Food Service Design & Construction Manual

February 2013
# Table of Contents

1. Introduction to Plan Review .......................... 1
2. The Plan Review Process .......................... 2
3. Equipment ........................................ 3
4. Sinks ................................................ 5
5. Refrigeration ....................................... 7
6. Storage ............................................. 9
7. Specific Food Service Installation and Operation .......... 10
8. Food Service Plumbing .................................. 13
9. Mechanical Dish Machines .......................... 14
10. Employee Areas, Laundry, and Restrooms ............... 15
11. Lighting ............................................ 16
12. Room and Area Finishes ............................ 17
13. Building Openings ................................... 18
14. Garbage and Grease ................................. 19

## Appendices

- Appendix I HACCP and the Plan Review Process .......... 20
- Appendix II Outdoor Bar Standards ....................... 22
- Appendix III Operations ................................ 23
- Appendix IV Standards for Food Service Ventilation .... 24
- Appendix V Reminder Checklist .......................... 27
- Appendix VI Picture Guide ............................. 40
- Appendix VII Resources ................................ 53
- Appendix VIII Child Care with Catered Food ............. 54
Introduction to Plan Review

This manual is intended for architects, contractors, equipment suppliers, food service operators, and other interested professionals. The purpose of this manual is to assist the user in designing a food service that is efficient, easy to clean, maintain, and supports safe food handling procedures. The information in this manual and the associated plan review process is intended to satisfy the County ordinance requirements for plan review. The information within this manual applies to any retail establishment offering food or beverages including restaurants, bars, caterers, fast food operations, grocery stores, schools, day cares, and other institutional care facilities.

Important points to remember:

- A menu analysis is a critical part of the plan review process. The type of food, method of preparation, and service style will influence the types of equipment required. A proposed menu or list of products to be sold is required along with your plans for review.

- Plans should be based on the principles of HACCP (Hazard Analysis Critical Control Points). The facility layout should reflect an efficient flow of supplies, food, and people from the receiving stage to final service. Equipment should be installed so it is easily accessible for cleaning. Anticipate your equipment needs to meet food storage, refrigeration, preparation, cooking, food holding, and serving demands. See Appendix I HACCP and the Plan Review Process for more details on how HACCP is applied to food service facility planning.

- There are minimum equipment, storage, and finish standards for any type of food service facility, regardless of the size or type of operation, to ensure the facility can operate safely and comply with Illinois State Food Service regulations.

- Please use Appendix V Reminder Checklist as a guide to insure all necessary items are included in the plan review submittal.

- Smoking in food service establishments and other public places is prohibited. Smoking within 15 feet of any entrances, exits, windows that open, and ventilation intakes that serve an enclosed area is also prohibited. See Smoke Free Illinois Act 095-1029, section 15, for more details.

- Environmental Health Services encourages the use of recycled content materials where appropriate meeting certification standards.
The Plan Review Process

Plan Review Submittal

A plan review submittal needs to be provided for all food service facilities that are new, undergoing construction and remodeling. Prior approval of the plans from the Health Department is needed before starting any on-site construction. Food service construction started prior to receiving final plan approval could result in unexpected costs or delays in the construction process.

Include the following items in the plan review submittal:

- One set of food service plans drawn to scale containing the following items:
  - Food service equipment layout, including floor plan with elevations.
  - Food service equipment list with manufactures’ names, model numbers, and equipment specification sheets.
  - Plumbing plans including food service equipment layout with waste diagram and specifications.
  - Room and area finish schedule for floors, walls, and ceilings.
  - Kitchen ventilation plans (if applicable).
  - Please be aware that most municipalities require architectural/professional quality food service plans to be submitted for subsequent review and approval for any sized project. The same plan information that is submitted to the health department is also to be submitted to the local municipality for review and approval.

- Plan review fee. See current fee schedule.

- Completed Plan Review Application Form.

- Copy of complete menu or list of food products to be offered.

- Copy of Illinois Food Service Sanitation Manager Certification information or proof of enrollment. (Any new medium or high-risk establishment must have a certified manager from the initial day of operation or provide documentation of enrollment in an approved course to be completed within three months.)

The plan review process cannot begin when submittals do not contain the necessary information and fee.

Allow 15 business days for a review and written response. All resubmittals to this department will be reviewed in 5 business days. An initial priority plan review service is available for an additional charge and with prior authorization. A priority plan review revision service is also available for an additional charge and with prior authorization.

Changes to approved plans are to be re-submitted and receive approval prior to construction.
Inspections

New Construction

The DuPage County Health Department conducts the following inspections prior to opening:

- **Plumbing Location**: Verify underground plumbing is provided for food service equipment to be installed.
- **Pre-final/Stocking**: Before receiving and stocking food and beverage products.
- **Final/Opening**: When items from previous inspections have been completed and the facility is cleaned and ready for operation.

Requests for inspections can be scheduled by contacting the plan review office at (630) 221-7045. Please make your inspection request 72 hours (3 business days) in advance to ensure we can accommodate your request.

Remodel and Renovation

Remodeling or renovations of existing food service establishments that include alterations to the menu, changes in equipment, etc., require a written submittal describing the scope of work proposed and a fixture/equipment plan. In addition, the Plan Review Application Form will need to be completed and the plan review fee submitted. Additional information may be requested based on the proposal submitted.

Once the plan submittal is received, an appointment for an on-site construction consultation will be scheduled. This on-site consultation will assess the status of existing conditions of the facility as it relates to the information submitted. This consultation may result in modifications or additions to the original scope of work. Environmental Health Services encourages recycling and reuse of unwanted equipment or building materials during remodeling/renovation projects.

Equipment

Food service equipment needs to be commercial grade and meet the standards regarding safe design, non-toxic materials, intended use, and workmanship established by one of the recognized accredited agencies for food service equipment. These agencies include the National Sanitation Foundation International (NSF) [http://www.nsf.org/](http://www.nsf.org/), Environmental Testing Laboratory (ETL-SAN) [http://www.intertek.com/marks/etl-sanitation/](http://www.intertek.com/marks/etl-sanitation/), Underwriters Laboratories (UL-SAN) [http://www.ul.com/](http://www.ul.com/), or Canadian Standards Association International (CSA) [http://www.csa-international.org/](http://www.csa-international.org/). The trademark seal of one of these agencies is an indicator that the equipment is approved. In this handbook “NSF” is referenced as the most common certification but any of the other accreditations listed above are considered equal.

Unmarked equipment, household grade equipment, equipment damaged beyond repair and non-functioning equipment cannot be used. Include equipment specification sheets with the
make and model numbers of equipment with your plans. Used or Existing equipment that is proposed for installation will need to be NSF approved, clean, and operable.

The following is a list of minimum equipment that is needed for any food service operation: *

- Utensil washing 3-compartment sink
- Hand washing sink
- Janitorial mop sink
- NSF commercial refrigeration
- NSF work surfaces
- NSF storage shelving

* See specific Sink, Refrigeration and Storage sections for additional information

Equipment Installation and Location

Proper installation helps assure there will be adequate space to allow for cleaning under and around equipment. Proper location of equipment will prevent food preparation and service operations from being contaminated during dishwashing and janitorial activities.

*Table-mounted equipment* is to be installed with 4 inch legs unless it is portable. Portable equipment is defined as weighing less than 75 pounds and with no rigid utility connections. Allow 6 inches of spacing between equipment.

*Floor-mounted equipment* is to be installed using casters for cookline and reach-in refrigeration/freezer equipment.

*Stationary equipment is to be provided with at least 6” legs using the following spacing dimensions:*

- Maintain at least 8 inches of spacing around pieces of equipment.
- Curb or raised floor platforms for cookline, bar equipment or millwork installation does not meet minimum cleanability standards.

Silicone caulk needs to be used in the sealing of gaps, voids, wall penetrations, protrusions, and escutcheon plates. Caulking back splashes of food service equipment is discouraged. Sinks in particular should be properly secured to walls without the use of caulk.

Utility Connections need to be installed using the following standards:

- Surface mounted utility lines (plumbing, gas, electrical, refrigeration, etc.) are to be kept to a minimum. Keep exposed lines at least 6 inches off the floor and at least 1/2 inch away from the wall.
- Commercial grade waterproof (liquid-tight) electrical lines need to be provided in areas subject to grease, high moisture, or splash zone areas that require frequent cleaning.
- Commercial grade NSF poly-vinyl coated gas lines with quick disconnects are to be installed for equipment using gas.
Commonly Overlooked Equipment

*NSF stainless steel or standard 51 work surfaces* need to be installed where food is prepared, assembled, or re-packaged. A minimum of 4 linear feet is required. However, workspace should be based on facility menu and operation. Stainless steel work table under shelving should also be stainless steel. Painted, galvanized, tiled, wood, or laminate surfaces do not meet standards for food preparation, assembly, packaging surfaces or storage.

*Icemakers* with integral storage bins are designed to make and store a large volume of ice and are not designed for dispensing purposes. Additional ice production capacity will be needed if ice is used as part of the cooling process. Ice machines should be located in food production areas and not in areas such as utensil washing, cookline, front service counters, hallways, bars, janitorial stations, by exterior doors, and/or under stairwells.

*Ice bins* are required for dispensing consumable ice. Specify ice bins that have cold plates as an integral part of the bin. Drop-in cold plates are not approved. Ice caddies should be considered for transport, not storage and/or dispensing purposes.

*Food shields/Food Guards* are required to protect food from contamination during preparation, display, holding, or customer self-service. Food shields shall be a minimum 60 inches off the finished floor. For every inch under 60 a horizontal component must be added to the top of the shield. Food guards shall have a maximum vertical distance between a counter top and the bottom leading edge of a food shield of fourteen (14) inches. The bottom leading edge of the food shield shall extend a minimum horizontal distance of seven (7) inches beyond the front inside edge of a food container.

*Drive-thru windows* need to be equipped with hands-free automatic or mechanical closing devices.

*Dipper wells* with continually running water are needed when food items such as bulk ice cream and rice are dispensed, unless procedures are provided that indicate the utensil is stored in the product.

*Cookline ventilation hoods* (Type I) are required for food service equipment that produces smoke, grease-laden vapors, particulate matter, and odors. *Ventilation hoods* (Type II) are required for all food service equipment that produces steam, mist, heat, and vapors. Hoods are to be NSF and NFPA approved. For additional requirements refer to *Appendix IV Food Service Ventilation*. Please contact local building officials regarding additional ventilation hood requirements.

Sinks

Manual Utensil Washing 3-Compartment Sink

A standard NSF approved, 3-compartment, in-line sink with two integral drain boards is required for all facilities that offer open food or beverage service. The minimum overall size of the sink is 84 inches with a minimum bin size of 16” x 20”, but a larger sink is required to accommodate
the largest item to be washed. Drain boards shall be of equal size to the bins. A mechanical dish machine may not be a substitute for a 3-compartment sink. Drop-in bins, built-in sinks, or corner style models do not meet minimum standards. A 3-compartment sink needs to be separated with the use of walls or distance from other food service areas such as food preparation, cookline and storage.

- The faucet of the 3-compartment sink shall be capable of reaching and filling all bins.
- Lever style drain stoppers for the 3–compartment sink are recommended.
- An NSF wall-hung wire shelf is to be provided over or adjacent to the 3-compartment sink to allow for storage and dish draining.
- A convenience “c” style 3-compartment sink, 72” total length with two drain boards, may be substituted for the standard 84” total length fixture in limited food or beverage service operations.
- A bar style 3-compartment sink, 60” total length, with two integral drain boards is typical for full-service bar installations.

**Hand Sink**

Hand sinks need to be provided and located to serve all work zones including food preparation, cooking, food assembly, dispensing, service, and dishwashing to promote proper hand washing by employees. They should be located within an unobstructed distance of 25 feet from the areas listed above. Hand sinks can be located to serve multiple work zones. Sinks used for food preparation or for washing equipment or utensils shall not be used for handwashing.

Hand sinks should be a minimum of 14 inches wide bowl and be wall hung.

Hand sinks need to be accessible and visible to employees with a minimum 24 inches front access. Hand sinks should be located out of corner locations and away from door swings. Hand sinks adjacent to large or protruding equipment will need to be bumped out.

When a hand sink is located within 18 inches of adjacent food service equipment, an 8 inch minimum splash guard is needed.

Automatic hand sink faucets can be touch free, low voltage, or direct hardwired units, but cannot be battery operated or self-metered. Alternative technology faucets may be submitted for review.

Soap and paper towel dispensers must be installed adjacent to all hand sinks. State code does not allow use of common cloth towels, rolled towels, and hot air hand dryers in food service areas.

Bar style hand washing sink(s) with integral soap and paper towel dispensers are allowed in bar areas in lieu of the traditional sized units.
Food Preparation Sink

An NSF approved food preparation sink with one bin and one integral drain board is required when vegetable, fruit, pasta, meat, and seafood washing, thawing, and cooling processes occur. Two drain boards are recommended in grocery stores with meat and seafood areas. Food preparation sinks are to be isolated from other workstations such as utensil washing and cookline areas. The use of a 3-compartment or 4-compartment utensil washing sink for preparation purposes will not be approved.

Janitorial Station

Each facility needs janitorial area that is physically separated from food service, storage, preparation, and utensil washing areas by full height walls. A closet is an alternative when adequate physical separation is not possible between the janitorial area and food prep and cooking areas. Per State plumbing code, the sink shall be accessible for use during food service operations and shall be located within 100 feet of the food service operation and on the same floor. The janitorial station should include the following:

- A floor style mop sink for general clean-up activities. Installation of a tiled curb area, depressed floor, or laundry tub does not meet standards. Specify open floor space adjacent to the mop sink to accommodate maintenance equipment.
- Accessories including heavy-duty mop and broom racks and a unit of NSF shelving should be provided at the mop sink area.
- Recommend a minimum 48” X 30” janitorial area and a prefabricated 24” x 24” floor style mop sink.

Refrigeration

Refrigerators and freezers are required to maintain potentially hazardous foods at or below 41°F and 0°F, respectively. These units must meet NSF specifications for the intended use as specified by the manufacturer. Household refrigerators and freezers, including chest freezers, “dorm” refrigerators, etc., do not meet standards for retail food service use.

Refrigeration and freezer equipment should be located in the direction of the food flow starting at receiving and storage. Calculation of the minimum amount of refrigeration and freezer space required is based on the menu and food preparation procedures. A minimum 6’X 6’ walk-in cooler will be required whenever cooking equipment requiring an exhaust hood is proposed. Additional refrigeration will be required when catering or banquet operations are proposed.

Shelving installed in refrigerators or walk-in units shall be NSF approved and rated for use in high moisture environments. Wood, zinc, galvanized, chrome finishes, or solid shelving are not to be used in refrigeration units.
Walk-in Coolers and Freezers

Units shall be located within the facility near delivery/receiving areas. Units that are specifically designed for outdoor installation are required to be accessible from the interior of the building. Walk-in cooler condensate may discharge outdoors if approved by local plumbing inspector. A condensate pump is not a substitute for an open site drain.

Additional walk-in cooler space will be required for facilities that conduct the following:
- Extensive thawing
- Advanced preparation*
- Extensive cooling*
- Batch cooking*
- Receive deliveries from a remote receiving or loading dock
- Store beer kegs, case liquor, or wine (separate coolers are to be provided for food and liquor)
- When there are extensive or continuous cutting, sawing and/or grinding of raw meats, poultry, and/or fish

*A blast chiller can be substituted for this activity

Reach-in Refrigerators and Freezers

Reach-in refrigerators and freezers are needed for the storage of food during preparation and assembly. These units shall be located within food preparation and cookline areas. Under-the-counter units are to be utilized for working supplies only, and cannot be used for receiving or cooling purposes.

Refrigerated Work Stations

Refrigerated make-up tables are needed when the menu includes the assembly of potentially hazardous foods. This unit shall be located adjacent or across from the cookline, and in assembly areas of foods such as sandwich, pizza, salad, and multiple ingredient menu items.

Refrigerated Display Cases

Refrigerated display cases are needed for the display and holding of potentially hazardous foods and are not intended for food assembly or cooling.

Refrigerated Beverage and Frozen Food Merchandisers

Refrigerated beverage and frozen food merchandisers are designed to be utilized for customer self-service and are typically located in the retail sales area. Beverage display coolers shall not be used to store potentially hazardous foods. Ice cream novelty freezers are not approved for storing items other than ice cream products and frozen novelties.
Storage

Storage Rooms

A food service dry storage area that equals 15 percent* of the total food service area must be provided for storage of food and other needed supplies. The receiving door needs to be located adjacent to the dry storage room to minimize traffic through areas of food preparation and utensil washing. Additional dry storage will be required when banquet or catering operations are proposed.

A separate liquor and beverage storage area equal to 25 percent* of the bar service area must be provided. Office and bar cabinetry is not to be considered as part of the liquor storage calculations. "Bag ‘n’ box”, CO2 tanks, and bulk syrup unit storage can be included in this area.

Remote storage room(s) must be accessible by means of interior hallways, stairways, or elevators. Storage is not permitted on top of the walk-in units, restrooms, or in space between the ceiling, roof deck, or hallways. The use of ladders will not be approved. Off-site storage or exterior facilities must adhere to same requirements as on-site storage or indoor facilities

In shared storage areas, the shelving must be labeled as the specific owner/user.

The following additional items are applicable to all food and beverage storage rooms:

- Storage shelving and dunnage racks shall meet NSF standards. Indicate on plans the size and positioning of shelving units. All shelves shall maintain a minimum 6 inch clearance above the finished floor. High-density storage shelving can be utilized to maximize available floor space. Dunnage racks can be substituted when storing case products, heavy containers, and bulk items. Keg racks can be needed when multiple kegs are specified.

- Solid fuels, such as firewood, wood chips, and charcoal are to be stored separated from food service and dry storage areas. Specify the provision and location for an interior or exterior storage area. Elevate items at least 6 inches off the floor.

*Calculations are based on wall-to-wall dimensions (square footage). Square footage calculations do not include wall-hung shelving, the number of vertical shelves per unit, under shelves in workstations, or any refrigerated storage units (including walk-in units).

Custom Cabinetry/Millwork

Indicate the following specifications for any cabinetry or millwork intended for use in areas such as food and beverage service, food storage cabinets, buffets, salad bars, and wait stations:

- Counter Tops: Stainless steel or solid surface. Plastic laminate, tile and wood finishes do not meet durability standards. Counter tops where drop-in cold and hot holding equipment are installed should be modified and fitted using stainless steel flanges to prevent thermal cracks.
o Base Cabinet: Open-to-floor design or 6 inch stainless steel legs.

**Specific Food Service Installation and Operation Standards**

**Banquet Facilities**

For facilities that solely receive food from outside sources, all foods shall come from commercial food service facilities that are permitted by a regulatory authority. A listing of menu items and their sources will be required. Each banquet facility shall have the following pieces of equipment:

- NSF approved 3-compartment utensil washing sink
- NSF approved, traditional size wall hung hand sink(s) at each workstation
- NSF approved stainless steel work surfaces
- NSF refrigeration units
- NSF approved mechanical hot holding equipment
- Janitorial station
- Restrooms in compliance with state and local plumbing codes

**Buffet**

Each buffet operation shall have the following pieces of equipment:

- Food service equipment used for the holding and/or display of potentially hazardous foods shall be mechanical, commercial, and NSF approved. Examples of approved equipment include refrigerated cold pans, Cook N' Holds, induction cookers, and electric chafing units. The use of non-mechanical equipment for holding such as ice or “Sternos” does not meet equipment standards for annually permitted facilities. Please consult with Plan Review staff for other permitting options i.e. mobile food or temporary food permits.
- Food shields shall be provided.
- Open site floor sink(s) or hub drain(s) shall be specified for equipment that requires sanitary waste discharges.

**Carts and Kiosks**

Proposals that include carts within the interiors of a building require compliance with this manual including the provision of water, sewer, and electrical services.

**Child Care with Catered Food**

See *Appendix VIII Child Care with Catered Food* for requirements.
Demonstration and Display Cooking

Cooking demonstration areas including “guest chef” food meal operations may be required to comply with the provisions of this manual. Proposals will be reviewed on a case by case basis. Please consult with Plan Review staff for other permitting options i.e. mobile food or temporary food permits.

Hotels with Food Service Facilities

Hotels providing food service beyond a continental breakfast, as defined by the Illinois Food Service Sanitation Code, are required to comply with the provisions of this manual and obtain an operating permit.

Non-Traditional Food Services

Hair salons, spas, pet shops, etc., that propose the installation of a food or beverage service will need to provide separation of food service and non-food service activities and comply with the provisions of this handbook.

Proposals that include non-traditional methods of serving food, including trains, boats, body buffets, etc., will require advanced submittal and approval. These operations may be subject to additional requirements based on specific proposals and will be reviewed on a case by case basis.

Churches, test kitchens, and other operations need to submit a written proposal explaining the usage of the facility for plan review and possible permit exemptions.

Smoking, Curing and Reduced Oxygen Packaging

See the Illinois Food Service Sanitation Code, section 750.2000 and this handbook for requirements.

Sushi

The sushi area must be separate from other food and beverage service operations. Each sushi station shall have the following pieces of equipment which can be shared:

- NSF approved, traditional sized wall-hung hand sink(s)
- NSF approved food preparation sink(s)
- NSF approved stainless steel work surface
- NSF approved refrigeration
- Food guards
- NSF refrigerated sushi display case(s)
Remote Sampling/Cooking Stations

Sampling of food items conducted outside the confines of designated processing areas shall comply with the following:

- A separate designated clean room equipped with utensil washing, hand washing, stainless steel or NSF standard 51 work surfaces, and preparation equipment shall be provided.
- At each sampling station provisions for hand washing, hot and cold holding, and food guards are required based on the food items being sampled.
- Advance approval to conduct sampling for outside vendor(s) shall be obtained by the permit holder.
- Accessible hand sink or hand washing facilities depending on proposed activities.

Outdoor Bar Service

See Appendix II Outdoor Bar Service Standards for specific requirements.

Food Service Departments in Retail Food Stores

The flow of food from receiving to the various departments shall be routed so as to minimize passing through areas of food preparation and utensil washing.

Each food processing area shall have the following pieces of equipment:

- Utensil washing NSF approved 3-compartment sink
- NSF approved, traditional size wall hung hand sink
- NSF approved food preparation sink(s)
- NSF approved stainless steel or standard 51 work surfaces
- NSF approved reach-in refrigeration units
- NSF approved walk-in refrigeration and/or freezer units
- NSF approved hot holding units (if applicable)

Food processing areas require physical separation from potential sources of contamination such as stock areas that have open receiving doors, balers, compactors, overhead utility and sewer lines.

Convenience, Drug, Specialty Stores, and Gas Stations with Food Service

Separate storage areas will be needed to segregate food and beverages from non-food related items, automotive supplies, and other hazardous chemicals.

Satellite and Commissary Food Services

A separate written proposal is required indicating the scope of the commissary operation for use as mobile vending or satellite food service. Additional plan review information may be required depending on proposed operations and will be reviewed on a case by case basis.
Dining Area or Restroom Modifications

Proposals to modify or expand dining areas or restrooms will need to submit a written proposal explaining the scope of work.

Food Service Plumbing

Specify all plumbing to be in compliance with the Illinois State Plumbing Code and local requirements.

Water Supply

Provide potable water under pressure to satisfy the needs of the food service establishment. Water is to come from a public water supply or from a Health Department approved non-community source.

Hot Water Supply

A 40-gallon storage capacity commercial water heater is the minimum standard in food service operations. Per State mechanical code, if the hot water heater is suspended, the support shelf is to provide a minimum of 80-inches of clearance above the finished floor. Heat-on-demand or “tankless” hot water systems shall be NSF approved, with design capacity calculations shown on the plan.

All sinks are to be provided with hot and cold water under pressure. In addition, dishwashers will need hot water temperature of at least 140°F to operate properly.

Sewage Disposal

All sewage shall discharge to a public sewer. All underground/below slab waste pipe plumbing shall be a minimum of 4 inches in diameter per Illinois Plumbing Code. Private sewage disposal systems are not permitted for food service operations. Waste collectors that do not discharge food solids into the sewer are to be used in place of garbage grinder and disposal units.

Grease Interceptor

The local Sanitary District determines the number and size of any grease traps, grease interceptors, or basins. If required, one of the following installation methods needs to be met:

- An exterior grease basin with a minimum 4 inch inlet and outlet.
- An interior grease interceptor/trap shall be recessed into the floor such that the lid is flush with the floor with a minimum 4 inch inlet and outlet.

The grease interceptor needs to be easily accessible for maintenance. Locate the grease interceptor so as to not interfere with the legs of the 3-compartment sink or other fixed equipment.
Overhead Utility Lines

State Food Code does not allow unprotected sewer, water, and roof drain lines to be located directly above food preparation, display, storage, and utensil washing areas.

Potable Water Backflow Protection

All plumbing fixtures must have backflow protection. All backflow protection shall be installed according to Illinois plumbing code and approved by local plumbing authority.

Indirect Waste Connections

Provide open-site indirect waste connections by means of floor sinks or through-the-floor hub drains for all drain lines that service dishwashing machines, utensil washing sinks, pot washing sinks, pre-rinse sinks, silverware sinks, bar sinks, utility dump sinks, soda dispensers, ice machines, steam tables, pasta cookers, ice bins, salad bars, dipper wells, all refrigerator or freezer condensate, and other similar fixtures.

- An indirect connection discharges waste through a hard piped minimum 1 inch air gap into the sewer.
- The drain piping from any fixture to the air gap shall be in the same room. All open site drains shall be visible for inspection. Installation of any open site drains within walls is not approved. Condensate pumps or aftermarket evaporator devices are not approved.
- Each fixture will require a separate drain line to the open site floor sink. Indirect waste drains are to be installed in the floor. To prevent overflows and splashing, specify floor sinks or floor hub drains for high volume discharges such as a 3-compartment sinks, food preparation sinks, or dishwashers. Power wash sinks are subject to additional requirements i.e. an additional floor sink.
- Drain lines shall not discharge to sinks, buckets, other food service equipment, or to the exterior of the building.

Direct Waste Connections

Hand sinks, lavatory sinks, and janitorial sinks shall be directly connected to the public sewer system in accordance with the Illinois State Plumbing Code.

Mechanical Dish Machines

General Standards

- Specify a pre-rinse sink at the soiled dish station to rinse soiled utensils before loading the dish machine, and a clean dish table after the machine to unload dishes. The soiled dish landing and clean dish landing tables shall be of equal dimensions.
o Provide and locate shelving units for the storage of clean food service equipment, glassware, and racks.

o The installation of a shared manual 3-compartment sink drain board and mechanical dish machine drain board will not be approved.

o Specify “undercounter” style dish machines will be installed with 6 inch legs and located adjacent to, but not under, the 3–compartment sink. Undercounter style machines do not require a Type-II exhaust hood.

o Provide a Type-II (NSF) exhaust hood to effectively remove steam and vapors generated by hot water sanitizing dish machines.

Chemical Sanitizing Dish Machines

A sanitizer alert system, which includes a visual and audible alarm, designed and approved for the specific machine, is required to warn the user when the sanitizer supply has been depleted.

Specify shelving, dollies, or brackets for the storage of chemical containers.

Hot-Water Sanitizing Dish Machines

A pressure gauge is required to monitor the water pressure. The flow pressure is to be 15 to 25 pounds per square inch (PSI) at the final rinse.

Facilities using a commercial dish washing machine will need to include a booster heater to meet hot water temperature requirements.

Glass Washers

An NSF approved glass washer can be provided in lieu of the standard bar 3-compartment sink for full service bar installations. If a glass washer is provided, an NSF approved dump sink will need to be installed adjacent the glass washer. The glass washer shall be installed on 6 inch legs.

Employee Areas, Laundry, and Restrooms

Employee Areas

Specify a coat rack, coat hooks, or other suitable facilities for employees to store coats and other personal belongings. Lockers should be installed in a designated area away from food.
Recommend mounting lockers 6 inches above the floor.

Break stations, when proposed, should be located in the dining room or an area separate from utensil washing, food preparation, and storage areas.

**Laundry**

Both a washing machine and dryer shall be provided if a laundry area is proposed. The laundry facility is to be located in a room separated from the food preparation, service, and storage by a solid, tight-fitting, self-closing door. Gas dryers are to be properly vented to the outside.

**Restrooms**

Restrooms are to be in compliance with state and local plumbing codes.

Restrooms shall be conveniently placed and accessible to employees. Per State plumbing code, restrooms shall also be located no more than 100 feet from the food service on the same floor. Public restrooms shall be located to prevent access through utensil washing, food preparation, food service, or storage areas.

Toilets are to have open front toilet seats without lids.

Lavatory sinks shall be provided and located within the restroom. Touch-free low voltage or direct hardwired units will be approved. Battery activated and metered faucets are not permitted. Alternative technology faucets can be submitted for approval.

Mechanical ventilation or a screened openable window is required for all restrooms.

Accessories including wall mounted soap and paper towel dispensers, covered garbage cans, sanitary containers and self-closing doors are needed. Cloth towels, including rolled towels, are not approved.

**Lighting**

**General Standards**

Food preparation, storage, utensil washing, bar, and walk-in unit areas are to have a minimum light intensity of 20 foot-candles as measured 30 inches above the floor.

Protective lenses, light tube with end caps, and safety-coated bulbs are required for light fixtures in the above-named areas. Track, can, and shatterproof pendant lighting fixtures need to fully encase the bulb. Sodium or mercury vapor light fixtures need to be installed with approved safety shut offs and shielding.
Room and Area Finishes

General Standards

Finishes in the food preparation, storage areas (including lower levels and mezzanines), utensil washing, bars, buffets, beverage and wait stations, salad bars, and janitorial closets shall meet the following general standards:

*Floor finishes* shall consist of a commercial grade, light-colored, non-absorbent, grease-resistant, and easily cleanable material.

*A coved radius (3/8 inch or greater)* and a tight seal are required at the floor/wall juncture. The floor finish determines the type of coving material. Tile installed on top of tile or wood does not meet minimum standards.

*Wall finishes* shall consist of a smooth, durable, light-colored, and easily cleanable material. Any painted wall sections will require a smooth, semi, or high-gloss finish.

*Ceiling finishes* for ceilings 12’ or less in height shall consist of smooth, durable, non-absorbent, and light-colored materials.

Cookline/Cooking Equipment

Stainless steel wall finishes or alternate wall finishes acceptable to local fire protection district shall be provided behind and adjacent to cookline equipment and other equipment that produce grease, steam, or heat. Install the stainless steel (or alternate wall finish acceptable to local fire protection district) from the bottom edge of the hood to the top of the finished floor at cookline. For countertop or floor-mounted equipment outside of a hood, the wall finish shall be stainless steel or tile shadowing the piece of equipment unless the piece of equipment is 18 inches off the wall.

Walk-In Coolers and Freezers

Floor finishes need to meet the minimum standards noted previously. However, pre-fabricated flooring such as diamond-plate aluminum or stainless steel is also approved. Interior and exterior floor/wall junctions shall be tightly sealed by means of screed, grout, or silicone radius. Wall panels shall be NSF approved.

Wait Stations, Buffets, and Salad Bars

Floor finishes need to meet the minimum standards noted above, installed under, and a minimum of 3 feet beyond the station.
Bars and Beverage Stations

Wall finishes on the interior bar wall surfaces (die wall) and underside of bar countertops need to reflect light-colored FRP or tile. Exposed joints, studs, or other support structures will need to be encased using approved materials.

Restrooms

Floor finishes need to meet the minimum standards noted previously.

Grocery Receiving, Stock and Back Storage Areas

Floor/wall junctures shall be tightly sealed. Installation of diamond plate aluminum-wrapped 2 x 4’s, 2 x 6’s or 2 x 8’s can be used as a substitute for traditional cove tile base. Walls shall be painted using white semi-gloss paint allowing a minimum of 18 inches below the roof deck.

Building Openings

Openings to the exterior need to be properly protected to prevent the entry of insects, rodents, and pest birds.

Exterior Doors

Exterior doors, including delivery and receiving (garage-style) doors shall be solid, self-closing, and tight fitting. Thresholds, door sweeps, and weather stripping are required. The installation of an overhead mechanical air curtain is recommended.

Windows

Openable windows, except drive-thru or walk-up windows, shall be screened with at least 16-mesh per inch wire screening.

Walls

The main food service area shall be fully enclosed. Proposals that include openable doors and movable walls such as garage/barn-style doors will require the installation of an overhead mechanical air curtain. The need for additional requirements such as physical barriers will be determined on a case-by-case basis.
Garbage and Grease

Garbage Containers, Dumpsters, and Grease Containers

Each food service facility is responsible for contracting garbage and/or grease disposal service, securing the location and determining the frequency for pick-up.

- Waste compactors are to be located outside. The compactor opening cannot be located in a food processing areas.
- Balers can be located within the building, but not in food service areas.
- Grease collection systems cannot be located in utensil washing, food preparation, or food service areas.
- Recycled materials are considered garbage and shall be stored and disposed of in the same manner.

Garbage Areas

Interior garbage storage areas are not approved. Garbage and refuse are to be stored outside of the facility.

Outside garbage dumpsters, containers, compactors, and grease containers are to be located on smooth surfaces such as concrete or machine-laid asphalt. Grass or gravel will not be approved. Grease containers should be provided with casters.

Enclosures

Enclosed areas, if provided, are to be large enough to provide space for dumpster(s), garbage container(s), grease container(s), and/or compactor(s). Check with local authorities for additional requirements.

Composting

EH encourages responsible exterior composting to prevent rodent harborage. Please submit collection procedures, container specifications and location for review.
Appendix I

HACCP and the Plan Review Process

As stated earlier, the purpose of the requirements within this manual is to design food service facilities that are safe, sanitary and efficient. Years of experience by local sanitarians, industry standards, and scientific research have all been referenced in the construction and subsequent revisions of this manual. It has long been recognized that the principles of HACCP play a vital role in food facility design, and thus the standards utilized in this Food Service Design and Construction Manual are based upon these principles.

HACCP, or Hazard Analysis Critical Control Point, is a food safety program that has been in use throughout the country since its inception in the late 1950’s. This seven-stop process is a method by which food safety experts, educators, regulators and designers work to identify biological, chemical and physical hazards within a facility, then attempt to minimize them; many state and local agencies, including DuPage, base their inspections on HACCP principles. It has proven quite successful in the minimization of the occurrence of food borne illnesses, which is why the plan reviews in DuPage County are based on this principle.

HACCP begins with the design and layout of the food service establishment, and monitors the flow of food throughout the establishment, from delivery to consumption. In HACCP the steps of receiving, storage, preparation, cooking and service are considered to form a continuous flow throughout the facility: therefore, this flow should have a few breaks as possible. As a general rule, food should not “double back” through a facility, meaning as it progresses from receiving to final service food maintains a straight flow that minimizes cross-contamination, maximizes efficiency, and does not require employees to travel backwards through the process.

To maintain the proper food flow during the design of a food service establishment, the receiving area(s) and both the dry storage area and walk-in units should be located near the receiving door. These storage areas should have direct access from the receiving area, and deliveries should not be made through areas of utensil washing, janitorial areas, or in other areas that could lead to contamination. It is also important to ensure the receiving and storage areas are not only properly located, but that HACCP is utilized during the operations in these areas. All food, ingredients, and materials should be obtained from an approved source. In addition, it is important to verify that all food is received at the proper temperature, and then quickly stored in the walk-in units to maintain temperature: this is why it is critical to have the walk-in coolers and freezers located near the receiving area. During storage, it is also important to prevent cross-contamination by following proper storage procedures for refrigerated units and ensuring all items are stored at least six inches off the floor.

From the storage areas the food should easily flow to the preparation area, which should be located in a convenient area close to the cookline but separate from any utensil washing. During food preparation care should be taken to minimize cross-contamination: this could include using separate equipment for raw and ready-to-eat foods, or even having separate areas in which to prepare raw foods. Care should be taken to prepare small batches of food to prevent time-temperature abuse, and employees must pay extra attention to assure raw and ready-to-eat foods are kept separate.

After preparation food is to be moved to the areas of cooking and assembly, where they are properly held until assembly or final cooking takes place. At these areas refrigerated make-up stations are required to maintain safe temperatures during assembly of foods such as pizzas, salads, sandwiches, and items containing cheeses or sauces.
In addition, care must be taken to ensure foods are fully cooked to their appropriate temperatures; these temperatures should be checked with thermometers. For foods that are prepared in advance, proper hot and cold holding is important. Walk-in coolers are required in facilities that have extensive preparation steps, cool foods, thaw foods, or have cookline hoods to accommodate these additional preparation steps, as well as the increase quantity of fresh foods utilized in these operations.

Finally, the food should be delivered to the end consumer directly from the cooking and assembly areas without passing though potential areas of cross-contamination such as utensil washing or restrooms. During service care should be taken to ensure proper utensils are used as needed, and that employees are practicing proper personal hygiene practices.

In each of these areas mentioned above, hand washing sinks must be provided. Designated wall-mounted, traditional sized hand sinks are to be provided within each work zone or work area to prevent employees from having to leave their workstation to wash their hands. In addition, hand sinks should be visible and easily accessible to employees at all times. This will encourage proper hand washing, which is the primary means through which food service employees can prevent foodborne illness.
Appendix II

Outdoor Bar Service Standards

Beverage Preparation

Outside food preparation will not be permitted. All lemons, limes, etc., shall be cut inside the permanent establishment. Only a minimal number of liquor bottles should be stocked in this area. Opened bottles shall not be left outside overnight. Ice cream drinks and drinks mixed with a blender will not be approved.

Equipment

Bar equipment shall meet NSF Standards and installation requirements. Provisions for bar equipment storage during the off-season shall be specified.

Permanently installed beverage dispensers are not approved. Only canned and bottled beverages are allowed. A portable tapper installed with casters can be used to dispense beer. Tabletop frozen beverage dispensers are approved only when using pre-mix made in the kitchen.

Ice for consumption shall be stored separately from ice used for cooling bottles and cans. Where ice is used, an approved “ice caddy” that meets NSF standards shall be provided for transporting the ice from the icemaker to the ice bin. The ice bin shall be designed with a self-closing, retractable lid.

Dish machines and 3-compartment sinks are not approved for outdoor installation. Glassware shall be properly protected during periods of storage and cannot be displayed. The use of disposable single service items is recommended. All glasses, unused single service items, condiments, etc., shall be returned to the inside permanent establishment at the end of each day.

Construction

A roof is required over the entire bar service area. The interior ceiling finish shall be smooth, durable, and easily cleanable. Open structure, thatched, or cloth coverings do not meet minimum standards.

Interior bar walls, die wall finishes, back bar wall, and undersides of bar countertops shall be constructed of smooth, durable, non-absorbent, easily cleanable materials such as FRP, tile, or stainless steel. Bare wood is not permitted.

Interior bar floor finishes shall be durable, light-colored, non-absorbent, grease-resistant, and easily cleanable material. Bare or sealed concrete, or concrete overlays, will not be permitted.

All bar areas shall be provided with at least 30-foot candles of light for clean-up purposes. Lighting shall be equipped with protective shielding. Neon lights, beer signs, or other fixtures are not to be installed above the bar.

Plumbing

The outside bar shall be provided with an approved water supply and connected to the sanitary sewer in accordance with the Illinois State Plumbing Code. At least one handsink and a utility/dump sink shall be provided and installed in the bar area. Both sinks shall be permanently plumbed.
Appendix III
Operations

When construction work is complete and you are ready for a final inspection, please contact the plan review staff to request an inspection. The items listed below will help ensure the inspection goes smoothly and that you will be ready to safely prepare food for your customers.

Sanitation

- Final cleaning and sanitizing of all equipment, fixtures, and finishes completed.
- Exterior of premise is cleaned and cleared (construction dumpster removed).

Utilities

- Dishwasher/glass washer/pan washer are to be operable and ready for testing.
- All utilities to be operable (i.e., electrical power, gas, water/sewer, etc.).
- All refrigeration to be turned on and operating for a minimum 72 hours (41°F refrigerator; 0°F freezer)

Facility

- Coat rack or lockers installed for storage of employee items.
- Metal garbage cans with lids in restrooms.
- Sanitary box provided in women’s restroom.
- Garbage dumpster and grease disposal containers to be present.

Food Safety

- Probe stem thermometer, digital probe or thermocouple for monitoring food temperatures.
- Thermometers in all coolers, freezers, and hot holding units.
- Food service approved sanitizer for manual dish washing and a test kit to measure proper concentration.
- Soap and paper towel dispensers to be provided, installed, and stocked at all hand sinks

For Food Safety Information and training tools, please visit our website at www.dupagehealth.org/food-safety.
Appendix IV
Standards for Food Service Ventilation

Plans Submittal

- Complete a Food Service Ventilation Plan Review Application Form for each new exhaust system installation or modification to existing systems for review and approval (one form per hood).

- Submit exhaust plans and specifications indicating the type of equipment being proposed for installation under the cook line exhaust hood.

Exhaust systems shall be installed in accordance with all municipal, county, state, fire, and building department requirements.

When Exhaust Hoods Are Required

Type I hoods are required for foodservice equipment that produces smoke, grease-laden vapors, particulate matter, and odors. A Type I hood is defined as a stainless steel hood certified by UL, NFPA, and NSF with a fire suppression system. Type I hoods shall also meet factory engineered performance standards. Examples of equipment requiring this type of hood include but not limited to stoves, ranges, fryers, ovens, broilers, hot plates (except induction cookers), and salamanders.

Type II hoods are required for all food service equipment that produce steam, mist, heat, and vapors. A Type II hood is defined as a stainless steel hood certified by UL, NFPA, NSF, and usually do not require a fire suppression system. Type II hoods shall meet minimum performance standards. Examples of equipment requiring this type of hood include but not limited to pizza ovens, gas convection ovens, pasta cookers, conveyor ovens, ban maries, kettles.

Exhaust Hood Designs

Canopy Hoods are a standard wall-hung hood. Wall-hung canopy hoods shall be designed as an overhead hood that completely covers the equipment it is intended to serve.

Island Canopy Hoods are open on all sides. They shall be designed as an overhead hood that completely covers the equipment it is intended to serve.

Ventilators, or "low sidewall hoods," are non-canopy hoods that shall be designed as a wall hood with a maximum height of 3 feet above the cooking surface. Ventilators are exempt from the 12 inch overhang requirements.

Water wash hood systems are designed with a self-cleaning washing system. They shall include the following additional requirements:

- Provide a floor sink within 5 feet of the hood for discharge. The drain line shall be routed through the grease trap. A separate grease trap for the hood system will be required.

- Exposed horizontal piping shall not be installed below the filter bank.
Install a reduced pressure zone backflow preventor (RPZ) on the potable water supply line that serves the hood. Locate the RPZ so it is accessible for inspection.

Black iron, galvanized and painted steel hoods do not meet current standards and shall be upgraded to meet all applicable codes.

The size of the exhaust hood is determined by the overall length of the equipment to be located under the hood. A hood shall overhang all underlying equipment by at least 6 inches, or end walls, or stainless steel side skirts at each end of the hood shall be provided. When providing a 6 inch overhang, the fire suppression compartment is not included as part of this overhang calculation.

**General Hood Construction Standards**

- The hood shall be NSF approved, stainless steel, factory engineered, and fully credentialed.
- The maximum distance between the bottom edge of hood and the floor is 7 feet.
- The maximum height of the bottom edge of the hood above the cooking surface is 4 feet.
- The minimum height of the hood itself is 24 inches.
- The minimum static pressure is 1/2 inch.
- Hoods located less than 18 inches from the ceiling or wall shall be closed with approved material to the ceiling and wall.
- The minimum distances between the lowest edge of a baffle or extractor and the cooking or heating surface are:
  - Three feet for exposed or unexposed flame units.
  - Four feet for charcoal.
- Provide a minimum of 50 foot candles of light in the hood to be measured 6 inches above the cooking surface. Protective light globes shall be provided on lighting.
- Fire suppression tanks cannot be located over sinks or food preparation equipment.
- Horizontal runs of exposed piping or fusible links of the fire protection system below the filter bank in the hood or the make-up air plenum will not be approved. Exposed piping/conduit on the exterior of the exhaust hood shall be spaced 1/2 inch to 1 inch away from all surfaces.
- Fire suppression piping shall be of easily cleanable material such as stainless steel or chrome.
- Plumbing and electrical conduit shall be concealed behind walls.
- Exposed gas lines shall be elevated 6 inches to 18 inches above the finished floor and spaced 1/2 inch to 1 inch away from all surfaces.
- Obstructions such as shelving or pot racks shall not be installed between the cooking equipment and the ventilation filter bank.
- Air intakes shall be located at least 10 feet away from any exhaust outlet or vent.
- Insulation shall not be applied on the interior of the ductwork.
- Final approval of the overall exhaust system shall be obtained.

**Performance**

Factory engineered exhaust systems shall comply with manufactures performance standards. Systems that are not factory engineered do not meet minimum standards.

**Exhaust Ducts**

Kitchen exhaust systems shall be designed and constructed to exhaust air through duct(s) directly to the outside atmosphere in a safe and nuisance-free manner. Non-rooftop exhaust ducts and duct-less systems will require written approval from local building and fire department authorities prior to health department review. Ductwork for
the exhaust system cannot cross-connect with utility ducts, such as those for oil or gas-fired furnaces and water heaters.

Multiple takeoff ducts are required for all hoods 10 feet or more in length.

Duct air velocity shall be a minimum of 1,500 feet per minute, with a maximum of 2,200 feet per minute.

**Exhaust Baffles**

Before entering the ductwork, all exhaust air shall pass through approved, removable baffle filters or grease extractors. Calculate the appropriate number of baffles/extractors needed based on the length of the filter bank and the size of the baffles/extractors.

Baffles or extractors shall be installed at a 45-degree angle and shall be sized appropriately to fit the hood and to channel grease accumulation into the collection container. Spacers will be needed to eliminate any gaps between baffles. Spacers cannot be installed over grease-producing equipment.

Baffles or extractors specified shall be of the same type so they will not adversely affect the static pressure of the total system. Mesh filters do not meet minimum standards for Type I hoods.

**Exhaust Fan**

The exhaust fan specifications (make and model) shall be compatible with the exhaust system. The fans shall be located to discharge to the outside atmosphere in a safe and nuisance free manner.

**Make-Up Air**

Exhaust systems with air removal capacity of over 1,500 CFM shall be provided with sufficient make-up air equal to or slightly less than the total CFM to be exhausted. The complete HVAC system and cookline exhaust system with make-up air shall be operable at the time of balancing and testing. Make-up air shall be tempered (i.e., heated to room temperature.)
Appendix V
Reminder Checklist

I. Type of Facility

Describe the types of food and beverage service activities being provided:

☑ Check all that apply

<table>
<thead>
<tr>
<th>Food</th>
<th>Beverage</th>
<th>Cafeteria</th>
<th>Grocery</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Full Service Dining</td>
<td>☐ Full Bar Service</td>
<td>☐ Office</td>
<td>☐ Full Service</td>
</tr>
<tr>
<td>☐ Fast Food Dining</td>
<td>☐ Beer / Wine only</td>
<td>☐ Other</td>
<td>☐ Convenient / Limited</td>
</tr>
<tr>
<td>☐ Take Out only</td>
<td>☐ Brewery</td>
<td>☐ Department Activities</td>
<td></td>
</tr>
<tr>
<td>☐ Drive Up Service</td>
<td>☐ Outdoor Bar *</td>
<td>☐ Food Preparation</td>
<td></td>
</tr>
<tr>
<td>☐ Sushi Bar</td>
<td>☐ Service Bar(s)</td>
<td>☐ Full Service</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Department Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Pre-packaged products</td>
</tr>
<tr>
<td>☐ Re-packaging of bulk food</td>
</tr>
<tr>
<td>☐ Produce</td>
</tr>
<tr>
<td>☐ Bulk Food Sales</td>
</tr>
<tr>
<td>○ Meat</td>
</tr>
<tr>
<td>○ Seafood</td>
</tr>
<tr>
<td>○ Sushi Bar</td>
</tr>
<tr>
<td>○ Coffee Bar</td>
</tr>
<tr>
<td>○ Juice Bar</td>
</tr>
<tr>
<td>○ Deli</td>
</tr>
<tr>
<td>○ Bakery</td>
</tr>
<tr>
<td>○ Other</td>
</tr>
</tbody>
</table>

☐ Cooking Instruction
☐ Gas Station w/ Beverage
☐ Liquor Store w/ Food
☐ Concession Stand
☐ Self - Service Station(s)
☐ Institution

☐ Bar
☐ Lodging

☐ Full Service
☐ Self-Service Breakfast Bar
☐ Salad Bar

☐ Bar

☐ Long Term Care Facility
☐ Assisted Living
☐ Other

Indicate Additional Foodservice Activities Proposed
☑ Check all that apply

☐ Catering ☐ School Lunch Program ☐ Sampling ☐ Buffet ☐ Banquets
☐ Customer Pick-up Catering

Outdoor Cooking: Annual permits are not issued for outdoor food service.

Any proposal for outdoor cooking must apply for a temporary permit. The temporary permit is good for 14 consecutive days or 14 event dates. Permit(s) can be renewed one (1) time for a total of 28 days or 28 event dates per year.
II. EQUIPMENT LIST

*Refer to Section II in the “Food Service Design & Construction Manual”

- All food Service Equipment must be commercial / NSF or meet recognized equivalent
- Model #'s are required if a statement is not noted on the plans referencing compliance with the National Sanitation Foundation (NSF) or recognized equivalent standards.
- All equipment including small wares will be considered new unless specified as used (U)
- Existing (E) equipment must meet the same standards and specifications as required of new equipment

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>EQUIPMENT LIST</th>
<th>NEW EXISTING USED</th>
<th>MANUFACTURER</th>
<th>MODEL NUMBER</th>
<th>NSF Approved</th>
<th>Movabl e On Casters</th>
<th>Spaced On Legs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### III. REFRIGERATION

The following are required – check or circle to verify

- Have you made provisions for refrigeration and freezer storage?  
  - Yes
  - No

- Are your walk-in coolers and walk-in freezers accessible from inside the establishment?  
  - Yes
  - No

- Are you installing a buffet or salad bar? If yes, the buffet or salad bar must be **mechanically** refrigerated  
  - Yes
  - No

- Have you designated the type of refrigeration needed for:
  - Cooling large quantities of food (Blast Chiller)  
    - Yes
    - No
  - Marinating food products (Walk-in Cooler)  
    - Yes
    - No
  - Cooling of hot foods (Walk-in Cooler)  
    - Yes
    - No
  - Refrigerating large quantities of food (Walk-in Cooler)  
    - Yes
    - No
  - Cookline (Walk-in Cooler)  
    - Yes
    - No
  - Working supplies of food at various work stations (Reach-in Coolers)  
    - Yes
    - No
  - Assembly or preparation of chilled foods (Refrigerated Make-up Units)  
    - Yes
    - No
  - Display of food products (Display Cases)  
    - Yes
    - No
  - Customer Self Service (Display Cases, Pop Coolers)  
    - Yes
    - No

### IV. STORAGE FACILITY

Specify the type of shelving units that will be provided in the following areas:

<table>
<thead>
<tr>
<th>Area</th>
<th>Manufacturer</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Areas</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>Refrigerated Areas</td>
<td>-------------</td>
<td>--------</td>
</tr>
</tbody>
</table>

#### Food Service Dry Storage Requirements

[15% of the total foodservice area]

*Wall shelves, under-shelves, cabinet shelves or tiers not to be included in final calculations.

Calculate: Total food service area = __________ sq. ft. (wall-wall)

Determine total dry storage required: Food Service Area $\times .15 = __________$ sq.

ft. (wall-wall)

Enter the amount of proposed dry storage area: __________ sq.

ft. (wall-wall)

Additional dry storage area needed to comply: __________ sq.

ft. (wall-wall)

#### Bar Service Storage Requirements

[25% of the total bar service area]

*Wall shelves, under-shelves, cabinet shelves or tiers not to be included in final calculations.

Calculate: Total bar service area = __________ sq. ft.

Determine total bar storage required: Bar Service Area $\times .25 = __________$ sq.

ft. (wall-wall)

Enter the amount of proposed bar storage area: __________ sq.

ft. (wall-wall)

Additional bar storage area needed to comply: __________ sq.

ft. (wall-wall)
The following are required – check or circle to verify

Have you indicated the storage location for dry storage? Yes No
Have you indicated a storage area for your cleaning supplies that is separate from food storage areas and food service operations? Yes No
Have you specified a heavy-duty-mop-rack capable of holding wet mops above the mop basin? Yes No
Are you using firewood as a fuel source for cooking equipment? Yes No
   If yes, specify the location of firewood storage ________________________________

V. EMPLOYEE AREAS, RESTROOMS, & HAND WASHING SINKS
The following are required – check or circle to verify

EMPLOYEE AREA
Have you shown the location for personal belonging storage on the plans? Yes No
Have you adequately provided for the number of employees per shift? Yes No
Indicate type of storage: ☐ Coat hooks ☐ Coat rack ☐ Lockers ☐ Other______________________

RESTROOMS
Have you provided the number of toilets/facilities as required by the Illinois State Plumbing Code and verified with the local Sanitary District or local Building Department? Yes No
Can the public access the restrooms without going through the kitchen, storage area(s), or utensil-washing area(s)? Yes No
Is a mechanical exhaust fan provided in each restroom? Yes No
Have you specified garbage containers with lids, sanitary containers (women’s), containers with lids for soiled diapers? Yes No

HAND WASHING SINKS
How many hand washing sinks excluding bathroom lavatories are you providing?_____
Are the locations of these hand sinks visible and accessible? Yes No
Do your plans indicate that all hand washing sinks will be supplied with dispensed soap and paper towels? Yes No

VI. PLUMBING
The following are required – check or circle to verify

UTILITIES
Water Supply: ☐ Public ☐ Private *if other than public contact plan review office immediately
Either the local Building Department or the local Sanitary District requires a grease interceptor. 
Indicate unit(s) specification:

Manufacturer: ____________________________________________
Model #: ________________________________________________
Capacity: ____________________ gallons
Size of Inlet/Outlet: ________ inches

How will it be installed?  ☐ Outdoors  ☐ Indoors - Recessed

Is the location of this unit indicated on the plans?  Yes  No

Are all pre-fabricated floor basin janitorial sinks indicated on the plans?  Yes  No

If proposing an alternative waste collection system, contact the plan review office immediately.
[i.e.: garbage grinder or salvage unit]

POTABLE WATER BACKFLOW protection is required on the following pieces of equipment. 
Check those that apply

☐ Chemical mixing system(s)  ☐ Pre-rinse sprayer(s)
☐ Dishwashing machine(s)  ☐ Carbonator(s)
☐ Water faucets with hose bib attachment(s)  ☐ Hose reel unit(s)

Other _______________________________________________________________________

INDIRECT OPENSITE WASTE CONNECTIONS are required on the following pieces of equipment. 
Check those that apply

☐ Refrigerator/freezer condensation line(s)  ☐ Steam table(s)
☐ Ice maker/ice bin(s)  ☐ Three compartment sink -- food service
☐ Food preparation sink(s)  ☐ Three-compartment sink -- bar service
☐ •Dipper well(s)  ☐ Dishwashing machine(s) *
☐ •Salad bar(s)  ☐ Soda dispenser(s)
☐ Steam kettle  ☐ •Buffet condensate
☐ Walk-in refrigerator drain(s)  ☐ •Espresso / Cappuccino machines

* Dishwashing machines must by-pass the grease trap (GT)

Other _______________________________________________________________________

VII. SANITIZING EQUIPMENT AND FACILITIES
HOT WATER SYSTEM

Specify the water heater storage capacity in gallons _________________________

REMINDER: 40-gallon storage capacity is the minimum.

Specify the water heater recover rate ____________________ GPH ___________________ °F, if mechanical (chemical or hot water) sanitizing machine is being proposed.

The following are required – check or circle to verify

MANUAL UTENSIL WASHING

Have you specified a standard food service three-compartment sink with two integral drain boards? Yes No

Is your largest item able to be submerged into the three-compartment sink? Yes No

What is your largest item? __________________________

Do you have a clean-in-place procedure for stationary equipment? Yes No

(If proposed, attach to submittal)

Have you provided additional space for the storage of clean utensils, glassware, etc.? Yes No

If yes, where? _________________________________________________________

MECHANICAL UTENSIL WASHING

If not applicable, proceed to next section.

Are you installing a dishwashing machine? Yes No

If yes, Manufacturer__________________ __________________________ Model # ________________

Dishwashing machine demand of rinse water ________________GPH @ 20 PSI flow pressure

Have you included a soiled-dish table? Yes No

Have you included a pre-rinse sink? Yes No

Have you included a clean-dish table? Yes No

Did you provide mechanical ventilation at dishwashing machine? Yes No

Provide and indicate the location for your clean utensil and dish storage? ______________________

CHEMICAL SANITIZING MACHINE

If not applicable, proceed to next section.

Are you providing a chemical sanitizing machine? Yes No

Have you provided an audible and visual warning indicator on the sanitizer dispenser? Yes No

Have you provided a location for air-drying utensils after being washed? Yes No

If yes, where __________________________

HOT WATER SANITIZING MACHINE

The following are required – check or circle to verify
If not applicable, proceed to next section.
Are you installing a hot water sanitizing machine?  Yes  No

Manufacturer (Booster Heater) _______________________________ Model # __________________

Booster Heater recovery rate: _______________GPH @ __________ °F
Have you provided for a temperature gauge before booster heater?  Yes  No

VIII. LIGHTING
The following are required — check or circle to verify
Are your food preparation and utensil washing areas lighted according to specifications? Yes  No
Are your food storage rooms lighted according to specifications? Yes  No
Have you provided dimmer switches or on/off switches in bar areas for clean-up purposes? Yes  No
Have you supplied fluorescent lights with vapor-proof fixtures or additional incandescent light kits for your walk-in refrigerator and freezer units to comply with the upgraded lighting standard? Yes  No
Are all of your light fixtures over the cooking line, food preparation, display, service, storage, and utensil-washing areas shielded with protective tubes and end caps or shatterproof acrylic lens? Yes  No

IX. LAUNDRY FACILITY
The following are required — check or circle to verify
If not applicable proceed to the next section.
Do you have a washer?  If yes, a dryer is also required.  Yes  No
Is a door provided to separate the laundry area from the food service area? Yes  No
Is shelving provided to keep clean linens stored separately from soiled linens? Yes  No
X. ROOM FINISH SCHEDULE

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

Dark shades such as black for floors, walls and ceilings will not be permitted.

<table>
<thead>
<tr>
<th>ROOM OR AREA</th>
<th>FLOOR</th>
<th>FLOOR BASE OR COVE</th>
<th>WALLS</th>
<th>CEILING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD PREPARATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COOK LINES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTENSIL WASHING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOOD STORAGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIQUOR STORAGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALK-IN REFRI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GERATOR/ FREEZER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JANITORIAL STATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAITRESS AREAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESTROOMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
XI. INSECT & RODENT CONTROL  

The following are required – check or circle to verify

Are all the vents covered with screening?  
Yes  No

All the voids and gaps around utility lines, pipes, etc. sealed?  
Yes  No

Are openable windows properly screened?  
Yes  No

Do you have a:  
☐ Drive-through window  ☐ Carry out window  ☐ Walk-up window(s)

The type(s) of protection provided for those windows:

☐ Semi-automatic bump pad  ☐ Electronic opener
☐ Air curtain w/ micro-switch  ☐ Spring-loaded screen

The type(s) of protection for your delivery and entrance doors:

☐ Self-closing device  ☐ Threshold  ☐ Threshold sweep  ☐ Weather stripping

If you have a garage-style delivery door, have you provided an air curtain?  
Yes  No

If yes, Manufacturer?_________________________  Model# ___________________

Other _____________________________________________________________________

XII. GARBAGE AND REFUSE DISPOSAL  

The following are required – check or circle to verify

The type of disposal provided:  
☐ Dumpster(s)  ☐ Compactor  ☐ Recycling container(s)  
☐ Exterior grease container(s)  ☐ Interior self-contained system for grease

Type of surface provided for storage of disposal containers:  
☐ Concrete pad  ☐ Machine-laid asphalt

Will an enclosure be installed for the storage of containers?  
Yes  No

Describe____________________________________________________________________
### XIII. EXHAUST HOOD VENTILATION FOR COOKLINE

**Establishment**  
Name_____________________________________________ City___________________________________

Mechanical Engineer__________________________________ Telephone_________________ Fax____________________

#### Determine Exhaust Hood Type (Refer to Section C):

<table>
<thead>
<tr>
<th>Check types that apply:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factory Engineered System: __________</td>
</tr>
<tr>
<td>Water Wash System _______</td>
</tr>
</tbody>
</table>

#### Review the Construction Needs and Criteria Check List (Refer to Section I).

The following are required - check (\_\_) to verify:

- List all equipment to be installed under the hood on the next page, one form per hood.
- Exhaust hood design and installation meets or exceeds the specifications in "Exhaust Hood Ventilation For Cook Line Equipment" section and hood is of stainless steel construction & materials.
- Hood and components are NSF approved or fabricated in compliance with NSF Basic Criteria C-2.
- Exhaust system will have a minimum of 50 FPM capture velocity at the cooking surface.
- No exposed horizontal piping on any portion of the hood in front of the filter bank.
- Point where the air is exhausted shall not be within ten feet of any air intake into the building.
- No insulation installed in the interior of the ductwork.

* If custom built system please complete the section below. Otherwise skip to next page titled “List All Equipment which Will Be Located Under the Hood”

#### Determine Exhaust Hood Size and Performance (Refer to Section D):

**Formula:**  
Total Length and Depth of Equipment _______inches  \( \times \) _______ inches

Total Length & Depth of Wall/Canopy Hood (including 12" front & side overhangs)
\( W________ \text{ ft.} \times L _______\text{ ft.}= _______ \text{ ft.}^2 \times 100 \text{ CFM/ft.}^2= _____ \text{CFM} \)

Total Length & Depth of Island/Canopy Hood (including 12" front & side overhangs)
\( W________ \text{ ft.} \times L _______\text{ ft.}= _______ \text{ ft.}^2 \times 150 \text{ CFM/ft.}^2= _____ \text{CFM} \)

Total Length of Non-Canopy Hood  \( L _______ \text{ ft.} \times 300 \text{ CFM/ft.}\) = _______\text{CFM} \n
#### Determining Exhaust Duct(s) Needs (Refer to Section E):

**Number:** ______________________________

**Formula (Using Square or Rectangular Duct Work):**  
\[
L_______ \times W _______ = _____ \text{inches}^2 \div 144 = \text{ft}^2 =_______ \text{ ft.}^2
\]

\[
\text{CFM} _______ \div \text{ ft.}^2 _______ = __________________ (1500-2200 FPM Range)
\]

#### Determining Exhaust Filter Needs (Refer to Section F):

**Number:** ______________________________

Total Length of Filter Bank ________inches  Size: __________ Type: ________________________________

#### Determining Exhaust Fan Needs (Refer to Section G):
Number: __________________________________________
Total CFM to be exhausted: __________at __________SPWG (Minimum Static Pressure shall be one half (.5) inch)
Fan manufacturer and model number: ____________________________

**Determining Make-Up Air Needs (Refer to Section H):**
Total CFM of make-up air to be supplied ____________________________
Described method of introducing make-up air into area ____________________________

**List All Equipment Which Will Be Located Under the Hood**

| Exhaust Hood: ________________________________ (one form per hood) |

<table>
<thead>
<tr>
<th>Equipment #</th>
<th>Equipment Description</th>
<th>Length</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following support information should accompany this form: Performance specifications for the exhaust fan(s) and the filters, shop drawings of the exhaust hood & ductwork and cleaning schedule. (Please attach.)

This approval in no way constitutes or implies a guarantee as to the proper functioning of any oral components and/or design factors of this system. All systems are subject to a smoke test.
Appendix VI
Picture Guide

Follows the principles of HACCP – Dry and Refrigerated storage located adjacent the receiving door
Walk-in cooler with epoxy coated shelving
Walk-in cooler with dunnage racks

Walk-in cooler with vapor proof fluorescent light fixture with cold tolerant ballasts
Prep sink with approved back flow protection
Unapproved prep sink because it lacks back flow protection (air gap)
Unapproved ansul system installation because the horizontal piping should be located outside the hood or recessed within the hood cavity with only vertical piping penetrations into the hood.
Millwork on approved 6 inch stainless steel legs
Food guard at a buffet
Food shield in a food service area
Traditional sized hand sink and side splash
Hand sink missing the escutcheon plates
Typical 3 compartment sink with lever waste drain stoppers
Dishwashing machine with pre-rinse with soiled dish table and clean dish landing area
Appendix VII

Resources

1. Baraban, Regina and Durocher, Joseph. Successful Restaurant Design. 2010
Appendix VIII
Child Care with Catered Food

Pre-portioned/ Prepackaged
- Commercial refrigeration meeting NSF standards
- Hand washing sink
- Hot holding unit that is NSF approved
- NSF approved storage shelving

If snacks are not pre-portioned by caterer the following is needed:
- NSF approved work surface

If disposable plates and utensils are not used the following is needed:
- 3-compartment sink

Bulk Service/Plating
- Commercial refrigeration meeting NSF standards
- Hand washing sink
- Hot holding unit that is NSF approved
- NSF approved work surface
- NSF approved storage shelving

If disposable plates and utensils are not used the following is needed:
- 3-compartment sink