SECTION 114000 - FOODSERVICE EQUIPMENT

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
       2. SUMMARY
          1. Section Includes:

Manufactured Food Service Equipment

Fabricated Equipment

Exhaust Hood

Fire Suppression Systems

Utility Distribution System

List of Equipment

Retain "Owner-Furnished Equipment" Paragraph below if Owner furnishes foodservice equipment items, or revise to suit Project.

* + - * 1. Owner-Furnished Equipment: Where indicated, Owner will furnish equipment for installation by Contractor.
        2. Related Requirements:

Retain subparagraph below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 114100 “Walk-in Box and Refrigeration System.”

Section 233813 "Commercial-Kitchen Hoods" for ventilation hoods.

* + - 1. COORDINATION
         1. Coordinate foodservice equipment layout and installation with other work, including layout and installation of lighting fixtures, HVAC equipment, and fire-suppression system components.
         2. Coordinate locations and requirements of utility service connections.
         3. Coordinate sizes, locations, and requirements relating to the food service equipment for the following:

Overhead equipment supports.

Equipment bases.

Floor depressions.

Insulated floors.

Floor areas with positive slopes to drains.

Floor sinks and drains.

Roof curbs, equipment supports, and penetrations.

* + - 1. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at [Project site] <Insert location>.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product. Include the following:

Manufacturer’s catalog sheets, standard schematic drawings, and installation instructions for each item specified.

If a product other than that specified by brand name is submitted, include service connection data. Where water, drain, power, gas, steam or HVAC service connections do not match the specified product; this contractor is responsible for related additional cost to bring the required connections to the equipment.

List all accessories and components required for each product listed in PART 2 – PRODUCTS, to be functional and supplied as part of the item.

Clearly note all clearance requirements for access and maintenance.

Provide an Equipment Schedule clearly listing all utility service connections for water, drainage, power, and fuel; include roughing-in dimensions required for each item listed in PART 2 - PRODUCTS.

Retain "Shop Drawings" Paragraph below with "Fabricated Equipment" Article. The term "fabricated equipment" is commonly used to describe custom, shop-fabricated, stainless steel kitchen, bakery, pantry, and cafeteria units, and other food-handling and -processing equipment such as tables and components, counters, shelves, and sinks.

* + - * 1. Shop Drawings: For fabricated equipment. Include plans, elevations, sections, roughing-in dimensions, fabrication details, utility service requirements, and attachments to other work. Provide in drawing scale of not less than ½” = 1’0” for all plans and elevations, and not less than ¾” = 1’-0” for all sections and details.

Include complete wiring diagrams of all power connections.

* + - * 1. Samples for Initial Selection: For units with factory-applied color finishes, or to demonstrate fabrication methods requested in PART 2 – PRODUCTS, where noted

Delete "Samples for Initial Selection" paragraph above if colors and other characteristics are preselected and specified or scheduled. Retain "Samples for Verification" paragraph below with or without above.

* + - * 1. Samples for Verification: For each factory-applied color finish required, in manufacturer's standard sizes.
        2. Warranty: List all standard and extended product warranties relevant to this project.

Generally, retain "Coordination Drawings" paragraph below to facilitate the coordination and installation of foodservice equipment with the work of other trades.

* + - * 1. Coordination Drawings: For foodservice facilities.

Indicate locations of foodservice equipment and connections to utilities.

Key equipment using same designations as indicated on Drawings and PART 2 – PRODUCTS.

Include plans at ¼”=1’-0” scale or larger and elevations at 3/8”=1/0” scale or larger; clearance requirements for equipment access and maintenance; details of equipment supports; and utility service characteristics.

Retain subparagraph below if required.

Include details of seismic bracing for equipment.

* + - 1. CLOSEOUT SUBMITTALS
         1. Operation and Maintenance Data: For foodservice equipment to include in emergency, operation, and maintenance manuals.

Include the following:

Product Schedule: For each foodservice equipment item, include the following:

Designation indicated on Drawings.

List Manufacturer's name and model, and serial number of each piece of equipment.

List of factory-authorized service agencies including addresses and telephone numbers.

List date of warranty activation.

Certification: Affidavit certifying that the Food Service Equipment meets the contract requirements and is operating properly.

* + - 1. FIELD CONDITIONS
         1. Field Measurements: Verify actual dimensions of construction contiguous with foodservice equipment by field measurements before fabrication. Indicate measurements on Coordination Drawings.
      2. WARRANTY

When warranties are required, verify with Owner's Representative that warranties stated in this article are not less than remedies available to Owner under prevailing local laws.

* + - * 1. Refrigeration Compressor Warranty: Manufacturer agrees to repair or replace compressors that fail in materials or workmanship within specified warranty period.

Failure includes, but is not limited to, inability to maintain set temperature.

Warranty Period: one (1) year parts and labor service warranty with a minimum of additional five (5) years parts warranty on all sealed portions of condensing units and include refrigeration loss.

* + - * 1. Product Warranty: Products shall be warranty for one (1) year from date of completion as issued for the project, all equipment and components against defects in assembly, installation and manufacturing. Coverage includes all labor and parts required to repair or replace faulty equipment.
        2. All components or equipment that carries an additional warranty beyond one (1) year is to be noted with the submission package, with coverage extended for the length of the warranty period. Repair or replacement of equipment will be at no additional cost.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. PERFORMANCE REQUIREMENTS

Always retain "NSF Standards" paragraph below. See "Health and Sanitation Requirements" Article in the Evaluations for a discussion of equipment certification for compliance with NSF standards.

* + - * 1. NSF Standards: Provide equipment that bears NSF Certification Mark or UL Classification Mark certifying compliance with applicable NSF standards.

For bakery equipment, retain "BISSC Standards" Paragraph below with paragraph above.

* + - * 1. BISSC Standards: Provide bakery equipment that complies with BISSC/Z50.2.

See "Health and Sanitation Requirements" Article in the Evaluations for a discussion of BISSC certification.

Provide BISSC-certified equipment, **[ with certification verified by a third-party agency]**.

UL lists certified products on its website in the "Online Certifications Directory" section. Certified products include those that bear the "Listed" and "Classified" versions of the UL EPH Mark. If UL certification is not required for certain equipment or if another testing agency's certification is acceptable, revise "UL Certification" paragraph below.

* + - * 1. UL Certification: Provide electric and fuel-burning equipment and components that are evaluated by UL for fire, electric shock, and casualty hazards according to applicable safety standards, and that are UL certified for compliance and labeled for intended use.

Retain "Steam Equipment" paragraph below for steam-generating and direct-steam heating equipment if any.

* + - * 1. Steam Equipment: Provide steam-generating and direct-steam heating equipment that is fabricated and labeled to comply with 2013 ASME Boiler and Pressure Vessel Code.
        2. Regulatory Requirements: Install equipment to comply with the following:

Retain applicable codes in subparagraphs below or revise to include other codes to suit Project.

ASHRAE 15, "Safety Code for Mechanical Refrigeration."

NFPA 54, "National Fuel Gas Code."

NFPA 70, "National Electrical Code."

NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

State Sanitary Code; Food Service Establishments.

Retain "Seismic Restraints" paragraph below if required. If retaining, verify requirements of authorities having jurisdiction, detail seismic restraints on Drawings, and revise to suit Project.

* + - * 1. Seismic Restraints: Comply with SMACNA's "Kitchen Ventilation Systems and Food Service Equipment Fabrication and Installation Guidelines," Appendix A, "Seismic Restraint Details," unless otherwise indicated.
        2. Refrigerants shall comply with the Energy Independence and Security Act of 2007/title III / Subtitle A, and all related revisions and amendments, no CFC refrigerants shall be used.
        3. All faucets and plumbing components are to meet the “U.S. Safe Drinking Water Act”. Amended legislation (2011), 25% allowable lead content; and the Senate Bill 3874; the national bill that passes as the “Reduction of Lead in Drinking Water Act”.
      1. MANUFACTURERED FOOD SERVICE EQUIPMEMNT
         1. Assemble and install all manufactured equipment per the manufacturer’s instructions and requirements. To include but not limited to all accessories as outlined for operation of the equipment, and including secondary items like light bulbs and batteries.
         2. All equipment and components supplied from a Food Service Distributor or Manufacturer shall be the latest model and shall be new and unused.
      2. FABRICATED EQUIPMENT

The term "fabricated equipment" is commonly used to describe custom, shop-fabricated stainless steel kitchen, bakery, pantry, and cafeteria units, and other food-handling and -processing equipment such as tables and components, counters, shelves, and sinks.

Insert drawing designation. Use these designations on Drawings or on manufacturer's Product Data sheets added to the end of this Section to identify each product.

* + - * 1. Metal shall be free of imperfections and conform to the following compositions:

Stainless steel shall conform to ASTM A240 standard, type 304, 18-8 analysis, finish #4

Stainless steel tubing shall conform to ASTM standard, type 304, 18-8 analysis, 16 gauge diameter per the Specification Item.

Galvanized steel, ASTM A653 coating designation No G165, minimized spangle, chemically treated. Cleaned, primed and painted with two coats of enamel finish.

Powder – Coat Finishes: Immediately after cleaning and pretreating, electrostatically apply manufacturer’s standard, baked-polymer, thermosetting powder finish. Comply with resin manufacturer’s written instruction for application, baking and minimum dry film thickness.

* + - * 1. Metal Gauges:

Counter top, back splashes, sink bowls and drain boards shall maintain 14 gauge Type 304 stainless steel.

Cabinet bodies: 18 gauge Type 304 stainless steel, unless otherwise noted in the itemized equipment list.

Wall shelves and undershelves: 16 gauge Type 304 stainless steel

Legs: 1-5/8” OD, 16 gauge Type 304 stainless steel tubing, fully welded to legs supports. Legs are to contain stainless steel leg sockets (gussets), and adjustable foot inserts unless otherwise stated in the itemized equipment list.

Cross bracing: 1” OD, 16 gauge Type 304 stainless steel tubing, fully welded to legs.

* + - * 1. Metal Construction:

Stainless steel grain patterns shall run in a horizontal direction. When necessary to join sheets at corners, miter so that the grain patterns meet at a 45 degree angle.

Exposed welded joints and surfaces shall be polished to match surrounding surface material. All joints shall be ground smooth and flush, free of pits and warping; corners are to maintain either the intended radius or a 90 degree joint. Where depressions or warping occurs due to welding, it is the responsibility of the fabricator to correct all depressions or warps to gain a flush level surface. All edges are to be ground smooth and even, free from burs and defects.

Sound deadening is required on all sink bottoms, underside of drain boards and counter tops. NSF approved for food service application.

* + - * 1. Wood Construction:

Wood construction to comply with requirements of AWI “Quality Standards and Guide Specifications” Section 400.

Wood products for custom cabinet construction shall be kiln dried, Birch laminated, Grade A2, cabinet grade plywood, solid core, marine grade.

Revise below sections to suit Project. Delete sections dependent on equipment included in project.

* + - 1. EXHAUST HOODS
         1. Exhaust hoods exposed and unexposed surfaces are to be fabricated of 18 gauge Type 304 stainless steel with No. 4 finish. All seams, joints and penetrations that direct and capture grease laden vapors and exhaust gases shall have liquid tight continuous external welds to the hoods lower outermost perimeter.
         2. U.L. and F.M. listed grease filters or filter plates are to be supplied with the System. Mesh filters are not to be supplied.
         3. Grease drip tray is to be located beneath the lower edge of the grease filters. Tray is to be pitched to collection container, size not to exceed 1 gallon.
         4. Exhaust collars are to be fabricated of 16 gauge Type 304 stainless steel fully welded and liquid tight to top of hood.
         5. Sealed fluorescent, LED or vapor proof light fixtures complete with lamps and high temperature ballast is to be mounted on top of Hood system. On/Off switches or LCD Control Panels are to be located with-in reach and visual path of exhaust hood, 48” to 60” above finished floor.
         6. Hood systems are to be hung from mounting brackets to building structure using threaded stainless steel rod and bolt systems. Hood to be hung plumb and level.
         7. Where hood sections meet, the installation of a stainless steel filler “U” strip is required to enclose any gaps between hood sections. To be supplied with the hood system.
         8. Electrical control package, variable speed fan contactors, temperature sensors, LCD Control Panels, Electric Eye fan controls and other operating accessories maybe included with the hood system. Coordinate installation and required interconnections with all trades on site. Mount all components as required by the hood and systems manufacturer.
         9. Fabrication and installation to conform to NFPA 96.
      2. FIRE SUPPRESSION SYSTEM
         1. Automatic fire suppression systems equipment shall be provided for the protection of cooking equipment that produces grease laden vapors or that might be the source of grease ignition, in all Type I exhaust hood systems.
         2. Portable fire extinguishing equipment. Class K rated extinguisher, will be supplied as part of the Food Service Equipment, Section 114000.
         3. Pre-engineered automatic fire suppression system is to cover the cooking equipment, exhaust hood, exhaust hood plenums and exhaust duct systems. Activation by means of fusible link set at 360°F at equipment surface and hood plenum, set at 500°F at Broiler and gas fired fryers.
         4. All exposed piping to be chrome plated or Type 304 stainless steel including all required fittings. Non-exposed piping to be schedule 40 black steel pipe.
         5. Automatic fire suppression systems shall comply with UL 300 standard and be installed in accordance with the terms of that listings, manufacturer’s instruction and NFPA12, NFPA13, NFPA17, NFPA17A, NFPA96 and the Fire Code of New York State.
         6. Installation of the fire suppression system is to be completed by certified personal, tagged and certified as required by the latest listing for the intended application.
         7. Remote pull stations are to be positioned 42” to 48” above finished floor, in the path of egress, per the current code requirements. Remote pull conduit is to be concealed piping.
         8. If multiple remote pull stations are required, provide place cards at each pull station corresponding to the respective exhaust hood fire suppression system. Place cards are to be made of high quality extruded styrene plastic, red in color with white lettering etched into the surface. Letters shall be in a recognizable font. The font shall be a minimum of ½” high and not exceed ¾” high. Place cards shall measure 5” wide by 3” high and be secured to the wall with construction adhesive.
         9. Microswitches will be provided with the control panel for interconnection to the building alarm system and to shut-off all electrical equipment under the hood system when the fire suppression system is activated. Coordinate with other trades on site for completion of all connections.
         10. Mechanical or electrical shut-off gas valve will be supplied with the exhaust hood system for installation by others on site. Coordinate size and placement of the valve.
         11. Inspection and testing of the system shall be in accordance with the latest Fire Code of New York State.
      3. UTILITY DISTRIBUTION SYSTEM
         1. The Utility Distribution System (UDS) is to be built in compliance with the National Electric Code, NSF standard 2, and the National Plumbing Code. The system is to be listed under ETL File – 3054803-001.
         2. Standard components of the Utility Distribution System are to be manufactured of not less than 18 gauge, 304 stainless steel with a # 4 finish to match exhaust hood system.

System will consist of vertical risers, horizontal service run with pedestal base for supporting the horizontal run when consisting of two or more sections.

Stainless steel access panels in risers and horizontal service run as required for access to all components. All access panels are to be removable without the use of tools, unless installed in a facility where tamper proof components are required.

The top horizontal service run will contain a “V” shape or pitched top to allow shedding of water.

* + - * 1. Plumbing Riser: Hot water, cold water, steam, steam return and gas connections are to be isolated from the electrical components. A water tight barrier is required between the plumbing and electrical compartments.

Hot water, cold water and steam piping are to be fully insulated.

All plumbing lines shall be color coded and labeled for identification.

A main shut off valve shall be provided for each individual line and located behind the riser panel.

Dual shut-off quick disconnect flexible hoses are to be supplied for all equipment. Restraining cables shall be suppled for all mobile equipment and properly anchored.

* + - * 1. Electric Riser: Main power connection shall be made to the main circuit breaker, which has a shunt trip mounted in the electrical riser.

Electrical power shall be feed through the main circuit breaker to a distribution panel which contains individual branch breakers. Each appliance is fed from the individual breakers.

All outlets shall be provided with ground fault receptacles (GFCI), moisture resistant covers and sized per NEMA standards. Each will be supplied with a matching cord and plug set if not already supplied by the equipment manufacturer.

* + - 1. LIST OF EQUIPMENT

A comprehensive list of manufacturers and products is available on NAFEM's website (www.nafem.org). See "Product Information" Article in the Evaluations. Copy paragraphs below and revise for each product.

Insert equipment, referencing item number as denoted on drawing equipment schedule. . Use these equipment item number designations on Drawings or when manufacturer's Product Data sheets are added to the end of this Section to identify each product.

* + - * 1. Item No. **<#> <Insert equipment title as denoted on drawing schedule>**

Manufacturer: **<Insert name of manufacturer, address, phone number and web site>**

Model Number: **<Insert model number of equipment>**

Description: **<Insert general description of equipment, including: construction, fabrication, components, controls, correctional hardware, etc. that explains the intent of the piece of equipment>**

Electrical Trim: **<List electrical trim shipped with the unit that others are responsible to install, etc. cord & plug configuration>**

Plumbing Trim: **<List plumbing components shipped with the unit that others are responsible to install, etc. faucets, valves>**

* + - * 1. Item No. **<#> <Insert equipment title as denoted on drawing schedule>**

Manufacturer: **<Insert name of manufacturer, address, phone number and web site>**

Model Number: **<Insert model number of equipment>**

Description: **<Insert general description of equipment, including: construction, fabrication, components, controls, correctional hardware, etc. that explains the intent of the piece of equipment>**

Electrical Trim: **<List electrical trim shipped with the unit that others are responsible to install, etc. cord & plug configuration>**

Plumbing Trim: **<List plumbing components shipped with the unit that others are responsible to install, etc. faucets, valves>**

5. Plumbing Trim: <List plumbing components shipped with the unit that others are responsible to install, etc. faucets, valves> Continue in this fashion, complete this section for all equipment listed in drawings and on drawing schedule. Reference drawings where required, include all components for complete installation of equipment.

* + - 1. MISCELLANEOUS MATERIALS
         1. Installation Accessories, General: NSF certified for end-use application indicated.
         2. Elastomeric Joint Sealant: ASTM C920; silicone. Type S (single component), Grade NS (non-sag), Class 25, Use NT (non-traffic) related to exposure, and Use M, G, A, or O as applicable to joint substrates indicated.

Public Health and Safety Requirements:

Sealant is certified for compliance with NSF standards for end-use application indicated.

Washed and cured sealant complies with the FDA's regulations for use in areas that come in contact with food.

Cylindrical Sealant Backing: ASTM C1330, Type C, closed-cell polyethylene, in diameter greater than joint width.

1. EXECUTION
   * + 1. INSTALLATION
          1. Deliver and set in place foodservice equipment level and plumb, according to manufacturer's written instructions.

Make equipment ready for final service connections to utilities. If this contractor is to make final connections to utilities, change this statement to read as such. Retain subparagraph below if equipment items are permitted to be modified on-site.

Provide cutouts in equipment, neatly formed, where required to run service lines through equipment to make final connections.

* + - * 1. Complete equipment assembly where field assembly is required.

Provide closed butt and contact joints that do not require a filler.

Grind field welds on stainless steel equipment until smooth and polish to match adjacent finish.

Verify equipment access- and maintenance-clearance requirements of authorities having jurisdiction and of local sanitation and health codes; reflect minimum clearances on Drawings.

* + - * 1. Install equipment with access and maintenance clearances that comply with manufacturer's written installation instructions and with requirements of authorities having jurisdiction.
        2. Install cabinets and similar equipment on bases in a bed of sealant.
        3. Install closure-trim strips and similar items requiring fasteners in a bed of sealant.
        4. Install joint sealant in joints between equipment and abutting surfaces with continuous joint backing unless otherwise indicated. Produce airtight, watertight, vermin-proof, sanitary joints.
      1. CLEANING AND PROTECTING
         1. After completing installation of equipment, repair damaged building materials or equipment finishes.
         2. Clean and adjust equipment as required to produce ready-for-use condition.
         3. Protect equipment from damage during remainder of the construction period.

Insert "Maintenance Service" Article if required for foodservice equipment.

* + - 1. DEMONSTRATION
         1. **[Engage a factory-authorized service representative to train] [Train]** Owner's maintenance personnel to adjust, operate, and maintain foodservice equipment.

END OF SECTION 114000