SECTION 11400 - FOOD SERVICE EQUIPMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. The Bid Alternate work covered by this Section includes the furnishing of all labor, materials, accessories, and special services necessary to complete the Food service Equipment Work as specified herein and where shown and scheduled on the drawings.

B. It is the intent of the Contract Documents for each and every item and/or component to be complete with all necessary devices for the item and/or component to properly function and perform in a manner equal to the manufacturer's stipulations.

C. The applicable provisions of Division 15 and 16 are a part of this specification; the Contractor shall consult them in detail for instructions pertaining to this work, together with all other Divisions relative hereto.

D. The work shall include, but not be limited to, the following:

1. The purchase and/or fabrication, delivery, unpacking and setting up of all items in the correct locations.
2. Furnishing Division 16 all controls for items requiring electrical connections except as hereinafter noted, or shown on the Contract Drawings.
3. Furnishing Division 15 with the control valves, pressure reducing valves, faucets, and specialty fittings as hereinafter noted, or shown on the Contract Drawings.
4. Supervising the mechanical and electrical connections and testing each item for performance, and the replacement of any item which fails to perform as claimed by the manufacturer.
5. Providing two days training of the employed personnel in the operation and maintenance of each piece of equipment.
6. Delivering three (3) copies of the operating manuals and lists of parts of each item of "buyout" equipment included herein and assembled as hereinafter described.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All plumbing, electrical and ventilation work required in connection with this equipment will be done by contractors under Division 15 and 16 unless specifically called for otherwise in the Item Specifications. The work to be done by these contractors shall include roughing-in to points indicated on utility requirements plans, and the final connecting from the roughing-in point to the various pieces of equipment requiring such connections, and the supplying of all necessary materials and labor for this work except as hereinafter noted.

B. Refrigeration work shall be done by the Kitchen Equipment Supplier as hereinafter listed in the Item Specifications, except for electrical and plumbing connections to compressors, blower coils, controls, etc. These final connections will be made by contractors under Divisions 15 and 16.
C. All traps, grease traps, line strainers, valves, stops, shut-offs and fittings necessary for equipment specified will be furnished and installed under the mechanical contract under Division 15, unless specifically called for otherwise under each item.

D. All line and disconnect switches, safety cut-offs and fittings, convenience outlets, outlet boxes, wiring, conduit, control panels, fuse boxes or other electrical controls, fittings and connections will be furnished and installed under electrical contract under Division 16. Starting switches are to be provided by the Kitchen Equipment Supplier under this Section. Those starting switches furnished loose as standardized by food service equipment manufacturers (other than fabricated items) shall be mounted and wired complete by contractors under Division 16.

E. Any sleeves, pneumatic tubing or conduit required for installation of refrigeration lines, syrup lines or CO₂ tubing will be furnished and installed by mechanical contractors under Division 15.

F. Necessary stainless steel seamless exhaust ducts of size and capacity required to operate fixtures specified, together with final approved connection between roughed-in vent openings and the ceiling connection will be furnished and installed by Kitchen Equipment Supplier unless otherwise noted in the Itemized Specifications. Final connection shall be made by the Division 15 Contractor in accordance with local code requirements.

G. Ventilating fans and all duct work between same and the ceiling rough-in openings and from same to discharge opening in building will be furnished and installed by contractors under Division 15.

H. Division 15 Contractor is to see that all plumbing lines are flushed free of foreign matter before connecting to food service fixtures.

I. Water inlets shall be located above the positive level to prevent syphoning of liquids into the potable water system. Wherever conditions shall require submerged inlet, a suitable approved type of check valve and vacuum breaker shall be placed on the fixture by the contractor under Division 15 to form part of same to prevent syphoning. If exposed and design dictates, piping and fittings shall be chrome plated.

J. Contractor under Division 16 shall interwire fire protection system, walk-in coolers and freezers, exhaust ventilators, lights, exhaust fans, as required for complete operation as designed, and furnish wall mounted light and exhaust fan switches.

1.3 REGULATIONS AND CODES

A. In addition to complying with applicable laws, statutes, building codes, and regulations of public authorities having jurisdiction at the project location, comply with the following:

1. National Sanitation Foundation (to bear label)
3. National Fire Protection Association
4. Underwriters’ Laboratories, Inc.
5. American Gas Association Laboratories
6. American Disabilities Act

1.4 FABRICATOR’S QUALIFICATIONS

A. All fabricated items described in the specifications, other than by catalog numbers, shall be manufactured by a food service equipment fabricator who has the plant, personnel and engineering facilities to properly design, detail and produce high quality food service equipment. All fabrication shall be by one manufacturer and be of uniform design and finish.

B. The Kitchen Equipment Supplier shall, if requested, submit a list of at least three comparably-sized projects for which the intended food service equipment fabricator has furnished and installed the fabrication.

C. The name of the fabricator shall be submitted to the Architect for approval at time of bidding.

D. Maintain or have access to a readily available stock of repair and replacement parts, together with authorized service personnel.

1.5 PLANS AND SPECIFICATIONS

A. Specifications and drawings have been prepared to form basis for procurement, erection, start-up and adjustment of all equipment in this contract. Plans and specifications shall be considered as mutually explanatory and work required by one, but not by the other, shall be performed as though required by both. Items required by one, but not by the other shall be provided as though required by both. Work shall be accomplished as called for in specifications and shown on drawings, so that all items of equipment shall be completely functional for purpose for which they were designed. When there is any discrepancy between drawings and specifications, drawings shall govern. Bidders should seek clarification of any discrepancies from the Architect prior to bidding.

1.6 SUBMITTALS

A. In addition to the requirements of the General and Special Conditions, submit to the Architect (through the Contractor) for preliminary review, two copies of brochures, and one sepia and two prints of shop drawings as outlined below in 1.07 C and 1.07 D. Prints shall be completely legible and be blueline with white background. Upon return of one copy of data, submit the required number of copies to the Architect for processing. The preliminary submittal shall be within six (6) weeks after award of contract. Partial submittals will not be accepted or processed.

B. Brochures of regularly manufactured items shall be submitted in the following format:

1. Front and rear hard protective covers with labeled project name.
2. Front sheet indicating the name and address of the project, Architect, General Contractor and Food service Equipment Supplier.
3. A separate fly sheet for each component or item of equipment indicating: Item number, name, quantity, manufacturer, optional equipment, modifications and utility requirements. An item of equipment or assembly containing more than one buyout sub-assembly or
component shall have the secondary item listed in parentheses beside the primary item name, i.e., Back Counter (Refrigerated Base).

4. Catalog specification sheet and/or manufacturer's shop drawing. Xerox copies are acceptable only if they are perfectly legible and contain all necessary data.

C. Roughing-in drawings shall be a series of four (4) sheets drawn at 1/4 inch scale on sheet sizes identical to contract drawings and shall not be traced from the contract drawings. Equipment not included in the contract but shown on bidding documents shall be indicated on roughing-in drawings with utilities noted and dimensioned. All utilities indicated on contract drawings including those not directly connected to Food service Equipment shall be fully dimensioned to point of stub-up/out (not to connection on equipment or fixture). Format of the contract drawings shall be followed using same numbering and identification methods in all instances.

1. Equipment layout or floor plan with itemized schedule.
2. Electrical requirements roughing-in plan.
3. Plumbing requirements roughing-in plan.
4. Critical dimensions plans sizing and locating the following:
   a. Exhaust vents
   b. Depressions in finish floor
   c. Slab recesses
   d. Raised pads
   e. Wall openings for pass-through equipment
   f. Conveyor particulars

5. Refrigeration systems schematic piping plans indicating line sizes and all components specified herein.

6. If the contract for equipment be awarded after the mechanical services have been roughed-in, the Kitchen Equipment Supplier shall carefully measure the locations of all floor and wall penetrations and existing conditions and indicate them and provide for them on his shop drawings and final mechanical plan. If his inspection reveals that any of these existing conditions seriously interfere with the execution of his work as required under the contract, he is to report these conditions to the Consultant and await a decision and instructions before proceeding with that portion of his detailed drawings.

D. Fabrication shop drawings shall be drawn at 3/4 inch scale for plan view and elevations; 1-1/2 inch scale for sections and construction details on sheet sized identical to contract drawings and shall indicate the following:

1. Item number, name and quantity.
2. All construction details, sections and elevations to reflect all requirements of the specifications and/or drawings.
3. Adjacent walls, columns and/or equipment.
4. The brand name and model number of all buyout components of a fabricated fixture.
5. List the item numbers of equipment details contained on each sheet above the title block in lower right hand portion of sheet.

E. The Kitchen Equipment Supplier shall provide himself with field dimensions and be responsible for the proper fit of all fabricated and/or buyout equipment.
F. The Architect’s review of submittals shall not relieve the Contractor under this Section of responsibility for deviations, errors or omissions to such data.

1.7 TECHNICAL SERVICE MANUALS

A. The Kitchen Equipment Supplier shall submit three (3) copies of instructions/maintenance manuals assembled in the following format. Manuals shall be available at the time set for the demonstration of the equipment.

1. Manuals shall be bound in hardback three-ring binders. Single sheets to have reinforced punched openings.
2. Insert a front sheet indicating the name and address of the project, Architect, General Contractor and Food service Equipment Supplier.
3. A separate fly sheet for each component or item of equipment indicating: Item number, name, quantity manufacturer, optional equipment, modifications and utility requirements. An item of equipment or assembly containing more than one buyout, sub-assembly or component shall have the secondary item listed in parentheses beside the primary item name, i.e., Serving Counter (Cup Dispenser).
4. Catalog specification sheet and/or manufacturer's shop drawing.
5. Manufacturer's operating/maintenance data including replacement parts list parts list:
   a. Provide the name, title, and address of personnel of each respective manufacturer to be contacted for spare or replacement parts after guarantee period.
   b. Provide replacement parts information and price list for each buyout item of equipment or component.

1.8 WARRANTY AND GUARANTEES

A. Warranty in writing all equipment and fabrication against defects and workmanship for a period of one (1) year from date of acceptance.

1. Each piece of mechanical equipment shall be listed, together with the authorized service and repair agency which the Owner should call should malfunctions occur within the one (1) year guarantee period.

B. Refrigeration system compressors shall be warranted for five (5) years by the manufacturer. Free refrigeration service, including parts and labor, to be furnished for one (1) year from date of acceptance.

1.9 EQUIPMENT REPAIR LISTS

A. Furnish three (3) copies of a list of all equipment and their respective local service agencies, indicating the address, telephone number and name of person to contact. Whenever possible, the service agencies selected shall be local and factory-authorized for the equipment specified.

1.10 QUIETNESS OF OPERATION

A. Quietness of operation of all food service equipment is a requirement and the Kitchen Equipment Supplier will be required to remove or repair any equipment producing objectionable noise.
1.11 REPAIRS

A. Kitchen Equipment Supplier shall make suitable arrangements with local approved service and repair agencies for the servicing and maintenance of the equipment should malfunctions occur within the one (1) year guarantee period. Upon completion of the installation and prior to the Final Payment, the Kitchen Equipment Supplier shall furnish the Owner with a list of the local agencies to be called in the event malfunctions occur. The Kitchen Equipment supplier shall authorize the agent to repair the equipment and to determine, with the concurrence of the Architect, the cause of the malfunction. Should the malfunction be due to defective equipment or faulty installation, the entire cost of repairs shall be paid by the Kitchen Equipment Supplier. If the malfunction is caused by improper use the cost of the repairs shall be paid wholly or in part by the Owner as determined by the Architect. Upon the completion of the installation, the Kitchen Equipment Supplier shall furnish the Owner with complete Parts, Repair and Maintenance manuals for all items of standard manufacture as hereinbefore outlined in Section 1.8.

1.12 PROTECTION

A. Protect the equipment from all damage. Cover sides with heavy sheet polythelene if required for protection from construction. Replace all damaged items which cannot be repaired to the satisfaction of the Consultant or Owner. Leave doors off of walk-in vaults or blocked open until interior concrete floor work has cured to prevent wall oxidation.

1.13 VERIFICATION OF DATA

A. The Kitchen Equipment Supplier shall verify and coordinate the dimensions of the refrigerated and dry storage areas to accommodate the modular shelf sections as specified and point out any variance between the contract documents and actual conditions.

B. The Kitchen Equipment Supplier shall obtain all color/pattern selections for plastic laminate, paint finishes or vinyl coated surfaces of equipment from the Architect.

C. The Kitchen Equipment Supplier shall obtain all required glass, dish, tray, milk carton, etc., size/weight information from the Consultant for coordination of self-leveling dispensing and transport equipment.

1.14 COORDINATION

A. The Kitchen Equipment Supplier shall field-check all rough-in utility connections for the Food service Equipment at the building and shall design all equipment so that outlets from his fixtures shall be as close to roughed-in connections as possible, and he shall cooperate and coordinate his work with all other Sub-Contractors.

B. All dimensions given are approximate and are as accurate as can be determined at this time. The Kitchen Equipment Supplier shall check all measurements at the building prior to fabrication of the equipment and shall bring to the attention of the Consultant any deviation from the dimensions shown.
C. Should it become necessary to schedule construction so that all partitions, etc., be erected prior to delivery of equipment, equipment must be fabricated so that it can be handled through finished openings. The Kitchen Equipment Supplier under this Section shall keep in close contact with the job so that he is cognizant of all conditions.

PART 2 PRODUCTS

2.1 WORKMANSHIP

A. The entire procedure, including materials, workmanship, details, fabrication, and fastening methods, shall comply with applicable standards.

B. Workmanship and finishes shall be first class in every particular, and in accordance with best practices of the trade. Only skilled workmen shall be employed in the fabrication and erection of the work of this Section.

C. Work shall be provided complete in every detail, and the finished work shall be strong and rigid, neat in appearance, and free from defects.

D. All material shall be new, of best quality, perfect and without flaws. Material shall be delivered and maintained on job in an undamaged condition. All items of standard equipment shall be the latest model at the time of delivery.

2.2 WELDING

A. Joints in stainless steel shall be electrically welded using stainless steel electrodes. All welds shall be free of pits and flaws. Acetylene welding or silver soldering will not be acceptable.

B. Joints in galvanized material shall be electrically welded using electrodes designed to weld galvanized material. All welds shall be free of pits and flaws. Acetylene welding will not be acceptable.

2.3 FINISHING

A. Joints in stainless steel which have been welded shall be ground smooth and polished to a No. 4 finish. Grain shall be blended into the grain of the surrounding surfaces.

2.4 SOUND CONTROL

A. Install Schnee Butyl Sealant 1/2" wide rope continuously between all frame-members and underside of stainless steel table tops, overshelves and undershelves.

B. Tighten stud-bolts for maximum compression of sealant.
2.5 FIELD JOINTS

A. All field joints on table tops, sink drainboards, dishtables, counters or other equipment necessary for delivery and assembly are to be solid welded in the field with joints ground smooth and finished in such a manner as to have the same luster and finish as before the welding operation. To be without dips and irregularities.

B. Where backsplashes of dishtables or other fixtures require field joints that are inaccessible from the back, the field weld is to terminate one inch above the coved corner. The remaining height of the field joint is to be a hairline butt joint with offset draw-angles behind.

C. Plastic laminated material joints shall be dowelled, glued, and draw-bolted with fasteners.

2.6 HI-LITING

A. Horizontal edges of stainless steel tops, splashes, and tops of raised rolled rims, and edges of all exposed doors, handles and shelf edges shall be hi-lited, in uniform design.

B. The 180 grit finish shall be polished to a 240 grit after which it shall be polished with compound to ensure a mirror finish.

2.7 MATERIALS AND CONSTRUCTION

A. Non-corrodible alloy:

1. Non-corrodible alloy, or stainless steel, specified hereinafter shall be Type 304 stainless steel, having a standard analysis of 18% chrome and 8% nickel.
2. All gauges, where specified, shall be United States standard gauges.
3. All exposed surfaces shall be given a No. 4 or No. 180 grit finish. Where manufacturing process and welding disturb the original finish, it shall be carefully re-ground and polished to match balance of the surface.

2.8 GALVANIZED METAL

A. Where galvanized metal is specified, it shall be copper-bearing galvanized iron, Armco, Toncan, or equal, re-rolled for smoothness and used in the largest possible sizes with as few joints as necessary.

2.9 HARDWARE AND CASTERS

A. All hardware shall be of a heavy duty type, satin finished chromium plated brass, cast or forged or hi-lited stainless steel of uniform design. All hardware shall be a well-known brand, and shall be identified by the manufacturer's name and number for easy replacement of broken or worn parts.

B. Casters shall be heavy duty type, ball bearing, solid or disc wheel, with greaseproof rubber, neoprene, or polyurethane tires. Wheel shall be 5" diameter, minimum width of tread 1-3/16".
minimum capacity per caster 250 pounds, unless otherwise noted. Solid material wheels are to be provided with stainless steel rotating wheel guard. All casters shall have sealed wheel and swivel bearings, polished plated finish and be N.S.F. approved.

2.10 THERMOMETERS

A. All refrigerated compartments, fabricated and standard, shall be fitted with dial type thermometers with chrome plated flush bezels. Thermometers shall be adjustable and shall be calibrated after installation.

2.11 FAUCETS

A. All sinks shall be equipped with T. & S. Brass and Bronze Company #B-231 wall-mounted type faucets, or #B-221 deck type faucets, as required for the type of sink furnished, unless otherwise specified in the Item Specifications. All faucets shall be equipped with proper length swing spouts as required by application. Faucets shall be chromium plated. All specialty faucets for pre-rinse, etc., will be listed under the Item Specifications.

2.12 TABLE FRAMES

A. All tubular stands for open base tables or dishtables shall be constructed of 1-5/8" O.D. #16 gauge stainless steel seamless tubing, with stringers and cross-braces of the same material. All joints between legs and cross-braces shall be welded and ground smooth, full 360 degree at 10" height unless otherwise specified. The top end of legs shall be closely fitted into fully enclosed gusset no less than 3" high, Component Hardware #A20-0206 stainless steel or approved equal. Gussets to be fully welded to top hat channel members specified under Table Tops. Crossrails must be supplied to reinforce each leg. Legs anchored to gussets at top only and without crossrails are not acceptable except in the case of sinks.

B. Table bases shall have maximum leg spacing of 6 feet 0 inches o.c.; dishtable and utensil-wash counter bases at 5 feet 0 inches o.c.

2.13 FEET AND COUNTER LEGS

A. All tubular legs will be swedged for appearance and close fit to United Show Case #BF-158 or approved equal stainless steel bullet shaped foot having a slightly rounded bottom to protect the floor. Top of these feet to be fitted with a male threaded stem to fit into the end of the legs hereinbefore specified and provide a total adjustment of 2”. The stem shall be extra long so the threads are not exposed. Bottom of tubular leg to be finished off smoothly to provide sanitary fitting and prevent the accumulation of grease or other debris at this joint.

B. Cabinet type fixtures, unless otherwise specified, shall be mounted on 8" high die-stamped sanitary two (2) piece stainless steel counter legs not less than 2-3/4" in diameter at top. Counter legs shall have an adjustment of 7" to 9". The upper part shall be stamped in a neat design with a flared inverted shoulder and shall be welded to a base plate designed for anchoring to the channel braces below cabinet type fixtures. All legs are to have one (1) piece die-stamped
closed 1-3/8" diameter bottoms to ensure sanitation. To be Deering Fabricators, 196 Asa Cash Road, Breman, Georgia 30110 model #DF8HGR. Maximum adjustment no less than 9".

C. 6" high counter legs shall have an adjustment of 5" to 7” and shall be Deering Fabricators model #DF6HGR.

2.14 BOLT, SCREW AND RIVET CONSTRUCTION

A. Wherever bolts are used to fasten trim to the paneling and body of equipment or to secure any exposed sheet metal surface, such bolts shall be of the concealed type.

B. Stainless steel bolts and screws of the same alloy composition as the metal to which they are fastened shall be used.

C. Wherever threads of bolts and screws occur on the inside of fixtures and are either visible or might come in contact with wiping cloths, such bolt or screw threads shall be capped with a suitable washer and stainless steel or chrome acorn cap nut.

D. If rivets are used to fasten rear paneling to the body of the fixture, such rivets shall be stainless steel. In no case shall iron rivets be used.

2.15 TABLE TOPS (METAL)

A. Metal table tops shall have all shop seams and corners welded, ground smooth and polished. All back welds to be peened and ground smooth. All working tops on closed base fixtures shall be reinforced on the underside with a framework of 1-1/2” angles. All open base tables shall be reinforced with 1-1/2” x 4” x 1-1/2” galvanized inverted hat channels. Cross channel closed end members shall be placed at each pair of legs. One angle or channel runner, running lengthwise, shall be provided below tops up to 30” wide. All tops shall be reinforced so that there will not be any noticeable deflection and all reinforcements shall be stud welded to the under side of the top. No rivets or bolts to be used through the top.

B. Field joints shall be provided in the top where necessary, and are to be located for practical construction, consistent with sizes convenient for shipping and accessibility into the building. See paragraph 2.5 entitled "Field Joints" for description of these joints.

C. All metal tops shall be of #14 gauge stainless steel of the quality hereinbefore specified. They shall be turned down as required by form design except where adjacent to walls or other pieces of equipment. Free corners to be rounded on 3/4" radius. The wall side shall be coved up a minimum of 8" and back 2-1/2” as required by uniform design or otherwise specified. Ends of these splashes shall be closed. Splash to be secured to wall with 12” long #14 gauge stainless steel angle fitting into stainless steel "zee" clips anchored to wall, 24” o.c.

2.16 HINGED DOORS

All hinged doors for cabinet bodies and enclosed bases shall be constructed of #18 gauge stainless steel. They shall be of double pan construction with sound deadening insulation
between the two pans. Doors shall be flush mounted without overlap and shall be fitted with semi-concealed stainless steel hinges or concealed torque-spring self-closing hinge assembly. Door shall be fitted with stainless steel die-stamped recessed handle of uniform design, and friction or magnetic catch (using steel plug).

2.17 PIPE CHASE

A. Where top arrangement of enclosed base tables make it necessary for plumbing and supply piping to be passed through the base, the piping shall be enclosed in a suitable pipe chase with easily removable access panels. The access panels are not to be held in place with screws or latches, but shall be formed in pan shape, removable without tools, where an access is required from the front of the fixture, as in the base of sinks. Pipe chases at end of fixtures containing bottom and intermediate shelves need not be enclosed unless specifically called for in the Item Specifications. Unless otherwise specified, shelves in these fixtures will be turned up on a cove to a minimum height of 6” at the edge of the pipe chase.

B. In detailing fixtures, Kitchen Equipment Supplier shall consult with piping contractors to be certain that due allowance is made for traps or other controls, particularly under lower shelves that set on masonry bases.

C. Where plumbing and supply piping pass through shelves on open base tables, shelves shall be neatly punched or die-stamped for the piping or fitted with escutcheon. Kitchen Equipment Supplier is to note the location of such pipe chases, or stamped pipe openings on his plan and/or detail drawings. Chases shall be of sufficient size to accommodate all necessary risers so that additional holes need not be cut in the field. Piping contractors shall be cautioned to rough-in as near to these chases as possible and that all risers from roughing-in to final connection must be run through the existing chases and/or slots.

2.18 SINKS

A. All sinks shall be of the size and shape as per plan and constructed of #14 gauge stainless steel. The backs, bottoms and fronts shall be formed of one continuous sheet with the ends welded into place. Partitions for compartment sinks shall be of the same material, electrically welded in place.

B. Sinks shall have all corners both vertical and horizontal coved on a 3/4" radius electrically welded, ground smooth and polished. Solder in filleted corners will not be acceptable.

C. Partitions in coved corner sinks shall be of double thickness with a half round 1-1/2" top edge.

D. Top edges of sinks at front and ends, except where fitted with integral type drainboards, shall be furnished with a 1-1/2" die-stamped formed integral sanitary semi-rolled rim.

E. Across the back of all sinks, unless otherwise specified, there shall be a 10” high backsplash measured from rolled edge or approximately 12” from working surface, turned back across the top 2” with ends enclosed. Unless otherwise specified, two (2) faucet holes on 8" centers are to be provided over the center line of partitions between compartments, 2-1/2” down from the top of the splash.
F. Bottom of each compartment shall be pitched or creased to the center drain, and shall be provided with cast brass quick opening drain valve with removable stainless steel strainer equal to T&S B3917-01 twist handle drain. Handle to have front stainless steel welded clip support to sink unless otherwise specified.

G. Bodies shall be mounted on 1-5/8" O.D. stainless steel tubing legs, and fitted with stainless steel bullet shaped adjustable feet. Legs shall be fitted with die-formed enclosed sanitary closed stainless steel gussets welded to the underside of the sink.

H. All free-standing sinks shall be 37" high to the top of the front edge and 47" high to the top of the splash. Sink depth from top of front edge to bottom of tub shall be 14" or as otherwise specified. Lengths and widths given shall be overall.

2.19 SINK INSERTS

A. Sink inserts shall be of one (1) piece deep-drawn construction in the size, material and gauge called for in the Item Specifications. Sinks shall be welded integral with counter tops with no lap between. Sink shall be fitted with a cast brass quick opening drain valve with removable stainless steel strainer as specified under "Sinks", or crumb cup drain (Component Hardware #E38-1012) as required by Item Specifications. Where sink bowls are exposed, the exterior shall also be polished to a #4 finish.

2.20 SINK DRAINBOARDS

A. Drainboards shall be constructed of same material as the sinks and shall be welded integral to same. Drainboards shall have 2-1/2" high rims with die-formed integral rolled edges to match sink edges. Front, end and corners shall be coved on 3/4" radius, as called for in sink specifications, electrically welded, ground and polished smooth. Solder filleting of these corners will not be accepted. Drainboards shall be pitched approximately 1/8" per foot to properly drain into the sink.

2.21 ELECTRICAL REQUIREMENTS FOR FOODSERVICE EQUIPMENT

A. Electrical fittings and accessories shall be furnished with the Foodservice Equipment as follows. Accessories provided loose for field installation shall be connected under Division 16.

B. Cords and Caps:

1. Kitchen Equipment Supplier shall coordinate all Foodservice Equipment cord caps with related receptacles.
2. All 120 volt "plug-in" equipment shall have Type SO or SJO cord and plug with ground wire fastened to frame/body of item.
3. Cord lengths for all equipment shall be adjusted as necessary to eliminate loose-hanging excess.
4. Foodservice Equipment specified to be furnished with an AVTEC or GREITZER cord/cap assembly shall be fitted with model suited for equipment load and voltage, with cord length
as specified. Provide matching receptacle and plate to Division 16 contractor for field installation as indicated on the electrical plans.

5. Provide all equipment caps with angle-connectors (integrady molded when possible) and strain-relief assemblies.

C. Switches and Controls:

1. Each motor-driven appliance or electrically-heated unit shall be equipped with a suitable control switch or starter of proper type in accordance with the requirements of the Underwriters’ Laboratories, Inc., which shall provide low-voltage and overload protection.

2. Equipment indicated on Utility Requirements Drawings to be directly connected to the building electrical system which is not provided with built-in circuit breakers or fused terminal block shall have a disconnect switch provided by the Electrical Contractor unless otherwise specified.

D. Motors:

1. 120 volt motors shall have a manual tumbler type starter with thermal overload protection and interchangeable heating elements.

2. 208 and 480 volt motors shall have magnetic starters with low voltage protection and one interchangeable overload relay per phase.

E. Heating Elements:

1. Electrically-heated equipment shall have thermostatic controls.

2. Steam generators, booster heaters, and sink heaters shall be equipped with positive low-water shut-off.

3. Verify foodservice equipment contract drawing voltages with Architect's engineering contract drawings and job site available service.

F. Equipment Final Connection Provisions:

1. Fabricated equipment containing electrically-operated components and/or fittings indicated on Utility Requirements Drawings to be direct-connected, shall have each component, fitting or group thereof prewired to a junction box for final connection. Refer to Consultant's drawings for circuit loading.

2. Field-assembled equipment (i.e., exhaust ventilators, conveyor or circular type warewashing machines, etc.) shall have electrical components completely interconnected under this Section for final connection arrangements as indicated on Utility Requirements Drawings. (This does not apply to pre-fabricated walk-in cooler and freezer vaults.)

3. All electrical final connection points of equipment shall be tagged, indicating: 1. Item number; 2. Name of device(s) on circuit; 3. Total electrical load, and; 4. Voltage and phase.

G. Lamps: Provide lamps in all Food service Equipment containing light fixtures. Refrigerator cabinets are to be furnished with G. E. No. 40A15 appliance bulbs.
2.22 PLUMBING & MECHANICAL REQUIREMENTS FOR FOOD SERVICE EQUIPMENT

A. Plumbing fittings and accessories shall be furnished with the Food service Equipment as follows. Accessories provided loose for field installation shall be mounted and connected under Division 15.

1. Faucets for sinks, kettles, tilting fry pans, etc.
2. Drain fittings with connected overflows for sinks.
3. Water inlet fittings in dishtable scrapping troughs.
4. Blending hose bibbs where indicated, to be mounted on Food service Equipment.
5. Control valves on Food service Equipment.
6. Vacuum breakers wherever required on Food service Equipment.
7. Booster heaters for 180 degree Fahrenheit final rinse water to dishwashing machines (integral).
8. Extensions of indirect waste fittings to 1" below fixture body from cold pans, frost plates, refrigeration coils, milk-carton dispensers, water stations and beverage-counter drain troughs. Drains shall be 1" minimum, Type "K" copper.
9. All drainlines subject to condensation shall have 1/2" thick Armaflex insulation.
10. All exposed piping and fittings on Food service Equipment shall be chrome-plated if design dictates.
11. Piping brackets and/or supports beneath dishtables or counter tops.
12. #14 gauge stainless steel gusset-shaped panel for control valves to be mounted on open base fixtures. Submit individual details to Consultant for review on shop drawings.

2.23 IDENTIFICATION PLATES

A. Regularly-manufactured equipment shall be fitted with name plates indicating the manufacturer's name address, and the utility requirements.

B. Equipment suppliers, fabricators, or contractors shall not attach company identification labels, tags, or plates to any equipment provided.

C. All adhesive-backed labels applied to the exterior surfaces except N.S.F. labels shall be removed prior to Owner's acceptance. All residual adhesive and grease pencil markings shall be chemically removed prior to Owner's acceptance.

D. Fabricated equipment switches, special-duty control valves and similar devices shall be fitted with an identification plate indicating the function or purpose (i.e., "display lights", "food warmers", etc.).

E. Identification plates shall be phenolic plastic, aluminum or stainless steel with etched relief letters (painted on aluminum and stainless steel plates). Labels shall be affixed to equipment with pop-rivets or stainless steel screws. Submit samples to Consultant for approval.

2.24 REFRIGERATION REQUIREMENTS OF FOOD SERVICE EQUIPMENT

A. Food service Equipment refrigeration system shall be installed complete with all refrigerant, oil, dials, dehydrators, gauges, controls as required for the proper operation of the system.
B. Equipment provided with self-contained or factory-installed compressors shall be checked and adjusted to proper operating temperature

C. Refrigeration System Installation:

1. Refrigerant lines shall be Type “L” hard copper tubing, dried charged with inert gas and plugged, suitable for working pressure of 450 p.s.i.g. Fittings shall be wrought copper or brass designed for use with high temperature solder and suitable for working pressure of 450 p.s.i.g. Piping joints shall be made with silver solder (Sil-Foz) under an internally inert atmosphere of dry nitrogen. Piping shall be properly suspended from and anchored to the structure with adjustable hangers 6’ o.c. maximum. Suction lines shall be sized to have maximum pressure drop of three pounds from receiver to evaporator. All refrigerant lines shall be graded to prevent trapping of oil. Install Armstrong Armflex foam plastic insulation not less than 1” thick on all suction lines which is to be taped and glued at joints. No slit insulation will be accepted.

2. Refrigerant piping shall be pressure tested before any covering is applied using carbon dioxide or dry nitrogen and freon under pressure in accordance with manufacturer’s recommended procedures. The pressure testing on the high side shall be at 300 p.s.i.g.; low side shall be 150 p.s.i.g. With the test pressure in the system, all joints shall be sharply tapped with a rubber or rawhide mallet sufficiently hard to break loose any defective joints. Every joint shall then be swabbed with a soap solution, which shall be wiped off after testing. If any leaks are found, the pressure shall be relieved from the system, leaky joints shall be taken apart, thoroughly cleaned and remade as a new joint. Test shall then be conducted again. After the system is found to be leak-proof by the aforementioned test, freon shall be introduced with an inert gas at the same pressures hereinbefore specified at the rate of one-half pound per 12,000 BTU's of refrigeration. All joints shall then be carefully tested with a Halide torch or electronic leak detector and any leaks found shall be repaired. After the system is found to be tight, it shall be allowed to stand under test pressure disconnected from the pressure source for a period of twenty-four (24) hours. If the system lost pressure considering temperature changes, then further tests for leaks shall be made.

D. Evacuation and Charging:

1. After completion of the above pressure test, the system shall be evacuated using an approved auxiliary vacuum pump. Connections for evacuation shall be in accordance with manufacturer's recommendations.

2. The vacuum pump shall be operated until vacuum in excess of 150 microns is obtained and has been maintained for a period of at least four hours. The vacuum shall then be broken with freon and the system shall again be evacuated as specified. Evacuation shall not be undertaken when the ambient temperature at the equipment is lower than 70 degree Fahrenheit.

3. Charging subsequent to the initial charge which is contained in the condensing unit shall be given through the charging valve in the high side passing all the liquid refrigerant through a charging dehydrator. All charging lines and gauges shall be purged of air prior to connection with the system. Refrigerant shall be unused and shall be delivered in clean containers. After the system is fully charged, it shall be started and placed in full operation.

E. Painting: Finish exposed refrigerant lines and drain lines within refrigerated compartments with chromotone paint.
2.25 APPROVED FOOD SERVICE EQUIPMENT SUPPLIERS

A. Kitchen and food serving equipment shall be furnished, installed, and guaranteed by one of the following named suppliers:

1. Hospitality Supply Restaurant & Bar Equipment, Mr. Don Alexander, 2223 Lombardy Lane, Dallas, Texas 75220, 214/556-1581, FAX 214/869-4025
2. International Kitchens, Inc., Mr. George Thiesen, P.O. Box 112550, Carrollton, Texas 75011-2550, 214/418-6330, FAX 214/418-1576
3. Kirby Restaurant Supply, Ms. Evelyn Warren, Route 2, Box 91, Uncertain, Texas 75661, 903/789-3293, FAX 903/757-2723
5. Quality Custom Fabricators, Mr. D. L. West, 1041 Avenue M, Grand Prairie, Texas 75050, 214/641-9860, FAX 214/641-3960
6. Kitchen Resources; Mr. Bill Youngblood, 806 W. Harrison, Harlingen, Texas 78550; 956-423-2491.
8. Mission Restaurant Supply, Mr. Evan Neff IV, 1737 North Padre Island Drive, Corpus Christi, Texas 78412, 361-289-5255.
9. 1st Choice Restaurant Equipment & Supply, Mr. John Chancellor, 15018 Tradesman Drive, San Antonio, Texas 78249.

2.26 EQUIPMENT

A. The following schedule lists and more fully describes items shown on the drawings:

1. Manufacturer names and model numbers are for establishing standards of quality, size and finish required, representing Owner’s preference and basis of bid. Equipment is listed hereinafter with same numbers as on the Contract Drawings:

ITEM #1  ICE MAKER,CUBE STYLE (5102 Shared Room): (2 units Base Bid – 1 unit Bid Alternate No. 2) Provide Manitowoc, Indigo Series, Model ID-1106A-X Ice Maker as per the following:

A. Cube-style, air-cooled, self-contained condenser.
B. Up to 1141-lb production/24 hours.
C. DuraTech exterior stainless steel finish.
D. Dice size cubes.
E. 1 ea. 208-230V/60/1ph.; 13.0 amps.
F. 1 ea. AuCS Automatic Cleaning System accessory for ice machines 300 through 1800. Option is installed on the outside of the machine and works in conjunction with cleaner and sanitizer bottle numbers #000005163/000005162 or #000005165/000005164.
G. 1 ea. B-570 Ice Bin, w/top-hinged front-opening door, approximate 430 lb ice storage capacity, for top-mounted ice maker, stainless steel exterior.
H. 1 ea. Factory Built-In Luminice II Growth Inhibitor, comes pre-installed in ice machine.
I. 1 ea. 40-1326-3 AuCS-SI Cleaner, 16 oz. bottles (sold in case of 12).
J. 1 ea. AR-40000 Arctic Pure, Primary Water Filter Assembly, includes head, shroud, hardware, mounting assembly, and one filter cartridge.

K. 6” adjustable stainless steel legs.

L. 3-year parts and labor Commercial warranty; 5 year parts and labor Commercial warranty on evaporator; 5-year parts and 3-year labor Commercial warranty on compressor.

ITEM #2 HAND WASH SINK (5101 Concessions 1 and 5103 Concessions 2): (4 units Base Bid – 2 units Bid Alternate No. 2) Provide one (1) each, Advance Tabco #7-PS-60 as per the following:

A. Hand Sink, wall model, 14” wide x 10” front-to-back x 5” deep bowl.

B. 20 gauge 304 stainless steel.

C. Splash mounted gooseneck faucet, 4” o.c.

ITEM #3 THREE COMPARTMENT SINK TABLE (5102 Shared Room): (2 units Base Bid – 1 unit Bid Alternate No. 2) Provide one (1) Advance Tabco Model #FC-3-1620-36RL, 26” deep top with 11” splash at rear only; #TA-11E-2 triple sink welded into top; 20” front-to-back x 16” wide sink compartments, 14” deep; stainless steel legs & cross-rails, 16/304 stainless steel, as per the following:

A. 1 ea. Vacuum Breaker Holes; to fit Item #4 listed below.

B. 2 ea., K-4 Support Bracket for lever drains on sinks.

C. 2 ea., K-15 Drain, lever operated with built-in overflow, 2” IPS

D. 1 ea., T & S #B-0231, splash mounted, 8” o.c., 12” spout.

ITEM #4 DISPOSER (5102 Shared Room): (2 units Base Bid – 1 unit Bid Alternate No. 2)

Provide one (1) InSinkErator Model SS-50-5-MS Disposer (at Item #3), with sink mount assembly, #5 adaptor for 3 ½” to 4” sink opening, 1/2-HP motor, stainless steel construction, flow control valve, w/ manual switch, as per the following:

A. 1 ea. 208v, 60hz, 3 phase

B. 1 ea. 3-1/2” sink collar with sink stopper

C. 1 ea. Disposer support leg

PART 3 - EXECUTION

3.1 EXAMINATION

A. Before beginning the installation of food service equipment, the spaces and existing conditions shall be examined by the food service equipment supplier and any discovered deficiencies or discrepancies noted shall be reported to the Architect in writing.

1. Beginning installation shall constitute acceptance of the area.

3.2 PREPARATION

A. Food service equipment drawings are diagrammatic and intended to show layout, arrangement, mechanical and electrical requirements.
B. Make and check all measurements at the building before beginning fabrication. Coordinate measurements and dimensions with rough-in and space requirements.

3.3 DELIVERY

A. Co-ordinate with progress of construction.

B. Deliver all loose electrical, plumbing and mechanical fittings and accessories with instructions for their proper installation.

C. When possible, deliver after masonry, plastering and painting is complete.

D. Loose items such as pans, covers, silver cylinders, shall not be delivered until Owner is ready to receive and inventory such items.

3.4 INSTALLATION

A. Supervision: Provide a competent foreman or supervisor who shall remain on the job during the entire installation.

B. Assemble, square, level, and make ready all items for the final utilities connections.

C. Scribing: Cut neatly around obstructions to provide sanitary conditions.

D. Where minimum gaps occur between equipment, apply General Electric Silicone construction sealant Series #SE120 mastic or stainless steel trim molding of proper shape with concealed attachment. Use epoxy cement and/or "zee" clips wherever possible to secure trim.

E. Trim is not an acceptable substitute for accuracy and neatness. When the Consultant elects to accept a trim strip in lieu of rebuilding an item, it is the responsibility of the Kitchen Equipment Supplier to provide same at no cost to the Owner.

3.5 CLEAN UP

A. Clean up and remove from the job site all debris resulting from the Work under this Section, as the installation progresses.

B. Immediately remove all spots, smears, stains, residue, adhesives, etc. from the Work of this Section and/or upon adjacent areas or surfaces which result from the Work of this Section.

C. Upon completion of the building and before final inspection by the Architect, Consultant and/or Owner, Kitchen Equipment Supplier shall remove protective coverings from his Work and give all parts of his equipment a thorough cleaning and servicing, leaving all items free from defects.

D. Thoroughly clean and polish all food service equipment, in and out, ready for Owner's use, prior to demonstration and final inspection, in accordance with Section 01710 - Cleaning.
3.6 EQUIPMENT START-UP/DEMONSTRATION

A. Carefully test, adjust and regulate all equipment in accordance with the manufacturer’s instructions and certify in writing to the Architect that the installation, adjustment and performance is in full compliance.

B. Provide the Owner and/or operators with a thorough operational demonstration of all equipment and furnish instructions for general care and specific care and maintenance. Arrange for the demonstration to be held in the presence of authorized representatives of the Architect and the Owner.

C. During the demonstration, instruct the Owner's operating personnel in the proper operation and maintenance of the equipment. Brochures assembled as per Section 1.8, to be available through the Architect's office at this demonstration time.

END OF SECTION