CONSTRUCTION GUIDELINES FOR RETAIL FOOD FACILITIES

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Introduction

This construction guide is for any person wanting to construct or remodel a retail food facility handling unpackaged food in Orange County. This guide provides an overview of the plan check process, a checklist, and an outline of all the structural details that California State Health and Safety Code require for retail food facilities. A separate guide is available for retail food facilities which will handle only prepackaged food. Please contact us at the number listed on the cover page if you have questions about your particular type of facility.

First, let's take an overview of the Environmental Health Plan Check process from the beginning to your grand opening:

Plan Check Process Overview

Plan Submittal

Before beginning any construction or remodeling work, you must submit three (3) copies of detailed plans/blueprints and specifications to the Environmental Health office (see below for plan specifics). The plans may be prepared by an architect, draftsperson, contractor, or owner. All plans must be drawn in a professional manner encompassing all applicable requirements of this construction guide. In addition, you must obtain all approvals from your local building and fire authorities prior to construction.

Plan Check Fee

A plan check fee must be paid at the time of submittal. The fee is based upon seating capacity when applicable or square footage and whether it is new construction or a remodel. Current fee schedules are available on our website www.ocfoodinfo.com and by request.

Remodels of retail food facilities also require plan review and submittal of the associated fee. A remodel is any construction or alteration to an existing retail food facility. Remodeling also includes the installation of equipment or repairs to a food facility which alters its configuration or method of operation. Installing a food facility in a new structure or in an empty building is new construction. Also, installing a food facility in a former non-food related facility, such as a shoe store, falls under the new construction category. If you are starting from a former food facility where all the equipment and interior structures have been removed, that also is considered new construction.

Initial Plan Review

Plans that are submitted will be reviewed and approved as submitted, approved with corrections or denied. In order for plans to be approved, they must include all the

information regarding structural requirements that are listed in this guide, and the plans themselves must be drawn to scale (e.g., ¼″ = 1′), using non-erasable ink or print (no pencil). Your plans must include:

- ✓ Complete floor plan with plumbing and electrical outlets and electrical panels.
- ✓ Complete equipment layout, including elevations of equipment and equipment specifications.
- ✓ Complete exhaust ventilation plans, including make-up air. Indicate the type of comfort cooling in building (e.g. "building is cooled by refrigerated air conditioning", "evaporative cooling" or "no cooling system is installed").
- ✓ Finish schedule for walls, ceilings and floors that indicates the type of material, surface finish and color. Samples of proposed finish materials should be submitted with the plans.
- ✓ Remodel plans must identify all proposed changes to existing structures, spaces, and equipment.
- ✓ A site plan showing the proposed rubbish and food waste storage receptacle location.
- ✓ A statement of the proposed customer seating capacity, when applicable.

Approval or Denial

If the plans you submitted do not contain all the information regarding meeting the requirements, additional information will be required and the plans may have to be revised before approval is granted. If your plans do meet all the requirements, your plans will be marked with approval stamps and you will be given back two sets of the originals that you submitted. One of these copies must be kept at the jobsite up until the end of the construction/remodel project. It is only after you receive the approval of your plans that you can begin construction/work at your facility.

Modification of Plans

If any changes are proposed to the plans *after* approval, they must be reviewed and re-approved by this Agency prior to being implemented.

Preliminary Inspection When construction is approximately 75% to 80% completed, with plumbing, rough ventilation, and rough equipment installed, you must call your Plan Checker (the person indicated on your approved plans) for a *preliminary construction inspection*. Requests should be made at least two (2) working days prior to the date of inspection requested. The preliminary inspection is usually scheduled at least two weeks prior to the proposed opening of the food facility. Note that approved materials and approved workmanship are significant factors in the evaluation and field approval of food facility construction and equipment installation.

Final Inspection Upon completion of 100% of the construction, including all finishing work, you must call your Plan Checker to arrange for a *final construction inspection*. Contact your Plan Checker at least two (2) working days in advance for an appointment for the final inspection.

Issuance of Permit Once your facility has passed the final inspection, you will be issued a Health Permit and you are then able to open for business, or begin using the newly remodeled areas of your business.

CHECKLIST
GENERAL CONSTRUCTION & EQUIPMENT REQUIREMENTS

RETAIL FOOD FACILITY
GENERAL STRUCTURAL REQUIREMENTS

1. FLOORS

a. Floors in food facilities shall be smooth and impervious to water, grease and acid, and be made of easily cleanable construction. Floor surfaces in all areas where food is prepared, packaged, or stored, where any utensil is washed, where refuse or garbage is stored, where janitorial facilities are located, in all toilet and handwashing areas and in employee change and storage areas, shall be an approved type that continues up the wall or toe-kicks, at least four (4) inches, in a seamless manner, with a 3/8 inch minimum radius cove. An approved slim foot ceramic, quarry or metal topset base is generally acceptable.

b. Floor drains are required in floors that are water-flushed for cleaning where pressure spray methods for cleaning equipment are used. Trench drains may be used in doorways or when the amount of water used for cleaning will be excessive. High pressure hot water cleaning systems are recommended in addition to floor drains when the degree of roughness of the slip resistant agent is excessive as determined upon evaluation by this Agency.

c. Flooring under equipment and on the coved bases shall be completely smooth. Floor surfaces, which contain slip resistant agents, shall be restricted to traffic areas only.

2. WALLS / CEILINGS

a. Walls and ceilings in all rooms shall be smooth and nonabsorbent with a light colored, washable finish. (Note: light colored is defined as having a light reflectance value of 70% or greater) The requirement does not apply to some areas, such as dining and sales areas; alternative finish colors will be evaluated on a case by case basis.

b. Wall materials other than smooth plaster or putty coat plaster, drywall with sealed and taped joints, or plywood with properly sealed joints require submission of a sample.

c. All wall surfaces shall be sealed with a cleanable paint such as: gloss or semi gloss enamel, epoxy, varnish or other equivalent washable finish.

3. EXHAUST HOODS AND DUCTS

a. Mechanical exhaust ventilation shall be required at or above all cooking equipment such as ranges, griddles, ovens, deep fat fryers, barbecues, and rotisseries to effectively remove cooking odors, smoke, steam, grease and vapors.

b. All hoods, ducts and exhaust outlets shall be installed in accordance with the current edition of the Uniform Mechanical Code as adopted by the local building department. All joints and seams shall be tight or soldered for ease of cleaning. Riveted seams are not considered easily cleanable.

c. Food heating or warming devices, cheese melters, etc., that are installed above other equipment beneath an exhaust hood, may create an air flow obstruction to proper ventilation of the equipment for which the hood ventilation system is designed. The design, construction and installation of such warming devices under a hood are subject to evaluation and approval by this Agency prior to installation.

d. Canopy-type hoods:

The lower lip of canopy-type hoods should not be more than seven (7) feet above the floor and should not be more than four (4) feet above the cooking surface. The hood shall overhang or extend at a horizontal distance not less than six (6) inches beyond the outer edges of the cooking surfaces on all open sides. It shall have grease troughs and drip pans that are easily cleanable.

e. Noncanopy-type hoods:

Noncanopy-type hoods will be approved providing they are constructed to be easily cleanable and they comply with the minimum exhaust air velocity requirements. Shielding at the ends of the hood may be necessary to prevent interference from cross drafts.

f. Make-up air:

Make-up air shall be provided at least equal to that amount which is mechanically exhausted. Windows and doors shall not be used for the purpose of providing make-up air.

g. Fire extinguishing systems may be required by local fire department codes. They shall be installed so as to allow easy cleanability of the hood and duct systems and, whenever possible, shall not be installed above food or utensil handling areas.

4. REFRIGERATION

a. All refrigeration units shall be adequate in capacity to the needs of the proposed operation and shall comply with the following requirements:

(1) Be capable of operating so as to maintain the refrigerated foods at or below 41° Fahrenheit at all times.

(2) Be specifically constructed for commercial use. Domestic model refrigeration units do not meet the ANSI certified sanitation standards, such as NSF International Food Service Equipment.

(3) Be provided with an accurate, readily visible thermometer.

(4) Have smooth, nonabsorbent and easily cleanable interior and exterior surfaces. If cement, plywood, or other similar absorbent materials are used, the surfaces must be sealed. All joints must be sealed.

(5) Condensate waste from reach-in refrigeration units may be drained into a floor sink or an approved evaporator unit.

(6) Cooling coils and related electrical, drainage and refrigerant lines shall be installed in a safe and easily cleanable manner. Drainage and refrigerant lines shall be constructed of nontoxic materials or properly insulated and covered with an approved, easily cleanable and nontoxic material.

b. Walk-in Refrigeration Units shall also:

(1) Have a coved base with a radius of at least 3/8 inch at the floor/wall juncture; the floor material shall extend up to a height of at least four (4) inches on the walls. Four (4) inch approved metal topset coving with a minimum 3/8 inch radius is acceptable against metal wall surfaces of walk-in refrigeration units.

(2) Open into an area with approved finishes within the facility. Refrigeration units may not open into the customer area or directly outside, with the exception of customer self-serve prepackaged refrigeration units.

(3) Have condensate waste drained into a floor sink. The floor sink is not to be located inside the walk-in refrigeration unit.

(4) If cement, plywood or other similar absorbent materials are used, the surfaces and joints must be sealed.

5. ICE MACHINES

All ice machines shall be located within the building in an easily cleanable, well ventilated area, and shall be drained to a floor sink.

6. FLOOR SINKS

a. All condensate and similar liquid waste shall be drained by means of indirect waste pipes into an open floor sink or approved receptacle.

b. Drain lines must be installed, constructed and maintained to be easily cleanable and prevent the harborage of insects. Installing horizontal runs of drain lines at least 1/2 inch from the wall and six (6) inches off the floor will accomplish this task. All drain lines must terminate at least one (1) inch above the overflow rim of the floor sink to provide an air gap.

c. Floor sinks shall be located so that they are readily accessible for inspection, cleaning and repair. The floor sink must be located close enough to the equipment being drained to facilitate proper drainage. Typically, this distance is within 15 feet.

d. Waste lines may not cross any aisle, traffic area or door opening.

e. Floor sinks or floor drains are not permitted inside walk-in refrigeration units.

7. UTENSIL SINK

a. Where multiservice utensils, i.e., pots, pans, etc., are utilized, there shall be provided at least a three (3)-compartment stainless steel sink with dual, integrally installed stainless steel drainboards.

b. A separate, approved three (3)-compartment sink must be installed within each department in a grocery store which handles unpackaged foods, i.e., deli, meat, bakery, etc., and remote food service operations in restaurants, i.e., sushi bars, espresso bars, oyster bars, etc.

c. The sink must otherwise be capable of accommodating the largest utensil to be washed, and the drainboards shall be as large as the largest sink compartment. Typical dimensions are at least 18" x 18" x 12" deep with minimum 18" x 18" drainboards, or 16" x 20" x 12" deep with 16" x 20" drainboards. These sizes are generally sufficient to accommodate most food service operations.

8. BAR SINK

Where alcoholic beverages are served, the facility must provide an approved three (3) compartment bar sink large enough to accommodate the largest utensil. Typically the largest utensil is a blender which can be washed in the standard size bar sinks which are a minimum of 10" x 14" x 10" deep compartments with 18" or 12" long dual, integrally installed stainless steel drainboards and backsplash. This sink must have an indirect connection to a floor sink. A bar sink equipped with a fourth dumping compartment is strongly recommended.

9. GARBAGE DISPOSALS

This Agency does not regulate the installation of garbage disposals. Most building departments and/or sanitation agencies prohibit them. Contact your local building and your local sanitation agency for limitations within your area.

10. GREASE TRAPS AND GREASE INTERCEPTORS

This Agency does not regulate the installation of grease traps or grease interceptors. If you do decide to install one, please indicate its location on the plan and contact your local building department for design, construction, installation and approvals.

11. JANITORIAL SINK

a. A one-compartment, non-porous janitorial sink or mop basin with hot and cold running water shall be installed for general cleanup activities.

b. A curbed area properly sloped to a drain, that is provided with hot and cold running water, a mixing faucet, and an approved backflow prevention device, is also acceptable. All curbed area surfaces shall be non-porous.

12. HANDWASHING SINKS

a. Handwashing sink(s) shall be provided in all food preparation areas.

b. Soap and sanitary towels shall be provided in single-service dispensers at all handwashing sinks.

c. A separate, approved handwashing sink should be installed within each department in a grocery store which handles unpackaged food, i.e., deli, meat, bakery, etc., and remote food service operations in restaurants, i.e., sushi bars, espresso bars, oyster bars, etc.

13. FOOD PREPARATION SINKS

Food facilities that prepare raw vegetables or meat may be required to have a food preparation sink. This sink must have an indirect connection to a floor sink.

14. GENERAL PURPOSE HOT WATER

a. Provide a water heater, which is capable of constantly supplying hot water at a temperature of at least 120° Fahrenheit to all sinks, and other cleanup facilities. In sizing the water heater, the peak hourly demands for all sinks, etc., are added together to determine the minimum required recovery rate.

b. A water heater should not be purchased until this Agency determines the minimum required energy input for the water heater.

15. DIPPER WELL

A running water dipper well should be provided if scoops are used for dipping ice cream. The dipper well shall be drained by an indirect connection to a floor sink.

16. WINDOW SCREENS

All openable windows, such as restroom windows, shall be screened. Sixteen (16) mesh screening is sufficient to prevent the entrance of insects.

17. SERVICE OF UNPACKAGED FOODS DIRECTLY TO OR BY THE CUSTOMER

Displays of unpackaged foods shall be shielded so as to intercept a direct line between the customer's mouth and the food being displayed, **or** shall be dispensed from approved self-service containers.

18. BACK-UP DRY FOOD AND BEVERAGE STORAGE

a. Adequate and suitable floor space shall be provided for the storage of food, beverages, and related products. In addition to working storage and refrigeration storage, additional backup storage must be provided. Working storage is considered to be cabinets over and under food handling equipment and wall mounted shelves which are located in and used in conjunction with food preparation areas. Reference the following to determine the minimum amount of backup storage space:

(1) Within food facilities that have food preparation areas which total 400 square feet or less **and** have 100 customer seats or less, typically a minimum of 100 square feet of floor space should be sufficient when 32 linear feet of approved shelving units is installed in the 100 square feet of dedicated floor space.

(2) Within food facilities that have food preparation areas which total **more** than 400 square feet, **or more** than 100 customer seats, the typical floor space needed for backup dry food storage can be determined by dedicating one square foot of floor space per customer seat, or by dedicating a space equal to 25% of the food preparation area, whichever is greater. The quantity of shelving units to be installed in this dedicated space should be *based upon whichever of the following formulas provides the greater amount of shelving*:

(a) Linear footage of shelving units =

$$\frac{32 \times (\text{seating capacity})}{100}$$

(b) Linear footage of shelving units =

$$\frac{32 \times (\text{sq. ft. of preparation areas})}{400}$$

(3) Where remote dry food and beverage storage is proposed, at least half of the required storage should be located within the food preparation areas where it is easily accessible to the food handlers. The remaining storage should be located within the food facility in an approved storage room.

(4) Each department in a grocery store which handles unpackaged foods, i.e., deli, meat, bakery, etc., must provide sufficient shelving units for food and utensil storage. In most cases 32 linear feet of shelving units will meet the storage demand.

(5) Food service operations within a restaurant, such as sushi bars, espresso bars, or a bars and taverns must provide shelving units for food and utensil storage within the remote area. Generally, 16 linear feet of approved shelving units is a sufficient amount of storage.

b. Approved shelving units are readily available and are sold with a minimum depth of 18 inches in depth and are three tiers high. To assist you in calculating shelving units, eight shelving units, each of which is four feet long and three tiers high, would equal 32 linear feet of shelving units.

c. Shelving is required to be constructed in an easily cleanable design of smooth metal or wood, which has been finished and sealed. Shelves installed on a wall should have at least one (1) inch of open space between the back edge of the shelf and the wall surface, otherwise, the back edge of the shelf shall be sealed

to the wall with silicone sealant or equivalent. This will prevent food waste from accumulating in cracks and eliminate insect harborage areas. The lowest shelf is required to be at least six (6) inches above the floor, with a clear unobstructed area below or be the upper surface of a completely sealed continuously coved base, with a minimum height of six (6) inches. The clearance under the shelving units allows for easy access for cleaning the floor and monitoring for rodent or insect activity.

19. RESTROOMS

a. Toilet facilities are required within each food facility for use by the employees.

b. At least one public accessible restroom must be provided in facilities with onsite consumption of food or beverages. Patrons may not access the restroom by passing through food preparation areas, food storage or utensil washing areas

c. Handwashing sinks shall be provided within or adjacent to each toilet room. The sink shall be provided with hot and cold running water from a mixing type faucet. Soap and sanitary towels in single-service, permanently installed dispensers shall be provided at the handwashing sink.

d. Toilet tissue shall be provided in a permanently installed dispenser at each toilet.

e. The restrooms shall be provided with well-fitting, self-closing doors.

f. All toilet rooms shall be provided with ventilation. If adequate ventilation cannot be provided by an openable, screened window, mechanical ventilation will be required.

NOTE: If there are five (5) or more employees, separate toilet facilities for each sex will be required by the local building department.

20. CLOTHING CHANGE ROOMS / DESIGNATED AREAS

a. Change Rooms

(1) A room or enclosure, separated from toilet, food storage, and food preparation areas, shall be provided where employees may change and store their outer garments and personal belongings.

(2) The clothing change room or designated area must be accessible to employees at all times.

b. Designated Areas

(1) A designated area may be substituted for a change room.

(2) The designated area must be physically segregated from toilet rooms, food storage areas, food preparation areas, and utensil washing areas by approved partitions or walls.

(3) Within the designated area provide lockers or similar enclosure for the storage of employee personal items.

21. PASS-THROUGH WINDOWS

a. When food is passed through a window to a customer on the outside of the building, the size of the window opening should be minimized to prevent the entrance of insects. Pass-through windows that exceed 432 square inches are generally insufficient in size to prevent the entrance of insects. Sizing between 432 and 216 square inches prevents insect entrance when used in conjunction with an insect exclusion device that meets NSF Standard 37. The standard states that the device must produce an air flow eight inches thick at the discharge opening and an air velocity of 750 feet per minute as measured three (3) feet below the device. The air flow must continue along the entire horizontal width of the window opening.

b. All openings must be equipped with a sliding closure device (e.g. glass, screen). This device must be kept closed except when food is being passed out to the customer.

c. The counter surface of the pass-through window must be smooth, free of channels and crevices, and be easily cleanable.

d. If the pass-through window opening is less than 216 square inches, an insect exclusion device is not required.

22. DOORS

a. All food facilities must be constructed and equipped to prevent the entrance and harborage of animals, birds, and vermin including, but not limited to rodents and insects. To prevent entrance of vermin all dedicated delivery doors leading to the outside shall be self-closing, and should be provided with an overhead insect exclusion device. All equipment installed on a food facility must meet NSF standards. Standards for exclusion devices are found in Standard 37. The Standard states the for delivery doors four (4) feet in width or less, the air curtain, when installed inside the building, should produce a downward-outward air flow not less than eight (8) inches thick at the discharge opening and with an air velocity of not less than 750 feet per minute across the entire opening as measured at a point three feet above the floor. For delivery doors wider than four (4) feet, the air curtain device must produce an air flow at least 1600 feet per minute, as measured three (3) feet above the floor. The device shall activate (turn on) automatically when the door is opened. When installed

outside the building, the same velocity of air must be directed straight down over the entire door opening.

b. All combination customer entrance/delivery doors leading to the outside should open outward, be self-closing and provide an effective means to prevent the entrance of insects. Refrigerated, positive pressure air conditioning with all doors self-closing is an acceptable method. The need for an air curtain device at a customer/delivery door will be determined on a case-by-case basis. An electrical outlet should be provided near the door in the event an air curtain must be installed at a later date.

c. Large cargo-type doors shall not open directly into a food preparation area.

d. An insect exclusion device is not a substitute that would permit a door to remain open.

e. Multiple door installations, such as French-style doors, that "open up" the proposed food establishment are not permitted unless the entire kitchen area is enclosed.

23. GARBAGE AND TRASH AREA

An area shall be provided for the storage and disposal of all waste material and for the cleaning of garbage and trash containers.

24. LIGHTING

a. All food preparation areas, all dishwashing areas, and all bar and fountain glass washing sinks (except where alcoholic beverage utensils are washed), shall be provided with at least 20 foot-candles of light, as measured 30 inches above the floor.

b. Food and utensil storage rooms, refrigeration storage, toilet rooms, and dressing rooms shall be provided with at least 10 foot-candles of light.

25. EQUIPMENT

a. All show and display cases, counters, shelves, tables, refrigeration equipment, sinks and other equipment used in connection with the preparation, service and display of food, shall be made of nontoxic materials and so constructed and installed as to be easily cleanable. ANSI certified sanitation standards, such as NSF International Food Service Equipment are required on all equipment.

b. All equipment shall be placed on minimum six (6) inch high, easily cleanable legs or on a four (4) inch high continuously coved curb, or on approved casters, or cantilevered from the wall in an approved manner.

26. WATER AND SEWAGE DISPOSAL

All liquid waste, including sewage, generated by a food facility, shall be disposed of in an approved manner into either a public sewer system or to an approved private on-site sewage disposal system.