



## Public Health Department

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# Food Facility Plan Check Resource Guide

## Introduction

This guide is designed to assist customers in understanding the requirements and review process for plan review by Butte County Environmental Health (EH) that is required whenever a retail food facility is constructed or remodeled.

## Review Process

**I. Step One: Pre-Plan Submittal.** Prior to submitting plans for a new or significantly remodeled food facility, the owner or architect shall contact the appropriate local government officials to determine if the proposed food facility will meet current planning, water source, and sewage disposal requirements. The owner or architect should also read this resource guide so that they are familiar with the plan check process and requirements. Once it has been determined that the location will be acceptable for the proposed food facility and you have gathered all the needed information, plans, and documents it is time to submit the plans for review.

**II. Step Two: Plan Submittal and Review.** Submit plan check application, fee, and all necessary plans, equipment specifications, and documents to the Environmental Health office. Only one set of plans is required by Environmental Health and plans may be reviewed concurrently with plans being reviewed by the Building Department.

Once the plans have been received, all the plans and documents will be bundled together and given to the Environmental Health Specialist who will review the plans, and:



- A. Plan review staff may contact the person who completed the plans in order to clarify any issues concerning the plan review.
- B. If the plans are incomplete or modifications are needed, the required changes or additions will be summarized in the *Food Facility Plan Review Correction Notification* document provided to the customer with a copy retained by this office.

### III. Step Three: Plan Approval.

After the plans have been reviewed, if there are any required corrections or modifications, you will need to submit an updated, final set of plans showing that the required changes have been made.

When the plans have been approved, our office will:

- A. Provide you or the plan preparer with a letter: (1) Stating the date the plans were approved; (2) Identifying any remaining corrections; (3) Clarifying any understandings or operational limitations; (4) Specify standard construction requirements.

The approval letter should be kept with the approved plans.

- B. Notify the appropriate building department that the plans have been reviewed and approved.



## Plan Submittal Requirements

The proper layout and construction of a food facility is an important element in a successful and profitable business. It helps ensure that you will meet all structural and operational requirements of the applicable State health laws and avoid costly mistakes during the construction process.

Plans need to be easily readable, drawn to scale, (recommend  $\frac{1}{4}$  inch = 1 foot) and include:

- A. Complete floor plan with plumbing and equipment details.
- B. Complete mechanical exhaust ventilation plans including make-up air. Indicate the type of comfort cooling in the building, e.g. "building is cooled by refrigerated air conditioning," "evaporative cooling," or "no cooling system is installed".
- C. Finish schedule for floors, walls, and ceilings that indicate the type of material, the surface finish, and the type of coved base at the floor/wall juncture.
- D. A site plan including interior and exterior waste storage, restrooms, janitorial facilities, and personal storage, if applicable.
- E. Manufacturer's specification sheets for all equipment.
- F. Description of operation and copy of the proposed menu.
- G. Scope of work for remodels.



## Submittal Checklist and Reference

- A. \_\_\_ Name and address of food facility
- B. \_\_\_ Name, mailing address and telephone number of:
  - 1. \_\_\_ Owner
  - 2. \_\_\_ Contractor (if one has been selected at this point)
  - 3. \_\_\_ Contact person
- C. \_\_\_ Submit one set of detailed plans drawn to scale initially for review
- D. \_\_\_ Floor plan showing equipment layout ([Appendix A](#))
  - 1. \_\_\_ Equipment checklist/method of installation ([Appendix B](#))
  - 2. \_\_\_ Equipment manufacturer specification sheets
- E. \_\_\_ Room finish schedule with names and specifications or samples ([Appendix C](#))
  - 1. \_\_\_ Floors
  - 2. \_\_\_ Base
  - 3. \_\_\_ Walls
  - 4. \_\_\_ Ceiling
- F. \_\_\_ Plumbing layout and hot water demand (Include floor sinks and water heater BTU or kW rating, recovery rate and capacity) ([Appendices D1 and D2](#))
- G. \_\_\_ Exhaust hood ventilation and make-up air systems. Complete worksheets ([Appendix E](#))
- H. \_\_\_ Site plan, including inside and outside waste storage locations
- I. \_\_\_ Number of seats (Indoor: \_\_\_ Outdoor: \_\_\_)
- J. \_\_\_ Proposed Menu (if restaurant)
- K. \_\_\_ Sneeze guard design (if one is proposed)
- L. \_\_\_ Plan check application and plan check fees (fees are listed on the application)

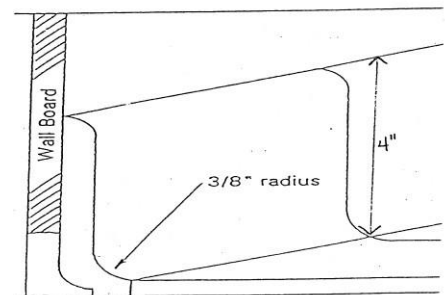
## Facility Requirements

Note: Each item in the checklist is followed by a reference in brackets. The applicable section reference is provided for each requirement taken directly from the California Retail Food Code. Requirements and interpretations developed by our office in consultation with other enforcement agencies are identified as “Best Industry Standards”.

### Floors

\_\_\_\_\_ Floors must be smooth, durable, non-absorbent and easily cleanable. [Sect. 114268 (a)]

\_\_\_\_\_ Floor surfaces in all food preparation, dispensing, food storage, utensil washing, janitorial, refuse storage areas, restrooms, and walk-in coolers/freezers must be an approved type that continues up the walls (or cabinet toe-kicks) at least 4 inches, forming a 3/8” minimum radius cove at the floor/wall and floor/cabinet junctures. [Sect. 114268 (b)]



\_\_\_\_\_ Quarry tile and seamless poured and troweled epoxy are recommended floor materials. Commercial grade sheet vinyl (no felt backing) with heat welded seams are suitable for many applications, based on information in the Product Specification sheet. Where sheet vinyl is used, a cove backing (cove stick) must be used at the wall/floor and toe kick/floor junctures. Vinyl composition tile (VCT) and vinyl rubber top set base are not acceptable. Anti-slip floor surfaces are restricted to traffic areas only (all other areas must be smooth). See the [Floor Materials For Retail Food Facilities](#) handout for more detailed flooring information. [Sect. 114268]

\_\_\_\_\_ Floor drains are required if floors are water flushed or equipment is cleaned in place with pressure sprayers. Floor shall be sloped to any floor drains. [Sect. 114269 (a)]

### Walls/Ceiling/Entry Doors

\_\_\_\_\_ Walls and ceilings must be smooth, durable, non-absorbent, and easily cleanable in same areas indicated in floors section above. [Sect. 114271 (a)]

\_\_\_\_\_ Brick, concrete block, rough concrete, rough plaster or textured gypsum board are not considered “easily cleanable.” [Sect. 114271 (a)]

\_\_\_\_\_ Walls adjacent to all sinks (other than hand washing sinks), dishwashers, and cooking facilities must be constructed of a waterproof material (FRP, stainless steel, or similar surfaces) 6 feet up from top of the coved base or to bottom of exhaust hood. [Sect. 114271 (a)]

\_\_\_\_\_ All unfinished wood surfaces must be sealed with a gloss or semi-gloss, epoxy, varnish or other sealer approved by this department. [Sect. 114271 (a)]



- \_\_\_\_\_ All entrance doors (leading to the outside) are to be self-closing and trimmed to prevent entrance of vermin. [Sect. 114259]
- \_\_\_\_\_ Ceiling acoustical tile may be approved if it is located at least 6 feet above the floor and must have a smooth, vinyl surface if located in the food preparation area, warewashing area or in areas where open food is stored. [Sect. 114271 (c)]
- \_\_\_\_\_ Facilities must be fully enclosed (but may have unenclosed dining areas and other areas approved by this office for outside food service). [Sect. 114266]
- \_\_\_\_\_ Conduit: all plumbing, electrical and gas lines must be concealed within the building walls, floors and ceiling when practicable or within approved conduit runs or chases at least 6 inches off the floor. When conduit or pipe lines enter a wall, ceiling or floor, the opening around the line(s) must be tightly sealed and made smooth for easy cleaning. [Sect. 114271 (d)]

## Refrigeration

- \_\_\_\_\_ Provide an adequate amount of commercial refrigerators and freezers that conform to NSF/ANSI Standards and are suitable for the intended use. (Domestic model refrigeration units will NOT be accepted). [Sect. 114130 (b)]
- \_\_\_\_\_ Must be provided with an accurate, readily visible thermometer. [Sect. 114157]
- \_\_\_\_\_ Floor drains and floor sinks must be located outside walk-in units. [Sect. 114190]
- \_\_\_\_\_ Walk-in shelving must be at least 6 inches off floor, durable, corrosion-resistant, non-absorbent, easily cleanable and meet NSF/ANSI standards. Wood shelving is not acceptable. Wall mounted shelving shall be attached to walls specifically designed to handle the extra load. [Sect. 114130.4, 114047]

Note: For walk-in floor material, refer to the "Floors" section of this checklist.

## Equipment

- \_\_\_\_\_ Equipment must meet or be equivalent to applicable NSF/ANSI standards, be suitable for the intended use, and be installed so as to facilitate cleaning. [Sect. 114130 (a) & (b)]
- \_\_\_\_\_ Ice machines must be located within the building in an easily cleanable, well-ventilated area. [Sect. 114178]
- \_\_\_\_\_ Provide the needed equipment to support the type of operation. If hot foods will be hot held, then a hot holding unit such as a steam table will be required. If sandwiches, pizzas or similar foods will be made to order then a prep refrigerator will be required. All facilities that prepare food will need an adequate amount of table or counter space to prepare food on. [Sect. 113984, 113996]
- \_\_\_\_\_ Provide adequate amount of shelving for food, utensils, and paper goods. Such shelving shall be easily cleanable, durable, non-absorbent and at least 6 inches off floor. Adequate shall mean a minimum of 50 sq. ft. or 10% of the food preparation areas. [Sect. 114047]



## Types of Sinks and Dishwasher Requirements

### Dishwashing Units

- \_\_\_\_\_ Dishwashing machines are recommended where a large volume of eating and drinking utensils are washed. [[Best Industry Standards](#)]
- \_\_\_\_\_ Dishwashing machines need to be equipped with two integral metal drain boards, one at the point of entry and the other at the point of exit. Under-counter machines need to be equipped with two drain boards, but may use the drain boards of an adjacent three-compartment manual warewashing sink if the drain boards are large enough. [[Sect. 114103 \(a\) and \(b\)](#)]

### Three-Compartment Sink

- \_\_\_\_\_ A three-compartment stainless steel warewashing sink with two integral metal drain boards is required in all food facilities where there is food preparation, equipment with food contact surfaces, and/or multi-service utensils. [[Sect. 114095 and Sect. 114097](#)]
- \_\_\_\_\_ The compartments of the warewashing sink and dual integral drain boards must be large enough to accommodate the largest utensils to be washed. [[Sect. 114099](#)]

### Food Preparation Sink

- \_\_\_\_\_ Food facilities that prepare food are required to have a food preparation sink with a minimum size of 18" x 18 "x 12" depth or 16" x 20" x 12" depth with an integral drain board or an adequately sized adjacent table that is located within the food preparation area and used exclusively for food preparation. [[Sect. 114163 \(a\) \(1\) and \(2\)](#)]

### Hand Washing Sinks

- \_\_\_\_\_ Hand washing sinks (dedicated specifically to hand washing) must be located in or adjacent to toilet rooms. Hand sinks shall be conveniently located in all food preparation and warewashing areas. [[Sect. 113953 \(a\) and \(b\) \(1\)](#)]
- \_\_\_\_\_ Hot water must be provided through a mixing faucet with levered handles. Hot water at hand washing sinks must be at least 100°F, or 100-108°F for non-adjustable faucets. [[Sect. 113953 \(c\)](#)]

### Janitorial Sink

- \_\_\_\_\_ A conveniently located commercial mop sink or curbed cleaning facility served with hot and cold water must be provided. Utility sinks on legs are not recommended. [[Sect. 114279 \(a\)](#)]
- \_\_\_\_\_ A "curbed cleaning facility" is a slab floor basin within a containment curb sloped into a drain. It must be constructed of concrete or equivalent material. [[Best Industry Standards](#)]
- \_\_\_\_\_ A backflow prevention device is required on mop area faucets. [[Sect. 114190](#)]
- \_\_\_\_\_ Install hooks or other suitable retaining device to hold mops, rubber mats, etc. over the mop sink. [[Sect. 114282](#)]





## Plumbing

- \_\_\_\_\_ An adequate supply of hot and cold water under pressure from an approved source shall be provided. [Sect. 114189, 114192.1]
- \_\_\_\_\_ A hot water heater shall be provided that can provide minimum 120° F (140° F for some dishwashers) hot water to all sinks and dishwashers at sufficient quantities to meet peak demand. Hot water shall be available to all sinks within 30 seconds. Hand sinks need only have 100° F warm water. Provide capacity, BTU, and recovery rate for proposed water heater. [Sect. 114190, 114195]
- \_\_\_\_\_ Tankless water heaters shall be able to provide sufficient quantity of hot water to meet peak demand at a minimum 60° F temperature rise (80° F rise for some dishwashers). Tankless water heaters are not recommended for dishwasher machines unless multiple units are provided. Provide temperature/ flow curve for proposed water heater. [Sect. 114190, 114195]
- \_\_\_\_\_ Floor sinks (flush or slightly elevated) are required to receive indirect fluid waste (all condensate and liquid waste) from dishwashers, 3-compartment or other utensil washing sinks, food preparation sinks, pot and pan sinks, ice machines and bins, iced display cases, bar ice bins, walk-in cooler condensate drains, wet steam tables, drink dispenser units, espresso machines, dipper wells and similar equipment. Funnel drains can sometimes be used for low water discharge such as condensate drains or ice bins. [Sect. 114269 (b)]
- \_\_\_\_\_ Garbage disposals cannot be installed under a required sink unless an additional scrap sink compartment is provided for the disposal. They are not recommended for discharge to onsite wastewater (septic) systems. [Sect. 114190]
- \_\_\_\_\_ Cold running water dipper wells must be provided if scoops or other in-use serving utensils are stored in water. [Sect. 114119]

## Restrooms

- \_\_\_\_\_ Restrooms shall be equipped with well fitted self-closing doors, hand sinks with a hot and cold mixing faucet, and sanitary soap and paper towel dispensers. [Sect. 114276 ,113953.2]
- \_\_\_\_\_ Restrooms are required for use by employees. [Sect. 114276 (a)]
- \_\_\_\_\_ Restrooms are required for use by customers when either: (a) there is onsite consumption of food, or (b) the facility has more than 20,000 square feet of floor space. A food facility with more than 20,000 square feet of floor space must provide at least one separate toilet facility for men and one separate toilet facility for women. [Sect. 114276 (b) (1) and (3)]
- \_\_\_\_\_ Toilet facilities which are provided for use by patrons must be situated so that patrons do not pass-through food preparation, food storage or utensil washing areas. [Sect. 114276 (b) (2)]

Exception: Any food facility (less than 20,000 sq. ft.) that was constructed before January 1, 2004 (but in continuous use since then) where food is consumed onsite by the public does not need to provide restrooms for customers if they “prominently” post a sign in the public area of the facility stating restrooms are not available. [Sect. 114276 (f) (1)]



## Window Screens

\_\_\_\_\_ All windows that open, including restroom windows, must be screened with not less than 16 mesh screening.

## Outdoor Pass-Through Windows

\_\_\_\_\_ The size of the window opening should not exceed 216 square inches, unless an air curtain device is used and then the window opening should not exceed 432 square inches. Service openings shall not be closer together than 18 inches. [Sect. 114259.2]

## Open Food Protection

\_\_\_\_\_ Food on display must be protected from contamination by the use of: (a) counter location, (b) service line setup and oversight, i.e. food dished up and served cafeteria-style, (c) sneeze guards to intercept a direct line between the customer's mouth and the food being displayed, (d) containers with tight fitting lids, display cases, mechanical dispensers, or approved self-service containers. [Sect. 114060 (a)]

Note: Display of the following items does not require protection as described above: (a) nuts in the shell, (b) whole raw fruit and vegetables when intended for washing or peeling by the customer prior to eating.

## Other Storage

\_\_\_\_\_ Provide separate area or storage facilities (shelf, cabinet, lockers, hooks) for employees' personal belongings.

\_\_\_\_\_ Other than cleaners and sanitizers that may be stored in the dishwashing area, all chemicals, insecticides, poisons and cleaning agents need to be stored in an area or enclosure separate from food, food handling equipment and utensils, and food packaging materials to prevent accidental contamination of the food. [Sect. 114254.2]

## Lighting

\_\_\_\_\_ Lighting shall be provided in each room or area that is sufficient for the usage of each area. [Sect. 114252]

\_\_\_\_\_ Shatterproof covers must be installed over all lights in food preparation, rooms storing unpackaged food, utensil storage areas, and dishwashing areas. [Sect. 114252.1 (a)]





## Garbage and Trash Storage Area

- \_\_\_\_\_ Area designated for refuse and recyclable collection and storage must be separate from food, equipment, utensils, linens, and single service articles. [Sect. 114245 (a)]
- \_\_\_\_\_ Outside storage area for refuse and recyclables must be constructed of non-absorbent material such as concrete or asphalt and be easily cleanable, durable, and sloped to a drain. [Sect. 114245.4]

## Ventilation

- \_\_\_\_\_ Sufficient ventilation is required in all areas to facilitate proper food storage and provide reasonable comfort for each employee. [Sect. 114149]
- \_\_\_\_\_ For restrooms, provide ventilation to outside air with openable, screened window, air shaft, or light switch-activated exhaust fan consistent with the requirements of local building codes. [Sect. 114149 (b)]

## Kitchen Exhaust System (Hoods and Ducts)

- \_\_\_\_\_ Mechanical exhaust ventilation must be provided at or above all cooking equipment such as ranges, griddles, ovens, deep fat fryers, barbecues and rotisseries and may be required at or above mechanical dishwashing equipment to effectively remove cooking odors, smoke, steam, grease and vapors. An integrated make-up air system is required. [Sect. 114149.1 (a)]
- \_\_\_\_\_ Make-up air must be supplied in a volume equal to the volume of air that is being exhausted. Windows and doors shall not be used for providing make-up air. [Sect. 114149.1 (d)]
- \_\_\_\_\_ Compensating hoods must extract at least 20% of their required exhaust air flow from the kitchen area. [Best Industry Standards]

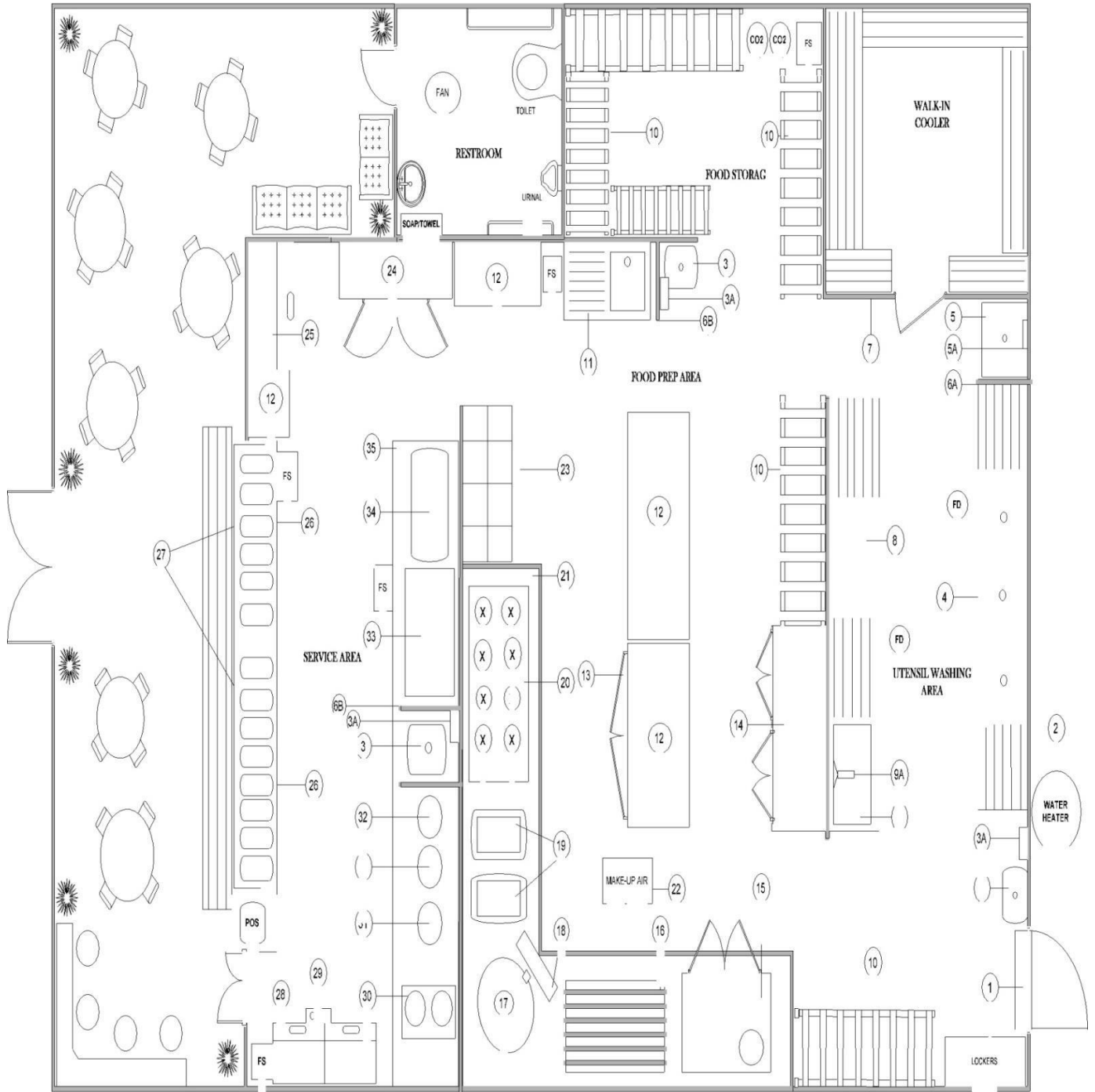
Notes: When you submit your plans, be sure to include complete exhaust ventilation plans and performance calculations, details of make-up air and cut sheets of blowers, motors, and filters and a list of all equipment types to be used under the hood. (Also, see *Appendix E* of this *Guide*). All exhaust hoods and ducts must be installed in accordance with Chapter 20 of the current edition of the Uniform Mechanical Code and the manufacturer's listing requirements.

## Grease Trap/ Interceptor

- \_\_\_\_\_ If provided, the grease trap/interceptor must be located outside food and utensil handling areas and where it can be easily accessible for servicing. [Sect. 114201 (b)]
- \_\_\_\_\_ Food facilities located in an area served by a public sewer system must contact the appropriate City or County Public Works Department for grease trap/interceptor requirements. [Best Industry Standards]
- \_\_\_\_\_ A facility located in an area not served by a public sewage system must contact the Land Use Division of this office regarding grease trap/interceptor and onsite wastewater system approval requirements. [Sect. 114197]

# APPENDIX A

## Sample Floor Plan



**LEGENDS:**  
 FS - FLOOR SINK  
 FD - FLOOR DRAIN

**DBA: PC CAFE**  
 ADDRESS: \_\_\_\_\_



## APPENDIX B

### Sample Equipment Schedule

#	EQUIPMENT	MANUFACTUR MODEL NO.	ANSI	PLUMBING				COMMENT
				HW	CW	DIR	IN- DIR	
1	DOOR ACTIVATED AIR CURTAIN							1600 fpm
2	COMMERCIAL GAS WATER HEATER							90,000 BTU
3	(3) HANDWASHING SINKS		X	X	X	X		
3A	SOAP & TOWEL DISPENSERS							
4	MANUAL WAREWASHING 3-COMPARTMENT SINK 18" x 18" x 12"		X	X	X		X	Comply with UPC 704.3 (2) 18" drain boards
5	MOP BASIN			X	X	X		Approved backflow prevention device
5A	MOP & BROOM HANGER							Wall-mounted chemical storage shelf
6A	18" S/S SPLASHGUARD							
6B	6" S/S SPLASHGUARD							
7	WALK-IN COOLER		X				X	
8	LOW TEMPERATURE MECHANICAL WAREWASHING MACHINE		X	X			X	Comply with UPC 704.3
9A	PRE-RINSE FAUCET		X	X				
9B	PRE-RINSE SINK		X	X	X	X		Comply with UPC 704.3
10	METRO SHELVES (1)-8'; (3)-6'; (1)-5'; (1)-4'		X					5 tiers Dry food storage
11	FOOD PREP SINK (18" x 18" x 12")		X	X	X		X	18" drain board
12	FOOD PREP TABLE		X					
13	2-DOOR UNDERCOUNTER REFRIGERATOR		X					Self-contained
14	4-DOOR UPRIGHT FREEZER		X					Self-contained
15	DOUBLE CONVECTION OVEN		X					
16	RADIANT CHARBROILER		X					
17	TILTING KETTLE		X				X	Indirect waste



#	EQUIPMENT	MANUFACTUR MODEL NO.	ANSI	PLUMBING				COMMENT
				HW	CW	DIR	IN- DIR	
18	TRENCH/TROUGH DRAIN							
19	(2) FRYERS		X					
20	8 BURNER STOVE		X					
21	TYPE I HOOD		X					UL - LISTED
22	MAKE-UP AIR							Electronically interlocked with hood
23	SANDWICH PREP TABLE		X					Self-contained
24	2 DR UPRIGHT REFRIG.		X					Self-contained
25	ICE MACHINE		X		X		X	
26	(2) STEAM TABLE		X				X	
27	SNEEZE GUARD		X					
28	DIPPING CABINET		X				X	
29	DIPPER WELL		X		X		X	
30	COFFEE BREWER		X					
31	COFFEE GRINDER		X					CSA
32	(2) BLENDERS		X					
33	SODA DISPENSER		X		X		X	ETL
34	ESPRESSO MACHINE		X		X		X	
35	S/S COUNTER		X					

**HW = Hot water**

**CW = Cold water**

**Dir = Waste line can be directly plumbed**

**In-Dir = Waste line has to be indirectly plumbed**



## APPENDIX C

### Room Finish Schedule

(Specific brand names and colors for materials should be specified whenever possible to ensure acceptability)

ROOM OR AREA		FLOOR	FLOOR BASE OR COVE	WALLS	CEILING	REMARKS
<b>Example:</b> <b>Wait Station</b>		<i>Smooth quarry tile</i>	<i>4" quarry coved tile (3/8" radius coving)</i>	<i>Gypsum board; smooth; semi-gloss paint Swiss coffee</i>	<i>Drop ceiling; vinyl faced panel; smooth; white</i>	
<b>A</b>	Dining Area					
<b>B</b>	Wait Station					
<b>C</b>	Kitchen Area					
<b>D</b>	Dishwashing Area					
<b>E</b>	Janitorial Station					
<b>F</b>	Restroom					
<b>G</b>	Storeroom					
<b>H</b>	Trash Enclosure					

**Notes:** This form may be omitted if plans contain a complete finish schedule.

Manufacturer specification sheets and product samples may be requested by this office for review of these items.



## APPENDIX D-1

### Calculating Hot Water Demand

#### A. Storage Water Heaters

- a. **Step One:** Calculate total required Gallons per Hour (GPH) demand based on the type and quantity of equipment in the facility based on the table below.

<u>Equipment Type</u>	<u>GPH</u>	<u>Equipment Type</u>	<u>GPH</u>
Vegetable Sink-----	15	Employee Shower-----	20
Single Pot Sink-----	20	Utility Sink-----	5
Double Pot Sink-----	40	Pre-Rinse for Dishes-----	45
Triple Pot Sink-----	60	Bar Sink – Three Compartments-----	20
Hot Water Filling Faucet-----	15	Bar Sink – Four Compartments-----	25
Bain Marie-----	10	Chemical Sanitizing Dishwasher-----	60
Kettle Stand-----	5	Ware Washer-----	64
9 and 12 Pound Clothes Washer-----	45	Hand Sink-----	5
16 Pound Clothes Washer-----	45	Cook Sink-----	10

- b. **Step Two:** Multiply the total calculated GPH by the appropriate adjustment factor for the type of utensils based on the table below.

<u>Food Facility’s Utensil Use Adjustment</u>	<u>Sizing</u>
Multi-Service Eating Utensils, Heavy Use (Serving 3 Meals/Day)-----	100%
GPH Multi-Service Eating Utensils, Moderate Use-----	90%
GPH Single-Service Eating Utensils or Don’t Use Utensils at All-----	80%
GPH Facilities serving only pre-packaged food are only required to have a water heater with a minimum storage capacity of 10 gallons.	

#### B. Instantaneous Water Heaters

Determine the total required flow demand in Gallons per Minute (GPM) based on the chart below. Then based on the proposed hot water heater specifications or flow/temperature curve determine if the water heater can provide the needed flow at 60°F temperature rise (80°F if dishwasher requires 140°F incoming hot water). Provide water heater specifications and flow/temperature curve with the submitted plans.

<u>Fixture Type</u>	<u>GPM</u>	<u>Fixture Type</u>	<u>GPM</u>
Utensil Sink-----	2	Single Rack Dishwasher <sup>1,2</sup> -----	2
Utensil Sink with Integral Pre-Rinse-----	2.5	Double Rack Dishwasher <sup>1,2</sup> -----	3
Utensil Sink with Separate Pre-Rinse-----	4.5	Hand Sink-----	.5
Mop/Utility Sink-----	2	Prep Sink-----	1

<sup>1</sup> Check manufacturer’s water use per rack

<sup>2</sup> For conveyor, check manufacturer’s specifications as they are generally unsuitable for use with instantaneous (tankless) water heaters.





## APPENDIX D-2

### Calculating BTU (Gas) and KW (Electric) Requirements

#### A. Gas Water Heaters

$$\text{BTU input} = \frac{\text{GPH}^{\text{A}} \times 60^{\circ}\text{F}^{\text{B}} \text{ Rise} \times 8.33 \text{ lbs./gal of water}^{\text{C}}}{0.70^{\text{D}}}$$

- A** Gallons per hour, calculated in Appendix D-1
- B** Desired Rise in Water Temperature: 60<sup>0</sup>F is the increase in water temperature required to meet Cal Code requirements for food facilities within Butte County
- C** Conversion factor
- D** Thermal Efficiency: 70% (0.70) is assumed to be the thermal efficiency of gas water heaters, unless listed by NSF or other nationally recognized testing laboratories

#### B. Electric Water Heaters

$$\text{KW input} = \frac{\text{GPH}^{\text{A}} \times 60^{\circ}\text{F}^{\text{B}} \text{ Rise} \times 8.33 \text{ lbs./gal of water}^{\text{C}}}{3,412 \text{ BTU/KW}^{\text{D}}}$$

- A** Gallons per hour, calculated in Appendix D-1
- B** Desired Rise in Water Temperature: 60<sup>0</sup>F is the increase in water temperature required to meet Cal Code requirements for food facilities within Butte County
- C** Conversion factor
- D** Conversion factor



# APPENDIX E

## Commercial Hoods/Mechanical Exhaust Data Information

### Information Concerning Provider

DBA:	DATE:
ADDRESS:	PLAN CHECK #:
HOOD SYSTEM DESIGNED BY:	PHONE #:

Provide the following information concerning mechanical exhaust hood and make-up air design. Elevated drawing of hood, make-up air, duct elbows, fans, and cooking equipment must be provided on a separate sheet. Plan must comply with the current Uniform Mechanical Code, Chapter 5.

### Cooking Equipment

*(Any equipment that may require higher make-up air /hood airflow (CFM), separate ducts etc.)*

Char broiler:       Radiant     Solid Fuel (Charcoal, Wood Etc.)       N/A

Tandoori Oven:     Radiant     Solid Fuel (Charcoal, Wood Etc.)       N/A

6" Overhang On Front of Equipment:  Yes  No    6" Overhang on sides:  Yes  No

### Type of Hood

Size of Hood: \_\_\_\_\_ Amount of exhausted air: \_\_\_\_\_ CFM at \_\_\_\_\_ resistance

TYPE I *(check below which applies to hood):*

    \_\_\_ Canopy type    \_\_\_ Recirculating/Ductless/Ventless    \_\_\_ Non-canopy type

    \_\_\_ Water-wash type exhaust hood    \_\_\_ Compensating hood

TYPE II *(suitable for equipment that only produces steam, moisture, or heat such as large ovens, high temperature warewashing machine, gas rice cooker, steam cooker, etc.*

LISTED HOOD: *Manufacturer:* \_\_\_\_\_

*(Provide Manufacturer specifications, listing conditions and calculations for Listed Hoods)*

### Duct and Filters (Type I hood only)

• Size of duct (s): \_\_\_\_\_ • Number of ducts: \_\_\_\_\_

• Number of grease filters: \_\_\_\_\_ • Size of grease filters: \_\_\_\_\_

• Rating of filters *(CFM or FPM):* \_\_\_\_\_

### Make-Up Air (must equal amount of exhausted air)

• Source \_\_\_\_\_ • CFM *(cubic feet/minute)* = \_\_\_\_\_