shoring plans for excavations that remove the lateral support from a public way or an existing building. Excavations adjacent to a public way require Public Works approval prior to issuance of building permit.

B. REFERRALS

1. Please see the attached **clearance summary worksheet** for the clearances required prior to issuance of building permit. **Project applicants/representatives are advised to initiate the sign-off processes for these clearances as soon as possible. The time to obtain the sign-off from some departments, i.e., Department of City Planning, may be time-consuming. Read the comments attached to the clearance, if any, as they often contain important and useful information.**
2. Parcel Map/Tract Map _____ must be recorded before a permit can be issued. Submit a copy of the recorded map.
3. For energy insulation requirements, see attached "Energy Correction Sheet."

C. STORM WATER - BEST MANAGEMENT PRACTICES

1. **STORMWATER DEVELOPMENT CONSTRUCTION PROGRAM** - Best Management Practices (BMPs) necessary to control pollutants from leaving construction

sites are required to be shown on the plans in accordance with the requirements of the "Development Best Management Practice Handbook, Part A Construction Activities" as adopted by the Board of Public Works (exception 14, section 106.4.1):

- a. Construction sites that will disturb the soil shall implement the applicable BMPs identified on attachment "A" entitled "Minimum Requirements for Construction Projects/Certification Statement." Attachment "A" or copy thereof shall be signed by the owner or an authorize agent of the owner, and either be attached or incorporated into the approved plans, and
- b. Construction sites that will disturb one acre (43,560 sq. ft.) or more of soil are required to obtain a Notice of Intent (NOI) from the State Water Resource Control Board and prepare a State Storm Water Pollution Prevention Plan (SWPPP). Note: NOIs are process by mail from Sacramento, CA.

2. **STORMWATER DEVELOPMENT PLANNING PROGRAM** - Best Management Practices (BMPs) necessary to control pollutants after construction are required to be incorporated into the developments in accordance with the requirements of the "Development Best Management Practice Handbook, Part B Planning Activities" as adopted by the Board of Public Works (exception 15, section 106.4.1):

- a. **Standard Urban Stormwater Mitigation Plan (SUSMP)** is required to be prepared and submitted to the Watershed Protection Division, Bureau of Sanitation, Department of Public Works for review and approval if the development is one of the following categories of projects:
 - Commercial/Industrial developments with 43,560 square feet or more of impervious surfaces (including buildings and parking areas).
 - Auto Repairs Facilities (not including auto sound or alarm facilities).
 - Retail Gasoline Services Stations.
 - Stand-alone Restaurants (including take outs).
 - Parking lots (including roof top parking) with 25 or more parking spaces or 5,000 sq. feet or more (including accessory driveways).
 - Residential projects with 10 or more dwelling units.
 - Projects located in or adjacent to or discharging directly into an Environmental Sensitive Area.

and

- Is a new development or
- An existing developments where the proposed work results in the addition or replacement of 5,000 square feet of impervious surface areas.

b. **Site Specific Mitigation Plan (SSMP)** is required to be prepared and submitted to the Watershed Protection Division, Bureau of Sanitation, Department of Public Works for review and approval if the development containing one or more of the following specific uses:

- Vehicle or equipment fueling areas.
- Vehicle or equipment maintenance areas, including washing and repair.
- Commercial or industrial waste handling or storage.
- Outdoor handling or storage of hazardous materials.
- Outdoor manufacturing areas.
- Outdoor food handling or processing.
- Outdoor animal care, confinement, or slaughter.
- Outdoor horticulture activities.
- Major Transportation projects.

and

- Is a new development or
- An existing developments where the proposed work results in the addition or replacement of 5,000 square feet of impervious surface areas.

For information regarding SUSMP or SSMP, please contact the Watershed Protection Division, Bureau of Sanitation at 1-323-342-1501

D. PLANS

1. Each sheet of the architectural and structural plans must bear the signatures, registration number and expiration date of an architect or engineer registered in the State of California
2. The address of the building and the name and address of the owner and designer are required on the first sheet of the plans.
3. Provide fully dimensioned plot plan to scale. Show legal description, building lines, easements, lot size, zone boundaries, highway dedication lines, street center line, alley, parking spaces, area separation walls, and location of all buildings. (Show type of construction, number of stories and use of all buildings.) (106.3.2.1)
4. Two sets of plans and one set of calculations will be required when permit is issued per Sections 106.3.2.2.& 106.3.3. Plans Shall be:
 - a. Quality blue or black line drawings with uniform and light background color.
 - b. Max. 36' x 48" size with minimum 1/8" lettering size.
 - c. Sticky back details must produce prints without contrasting shades of background color.
5. Provide the following with each set of plans:

9 Topography Survey Map	9 Grading Details
9 Floor Plans	9 Two Elevations
9 Construction Section	9 Foundation Plans
9 Framing Plans	9 Structural Details

6. The final set of plans must be stamped by the following agencies: (Disabled Access Division), (City Planning Dpt.), (Fire Dpt), (_____), (_____).
7. Show on site plans the natural and finish grade elevations around the perimeter of the building. Show elevations for all floors and top of roof. Survey Map must be signed by a licensed Surveyor or Civil Engineer. (106.4.3.3)
8. Building projections into public properties must comply with Chapter 32.
9. Note on the plans: "Temporary pedestrian protection shall be provided as required by Section 3303.7
10. Show location and distance of active and abandoned oil wells with respect to building perimeter.
11. Void or delete all plans, details and notes that do not pertain to this project.
- 45 ft. in height and shall also comply with the transitional height requirements of Section 12.21.1A10. (12.22 A 23)
8. In a Mini-Shopping Center or Corner Lot Development **Tandem parking** is not permitted. (12.22A23(a)(2)(1))
9. Provide a **10' front yard** for a building in the CR, C1, or C1.5 Zone, and a min. rear yard when abutting a A or R Zone.
10. Maintain a () foot **building line** setback.(12.22C1)
11. Comply with the provisions of the _____ **Specific Plan.**
See attached Ord./ handout.
12. Provide a 400 / 600 ft² **loading space** 20 ft min. length adjoining the alley. (12.21C6(c))
13. Show **storage area** on rear half of lot that is enclosed with 6'high solid fence with necessary gates. (12.14A42)
14. Provide a **summary for the use and floor area** of all buildings on site, for use in determining required parking.
15. Provide **records** from our files section for permits showing the required existing parking on site.
16. Provide () **paved parking spaces**. A minimum of 60% shall be standard stalls.(12.21A4, 12.21A5(c))
17. **Off Site parking** if required - Obtain use of land permit, and file Off Site Parking Affidavit. (12.21A5(h))
18. **Tandem parking** requires filing of an Attendant Parking Affidavit.
19. Provide parking design per Information Bulletin, **P/ZC 2002-001**. Plans shall be to an appropriate scale (around 1/8"=1') and be fully dimensioned to show stall widths (including increases for obstructions and end aisle stalls), aisle widths, and circulation driveways. (12.21A5)
20. Provide note on plans: **Double striping** of stalls shall be per Section 12.21A5(l), Chart No. 5.
21. Provide **Walls** - Parking and turning areas within 15' of a property line must be enclosed by a **5'- 9" high wall***. A **3' high wall*** is required where parking is within 15' of the sidewalk. (12.21A6(d), (e), (f))

*A solid concrete or masonry of 6" thick construction is required for parking areas of over 4 cars. (12.21A6(f))

PART II: *PLANNING & ZONING

If you cannot comply with circled corrections in this section, and instead, wish to obtain a discretionary approval from the Department of City Planning, please initiate the request for discretionary approval as soon as possible as the process may be time-consuming due to the probable requirement of a public hearing.

1. The proposed **use** () is not permitted in the () zone.
2. **Conditional use** approval from City Planning is required for the proposed _____ use.
3. Limit the **floor area** to not more than 1.5 X the buildable area of the lot for Height District 1. (12.21.1A1)
4. In Height District 1-VL, buildings are limited to 3 stories and the height can not exceed 45 ft. (12.21.1A1)
5. No building or structure can exceed the heights shown below due to proximity to an RW1 or more restrictive zone either adjacent or across a street or alley. (12.21.1A10)

Distance	Height
0 to 49 ft	25 ft
50 to 99 ft	33 ft
100 to 199 ft	61 ft

6. Comply with all requirements of the **Mini-Shopping Center / Commercial Corner Development** regulations or obtain a Conditional Use Permit from City Planning. (12.22A23)
7. Buildings in a mini-shopping center located in Height District Nos. 1 and 1-L shall not exceed

22. Maximum **Driveway slope** is 20%. Grade details and transition slopes required where slope exceeds 12½%.~ Maximum driveway cross slope is 10%. Maximum slope within parking area is 5%. (12.21A5(g))
23. Automobiles are not permitted to **back onto** a public street or sidewalk. (12.21A5(i)1)
24. Provide 3 ft 6 in high enclosing **walls** at each floor level of parking garages in the PB, C1.5, C2, C4, C5, CM zones. (12.12.1.5A2(a), 12.13.1.5A2(b)5, 12.14A24, 12.16A2, 12.17.1A1)

25. Provide 10'x10' **visibility triangle** from property line, open from 2.5' to 10' above curb.(12.21C7)
26. **Transportation Demand Ordinance**. Check zoning section 12.26J. Requirements vary depending on size starting with developments of 25,000 ft². Obtain clearance from Traffic Dept.
27. Provide () **bicycle** parking spaces for buildings over 10,000 ft²; show size and location. Show () lockers, and () shower stalls per zoning section 12.21A16. Up to 2% of required auto parking may be replaced with bicycles.
28. Provide **recycling room** or enclosed area per Section 12.21A19.
6. Wood panel type doors must have panels at least 9/16 in. thick with shaped portions not less than 1/4 in. thick and individual panels must be no more than 300 sq. in. in area. Mullions shall be considered a part of adjacent panels except mullions not over 18 inches long may have an overall width of not less than 2 inches. Stiles and rails shall be of solid lumber in thickness with overall dimensions of not less than 1 3/8 inches and 3 inches in width. (6709.1 item 2)
7. Sliding doors shall be provided with a device in the upper channel of the moving panel to prohibit raising and removing of the moving panel in the closed or partially open position. (6710)
8. Sliding glass doors shall be equipped with locking devices and shall be so constructed and installed that they remain intact and engaged when subjected to the tests specified in Section 6717.1
9. Metal or wooden overhead or sliding doors shall be secured with a cylinder lock, padlock with a min. 9/32" diameter hardened steel shackle and bolted, hardened steel hasps, metal slide board, bolt or equivalent device unless secured electrically operated. (6711)
10. Provide metal guides at top and bottom of metal accordion grate or grille-type doors and cylinder locks or padlocks. Cylinder guards shall be installed on all cylinder locks whenever the cylinder projects beyond the face of the door or is otherwise accessible to gripping tools. (6712)
11. In B, F, M, and S occupancies, panes of glazing with at least one dimension greater than 5 in. but less than 48 in. shall be constructed of tempered or approved burglary-resistant material or protected with metal bars or grilles. (6714)
12. Glazed openings within 40" of the door lock when the door is in the closed position, shall be fully tempered glass or approved burglary resistant material, or shall be protected by metal bars, screens or grills having a maximum opening of 2". The provisions of this section shall not apply to view ports or windows which do not exceed 2" in their greatest dimensions. (6713)
13. Louvered windows shall be protected by metal bars or grills with openings that have at least one dimension of 6" or less, which are constructed to preclude human entry. (6715.3)
14. Other openable windows shall be provided with substantial locking devices. In B, F, M and S occupancies, such devices shall be glide bars, bolts, cross-bars, and/or padlocks with minimum 9/32" hardened steel shackles and bolted, hardened steel hasps. (6715.2)
15. Sliding windows shall be provided with a device in the upper channel of the moving panel to prohibit raising and removing of the moving panel in the closed or partially open position. (6715.1)
16. Sliding windows shall be equipped with locking devices and shall be so constructed and installed that they remain intact and engaged when subjected to the tests specified in Section 6717.2.
17. Any release for metal bars, grills, grates or similar devices constructed to preclude human entry that are

PART III: NONSTRUCTURAL PLANS

E. ACCESSIBILITY REQUIREMENTS

For the State of California requirements, see separate marked up plans and correction sheet. Contact the ADA plan checker to verify these corrections.

F. METHANE SEEPAGE REQUIREMENTS

This project is located within an area designated as a Methane Zone / Methane Buffer Zone.
For requirements, see the "Supplemental Correction Sheet For Methane Seepage Regulations."

G. ENERGY REQUIREMENTS

See attached "LARUCP Energy Conservation Plan Check List"

H. SECURITY REQUIREMENTS*

1. Screens, barricades, or fences made of material which preclude human climbing shall be provided at every portion of every roof, balcony, or similar surface which is within 8 ft. of the utility pole or similar structures. (6707)
2. Wood flush-type doors shall be 1 3/8" thick minimum with solid core construction. (6709.1)
3. All pin-type door hinges accessible from outside shall have non-removable hinge pins. Hinges shall have min. 1/4" dia. steel jamb stud with 1/4" min. protection. The strike plate for latches and holding device for projecting dead bolts in wood construction shall be secured to the jamb and the wall framing with screws no less than 2-1/2 long. (6709.5), (6709.7)
4. Provide dead bolts with hardened inserts; deadlocking latch with key-operated locks on exterior. Locks must be openable from inside without key, special knowledge or special effort (latch not required in B, F, and S occupancies. (6709.2)
5. Straight dead bolts shall have a min. throw of 1" and an embedment of not less than 5/8", and a hook-shaped or an expanding-lug deadbolt shall have a minimum throw of 3/4". (6709.2)

installed shall be located on the inside of the adjacent room and at least 24 inches from the closest opening through such metal bars, grills, grates or similar devices that exceeds two inches in any dimension. (6715.4)

18. All other openings must be protected by metal bars or grilles with openings of not less than 6 inches in one dimension. (6716)

I. AREA AND OCCUPANCY

1. Show on the plans the proposed number of stories, occupancy group(s), type(s) of construction and area justification for this structure. Vent shafts and courts do not count as area. The mezzanine floor area must be included in the area of the story in which it is located. The basement need not be included in the total allowable area if it is not a story and does not exceed the area permitted for a one-story building. Specify the use of all rooms/areas on floor plans. Provide an area breakdown by level.
2. Exterior (bearing) (nonbearing) walls within _____ feet of property lines must be of _____ hour construction. (503.2)
3. Openings in exterior walls within _____ feet of property lines (must be protected with three-fourths-hour fire assemblies) (not permitted). (503.2)
4. Provide minimum 30 inch high parapet at _____ wall(s) (709.4)
5. Limit openings to 50% of the area of any exterior wall where protected openings are required. (503.2.2)
6. The building as shown is a mixed-occupancy building. The sum of the ratios of the actual area for each separate occupancy divided by the total allowable area for separate occupancy must not exceed one. (504.3)
7. A property line must be assumed between buildings on the same property(court walls) to determine wall and opening protection requirements. (503.3)
8. The total floor area must be limited to _____ square feet, including increase of _____ percent for _____-ft. yards at _____ sides, 100 percent for multistory buildings and doubling (tripling in one-story buildings) for sprinklers. (504 & 505)
9. Unobstructed yards of _____ feet must be maintained on _____ sides of the building to permit a _____percent floor area increase(505)
10. Projections beyond the exterior wall must not extend beyond:
 - a. A point one-third the distance to the property line from an exterior wall. (503.2.1)

- b. A point one-third the distance from an assumed vertical plane located where fire- resistive protection of openings is first required due to location on property. (503.2.1 & 705)

- c. point more than 12" into area when openings are prohibited. (503.2.1)

11. A complete separation is required between Group _____ and Group _____ Occupancies. Detail construction of all walls, partitions, floors and ceilings of the separation to provide _____ hour construction. Openings in the separation shall have _____ hour fire assemblies.
12. Provide _____ water closets for women, _____ water closets for men, and _____ urinals. (2901), (P.C., T 4-1), (IB: P/BC 2002-95)
13. Show maximum height of the structure from top of roof to grade on all elevation views.
14. This structure is of type _____ construction. Show on the plans the required _____ roof, _____ exterior wall construction, structural frame protection, and _____ floor construction. (Table 6-A)
15. Ducts through two-hour area separation walls require dampers.
16. Exterior exit balconies must not project into yards where wall openings are not permitted or must be protected. (1006.2.1)
17. Exterior exit stair must not project into yards where wall openings are not permitted or must be protected. (1006.2.1)
18. Horizontal occupancy separation must be supported with a structural system having equivalent fire-resistive protection. (302.2)
19. Vertical occupancy separations must afford a complete separation and must extend through underfloor and attic areas, including areas where fire-resistive ceilings are specified. (302.2)
20. Provide detail to show that (2) _____ hour area separation walls will comply with Section 504.6.
 - a. Extend vertically from the foundation to a point 30 inches above the roof. (504.6.4)
 - b. Total width of all openings in area separation walls is limited to 25 percent of the wall length in the story under consideration . (504.6.2)
 - c. All openings to be protected with fire assemblies having a fire-resistive rating of (1-1/2) (3) hours.
 - d. Ducts through area separation walls should be avoided. If allowed duct penetrations should be protected as required in Section 713.11.
21. Note on plans: fire blocking must be provided in accordance with Section 708.2.1 in the following locations:
 - a. In concealed spaces of stud walls and partitions,

- including furred spaces, at the ceiling and floor levels.
- b. In concealed spaces of stud walls and partitions, including furred spaces, at 10-foot intervals along the length of the wall.
 - c. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and covered ceilings.
 - d. In concealed spaces between stair stringers at the top and bottom of the run and between studs along and in line with the run of stairs if the wall under the stairs is unfinished.
 - e. In openings around vents, pipes, ducts, chimneys, fireplaces and similar openings which afford a passage for fire at ceiling and floor levels, with noncombustible materials.
22. Show draft stop location on plans. Also, provide these notes on the plans:
 - a. In non-residential buildings, draft stops must be so installed in wood frame floor construction containing concealed space that the area of the concealed space does not exceed 1000 (3000) square feet and the horizontal dimension between stops does not exceed 60 (100) feet. (708.3.1.1.3)
 - b. In non-residential buildings, draft stops must be so installed in the attic (mansards) (overhangs) (false fronts set out from walls) (similar concealed spaces) formed by combustible construction that the area of the concealed space does not exceed 3000 (9000) square feet and the horizontal dimension between stops does not exceed 60 (100) feet. (708.3.1.2.2)
 - c. Draft-stopping materials must not be less than ½-inch gypsum board, 3/8-inch plywood, 3/8-inch Type 2-M particle board or other materials approved by the building department. Draft-stopping must be adequately supported. (708.3.1.3)
 23. In buildings over one-story in height, members supporting concrete or masonry walls require 1-hour fire resistive protection or the fire resistive requirement of the wall, whichever is greater. (704.4)
 24. Exterior stairs must be constructed of _____ as specified in Section 602.4 (603.4) (604.4) (605.4) (606.4)
 25. Building shall be sprinklered as the floor area exceeds 1500 sq. ft. and 20 sq. ft. of opening for every 50 ft of wall length is not provided. (904.2.2)
 26. Group _____ Occupancy requires automatic sprinkler system. (904.2.3 - 904.2.11)
 27. Provide an automatic sprinkler system in every building of Group B, Group F, Division 1, Group M, Group S, Division 1 and 2 Occupancies constructed in Fire District 1 or 2 with a floor area exceeding 3000 square feet. (7203.6)
 28. Envelope ceilings must satisfy the following conditions of Section 704.2.6
 - a. Envelope ceilings must not be used to provide fire protection for beam and girders supporting more than one floor or roof.
 - b. Columns must be individually fire protected.
 - c. The areas of openings for copper, sheet steel and ferrous plumbing pipes must be limited to 100 square inches in each 100 square feet of ceiling area. Duct openings must be protected by approved ceiling fire dampers.
 - d. Individual electrical outlet boxes must be of steel and not greater than 16 square inches in area.
 29. Combustible materials framed into a fire-resistive wall must have one half the required wall thickness as end protection. (709.2)
 30. In fire-resistive exterior wall construction, the fire-resistive rating must be maintained for such walls passing through attic areas. (709.3)
 31. Penetrations in walls requiring protected openings must be firestopped with an approved material in accordance with Section 709.6. Space between penetrating materials (described below) must be designed to prevent the movement of hot flame or gases.
 - a. Copper or ferrous pipes or conduits may penetrate the walls or partitions, provided they are firestopped.
 - b. Openings for steel electrical outlet boxes not exceeding 16 square inches are permitted provided openings do not aggregate more than 100 square inches or 100 square feet of wall or partitions. Outlet boxes on opposite sides of walls or partitions must be separated by a horizontal distance of 24 inches.
 - c. Where walls are penetrated by the other materials or where larger openings are required than permitted in (ii.) above, they must be qualified by tests conducted in accordance with Section 703.2.
 32. Smoke and fire dampers must be installed in the following locations per Sections 713.10 & 11:
 - a. Duct penetrations of area or occupancy separation walls with ratings of two hours or less.
 - b. Ducts passing through horizontal exit walls.
 - c. Ducts penetrating shafts.
 - d. Ducts penetrating fire-resistive elements of fire-rated corridor walls. See exception for steel ducts with no openings into corridor.
 33. Show the location on the plans: Class I, II or III standpipe (dry, wet, combination) are required in this building. Hose size is respectively 2 ½", 1 ½" outlets

for the sprinkler system.
(904.5.1 thru 5, T 9-A)

34. The Type I parking structure permitted by section 311.2.2 is a story rather than a basement. This structure is 4 stories in height and requires sprinklers throughout. (904.2.2-5)
35. This structure has _____ Atrium(s). Show that the requirements of Section 402 are satisfied. (402.1 thru 10)
36. All openings in an exterior wall below and within 10 ft. measured horizontally, of an exterior exit stairway serving buildings over two stories in height shall be protected by a fixed or self-closing assembly having 3/4 -hr. fire protection rating. Openings may be unprotected when two separated exterior stairways serves an exterior exit balcony. (1006.3.3.3)
37. Pressurized enclosures are required for all exits in buildings having floors used for human occupancy located more than 75 ft. above the lowest level of Fire Department vehicle access. (1005.3.3.7)
38. Show the location, on plans, of any room(s) that will be used for "compact storage" (movable files). Rooms that are used for "compact storage" must comply with the following requirements: LAMC, Section 94.2012.1
 - a. The maximum area of a "compact storage" room is limited to 1500 square feet for systems designed as Ordinary Hazard Group 2 and 5000 square feet for for Extra Hazard Group 1.
 - b. The clear space below the sprinklers shall be a minimum of 18 inches between the top of the storage and the ceiling sprinkler detector.
 - c. The minimum design live load for "compact storage" rooms shall be 250 psf.

width of not less than 32" and shall be capable of opening 90 degrees. The maximum door leaf width is 4 feet when serving an occupant load of 10 or more. (1003.3.1.3a) & (1003.3.1.4)

- c. Exit doors shall be of the pivoted, balanced or side-hinged swinging type. (1003.3.1.5)
3. Door(s) # _____ serve(s) an area that has an occupant load of 50 or more. Swing this/these door(s) in the direction of egress. (1003.3.1.5)
4. Show the path of exit travel to and within exits. The exit path shall be identified by exit signs conforming to the requirements of Section 1003.2.8. Exit signs shall be readily visible from any direction of approach. Exit signs shall be located as necessary to clearly indicate the direction of egress travel. No point shall be more than 100 feet (30480 mm) from the nearest visible sign. (1003.2.8.2)
5. Note on Plans: Exit signs shall be internally or externally illuminated. When the face of an exit sign is illuminated from an external source, it shall have an intensity of not less than 5 foot candles (54 (lx)) from either of two electric lamps. Internally illuminated signs shall provide equivalent luminance and be listed for the purpose. (1003.2.8.4)
6. Note on plans: The exit signs shall also be connected to an emergency electrical system provided from storage batteries, unit equipment or an on-site generator set, and the system shall be installed in accordance with the Electrical Code. For high-rise buildings, see Section 403. (1003.2.8.5)
7. Note on plans: The power supply for means of egress illumination shall normally be provided by the premises of electrical supply. In the event of its failure, illuminator shall be automatically provided from an emergency system for Group I, Divisions 1.1 and 1.2 Occupancies and for all other occupancies where the means of egress system serves an occupant load pf 100 or more. (1003.2.9.2)
8. Separation between exits/exit access is only _____ ft., less than _____ ft. which is one-half of the diagonal dimension of the building/area served. (1004.2.4)
9. Exits shown at _____ shall be maintained until arrival at grade or the public way. (1004.2.3.1)
10. Change of elevation at _____ is more than 12 inches. Provide steps or stair. (1003.3.3)
11. Corridors require 1-hour rated walls and ceiling construction. Provide details, properly referenced, at all corridors. (1004.3.4.3.1)
12. Door(s) _____ located in a 1-hour corridor shall be protected by a 20-minutes tight fitting, self-closing smoke and draft control door and frame assembly which bears an approved label followed by the letter "S". (1004.3.4.3.2.1)
13. Provide ramp at _____ since interior elevation change is less than 12 inches (305 mm) along the path of exit travel serving an occupant load of 10 or more. (1003.2.6)

J. MEANS OF EGRESS

1. For areas having fixed benches or pews, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of length of pew or bench. Where fixed booths are used in dining areas, the occupant load shall be based on one person for each 24 inches (610 mm) of booth length. Where fixed benches, pews or booths are curved, the larger radius shall determine the booth length. (1003.2.2.2.3)
2. All exit doors serving an occupant load of 10 or more shall comply with Section 1003.3.1.
 - a. Revolving, sliding and overhead doors shall not be used as required exit doors. (1003.3.1.2)
 - b. All required exit doors shall be not less than 3 ft. wide, 6'-8" high, shall have a clear exit way

14. Exit doors shall be openable from the inside without the use of a key, special knowledge or effort. Flush bolts or surface bolts are prohibited. "Applies also to exit gates". The unlatching of any leaf shall not require more than one operation. (1003.3.1.8)
15. Show that the exit hardware on the exterior exit doors of this building satisfies the requirements of Section 1003.3.1.9.
16. At _____, double-acting doors shall not be used as exits as they serve an occupant load of more than 100 (the door is part of a fire assembly) (the door is a part of a smoke-and draft-control assembly) (panic hardware is required or provided). (1003.3.1.5)
17. Double-acting doors must have a view panel of not less than 200 square inches. (1003.3.1.5)
18. For ramp at _____, provide enough details to show that the width, slope, landings and handrails satisfy the requirements of Section 1003.3.4. (1003.3.4.1)
19. Exiting through more than one intervening room is not permitted for an occupant load of 10 or more.
Location: _____ (1004.2.2)
20. Post a sign adjacent to the required main exit door with 1" lettering stating: " THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS." Main exit only. (1003.3.1.8)
21. Plans must indicate the floor or landing on each side of doors is not more than 1/2 (1) inch lower than the threshold of the doorway. (1003.3.1.6)
22. Door at _____ opens over a landing. The landing shall have a length of not less than (36")(44")(60" HCD) and be not more than 1/2" below the threshold. 1" is OK if access is not required. (1003.3.1.6&7)
23. Doors shall not project more than 7" into the required corridor width when fully opened, or more than one half into the required exit when in any position. See door at _____ (1003.3.1.7 & 1004.3.3.2)
24. Dead end (hallways), (corridors), (exit passageways), (exterior exit balconies), (exterior exit ramps & exit courts at other than grade) must not exceed 20 feet. (1004.2.6), (1005.3.4.6), (1006.2.2)
25. Details of the _____ stairway are required showing: (1003.3.3)
 - a. A maximum 7" rise and minimum 11" run (tread). (1003.3.3.3)
 - b. A minimum headroom over the stairs of 6'-8." (1003.3.3.3)
- c. A minimum (36") (44") clear width. (1003.3.3.2)
- d. Handrails at all stairways with two or more risers.
- e. Handgrip portion of handrail shall not be less than 1 1/4" nor more than 2" in cross-sectional dimension having a smooth surface with no sharp corners. (1003.3.3.6)
- f. A handrail height 34" to 38" above the nosing, 1 1/2" clearance to the wall, 2" max. width and ends returned to the wall. The open side shall have intermediates rails or balusters spaced 4" maximum.
- g. Handrails designed for 20 or 50 lbs./ft. lateral load. (Table 16-B)
- h. One handrail extending 12" beyond the top and bottom riser.
- i. Stairway framing, footing, connections and bracing.
- j. One-hour construction for the enclosed usable space under the stairs. (1003.3.3.9)
- k. A stair width determined as specified in Section 1003.2.3, but not less than 44" for OL \geq 50 or 36" for OL < 50. (1003.3.3.2)
- l. Stairway landing(s) (36") (44"). (1003.3.3.5)
- m. Maximum, 12 ft. vertical distance between landings. (1003.3.3.5)
26. For glass handrails and guardrails, without vertical supports, provide Los Angeles Research Report # (LARR #) showing that the glass and base connections shown on the plan are adequate for the required 20 or 50 lbs./ft lateral load. (Table 16-B)
27. The means of egress system at _____ has a clear height of less than 7 feet. (1003.2.4)
28. The second story requires two exits. Occupant load \geq 10. (1004.2.3.2)
29. Two exits, separated by _____ feet at the _____ floor and/or roof are required. (1004.2.4)
30. Provide a barrier in the exit enclosure at _____ to prevent accidental entry into the basement. (1005.3.3.4)
31. Building is four (4) or more stories in height, provide an approved stairway sign indicating the floor level, terminus of the top and bottom of the stair and the identification number of the stair. It shall be located approximately 5 ft. above the floor landing and be readily visible when the stair doors are in an open or closed position. (1003.3.3.13, UBC Std. 10-2)
32. There shall not be enclosed usable space under interior stairways or ramps in an exit enclosure, and exterior stairways. The open space under such stairways shall not be used for any purpose. (1005.3.3.6, 1006.3.3.2)
33. Provide floor-level exit signs in all corridors serving guest rooms of hotels where exit signs are required by Section 1003.2.8.2. (1007.6.2)

34. The exit passageway requires _____ hour construction for walls, floor and ceiling. Walls shall be without openings except for required exits. Exit openings through enclosing walls shall be _____ hour rated. (1005.3.4.3, 1005.3.4.4)
35. Where an exit passageway is used and more than one exit is required, dead ends shall not exceed 20 feet in length. (1005.3.4.6)

K. GENERAL REQUIREMENTS

1. Toilet room floors shall have a smooth, hard non-absorbent surface such as Portland cement, ceramic tile or other approved material that extends upward onto the walls at least 5 inches (127 mm). (807.1.1)
2. Walls within 2 feet (610 mm) of the front and sides of urinals and water closets shall have a smooth, hard non-absorbent surface of Portland cement, concrete, ceramic tile or other smooth, hard non-absorbent surface to a height of 4 feet (1219 mm), and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture. (807.1.2)
3. According to Section 2512, when gypsum is used as a base for tile or wall panels for tub, shower or water closet compartment walls, water resistant gypsum backing board shall be used. Regular gypsum wallboard is permitted under tile or wall panels in other wall and ceiling areas when installed in accordance with Table 25-G. Water-resistant gypsum board shall not be used in the following locations:
 - a. Over a vapor retarder.
 - b. In areas subject to continuous high humidity, such as saunas, steam rooms or gang shower rooms.
 - c. On ceilings where frame spacing exceeds 12 inches (305 mm) on center.
4. Provide shower and locker facilities as required by Section 6307
5. All shower compartments, regardless of shape, shall have a minimum finished interior area of not less than 1024 square inches (0.66 m²) and shall be capable of encompassing a 30 inch (0.76 m) circle. The minimum area and dimensions shall be maintained to a point 70 inches (1.8 m) above the shower drain outlet. (LAPC 412.7)
6. Provide separation by a tight fitting door between food preparation area(s) (including food storage rooms) and toilet room(s). (6302.4)
7. Each light of safety glazing material installed in hazardous locations as defined in Section 2406.4 shall be identified by a permanent label that specifies the labeler, and states that safety glazing material has been utilized in such installations.
8. Details of the guardrails at the floor and roof

openings, occupied roofs and balconies or porches more than 30" above grade are required. Guardrails shall be 42" in height, have intermediate rails or balusters spaced at 4" maximum and be designed for 20 or 50 lbs./ft. lateral load. (Table16-B) (509.1)

9. Toilet rooms shall be provided with a fully openable exterior window with an area not less than 3 square feet or a vertical duct not less than 100 square inches in area for the first water closet plus 50 square inches 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 feet from any opening that allows air entry into occupied portions of the building. (1202.2.1)
10. Indicate on plans that interior finish materials applied to wall and ceilings shall be tested as specified in Section 802. In addition, provide details showing application in accordance with Sections 803 & 804, and Tables 8A & 8B.
11. The flame-spread rating of paneling materials on the walls of the corridor, lobby and exit enclosure must be class _____. Clearly indicate on the plans. (Table 8-B)
12. Clearly indicate on the plans if the skylights are glass or plastic. Show that the requirements of Chapter 24 or 26 are met.
13. Glass skylights shall comply with Section 2409. Plastic skylights shall comply with Section 2603.7.1.
14. Attic ventilation of 1 sq. in. for each 10 sq. ft. of attic area is required. (1505.3)
15. Provide veneer details. Show method of anchorage, size and spacing of anchors. Type of backing to comply with Section 1403.
16. Note on the plan " The construction shall not restrict a five-foot clear and unobstructed access to any water or power distribution facilities (Power poles, pull-boxes, transformers, vaults, pumps, valves, meters, appurtenances, etc.) or to the location of the hook-up. The construction shall not be within ten feet of any power lines-whether or not the lines are located on the property. Failure to comply may cause construction delays and/or additional expenses."
17. Provide a weep screed for stucco at the foundation plate line a minimum of 4 inches above the earth or 2 inches above paved areas. (2506.5)
18. "An approved Seismic **Gas Shutoff** Valve will be installed on the fuel gas line on the down stream side of the utility meter and be rigidly connected to the exterior of the building or structure containing the fuel gas piping." (Per Ordinance 170,158) (Includes Commercial additions and TI work over \$10,000.) Separate plumbing permit is required."
19. Provide anti-graffiti finish at the first 9 feet, measured from grade, at exterior walls and doors.
LARR # _____.
20. A dressing room is required for a food establishment

where five or more employees are on duty on any shift. Lockers will be accepted in lieu of the dressing room requirement, where there are a maximum of four employees on duty on any given shift. Lockers shall not be located in toilet rooms or food preparation area.
(91.6302.5, LA County Code Section 11.12.07(D), California Health & Safety Code Section 114135)(6306)

Department. (L.A.M.C. 57.09.03)

L. ROOF AND ATTICS

1. A fire retardant roof covering is required. Provide a complete description on plans. Class A roof covering is required for all buildings located in a Mountain Fire District or Fire Buffer Zone.
(1503, 1504, 7207.4)
2. Show roof slope(s), drain(s) and overflow drain(s) or scuppers on the roof plan. Provide a detail of the roof drain and overflow system.
 - a. Size the roof drains and overflow drains according to the LAPC. (1506.4)
 - b. The roof drain and overflow drain must be independent lines to a yard box. (1506.3)
 - c. Roof drainage is not permitted to flow over public property. (1506.5)
 - d. Overflow scuppers shall have a minimum opening height of 4", a minimum area three times that of the roof drain and shall be located not more than 2" above the low point of the roof. (1506.3)
3. An attic access opening (22" x 30" with 30" headroom above the opening) is required into each separate attic space. (1505.1)
4. Provide access to all mechanical equipment located on the roof as required by the LAMC. (1513)
5. A stairway to the roof is required in every building four (4) or more stories in height unless the roof has a slope steeper than 4 in 12. (1003.3.3.11)
6. Show that the penthouse satisfy the requirements of Section 1511.

***M. FIRE ZONE REQUIREMENT (LA CITY SPECIFIC)**

1. Type V buildings in Fire District No. 2 shall comply with the one-hour fire resistive construction requirements of Section 7206.2.
2. Type (IV) (V) building is not permitted in Fire District No 1. (7204.1)
3. In every building in Fire District Nos. 1 and 2, every story or basement with a floor surface elevation more than 4 ft lower than the highest elevation of the floor landing or tread of any required exit that story shall be sprinklered .
(7203.5.1)
4. Fire lane access is required where any part of the building is 150 ft. from the edge of an improved street or approved fire lane. Obtain clearance from the Hydrants and Access Unit of the Fire

N. FLOOD HAZARD

1. The lot is located in an area subject to **flood**. An Elevation Certificate must be filled out for submittal to the inspector certifying that foundation was built at the required elevation."
2. This project is in the Special Flood Hazard Zone (). Elevate the structure above elevation (), or design the structure for flood proofing.
3. Flood Zone (A, AR VI-30, AO (AF), A1-30 (FW)) require clearance from the Department of Public Works, NFIP Coordinator, (213) 847-5210.
4. Note on the plan:
 - a. "Survey by a licensed surveyor or Civil Engineer authorized to perform survey work is required to verify elevation of lowest finished floor."
 - b. Completed (Elevation/Flood Proofing) Certificate (attached) shall be given to the inspector. If misplaced, the certificate can be downloaded from the Internet at <http://www.fema.gov/library/elvinst.htm>
5. For structural requirements, see "Supplemental Correction Sheet for Flood Hazard Specific Plan - Structural."

PART IV: STRUCTURAL PLANS & CALCULATIONS

O. GENERAL REQUIREMENTS

1. Submit structural calculations to justify the adequacy of the structural system for seismic, wind, dead and live loads
2. Floor dead load must include a 20 psf partition, in addition to other loads. (1606.2)
3. Exit facilities must be designed for a 100 psf live load. (Table 16-A)
4. General storage and/or repair garage floors must be designed to support a100 psf uniform load. (1607.3.3)
5. The following uniform (concentrated, special) loads must be used in accordance with Tables16-A & 16-B.
6. Ceiling joists must be designed for a live load of not less than 10 psf. (Table 16-B)
7. The live load _____ for which commercial and industrial floors are designed shall be posted in each room. Clearly note on the plans and show the design live load on the structural plans. (1607.3.5, Table 16-A)
8. Key or identify all sections and details as to their location on the plan or elevation views.
9. Provide analysis and design for wind loads per Section 1620.
10. The value of R used for design in a specific direction shall not exceed the lowest value of R for any of the

lateral force resisting systems utilized in that same direction. (1630.4.4)

11. Submit structural calculations and plans including truss profiles, member sizes and connection details for all roof and floor trusses prior to issuance of the building permit.

Provide LARR # for _____

12. The Engineer or Architect of record, shall review and approve truss design for loads, location, and suitability for intended use. (106.3.3.2)

13. Specify the size, spacing and direction of:

roof rafters roof joists

ceiling joists floor joists

14. Exterior stairs and balconies must be positively attached to the structure without the use of toenails or nails in withdrawal. (2320.13)

15. Provide a diaphragm analysis to show diaphragm adequacy. (1633.2.9)

16. Cross reference all calculations for joists, beams, shear walls, etc, to framing / floor plans. (101.5)

17. Calculations and details are required for retaining walls over 4 feet in height, measured from the bottom of the footing to the top of the wall.

18. Calculate seismic drift, $\Delta_M = 0.7R\Delta_S$ using strength level forces in accordance with Section 1630.9.2.

19. Provide separation from property line or adjacent building(s) in accordance with Section 1633.2.11.

20. Provide details of the lateral support for the top and bottom of the interior non-bearing walls. (1611.5)

21. Provide calculations and details to show that collector elements, splices, and connections to resisting elements have the strength to resist the combined loads resulting from the special seismic load of Section 1612.4. (1633.2.6)

22. Provide calculations and details for **drag strut** connections. See checked plans.

23. **Cantilevered columns** resisting seismic forces shall be designed with a K factor of 2.1 and shall be limited to a maximum inelastic response displacement, Δ_M , of 0.025h. (1630.9.2, 1630.10.2)

24. See attached "Supplemental Structural Correction Sheet(s)" for the design requirements of the following structural systems.

Steel Moment Frames Steel Brace Frames

Concrete Walls Flexible Diaphragms

25. Design seismic forces for flexible diaphragms

providing lateral support for walls or frames of masonry or concrete shall be determined using Formula (33.1) based on the load determined in accordance with section 1630.2 using a $R \leq 4$.

26. A supplemental plan check and permit with the applicable fees are required for deferred items.
- a. Prefabricated stairs including handrails
 - b. Prefabricated roof and floor trusses
 - c. Curtain Walls
 - d. Storage racks.
 - e. _____

The engineer of record shall review and approve the design of the deferred item(s) and verify its conformance with the intent of the original design.

27. Submit structural calculations and connection details for the structural members that provide support for the seismic forces generated by elevators. The seismic forces must be determined in accordance with Section 1632. The calculations and details provided must show the complete load path from the rail supports to the building's lateral-force-resisting system. (1633.2.9, item 3)

P. MATERIAL SPECIFICATIONS & INSPECTIONS

1. Add the following **material specifications** and/or notes to plans:
- a. Specify type of soil and bearing value per Table 18-I-A.
 - b. Note on plans. "LADBS licensed fabricator is required for (Glulam beams) (Trusses) (Structural Steel) (), (), ()."
 - c. Specify grade, species, and moisture content of all lumber.
 - d. Note on plans. "Glue lam beams must be fabricated in a LA DBS licenced shop." Identify grade symbol and lamination species per T 5-A, '91 NDS Supp.
 - e. Note on plans. "Field Welding to be done by welders certified by the L.A.DBS for (structural steel) (reinforcing steel) (light gage steel). Continuous inspection by a deputy inspector is required."
 - f. Specify: Structural steel ASTM (A36) (A992), Structural Pipe ASTM A53 Gd B, Tubing ASTM A 501. Reinforcing bars ASTM A615.
 - g. Note on plans. "Shop welds must be performed in a LA City Bldg. Dept. licenced fabricator's shop."
 - h. Specify: Standard 2500 psi concrete 3000 psi min. for grade beams and caissons." (1905.1, 1921.2.4.1)
 - i. Note on plans. "Continuous inspection by a deputy inspector is required for all concrete designed with f_c greater than 2500psi."
 - j. Note on plans. "Provide lead hole 40%-70% of threaded shank dia. and full dia. for smooth shank portion." '91 NDS

- k. Specify type and f'm of masonry units. Proportions of mortar and grout mixes. (91. 2103, T 21-D)
 - l. Specify type and grade of plywood: Douglas fir-Larch, Structural I (or CDX).
 - m Note on plans. "Continuous inspection by a deputy inspector required for ()."
 - n. Specify that **foundation sills** shall be pressure treated, or foundation grade Redwood. (2306.4)
2. Specify the size, LARR # _____ and manufacturer of the shot pins. Show on plans, the maximum spacing of the shot pins in bearing/nonbearing walls _____ / _____.
 3. For metal deck provide LARR number: _____. Specify on plans and calculations the designation and which table(s) was(were) used to determine the allowable loads. Provide complete welding information on plans.
 4. Special inspection by a registered deputy inspector is required for field welding, concrete strength >2500 psi, high strength bolting, sprayed on fireproofing, masonry when using full stresses, high-lift grouting, prestressed concrete and special moment-resisting concrete frames. Note on the plans. (1701.5, & Chapter 19, 21 & 22)
 5. Structural observation per Section 1702 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 "General Notes for Structural Observation" form).

Q. WOOD

1. Provide designed ridge beams (4 x min.) for open beam vaulted ceilings when ceiling joists or rafter ties are not provided.
2. Ridge board / hip / valley members shall be designed as beams when roof slope is less than 3:12. Provide calculations. (2320.12.1)
3. Rafter ties spaced 4 ft. (max.) on center are required immediately above ceiling joists which are not parallel to the rafters. (2320.12.6)
4. Show blocking at ends of rafters and trusses at exterior walls, and at supports of floor joists. (2320.12.8 & 2320.8.6)
5. Specify the header size at door, window and other openings over 4 ft. wide in bearing walls. (2320.11.6)
6. Note the use of full length studs (balloon frame) on exterior walls of rooms with vaulted ceiling. (2320.11.1, T 23 -IV-B)
7. Specify the size, height, and spacing for studs. Studs in bearing walls are limited to 10 ft. in height unless an approved design is submitted. (T-23-

IV-B)

8. Veneer supported by wood frame shall not exceed 30'-0" above ground unless differential movement is considered by an engineer. (1403.1.2)
9. Three- and four-story wood structures require 3x4 or 2x6 studs at 16" o.c. max. in bearing partitions below the top two stories. Submit calculations showing that allowable stress in compression perpendicular to grain is not exceeded in the plates at the proposed stud spacing. (T-23-IV-B)
10. For plywood roofs and floors, specify panel index no. _____, plywood 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. Plywood spans shall conform with T-23-11-H.
11. Show width, type and location of all brace wall panels. Clearly show the required braced wall lines (spacing not to exceed 25 ft. o.c. for Conventional Light-Frame Construction, Section 2320.5.1)
12. Solid blocking shall be provided at all horizontal joints occurring in braced wall panels. (2320.11.3)
13. Allowable shear for stucco is (90 plf for seismic) (180 plf for wind) and for gypsum board (30 plf for seismic) (100 plf for wind). (T25-I)
14. Stucco and drywall shear walls cannot exceed a height to length ratio of 1:1. These shear walls are not allowed below the top level of a multi-story building. (2513.4 & T25-I, footnote 4)
15. Stucco shear walls shall utilize furring, galvanized nails (having a minimum 11 ga., 1-1/2" long, 7/16" diameter head, and furled out a min of 1/4") to attach the lath to the studs. Staples shall not be used." (T25-I)
16. The maximum allowable shear for three-ply plywood resisting seismic loads is 200 plf. (T23-II-1, footnote 6)
17. Limit height/width ratio of plywood (wood structural panels) shear walls to 2:1.
18. For shear walls with openings, check the limitations of the overall shear wall and of each wall pier at the side of an opening. Provide calculations and connection details for the boundary members around the openings and check the story drift limitations of Section 1630.10.2 (2315.1, 2315.5.7, T23-II-G)
19. The horizontal distribution of seismic shear to wood structural panel shear walls shall be in accordance to section 1630.6. For buildings that are three stories or less in height, Method I or II of IB: P/BC 2001-03 (rev. 8-24-06) may be used.
20. Wood structural panel shear walls shall meet the story drift limitation of section 1630.10. Conformance shall be determined by testing or calculations. Calculated deflection shall be determined according to UBC Standard 23-2 section 23.223 and shall be increased by 25% to account for inelastic action and repetitive loading. Total vertical deflection shall be multiplied by the aspect ratio and added to the horizontal deflection. (2315.5.7)

21. Provide a shear wall schedule on the plans and specify the maximum design shear load for each shear wall type. Limit the design shear wall loads to those allowed by Table 23II-I-1. Clearly indicate on the plans all plywood and drywall shear walls.
 22. Provide shear connection details, properly referenced, at the top and bottom of all shear walls. Provide spacing and penetration details as required by Section 2318.3.3.
 23. The following applies to all shear walls with a shear value greater than 300 plf. These walls shall be clearly identified on the plans. Table 23-II-I-1 footnote 3. Provide the following:
 - a. 3x foundation sill plates.
 - b. 3 x studs and blocks between adjacent panels.
 - c. 1/2" edge distance for plywood boundary nailing.
 - d. Stagger nails if nail spacing is less than 2" o.c.
 - e. Square plate washers shall be used with all anchor bolts. (T 23-II-L)

5/8" dia. - 2.5x2.5x1/4 3/4" dia. - 2.75x2.75x5/16
7/8" dia. - 3x3x5/16 1" dia. - 3.5x3.5x3/8
 24. Note on plans. "All diaphragm and shear wall nailing shall utilize **common nails or galvanized box.**" (T 23-II-I-1)
 25. Provide LARR number or approval from the Research Division for nails used in fire treated lumber and glued laminated timber. (7.3.5 NDS)
 26. Cantilevered **diaphragms** shall not exceed **15%** of the distance between lines of lateral load resisting elements from which the diaphragm cantilevers. The depth to width ratio of the cantilevered portion of the diaphragm shall not be less than 4:1. (2315.1)
 27. Note on plans. "All **bolt holes** shall be drilled 1/32 to 1/16" oversized. (8.1.2.1, '91 NDS)
 28. Provide the design for the **shear transfer** from the roof diaphragm or upper shear wall to the shear wall below the floor or roof. Detail nails, bolts, shear plates, sill plates and blocking as required by design. Use reduced values for nails with reduced embedment.
 29. For wood to wood connections, where there are over 3 bolts in a row, reduce the allowable bolt loads per T 8.5.5, '91 NDS.
 30. Show the required embedment and *edge distance* for all **anchor bolts** in connections details per T 19-D. (6 dia min. or 3 dia. with 50% stress reduction). A reduction factor is often needed due to the larger size of bolt for HD anchors. Continuous inspection for embedded plate washers or double hold down anchors may be required.
 31. When bolting to an existing footing, provide a copy of the Research Report Approval for the type of bolt, allowable design loads, required embedment, and required edge distances. Deputy inspection is generally required. For a 6" wide stem wall special design may be needed for HD's.
 32. **Hold down straps** - Include the following in design and detailing between floors:
 - a. Design and detail straps installation when used as hold downs across floor joists. Account for reduced number of nails across joist.
 - b. Determine the allowable load based on the number of nails thru the strap into the posts above and below the "Dead Space" between floors. Specify # of nails required.
 - c. Design and detail straps so that the minimum nail spacing will be provided when the strap nailing is combined with the shear wall edge nailing (i.e. provide 4x member wherever a strap and shear wall edge nailing occur or detail strap nailed over and thru unnailed plywood--show nailing pattern on plan).
 33. Provide LARR number or obtain approval from the Research Division for screws used in plywood shear walls framed with cold formed steel studs. (T 22-VIII-C, footnote 2)
 34. Provide LARR number for hold-down connectors. 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. (2315.5.6)
 35. Note on the plans that hold-down connector bolts into wood framing require approved plate washers; and hold-downs shall be tightened just prior to covering the wall framing. (2315.5.6, T 23-II-L)
- R. CONCRETE & MASONRY**
1. 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)
 - a. Glass-block panels in exterior walls shall not exceed 144 sq. ft. of unsupported area or 15 ft. in any dimension. (2110.5)
 - b. Every exterior glass-block panel shall be provided with a min. 3/8 - inch expansion joints at the side and top. Expansion joints shall be entirely free of mortar and shall be filled with resilient material. Provide a detail on the plans. (2110.6)
 - c. Lateral support shall be provided by panel anchors spaced not more than 16" o.c. (2110.3)
 2. Structural calculations and details are required for anchored masonry or stone veneer that extends more than 5 ft. above the first floor. (2320.5.3)
 3. The masonry or concrete walls below grade may be designed to span simply supported between slabs. **NOTE ON THE PLANS:** "The perimeter walls are not to be backfilled until the floor slabs are poured and cured."

4. For concrete columns that are not part of the lateral-force-resisting system, provide transverse reinforcement in accordance with Sections 1921.7.2.2 and 1921.4.4.1.
5. Provide mix design calculations for concrete with specified $f'_c > 5000$ psi.

S. FOUNDATIONS AND GRADING

1. Add notes/details to show compliance with all corrections on enclosed Grading Pre-inspection Report, **GPI**
2. Call out minimum thickness of 3½ inch concrete slab on grade, reinforcement, and moisture barrier on foundation plan. (1900.4.4)
3. Call out foundation bolt size and spacing on foundation plan. The foundation bolts shall be 5/8 inch diameter embedded at least 7 inches into the concrete or masonry foundation spaced not more than 6 feet apart. (1806.6)
4. Foundation sill bolts require steel plate washers of size and thickness as specified by table 23-II-L. (1806.6.1)
5. 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.
6. Concrete grade beams that are part of a system that resists seismic lateral loads shall use A706 reinforcing steel. Transverse reinforcement shall be provided over a length equal to twice the member depth measured from the face of the supporting member and the spacing of such reinforcement shall not exceed: (a) $d/4$, (b) 8 longitudinal bar diameters, (c) 24 hoop bar diameters, or (d) 12 inches. The remainder of the grade beam shall have transverse reinforcement spaced not more than $d/2$. (1921.2.5.1), (1921.3.3)
7. Foundations with stem walls shall be reinforced with a minimum of one No. 4 bar at the top of the wall and one No. 4 bar at the bottom of the footing. (1806.7.1)
8. Slabs-on-grade with turn-down footings shall be reinforced with a minimum of one No. 4 bar at the top and one No. 4 bar at the bottom. (1806.7.2)
9. Provide details for stepped footings when slope of top and/or bottom of footing exceeds 1 :10. (1806.4)
10. Show minimum 18 inch underfloor clearance from grade to bottom of floor joists and minimum 12 inch clearance to bottom of girders. (2306.3)
11. Detail a footing **setback of H/3** to the face of slope or as required by the approved soil report. (1806.5.3, Fig 18-I-1)
12. Provide an **ascending slope** clearance to building of $H/2$ or 15' max. (1806.5.6, Fig 18-I-1)

13. Provide **pile ties**: Individual pile caps and caissons subject to seismic forces shall be interconnected by ties in two directions. Ties shall be capable of resisting, in tension or compression, a minimum horizontal force equal to 10% of the larger column load. Design lateral force resisting piles and caissons for flexure for a length equal to 120% of the flexural length. (1921.4.2, 1807.2, 1809.5.1)

14. Expansive soil requirements:

- a. Note on plans. "If soil is found to be expansive, the footings must meet the following minimum requirements." (1804.4)
 - b. Depth of footings below the natural and finish grades shall not be less than 24 inches for exterior and 18 inches for interior footings.
 - c. Exterior walls and interior bearing walls shall be supported on continuous footings.
 - d. Footings shall be reinforced with minimum four ½ -inch diameter deformed reinforcing bars. Two bars shall be placed 4 inches of the bottom of the footing and two bars within 4 inches of the top of the footings.
 - e. The soil below an interior concrete slab shall be saturated with moisture to a depth of 18 inches prior to placing the concrete.
 - f. Concrete slabs on grade on shall be placed on a 4-inch fill of coarse aggregate or on a 2" sand bed covered moisture barrier membrane. The slabs shall be at least 3-1/2 inches thick and shall be reinforced with #4 bars spaced at intervals not exceeding 16 inches each way.
15. Earthquake Induced **Liquefaction/Landslide** Area: A geotechnical report is required to evaluate the potential for soil liquefaction and soil strength loss during earthquake. (1804.5)
 16. Site **drainage**: Show on plans how concentrated drainage is being conveyed to the street via non-erosive devices. (7013.10)
 17. Note on plans: If adverse soil conditions are encountered, a soils investigation report may be required. (1804.2)
 18. A grading bond is required to be posted for projects involving over 250 cubic yards of soil in "*Hillside Grading Areas*". (7006.5.1)
 19. Provide plans for **temporary shoring** of excavations that remove the lateral support from a public way or an existing building. Excavations adjacent to a public way require Public Works approval prior to issuance of building permit. (3301.2.3.2)

