



TOWN OF HILLSBOROUGH

BUILDING & PLANNING DEPARTMENT

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General Requirements for Residential Kitchens

BUILDING

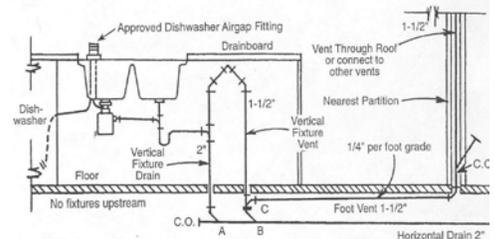
1. Minimum ceiling height in a kitchen is 7' clear, from the finished floor to the finished ceiling.
2. Insulation is required to be installed in all walls, floors and ceilings open for construction between conditioned space and unconditioned space, such as exteriors, garages, crawl spaces and attics. Type or insulation required: Walls: 2x4 R-13 or 2x6 R-19 Ceiling R-30 – Floor R-19)
3. Doors opening to garages must be a minimum of 1 3/8" solid core, self closing and latching. The door must seal on all four edges. Doors must not open up over steps or landing lower than 1" from the threshold of the door.
4. A modified 1-hr wall is required between the garage and the kitchen. The garage side sheetrock shall be 1/2" type X minimum.

ELECTRICAL

5. Provide electrical calculations per Article 220, if less than 200 amp service (fill out attached: RESIDENTIAL ELECTRICAL LOAD CALCULATIONS form)
6. Provide a completed CF-6R RESIDENTIAL KITCHEN LIGHTING CERTIFICATE OF INSTALLATION form. (attached) or may be accessed at the following link: http://www.energy.ca.gov/title24/2008standards/residential_manual.html
7. Two = 20 amp. Dedicated kitchen counters circuits are required. All the kitchen counter receptacles shall be GFIC protected. The counter top circuits may only be shared with the dining room or a pantry. Dishwashers, garbage disposals, insta-hots, compactors, built in microwave ovens, and the kitchen lighting **shall not** be on the same electrical circuits.
8. Receptacles are to be located so no appliances are further than 2' from any plug. (4' max. apart located on all counters) Counter tops wider than 12" require receptacles. Receptacle shall be no higher than 18" above the counter.
9. Island or peninsulas require at least 1 receptacle. The receptacles may not be more than 12" below the counter surface or be below a counter that extends more than 6" beyond a cabinets end.
10. At least 50% of total wattage in kitchen must be **high efficacy**. Low efficacy fixtures may be installed but not to exceed 50% of total wattage in kitchen area. Other areas near the kitchen can be used in the watts calculation as long as they are on the same switch as kitchen lighting. For dwelling larger than 2500 sqft a 100 watt allowance will be added to the non high-efficacy lighting total. Conditions for this extra 100 watts are as follows- all non high efficacy lighting must be on a manual on/off sensor or a programmable lighting control system. Interior cabinet lighting will not be counted against the 50% rule as long as the watts do not exceed 20 watts per lineal foot of cabinet.
11. The maximum length for a garbage disposal cord is 36" and a dishwasher is 48".
12. Multiwire duplex receptacles for garbage disposals and dishwashers require tie-bars on the breaker in the service panels.
13. Interior cabinet lighting will not be counted against the 50% rule as long as the watts do not exceed 20 watts per lineal foot of cabinet

PLUMBING

14. All new gas piping shall be sized to supply sufficient gas to the appliances. The gas piping shall be tested with 3 PSI for a minimum of 10 minute. Testing gauge must read in tenth. Gauge not to exceed 5 times the testing pressure.
15. Hot water piping 3/4" and greater serving a kitchen shall be insulated with minimum 1" wall thickness insulation.
16. All oven and stove gas valves shall be accessible and be within 6' of the appliance. Connectors may not be concealed or pass through any floor, wall partition, ceiling or appliance housing.
17. A 2" assessable plumbing cleanout under the sink shall be required if the sink is the highest fixture on the system.
18. An air-gap above the sink rim shall be installed between the dishwasher drainpipe and the garbage disposal inlet.
19. A pressure-absorbing device is recommended to be installed before the dishwasher angle-stop. The device shall be an air-chamber or approved mechanical device.



Island drainage & venting system

MECHANICAL

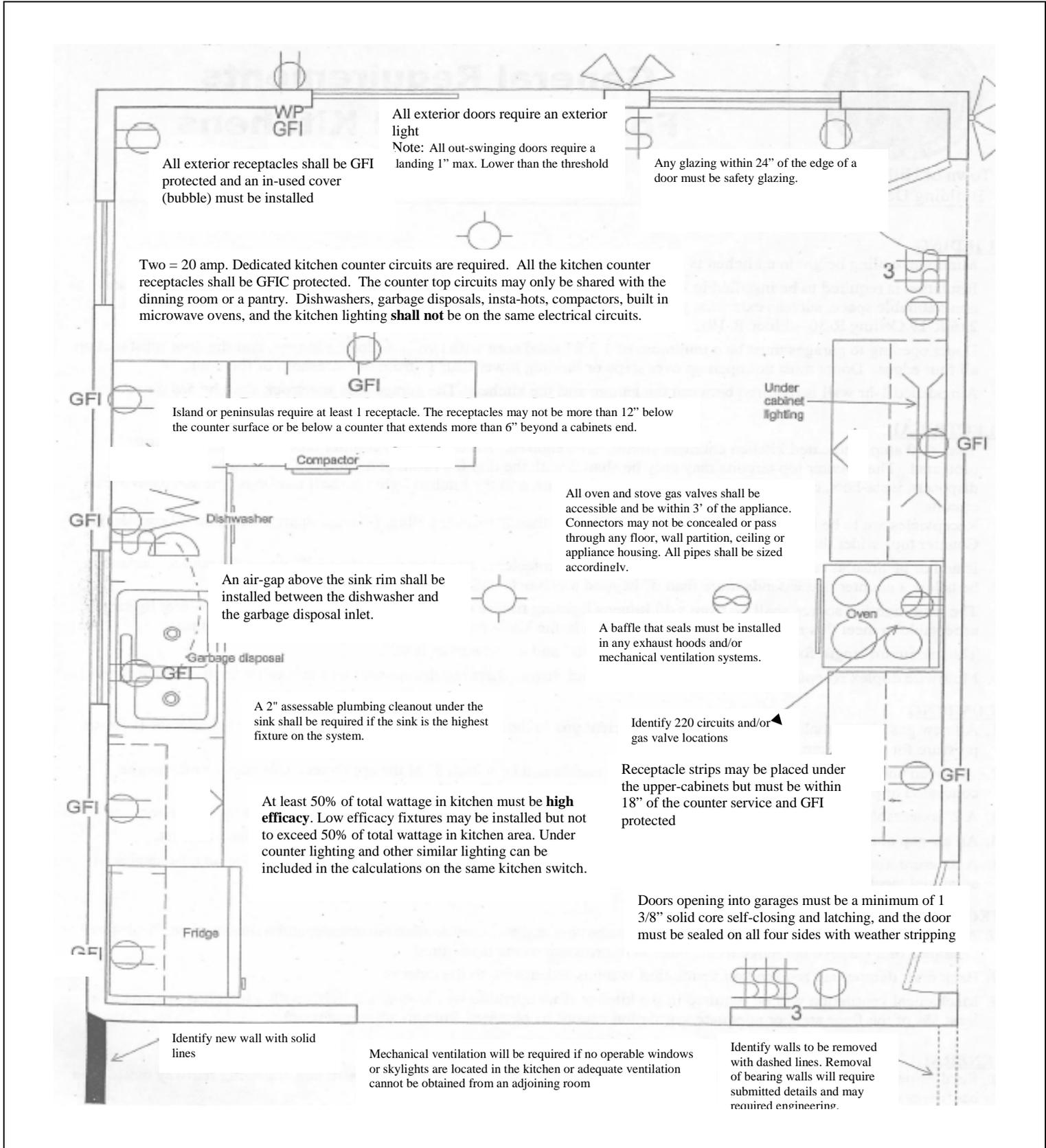
20. A vertical minimum clearance of 30" is required above a range to combustibles materials, and a minimum vertical clearance of 24" above the range to the built-in microwave ovens is required. NOTE: Larger units require greater clearances, refer to the manufacturers requirements.
21. Mechanical ventilation will be required in the kitchen if no operable windows or skylights with a net clear opening of a least 5% of the floor area, or adequate ventilation cannot be obtained from an adjoining room. Back draft damper are required on ventilation systems exhausting to the exterior

GENERAL

22. Final inspection will require operational smoke detectors/carbon monoxide detectors in all the bedrooms, basement and adjoining hallway outside all sleeping rooms and a minimum of one per floor level.

Typical kitchen floor plan showing general requirements:

Provide the following: Three sets of plans with the following information; Owners, Name & address, page numbers – 1/4" or 1/2" scale
Identify: Existing walls, walls to be removed and/or added - switches, lights, florescent lights - plugs, GFI plugs - 220 outlets – plumbing - gas lines & location of valves - doors - windows - skylights - appliances - exhaust fans or ventilation
Show: Dimensions and sizes of the rooms, walls, pipes, doors, windows and skylights and note height of ceilings



***SMOKE AND CARBON MONOXIDE ALARMS**

- PHOTOELECTRIC* **SMOKE ALARMS** shall be installed in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedroom(s), and on each additional story, including basements and habitable attics. *CRC R314*

*Dual sensor (Photoelectric/Ionization) alarms shall be used if located not less than 20 ft from a kitchen, fireplace or wood-burning stove. *PAMC*

CARBON MONOXIDE ALARMS shall be installed outside each separate sleeping area in the immediate vicinity of the bedroom(s), and on each additional story, including basements and habitable attics. *CRC R315*

- Smoke and Carbon Monoxide alarms** shall be California State Fire Marshal and UL listed/ approved.
- BEDROOMS AND DENS (W/CLOSET)**
- Bedroom window egress** min. clear height 24", min. clear width 20", min. 5.7 sq. ft. open able area except at grade floor may be 5.0 sq. ft. Max. sill height 44" clear space to floor or requires ladder.
- Switched Lighting** shall be high efficacy (fluorescent OR occupant sensor OR dimmer). Closets that are less than 70 sq. ft. are exempt from this requirement. *Energy Code*
- Closet light clearances** : Surface incandescent lights shall be fully enclosed and a min. of 12" clearance from storage/shelf area. Fluorescent lights shall be a min. 6" from storage/shelf. Recessed lights in wall or ceiling shall be a min. 6" from storage area. *CEC 410.8 (D) (1) (2) (3) (4)*
- Roof/balcony drains:** Verify that 2nd floor exterior balcony has primary and secondary drains, 1/4" per foot slope to drains and min 2" clearance from weep screed or wood to paving. Check permit card that deck was water tested. *CPC 1101.11.2.1*

 HALLWAYS

- Switched-lighting shall be high efficacy (fluorescent OR occupant sensor OR dimmer).
- The minimum ceiling height in a hallway is 7'.
- The minimum width of the hallway 36"
- Smoke alarms are required on ceiling or wall outside of each separate sleeping room in the immediate vicinity of the bedrooms. (min. 3' clearance from any air supply or per manufacture instructions)
- Hallways: 10' or more in length require min. (1) electric receptacle. *CEC 210.52(H)*
- Min. of (1) switch controlled light in hallway. (dimmer or fluorescent) *CEC 210.70(2) (A)*

Residential Lighting

Site Address:	Enforcement Agency:	Permit Number:
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1. Kitchen Lighting

Does project include kitchen lighting?

<input type="checkbox"/> Yes, complete section 1 <input type="checkbox"/> No, go on to section 2
<input type="checkbox"/> Yes §150(k)3: The wattage of permanently installed luminaires (lighting fixtures) has been determined as specified by §130(d).
<input type="checkbox"/> Yes <input type="checkbox"/> No §150(k)3: In the kitchen, are there electrical boxes finished with a blank cover or where no electrical equipment has been installed, and where the electrical box can be used for a luminaire or a surface mounted ceiling fan? If yes, the following row must also be yes:
<input type="checkbox"/> Yes <input type="checkbox"/> NA Wattage has been calculated as 180 watts of low efficacy lighting per blank electrical box.

§150(k)8 Kitchen Lighting must comply with either method (a), (b), or (c) below:

(a) All high efficacy luminaires

<input type="checkbox"/> Yes, complies because only high efficacy luminaires have been installed in the kitchen.
<input type="checkbox"/> No, complies with method (b) or (c).

(b) ≥ 50% watts used by high efficacy luminaires

<input type="checkbox"/> Yes, complies because at least 50% of the installed watts are from permanently installed high efficacy luminaires as demonstrated in the table below: Total A ≥ Total B.
<input type="checkbox"/> No, complies with method (a) or (c).

Fill out the following table if complying with either method (b) or (c).

Table (b)

Luminaire Type	Efficacy		Watts	x	Quantity	=	High Efficacy Watts	or	Low Efficacy Watts
	High	Low							
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
Complies with method (b) if $A \geq B$							Total: A:	\geq	B:

(c) Additional Kitchen Low Efficacy Lighting

<input type="checkbox"/> Yes, complies because the kitchen lighting qualifies for additional low efficacy lighting and as demonstrated in table in (b) (above) and the table in (c) (below) that $(A + C) \geq B$
<input type="checkbox"/> No, complies with method (a) or (b).

Additional kitchen low efficacy lighting is available only if all of the following are true:

<input type="checkbox"/> Yes. All low efficacy luminaires in the kitchen are controlled by a vacancy sensor Dimmer energy management control system (EMCS) or a multi-scene programmable control system.
<input type="checkbox"/> Yes. Permanently installed luminaires in garages laundry rooms closets greater than 70 square feet and utility rooms are high efficacy luminaires AND are controlled by a vacancy sensor.

Table (c)

From the Table in (b)		Use 50 W for dwelling units $\leq 2,500 \text{ ft}^2$ Use 100 W for dwelling units $> 2,500 \text{ ft}^2$	Add	Yes/No ?
A	B	C	A + C	Is $(A+C) \geq B$?

2. Lighting Internal to Cabinets

Does project includes lighting internal to cabinets?

<input type="checkbox"/> Yes, complete section 2 <input type="checkbox"/> No, go on to section 3
<input type="checkbox"/> Yes, §150(k)9: Permanently installed lighting internal to cabinets uses ≤ 20 watts of power per linear foot of illuminated cabinet.

Residential Lighting

Site Address:

Enforcement Agency:

Permit Number:

3. Installed Devices and Components Have Been Certified to the Energy Commission

Does the project include any of the devices or components listed below? Yes, complete section 3 No, go on to section 4

Yes
 §119 and §150(k)7(F): Any of the following devices and components which have been installed have been certified to the Energy Commission according to the applicable provisions of §119: All LED lighting systems that are classified as high efficacy, ballasts used in recessed luminaires, vacancy sensors (automatic off/manual on occupant sensors), dimmers, track lighting integral current limiters, and outdoor motion sensors.

4. Lighting Controls Complete section 4

- Yes NA §150(k)7A: Permanently installed low efficacy luminaires are controlled by switches separate from those controlling high efficacy luminaires.
- Yes NA §150(k)7B: Exhaust fans with integral lighting systems are switched separately from lighting systems, OR have a lighting system that can be manually turned on and off while allowing the fan to continue to operate for an extended period of time.
- Yes NA §150(k)7C: All permanently installed luminaires are switched with readily accessible controls that permit the luminaires to be manually switched on and off.
- Yes NA §150(k)7D: All lighting controls have been installed in accordance with the manufacturer’s instructions.
- Yes NA §150(k)7E: All lighting circuits that are controlled by more than one switch, where a dimmer or vacancy sensor has been installed to comply with §150(k), no controls bypass the dimmer or vacancy sensor functions.

5. Luminaires (Lighting Fixtures)

Does the project include the installation of any luminaires (indoor or outdoor)?

- Yes, complete section 5 No, go on to section 6
- Yes, high efficacy luminaire classification has been determined according to §150(k)1, and low efficacy luminaire classification has been determined according to §150(k)2.
- Yes NA §150(k)4: Fluorescent lamps rated 13 watts or greater have an electronic ballasts having an output frequency no less than 20 kHz.
- Yes NA §150(k)5: Permanently installed night lights, and night lights integral to permanently installed luminaires or exhaust fans, contain only high efficacy lamps meeting the minimum efficacies contained in Table 150-C and do not contain a line-voltage socket or line voltage lamp holder, OR the night light is rated to consume no more than 5 watts of power and does not contain a medium screw-base socket.
- Yes NA §150(k)6: Lighting integral to exhaust fans, in rooms other than kitchens, meet the applicable requirements of §150(k).
- Yes NA Any electrical box finished with a blank cover or where no electrical equipment has been installed, and where the electrical box can be used for a luminaire or a surface mounted ceiling fan, has been treated as low efficacy luminaires for compliance with §150(k).

Does the project include any luminaires that are recessed into insulated ceilings?

- Yes, complete the rest of section 5 No, go on to section 6
- Yes, §150(k)12: Luminaires that are recessed into insulated ceilings meet all of the following conditions:
 - Yes, are listed, as defined in §101, for zero clearance insulation contact (IC) by UL or other nationally recognized testing/rating laboratory, and
 - Yes, have labels that certify the luminaires are airtight with air leakage less than 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283 (Exhaust fan housings are not required to be certified airtight), and
 - Yes, are sealed with a gasket or caulk between luminaire housings and the ceiling, and all air leak paths between conditioned and unconditioned spaces have been sealed with a gasket or caulk. (including all exhaust fan housings), and
 - Yes, allows ballast maintenance and replacement to be readily accessible to building occupants from below the ceiling without requiring the cutting of holes in the ceiling.

6. Indoor Lighting (any indoor room that is not a kitchen)

Does the project include permanently installed luminaires in any room that is not a kitchen?

- Yes, complete section 6 No, go on to section 7
- Yes NA §150(k)10: Permanently installed luminaires in bathrooms, garages, laundry rooms, closets > 70 ft², and utility rooms are high efficacy luminaires OR are controlled by a vacancy sensor.
- Yes NA §150(k)11: Permanently installed luminaires located in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, closets, and utility rooms are high efficacy luminaires, OR are controlled by a dimmer switch OR are controlled by a vacancy sensor.

Residential Lighting

Site Address:	Enforcement Agency:	Permit Number:
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7. Outdoor Lighting

Does the project include any permanently installed outdoor lighting?

<input type="checkbox"/> Yes, complete section 7 <input type="checkbox"/> No, go on to section 8	
<input type="checkbox"/> Yes <input type="checkbox"/> NA	§150(k)13: Luminaires providing outdoor lighting, including outdoor lighting for private patios on low-rise residential buildings with four or more dwelling units, entrances, balconies, and porches, and which are permanently mounted to a residential building or to other buildings on the same lot are high efficacy luminaires OR are controlled by a manual on/off switch, plus a motion sensor not having an override or bypass switch that disables the motion sensor, plus one of the following three additional control methods:
	a. A photocontrol that does not have an override or bypass switch that disables the photocontrol; or
	b. An astronomical time clock not having an override or bypass switch that disables the astronomical time clock; or
	c. Energy management controls systems (EMCS) not having an override or bypass switch that allows the luminaire to be always on.
<input type="checkbox"/> Yes <input type="checkbox"/> NA	Exception 2: Low efficacy outdoor luminaires used to comply with Exception 1 to §150(k)13 are controlled by an override switch which temporarily bypasses the motion sensing function, and the motion sensor is automatically reactivated within six hours. The luminaire is controlled by a photocontrol, astronomical time clock, or EMCS as required by Exception 1 to §150(k)13.
<input type="checkbox"/> Yes <input type="checkbox"/> NA	Exception 3: There are permanently installed luminaires in or around swimming pools, water features, or other locations subject to Article 680 of the California Electric Code which do not need to be high efficacy luminaires.
<input type="checkbox"/> Yes <input type="checkbox"/> NA	§150(k)14: Internally illuminated address signs comply with §148, OR do not contain a screw-base socket and consume no more than 5 watts of power as determined according to §130(d).
<input type="checkbox"/> Yes <input type="checkbox"/> NA	§150(k)15 Lighting for parking lots and carports with a total of 8 or more vehicles per site have lighting that complies with §130,132, 134, and 147. Lighting for parking garages for 8 or more vehicles comply with §130, 131, 134, and 146. If yes, the Nonresidential compliance forms must be submitted

8. Common areas of low-rise residential buildings

Does the project include the installation of any luminaires in common areas of low-rise residential buildings?

<input type="checkbox"/> Yes, complete section 8 <input type="checkbox"/> No, go on to section 9	
<input type="checkbox"/> Yes	§150(k)16: Permanently installed lighting in the enclosed, non-dwelling spaces of low-rise residential buildings with four or more dwelling units shall be high efficacy luminaires OR are controlled by occupant sensor(s) certified to comply with §119(d).

DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance (CF-1R) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-1R that apply to the installation have been met.
- **I will ensure that a completed, signed copy of this Installation Certificate shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Installation Certificate is required to be included with the documentation the builder provides to the building owner at occupancy.**

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	Responsible Person's Signature:	
CSLB License:	Date Signed:	Position With Company (Title):