

SECTION 114000 - FOOD SERVICE EQUIPMENT

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes equipment for the food service facilities indicated on the drawings. Extent of food service equipment work is indicated on drawings and by provisions of this section.

B. This specification covers food service equipment requirements at the Prairie View Elementary School Site.

C. Installation shall include uncrating, setting-in-place, cleaning and leveling of new equipment, installation of fittings / controls and utility connections. Installation shall also include removal, relocating, cleaning (of construction generated soils & debris), re-installing and leveling of current equipment designated to be relocated, as here in after specified. Currently installed equipment is presently in operation within these spaces / kitchens. The owner will relocate all small wares, utensils, etc. Coordinate removal of all existing equipment with Owner. Disconnection of currently installed equipment from electrical, mechanical and plumbing shall be performed by the installing contractor or subcontracted by the installing contractor.

D. Removal of currently installed equipment, demolition within facility, construction, installation of equipment, and phasing of this work must be coordinated closely with the owner.

F. Upon request, the successful bidding provider of food service equipment will be required to provide an itemized breakdown of cost for each individual equipment item.

G. Bidding food service contractors should visit the school to assess quantity, sizes and configurations of existing equipment. Prior to the beginning of construction, owner will remove / salvage items of equipment which aren't designated for relocation and which they wish to retain and repurpose. Equipment which the owner does not remove and which does not relocate, becomes the property of the contractor and their responsibility for removal from the site and disposal.

H. The provider / installer of food service equipment, having; made himself/herself aware of the current site installation conditions, reviewed plans and specifications, shall be fully satisfied as to his/her obligations here-in stated, as shown and as required for a completed, properly operating installation at project completion before submitting his/her bid. No allowance will be made to the provider / installer of food service equipment for any error on his/her part, or obvious oversight not called to the attention of the Owner prior to bidding.

I. Provide as part of the Contract, a qualified food service equipment project foreman at the job sites, during all phases of construction relating to this contract. Foreman shall have the technical expertise to handle all phases of equipment installation. Foreman shall coordinate roughing-in equipment, equipment installation and connections, with Owner. Foreman shall answer questions and determine locations for making required cut outs, etc., for satisfactory final installation.

J. The specifications and drawings are complementary and what is called for by the one shall be binding as if called for by all. Verification of quantities is the responsibility of the provider / installer of food service equipment.

1.2 SUBMITTLES

- A. The successful bidder of the contract shall provide to Owner equipment submittles just as soon as possible after award of contract. Electronic submittles are preferred by Owner.
- B. The submittles shall contain:
 - 1. Diagrams showing proper assemblage, installation, and inter-connection/connection of parts provided / supplied by the food service equipment provider.
 - 2. Utility connection sizes, loads, characteristics, etc., for equipment at its rough-in points.
 - 3. Utility sizing and locations shall be in accordance with exact equipment to be provided /supplied and its installation.
 - 4. Lateral, longitudinal and height dimensions, locating rough-in points for utility connections.
- C. Product Data: Provide Equipment Specifications and Cut-sheets, for the Prairie View Elementary site, containing manufacturers technical product data and installation instructions on all non-custom, standard, manufactured equipment. Owner shall correct or make a list of corrections to the submittals.
- D. Unintentional approval of submitted incorrect/incomplete Shop Drawings and Specification sheet books shall not waive obligation of the food service equipment provider to provide / supply equipment, materials and construction methods as shown and specified herein.
- E. Maintenance Data: Furnish to the Owner one (1) electronic copy of maintenance and parts manuals, for all items of standard manufacture. Provide an index in the front listing Item No., Description as shown on Food Service drawings and manufacturer. These electronic Manuals shall also include copies of warranties extending past the manufacturers standard, operating and maintenance instructions, adjustment and testing instructions; parts listing, and other applicable information necessary for proper maintenance and care of equipment. When available, provide equipment manufacturers operation and maintenance video tapes in the CD or DVD format. At least (1) one copy of the completed manual shall be available at the owner demonstration for reference by the demonstrator and owner.
- F. Warranties; at minimum, provide to the owner Three (3) equipment warranty books, or, electronic copies if so provided by the manufacturer. Provide at the front of each book, a warranty listing in columnar form of all equipment used on the project. In landscape format, using Microsoft Word, develop the warranty listing as follows;
 - 1. Provide a header at the top of each page of the warranty listing, designating the Project Name, food service equipment provider Company Name, Project Manager, Address and Phone Number. Below this project information, in bold letters, designate the "Warranty Initiation Date _____" (Refer to 1.10 Service and Warranties).

2. Below the header, designate across the top of each page, columns for Item No., Description, Manufacturer, Model No., Serial No., Warranty Period and Comments. Comments column used to designate specifics (where they apply) such as " year labor, 3 years materials" For items having multiple components with varying warranties, list each component and its information, on a separate line below the specific item number. Fill in all columns for each item.
3. Additionally, provide in each warranty book (or electronic copy), the warranty listing saved with project name and "KITCHEN EQUIPMENT WARRANTIES".
4. Behind the warranty listing, provide in order by item number, manufacturers standard warranty certificates. Designate the item number on each certificate and fill in all appropriate information as required by the equipment manufacturer. Food service equipment provider is responsible for submitting to the manufacturer all appropriate information for initiating warranties.

1.3 QUALITY ASSURANCE

- A. All work, materials and installation shall meet applicable regulations and codes, including but not limited to:
 1. ADA (Americans with Disabilities Act); Food service serving line equipment shall be accessible to the physically challenged
 2. AGA (American Gas Association); Provide gas burning equipment which complies with and is listed by the AGA.
 3. ANSI (American National Standards Institute) Standards: electric powered and gas burning appliances, plumbing fittings including anti-siphonage water fittings and compressed gas piping shall meet applicable standards of the American National Standards Institute.
 4. ASHRAE15, "Safety Code for Mechanical Refrigeration."
 5. Clean Air Act for Stationary Refrigeration & Air Conditioning. (Protection of the Ozone, Recycling and Emission Reduction Program).
 6. Energy Independence and Security Act of 2007; Walk-in refrigerators / freezers and their refrigeration systems shall comply.
 7. Health Codes; National, State and Local which have jurisdiction including but not limited to;
 - a. City and local jurisdictional health and sanitation requirements.
 - b. Compliance with the current Missouri Food Code.
 9. Montreal Protocol for installation and use of non-CFC content refrigerants and reduced HCFC content refrigerants.

10. NEMA (National Electric Manufacturers Association); Electrically operated buy-out and custom fabricated equipment shall conform to latest standard of National Electric Manufacturers Association
11. NFPA (National Fire Protection Association) Codes: equipment shall be manufactured and installed in accordance with applicable standards of the National Fire Protection Association (NFPA).
12. NSF (National Sanitation Foundation) Standards: Provide equipment that bears NSF Certification Mark or UL Classification Mark certifying compliance with applicable NSF/ANSI standards.
13. UL (Underwriters Laboratories) 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.

B. The provider of food service equipment Qualifications: The company or its sub-trades shall;

1. Be regularly engaged in the supplying and installation of food service equipment of types, capacities, and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.
2. Have technical personnel experienced in all aspects of procuring and installing the food service equipment specified here-in.
3. Have the financial ability to handle this project and be able to provide documentation supporting their capacity to the Owner's satisfaction.
4. Be regularly engaged in the manufacture of custom built food service equipment with the necessary facilities, manufacturing equipment and personnel to draw and manufacture food service equipment of the highest quality in accordance with the best accepted practices of the industry.
5. Have successfully completed installations of similar size and complexity.
6. Have expertise in field welding, finishing, and adjustment of equipment to fit field conditions with a neat and uniform installation per the best accepted practices of the industry.

1.4 PROJECT CONDITIONS

- A. The provider of food service equipment preparing bids for this project should visit site to familiarize themselves with existing equipment and conditions relative to removing, relocating and scraping food service equipment from the existing kitchen.
- B. Delivery, Storage, Handling: Equipment shall be delivered in factory-fabricated containers designed to protect equipment and finish until final approval. Coordinate size of access and route to place of installation. Make arrangements to receive equipment at the project site. The installer of food service equipment is responsible for, determining when construction activities are sufficiently complete to begin installations without risking damage to the equipment, for protection of the equipment until final approval.

- C. Site Visits: Food service equipment provider and/or installer shall visit each site to; direct, check and verify location of all rough-ins; coordinate floor drain / sink locations; to take all field measurements; make templates of field wall/floor conditions for accurate fabrication of equipment; to supply and provide equipment to fit job conditions; to direct coordinating trade.
- D. Equipment shall be consistent with these specifications and accompanying drawings.
- E. All questions concerning this contract shall be directed to the Owner
- F. Examine job conditions with Owner before starting work, if any changes are required because of discrepancies between Specifications and Drawings and actual conditions.
- G. All equipment shall fit space provided and job conditions. Conditions causing major or unusual alteration to specified equipment, shall be brought to the Owners attention in writing, before equipment is constructed or installed. Minor adjustments of equipment to fit field conditions, including added length, are the responsibility of the provider of food service equipment and not grounds for an additional charge.
- H. It is the purpose of these Drawings and Specifications to procure Food Service Equipment both special fabricated items and items of general manufacture that conform to the best operating policies of the industry. These items have been selected as preferred items as a result of past experiences in functional design, construction, material and in maintenance and repair.
- I. The bidding food service equipment provider is responsible for providing a bid amount for each piece of equipment shown or specified.
- J. Buy-out or equipment of standard manufacture shall be of latest model or succeeding model at time of delivery and include all standard accessories as designated in the latest catalog. Non serial numbered equipment and equipment which doesn't require field measurement for accurate fabrication may be purchased following approval of shop drawings and stored in their factory provided packaging/crating in a bonded warehouse (per the requirements of Division 1) until the installation date. Installed equipment shall be like new without damage or physical deterioration. Warranties on all operational equipment items shall comply with 1.5 Warranty, paragraph D. - Initiation of Warranty ...
- K. All equipment except those designated as "Relocated" and "Existing", their accessories and parts shall be new, without previous use and meet all conditions required for this project.
- L. Equipment price increases not included in bidders proposal, will not be allowed after the bid opening.

1.5 WARRANTY

- A. The provider / supplier of food service equipment shall fully guarantee / warranty all work and materials for a minimum period of one (1) year from date of acceptance.

- B. Provide five (5) year warranty for motor-compressor at each remote or self-contained condensing unit supplied with buy-out or custom fabricated refrigeration equipment provided under this Contract.
- C. Extended warranty and conditions of service on items of standard manufacture, as established by manufacturer of such equipment, shall apply where extending beyond warranty and conditions of service set forth in these Specifications. Provide written manufacturers warranty to the Owner, when any guarantee or warranty extends beyond above mentioned one (1) year warranty period.
- D. Initiation of warranty period shall occur on the First Day of Effective Use of the equipment by the owner. First Day of Effective Use will be the first day, following substantial completion acceptance, that the kitchen is used to produce a full meal. Equipment start-up and testing, by the food service equipment provider, his sub-contractors, service agents or other parties / trades responsible for setup or connections, will not start the warranty period. Substantial Completion Acceptance of food service equipment shall not be interpreted to be the initiation of the warranty period unless it falls within 30 days prior to the First Day of Effective Use. Food service equipment provider shall notify Owner prior to bid date, of Manufacturers who are not accepting of this policy. Rejection of this policy is grounds for disallowance of manufacturers equipment. Manufacturers equipment which is bid is understood to be in acceptance of this policy.
- E. Immediately upon written notice from Owner, and as directed, the provider / supplier of food service equipment agrees to repair or replace without cost to Owner, defects in workmanship of materials, not due to abuse, appearing within above mentioned time. Trips to job for servicing of equipment under guarantee shall be made without charge, but such trips shall be made only at direction of Owner or Owner's previously identified agent.

1.6 REFRIGERANT REQUIREMENTS

- A. Walk-in refrigerators / freezers and their refrigeration systems shall comply with the Energy Independence and Security Act of 2007.
- B. The provider of the walk-ins shall supply and install, ready for all connections, all remote compressors and accessories for Food Service Equipment, as specified herein. The contractor shall be responsible for all electrical and plumbing work and will rough-in, inter-connect and connect-up equipment & accessories.
- C. The provider of the walk-ins shall do all "Refrigeration Installation".
- D. "Refrigeration Installation" shall include uncrating and setting-in-place of compressors and accessories, installation of refrigerant lines and refrigeration accessories, initial charge of refrigerant for each system, system(s) start-up, testing and temperature adjustment.
- E. Refrigerant line sizes shall be of proper size to operate units, at temperatures required. Condenser manufacturer shall size refrigerant lines to operate units at the temperatures required. Refrigerant piping to remote compressors shall be Type "L" copper, labeled ACR, with wrought copper fittings and sweat solder joints. Make connections with silver solder having melting point of not less than 1000deg. F. Run and test refrigeration systems and piping prior to application of insulation. After successfully testing, evacuate system and

charge per manufacturers recommendations. Insulate suction lines per applicable code requirements for composite smoke and fire hazard. Insulation shall be 3/4" "Armaflex AP", black, flexible, elastomeric tubing with flame spread rating of 25 or less and smoke developed rating of 50 or less. Cover fittings with "Armaflex AP" blanket and wrap with vapor proof tape. "Armaflex" blanket shall be neatly applied with no buckles or gaps using the manufacturers recommended adhesive and installation procedures. Seal seams weather tight with longitudinal seams at bottom of pipe. Protect "Armaflex AP" installed outside the building with PVC sleeving sealed with vapor barrier adhesive and strapped at 18" O.C. and at each 90 deg fitting with non removable plastic strapping.

- F. Provide initial charge of refrigerant, (type as hereinafter specified) for each refrigeration system. Provide initial charge of lubricating oil, for compressor unit, in accordance with manufacturer's recommendation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The food service equipment bid shall quote only manufacturers listed with-in the specification or drawings. Hereinafter, where specific mention is made of catalog number of any particular manufacturer or trade name, it shall be understood that such mention is made for purpose of establishing type, design and/or quality of material and equipment desired. Owner will review equipment submitted by other than specified manufacturers for acceptance as equivalent to the specified. All equipment submitted must meet or exceed the quality, design and function of the specified equipment. The food service equipment bidder requesting review of the alternative manufacturer shall submit complete construction details, brochures and comparison sheets to the equipment specified. If the submitted equipment varies in size from specified or will require any changes in the shown mechanical, electrical, ventilation or structural building systems, the bidder shall call these to the Owners attention in considering the submitted equipment. The bidder making such submission shall cover all costs for any modifications to equipment, mechanical, plumbing, electrical, ventilation or structural systems which may be necessary. Such equipment will be approved, approved with requisites, or rejected and noted as such in the last addenda issued. Only equipment which is specified or approved as equivalent by addenda may be bid.

2.2 FABRICATED EQUIPMENT

A. Materials:

1. Stainless Steel: AISI Type 304; austenitic; meeting NSF/ANSI 51 Food Equipment Materials with minimum 16% chromium; 8% - 10.5% nickel; 1% - 2% Manganese. Provide non-magnetic sheets, free of buckles, waves, and surface imperfections. Provide No. 4 polished finish for any surfaces exposed to view, 2B or 2D finish on unexposed surfaces. Only in areas exposed to high temperature and high acid/chloride exposure, type 316 Stainless Steel will be used.
2. Stainless Steel Tube: ASTM A 554, Type 304 with no. 4 polished finish.
3. Sound Deadening:

- a. For all sound deadening applications; Component Hardware Q75-2000 Multiflec Sound Deadener or equal, heavy-bodied resinous coating, filled with granulated cork or other resilient material, compounded for permanent, non-aging, non-flaking adhesion to metal. Spray apply in 1/8" thick coating and paint aluminum.
 - b. For Metal/Dish Table Tops only; Component Hardware Tack Tape, or equal, sound deadening, tape form of sound deadening applied between table reinforcing and metal top.
4. Sealant: Sealant shall be ASTM C 920, Type S Grade NS, Class 25, use NT sealant which is an easily cleanable CLEAR silicone sanitary sealant which does not support bacterial growth, Shore A hardness of 30. Single component, chemical curing, non-sagging, non-staining, fungus resistant, non-bleeding. Sealants shall:
- a. Product; Pecora Corporation 898 Silicone Sanitary Sealant, or approved equivalent.
 - b. Color; Translucent.
 - c. Movement Capability; Plus and minus 50 percent.
 - d. Service temperature range; -40 to +300 degrees F.
 - e. Shore A Harness Range; 30
 - f. Certified for compliance with NSF standards for use in food service areas.
 - g. Washed and cured sealant shall comply with the FDA's regulations for use in areas that come in contact with food.
5. Sealant for Low Temperature Conditions; Adhesive sealant for low temperature use shall be Kason Industries model 3700 Rubbaseal Silicone Sealant. Premium grade, fully NSF certified silicone adhesive sealant ; waterproof; air-cures overnight; tack-free in 15 min.; standard temperature formula serviceable from -80 degree F to 450 degree F. (62degree to 232degree C).
6. Elastomeric Joint Sealant: ASTM C 920; Type S (single component), Grade NS (nonsag), Class 25, Use NT (nontraffic) related to exposure, and Use M, G, A, or O as applicable to joint substrates indicated.
7. Cylindrical Sealant Backing: ASTM C 1330, Type C, closed-cell polyethylene, in diameter larger than joint width.

B. Specification of Standard for Custom Fabricated or Modified Equipment:

1. Following are specifications, for all custom fabricated equipment to be specified hereinafter, and shall be followed where referred to by work "Standard", "Specification of Standard", "Standard Specification", or where otherwise applicable.
2. All custom fabricated equipment, materials and workmanship, shall be best of their respective kinds and equal in detail, quality and construction.

3. Neatly cut and finish all openings in equipment required by other trades for electrical and plumbing leads.
4. Welding:
 - a. All piecing or jointing, exposed to view on top surfaces, back splashes, cabinet faces, shall be done with continuous welded joints. Weld joints shall be flush and smooth free of all depressions, cavities, ridges and impurities.
 - b. Tack welding is only acceptable when out of view from 3'-0" eye level.
 - c. Pop rivet fasteners and exposed to view screws and bolts are not allowed.
 - d. No soldered joints, cold solder or caulked fillets allowed.
5. Grinding and Polishing:
 - a. Grind smooth all welds. Polish out all welds, weld discolorations, and brake marks occurring in surfaces, including finished base interiors enclosed by doors. Polished welds shall match original finish and grain, unless otherwise specified.
 - b. Grind smooth all cut or sheared edges of metal so they are free of snags and burrs.
 - c. All surfaces shall be checked over, after installation is completed, and polished where needed to give final full finish to job.
6. Sealants:
 - a. Installer shall provide sealant at all joints 3/8" or less between all stationary (fixed, without casters) equipment surfaces abutting adjacent walls or equipment. Seal the perimeter of all floor mounted, non-mobile equipment, to the floor to prevent hiding places for vermin. Interior corner joints shall form a sanitary cove of not less than 1/4". Prep. and prime surfaces as required by the manufacturer for sealant adhesion. Installation shall be a uniform, smooth continuous concave ribbon without voids and irregularities. Per sealant manufacturers recommendations, provide backer rods. Non-portable or non-movable counter top equipment without legs shall be sealed to the countertop. Any joints or portions there of exceeding 3/8" shall be covered for its entire length by a Stainless Steel closure of a design approved by the Owner.
7. Metal Tops:
 - a. Material;
 - 1) Top / backsplash / back splash ends / sinks shall be Stainless Steel.
 - 2) Top under bracing shall be Stainless Steel.
 - b. Metal top shall be 14 ga.
 - 1) On flat top tables, turn all exposed edges straight down 1-1/2" on 90deg. angle, with 1/2" toe-in on 30deg. angle, unless Item specification differs.
 - 2) On tables with sinks, unless specified otherwise, table edges shall have 3/4"H. inverted "V" edge with vertical turndown for 1 1/2" with 1/2" toe-in on 30deg. angle.
 - 3) Adjacent to walls, equipment or other non-mobile equal or taller equipment,

provide splashes of height and width specified, 14 gauge and integral with top. Provide 2" wide splashes unless Item specification differs. Slope splash top back

on an upward 45deg. angle to adjacent walls or equipment, where shown. At walls or taller equipment, turn splash top down 90deg. for 1/2" on the back unless

Item specification differs. Provide 18 ga. S/S "Z" clips, secured to walls, to engage 1/2" backsplash turn down and hold backsplash to wall. All vertical and horizontal corners at splashes or turn-ups shall be coved on 1/4" R. No solder fillets allowed. Fully weld fillers into exposed open splash ends.

- 4) At a backing tables with backsplashes, as specified, provide a 1" x 1" x 90deg. X 18ga. cap set in sealant and lapping the top of both a backing back splashes OR provide one of the back splashes with a 1" x 45deg. downward sloped lip set in sealant and lapping the top of the a backing back splash.
- 5) Under brace the top with 1" x 4" x 1" channel or 1-1/2" x 1-1/2" angles, both lengthwise and widthwise 18" O.C. Stud bolt under bracing to top.
- 6) Seal splash tops, back edges to walls and adjacent non-mobile equipment.
- 7) Sound deaden all tops.
- 8) Provide Drawers, electrical receptacles, etc. per standards when specified by a specific Item.

c. When sinks are specified integral to the Metal Top, construct sink as follows;

- 1) With all bowl vertical and horizontal corners coved on 1" R.
- 2) No solder or caulked fillets allowed.
- 3) Sink bowl bottom creased/sloped to drain to provide complete drainage of sink. At drain valve location, sink bottom ferruled downward to allow installed drain valve grate to set flush to or below plane of sink bottom.
- 4) 14 ga. S/S "L" bracket stud bolted to bottom of sink bowl to support drain twist action handle.
- 5) Punch splash top, deck or splash face for trim and vacuum breaker as specified. Faucets centered over sink compartment or centered over partitions if multi compartment sink.
- 6) Provide sink underside with smooth 1/16" thick coat of sound deadening mastic, painted aluminum.
- 7) Integral sinks shall be continuously welded into the metal top, ground smooth and polished. Backsplash, Metal Top and base as specified for the specific item.

8. Dish Table Tops:

a. Materials;

- 1) Dish Table Top / backsplash / back splash ends / rolled rims / sinks / troughs / conveyor beds shall be Stainless Steel.
- 2) Dish Table Top under bracing shall be Stainless Steel.

b. Dish table top shall be 14 ga.

- 1) All exposed edges shall be turned straight up 3" high with 1-1/2" semi-rolled rim, terminate at back splash and weld thereto, unless Item specification differs. Rolled rim shall have spherical corners.

2) Turn down into dish machine in a water tight manner per the dish machine manufacturers recommendations.

3) When top is adjacent to walls, it shall be turned straight up 8" and back 2" on 45deg. angle, unless Item specification differs. Turn splash top down 90deg. For 1/2" on the back unless Item specification differs. Provide 18 ga. S/S "Z" clips, secured to walls, to engage 1/2" backsplash turn down and hold table to wall. Cove vertical and horizontal corners on 1/2" R. No solder or caulked fillets allowed. Fully weld Stainless Steel fillers into exposed open splash ends. Seal splash top, back edges to walls. Provide holes in back splash and top for fittings and fixtures as required.

4) Under brace dish table top with 1" x 4" x 1" channel or 1-1/2" x 1-1/2" angles both lengthwise and widthwise 18" O.C. Stud bolt under bracing to top. Top shall be sound deadened.

c. When sinks are specified integral to the Dish Table Top, construct sink as follows;

1) With all bowl vertical and horizontal corners coved on 1" R.

2) No solder or caulked fillets allowed.

3) Sink bowl bottom creased/sloped to drain to provide complete drainage of sink. At drain valve location, sink bottom ferruled downward to allow installed drain valve grate to set flush to or below plane of sink bottom.

4) 14 ga. S/S "L" bracket stud bolted to bottom of sink bowl to support drain twist

5) Punch splash top, deck or splash face for trim and vacuum breaker as specified. Faucets centered over sink compartment or centered over partitions if multicompartment sink.

6) Provide sink underside with smooth 1/16" thick coat of sound deadening mastic, painted aluminum.

7) Integral sinks shall be continuously welded into the metal top, ground smooth and

polished. Backsplash, Metal Top and base as specified for the specific item.

9. Open Frame Base:

a. Materials;

1) Legs / crossrails shall be Stainless Steel.

2) Leg Gussets; Component Hardware model A18-0206, or approved equal, 300 series x 16 ga.; set-screw style; 3-1/2"H. die-stamped round fully enclosed straight body.

3) Bullet Feet; Components Hardware model A10-0851, or approved equal, 1-1/4" adjustable Stainless Steel clad hex bullet feet.

4) Flanged Feet; Component Hardware model A10-0854 Stainless Steel 1-1/8" adjustable flanged feet with mounting holes, set in sealant and expansion anchored to the floor.

b. Provide bases with 1-5/8" x 16 ga. uprights/legs and crossrails.

1) Crossrails at rear and ends unless Item specification differs.

2) Fully weld cross rails to uprights.

3) Uprights shall be fitted at top with Leg Gussets and at bottom with Bullet Feet unless Item specification differs.

4) On island table legs and on legs which are not braced from Two (2) perpendicular directions by crossrails, cabinet base or undershelf, provide

Flanged Feet with mounting holes, set in sealant and expansion anchored to the floor.

5) Weld leg gussets to top under bracing.

6) Spans between legs shall not exceed 6'-0".

7) When open frame base and cabinet base are both used under equipment top, terminate cross rails at cabinet body and securely anchor to body framework.

8) Cross rails shall not occur in front of serviceable / movable / mobile items such as sinks, floor sinks, food waste collectors, disposers, booster heaters, waste barrels, ingredients bins.

10. Electrical Receptacles:

a. Materials; Exposed electrical receptacle boxes shall be constructed of aluminum or fabricated Stainless Steel with smooth exterior (no exposed knockouts).

1) Vertical Tombstone Receptacle Box; Component Hardware Group Inc. model no. R58-1010, or equivalent, single faced cast aluminum tombstone electrical outlet box with brushed satin finish and ground screw. At under counter locations, drill the back of the tombstone/box for a 1/2" I.P.S. adapter. Receptacle device and cover plate provided by other trades.

b. Under Top;

1) Where shown at the end of tables, enclose/box-in a 4" x 4" x 1"H. section of the leg/metal top under bracing channel with 16 ga. S/S. Bolt to the enclosure and faced outward, a fabricated 16ga. Stainless Steel or Vertical Tombstone Receptacle Box. Receptacle device and cover plate provided by other trades.

2) Outlet box shall occur inside drawer enclosures when shown adjacent thereto.

b. Elevated Shelf Bottom; As detailed and where shown, enclose/box-in a 4" x 4" x 1"H section of the shelf underbracing channel with 16 ga. S/S. Bolt to the enclosure and faced, as shown, a fabricated 16ga. Stainless Steel or Vertical Tombstone Receptacle Box. Provide access for concealing feed wire conduit thru shelf supports and securing conduit below shelf in a concealed manner.

11. Enclosed Cabinet Bases:

a. Materials;

1) Exterior cabinet base sides, fronts, backs, ends, drawer fronts; shall be Stainless Steel.

2) Internal cabinet base bracing, cabinet bottom shall be Stainless Steel.

3) 6" Cabinet Legs; Component Hardware model A48-5048, 6" high, 2000 lbs static load rating, 300 series Stainless Steel legs with #4 finish; hex adjustable Stainless Steel bullet feet and 3-1/2" square Stainless Steel removable mounting plate.

b. Construct, as detailed, of 18 gauge stainless steel enclosed on both sides, back and bottom. Cabinet body of welded construction free of screws and bolts.

- 1) Brace body at top with 14 gauge stainless steel 1" x 4" x 1" channel or 1-1/2" x 1-1/2" angles.
- 2) Cabinet ends shall terminate at exposed sides in a vertical 2" wide mullion. Below top at front, a 3"H. horizontal mullion shall extend down from Metal Top (partially hidden behind Metal Top turndown edge).
- 3) 16 ga. bottom shelf turns up 1 1/2" x 90deg. to inside of sides / partitions and back, welding thereto. Bottom shelf turns down at cabinet front 2" with 1" x 90deg. return. Mount cabinet body on Cabinet Legs bolted to 12 gauge stainless steel gussets, which in turn are welded to body. S/S legs shall provide a 6"H. toe space below the cabinet. Spans between legs shall not exceed 6'-0".
- 4) Fully weld flush and polish all seams on face of base front horizontal and vertical mullions.
- 5) Provide with Drawers per standards when specified by a specific Item.

12. Closure Panels:

a. Materials;

- 1) Closure panel interior and exterior surfaces shall be Stainless Steel.

b. Closure panels shall be 3/4" thick double pan type construction.

- 1) Surfaces materials shall be 18 ga. exterior pans, 20 ga. interior pans or as specified for the specific item.
- 2) Exposed / exterior pans constructed with 90deg. x 3/4" returns at all edges, corners flush welded. Interior pan similar, inset to edges of exterior pan edges.
- 3) Internally brace to prevent twisting and internally apply sound deadening mastic.
- 4) Closure panels exceeding 36" in width or length shall be back braced with continuous horizontally mounted S/S channels, tack welded horizontally at bottom and 24" AFF. Channel sizes as specified for each specific item. Continuously weld channels to the table Open Frame Base legs using S/S 14 ga. gussets.

13. Drawers:

a. Materials;

- 1) Provide fabricated 14 ga. Stainless Steel drawer faces with 1/4" radius corners and full width, 1" x 1" inverted channel style pull at drawer face top, (pull as approved by Food Facility Consultant)
- 2) Stainless Steel Drawer Pans; Provide 18-8 Stainless Steel drawer pans with coved corners; Component Hardware model S81-2020, 20" x 20" x 5"H. unless Item specification differs. Component Hardware model S81-1520, 15" x 20" x 5" when specifically specified.
- 3) Drawer Slides; Component Hardware Group model S52 easily removable, heavy duty, full extension drawer slides with Stainless Steel ball bearing wheels, 14 ga. 300 S/S rails, removable positive stops, 200 lbs. rating. Installed to be self-closing.

- b. Drawers shall operate easily without binding on removable Drawer Slides. Drawer pans shall be easily removable. Install drawers to be self closing. Drawers, single under top hung and (3) tier shall be enclosed on back, both sides and bottom by 18 gauge stainless steel housing (ref. Enclosed Cabinet Base standard). Cabinet and other enclosures around drawers shall be vermin-proof.

14. Rolled Rim Sinks:

- a. Materials; All metals shall be Stainless Steel.
- b. Sink shall be 14 gauge with all bowl vertical and horizontal corners coved on 1" R. No solder or caulked fillets allowed.
 - 1). Sink bowl bottom creased/sloped to drain to provide complete drainage of sink. At drain valve location, sink bottom ferruled downward to allow installed drain valve grate to set flush to or below plane of sink bottom. 14 ga. S/S "L" bracket stud bolted to bottom of sink bowl to support drain twist action handle.
 - 2). All exposed edges shall have continuous formed 1-1/2" x height (per Item specification) semi-rolled rim, terminating at back splash and fully welded thereto (unless Item specification differs). Exposed corners of rolled rims shall be spherical.
 - 3). Provide integral splash(s) being 10" high (from top of rolled rim), turned back 2" with upward 45deg. slope and then straight down 1/2"(unless Item specification differs) with closed ends. Provide 18 ga. S/S "Z" clips, secured to walls, to engage 1/2" backsplash turn down and hold sink to wall.
 - 4). Punch back splash face and top for fittings which are specified for each Item. Faucets centered over sink compartment or centered over partitions multicompartment sink. Sound deaden bottom of sink.
- c. Construct base per Open Frame Base specification of standard.
- d. Seal splash top, back edge to wall.
- e. Construct drain boards for sinks of 14 ga. with all vertical and horizontal corners coved on 1/2" R. No solder or caulked fillets allowed. Drain boards shall be an integral part of the sink.
 - 1). Exposed edges shall have continuous formed 1 1/2" x height (per Item specification), semi-rolled rim terminating at the splash and fully welded thereto. Corners of rolled rim shall be spherical. Drain boards shall be 2" deep at end and slope 1/2" to sink
 - 2). Back splash shall be continuous / have same configuration of sink's back splash with closed ends.

15. Fittings;

- a. Supply drain and faucet fittings as specified within each individual item. One consistent faucet/pre-rinse spray/hose manufacturer shall be used throughout the kitchen.
- b. Faucet fittings shall be centered behind single sinks or centered over sink bowl partitions at multi-compartment sinks.

- c. Provide a chrome tail piece on all drain fittings.
- d. Provide 14 ga. S/S "L" bracket stud bolted to bottom of sink bowl to support drain twist action handle. Shorten twist action handles, when necessary, to be flush to front of sink bowl.
- e. Pre-rinse sprays, centered behind disposal / sink with spray head centered over sink / collector throat.

16. Removable Under Shelves

- a. Materials; Stainless Steel.
- b. Shelf shall be 16 gauge, typically at 10" AFF. Construct in section sizes to allow cleaning them in dish machine. Roll edges down 1 1/2" fitting contour of cross rails, except where adjacent to walls, or other equipment then turn edge straight up 1-1/2" on 1/4" R. Turn adjacent edges of sections straight down 1-1/2" on 90deg. angle.

17. Stationary Under Shelves:

- a. Materials;
 - 1) Shelf top; shall be Stainless Steel.
 - 2) Shelf under bracing; shall be 14 ga. Stainless Steel.
- b. Shelf shall be 16 gauge typically at 10" AFF unless Item specification differs. All edges of under shelves shall be provided with (unless Item specification differs) 1/2" die-crimped inverted "V" shape edge turned straight down 1-1/2" with 1/2" toe-in at 30deg. except where adjacent to cabinet bodies, then edge shall be turned straight up 1-1/2" on 1/4" R. Notch shelf to closely fit legs and fully weld. Under shelves longer than 36" shall be under braced with 1" x 4" x 1", 14 gauge stainless steel channel, stud-bolted to shelf. Sound deaden bottom of shelf.

18. Elevated Shelves:

- a. Materials;
 - 1) Shelf top / tubing / tubing supports; shall be Stainless Steel.
 - 2) Shelf under bracing and supports; shall be Stainless Steel.
- b. Shelf tops shall be 16 ga. Edges as specified for each specific item. Turn edges adjacent to taller items up 2" on 1/4"R. flush to surface face. Under brace elevated shelves lengthwise with 14 ga. x 1" x 4" x 1" channel or 1-1/2" x 1-1/2" angle, stud bolted to bottom when unsupported shelf length exceeds 48".
- c. Support wall mounted shelves with 14 ga. "Knife" tapered cantilever bottom support wall brackets (unless noted otherwise). Brackets have 1" x 90o return on perpendicular sides, stud bolted to shelf bottom, expansion anchored to wall.
Brackets 36" O.C. max.
- d. Support shelves mounted on tables / equipment with 1-5/8" O.D., 16GA. tubing with 14 ga. "Knife" tapered cantilever support, unless noted otherwise. Spans between shelf supports shall not exceed 5'-0" except as noted.
 - 1) On tables with backsplashes, Stainless Steel tubing shall extend through a 2"

backsplash and continuously welded to the back legs of the table at 18" AFF using S/S 14 ga. gussets.

19. Enclosure Panels and Fillers:

- a. Provide Stainless Steel enclosure panels and fillers where gaps or spaces occur at equipment tops and bodies, due to interferences or irregularities in building walls, columns, outlets, pipes, etc. and above equipment to ceiling as shown and detailed on drawings. Panels and fillers shall be attached, having all attaching devices concealed, unless food service equipment provider has received approval, in writing from Owner, for other means of attaching.

20. Plastic Laminate Panels:

a. Materials;

1) High Pressure Plastic Laminate; NEMA LD-3 and as required by AWI standards;

a) VOC Content; Free of Added Urea Formaldehyde.

b) Vertical exterior laminates shall be VGS, 0.028" nominal thickness;

c) Interior surfaces shall be Cabinet liner CLS, 0.020 inch (0.51) nominal thickness;

1. Melamine, equal to Weyerhaeuser MI-380, exceeding 360 cycles for wear resistance by NEMA Test LS3-3.01.

d) Laminate shall be used in maximum possible sizes to eliminate joints where ever possible. Joints when necessary shall be hairline. Plastic laminate, suede finish, standard color as manufactured by Formica, Wilsonart, Pionite. Plastic laminate color to be selected by the Owner.

2) Edge Banding; On all edges of panels, Provide 3MM Edge Banding on edges of laminate covered panels. Polyvinyl chloride impact/chip/mar-resistant edge, machine applied with hot melt glue. Contact cement not acceptable. Able to be radiused to 12mm; color to match laminate face.

3) Laminate substrate shall be 3/4", Particle board: ANSI A208.1; medium density industrial type as specified in AWI/AWMAC/WI Architectural Woodwork Standards, composed of wood chips bonded with interior grade adhesive under heat and pressure; sanded faces; Grade M-2, thickness as required. VOC Content; Free of Added Urea Formaldehyde. Particle board Products; (Give preference to Regional Materials);

a) Boise Cascade Corporation - Evergreen.

b) Collins Companies - FreeForm.

c) Flakeboard - Vesta.

d) Panel Source International - Purekor.

e) Potlatch Forest Products Corp - Terramica.

f) Roseburg - Skyblend..

g) SierraPine - Encore.

4) Adhesive for laminate application and particle board construction; Type as recommended by fabricator to suit application.

b. Panel Construction;

- 1) Panel construction and materials shall comply with the provisions of the Architectural Woodwork Institute (AWI) "Quality Standards", section 400, premium grade.
- 2) All exposed surfaces face surfaces shall receive high pressure plastic laminate or liner.
- 3) Exposed edges of all panels shall be Edge Banded.
- 4) Laminates shall be bonded to 49 pound density particle board using contact bond cement applied under pressure per cement manufacturers recommendations. Panels shall be continuous without seams where possible.

2.3 LIST OF EQUIPMENT

A. Following is a detailed list of all equipment in the new food service area to be a part of this contract or provided by the owner. All electrical equipment is 60 cycle. All items utilizing electrical power shall be UL or CSA listed.

B Refer to accompanying Food Service Equipment drawings for equipment quantities and utility configurations required.

C. Use of the terms "standard", "standard construction", "specification of standard" refer to construction techniques, materials, methods and configurations specified in "Specification of Standard for Custom Fabricated or Modified Equipment" within this section.

D. Reference 1.1 - SUMMARY for terminology definitions.

E. Connection hose lengths specified here-in, are approx. for the anticipated stub up, stub out or rough-in location. Trade responsible for food service equipment installation shall verify utility rough-in locations and provide hoses and equipment restraints of the required length for field conditions.

F. Equivalent manufacturers, as listed in this specification, must provide equipment of similar size, configuration, construction and capability with similar utility requirements to the specified primary manufacturer allowing its use without changes to the plan, the equipment locations or the plumbing / mechanical / electrical service designated within the contract documents. Listed equivalent manufacturers are responsible for verifying they comply with these requirements before submitting a bid.

WALK-IN FREEZERS & WALK-IN REFRIGERATORS

A. Furnish all labor, materials, and equipment for complete installation of sectional walk-in refrigerator/freezer unit as shown on drawings and specified herein. Shall include lights, thermometers, and accessories for complete first class installation. Install compressors, refrigerant piping and refrigerant as specified.

B. Specification is based on walk-in box as manufactured by Norlake*M112, N.S.F. approved. Equivalent manufacturers, if requested and approved must provide equipment of exact same dimensional size, and comparable construction with similar utility requirements to the walk-in box manufacturer on which this specification is based. Use of equivalent manufacturers equipment shall not require changes to the plan, the equipment locations or to plumbing /

electrical service designated within the contract documents. Approved Equipment Manufacturers are as follows:

- 1). Kolpak
- 2). U.S. Cooler

C. Walk-in refrigerators and freezers of less than 3,000 square feet shall comply with the Energy Independence & Security Act of 2007.

D. Design layout and overall size of walk-in units as specified. Overall nominal size shall be 18'0" wide x 9'0" D x 8'7" high from exterior top to bottom of prefab floor. Walk-in shall consist of two (2) storage compartments being separated by common insulated wall. Refrigerator nominal dimensions - 5' W X 9' D; Freezer nominal dimensions - 13' W X 9' D. Each compartment being completely free of other for use and operation. Unit shall be installed on existing interior concrete floor slab.

E. Walk-in box shall be designed, constructed / installed in accordance with strength design, load and resistance factor design, allowable stress design, and empirical design as required by codes for the installation location.

F. Provider of walk-ins are required to field measure locations of existing door openings and other building constraints and provide walk-in to fit such conditions. Report any changes / modifications from what is shown / specified in the contract documents to the Owner prior to making any change.

G. Provide walk-in with minimum R-28, 4" insulated floor with .080" aluminum textured (tread plate) wear surface, to withstand uniformly distributed loads of minimum 700 lbs per square foot. Insulated floor will set on existing interior concrete floor. Coordinate walk-in installation with Owner. This Contractor shall install door sills. At door, a tapered interior sill plate shall be provided to reduce the tripping hazard caused by the NSF coved floor. Provide floor panels in maximum lengths and widths to minimize joints and avoid mid floor panel corners.

1. Provide floor with 3/4" marine plywood subfloor below the metal wear surface. Plywood shall be foamed in place as an integral part of the floor panel during its manufacture.
2. Provide interior ramps same width as exterior door x 20"D. Reinforce ramp to withstand heavy usage. Ramp with textured (tread plate) wear surface, 3/4" marine plywood subfloor and heated threshold.
3. Floor panels shall be anchored to the concrete floor with 1/4" x 4" Tapcons (or other method), as recommended by the box manufacturer.

H. All interior wall and ceiling panel surfaces shall be .040 embossed aluminum. Insulate walk in throughout, with 4" foamed in place, rigid U.L. fire rated, 100% foamed in place polyurethane insulation 4" thick, UL Class 1, bonded by an adhesive to the interior and the exterior metal pan skins and heat cured. Cam lock type fasteners are used as joining devices: each skin formed using 90 deg bend on each edge; All panels are U.L. label. Panels joints are interlocking male and female tongue and groove shapes; panel edge shall have a gasket which provides a positive seal that meets NSF standards; flame spread rating according to ASTM E84/UL 723 shall be less than 25. Minimum "R" factor of 32. Food service contractor shall provide penetrations thru insulated cabinet exterior & is responsible for sealing them.

1. Provide verification, as required by the code authority, that the box complies with the code requirements for use of foam plastic insulation in buildings and structures. Cost of the verification to be borne by the provider of the walk-in box.
 2. Sections are fitted together with mating tongue and groove panel perimeters having thermoplastic hooded gaskets at interior and exterior edges. Provide non-conductive strip-in all exterior sections, at joints where partitions butt. Sections fasten together with quick acting cam, "Posi-Loks". Access ports to cam-locks shall be on interior. Spacing between fasteners at vertical to horizontal joints and horizontal joints shall not exceed 23"O.C. Cover all cam fasteners wrench holes, with thermoplastic press-fit caps.
 - a. Spacing between fasteners on vertical joint shall not exceed 23"O.C.
 - b. Panels shall be assembled with racking clips at cam-lock locations (or other method), as recommended by the box manufacturer, to meet wind restraint requirements.
- I. Provide heated pressure relief port in freezer door section. Factory wire relief port to J-box at door section.
- J. Door shall be in-fitting, flush design, 78"H. Field verify door opening locations and sizes to work with existing wall openings. Refrigerator door approx. 30"W.; freezer door 36"W.; door swings as indicated by Owner. Door section shall provide a full 4 inches of polyurethane, HFC134a insulation construction and finish shall be same as the adjoining wall panels. Bottom of door shall seal with an adjustable double sweep gasket, to provide complete seal between door threshold and door jamb. Door jamb shall be a fully coved, extruded welded, structural anodized aluminum. Threshold plate shall be constructed of extruded aluminum for bearing weight. Doors on both refrigerator & freezer shall have an anti-sweat heater wire around entire perimeter of door opening and under threshold; door swing as indicated on drawings.
- 1). Provide with spring loaded hinges.
 - 2). Provide door(s) with automatic door closers that firmly close door when shut to within 1 inch of full closure. Door shall self close.
 - 3). Door handles shall be Kason Industries 0027C Deadbolt Handle Latch. Diecast Zamak latch handle housing, tongue and strike with brushed chrome finish; Die-cast Zamak strike housing with brass rod and black polycarbonate turn-knob in brushed chrome finish. Finger slide deadbolt; unlocked door easily pulls or pushes open; deadbolt is secured using cylinder lock or padlock, or both; easy-grip, twist-off inside release handle prevents lock-ins; surface-mounted; Locking mechanism located entirely on outside of panel resists freeze-up, even on super low-temp walk-ins.
 - 4). Provide anti-sweat heater wires around perimeter of door opening and door Factory-wire heater wires to j-box at door section.
 - 5). Provide 14 gauge stainless sill plate with non-skid stripping, extend onto kitchen floor and into box as detailed.
 - 6). On the exterior of the door section, adjacent to the door latch side, provide a box for the walk-in alarm & light management system. Control is pre-wired to a junction box & wall light fixture at the interior latch side upper corner of the door opening; wiring in conduit concealed within the insulated panel.
 - 7). Provide each compartment with Walk-in alarm & light management system. Touch pad control with LED temperature display; high / low temperature alarms with delays. (Optional battery back-up). Features; Keypad set high and low alarm points with adjustable 0 to 255 minute delays; alarm re-sets when temp. returns

to normal; Visual "HA" or "LA" will flash on the display along with the actual temperature; 8A "dry contacts" terminal can be used to trigger remote alarm devices; door Open alarm with adjustable delay from 0 to 255 minutes; visual and audible door open alarm; Light(s) controlled from the key pad; light timer can turn off lights automatically in one to 255 minutes (adjustable); light(s) can be returned on by opening door; able to control up to 2000 watts of lighting; bright red LED temp. readout from -40 to 23degF; adjustable display update time from one second to 4 1/2 minutes.

- 8). Provide doors with Cool Curtain Industries model Clear Vu Swinging Doors. Two .125 PVC non-stick panels on 10 year rust proof warrantied stainless steel constructed self closing gravity hinges; doors sized for designated door opening size. Door opening / frame reinforced, as necessary to support the doors, per the door manufacturers recommendations.
- 9). On exposed-to-view exterior and interior of walk-in doors, provide 36"H. wainscots constructed of .100 - 6061-T6 mill finish aluminum tread plate. Mechanically secure tread plate to door and seal thereto. Provide door with 3rd hinge.
- 10). Provide a window in each door. Minimum 14" x 14" window. Freezer door(s) window shall be of triple pane glass with either heat-reflective treated glass or gas fill with heated frame. Refrigerator door(s) window shall be double or triple pane glass with heat-reflective treated glass or gas fill. Window shall be field replaceable. Window centered at 60" off.
- 11). Provide 3" X 3" X .040" embossed aluminum trim strips from walk-in panel face onto opening jambs and head at perimeter of door thru-wall penetrations, as detailed. Crimp all trim strip edges down slightly, to hug adjacent surfaces. Attach trim strips with 1/8" aluminum pop rivets, at 16" O.C., to give neat appearance. Edges of trim sealed.

K. Interior lighting;

- 1). At junction box / light fixtures on the interior latch side upper corner of the door opening, provide a Kason 1806 LED fixture with lamp and Optic Globe. 980 Lumens; 5000K color temperature; 50,000 hr. rated life; -40 to 70deg. F. operating range; 11.5W at 120V.; Lexan globe with light intensifying focused optics; aluminum housing; 5 year limited fixture warranty; 3 year limited lamp warranty; NSF listed, cULus listed.
- 2). Supply for installation Three (3) Kason Industries model 1810 LED light fixtures; overall 49-7/8"L. X 6-7/32"W. X 4-7/32"H. Lumaire rating IP-65 for wet and cold environments; constructed of heavy gauge injection molded polycarbonate with integrated gasket; clear molded shatterproof high impact polycarbonate diffuser with (8) stainless steel latches; , 8 supplied per fixture; two E-Z mount brackets; 2-Lamp x 18w at 1200 lumens each; 67 lumens/watt - exceeds Federal Energy Act requirement; bright 5000K color temperature; 50,000 hr life; 5-year limited warranty on fixture; 3-year limited warranty on lamps; listed cULus & NSF; NEC & RoHS compliant; specifically designed for wet and low temperature environments; 36 Watts, 0.3 AMPS, 120V; Ideal operating temperature range from -40F to 70F (-40C to 21C)

L. Structurally design ceiling sections to span area shown, without dip or bulge, in horizontal planes and provide exterior ceiling suspension beams where required.

M. Provide vertical exterior trim; angle/flat strips and closures of same material and gauge as walk-in exterior wall surface(s), where walk-in is adjacent to exterior walls. Crimp all angle trim strip edges down slightly, to hug adjacent surfaces. Attach trim strips with 1/8" aluminum pop rivets, using only minimum required number to give neat installation.

- N. Provide a moisture tight minimum 1/8" per foot sloped membrane roof cap fabricated from a polyester fabric coated with a thermoplastic alloy. Mechanically fastened with concealed stress plates and fasteners. Perimeter trim provided for a uniform termination of the roof cap at the ceiling elevation. Membrane flashed to building as shown. Roof cap, its installation and flashing covered by a 10-year limited warranty. Coordinate installation with other roofing components provided by the roofing contractor. Provide flashing / membrane to the adjacent building as recommended by manufacturer.
- O. Provide Slab Trim, as detailed, at the perimeter of the box, to the slab below. Trim of same material and gauge as walk-in exterior wall surface. Top trim edge mitered inward at 45deg to hug the box, bottom edge mitered outward 45deg to shed water. Set trim in sealant at installation and attach trim to box strips with 1/8" aluminum pop rivets at 16"O.C., to give a uniform installation appearance.
- P. It is the intention of this specification for a complete refrigeration system, including all refrigeration specialties and all other parts, devices and accessories required for a complete and properly functioning system, furnished and installed whether or not each item is specifically mentioned in the specifications.

WALK-IN FREEZER COMPRESSOR

- A. Furnish all labor, materials, and equipment for complete installation of walk-in freezer refrigeration system. Shall include time clock, expansion valve, solenoid valve, temperature control, sight glass, drier, head pressure control, crankcase heater, anti-sweat heater, cables, pilot lights, evaporator, outside condensing unit, accessories and all other required parts and refrigeration specialties for complete first class installation. Refrigerants shall be R-404A. Install compressor, refrigerant piping and refrigerant as specified, hereinafter. See Refrigeration Requirements paragraph of these specifications. Equivalent manufacturers must provide equipment of similar dimensional size, and comparable construction and same or higher BTU refrigeration capacities with similar utility requirements to the refrigeration system on which this specification is based. Use of equivalent manufacturers equipment shall not require major changes to the plan, the equipment locations or to electrical service designated within the coordinate with other trades and all costs associated with changes shall be covered by the provider. Listed Equivalent manufacturers are responsible for verifying they comply with these requirements before submitting a bid.
 - 1). Provide pre-fitted remote refrigeration system for remote installation and as located by Owner, including all standard parts, refrigeration specialties, factory sized refrigeration lines, electric defrost freezer, air cooled condensing unit, with weather-proof cover and low ambient kit/winter controls using head pressure control valves and other items necessary for a complete and properly operating system. Hang evaporators with double nutted nylon bolts. Units on racks at least 4" above roof / slab. Provide (5) year compressor warranty.
 - 2) . Freezer basis of design is Norlake model LASJ75RL4-#BYH, pre-fitted remote scroll refrigeration system with condensing unit and matched evaporator coil with electric defrost for freezer to operate at -10 degreeF.

- 3). Approved Equipment Manufacturers are as follows:
 - 1). Kolpak
 - 2). U.S. Cooler
- 4). Walk-in freezers of less than 3,000 square feet shall comply with the Energy Independence & Security Act of 2007.
 - a. Evaporator fan motors of under 1 horsepower and using less than 460 volts shall have electronically commutated motors (brushless direct current motors); or 3-phase motors.
 - b. Condenser fan motors of under 1 horsepower shall use electronically commutated motors, permanent split capacitor-type motors or 3-phase motors.
- B. Condensing unit shall be mounted on building roof per box manufacturers recommendations. Condenser / compressor shall not create undue vibration. Refrigerant lines shall enter the box thru the rear walls and not thru the ceiling panels. Refrigerant lines shall be concealed in an aluminum shroud from where they exit the box to the condensing unit to prohibit vandalism.
- C. Extend condensate drain line down the interior of the walk-in box and turn out / thru the walk-in box panel just above the floor. Condensate line, wrapped with electric heater wires and insulation to prevent freezing of condensate. Provide heat tape with integral 30mA nominal ground fault equipment protection circuit interrupter. Heat tape and insulation by Food Service Contractor. Connect heater wires to power supply at evaporator.
- D. It is the intention of this specification for a complete refrigeration system, including all refrigeration specialties and all other parts, devices and accessories required for a complete and properly functioning system, furnished and installed whether or not each item is specifically mentioned in the specifications.

WALK-IN REFRIGERATOR COMPRESSOR

- A. Furnish all labor, materials, and equipment for complete installation of walk-in refrigerator refrigeration system. Shall include expansion valves, solenoid valves, temperature control, sight glass, drier, head pressure control, crankcase heater, anti-sweat heater, cables, pilot lights, evaporators, outside condensing units, accessories and all other required parts and refrigeration specialties for complete first class installation. Install compressors, refrigerant piping and refrigerant as specified, hereinafter. See refrigeration requirements paragraph of these specifications. Equivalent manufacturers must provide equipment of similar dimensional size, and comparable construction and same or higher BTU refrigeration capacities with similar utility requirements to the refrigeration system on which this specification is based. Use of equivalent manufacturers equipment shall not require major changes to the plan, the equipment locations or to electrical service designated within the contract documents. Any minor changes required are the responsibility of the provider to coordinate with other trades and all costs associated with changes shall be covered by the provider. Listed Equivalent manufacturers are responsible for verifying they comply with these requirements before submitting a bid.
 - 1). Provide refrigeration system for installation as located by Owner, including all standard parts, refrigeration specialties, factory sized refrigeration lines, air

cooled condensing unit, with weather-proof cover and low ambient kit/winter controls using head pressure control valves and other items necessary for a complete and properly operating system. Hang evaporators with double nutted nylon bolts. Provide (5) year compressor warranty.

- 2). Cooler basis of design is Norlake Model NAW50RL0-#BYH, prefitted remote hermetic refrigeration system with condensing unit and matched evaporator coil for refrigerator to operate at 35 degrees F.
 - 3). Approved Equipment Manufacturers are as follows:
 - 1). Kolpak
 - 2). U.S. Cooler
 - 4). Walk-in freezers of less than 3,000 square feet shall comply with the Energy Independence & Security Act of 2007.
- B. Condensing unit shall be mounted on building roof per the box manufacturers recommendations. Condensor / compressor shall not cause undo vibration. Refrigerant lines shall enter the box thru the rear walls and not thru the ceiling panels. Refrigerant lines shall be concealed in an aluminum shroud from where they exit the box to the condensing unit to prohibit vandalism.
- C. Extend condensate drain line down the interior of the walk-in box and turn out / thru the walk-in box panel just above the floor.
- D. It is the intention of this specification for a complete refrigeration system, including all refrigeration specialties and all other parts, devices and accessories required for a complete and properly functioning system, furnished and installed whether or not each item is specifically mentioned in the specifications.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Examine roughed-in mechanical and electrical services, and installation of floors, walls, columns, and ceilings, and other conditions under which food service work is to be installed; verify dimensions of services and substrates before fabricating work. Notify coordinating trade of unsatisfactory locations and dimensions of other work and of unsatisfactory conditions for proper installation of food service equipment. Do not proceed with fabrication and installation until unsatisfactory dimensions and conditions have been corrected in manner satisfactory to installer.
- B. Set each item of non-movable, non-mobile and non-portable equipment securely in place, leveled and adjusted to correct height. Adjust counter tops and other work surfaces to a level tolerance of 1/16" maximum offset, and maximum variation from level or indicated slope of 1/16" per foot. Dish tables shall slope to the dish machine or collector for positive drainage.
- C. Set equipment with access and maintenance clearances that comply with manufacturer's written installation instructions and requirements of authorities having jurisdiction.

D. Install closure-trim strips and similar items requiring fasteners in a bed of sealant.

E. Install joint sealant in joints between equipment and abutting surfaces with continuous joint backing, unless otherwise indicated. Produce airtight, watertight, vermin-proof, sanitary joints.

F. Punch List Inspection Requirements; Food Service Equipment is not ready for punch list inspection until the following have been completed for ALL EQUIPMENT;

- 1). All set in place per plan (mobile & stationary).
- 2). All equipment unpacked & assembled with all protective packaging, papers and films removed.
- 3). All sealants & sound deadening applied.
- 4). All plumbing, mechanical & electrical connections completed.
- 5). All operational equipment has been turned on and tested for operation.
- 6). All cleaned of dirt/dust/debris and fabrication markings.
- 7). All packing / packaging and installation fittings removed from the food service areas.
- 8). All equipment completed per these specifications and food service drawings.
- 9). Requests for a punch list inspection prior to completion of these requirements will not be honored. Punch list inspections made by the Owner based on false representation of completion by the provider of food service equipment or coordinating trade will be billed to the food service equipment provider for time, travel, meals and related visit expenses.

3.2 CLEANING AND PROTECTING

- A. Remove all debris from equipment and site, accumulated by delivery and installation of all equipment in this Contract.
- B. Restoration: After completion of installation, and completion of other major work in food service areas, remove protective coverings, if any, and clean food service equipment, internally and externally. Restore exposed and semi-exposed finishes to remove abrasions and other damages; polish exposed metal surfaces and touch-up painted surfaces. Replace work which cannot be successfully restored.
- C. Final Cleaning: Clean and sanitize food service equipment and leave in condition ready for use in food service. Cover food service equipment with 4-mil polyethylene film as protective cover.

3.3 DEMONSTRATION

- A. Testing: Delay start-up of food service equipment until utilities services have been tested, balanced, and adjusted for pressure, voltage, and similar considerations; and until water and steam lines have been cleaned and treated for sanitation. Before testing, lubricate each equipment item in accordance with manufacturer's recommendations. The food service equipment provider, with his own personnel or those of a service agency, shall turn on and test all functions of each item of operational equipment, **PRIOR TO THE SUBSTANTIAL COMPLETION PUNCH LIST AND OWNER**

Prairie View Elementary School – Walk-In Cooler and Freezer

DEMONSTRATION, to assure that it is operating properly, and that controls and safety devices are functioning. Repair or replace equipment PRIOR TO THE SUBSTANTIAL COMPLETION PUNCH LIST AND OWNER DEMONSTRATION, which is found to be defective in its operation, including units which are below capacity or operating with excessive noise or vibration.

- B. Instruct Owner's operating personnel in proper operation and maintenance procedures for each new item of operational food service equipment. PRIOR TO THE SUBSTANTIAL COMPLETION PUNCH LIST AND OWNER DEMONSTRATION, operate walk in freezer and walk in cooler and bring down to desire temperatures. Food service equipment provider shall demonstrate full operation of the walk in freezer system and walk in cooler system.

END SECTION 114000 - FOOD SERVICE EQUIPMENT