CITY OF LOS ANGELES
ELECTRICAL PLAN CHECK CORRECTION LIST

(Effective 2017)

Plan Check/PCIS Application No.: _____

Job Address: _____ **Expiration Date:** _____

Applicant Name: _____ **Description:** _____

Address: _____ **Phone:** _____

City/State/Zip: _____ **E-Mail:** _____

Plan Check Engineer: _____ **Review Date:** _____

(Print first / last name)

Telephone: _____ **E-mail:** firstname.lastname@lacity.org

If you have any questions or need clarification on any plan check matters, please contact the plan check engineer, or in his absence, the plan check supervisor, or call our Customer Hotline at (213) 482-0056.

Your application for a permit, together with plans and specifications, has been examined and the issuance of a permit is withheld for the reasons 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 2017 edition of the City of Los Angeles Electrical Code (based on 2016 California Electrical Code with adopted portions of 2014 National Electrical Code), 2017 L.A. Building Code (LABC), 2017 L.A. Mechanical Code (LAMC), 2013 National Fire Alarm Code (NFPA 72), 2016 California Energy Code, and 2017 L.A. Green Code (LAGC).

INSTRUCTIONS:

- Corrections with circled item numbers apply to this plan check.
- In the left hand margin of the circled corrections, please indicate the sheet number and detail or note number on the plans where the corrections are made. Resubmit marked original plans and one corrected set of plans, calculations and this plan review list.
- Incomplete or unreadable drawings or calculations will not be accepted.
- Incorporate all comments as marked on the checked set of plans and calculations and this corrections sheet.
- **Call the plan check engineer for appointment when the plans are ready for re-submittal.**
- **Appointments are required to schedule for conferences and verifications.**

PLEASE BRING THE MARKED UP PLANS TO THE VERIFICATION APPOINTMENT.

Your feedback is important; please visit our website to complete a Customer Survey at www.ladbs.org/LADBSWeb/customer-survey.jsf.

SEE MARKED UP PLANS FOR CLARIFICATIONS OF CORRECTIONS.

A. GENERAL REQUIREMENTS

1. The plans shall bear the signature and registration number of a State of California: (93.0206(a))
   a. Registered Electrical Engineer, or
   b. Licensed Architect, or
   c. Licensed Electrical Contractor (C-10), or
   d. _____
2. Provide two sets of corrected plans along with the original marked up plan prior to the plan's approval. __ (93.0206(c))
3. a. Indicate the job address on the plan(s). _____
   b. Indicate the suite number of the tenant. ____ (93.0207(n))
4. Submit a separate plan check application for permitting of each building. _____ _____ (93.0210)
5. Provide a site plan. _____ (93.0207(n))
6. Indicate the use of each room/area. _____ _____ (93.0207(n), T-24)
7. Provide a layout of the proposed electrical system including all required details. _____ _____ (93.0207(a))
8. Indicate scale used on drawings. _____ (93.0206(e))
9. Plans shall be legible. _____ _____ (93.0206(e))
10. Provide luminaire schedule(s). _____ (93.0207(n))
11. Provide a legend of all symbols used. _____ _____ (93.0207(n))
12. Electrical equipment shall be listed or certified by a City of Los Angeles recognized electrical testing laboratory or approved by the Department. Provide a note on the plans. _____ (93.0402)
13. Indicate on the plan the scope of work with a brief description of the equipment being installed and clarify what is new and existing on the plan. _____ _____ (93.0207)
14. Provide load schedules for panel boards, distribution boards, motor control centers, and switchboards. _____ _____ (93.0207(l))
15. Show movable and relocatable partitions, office modules and office furnishings which contain electric wiring, including lighting and receptacles, on the plans(s). _____ (93.0207(n))
16. Conductors for branch circuits shall be sized to prevent a voltage drop exceeding 3% at the farthest outlet. The maximum total voltage drop on both feeders and branch circuits to the farthest outlet does not exceed 5% _____ (CEC 130.5(c), (210.19(A) Note 4, 215.2(A)(3) Note 2)
17. Indicate the voltage drops and available fault current values at each distribution board, panel, ATS, _____ _____. (93.0207(d))
18. Indicate the short circuit withstand/interrupting rating of switchboards, panels, ATS, circuit breakers, fuses, and the % impedance of transformers._____ (110.9, 110.10)
19. Submit the following information: _____ _____ _____ _____ _____ _____ (93.0207(n))
20. Correct the following inconsistencies: _____ _____ _____ _____ _____ _____ _____ (93.0207(n))
21. Provide a 15- or 20- ampere rated 120 V receptacles within 25 feet of heating, ventilating, air conditioning, refrigeration, miscellaneous heat-producing and energy-utilizing equipment. _____ (LAMC 310.1, 210.63)
22. Additional plan check fees of $ _____ is due. (93.0233)

SINGLE LINE DIAGRAM:

23. Provide single line diagram. _____ (93.0207(n), 215.5)
24. Indicate electrical rating of transformers, buses, circuit breakers, panel boards, motors, _____ _____ (93.0207(l) & (j))
25. Unless listed otherwise, the ampacity of 1,000 Volts or less conductors shall based on the terminals not to exceed 60^{O}C (140^{o}F) for conductor size 14 through 1AWG or 75^{O}C (167^{o}F) for conductor sizes over 1 AWG. _____ _____ (110.14(C))
26. Indicate the loads on: _____ _____ (93.0207(l) & (m))

WORK CLEARANCE AND DEDICATED SPACES:

27. No piping, ducts or equipment foreign to electrical equipment shall be permitted to be located within the dedicated space above the indoor/outdoor electrical equipment. Provide a note on the plans. _____ _____(110.26(E)(1), 110.26(E)(2)(b))
28. Provide and maintain required work space, adequate illumination, access to work space and head room about electrical equipment. _____ _____ _____ (110.26)
29. For electrical equipment rated 800 amperes or more and over 6 feet wide:
    a. There shall be one entrance not less than 24 inches (610 mm) wide and 6-1/2 feet (1.98 m) high at each end. _____ (110.26(C)(2))
    b. The door(s) within 25 ft. of the nearest edge of work space shall open in the direction of egress and be provided with listed panic hardware. ___ (110.26(C)(2))
30. Provide protection from physical damage for switchboards, panelboards and other electrical equipment. _____ _____ (110.27(B))
31. Equipment in a plenum such as a fan room shall be noncombustible and only serve the loads that are permitted in such areas. _____ _____ _____ (LAMC 602.2, 300.22(B))
32. See attached **SUPPLEMENTAL CORRECTIONS:**
    a. Electrical Fire Pump System
    b. Fire Alarm System.
    c. Methane Mitigation System.
    d. Photovoltaic System.
    e. _____

B. BRANCH CIRCUITS

1. Indicate circuit designations near outlets, luminaires, and equipment; identify all home-runs. _____ _____ (93.0207(n))
2. Provide a receptacle outlet within six feet (1.83 m) of any point along walls in livable rooms of dwelling occupancies. _____ (210.52(A))
3. Provide a dedicated 120V, 20-ampere circuit for receptacles within 3 feet of the outside edge of each dwelling unit bathroom basin. _____ (210.11(C)(3), 210.52(D))
4. Provide arc-fault circuit interrupter (AFCI), combination type protection on branch circuits serving outlets in dwelling units except in bathrooms and garages. _____ _____ (210.12(A), 406.4(D))

5. In dwelling units where branch-circuit wiring is modified, replaced, or extended in any of the areas specified in 210.12(A), the branch circuit must be protected by either a listed combination AFCI located at the origin of the branch circuit or a listed branch circuit AFCI located at the first receptacle outlet of the existing branch circuit unless the extension of conductors is 6 feet or less and no outlets or devices are added. _____ (210.12(B))
6. Provide ground fault circuit interrupter (GFCI) protection for personnel on receptacle(s) located in: _____ (210.8, 422.23)
   a. All occupancies: bathrooms, garages, kitchens, outdoors, and within 6' of the outside edge of sinks.
   b. Dwelling units: Accessory buildings with floors at or below grade, crawl spaces, unfinished basements, boathouses, laundry areas, and within 6' of the outside edge of shower stalls and bathtubs.
   c. Other than dwelling units: rooftops, service bays, indoor wet locations, locker rooms with shower facilities, at public tire inflation and automatic vacuum machines
7. Provide GFCI protection for outlets supplying dishwashers in dwelling units. _____ (210.8(D))
8. Provide GFCI protection for all single phase 120 through 240 volt outlets supplying pool pump motors (680.21(C))
9. All 125 volts 15 and 20 ampere receptacles as required in Section 220.52 in dwelling units, guest rooms/suites, and child care facilities shall be tamper-resistant. _____ (406.12, 406.13, 406.14)
10. Provide show window lighting(s) and receptacle branch circuit(s). The receptacle outlets shall be within 18 inches from the top of a show window. _____ _____(210.62, 220.43(A))
11. A single receptacle installed on an individual branch circuit shall have an ampere rating of not less than that of the branch circuit. Indicate the receptacle rating. (210.21(B)(1))
12. Provide receptacle outlets wherever cord connected equipment will be used. _____ (210.50(B))
13. Conductors of a multi-wire branch circuit shall originate from the same panelboard. The branch circuit shall be provided with a means that will simultaneously disconnect all ungrounded conductors at the point where the branch circuit originates. _____ (210.4, 240.15(B)(1))
14. Other than in one and two family dwellings, provide at least one 125 volt single phase 15 or 20 ampere rated receptacle outlet within 50 feet of the electrical service equipment. _____ _____ (210.64)
15. An outlet installed for the purpose of charging electric vehicles shall be supplied by a separate branch circuit. This circuit shall have no other outlets. _____ (210.17)

C. FEEDERS

1. A building or structure shall be supplied by one feeder or branch circuit unless permitted in (225.30(A) through (E))
2. The following feeders are undersized. _____ _____ _____ (225.5, 310.15, 110.14(c), 240.4)

D. BRANCH CIRCUITS & FEEDER CALCULATIONS

1. Branch circuit loads were incorrectly calculated or omitted: _____ _____ (220.14)
2. Feeder loads shall include 150 VA of load for every 2 feet of track lighting or the rating of the device used to limit the current to the track. _____ _____ (220.43(B))
3. Provide proper feeder, panel board and branch circuit ampacity for general lighting load as required per Table 220.12. If a power monitoring system complying with 220.12 exception is installed, lighting load calculation per CEC 140.6 is permitted. _____ (220.12, 220.40, 215.2)
4. Provide a dedicated branch circuit for exterior sign or outline lighting system calculated at a minimum of 1200 VA. _____ _____ (220.14(F), 600.5(A))
5. Provide a dedicated branch circuit for the light, receptacle(s), auxiliary lighting power source, and ventilation on each elevator car. _____ (620.22(A))
6. Provide a separate dedicated branch circuit for the air conditioning and heating units on each elevator car. _____ _____(620.22(B))
7. Feeder loads were incorrectly calculated or omitted: _____ _____ (220.40)
8. Provide a minimum of 200 VA for each linear foot of show window supplied by a branch circuit._____ _____ (220.14(G))
9. Branch circuit and feeder conductors shall be sized to carry not less than the larger of a or b below _____ _____ (210.19(A)(1), 215.2(A)(1))
   a. Sum of noncontinuous and 125% of continuous loads.
   b. Not less than the maximum load to be served after the application of any adjustments or correction factors.
10. Provide 180 VA of load for each general use receptacle. _____ (220.14(I) & (L))
11. Small Appliance branch circuits shall be rated at 1500 VA each. _____ (220.52(A))

E. SERVICES

1. Show the service conductor routing from the utility service point. _____ (93.0207(o) & (n))
2. Provide a copy of the utility company's service report indicating the available fault current, voltage, amperes and phase at the service. _____ _____ (93.0207(k))
3. Provide an elevation drawing of the service equipment. Indicate dimensions and show each section, meter, and disconnect. _____ (93.0207(k))
4. Service disconnect(s) shall be installed at a readily accessible location either outside of a building or structure, or located nearest the point of entrance of the service conductors. _____ (230.70(A))
5. There shall be not more than six sets of disconnects per service grouped in any one location and each disconnect shall be marked to indicate the load served. _____ (230.72(A))
6. Additional service disconnecting means for fire pumps, emergency systems, legally required standby, or optional standby service shall be installed remote from the one to six service disconnecting means for normal service. (230.72(B))
7. No more than one service disconnecting means is permitted for motor control centers _____ (430.95)
8. The service equipment shall have a rating not less than the load served. This load shall be calculated per Article 220._____ _____ (230.79)
9. Ground fault protection is required on every solidly grounded wye service, feeder, or branch circuit disconnect rated1000 amperes or more and more than 150 volts to ground but not exceeding 1,000 volts phase to phase. _____ _____ (210.13, 230.95, 215.10)
10. Except as permitted in section 230.2(A), a building or other structure shall be supplied by only one service. _____ _____ (230.2)
11. When more than one building or other structure is on the same property and under single management, each building or structure shall be provided with means for disconnecting all ungrounded conductors. _____ _____ _____ (225.31)
12. Equipment shall not be connected to the supply side of the service disconnecting means. _____ (230.82)

13. In a multiple occupancy building, each occupant shall have access to their service disconnecting means._____ _____ (230.72(C))
14. Provide service load calculation. _____ _____ (230.42, 93.0207(n))
15. Provide service load calculations for 120/240 V, 3 phase, 4W, delta system in accordance with Los Angeles Electrical Code (Excerpts Section). _____ _____ (93.0207(n))
16. Service and feeder demand load calculation shall be in accordance with Article 220.87.

F. OVERCURRENT PROTECTION AND SHORT CIRCUIT PROTECTION

1. Submit overcurrent coordination study. _____ _____ (240.12, 620.62, Table 685.3)
2. Indicate the provisions to ensure the proper operation of Ground Fault Protection equipment on a separately grounded service and generator system. _____ _____ (215.10, 230.95(C), 240.13, 110.26)
3. Provide proper overcurrent protection for conductors on circuits: _____ (240.4)
4. Overcurrent devices shall be connected at the supply point of ungrounded conductors except as specified in 240.21(A) through (H). _____ (240.21)
5. Fuses shall be provided with rejection type fuse holders. Provide notes on the plan. _____ (240.60(B))
6. Provide short circuit analysis including motor contribution. Fuse let-thru is not acceptable. _____ _____ (110.9 & 10, 93.0207)
7. If series rating is used for short circuit protection:
   a. Indicate the series combination interrupting rating of overcurrent devices. Identify on the plan, the fuse class and the circuit breaker manufacturer, model designation, type and electrical rating used as part of series rating. Include manufacturer specification sheet(s).
   b. Series combination interrupting rating shall not be used when the second device in the series is subjected to a total connected full load motor current of more than 1% of it's AIC rating.
   c. Motor circuit protectors shall not be used as part of a series combination interrupting rating.__ (110.3, 93.0402)
   d. If series combination ratings are used, provide a cautionary label to the series rated device cover stating "Caution - Series Rated System _____ A available. Identified replacement component required."

   (240.86, 110.3, 110.22(C), 93.0402, UL Recognition Directory)
   e. _____
8. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted to 1,200A or higher, 240.87(A) and (B) shall apply. _____ (240.87)

G. GROUNDING

1. The service shall be grounded. _____ (250.20)
2. Provide properly sized grounding electrode conductor(s) to connect the equipment grounding conductor(s) and the grounded conductor(s) to the grounding electrode(s). _____ _____ _____ (100, 250.26, 250.66, Table 250.66)
3. Separately derived systems shall be grounded per 250.30(A) for grounded, and 250.30(B) for ungrounded systems, and comply with 250.20 and 250.26 _____ _____ (250.20 and 30)
4. Multiple separately derived systems that are connected in parallel shall be installed in accordance with 250.30
5. The grounded conductor of a 3-phase, 3-wire delta service shall have an ampacity not less than that of the ungrounded conductors. _____ (250.24(C))
6. Where more than one building or structure is supplied by a feeder or branch circuit, an equipment grounding conductor shall be run from the main service with the supply conductors and connected to each building or structure disconnecting means and to the grounding electrode. _____ _____ (250.32(A) & (B))
7. If a building is served by an unprotected feeder from an outdoor separately derived system transformer, the feeder grounded circuit conductor shall be connected to the equipment ground conductor, grounding electrode conductor, and the enclosure for the first disconnecting means. _____ (250.32(B), 250.30(A)(1) Exception)
8. All services, feeders or branch circuits supplying a building shall have common grounding electrode system. _____ _____ (250.58)
9. Provide properly sized equipment grounding conductor(s). _____ (250.122)
10. All grounding electrodes that are present at each building or structure shall be bonded together._____ _____ (250.50, 250.52(A))
11. All equipment fastened in place or connected by permanent wiring method shall be grounded. _____ _____ (250.110 & 112)
12. Where the phase conductors are increased in size from the minimum size that has sufficient ampacity (e.g., for voltage drop compensation), equipment grounding conductor shall be increased in size proportionately according to circular mil area of the phase conductors. _____ _____ (250.122(B))
13. An equipment grounding conductor shall not be used as a grounding electrode conductor _____ (250.121)
14. Provide an insulated equipment grounding conductor between service and remote panelboard serving swimming pool equipment. _____ (680.25(B))
15. Provide equal potential bonding for all pool related equipment, including the perimeter surface that is within 3 feet horizontally from the inside wall of the pool. _____ _____ (680.26)
16. Patient care area receptacles shall be grounded by an insulated copper equipment grounding conductor. _____ _____ (517.13(B))
17. Receptacles with insulated grounding terminals, as described in 250.146(D) (isolated receptacles identified by an orange triangle), shall not be permitted. _____ (517.16)
18. Panelboards serving power to the same individual patient care vicinity area shall be bonded together with minimum 10 AWG insulated copper conductor. _____ _____ (517.14)

H. WIRING METHODS

1. Conductors rated over 1,000 volts shall not occupy the same wiring enclosure, raceway or cable with conductors of 1,000 volts or less. _____ _____ (300.3(C)(2))
2. In dwelling units and guest rooms of hotels, motels and similar occupancies, the lighting and outlet circuit voltage shall not exceed 120 volts nominal. _____ _____ (210.6(A))
3. Indicate the burial depth of underground conduits and conductors and specify the cover material. _____ _____ (Table 300.5)
4. Portions of raceways and cable sleeves that are exposed to widely different temperatures, such as coolers, freezers or service entrance conductors, shall be sealed to prevent circulation of air and/or moisture. _____ _____ (300.7(A))

5. Provide expansion fittings for raceways subject to thermal expansion and contraction._____ _____ (300.7(B), 352.44, 355.44)
6. Provide cable supports on vertical runs._____ _____ (300.19)
7. Identify the cable trays used, dimensions, conductor types, and provide cable tray fill calculations per Article 392. _____
8. Wiring methods beneath the raised floors shall comply with all requirements of Article 645._____ _____
9. Provide a ground fault circuit interrupter on the pool light circuit operating above 15 volts._____ _____ (680.23(A)(3))

I. CONDUCTORS FOR GENERAL WIRING

1. Provide the proper wire type (temperature rating) for use in the following applications: _____ (310.10)
2. The following branch circuit/feeder conductors are improperly sized: _____ _____(310.15)
3. Where the number of current carrying conductors including spare conductors in a raceway or cable exceeds three, or where over 24 inches of single conductors or multiconductor cables are installed together without maintaining any spacings in between them and are not installed in a raceway, the allowable ampacity of each conductor shall be reduced per table 310.15(B)(3)(a). _____ _____(310.15(B)(3))
4. Where the ambient temperature is over 30^{O}C, (86^{O}F), the referenced correction factors shall apply to conductors. _____ _____ (93.0600, TABLE 310.15(B)(2)(a) and (b))
5. Where raceways or cables with other than type XHHW-2 insulated conductors are exposed to direct sunlight on or above rooftops, the adjustment shown in Table 310.15(B)(3)(c) shall be added to the outdoor temperature to determine the applicable correction factor in Tables 310.15(B)(2)(a) and (b). _____ (310.15(B)(3)(c))
6. Types NM, NMC and NMS cable(s) cannot be used for _____ (334.12)
7. Types NM, NMC and NMS cable(s) is permitted in Type I and II construction when installed in approved raceway(s). _____(334.12(A)(1)Exception)

J. CONDUIT, RACEWAYS, J-BOXES, ETC.

1. Indicate the number of conductors in raceways _____ _____ _____ (300.17, Chapter 9 Table 1)
2. Provide proper conduit size on _____ _____ _____ (Chapter 9, Tables 4, 5 & 5A)
3. A separate grounding conductor shall be installed in non-metallic conduit runs._____ _____ (352.60, 353.60, 354.60, 355.60, 356.60, 362.60, 378.60, and 388.60)
4. Exit signs shall not be used as J-boxes. Show location of required junction boxes. _____ _____ (700.10)
5. Indicate type of conduit(s) used. _____ _____ _____ (Chapter 9, table 4, Appendix C, 93.0207(n))
6. The following outlet, pull or junction boxes are inadequately sized: _____ _____ _____ (314.16, 314.28, 314.71)
7. Unless permitted otherwise, the highest operable part of all controls, dispensers, receptacles shall be placed within not less than 15 inches above floor and no more than 48 inches above floor._____ _____ (LABC 1117B.6.3)

K. SWITCHES, PANELS, & ROOF EQUIPMENT

1. Provide permanent access to roof mounted equipment. _____ _____ (P/MC 2014-006, 240.24, 430.102, 440.14)
2. Switches, circuit breakers, fuses shall be readily accessible. _____ _____ (404.8(A), 240.24, 430.102, 440.14)
3. Provide individual overcurrent protection on the supply side of each lighting and appliance branch circuit panel board. _____ (408.36(A))
4. Provide weather proof, GFCI protected outlets within 25 feet of heating, air conditioning, or refrigeration equipment. _____ _____ (210.63, 210.8(B)(3))
5. Circuit breakers used as switches in 120 and 277 volt fluorescent lighting circuits shall be listed and marked "SWD" or "HID". _____ _____ (240.83(D))
6. Unless permitted otherwise, provide a grounded circuit conductor for every switch location controlling lighting loads supplied by grounded general-purpose branch circuit._____ _____ (404.2(C))

L. MOTORS

1. Provide the nameplate current rating of the following:
   a. Locked-rotor current of Torque motors.
   b. AC adjustable voltage motors.
   c. Low Speed (1200 RPM or Less) motors.
   d. Multi-speed motors.
   e. Noncontinuous duty motors.
   f. _____ (430.6, 430.22, Table 430.250)
2. Indicate the Duty-Cycle service and design of motors. This information should include the motors duty and time rating. _____ (430.22, Table 430.22(E))
3. Provide proper conductor size for motor(s) _____ _____ _____ (430.22, 430.24, 430.26)
4. Provide overload protection for the following motor(s) _____ _____ _____ (430.31, 430.32)
5. Provide proper short circuit ground fault protection for motor(s). (Specify breaker/fuse type). _____ _____ (430.52, 430.62)
6. An individual branch circuit is required for each motor over one horsepower or 6 amperes of full load current. _____ _____ _____ (430.53(A))
7. Provide properly located disconnects, types and size on motor(s) _____ _____ (430.102, 103, 109 & 110)

M. TRANSFORMERS

1. Provide overcurrent protection on the primary of the transformer. _____ _____ (450.3)
2. Provide overcurrent protection for the secondary conductors of transformer. _____ _____ (240.21)
3. Indicate transformer(s) secondary tap length(s). _____ _____ (240.21)

4. Provide adequate ventilation in transformer room(s). _____ _____ (450.9)
5. Indoor dry type transformers over 112.5kVA shall be installed in minimum 1-hour fire rated room. _____ _____ (450.21(B))
6. Transformers over 50kVA shall not be installed in hollow spaces, ceiling spaces of the building. _____ _____ (450.13(B))
7. Indicate transformer type (dry, liquid, ventilated, etc) and provide its nameplate marking. This information should also include the transformer impedance value for 25 KVA or larger transformers. _____ (450.11, 450.3, 450.21-27)
8. Transformers, other than Class 2 or Class 3 transformers, shall have a disconnecting means located either in sight of the transformer or in a remote location lockable in accordance with 110.25 with the location field-marked on the transformer _____ (450.14)

N. HAZARDOUS AREAS

1. Provide hazardous classification by class, division or zones and group, and show boundaries of the hazardous area(s). _____ _____ (Art. 500, 505, 511.3, 513.3, 514.3, 515.3, 516.3)
2. Wiring in hazardous areas shall comply with the Code provisions for such areas. _____ _____ _____ (Art. 500 through 516)
3. Provide conduit seals at boundaries of hazardous areas. _____ _____ (501.15, 504.70, 505.16. 506.16, 511.9, 513.9, 514.9, 515.9)
4. Provide a conduit seal between dust-ignition proof enclosure and regular enclosure located in Class II, Division 1 or 2 areas. _____ (502.15)
5. Maximum permitted cross-section fill of seals shall not exceed 25% of the cross-sectional area of a conduit of the same trade size unless specifically approved. _____ _____ (501.15(C)(6))
6. Submit details of the natural or mechanical ventilation provided in garage area(s). _____ _____ (511.3(C), (D), or (E))
7. Provide GFCI protection for outlets in repair garages. _____ _____ (511.12)
8. Classify the pits in the garage areas. _____ _____ (511.3(B))
9. A manually operated remote control installed at an approved location shall be provided to shut off fans or blowers installed as part of ventilation system that are located in flammable vapor or dust systems. _____ _____ (LAMC 503.1)
10. Electrical equipment located in operations that generate explosive or flammable vapors, fumes or dust shall be interlocked with the ventilation system so that the equipment can not be operated unless the ventilation fans are in operation. _____ (LAMC 503.1)

O. CLINICS

1. Indicate type of clinic(s). _____ _____ (LABC 1226)
2. Provide a list of equipment to be installed. _____ (93.0207)
3. Equipment classified for life-support purpose shall be supplied from an essential system as required per Sections (517.31 through 517.45).
4. Indicate if the clinic is or will be licensed by the State of California. _____ (LABC 1226.2)
5. Clarify if a generator is to be installed to supply all the loads in the ambulatory surgical clinics._____ (517.45(D)(1))
6. Clarify if wiring installation within an ambulatory surgical or hemodialysis clinics are in accordance with 517.45(F) and (G).
7. Provide a nurse call system in the birthing clinic. _____ (LABC 1226.16)
8. Provide minimum of 100 fc at working surface in a birthing clinic._____ (LABC 1226.16)
9. Operating room of a surgical clinic shall include a clock and elapsed timer and an x-ray film illuminator. (LABC 1226.17.1)
10. If Ethylene Oxide sterilizers are supplied from emergency power, the exhaust system shall also be supplied from the emergency power. _____ (LABC 423A.4.4)

P. FIRE PUMP

1. A dedicated feeder shall be permitted where it is derived from a service connection as described in 695.3(A)(1).
2. If the sources in 695.3(A) are not practicable and the installation is part of a multi-building campus-style complex, feeder sources shall be permitted if approved by LADBS and installed in accordance with either (C)(1) and (C)(3) OR (C)(2) and (C)(3) _____ (695.3(C))
3. Fire pump circuit conduits shall be encased in no less than 2 inches of concrete. _____ _____ (695.6)
4. Show the routing of the fire pump feeder. _____ _____ (93.0207, 695.6)
5. Overcurrent protection for fire pump services shall provide short circuit protection and shall be set to carry fire pump motor locked rotor current indefinitely._____ _____ _____ (695.4(B)(2))
6. Provide an emergency source of power for fire pump. _____ _____ _____ (695.3(B), 700.12)
7. No disconnecting means shall be installed within the fire pump feeder circuit. _____ _____ (695.4(A))
8. Transfer of power shall take place within the fire pump room. _____ _____ (695.12(A))
9. All energized equipment shall be located at least 12 in. above the floor level _____ (695.12(D))
10. When starting, the voltage at the fire pump controller line terminals shall not drop more than 15% below normal voltage. _____ (695.7(A))
11. When the motor is operating at 115% of the full-load current rating, the voltage at the motor terminals shall not drop more than 5% below the voltage rating of the motor_____ (695.7(B))
12. Diesel engine fire pump and associated equipment shall be listed for fire pump service. _____ (695.10)

Q. EMERGENCY SYSTEMS

1. Provide (a) properly sized emergency power source(s) for required emergency load(s). _____ _____ (700.4)
2. A completely independent raceway, switchboards and wiring system shall be installed for emergency circuits including generator control wiring. _____ _____ (700.10)
3. Transfer equipment shall supply only emergency loads. (700.5(D))
4. The means of egress illumination level shall not be less than 1 foot-candle at the walking surface level. __ (LABC 1006.2)
5. Emergency lights shall be provided in all means of egress as defined in section 1006.3. _____ _____ (LABC 1006.3)

6. The emergency luminaires shall provide an initial average illumination level of at least 1 foot-candle but at any point it shall not be less than 0.1 foot-candle along the path of egress at floor level. _____ (LABC 1006. 3.1)
7. At the end of the required emergency source time duration, the emergency luminaires shall provide an average illumination level of at least 0.6 foot-candle but at any point it shall not be less than 0.06 foot-candle along the path of egress at floor level. _____ (LABC 1006.3.1)
8. The emergency illumination level shall have a maximum-to-minimum emergency illumination uniformity ratio that does not exceed 40 to 1. _____ (LABC 1006. 3.1)
9. Emergency exit illumination shall be supplied from:

   a. generator, b. storage battery, c. UPS, d. Fuel Cell with storage battery, or e. unit equipment. (LABC 1006.3,700.12)
10. Provide exit signs. _____ (LABC 1011.1)
11. Provide floor level exit sign & path marking. _____ _____ (LABC 1011.7, 1011.8)
12. Provide battery capacity calculation. _____ _____ (700.4, 700.12(A))
13. Storage batteries shall comply with Article 480. _____ _____
14. Provide selective overcurrent protection. _____ _____ (700.27)
15. Exit signs shall be supplied by two circuits, one from normal source and one from emergency source. _____ _____ _____ (700.17, 700.3, 110.3, LABC 1101.5 & 1011.6.3)
16. Provide a lock-on device for circuits supplying emergency unit equipment. _____ (700.12(F) Exception)
17. The branch circuit feeding the unit equipment (emergency light with self-contained rechargeable battery) shall be the same branch circuit as that serving the normal lighting in the area and connected ahead of any local switches or time clocks. Indicate the correct circuit wiring diagram on the plans._____ (700.12(F))
18. Remote heads providing lighting for the exterior of an exit door shall be permitted to be supplied by the unit equipment serving the area immediately inside the doors __ (700.12(F))
19. Provide Coordination study for all emergency and legally required standby systems overcurrent protective devices. _____ (700.27, 701.18)
20. Provide 4 pole automatic transfer switch to transfer normal to emergency power under any of following conditions:

    a. Ground fault protected service or feeder supplying the transfer switch. _____ (700.27)

    b. Ground fault indicating for the emergency source and Ground fault protected service or feeder. _____ (700.26)

    OR

    c. Two levels of ground fault protection on normal supply side. _____ (700.6)
21. Emergency generators shall not be located in a room or an area used for any other purpose other than equipment and controls related to the generation and distribution of emergency power. This room shall be separated from the reminder of the building by a one-hour fire barrier. _____ (LABC 432.2.1, 432.2.3)
22. A listed surge protective device shall be installed in or on all emergency system switchboards and panelboards. (700.8)
23. Where an emergency system is installed, emergency illumination shall be provided in the area of the disconnecting means required by 225.31 and 230.70 as applicable where the disconnecting means are installed indoors. _____ (700.16)
24. The branch circuit serving emergency lighting and power circuits shall not be part of a multi wire branch circuit. _____ (700.19)
25. Personnel doors intended for entrance to and egress from rooms designated as battery rooms shall open in the direction of egress and shall be equipped with listed panic hardware. _____ (480.9(E))
26. Where emergency illumination is provided by one or more directionally controlled luminaires that respond to an external control input to bypass normal control upon loss of normal power, such luminaires and external bypass controls shall be individually listed for use in emergency systems. _____ (700.24)
27. The alternate source for emergency systems shall not have ground-fault protection of equipment with automatic disconnecting means. Ground-fault indication of the emergency source shall be provided in accordance with 700.6(D) _____ (700.27, 701.27)
28. Where an outdoor housed generator set is equipped with a readily accessible disconnecting means in accordance with 445.18 and the disconnecting means is located within sight of the building or structure supplied, an additional disconnecting means is not required where ungrounded conductors serve or pass through the building or structure. Where the generator supply conductors terminate at a disconnecting means in or on a building or structure, the disconnecting means shall meet the requirements of 225.36. _____ (700.12(B)(6))

R. FIRE PROTECTIVE SIGNALING SYSTEMS

1. Submit a variance to separate fire warning system or provide the following information in this section. _____ _____ (93.206(b)(8))
2. Provide a fire warning system. _____ (LABC 907)
3. The fire warning system shall be approved by the Fire Department before the approval of the final plans. (93.0206)
4. The fire warning system shall be supplied from an approved source. _____ (NFPA 72)
5. An individual multi-wire branch circuit is required to supply the fire warning system unless a primary battery supplies the trouble signal devices of the signaling system.(NFPA 72)
6. Fire warning equipment shall be listed by a city recognized testing laboratory and shall be approved by the State Fire Marshall. _____ (93.0402)
7. Fire warning system conductors shall be installed in metal raceways unless they are specifically approved for exposed installation. _____ (760.46, 760.154(C)(2))
8. Except as permitted, power limited fire alarm circuit conductors or cables shall run separately from any other circuit other than Class 2 or 3 circuits. _____ (760.136)
9. Provide catalog cut sheets showing the electrical ratings for FACP, power expanders, annunciators, and devices. _____ _____ (93.0207)
10. Provide a worst case DC voltage drop calculation using chapter 9, table 8 of NEC for the notification appliance circuits, (based on 80% backup battery voltage and minimum appliance operating voltage). _____ ____ (93.0402, 110.3(B), NFPA 72, 10.18.1.2, 10.5.6.3.1(1))
11. Indicate type of fire protective signaling systems. (Power or Non-Power limited) _____ (760.35)
12. Fire protective signaling systems shall be equipped with approved control panel(s) and annunciator(s). __ (NFPA 72)
13. Provide battery load calculation. _____ _____ (NFPA 72)
14. The secondary battery load calculation shall include the total power supply (supervisory and alarm) loads. ___ (NFPA 72)
15. Provide a fire control center, fire alarm and fire warning system, public address system and two way communication system. _____ (NFPA 72, LABC 907)
16. Provide protection to ensure survivability of critical circuits. _____ _____ (NFPA 72, 760.176(F), 760.179(G))

S. MACHINERY ROOM

1. A readily accessible control switch shall be provided immediately adjacent to and outside of each machinery room exit to shut off all electrically operated machinery in machinery room(s). _____ (LAMC 1109.4)

2. No electrical equipment other than specified in Los Angeles Mechanical Code Section 1109.1 shall be located in machinery room(s). _____
3. Purging fans and associated equipment in a refrigerant room containing refrigerants other than group A1 or B1 shall comply with the requirements of Article 500 Class I, Division 1 area. _____ (LAMC 1108.8)
4. Provide a readily accessible emergency "off"-only fan control switch outside of machinery room(s). (LAMC 1109.4)
5. Machinery rooms shall have approved refrigerant vapor detectors and shall activate visual and audible alarms when the concentration of refrigerant vapor exceeds 25 percent of the LFL. _____ (LAMC 1107.4)
6. Refrigerant detection and alarm systems shall be powered and supervised as required for fire alarm systems in accordance with the Fire Code. _____ (LAMC 1121.2)
7. The detection and alarm systems shall be annunciated at an approved location in accordance with the fire code._____ (LAMC 1121.3)
8. Except as permitted, provide sufficient illumination and service receptacles to safely perform required tasks in the machinery rooms._____ (LAMC 1106.4, & 310)

T. SMOKE DETECTORS

1. Unless a fire alarm system with smoke detectors is installed within the occupancies, single- or multiple- station smoke alarms (detectors with built-in battery) shall be installed in the following locations and specified occupancy. _____ (2014 LABC 907.2.8.3, 907.2.9.2, 907.2.10.3, 907.2.11, NFPA 72)

a. Group R-1: (LABC 907.2.11.1)

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

b. Groups R-2, R-2.1, R-3, R-3.1, R-4 and I-1: (LABC 907.2.11.2)

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.

Exception: Single- or multiple-station smoke alarms in Group I-1 shall not be required where smoke detectors are provided in the sleeping rooms as part of an automatic smoke detection system.

3. In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. In a Group R-3.1 occupancies, in addition to the above, smoke alarms shall be provided throughout the habitable areas of the dwelling unit except kitchens.

c. Group I-4 (LABC 907.2.11.2.1)

Large family day-care homes shall be equipped with State Fire Marshal approved and listed single station residential type smoke alarms.

d. Specific location requirements

(LABC 907.2.11.2.5, NFPA 72 Section 29.8.3.4)

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

(1) Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.

(2) Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40ºF (4ºC) or exceed 100ºF (38ºC).

(3) Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an-unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.

(4) Smoke alarms or smoke detectors shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance.

Exceptions:

(1) Ionization smoke alarms with an alarm silencing switch or photoelectric smoke alarms shall be permitted to be installed 10 feet (3 m) or greater from a permanently installed cooking appliance.

(2) Photoelectric smoke alarms shall be permitted to be installed greater than 6 feet (1.8 m) from a permanently installed cooking appliance where the kitchen or cooking area and adjacent spaces have no clear interior partitions and the 10 ft. distances would prohibit the placement of a smoke alarm or smoke detector required by other sections of the code.

(3) Smoke alarms listed for use in close proximity to a permanently installed cooking appliance.

(5) Installation near bathrooms. Smoke alarms shall be installed not less than a 3-foot (0.91 m) horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by other sections of the code.

(6) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.

(7) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan.

(8) Where stairs lead to other occupied levels, a smoke alarm or smoke detector shall be located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.

(9) For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.

(10) For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.

(11) Smoke alarms and detectors installed in rooms with joists or beams shall comply with the requirements of NFPA 72, Section 17.7.3.2.4.

(12) Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of NFPA 72, Section 17.6.3.

2. **Interconnection.** (907.2.11.3)
Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R occupancies, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. _____
_____
_____

U. OVER 1,000 VOLTS

1. Provide proper type and size of overcurrent protection for high voltage feeders._____(240.100)
2. Select proper feeder ampacity per Duct bank Details (310.60)_____
3. Medium voltage equipment shall be listed by a city recognized testing laboratory or approved by the Department._____ (110.2, 93.0402)
4. Provide detail, specifications, and evidence of listings for the following: _____ (110.2, 93.0402)
   a. Cables.
   b. Overcurrent protective devices (electrical ratings, listing, type, AIC rating, close-and-latch rating, breakers "K" factor, MVA rating, continuous current rating, fuse time-current curves, etc.)
   c. Transformer(s) (rating, listing, etc.)
   d. Raceway(s) (size, material, etc.)
   e. Terminations and Splices.
   f. Pull boxes and Manholes.
   g. Disconnect devices (type, size, electrical rating, magnetizing current interrupting ratings, cable charging rating, fault close rating, etc.)
   h. Switchgear(s), Substation(s), Unitsubstation(s).
   i. Grounding Impedance (continues and watt rating, etc.)
   j. Bracing. (110.8, 93.0207(n))
   k. _____
5. Clarify the grounding method used. Include information on size and termination method._____ (Art. 250, 93.0207(n))
6. Provide detail on high impedance grounding. _____ (Art. 250, 93.0207(n))
7. Provide cable pull calculation._____ (93.0207(n), 300.17)
8. Provide detailed short circuit analysis including a coordination study. The analysis should reflect the three and single phase fault as well as ground fault and line to line to ground fault (when applicable)._____ (110.9 & 10, 240.12, 93.0207(n))
9. Provide a coordinated protection for the motor circuit. This coordination shall include the fault current, overload, circuit conductors and motor control apparatus. _____ (430.225)
10. Provide means to discharge the stored energy in capacitors and provide a warning sign and discharge instructions on the equipment. _____ (460.28)
11. A permanent single line diagram of the switchgear shall be provided in a readily visible location within the same room or enclosed area with the switchgear. This diagram shall clearly identify interlocks, isolation means, and all possible sources of voltage to the installation under normal or emergency conditions. The marking on the switchgear shall cross reference the diagram. _____ (490.48(B))
12. The sizing of conductors over 1,000 volts shall be in accordance with 210.19(B) for branch circuits and 215.2(B) for feeders. _____ (225.50)

V. LOW VOLTAGE POWER CIRCUITS

1. Identify all Class 2 and Class 3 circuits _____ (725.30, 93.0207(n))

W. STATE ENERGY REGULATIONS (Title 24, Part 6, California Code of Regulation)

T-24 Standards, Design Manuals, Forms and Tables are available at the California Energy Commission website: www.energy.ca.gov

DOCUMENTATION:

1. The 2016 certificate(s) of compliance forms LTI-01-E (Pages 1 to 5) for interior lighting and LTO-01-E (Pages 1 to 3) for outdoor lighting shall be printed on plans. 10-103(a)(2)(A)
2. The certificate(s) of compliance shall be completed, signed and dated by the person responsible for its preparation prior to plan check approval. _____ (10-103(a)(1))
3. Submit lighting calculations on 2016 lighting compliance forms for:
   a. New and altered indoor lighting to be installed on LTI forms. _____ (140.6, 141.0(l))
   b. New and altered outdoor lighting to be installed on LTO forms. _____ (140.7, 141.0(J))
   c. For conditioned buildings using the Performance Approach, the interior lighting budget and the lighting TDV energy use shall be calculated on the prescriptive LTI forms._____(140.1(a)(2)(C),140.1(b)(2))
   d. There shall be no lighting power trade offs between conditioned and unconditioned areas of a building. _____ (140.6(b))
4. The mandatory lighting controls to be installed shall be listed on the LTI-02-E (pages 1 to 3) and the LTO-01-E (pages 1 to 3) forms respectively. _____ _____ (10-103(a)(2)(A))
5. The appropriate sections and check boxes on form LTI and LTO shall be filled as required. _____ (93.0207)
6. The control type and designated space on the LTI-02-E form (page 2 of 3) and the plan shall agree with Table 140.6-A. _____ (140.6)
7. Provide evidence that the lighting control devices and equipment are certified by the California Energy Commission. _____ (110.9)

EFFICACY:

8. Submit copies of luminaires catalog cut sheets to verify their efficacy and maximum relamping rated wattage: _____ _____ (130.0(c))
9. High efficacy luminaires shall meet Table 150-B below:

Lamp Power Rating or LED System Power Rating	Minimum Lamp Efficacy or LED System Efficacy
5 Watts or less	30 lumens per watt
over 5 watts to 15 watts	45 lumens per watt
over 15 watts to 40 watts	60 lumens per watt
over 40 watts	90 lumens per watt

10. Luminaire power shall be determined as follows:
    a. The wattage of luminaires with line voltage lamp holders shall be the maximum relamping wattage as indicated on the luminaire factory installed label. (130.0(c)(1))
    b. The wattage of luminaires with permanently installed or remotely installed ballasts or transformers shall be the input wattage rating of the lamp/ballast or lamp/transformer combination. (130.0(c)(6), 130.0(c)(8))
    c. The wattage of line voltage lighting track and plug-in busway shall be determined based on the ampere rating of the lighting track and plug-in busway. Submit completed LTI-05-E form (pages 1 and 2). _____ (130.0(c)(7)(A,B))
    d. The wattage of light emitting diode luminaires shall be the maximum rated input wattage of the system as indicated on the factory installed label. ___ (130.0(c)(9))
11. Electric resistance heating systems shall not be used for space heating._____(140.4(g), 150.1(f)(6))
12. Unless permitted under energy budget, electric water heating shall not be used for water heating in new or addition to an existing residential and hotel/motel building. _____(140.5(b), 140.1(a)(1),150.1(g))
13. High efficacy and low efficacy luminaires in residential units shall be separately switched. All exhaust fans shall be separately switched from luminaires. _____ (150.0(k)(2))
14. Recessed luminaires in insulated ceilings shall be tested and listed for zero clearance insulation cover (IC) and air-tight (AT) by a recognized testing laboratory. _____ _____ (150.0(k)(8))

SIGNS:

15. For internally illuminated signs, the maximum allowed lighting power shall be 12 watts per square feet of sign area. For double faced signs, only the area of a single face shall be used to calculate the allowed lighting power. __(140.8(a))
16. For externally illuminated signs, the maximum allowed lighting power shall be 2.3 watts per square feet of illuminated sign area. _____ (140.8(a))
17. As an alternative to 140.8(a), sign lighting sources shall be high pressure sodium, metal halide, neon, cold cathode, light emitting diodes, fluorescent lamps, or be equipped with electronic ballasts with a fundamental output frequency not less than 20kHz. _____ (140.8(b))

INDOOR CONTROLS:

18. Provide an independent switching or control device for each area enclosed by ceiling-height partitions. ____ (130.1(a)(1))
19. Switching or control devices shall be readily accessible and located in the same room or area as the lighting that is controlled. _____ (130.1(a)(2))
20. Maximum security and egress lighting allowance of 0.2 W/sf may remain on at all times when a building is occupied. Provide calculations. _____ (130.1(a)(1) Exception)
21. Floor and wall display, window display, case display, ornamental, and special effects lighting must be separately switched on circuits that are 20 amperes or less. _____ (130.1(a)(4))
22. Provide multi-level lighting control for the general lighting in enclosed spaces of 100 square feet or larger with a connected lighting load exceeding 0.5 watts per square feet and use one of the following control strategies: a) Manual Dimming (b) Lumen Maintenance (c) Tuning (d) Automatic Day Lighting (e) Demand Response _____ _____ (130.1(b))
23. Provide an automatic shut-off control for all indoor lighting system, and show the control wiring diagram. _____ _____ (130.1(c)(1))
24. Countdown timer switches shall not be used to comply with the automatic shut-OFF control requirements in Section 130.1(c)1. _____ (130.1(c)(2))
25. Offices 250 square feet or smaller, multipurpose rooms less than 1000 square feet, and classrooms or conference rooms of any size, shall be equipped with occupant sensor(s) and manual area control switches to shut off the lighting in accordance with 130.1(a). _____ (130.1(c)(5))
26. Provide partial ON/OFF occupant sensing controls that automatically reduce lighting power by at least 50 percent when the areas are unoccupied for the following areas (and control no other areas):
    a. In aisle ways and open areas in warehouses. _____ (130.1(c)(6))
    b. Library book stack aisles >10 feet in length (130.1(c)(6))
    c. Corridors and stairwells. _____ (130.1(c)(6))
27. Where partial ON/OFF controls are required instead of shut off controls, provide at least:
    a. 50% reduction when unoccupied for stairwells and common area corridors which provide access to guestrooms and dwelling units of high-rise residential buildings and hotel/motels. _____ (130.1(c)(7)(A))
    b. In parking garages, parking areas and loading and unloading areas, general lighting shall be controlled by occupant sensing controls having at least one control step between 20 percent and 50 percent of design lighting power. No more than 500 watts of rated lighting power shall be controlled together as a single zone. _____ (130.1(c)(7)(A))
28. Show the locations of automatic time clock override switches on the plan and show the area of coverage, not exceeding _____ sq. ft. per floor. _ (130.1(d)(2))
29. Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal; so that the building's total lighting power can be lowered by a minimum of 15 percent below the total installed lighting power. _____ (130.1(e))

DAYLIGHTING CONTROLS:

30. All Skylit Daylit Zones and Primary Sidelit Daylit Zones shall be shown on the plans. _____ _____ _____ (130.1(d)(2)(A))
31. Luminaires in sidelight and skylit areas shall be separately controlled. _____ _____ _____ (130.1(d)(2)(B))
32. Luminaires that fall in both a Skylit and Primary Sidelit Daylit Zone shall be controlled as part of the Skylit Daylit Zone ___ _____ (130.1(d)(2)(C)
33. For luminaires in daylight zones, automatic daylighting controls shall be installed and configured to operate according to all of the following requirements 130.1(d)(2)(D):
    a. Photosensors shall be located so that they are not readily accessible to unauthorized personnel, and the location where calibration adjustments are made to automatic daylighting controls shall not be readily accessible to unauthorized personnel.
    b. Automatic daylighting controls shall provide functional multi-level lighting having at least the number of control steps specified in Table130.1-A.
    c. For each space, the combined illuminance from the controlled lighting and daylight shall not be less than the illuminance from controlled lighting when no daylight is available.
    d. In areas served by lighting that is daylight controlled, when the illuminance received from the daylight is greater than 150 percent of the design illuminance received from the general lighting system at full power, the general lighting power in that daylight zone shall be reduced by a minimum of 65 percent.
34. In a parking garage area with a combined total of 36 square feet or more of glazing or opening, luminaires providing general lighting that are in the combined primary and secondary sidelit daylit zones shall be controlled independently by automatic daylighting controls, and shall meet the requirements of 130.1(d)(3) and partial ON/OFF. _____ (130.1(d)(3))

OUTDOOR CONTROLS:

35. All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c)2, shall be controlled by a motion sensor._____ (130.2(a))
36. Outdoor lighting shall be controlled by a photo-control or astronomical time switch that automatically turns OFF outdoor lighting when daylight is available. _____ (130.2(c)(1))
37. All installed outdoor lighting shall be circuited and independently controlled from other electrical loads by an automatic scheduling control._____(130.2(c)(2))
38. All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls that meet all of the following requirements: (130.2(c)(3))
    a. Shall be motion sensors or other lighting control systems that automatically controls lighting in accordance with item B in response to the area being vacated of occupants
    b. Shall be capable of automatically reducing the lighting power of each luminaire by at least 40 percent but not exceeding 80 percent, or provide continuous dimming through a range that includes 40 percent through 80 percent
    c. Shall employ auto-ON functionality when the area becomes occupied
    d. No more than 1,500 watts of lighting power shall be controlled together
39. For Outdoor Sales Frontage, Outdoor Sales Lots, and Outdoor Sales Canopies lighting, shall have a part-night outdoor lighting control or Auto-on motion sensor that automatically reduces lighting power by at least 40% when spaces are vacant._____(130.2(c)(4))

40. For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control shall be installed that meets one or more of the following requirements:
    a. A part-night outdoor lighting control
    b. Auto-ON motion sensors that reduce lighting power by at least 40% but no more than 80%
    c. A centralized time-based zone lighting control capable of automatically reducing lighting power by at least 50 percent.

ELECTRICAL POWER DISTRIBUTION SYSTEMS:

41. Each electrical service shall have permanently installed user-accessible metering of total electrical energy use per TABLE 130.5A. _____ (130.5(a))
42. Electrical power distribution systems shall be designed to permit the disaggregated measurement of electrical load energy uses downstream from the service meter according to TABLE 130.5-B. Additive and subtractive methods may be used to determine aggregate and disaggregated energy use._____ (130.5(b))
43. In all buildings, both controlled and uncontrolled 120 volt receptacles shall be provided in each private office, open office area, reception lobby, conference room, kitchenette in office spaces, and copy room. Additionally, hotel/motel guest rooms shall comply with 130.5(d)(5)). _____ _____ (130.5(d))
44. Demand responsive controls and equipment shall be capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. _____ (130.5(e))
45. Energy Management Control System (EMCS) shall comply with the requirements of CEC_____ (130.5(f))

RESIDENTIAL REQUIREMENTS (150.0(k)):

AREA	REQUIREMENT
Kitchen	● > 50% of installed wattage must be high efficacy
Bathroom	● On high efficacy fixture AND ● Manual-on vacancy sensor OR high efficacy for all other fixture
Garage, laundry room, utility room, closets ≥70sqft	● High efficacy AND ● Manual-on vacancy sensor
All other interior rooms	● High efficacy OR ● Manual-on vacancy sensor ● Dimmer
Outdoor Lighting	● High efficacy OR ● Low efficacy controlled by manual ON OFF switch AND both: ● Motion sensor without bypass switch AND ● One of the following: integral photocontrol, astronomical timeclock, or energy management control system
Common Areas	● High efficacy or vacancy sensor in areas where common space ≤ 20% of floor area ● In common areas that >20% of floor area, occupancy responsive adaptive corridor and stairwell lighting is required. ● Multi-family complex ≥ 4 stories shall comply with non-residential code
Residential Parking	● Lots for < 7 cars must comply with Outdoor Lighting requirements ● Garages for < 7 cars must comply with Garage requirements ● Lots and garages for 8 vehicles or more must comply with Nonresidential Lighting Standards

X. GREEN BUILDING CODE

RESIDENTIAL BUILDINGS:

(*Applicable to new construction*)

1. Single, Duplex and Townhouse Dwellings with attached private garages:
    a. Provide either one 208/240 V branch circuit or, panel capacity and 1“conduit (terminated to a j-box) for the future installation of a level 2 electric vehicle supply equipment._____ (LAGBC 4.106.4.1)
    b. The outlet or conduit termination shall be located in close proximity of the proposed location of charging system._____ (LAGBC 4.106.4.1)
2. All multi-family dwelling occupancies shall comply with the following: (LAGBC 4.106.4.2)
    a. At least five (5) percent of the total parking spaces provided for all types of parking facilities, but in no case less than one location, shall be capable of supporting future electric vehicle supply equipment. _____ _____ (LAGBC 4.106.4.2)
    b. When only one charging station is required, provide a 208/240 V branch circuit and a 1“conduit (terminated to a j-box). The panel shall have adequate capacity for the installation of at least the level 2 electric vehicle supply equipment (EVSE)._____ (LAGBC 4.106.4.2.1)
    c. When multiple charging stations are required, plans shall indicate the proposed type and location of EVSE and also include raceway method(s), wiring schematics and electrical calculations to verify that the electrical system has sufficient capacity to simultaneously charge all electric vehicles at all designated EV charging locations at their full rated amperage. Plan design shall be based upon Level 2 or greater EVSE at its maximum operating ampacity._____ (LAGBC 4.106.4.2.2)
3. Provide a label stating “EV CAPABLE” shall be posted in a conspicuous place at the service panel or subpanel and next to the raceway termination point. _____ _____ (93.0207, LAGBC 4.106.4.2.3)

NON-RESIDENTIAL BUILDINGS:

(*Applicable to new construction*)

1. Parking facilities shall have a number of electric vehicle charging spaces as determined from Table 5.106.5.3.3. _____ (LAGBC 5.106.5.3.2)
2. The electrical system shall have sufficient capacity to simultaneously charge all electrical vehicles at their full rated amperage. Plan design shall be based on 40-ampere minimum EV branch circuit, with EVSE or greater at its maximum operating ampacity. The raceway shall not be less than the trade size 1”. _____ (LABGC 5.106.5.3.2)
3. A label stating “EV CAPABLE” shall be posted in a conspicuous place at the service panel or subpanel and next to the raceway termination point._____ (LABGC 5.106.5.3.3)
4. Except for emergency lighting, exempted luminaires under the provisions of section 147 of the California Energy Code, college campus lighting requirements for parking facilities and parkways per section 91.1205.6 of the Los Angeles Building Code, building facade meeting the requirements in Table 140.7-B of the California Energy Code, and custom lighting features as allowed by the local AHJ as permitted by section 101.8 of the building code, outdoor lighting systems shall be designed and installed to comply with the following:_____ (LABGC 5.106.8)
    a. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and
    b. Backlight, Uplight and Glare (BUG) ratings as defined in IESTM-15-11; and
    c. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent

Y. ADDITIONAL CORRECTIONS

	Code Sec. No