SECTION 11416

SERVING LINE EQUIPMENT AND UNITS

PART 1 GENERAL

1.01 SUMMARY

A. Related Sections:

1. 11401 - Custom Fabricated Equipment.
2. 11419 - Utility Distribution Systems.
3. Division 15 - Water supply, drainage, and related piping.
4. Division 16 - Electrical connections.

1.02 REFERENCES:

A. National Sanitation Foundation (NSF).

B. Underwriters Laboratories (UL).

C. National Electrical Manufacturers Association (NEMA).

1.03 SUBMITTALS

A. Shop Drawings: Submit with dimensioned plans prepared in minimum 1/4" scale showing Mechanical/Electrical roughing-in data for each piece of equipment and their relationships to the space the equipment occurs.

1. Include accurately dimensioned details and locations of any special wall openings required by items of equipment extending through walls.
2. Include plans, elevations, and sections, all dimensioned and suitable to be used for actual construction of items specified.
3. Locate connection to overhead domestic water service drop at the center of serving lines and not at the hot food station.

B. Maintenance Manual: Submit bound maintenance manual with insert section for each item of operational equipment, include product data, operating/maintenance instructions, parts listing, product warranty, and similar applicable information.

C. Submit a current list with the names, addresses, and telephone numbers of the manufacturer's local service representatives and the local parts suppliers.

1.04 QUALITY ASSURANCE

A. Source Quality Control:

1. Manufacturer: Provide equipment manufactured by one manufacturer except where otherwise noted, uniform throughout as to method and type of construction used.

2. Name Plates:

   a. Identify model and manufacturer with appropriate name plates.
   b. Show electrical characteristics on appropriate name plates.

B. Special Requirements for Refrigerated Equipment: Furnish refrigerated equipment with expansion valve systems. Capillary systems are not acceptable.

1.05 PROJECT CONDITIONS

A. Existing equipment designated to be removed from the project site shall be disconnected, packed, and delivered to a Board designated location within Miami-Dade County, Florida, before starting with the Work.

1.06 WARRANTY

A. Warranty, Parts List, Service and Users Manual, and Schematic:

1. Each unit shall be under warranty for all parts and labor for 1 year after the date of substantial completion. Compressor warranty shall be for 5 years.

   a. The warranty shall cover any corrosion of stainless steel surfaces resulting in the formation of visible rust during the life of the milk box.
   b. In the event rust develops on a stainless steel surface, the vendor shall replace the stainless steel or milk box at no cost to the Board.

2. The successful vendor will be notified of the date installation is to be complete and the unit is operational.
3. Before awarding the bid, each vendor when requested shall deliver to the M-DCPS Maintenance for approval, three complete illustrated parts lists with current school prices and three service manuals.
4. A users manual shall be included with each milk box and a schematic shall be permanently attached to the unit.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Custom Fabricated Kitchen and Serving Lines:

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NOTE TO SPECIFIER: Verify quantity and sizes with M-DCPS Food and Nutrition .

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1. Item No._____, Milk Box: A self contained, top front opening cooler, air curtain style, with cool air force over the opening to maintain 36 to 40 degree F. temperature. Capable of maintaining a chilled food product at 40 degree F. for up to 2 hours with lids open and able to accommodate 8, 12, or 16 standard size milk cases as supplied to the school cafeterias. The milk box shall be approved by NSF and UL listed.

   a. Manufacturer:

      1) Delfield NLFAC-8 (8 cases).
      2) Delfield NLFAC-12 (12 cases).
      3) Delfield NLFAC-16 (16 cases).
      4) Accepted equivalent.

   b. Maximum Counter Height: 42 inches.
   c. Cabinet:

      1) Bottom of cabinet to be enclosed with 14 gage stainless steel, remainder of exterior to be 18 gage stainless steel. Milk boxes shall include 14 gage stainless steel self-dividing milk crate carriers. The opening of the milk box shall have 2 piano hinged lids to cover the top and front with common keyed lid-locking mechanisms. Lids shall be molded of a durable ABS material with an integral handle the full length of the lid. Door track shall be made of PVC type material (no rubber gaskets). Cabinet insulation shall be at least 2 inch thick and of foamed-in-place polyurethane. Boxes shall have 4 full swivel locking non-marking casters and stainless steel full-length bumper at the bottom front of unit to protect louvered door. Milk boxes shall provide ball valve with garden hose hookup behind hinged access louvered door at rear of unit with a 4 foot long drainage hose connection. Unit shall be 115 volt and have a minimum 8 foot long electrical cord installed at rear approximately 6 inches above the floor and full length non-marking bumper at bottom rear. Provide a recessed on/off switch at rear of cabinet and a thermometer indicating accurate temperature readings located where it can be easily read.

2) Refrigeration:

a) Refrigeration system shall have a minimum 1/3 HP compressor for 8 crate unit, and minimum 1/2 HP compressor for the 12 and 16 crate units, use 134-A refrigerant, and have a thermostatic expansion valve. A refrigeration site glass shall also be provided.

2. Item No._____, Top and Tray Slide:

a. Counter top constructed of 14 gage 18-8 stainless steel.
b. Working side (rear) edge shall be turned down 2 inches at 90 degrees and returned toward counter body 5/8" at 45 degrees.
c. The top where next to walls shall be turned up 2 inches at 90 degrees.
d. Front edge shall be turned down 2 inches for middle schools and high schools, and 6-1/2" for elementary schools at 90 degrees, then out at 90 degrees for 10 inches forming an integral tray slide.
e. The intersection of the tray slide and the front edge of the top shall be formed at a 3/4" radius.
f. The tray slide shall have three die formed inverted ridges on the surface. The front edge and ends shall turn down 2 inches and back 5/8" at 45 degrees with all corners welded ground smooth and polished.
g. The tray slide shall be supported by heavy duty stainless steel cantilever brackets. Sliding surface will be 28 inches above the floor to accommodate elementary school pupils and 32 inches above the floor to accommodate middle school and high school students.
h. Structural Supports: 1-1/2" x 1-1/2" x 1/8" thick galvanized angles electrically welded with welds coated with rust inhibiting finish. Welded to this structure shall be 14 gage galvanized channel members to accommodate legs and to act as support for pilasters and tray slide brackets.
i. Body:

1) Front and ends shall be enclosed with 20 gage stainless steel.
2) Vertical seams between panels shall be concealed by pilaster trim evenly spaced to give the counter a symmetrical appearance.
3) The pilasters shall be secured to the framework with concealed bolt construction.
4) The rear of the counter, where not refrigerated

or heated, shall have 18 gage stainless steel bottom and intermediate shelves with the front edge turned down and under. The sides shall be turned up and welded to the body partitions.

5) The rear of the shelves shall turn up 4 inches and back 3/4" terminating approximately 3-1/4" from the inside front of the counter and providing a space where utility lines such as plumbing, electric, gas and refrigeration may be run.

j. Legs: 6 inches high stainless steel with stainless steel bullet feet with 2 inch adjustment and welded to the structural channels running the length of the counter.

3. Item No._____, Hot Food Section (Dry-Moist-Electric):

a. Drop in type with openings 12 inches x 20 inches to fit standard cafeteria pans.
b. Four openings for elementary schools and five openings for middle and senior high schools.

1) Each opening shall have a raised die formed edge with a flange turned down inside.
2) Provide each opening with a UL approved dry-moist, one piece, die stamped, stainless steel, water proof hot food well.
3) Each well shall be equipped with a 1,500 watt thermostatically controlled electric element with controls mounted on the apron on the work side of the counter.
4) Provide each hot food well with a drain.
5) Manifold all drains together and plumb to a gate valve outside the heated base section.

c. Below the hot food wells provide an electrically heated, insulated base section with sliding doors and slides to accommodate a minimum of two tiers of 3 each 12 inch x 20 inch cafeteria pans.

1) The doors shall be double-pan insulated type with integral handles and shall slide on a top mounted roller track.
2) Heating elements shall provide not less than 750 watts of heat per lineal foot of cabinet, mounted under the perforated bottom shelf, and thermostatically controlled with the control mounted in the apron on the work side of the counter.

4. Item No._____, Cold Food Section:

a. Size as indicated on plan.
b. Frost top design of 14 gage stainless steel raised approximately 1/4" above counter top, sides of frost top to be perpendicular to top surface, welded water tight construction with a continuous refrigeration coil bonded to underside and concealed in mastic.
c. Fully insulate with urethane foam insulation.
d. An integral full perimeter drain trough shall be furnished complete with a drain extended to a shutoff valve below the base.
e. Connect refrigeration lines to the condensing unit at the factory including all controls necessary to provide a complete, properly balanced system.
f. Provide 2 shutoff switches mounted in the apron of the compressor housing. One to turn off the frost top when not in use. The second switch to turn off the refrigerated cabinet when not in use. Each switch shall be labeled.
g. The base under the frost top shall be mechanically cooled and an integral part of the counter.
h. The refrigerated base shall be double wall construction, insulated with urethane foam insulation on the sides, bottom, top, and doors. The inner liner shall be 20 gage stainless steel with all seams welded and coved corners. Provide vinyl breaker strips with unexposed fasteners to separate the inner liner from the outer body at the door openings.
i. Mount the evaporator coil on side wall next to the compressor housing. Connect the evaporator to a properly sized condensing unit at the factory including all necessary controls to make a complete, properly balanced refrigeration system.
j. Mount doors with heavy duty, spring loaded, chrome plated self closing hardware. The door seal shall be achieved with preformed magnetic gaskets.
k. Furnish one intermediate, adjustable stainless steel or vinyl coated wire shelf large enough to support an 18 inch x 26 inch sheet pan.
l. Provide 2 inch dial thermometer mounted on workside surface of the refrigerator body.

5. Item No._____, Protector Cases:

a. Provide over the hot food section and the cold food section a protector case 14 inches high with a 12 inch wide stainless steel serving shelf.
b. The front and both ends shall be enclosed with plexiglass with a scratch resistant coating on both sides.
c. Uprights shall be of square tubular construction.
d. Front of protector case with air space top and

bottom on hot food unit only. Front of protector case over cold pan with 7 inch clear space at bottom.

6. Item No._____, Display Cases:

   a. Provide one or two shelf unit as required, length as shown on plan by 18 inches wide.
   b. Shelf to be 10 inches above counter top for one shelf unit.
   c. Bottom shelf to be 10 inches above counter top and the top shelf 18 inches above the counter top for the two shelf unit.
   d. Construct uprights of 1 inch square stainless steel tubing connected by a frame of 5/8" square stainless steel tubing welded to the uprights.
   e. The shelves shall be 1/4" plexiglass with a scratch resistant coating on both sides. Front sneeze guards shall be mounted adjustable stainless steel brackets.

7. Item No._____, Cashiers Stand:

   a. Stainless steel lined, provided at end of counter approximately 30 inches long. Space below counter to allow for knee and leg room for cashier.
   b. Furnish in base a stainless steel foot rest, a cash drawer and a duplex electrical receptacle.
   c. Fabricator to punch out a die stamped hole in the countertop to accommodate the Board's computer.

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NOTE TO SPECIFIER: When required, provide decorative high pressure laminate plastic panels. Manufacturer and pattern shall be chosen by A/E.

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8. Item No._____, Decorative Laminated Plastic Front:

   a. Bond decorative panel to stainless steel front using proper bonding agent and technique so delamination does not occur. Arrange seams in decorative panels to be covered by stainless steel pilaster strips on the counter front. Trim bottom edge of counter with stainless steel trim angle to prevent breakage of bottom edge of decorative panels.
   b. Counter shall present a one piece homogeneous construction.
   c. Where building conditions limit access, the counter shall be delivered in sections as large as possible with all field joints welded, ground, and polished to a No.4 finish.
   d. Electrical circuits required in counter shall be

prewired to a breaker panel located in the counter base.

e. Stainless steel shall be type 302 or type 304, 18-8 with a No.4 finish.

f. The entire counter shall comply with the requirements of NSF standard #2 and #7.

1) Cafeteria counters manufactured by Emjac Industries, Hialeah, FL or accepted equivalent.

PART 3 EXECUTION

3.01 INSPECTION

A. Do not proceed with the work of this section until conditions detrimental to the proper and timely completion of the work have been corrected in an acceptable manner.

3.02 INSTALLATION

A. Deliver to job site, set in place, and align as shown on Drawings.

B. Connect factory interlock devices. Adjust bullet feet to bring tray slides level and in alignment with one-another according to manufacturer's recommendations.

C. Leave equipment clean and free from dirt and other foreign matter, ready for connection to utility outlets.

END OF SECTION