Part 1 General

1.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

2. The General Contractor shall be responsible for coordinating all work contained in this section of the specification including the work provided by the:

    1. Foodservice Division 11 40 00;
    2. Electrical Division 26 00 00;
    3. Plumbing Division 22 00 00;
    4. Mechanical Division 23 00 00;
    5. Structural Division 30 00 00, 40 00 00 and 50 00 00;
    6. Architectural Millwork Division 62 00 00 ; and
    7. Other trades subcontractors.

3. ABBREVIATIONS

S.S.	-	Stainless Steel
C/W	-	Complete With
A.F.F.	-	Above Finished Floor
A	-	Amperes
V	-	Volts
CY	-	Cycle
P	-	Phase
Pl. lam.	-	Plastic Laminate
Kw	-	Kilowatt
kPa	-	Kilopascals
J.B.	-	Junction Box
CFM	-	Cubic Feet per Minute
L.E.D	-	Light Emitting Diode
in	-	Inches
ft		feet
F	-	Fahrenheit
C.P.	-	Chrome Plated
I.P.S.	-	Inside Pipe Size
N.I.C.	-	Not in Contract (for Section 114000)
L.C.	-	Load Center
CBP	-	Circuit Breaker Panel
KEC	-	Kitchen Equipment Contractor

4. Delivery and installation, removal, storage and relocation of all food service equipment, included in this specification to be as per the schedule set out by the General Contractor or other designated party.

1.2 RELATED TYPICAL WORK BY OTHER TRADES

1. WORK PROVIDED BY ELECTRICAL DIVISION 26 00 00

    1. Supply, rough-in, installation and connection of all necessary electrical wiring in liquid tight flexible conduit (AC-90) required for the operation of, but not limited to the foodservice equipment, prefabricated insulated walk-in refrigerated and frozen room assemblies, mechanical refrigeration

systems, foodservice conveyors and ware washing/waste management systems unless otherwise stated in Part 1.3 of this Section of the Specification.

2. Supply and installation of electrical wiring from the building source or distribution point of power, through disconnect switches to the terminals, connection box, circuit- breaker panel or plug receptacles located on the equipment. Equipment manufacturer's control panels and switches are not considered to be disconnect switches unless specifically permitted by applicable codes.

3. Supply, installation and co-ordination of all required disconnect switches, except those provided by the KEC for evaporator coils inside walk-in refrigerators and freezers, and power distribution panels.

4. Supply and installation of receptacles in all food service areas. All receptacles in wet areas such as the dish-room and pot wash areas must be waterproof and must have ground fault interrupters.

5. Supply and installation of all electrical wiring from power source through disconnect switches and ground fault interrupters to the various components of the ware washing and waste management system including but not limited to the control panel on the scrapping table, the dish washing machines, the waste collector and the waste collector control panel.

6. Supply and installation of water-proof emergency stop push button(s) for all ware washing equipment, location to be determined on site.

7. Supply and installation of electrical wiring from power source through disconnect switches to the control panel(s) for exhaust ventilator(s) and hood(s).

8. Supply and installation of electrical inter-wiring of control panel(s) for all exhaust ventilator(s) and hood(s) from the control panel to the exhaust ventilator(s) and hood(s) and from the control panel to the magnetic contactor on the exhaust and make up air fan(s).

9. Supply and installation of all inter-wiring required for the kitchen ventilation and fire suppression system components including but not limited to the following: exhaust ventilator(s) hood(s), control panel(s), pull stations, surface fire suppression detector(s) in each exhaust ventilator and hood, fire suppression building alarm fire and trouble interlocks as required, exhaust fans, makeup air units, cooking equipment shut down devices, and interlocks to Building Management Control Systems.

10. Supply and installation of electrical wiring from power source to components of the fire control system as required.

11. Supply and installation of wall switches for exhaust ventilator(s) and hood(s) lights and the supply and installation of inter-wiring between the wall switch and junction boxes on each ventilator or hood section.

12. Supply and installation of all inter-wiring for exhaust and make-up air fans, exhaust ventilator control panel(s), magnetic contactors and shunt trips etc. so as to shut down power to electric cooking equipment in the event of a fire condition in conjunction with the fire suppression system.

13. Supply and installation of electrical wiring from power source through disconnect switches or MCC to the exhaust and make-up air fans.

14. Supply and install the reset relay or shunt trip to shut down electricity to the cooking equipment in the event of activation of the surface fire suppression system.

15. Supply and installation of all electrical wiring from power source through disconnect switches to the various components of the mechanical refrigeration system for the walk in refrigerators and freezers, including but not limited to compressors, refrigeration rack, air cooled condensers, compressor room gas detection system and any other devices or equipment items required to form a complete and operating system as specified in Part 2 of this specification.

16. Supply and installation of electrical wiring from power source to a junction box(es) on top of the prefabricated walk-in refrigerator and freezer for power supply to each interior light fixture. Division 260000 to supply and install all interconnections between individual light fixtures and junction box for the light switch located on top of the prefabricated walk-in refrigerated and freezer rooms. Division 114000 to physically mount all interior light fixtures and run electrical wiring within conduit from each interior light fixture to a junction box located on top of the prefabricated walk-in refrigerated and frozen room assembly.

17. Supply and installation of electrical wiring from power to a junction box(es) on top of each prefabricated walk-in refrigerator and freezer for power supply to door heaters. Division 114000 to factory pre-wire door heaters within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly.

18. Supply and installation of electrical wiring from power source to a junction box(es) on top of each prefabricated walk-in refrigerator and freezer for power supply to temperature alarms. Division 114000 to factory pre-wire all temperature alarms within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly. Division 26 to supply and install all necessary wiring interconnections within conduit between temperature alarms and building annunciation system and/or building control management system.

19. Supply and installation of electrical wiring from power source to a junction box(es) on top of each prefabricated walk-in refrigerator and freezer for power supply to interior electrical receptacles. Division 114000 to supply and install all electrical receptacles within the walk-in room assemblies. Division 114000 to factory pre-wire electrical receptacles within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly.

20. Supply and installation of all electrical wiring from power source to a junction box on top of each prefabricated walk-in freezer for power supply to drain line heaters. Division 114000 to provide receptacle recessed in pre-fabricated insulated panel for drain line heater. Division 114000 to run wiring from receptacle to a junction box on top of room ready for final connection by Division 260000.

21. Supply, rough-in and installation of all electrical wiring required for "Owners Supplied", "Existing", “Relocated” or "NIC" designated equipment, as well as final hook-up and connections.

22. Supply, rough-in and capping off of electrical wiring required for any equipment designated as "Future".

23. Supply and installation of all electrical receptacles located in floors, ceilings or walls.

24. Supply and installation of all ceiling hung twist lock type receptacles as required.

25. Supply and installation of emergency stop button mounted on wall capable of interrupting power supply to dishwasher, waste reduction system, waste disposer, waste disposer control panel and scrapping table. Number and location of emergency stop buttons to be confirmed with owner on-site.

2. WORK PROVIDED BY PLUMBING - DIVISION 22 00 00

1. Supply, installation, rough-in and connection of all domestic hot and cold water, drains, vents, gas supply lines, steam supply and condensate return lines as per code from building supply to the point of connection required for the complete operation of, but not limited to, the foodservice equipment, mechanical refrigeration systems, the pre-fabricated, insulated walk-in refrigerated and frozen room assemblies, foodservice conveyors and the ware washing/waste management systems.

2. Supply and installation of domestic hot and cold water lines complete with shut off valves, back flow preventers, line strainers, shock absorbers, pressure, temperature and pressure gauges and control valves or devices (unless otherwise stated and/or supplied with the equipment of this section). This project will be constructed, using components (valving and piping) which satisfies the requirements for a “Lead Free” domestic water supply system as defined by the governing province, territory or state. All valves, piping, and fittings 2” and smaller, used in domestic water piping serving faucets or plumbing fixtures used to dispense water for drinking or food preparation shall conform to the governing province, territory or state requirements.

3. Supply, installation, rough-in and connection of all domestic hot and cold water and drains as per code from building supply to the point of connection required for the complete operation of hand sinks and work tables with sinks within the pre-fabricated insulated walk-in refrigerated and frozen room assemblies. Division 230000 shall identify all penetrations/holes required in the pre-fabricated wall and/or ceiling panels to accommodate any plumbing or drain lines and request Division 114000 to cut penetrations/holes as required. Division 23000 shall also inform Division 114000 after the plumbing and drainage is complete in order that Division 114000 can seal all penetrations/holes appropriately.

4. Supply and installation of drain lines complete with traps, vent piping and clean outs.

5. Supply and installation of drain lines, traps, vent piping, clean outs and grease traps, drains for floor pans, connected drains for equipment, floor drains with funnels for open drains on equipment and exhaust ventilators.

6. Supply and installation of combination funnel floor drains required for the condensate drain lines from each evaporator coil inside prefabricated, insulated walk-in refrigerated and frozen room assemblies.

7. Supply and installation of all indirect drain lines including, but not limited to those required for foodservice equipment, mechanical refrigeration systems, conveyors, ware washing and waste management systems and any other open or indirect type connections from custom fabricated stainless steel equipment to a hub, funnel or combination drain at a rate of not less than 1” in 24”.

8. Extend all open or connected drains on foodservice equipment, mechanical refrigeration systems, conveyors and ware washing/waste management systems to above funnel floor drains using chrome plated piping.

9. Supply and installation of all floor drains for general drainage purpose, maintenance and cleaning. Finished floor to slope to all floor drains to ensure proper drainage and prevent pooling.

10. Supply and installation of water softener and condensate return pump for dishwashing equipment.

11. Interconnection between refrigerant leak detector system (supplied by Division 114000) and ventilation system for mechanical room and B.A.S. system.

12. Supply and installation of all hand sinks, slop sinks, janitorial sinks, drinking fountains, grease traps and general sanitizing stations as noted in the drawings.

13. Supply and installation of gas lines with manifolds to each piece of gas fired foodservice equipment complete with shut off valves. Installation of mechanical gas valve(s) as specified under the Foodservice Section of Division 114000, in conjunction with the fire suppression system. Install pressure regulating valves as specified under the Foodservice section of Division 114000.

14. Supply and installation of grease traps.

15. Supply and installation of sediment interceptors before grease traps.

16. Installation of water filters provided by Division 114000 for coffee machines, hot water machines, combi ovens, soda machines and ice/water dispensers.

17. Supply and inter-connection of water lines between hose reel control panels and hose reels.

18. Connection of all equipment designated as "Owner Supplied".

19. Disconnection and later reconnection of any equipment designated as “Existing Equipment to Be Relocated or Reused”.

20. Capping off of all mechanical services for all equipment designated to be removed.

21. Roughing-in and capping off of mechanical services required for any equipment designated as "Future".

22. Use chrome plated piping wherever exposed.

3. WORK PROVIDED BY THE MECHANICAL HVAC - DIVISION 23 00 00 FOR KITCHEN EXHAUST SYSTEMS

    1. Supply, installation and connection of all exhaust ductwork from, but not limited to foodservice equipment, exhaust ventilator(s) hood(s) or dishwashing and cart washing equipment per the current edition of the NFPA-96 as recognized by local building codes.

    2. Supply and installation of all exhaust fan motor starters and overloads for exhaust ventilator(s) hood(s) with the 120V magnetic coils interlocked to the control panel(s).

    3. Supply and installation of all exhaust s.s. duct work leading to exhaust ventilator(s) or hood(s) take-off collars and connect to collars. Use watertight ductwork and weld all joints as per NFPA Code - 96.

    4. Supply and installation of make-up air system including fan, s.s. duct work and distribution grills.

    5. Supply and installation of exhaust fan delay timer including all interconnections between dishwashers and exhaust fan.

4. WORK PROVIDED BY MECHANICAL CONTROL AND INTEGRATED AUTOMATION - DIVISIONS 23 00 00 and 25 00 00

1. Supply and installation of electrical inter-wiring between the components of the gas detection system in the mechanical room housing the refrigeration system compressors and parallel packs. Division 114000 to supply and mount the components of the system.

2. Installation of any component of the temperature and maintenance monitoring system for the mechanical refrigeration system, walk in refrigerators and freezers.

3. Supply and installation of all electrical inter-wiring between each of the controllers on the refrigeration system and the building control management system.

5. WORK PROVIDED BY OTHER TRADES

1. Construction of all walls, partitions or ceilings, openings therein and finishes thereon.

2. Demolition and make good of any existing wall, partitions or ceilings, openings there in and finishes there on required to accommodate the revised plan/layout.

3. Supply and installation of floors, floor levelling materials and floor finishes throughout the foodservice areas as well as those required for, but not limited to, prefabricated insulated walk-in type refrigerated and frozen room assemblies.
4. Finished floors to slope to all floor drains to ensure proper drainage and prevent pooling.

5. Provision of all floor depressions required for foodservice equipment, prefabricated walk in-type refrigerated or frozen room assemblies, trench drains etc. as required or indicated on drawings.

6. Provision of concrete curbs and bases under foodservice equipment, and mechanical refrigeration systems.

7. Provision of concrete bases or pads with vibration isolation for outdoor condenser, if required.

8. Provision of all building floor levelling, grouting, finishing, cutting and patching required to accommodate installation of prefabricated insulated walk-in refrigerated and frozen room assemblies.

9. Provision of all building floor slab toppings for prefabricated, insulated walk-in refrigerated or frozen room assemblies where specified.

10. Supply and installation of in-fill concrete topping inside prefabricated, insulated walk-in refrigerated and frozen room assemblies which have depressed prefabricated insulated floor panels so as to make floor level with outside floors (allowing for floor finish thickness).

11. Supply and installation of all floor tile or other specified flooring finishes inside prefabricated, insulated walk in type refrigerated and frozen room assemblies including coving up inside and outside of prefab walls.

12. Provision of all core hole drilling through building structural slab, walls or roof to accommodate refrigeration lines, electrical conduit, plumbing lines, steam supply and condensate return lines, gas lines, detergent lines and exhaust/make-up air ducting etc.

13. Supply and installation of grout under and around floor sump pans and depressions.

14. Supply and setting of sleeves in floors, walls and ceiling (as well as any related core drilling) for electrical, mechanical refrigeration, plumbing, gas and beverage lines etc.

1.3 WORK INCLUDED BY FOODSERVICE DIVISION 114000 CONTRACTOR

1. GENERAL

    1. The work listed here includes, but is not limited to, the provision of all equipment indicated on the drawings and listed in the specifications together with labour, material, tools, plant, delivery, un-crating, setting-in-place of equipment, erecting of prefabricated insulated walk-in type refrigerated and frozen room assemblies, leveling, final assembly of equipment items shipped knocked down or in sections and cleaning herein ready for final connection of services by mechanical and electrical trades.

    2. The work listed here includes coordination of the schedule for the manufacture, delivery and setting into place of the food service equipment in conjunction with the overall construction schedule being maintained by the General Contractor. This also includes the delivery and set-into-place of all large foodservice equipment that may not fit through normal building doorways such as but not limited to mechanical refrigeration system components, dishwashing and waste management system components or exhaust ventilators. Ensure that there is sufficient access into the building for the delivery and set into place of all foodservice equipment, mechanical refrigeration system components, prefabricated insulated panels for walk-in refrigerated and frozen rooms, conveyors or ware washing equipment etc.

    3. Attend project site meetings when requested by the General Contractor, food service consultant, owner and/or architect and provide coordination with the other construction team members as required.

    4. Oversee the scheduling, performance and delivery of all work and products being supplied by sub-contractors hired by the KEC.

    5. Provide all required drawings including by not limited to: plans, elevations, construction and fabrication details, refrigeration shop drawings, mechanical and electrical rough in and connection drawings in conjunction with the project schedule as maintained by the General Contractor. Note the KEC is to show services for owner supplied owner installed equipment on their shop drawings.

2. ELECTRICAL

    1. All work shall comply with the standards for material and workmanship specified under Division 26 00 00.

    2. Supply and installation of low water cut-off devices for any equipment in which immersion type electric heating elements are utilized.

    3. Supply and installation of all motors integral with equipment complete with starters, motor control centers and internal thermal overload protection.

    4. Supply and installation of all internal wiring on custom fabricated items in a concealed and well supported manner and terminated inside circuit breaker panels or junction boxes ready for final connection by the electrical trades. All equipment shall be inspected by the local hydro authority and carry LOCAL and UL approval.

    5. Supply and installation of all necessary junction boxes and circuit breaker panels (electrical load centers) required to terminate internal wiring within custom fabricated equipment, refrigeration system, exhaust ventilator(s) exhaust hood(s) and conveyors etc.

6. Tag each multiple electrical wire or cable used in any custom fabricated piece of equipment to indicate the item serviced. When circuit breaker panels are used, identify each circuit.

7. Supply and installation of waterproof wiring, outlets, panels and controls in all wet areas.

8. Supply and installation of cords and plugs on equipment as required and match the plug with the respective receptacle.

9. Supply and installation of waterproof electrical outlets on all custom fabricated equipment, prefabricated insulated walk-in type refrigerated and frozen room assemblies, conveyors and ware washing/waste management equipment. Mount electrical plug receptacles with stainless steel cover plates and casings. Furnish and install waterproof wiring. On open tables, recess outlets in stainless steel housing under table top. On enclosed tables and counters, recess outlets in stainless steel insert pans in counter front.

10. Supply and installation of switches for all lights in custom fabricated items.

11. Supply and installation of all necessary cords and plugs to match designated receptacles.

12. Supply and mount interior Low Temperature LED lights with quick starter ballasts within prefabricated walk-in refrigerator and frozen room assemblies. Physically mount all interior lights and run electrical wiring within conduit from each interior light to a junction box located on top of the prefabricated walk-in refrigerated and frozen room assembly. Supply and install junction box, ready for final connection by Division 260000.

13. Supply and installation of interior light switches within pre-fabricated insulated walk-in refrigerated and frozen room assemblies. Factory pre-wire light switches within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly.

14. Factory pre-wire door heaters within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly.

15. Supply and installation of temperature alarms. Factory pre-wire all temperature alarms within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly. Section 114000 to supply and install all necessary control wiring interconnections within conduit between temperature alarms and refrigeration system.

16. Supply and installation of electrical waterproof receptacles within pre-fabricated insulated walk-in refrigerated and frozen room assemblies. Supply and install all electrical receptacles within the walk-in room assemblies. Factory pre-wire electrical receptacles within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly.

17. Supply and installation of electrical waterproof receptacles within pre-fabricated insulated walk-in refrigerated and frozen room assemblies for connection of drain line heaters. Factory pre-wire electrical receptacles within pre-fabricated insulated wall panels and run wiring to a junction box located on top of the walk-in room assembly.

18. Supply and installation of all drain line heater cables and insulation required for the walk-in refrigerated and/or frozen room assemblies.

19. Supply and installation of electrical wiring from contacts on evaporator coils through disconnect switches (supplied and installed by KEC) to a junction box located on top of the walk-in refrigerator and freezer assembly ready for final electrical connection from refrigeration rack by KEC.

20. Supply and installation of all electrical control wiring required for the mechanical refrigeration systems including but not limited to inter-connections from remote compressor(s), compressor(s), parallel pack(s), evaporative condensor(s), evaporator coils and temperature alarms.

21. Supply and installation of control wiring required for the refrigeration system or for any other device or equipment item included as part of the mechanical refrigeration system such as, but not limited to pumps, receivers, suction accumulator and liquid refrigerant sub-coolers etc.

3. MECHANICAL

1. All work shall comply with the standards for material and workmanship specified under Division 22 00 00 and 23 00 00.

2. This project will be constructed, using components (valving and piping) which satisfies the requirements for a “Lead Free” domestic water supply system as defined by the governing province, territory or state. All valves, piping, and fittings 2” and smaller, used in domestic water piping serving faucets or plumbing fixtures used to dispense water for drinking or food preparation shall conform.

3. Supply and installation of hard drawn copper condensate drain lines from each evaporator coil inside prefabricated, insulated walk-in refrigerated and frozen room assemblies complete with traps to building funnel floor drains. Wrap freezer evaporator coil drain lines with drain line heaters from coil to exterior of walk-in freezer. Evaporator fan coil condensate drain lines to be pitched down from drip pan connection to funnel floor drain at a rate of not less than 1” in 24”. Wrap all condensate drain lines with insulated white PVC covering.

4. Provision and installation of all faucets complete with aerators and replaceable seats, ready for connection by appropriate contractor.

5. Supply and installation of chrome plated overflow assemblies, drain fittings and traps with tail pieces for all sink type assemblies.

6. Supply and installation of chrome plated blow down piping from items with relief or safety valves, extend piping to nearest hub or floor drain approximately 4" above drain.

7. Supply of any pressure regulating valves on domestic hot and cold water, low temperature chilled water, gas, steam or condensate lines for equipment supplied herein.

8. Conceal and support of all piping and accessories within custom fabricated equipment.

9. Interconnection of drains and water lines between common multiple pieces of equipment. i.e. exhaust ventilator(s) (hoods), steam equipment, dishwashers and waste collector etc.

4. PREFABRICATED, INSULATED WALK IN TYPE REFRIGERATED AND FROZEN ROOM ASSEMBLIES – NOT APPLICABLE

5. MECHANICAL REFRIGERATION SYSTEMS – NOT APPLICABLE

6. EXHAUST VENTILATOR(S), (HOODS) AND FIRE SUPPRESSION SYSTEMS

1. Supply, set-into-place and/or suspension of all specified exhaust ventilator(s) and hood(s).

2. Supply and set into place of all hanging rods required for the suspension of exhaust ventilator(s) or (hoods).

3. Supply and set-into-place of exhaust ventilator(s) control panels complete with control relays as required for interlock to the building central alarm panel.

4. Supply and set-into-place of fire suppression electrical control panel(s) and Automan(s) complete with piping, bottles, fusible links as specified, release mechanisms and all other necessary accessories and components to form a complete operational and approved system.

5. Supply and installation of remote fire pull stations for the exhaust ventilator/fire suppression system.

6. The supply and installation of remote fire suppression system shall be in accordance with all requirements and regulations of “N.F.P.A. Code 96”, Local Building Code and other local municipal authority having jurisdiction.

7. Supply of emergency mechanical gas valve(s) for installation by the mechanical contractor into the gas supply line.

7. WAREWASHING AND WASTE MANAGEMENT SYSTEM

1. The KEC will be responsible for the manufacture, supply, relocation and set-in-place and on-site commissioning of the entire ware washing and waste management system.

2. The KEC will be responsible to ensure that all these items function together as a complete and inter-related system, the entire system is fully operational and that all of the system sub-component parts are properly integrated.

3. The scrapping table will be used to disassemble patient/resident and cafeteria soiled meal trays, loading soiled meal service wares into 20” x 20” plastic dish machine racks and loading cutlery from flat racks into plastic type bins. It will also be used for source separation of organic and non-organic food waste materials, transfer of organic food waste to the waste decomposer, transfer of dish racks to the main dishwashing machine. KEC is required to interconnect the disposer on the dishtable to the waste decomposer.

4. The electrical circuit that provides power to the main system control panel mounted on the scrapping table must have electrical ground fault protection (GFI) protection.

8. MISCELLANEOUS

1. Supply and installation of all hardware and standard accessories normally part of the equipment whether shown and/or specified or not; ie locks, catches, handles, hinges, etc.

2. Provision of rubber button feet or pads under any piece of equipment that will rest on a counter.

3. Caulking and sealing of equipment to walls, curbs, bases, adjacent units and between any dissimilar materials. Use an approved silicone sealer for gaps under 0.33” and stainless steel trim strips and sealer for wider gaps. Prepare area being siliconed prior to silicone application.

4. Securing of all permanent equipment to floor or base. Use stainless steel shims for levelling.

5. Supply and installation of all stainless steel strips and filler pieces necessary to properly finish any individual or combined set of pieces of equipment as part of the contract.

6. Protection, identification and recessing of all controls, pilot lights, switches and valves on any item of equipment.

7. Provision of all necessary access panels within each piece of equipment to allow for proper maintenance and service. Allow access when two (2) or more units are adjacent to each other.

8. Supply of all standard equipment accessories normally furnished with all items specified whether indicated or not.

9. Provision of all inserts, bolts, anchors, sleeves, ferrules, sleepers and other assorted hardware as may be necessary for the proper anchorage, fixing or attachment of equipment to the building.

10. Verification of the dimensions and services of all pieces of equipment that may be supplied by the Owner but are to become a part of a unit specified under this work in order to ensure a proper fit and co-ordination of installation.

1.4 QUALITY ASSURANCE

1. The work of this section shall be executed by qualified Foodservice Equipment Sub-Contractors such as foodservice equipment dealer/custom stainless steel fabricator, manufacturer of prefabricated insulated walk-in type refrigerated and frozen room panels, foodservice refrigeration specialists, manufacturer of blast chillers, manufacturers of ware washing/waste management systems and conveyor systems.

2. If the Foodservice Equipment Sub-Contractor performing the work included in this specification is an equipment dealer only, the firm shall at the time of tendering, provide in writing the name, address and qualifications of the fabricator proposed for the manufacturing and installation of custom stainless steel equipment.

3. If the Foodservice Equipment Sub-Contractor performing the work included in this specification intends to further sub contract out any portions of the work they are to perform to another individual or firm including but not limited to research and development, design, sub-fabrication, stamping, sub-assembly, electrical wiring or controls and any parts or all of the installation, the name of the proposed individual or firm who the Foodservice Sub-contractor intends to further sub-contract work to, must be identified at the time of tender. No further subcontracting will be permitted after tender award without written authorization by the food service consultant.

4. If the Foodservice Equipment Sub-Contractor performing the work for the prefabricated insulated walk-in panels also proposes to supply the mechanical refrigeration systems, the firm shall at the time of tendering provide in writing the name, address and qualifications of the company proposed to supply and install the mechanical refrigeration systems.

5. No company will be considered for the supply and installation of the mechanical refrigeration systems without having a Local authorized service agency. At the time of tendering, the name of the authorized service agent for each and every component of the mechanical refrigeration system must be identified as well as the terms and conditions of the warranty.

6. Before submitting tenders, it is the responsibility of the bidder to carefully examine the drawings, specifications and the site to become aware of all existing conditions and limitations and to ensure that all of the work called for will be included in the tender submission.

7. All equipment and components supplied from manufacturers shall be the latest model or issue and shall be new and unused in every respect.

1.5 TENDER FORMAT

1. Comply with Division 1, General Requirements and all documents referred to therein.

2. Conform to the tender form provided at the end of this specification.

3. Submit an itemized price breakdown of the cost for each piece of equipment specified, including labor and materials. Separately indicate the total Sales Taxes if applicable and a separate cost for transportation, delivery, un-crating and setting into place.

4. Prices tendered shall be for the manufacturer as specified in the first instance for each piece of equipment listed in the item specification section and shall form a base stipulated price bid.

5. Prices tendered for the other acceptable manufacturers as indicated in the item specification shall be included on a separate form and shown as either an addition to, or deletion from, the base stipulated price bid.

6. List the item number, name and quantity of each item together with the manufacturer's name and model number.

7. Failure to provide the itemized list of equipment with identification of the manufacturer, model number and individual price forming the base stipulated price bid will automatically disqualify the tender submission.

1.6 ALTERNATIVES AND SUBSTITUTIONS

1. Refer to Division 1 - General Requirements.

2. The specifications, drawings and mechanical and electrical services etc., have been prepared on the basis of the brand names and models identified in the first instance for each individual piece of equipment as listed in the item specification. The tender must include a base stipulated price bid for the foodservice equipment as specified in the first instance for each individual piece of equipment. Tenders which include any other brand or model other than what was specified in the first instance for any individual piece of equipment in the base stipulated price bid, will be automatically rejected.

3. Should the bidder elect to use one of the acceptable alternative manufacturers listed in the item specification, he/she may do so by submitting an alternative price for this item together with the chosen manufacturer and model number etc. Acceptable alternative manufacturers proposed for any equipment item must be listed on a separate page for "Acceptable Alternative Manufacturers" located at the end of the tender form. Acceptable alternatives proposed, must indicate the addition to, or deletion from, the cost of the base stipulated price bid. The alternative price must also show and include the cost of all changes or modifications in the building necessary to accommodate the installation of the alternative item.

4. Alternatives proposed other that those listed in the specification as being acceptable alternative manufacturers may be submitted for review and consideration by the Owner and/or Consultant. These must be submitted in advance of the tender close and must be pre-approved in writing by the Owner and/or Consultant in order to be considered.

5. If an alternative other than those listed in the specification as being acceptable alternative manufacturers is proposed, the item must be submitted on a separate page included at the end of the tender form for "Other Pre-Approved Acceptable Manufacturers" together with the chosen manufacturer and model number etc. Other pre-approved acceptable alternatives must indicate the addition to, or deletion from, the cost of the base stipulated price bid.

6. Alternatives proposed other than acceptable alternative manufacturers, must meet the physical and technical requirements of the specified item, be of a known and recognized manufacturer and satisfy the performance criteria and design intent originally determined by the Consultant in conjunction with the Owner.

7. Any alternative that is judged not to meet the above requirements, criteria or intent for whatever reasons shall be rejected and the model and manufacturer originally specified shall be supplied and installed at no additional cost to the Contract.

8. The proposed alternative and costs will be evaluated against the requirements set for the original specified manufacturer or model and a final decision made prior to the signing of a contract.

9. If any alternative is accepted, it is the responsibility of the respective Foodservice Equipment Sub-contractor to coordinate and bear all costs for mechanical, electrical, structural, architectural and any other adjustments necessary as a result of the substitution.

10. The Foodservice Equipment Sub-contractor awarded the work under Section 114000, shall also pay the costs of all professional fees and disbursements required to make necessary adjustments to the plans, specifications, mechanical and electrical requirement schedules or other information as a result of the substitution and for any coordination that must be done by the other project Consultants to accommodate any alternatives that are accepted.

1.7 REJECTION OF TENDERS

1. The Owner or Consultant reserves the right to reject any or all tenders without explanation.

2. The lowest tender in terms of cost, will not necessarily be accepted.

3. Tenders not conforming to any or all instructions may be rejected.

1.8 ADDENDA

1. The tender shall include any and all addenda that may change the original plans, specifications or other coordination information.

2. It is the responsibility of the bidder to report in writing any and all discrepancies, errors, omissions, contradictions or ambiguities to the Consultant. The necessary clarification will be issued in an addendum or bulletin to all bidders. If any uncertainty remains, base price on the most expensive interpretation.

3. The Owner, Food Service Consultant, Architects or Engineers will not be responsible for oral instructions.

1.9 CERTIFICATES OF APPROVAL

1. All work and materials shall be in accordance with the latest rules and/or regulations of agencies/ authorities having jurisdiction. All regulations, including building codes, and other codes applying to this jurisdiction should be followed. In addition, all equipment shall comply with the following:

    1. National Electric Manufacturer's Association, (N.E.M.A.).
    2. Underwriter's Laboratories Inc. (U.L.), must bear label.
    3. National Electric code, (N.E.C.).
    4. National Sanitation Foundation, (N.S.F.), must bear label.

5. American Society of Mechanical Engineers must carry the (A.S.M.E.) stamp.
6. American Gas Association (A.G.A.).
7. Provincial and Local Health Department Requirements.
8. American with Disabilities Act (ADA) as applicable to this project.

2. The Contract Documents shall govern whenever they require larger sizes or higher standards than are required by regulations.

3. The regulations shall govern whenever the Contract Documents require something which will violate the regulations.

4. When seismic regulations are applicable, all equipment shall be fabricated and installed in accordance with those regulations. All seismic requirements shall be shown on all submittals. Submit requested information to the agencies and authorities having jurisdiction.

5. No extra charge will be paid for furnishing items required by the regulations, but not specified and/or shown on the drawings.

6. Rulings and interpretations of the enforcing agencies shall be considered a part of the regulations.

7. The KEC is responsible to maintain the accuracy of equipment drawings and cut books to reflect as built conditions due to equipment deletions, manufacturer and/or model number changes and unanticipated changes to site conditions. It will be the KEC's sole responsibility to notify the Health Department having jurisdiction of all revisions until the project is issued its Certificate of Occupancy.

8. Conform to all laws, bylaws, rules, regulations and requirements of all authorities having jurisdiction.

9. All electrical equipment must conform to the National Electrical Code, the Electrical Inspection Department Bulletins, the National Electric Code. All equipment must have an approval label. Equipment that is not N.E.M.A. approved will be rejected, removed from the site and substituted for at no additional cost to the Contract.

10. Gas equipment shall conform to the A.G.A.

11. Any plumbing or drainage systems shall conform to the Local Plumbing Code.

12. Each piece of equipment shall be accompanied by a label or certificate of approval.

13. All mechanical refrigeration system shall be supplied with safety relief valves, shut-off valves for each piece of equipment and all other items as required by local regulations.

14. All welded pressure vessels shall be constructed to ASME Code. The vessels shall bear the stamp and certificates framed under glass and hung adjacent to the vessel.

15. Equipment design and fabrication must conform with the National Sanitation Foundation and Provincial as well as Local Municipal Health Department Regulations.

1.10 PERMITS

1. The General Contractor shall obtain and pay for all necessary permits, inspections and certificates and licenses required and necessary for the performance of the work and post all notices required by law and comply with all laws, ordinances and regulations bearing on conduct of the work as drawn and specified.

1.11 SHOP DRAWINGS AND MECHANICAL AND ELECTRICAL REQUIREMENTS

1. All fabricated items and assemblies of equipment shall be completely illustrated by shop drawings with detailed descriptions, clearly indicated methods of construction, gauges, assembly, fastenings and services, etc.

2. All shop drawings for this project shall use Metric Units.

3. Drawings prepared by the Consultant depict equipment design intent only. It is the responsibility of the foodservice equipment sub-contractor to prepare shop drawings in conjunction with the Consultants' drawings, specifications, mechanical and electrical data, details and other information. The KEC shall be responsible to coordinate all shop drawings with Architectural and Engineering plans, as built site conditions and the work of all relevant Sections.

4. Identify and explain any variation in the shop drawings that do not adhere to the original specifications or details. Advise the Consultant in writing of any conditions that would limit or adversely affect the design intent.

5. Ensure that all component parts and assemblies of each piece of equipment will support the loads anticipated without detriment to function, safety or appearance.

6. Prepare shop drawings on the same size sheet as plans and elevations, in a scale of not less than 1:1/4 for plans and 1:1/2 for details and sections so as to clearly illustrate the construction and arrangement of equipment.

7. Prepare fully dimensioned "roughing-in" and final connection point drawings for mechanical and electrical services. Separate mechanical and electrical, or combined drawings, may be submitted. In either case, drawings must be a minimum of 1:1/4. Include walk-in and fire suppression schematics and any pertinent installation diagrams including dimensioned "sleeving" drawing.

8. “Rough-in” and “final connection point drawings” must include a list of symbols for each type of connection and must show the location of connections on equipment as well as the location of the rough-in point for all mechanical and electrical services. Both connections to the equipment and the rough-in point must be dimensioned so as to show the relative distances from grid lines or architectural wall reference points as well as the height above the finished floor.

9. Verify the energy requirements for any piece of equipment that is being supplied by the Owner or is existing and being reused. Incorporate this information into the shop drawings, "rough-in" and connection point drawings.

10. Base, curb and depression drawings including low walls, cut-outs and openings must be fully dimensioned and drawn at 1:1/4 scale.

    1. Submit equipment data sheets and shop drawings in the following order:
    2. Catalogue cuts and illustrations.
    3. Plan lay out drawing with mechanical and electrical "roughing-ins" and
    4. "connection points"
    5. "Sleeving" drawing
    6. Base, curb and depressions
    7. Custom fabricated items

11. Review of shop drawings is general and applies to design only, it is not intended to serve as a final check and shall not relieve the KEC of the responsibility for errors in dimensions, quantity, material or interfacing as required to complete the intent of the design.

12. All shop drawing submissions shall be checked and signed by a senior member of the firm qualified to evaluate the function and construction necessary.

13. The Consultant reserves the rights to reject any submissions that do not comply with the standards noted herein.

14. After the drawings have been reviewed, provide the number of sets required by the Consultant for distribution. Do not proceed with the fabrication until the drawings have been reviewed by the Consultant.

15. Prior to manufacture, the Foodservice Equipment Sub-Contractor shall provide a schedule outlining the proposed manufacture and installation dates for all equipment.

16. The KEC shall be responsible to keep one (1) copy of the reviewed shop drawings on the project job site in good order available to all consultants approved.

17. Examine the drawings and specification of all Sections for any information that may affect this work and co-ordinate the architectural and service requirements with other appropriate contractors.

18. Submit one copies of each shop drawing, quantity of shop drawings to be provided as required by General Contractor.

19. All shop drawings must be prepared using Revit or AutoCAD. Hand drawn shop drawings will be automatically rejected without review and returned to the Foodservice Equipment Sub-contractor.

20. The Consultant will only perform one (1) subsequent review of re-submitted shop drawings that have been rejected. If shop drawings are rejected in whole a second time, the Consultant will proceed to prepare the shop drawing and the costs including fees and disbursements will be deducted from the KEC contract amount.

21. “Rough-in” and connection point drawings will not be reviewed unless the catalogue cuts and illustrations are submitted first.

1.12 CATALOGUE CUTS AND ILLUSTRATIONS

1. All manufactured items being purchased by the Foodservice Equipment Sub-Contractor must be illustrated by catalogue cuts and data sheets.

2. Submit two (2) sets of illustration/cuts bound in booklet form for review. Sheets are to be in numerical order, properly labelled with the name of the project and accompanied by a lead sheet with an itemized list of contents. The lead sheet must include the project name, the name of the General Contractor (if applicable), the name of the KEC, the item number, the manufacturer’s name and model number, all options and accessories included as well as mechanical and electrical service requirements (see typical example provided).

BROCHURE LEAD SHEET (typical information required)

ITEM NO: _____ QUANTITY: _____

DESCRIPTION:

_____

MANUFACTURER: _____

MODEL NUMBER: _____

SERVICES;

ELECTRIC: _____VOLTS,_____PHASE, _____WATTS,
_____KW ____ AMPS
NEMA PLUG CONFIGURATION: _____
PLUMBING: _____ NPT (HW) _____ NPT (CW)
_____ I.W., _____ WASTE
STEAM: _____,(INLET) _____ (CR), _____PSI
GAS: _____BTU, (NATURAL) (LP)

ACCESSORIES, ATTACHMENTS OR REMARKS:

1._____

2._____

3._____

4._____

3. Ensure that the equipment suits the space allocations and the intent of the design.

4. After the illustrations have been reviewed, provide the required number of sets for distribution.

1.13 DESIGN DRAWINGS AND SITE DIMENSIONS

1. In addition to preparing shop drawings illustrating custom fabricated equipment or assemblies, the Foodservice Equipment Sub-contractor shall be responsible to prepare a set of final plan layouts of the foodservice equipment included. These final plan layouts are to include:

    1. 1:50 scale final plan drawings on Revit or AutoCad version 2022 or later;

    2. Finalized itemized list of food equipment by component and functional area indicating item umber, quantity, manufacturer, model number, etc. for all new and relocated existing equipment;

    3. Detailed schedule of the mechanical, electrical and structural requirements for new and re-used existing equipment with connection size information; and

4. Depression and curb layout drawings.

Part 2 Products

2.1 COMMERCIALLY MANUFACTURED EQUIPMENT

1. All items of standard equipment shall be the latest model at time of delivery.

2. Manufacturer's directions shall be followed in cases where the manufacturers of articles used in this contract furnish directions or prints covering points not shown on the drawings or specifications.

3. All doors shall be hinged as shown on plans.

4. Refrigerated Items

    1. All reach-in refrigerators and freezers with remote refrigeration systems shall be complete with condensate evaporator when no floor drain is available.
    2. When a condensate evaporator is required, it shall be complete with thermostatic expansion valves at the evaporator.
    3. Refrigerated drawer units are to be provided with stainless steel drawer liners and stainless steel full size pans. KEC to furnish each drawer with two (2) 12" x 20" x 4" deep 18 ga. stainless steel pans.
    4. When a removable plate rail/cutting board is specified for an equipment stand, the KEC is to coordinate cutting board support locations with work top cooking appliances to provide access for operations and service.
    5. The refrigerant for medium and Low Temperature fixtures to be CFC free and conform to the Montreal Protocol Agreement.
    6. All refrigerated fixtures are to be provided with a flush mounted exterior dial thermometer.
    7. All refrigeration Systems to be provided with 5 year compressor warranty and 1 year service agreement.
    8. Doors on refrigerated fixtures are to be provided with cylinder door locks unless specified with an alternate locking devise.

5. Free-standing work tables and counters with flanged feet shall be secured to the floor with smooth head stainless steel fasteners or with pins concealed in all legs of the table/counter, when specified or required by code.

6. All equipment units that "pass thru" wall openings are to have an "equal" finish on front and rear. The intent is that the equipment unit will project a finished "look" on the rear (kitchen side) as on the front (customer side).

7. Provide water treatment units/systems (including surge tanks) for installation by the Plumbing Division suited to the application and anticipated volume for items “in contract” and those units provided “by vendor”, “by product supplier” or “by owner” as follows:

    1. Postmix beverages:
        a. low to medium volume - Everpure High Flow Twin MC p/n 9328-02
        b. high volume - Everpure High Flow Triple p/n 9328-03
    2. Coffee:
        a. low to medium volume - Everpure E-10 prefilter with QC4-BH cartridge (can be mounted undercounter)
        b. high volume - Everpure E-20 prefilter with Twin head/MH cartridges.

3. Ice makers:
    a. less than 500#/day - Everpure Insurice Twin PF p/n 9324-22
    b. less than 1000#/day - Everpure Insurice Triple PF p/n 9325-23
    c. greater than 1000#/day - Everpure E-20 prefilter and Insurice 4000 quad
4. Combination:
    a. less than 3 gallons per minute (gpm) - Everpure High Flow Triple CSR 9328-06
    b. less than 5 gpm - Everpure High Flow Quad 9437-10
    c. greater than 5 gpm contact representative 516 250-2200
5. Steam (boiler only):
    a. countertop and floor steamers less than 1gpm - Everpure E-20 prefilter with Kleensteam 9797-00
    b. flow rates less than 2 gpm - Everpure High Flow CSR Twin
    c. flow rates less than 3 gpm - Everpure High Flow CSR Triple 9328-06
6. Provide wall mounted rack per detail C-19-4 when surge tank is wall mounted. Provide properly sized stainless steel pedestal to support surge tank when the surge tank is floor mounted.

2.2 FOODSERVICE EQUIPMENT FLEXIBLE CONNECTORS

1. The KEC shall provide all counter top coffee brewing and dispensing equipment (hot and/or cold water), with Dormont Swirl (retractable) hose with quick disconnect 2-way coupling. This includes equipment “in contract” and those items “by vendor”, “by product supplier” or “by owner”. Service length to be sufficient to attach properly to the food service fixture.

2. The KEC Contractor shall furnish the following cooking appliances with appropriately sized (length and diameter) flexible connectors, coiled restraining devices and installation hardware, as indicated below:

3. Gas Appliances (Mobile) Dormont Model BPQ-2SR Series flexible connector with two (2) Supr-Swivel couplings and one (1) coiled restraining device with installation mounting hardware.

4. Gas Appliances (Stationary) Dormont Model BPQ-2S Series Flexible Connector with two (2) Supr-Swivel couplings.

5. Stationary/Mobile Appliances other than Counter-Top Dispensing Units with Water Connections (hot, cold) Dormont Model W-BP2Q Series flexible connector. When mobile, provide unit with coiled restraining device with installation mounting hardware.

6. Steam appliances (stationary or mobile) Dormont model BIP-2Q Series flexible connector. When mobile provide unit with coiled restraining devices with installation mounting hardware.

7. Length restraining device on mobile units to be sufficient to allow movement of equipment for housekeeping.

8. Flexible connectors to be NSF and AGA certified.

9. Division 23 00 00 shall connect all quick-disconnect hoses to equipment.

2.3 FIRE SUPPRESSION SYSTEMS

1. Fire suppression systems will be installed to conform with all applicable codes.

2. All piping to surface protection nozzles to be chrome plated.

3. Remote fire pull stations to be recessed in building wall.

4. Minimize elbows on piping to surface protection nozzles.

5. Coordinate placement of protection nozzles to avoid conflict cooking equipment and accessories (range faucets).

6. All piping drops to surface protection nozzles to be aligned in the same plans.

2.4 BUY OUT EQUIPMENT

1. The following is a list of standards for all “buy out” equipment:

    1. The intent is that exposed metal surfaces of buy-out equipment units have a stainless steel finish except where the model number of the unit dictates aluminum. For those items where stainless fronts, tops, rears and sides are “optional” we expect that a stainless finish will be provided in those areas where the finish is exposed.
    2. All range units if not provided with a rear riser as a standard component by the manufacturer are to be provided with a stub back (min.).
    3. Provide any/all stacking/mounting kits as may be required per the manufacturer’s recommendations for stacking equipment units together (for example: ice makers positioned on top of soda/ice dispensers), built-in/drop-in units into custom fabricated fixtures, etc.

2.5 PLUMBING WORK

1. Provide suitable pipe slots, chases and/or do all drilling, punching and cutting of equipment required to provide access for Division 23 00 00 connections and/or runs. Such work performed at the job site shall be of the same quality as similar work in the shop.

2. To ensure proper clearance for cleaning, all horizontal piping lines shall be run at the highest possible elevation and not less than 6" above floor, through equipment wherever possible.

3. Indirect waste piping (except from sinks and ventilators) shall be installed in accordance with the codes in effect at the job site. Piping shall run as described hereinafter, and shall discharge into floor sinks. Extend piping to a point of at least 2" (50 mm) above rim of floor sink and cut bottom on 45 degree angle. All indirect waste piping shall be installed and routed in a manner to ensure proper drainage and shall conform with shelves, spaces, equipment or building conditions. Secure all indirect waste piping as required to achieve same. Indirect waste piping from ice bins, ice pans and similar items shall be insulated to prevent condensation.

4. Water inlets shall be located above the positive water level to prevent siphoning of liquids into the water system. Wherever conditions shall require a submerged inlet, a suitable type of check valve and vacuum breaker shall be placed on the fixture to form part of same to prevent siphoning.

5. Where exposed, piping and fittings shall be chrome plated.

6. All valves shall be American made to ensure availability of replacement parts.

2.6 FAUCETS

1. Low flow faucets shall be furnished on all sinks, bain maries, water stations and other fixtures as specified and shall be supplied with non- splash aerator, and water saving devices where required by local codes. Unless otherwise specified, faucets shall be provided as follows, for installation by Division 23: (Note: All faucets to be from the same manufacturer).

Type 1: Faucet (1/2 Splash)

	Fisher Model 3251 (8” Spout)
	T&S Model B—0231 with #60 x (8” Spout)
Type 2:	Faucet (3/4 Splash)
	Fisher Model 5414 (14” Spout)
	T&S Model B-0290 (12” Spout)
Type 3:	Faucet (1/2 Deck)
	Fisher Model 3311 (8” Spout)
	T&S Model B-1121 (8” Spout)
Type 4:	Faucet (3/4 Deck)
	Fisher Model 5314 (14” Spout)
	T&S Model B-0293 (12” Spout
Type 5:	Faucet (1/2 Deck)
	Fisher Model 1821 (Gooseneck)
	T&S Model B-1142 (Gooseneck)
Type 5A:	Faucet (1/2 Splash)
	Fisher Model 1945 (Gooseneck)
	T&S Model B-0331 (Gooseneck)
Type 5B:	Faucet (1/2 Deck)
	Fisher Model 3525
Type 6:	Faucet (1/2 Deck)
	Fisher Model 3010 (INDEX HOT)
	T&S Model B-207 (INDEX-HOT)
Type 7:	Pre-Rinse Faucet (1/2 Splash)
	Fisher Model 2210-WB
	T&S Model B-133B W/Wall Bracket
Type 7A:	Pre-Rinse Faucet (1/2 Deck)
	Fisher Model 2310-WB
	T&S Model B-0113 W/Wall Bracket
Type 8:	Fill Faucet (1/2 Wall) Double Jointed Swing Sprout
	Chicago Model 515 (INDEX COLD)
	T&S Model B-592
Type 9:	Dipperwell & Faucet
	Fisher Model 3041
	Component Hardware Model K27-1010
Type 10:	Water Fill Faucet & Drain Pan
	Fisher Model 1400
	Component Hardware Model K27-1000
Type 11:	Pre-Rinse Add On Faucet
	Fisher Model 2901 add-on faucet.
	T&S Model B- 155 ADD-ON-FAUCET
Type 12:	Glass Rack Fill Faucet (1/2 deck- hot/cold water)
	Fisher Model 1117-WB with #82104
	Single Deck Dual Control Valve
Type 13:	Not Assigned
Type 14:	Faucet (1/2 Deck)
	Fisher Model 3525 (Gooseneck)
	T&S Model B-1141 (Gooseneck)
Type 14A:	Faucet (1/2 Splash
	Fisher Model 1996 (Gooseneck)
	T&S Model 1146 (Gooseneck)
Type 14B:	Faucet (1/2 Deck) at Fabricated
	Hand Sink Located in Worktop
	Fisher Model 3526 (Gooseneck)
	T&S Model B-1141 with #120x

	Rigid Gooseneck & #B-0413 Adaptor
Type 15:	Faucet (1/2 Deck) at Fabricated Hand Sink Located Below Worktop T&S Model –0202
Type 16:	Fill Faucet (1/2 Wall) at Range Spreader Fisher Model 3710 (INDEX COLD) T&S Model B-0212 (INDEX COLD)

2.7 DRAINS AND WASTES

1. Furnish all necessary drains and wastes with the equipment as follows:

Type 1:	Drain (1-1/2” & 2") - Rotary handle without overflow, flat strainer. Fisher Model 28932
Type 2:	Drain (1-1/2" & 2”) - Basket Strainer without overflow, basket strainer. Fisher Model 28983.
Type 3:	Drain (1-1/2") - Drain with standpipe. Fisher Model 6541-2400 waste socket, 6550-2100 lock nut, 6580-5000 tail piece and 6571 standpipe (length as required)
Type 4:	Drain (1") - Drain with standpipe. Fisher Model 6240-2100 waste socket with 6280-5000 washer, 6250-2100 lock nut and 6271 standpipe (length as required).
Type 5:	Drain (1-1/2") - Open. Fisher Model 6541-2400 waster socket, 6550-2100 lock nut, 6580-5000 washer and 6544-0000 tail piece.
Type 6:	Drain (1-1/2” & 2") - Rotary handle with overflow, flat strainer. Fisher Model 28940 (verify length and height of overflow assembly with sink size).
Type 7:	Drain (1-1/2" & 2”) - Rotary handle with overflow and basket strainer. Fisher Model 28959 (verify length and height of overflow assembly with sink size).

2. All rotary wastes/lever wastes are to be provided with a # 14 ga. stainless steel valve bracket located a sink bowl front. Refer to Detail C-8-5 for construction.

3. KEC to coordinate plumbing interconnections at field joints, completed by Division 23, on equipment assembled at the job site.

2.8 FLOOR TROUGHS

1. When specified, floor troughs are to be properly dimensioned on the KEC building works rough-in plan. Careful coordination is required so that trough grate removal is unobstructed by adjacent equipment units. Further, where troughs are specified in front of tilting units (braising pans, kettles), the equipment is to be placed so that the center of the pour path on the tilting unit aligns with the center line of the trough.

2.9 ELECTRICAL WORK

1. For all fabricated equipment, furnish and install all outlets, switches, controls, conduit, service fittings and load centers. Load centers shall be complete with individual "visi-trip" circuit breakers for each device built into or forming an integral part of the unit. Furnish to Division 26 a wiring schematic including circuit breaker diagram for load center.

2. Ensure that all equipment furnished under this contract shall be so wired, wound or constructed as to conform with the characteristics of electrical and other services at the premises.

3. Appliances shall be new, of manufacturer's current production and furnished complete with motors drive mechanism, Starters and controllers, including master switches, timers, cut-outs, reversing mechanism and other electrical equipment if and as applicable. Wiring and connection diagrams shall be furnished with electrically operated machines and for all fabricated equipment.

4. Only rigid steel conduit shall be used, zinc coated where unexposed and chrome plated where exposed. All conduit wiring shall be run concealed wherever possible. Conduit shall be continuous from outlet to outlet and from outlet to load center circuit or pull boxes and shall enter and be secured in such a manner that each system shall be electrically continuous throughout. All conduits shall be thoroughly and substantially supported by accepted industry practices.

5. Supply on each motor driven appliance or electrical heating unit, a suitable control switch or Starter of proper type wherever such equipment is not provided with same.

6. All plug-in equipment shall have plugs and neoprene cords furnished and installed. Coordinate work with Division 26 so that the receptacles provided will match the specific plugs installed as part of the plug-in equipment. Any changes on cords and plugs required in the field due to lack of coordination between Division 26 and KEC shall be the latter's responsibility.

7. All surface mounted receptacles indicated for fabricated equipment are to have Component Hardware Group, Inc. model R58-1010 or R58-1029 or equal aluminum box complete with satin finish stainless steel cover and receptacle as indicated below:

    1. 2-pole, 3-wire grounding 20 amp; 125V. Hubbell #5352 or equal (NEMA 5-20R).
    2. 2-pole, 3-wire grounding 20 amp; 250V. Hubbell #5461 or equal (NEMA 6-20R).
    3. 2-pole, 3-wire grounding 30 amp; 250V. Hubbell #9330 or equal (NEMA 6-30R).

8. All built-in receptacles indicated for fabricated equipment are to be 2" x 4" x 1-1/2" deep "Handy Box" tack welded to fixture and fitted with receptacle indicated above and satin finish stainless steel cover. Splash mounted receptacles to be horizontal with all others vertical.

    1. 30 AMP, 250 V receptacles require a 2-1/8" deep "Handy Box". If splash mounted, increase splash width to 2-1/2".

9. All switches, controls, etc., shall be conspicuously labeled as to use with phenolic plastic name plates screwed to adjacent surfaces, with white recessed lettering on black background. Submit a sample to the Designer for approval.

10. All electrically heated, fabricated equipment shall be internally wired to a thermostatic control and an "on/off" red neon light indicator, both to be mounted in a terminal box with a removable access panel and located outside the heated area. Wiring to be nickel-plated copper, properly insulated.

11. All cold storage room electrical components shall be provided with conduit, splice boxes, switches, fittings, etc. concealed within the insulated panels at time insulation is foamed in place. Conduit shall extend up within wall panels, through ceiling panels ready for EYS fittings and final connection by Division 26 00 00.

12. Provide all incandescent bulbs and fluorescent tubes required for equipment under this section. Fluorescent tubes, for food service display equipment, to be high natural colour fluorescent lamp "Colour-Gard 50" as manufactured by Duro-Test Corporation 1-800-937-0900 ext 7020 (or equal).

13. KEC to coordinate electrical interconnections, completed by Division 26, at field joints on equipment asembled at the job site.

14. All wiring within custom fabricated counters and tables to be concealed. Wiring to heat lamps and display lighting (Part of food shield assembly) to be concealed.

2.10 FOOD SERVICE EQUIPMENT (COMMERCIAL & FABRICATED)

1. Lamps
    1. KEC shall furnish all lamps as recommended by the manufacturer, or as specified, required for all food service equipment light fixtures. Lamps will be installed by Division 26.

2. Cutting Boards
    1. All cutting boards provided for “buy-out” and custom fabricated equipment to be manufactured by Richlite. For custom fabricated application provided the size and thickness as indicated in the documents. For “buy-out” items provide same size and thickness as would otherwise be provided by the manufacturer of the “buy-out” item.

2.11 MOUNTING HEIGHTS FOR FOOD SERVICE EQUIPMENT

1. Wall Shelving
    1. Wall and table mounted shelves are to be mounted at appropriate height and provide clearance to accommodate table top equipment and provide convenient access to items stored. Coordinate mounting height with Owner’s representative prior to installation.

2. Fire Suppression System
    1. Fire Suppression System tank/control cabinet to be mounted tight to finished ceiling at location shown on plan.

2.12 VENTILATION WORK

1. Provide all labor, material and services required; verify sizes and locations of duct connections; and provide all exposed duct work from hoods, ventilators, and dishwashers to 4” above finished ceiling for final connection to building duct work by Division # 23.

2. All exposed ducts etc. to be stainless steel.

3. KEC to verify field conditions and provide and install matching trim and closure panels (as required) to close gaps between exhaust hoods, adjacent walls and ceilings. All trim and closure panels to be provided by ventilator manufacturer.

2.13 FABRICATED EQUIPMENT

1. All specially fabricated equipment must be by one manufacturer acceptable to Designer and the Owner.

2. All work must be done in an approved workmanlike manner to the complete satisfaction of Designer and the Owner.

3. All stainless steel shall be the U.S. standard gauge, 18-8, type 304, finish as noted in paragraph 2.05N.

4. All galvanized steel shall be electro-galvanized.

5. All seams and joints shall be shop welded or soldered as the nature of the material may require. Welds to be ground smooth and polished to match original finish.

6. Framework of galvanized steel shall be welded construction. Where galvanizing has been burned off, the weld shall be touched up with high grade aluminum paint.

7. The underside of all metal top tables, counters, drainboards, sinks and dishtables shall be provided with sound deadening material similar to Component Hardware Model Q85-5225 Tacky Tape; 3/4" wide x 3/32" thick strips. Spray or painted material or exposed mastic will not be acceptable.

8. Metal Top Construction

    1. All seams and joints shall be one-piece welded construction, reinforced on the underside with galvanized steel secured to top with weld studs and stainless steel or chrome plated cap nuts so tops can support heavy weight without deflection. Cross braces to be not more than 48" (1200 cfm) on center.
    2. Tops supporting coffee urns, ice/soda dispensers, Etc…shall have additional bracing to support the heavy loads.
    3. Field joints in stainless steel tops; where required due to limitation of sheet sizes, equipment sizes or installation requirements shall be welded, ground smooth and polished to blend with adjacent surfaces.
    4. If inverted hat sections are used in lieu of channels, close ends.
    5. Stainless steel counter tops and overshelves exposed to heat shall be properly braced to maintain level work surfaces and to prevent warping.

9. Fasteners

    1. Exposed bolt heads will not be permitted on fixtures.
    2. Butt joints made by riveting straps under seams and then filled with solder will not be accepted.
    3. Rivets of any kind, including pop-rivets, will not be accepted.
    4. Exposed screw heads, when necessary, shall be countersunk flush.
    5. Exposed fasteners shall be one of the same material and finish as the pieces held in place.
    6. Exposed bolt ends not permitted. Chrome plated hexagon type cap nuts to be provided on all exposed bolt ends.

10. Rolled edges shall be as detailed with corners bullnosed, welded, ground and polished.

11. Corners of dishtables, drainboards, splashbacks and turned up edges shall have 1/2" (15 mm) or larger radius bends in all horizontal and vertical corners, coved at intersections unless specified otherwise.

12. Enclosed Cabinet Bases shall be made of 18 gauge stainless steel sheets reinforced by forming the metal. Sides and partitions shall terminate at front in a 2" (50 mm) wide fully enclosed mullion and welded at intersections. Shelves are to be removable where detailed. Exposed ends, partitions and shelves are stainless steel.

13. KEC to coordinate size, quantity and location of louvered openings for sufficient ventilation of food service equipment.

14. Legs and Cross Rails

    1. Equipment legs and cross rails shall be 1-5/8" (40 mm) 16 gauge stainless steel tubing unless otherwise noted. All welds at cross rails shall be continuous and ground smooth. Tack welds are not acceptable. Tops of legs to be fitted with Component Hardware Model # A20-0206 16 gauge stainless steel gusset or approved equal. Gussets are to be secured as hereinafter described to fixtures.
    2. Sinks - weld gussets to triangular 12 ga. stainless steel gusset plates, which are in turn welded to underside of sinks.

3. Tables and Dishtables - to metal top tables and dishtables with gussets which shall be welded to reinforcing channel/hat sections 14 gauge or heavier.

15. Wood tops:

1. Welded stainless steel hat sections to support top and be held in place with stainless steel metal screws in slotted holes of flanges.
2. Bottom of legs to be fitted with Component Hardware Mode # A 10-0851 with locking ring adjustable stainless steel foot or approved equal. Foot plug to be welded, ground and polished. When flanged feet are specified, use Component Hardware Model # A-10-0854 adjustable stainless steel foot or approved equal.
3. Enclosed cabinet bases mounted on 6" (150 mm) high legs are to be equipped with Component Hardware Model # A52-9907 adjustable stainless steel counter legs or approved equal.

16. Metal Gauge

1. Unless otherwise noted in itemized specification or details, all gauges to be manufactured to the following minimum thickness:

Stainless Steel USS Gauge	Decimal Thickness	Millimeter Thickness
12	.1094	2.78
14	.0781	1.98
16	.0625	1.59
18	.0500	1.27
20	.0375	0.95

2. Materials

a. All fabricated items to be provided in gauge, metal type and finish per the following table.

Description	Gauge	Metal	Finish No.
Dishtable, Table and Counter tops	14	S.S	4
Hat Sections/Channel:			
Unexposed	14	Galvanized	4
Exposed	14	S.S	4
Counter Body:			
Framework	14	Galvanized	
Aprons, Partitions, Backs and Ends	18	S.S	4
Shelves (Intermediate)	18	S.S	4
Shelves (Base Shelf)	16	S.S	4
Refrigerators			
Interiors	20	S.S	2B
Doors			
Outside Faces	18	S.S	4
Inside Faces	20	S.S	2B
Drawer Pans			
General	18	S.S	2B
Plastic	Uniroyal "Royalite" Series		
Refrigerated	18	S.S	2B

Shelf			
Wall Mounted	16	S.S	4
Fixture Mounted	16	S.S	4
Table	16	S.S	4
Refrigerator		S.S Wire	
Shelf Bracket (Exposed)	14	S.S	4
Ventilators & Hoods			
Exterior Frame	14	S.S	4
Interior	18	S.S	4
Plenum	16	S.S	4
Ducts			
Unexposed	16	Galvanized	Weld
Exposed	16	S.S	4-Weld
Dishmachine	18	S.S	4-Weld
Wall Flashing	20	S.S	4
Equipment Legs & Cross Rails	16	S.S Tubing	4

3. Closure

    a. Return backsplashes, when exposed to have enclosed finished rear.
    b. Exposed backs of all equipment, fixtures, back splashes, shelves, etc., shall be closed.
    c. Exposed backs of counter top equipment in an island configuration will be provided with a full height stainless steel enclosure to conceal utility connections.
    d. Where the rear of a piece of equipment placed in a wall opening is exposed and unfinished, the KEC will provide a finished rear.
    e. Provide finished stainless steel on exposed rear of all equipment units.

4. Casters shall be Colson Caster Corp. Series 2, or equal, non-marking, ball bearing NSF approved type with greaseproof polyurethane tires, Wheels shall be 5" (130 mm) diameter. Minimum width treads of 1-1/4" (30 mm). Minimum capacity per caster 250 lbs. (115kg). Where a set of four casters is specified, two are to be provided w/ brakes.

5. Fabricated sinks shall have corners same as for metal tops. One piece welded construction with bottom pitched to drains and double wall partitions (see standard detail C-8-5 & C-8-8). Multiple compartments shall have continuous and seamless flush front exteriors. Openings between compartments or applied panel will not be accepted. Sink insets shall be 14 gauge stainless steel welded as integral part of top.

6. All drawer pans shall have all corners coved. Pan to be mounted on fabricated 14 gauge stainless steel angle cradle frame. Frame to be supported on Component Hardware Model S-52 or approved equal full extension slides with 200 lbs. (91 kg.) capacity per pair. Pan to be easily removable without the use of tools. Drawer fronts shall be double pan type with sound deadening material. Drawer shall be self-closing.

7. Doors

    a. All metal doors to be double pan type reinforced and stiffened to prevent flexing and filled with sound deadening material.
    b. Sliding doors shall be mounted on large ball bearing quiet rollers in 14 gauge stainless steel overhead tracks and be removable without the use of tools. Sliding doors shall be self-closing.
    c. Hinged doors shall be flush type, mounted on heavy duty, stainless steel, lift-off hinges.

d. Door catches shall be heavy duty, 4 way (mortise or surface application) with adjustable spring loaded ball tension, Model M22-2430 as manufactured by Component Hardware Inc. or equal.

8. All hardware shall be of heavy duty construction and identified on shop drawings by manufacturer and model number and shall be subject to final approval be Designer. All hardware shall be identified with manufacturer's name and number so that broken or worn parts may be replaced.

9. Breaker Strips - all ice pans, ice bins, refrigerated pans, hot food, Bain Marie pans and cabinets shall be provided with breaker strips where adjoining top or cabinet face materials to prevent condensation. Breaker strips shall be fastened with stainless steel, counter sunk screws. Pop rivets will not be accepted.

10. All insulation shall be board form or foamed-in-place polyurethane. Fiberglass insulation shall not be used. Heated areas shall have minimum of 1" thick at sides and 2” thick at bottom. Cold areas shall be thickness indicated on details or drawings. Insulation shall be bonded to all surfaces.

11. Refrigerated Items

    a. All reach-in refrigerators and freezers with remote refrigeration systems shall be complete with condensate evaporator when no floor drain is available.
    b. When a condensate evaporator is required, it shall be complete with thermostatic expansion valves at the evaporator.
    c. Fabricated compartments, refrigerated shelves, plates, etc., shall be provided with a 20 gauge steel box to house expansion valves when valve is remote from evaporator. Install in base of fixtures or in a concealed position.
    d. All refrigerated compartments shall be fitted with a flush mounted exterior dial thermometer with chrome-plated bezels. Thermometers shall be adjustable and shall be calibrated after installation.
    e. Refrigerator hardware for fabricated refrigerator compartments shall be heavy duty components. Hinges shall be self-closing. Latches to be magnetic edgemount type with cylinder lock unless specified or noted.
    f. Refrigerated drawer units are to be provided with stainless steel drawer liners and stainless steel full size pans. KEC to furnish each drawer with two (2) 12" x 20" x 4" deep 18 ga. stainless steel pans.
    g. When a removable plate rail/ cutting board is specified for an equipment stand, the KEC is to coordinate cutting board support locations with work top cooking appliances to provide access for operations and service.
    h. The refrigerant for medium and LOW TEMPerature fixtures to be CFC free and conform to the Montreal Protocol Agreement.
    i. All refrigeration systems to be provided with 5 year compressor warranty and 1 year service agreement.

12. Louvered Shelving - at location of three (3) compartment or pot wash sinks, wall shelving to be louvered to facilitate drainage and air drying. Construction of shelving to be the same as solid shelving as noted under 2.05M. See standard detail.

13. Flanged Feet Pinned to Floor - free-standing work tables and counters with flanged feet shall be secured to the floor with smooth head stainless steel fasteners or with pins concealed in all legs of the table/counter when specified.

14. Backsplash “Returns” - backsplashes on tables and counters are to be returned at the sides where adjacent wall, columns and other equipment to match the dimension of the adjacent element.

15. Wall Flashing to include Component Hardware Model # J64-1450 divider bars and Model # J-63-1451 cap strips as required. No exposed fasteners will be accepted.

16. Protection of Tops/Shelves - in order to protect finishes of fabricated items, all exposed horizontal surfaces of counter, tables & shelves are to be covered with cardboard & held in place with duct tape until such time that the work of related trades is complete.

17. Adapter Bars - provide a full complement of adapter bars for “buy-out” and “custom fabricated” equipment units where adapter bars are necessary to optimize storage. Provide maximum number of adapter bars based on the smallest pan size to be used.

18. Integration of “Buy Out” Item’s - custom Fabrication integrated with “buy out” items must satisfy the recommendation of the manufacturer of the buy out item for clearances, tolerances, ventilation, etc. Modifications to custom fabrication to satisfy these manufacturer’s recommendations will be at the expense of the custom fabricator.

2.14 MILLWORK/ CASEGOODS

1. Work is to be performed by skilled mechanics of the trade and is to be of the highest quality throughout, in such a manner as to fulfill the intent of the Contract Documents.

2. All fixtures are to be made by one manufacturer and assembled in single and complete units, as the dimensions will permit shipment to and installation at the building. Large pieces requiring sectional construction are to have their parts accurately fitted and aligned with each other, and provided with ample screws, glue and bolt blocks, tongues, grooves and splines, dowels, mortises and tenons, screws, bolts or substantial, rigid and permanently secured in proper position to each related section.

3. Sufficient additional material is to be provided to permit accurate scribing to walls, floors and related work, and allowance made wherever possible for shrinkage that may develop after installation. All units are to be provided with adequate cleating, blocking, crating and other forms of protection as necessary to prevent damage during shipping and handling.

4. All fixtures are to be assembled without face screws or nails, except where it may be necessary to attach trim items. All face screws or nails that are necessary are to be countersunk and plastic wood or wood plugs used to cover heads, and the plug neatly touched up. The heads of all screws used in any assembly are to be countersunk below the surface.

5. Joints – Mortise and tenon, spline, dowel and/or pin block and glue work to avoid use of nails wherever practical. Make butt joints with an approved device for prevention of separation of members. Blind nail and conceal.

6. Plastic laminate is to be bonded to all exposed surfaces with contract cement fast bond EC2166 as manufactured by 3-M Products Company, or equal, to minimum ¾” (19MM) fir faced plywood applied under high pressure. All edges shall be carefully sanded to smooth finish, removing burns, nicks and cut marks. Plastic laminate joints are to be finished without wavy and unsightly joints.

7. Where solid core/monolithic tops are specified i.e. Nevamar Fountainhead or equivalent, such materials are to be installed by factory certified installers only.

8. Hinged doors are to be fabricated of ¾” (19mm) thick plywood with hardwood full perimeter edging with plastic laminate on face and self-edging on exposed sides. Door hinges, pulls and catches shall be supplied and installed as specified.

9. Sliding doors are to be fabricated of solid core plywood with hardwood edges and constructed similar to hinged doors. Doors are to be mounted on E-Z Glides track, and to be removable without the use of tools. Rubber stops are to be provided concealed in end stile or mullion.

10. Tambour sliding doors are to fabricated of individual hardwood slats, 3/8" x 3/4" (10 x 20mm), round on 2 edges and glued to 20 ounce duck canvas or reject elastic vinyl plastic or equal and be provided with hardwood end stile with integral door pull. Track to be lined with laminated plastic or equally sooth surface and guides at top and bottom to be fabricated hardwood. Provide lock-pin for sliding doors.

11. Any access panel is to be fabricated of ¾" (19mm) nominal thick hardwood and fabricated as a door. Each access panel to be provided with two (2) magnetic catches at top and two (2) 3/16" (5mm) positioning pins at bottom.

12. Drawer sides and backs are to be constructed of 5/8" (16mm) thick solid hardwood such as ash, oak or maple, or 5/8" (16mm) finished birch interior plywood without plugs or defects. Sides to be French dovetailed into fronts, with backs lock-shouldered into sides. Drawer bottoms to be 1/4" (6mm) tempered hardboard, dadoed into sides. Provide pulls as specified. The inside surfaces of all drawers shall receive one coat of Penetrating Primer and one coat of Glass Lacquer.

13. Drawer fronts to be 3/4" (19mm) thick, 5-ply veneer core construction, with veneer banded top edge to match face. Ends to be puttied, sanded and glazed to match top edge. All drawers to be provided with full extension glides.

14. Painted finishes to have exposed surfaces free from defects and blemished that would show after being finished, regardless of grade specified. All surfaces specified to receive a panint or enamel finish are to receive one cross-coat of lacquer type undercoat. After the undercoat has been thoroughly dried, surfaces are to be sanded smooth and tow coats of enamel is to be applied. Back painting is to be provided for all cabinet and woodwork prior to installation.

15. Interior shelves are to be laminated and provided with self-edging on all sides.

16. Where required by code, all required materials are to be treated with fire retardant chemicals to achieve the required flame spreading performance rating. Retardant chemicals must be a type approved by local authorities.

2.15 SOLID SURFACE – NOT APPLICABLE

2.16 PREFABRICATED, INSULATED WALK-IN TYPE REFRIGERATED AND FROZEN ROOM ASSEMBLIES – NOT APPLICABLE

2.17 MECHANICAL REFRIGERATION SYSTEMS

1. Supply and installation of all mechanical refrigeration equipment and controls for refrigerators, freezers, blast chillers and freezer and tempering rooms to form a complete and functional system consisting of but not limited to:

    - semi-hermetic and or scroll compressor/muli-plex compressor system/condensing unit-air or water cooled, as specified
    - automatic water regulator valve (on water cooled condensing units only if specified)
    - evaporator/cooling coil c/w electric defrost heaters in all refrigerator and freezer evaporator coils as specified
    - Room sensor
    - thermostatic expansion valve(s)

- liquid line sight glass
- dehydrator filter/drier
- solenoid valve
- pressure control
- electronic controller (for defrost cycle in refrigerators and freezers),
- evaporator coil drain line heaters
- contractor (where applicable)
- disconnect switch (where applicable)
- service valves

2. The K.E.C. shall supply all products, materials and labour necessary to provide a complete operating mechanical refrigeration system capable of meeting the cooling demands of, but not limited to, all refrigerated and frozen storage rooms, designated refrigerated preparation/assembly rooms, cook chill food production systems, blast chilling and freezing systems, tempering rooms and ice builder. The system shall also include remote condensor(s) sized to suit the BTU cooling requirements that meet the specifications of the system and/or individual compressors.

3. Each individual mechanical refrigeration system shall be sized by the Foodservice Refrigeration Sub-Contractor to suit the internal space, ambient temperatures and humidity levels of surrounding areas, product type and load, heat infiltration and temperature of incoming product in order to maintain the specified holding temperatures. The Food Service Refrigeration Sub-Contractor must verify all of this information with the Owner and/or the Consultant during the bidding period. Equipment sizes specified are to be used as a guideline only. Should an adjustment in the size of any refrigeration equipment be required, advise the Consultant during the bidding period so that an addendum may be issued.

4. Design compressor and coil capacity on a 16 to 18 hour day compressor operation in 32.8 C ambient temperature maximum.

5. Design refrigeration equipment for use with specified refrigeration gas for refrigerators and freezers (high, medium, and low temperature applications). Refrigeration equipment for use with Freon R22 will not be accepted.

6. All condensing units shall be Semi-Hermetic or Scroll complete with motor, water or air cooled condenser, receiver, compressor, suction and discharge valves, oil separator, high/low pressure controls and all other necessary components mounted in a flexible manner on a common base with all service valves and controls readily accessible and easily serviceable.

7. Evaporator (coil) to be forced convection unit cooler type, suspended from ceiling panels. Forced air discharge to be parallel to ceiling. Air circulation motor ECM type, multi-fin with tube type coil and grill to be assembled within protective housing. Expansion valve, disconnect switch, with strainer, heat exchanger inlet and outlet service valve connections also to be contained within housing.

8. Construct evaporator entirely of non-corrosive materials. Air circulation motors to be life time sealed and entire unit-cooler assembly readily accessible for cleaning.

9. Evaporator (coil) shall be equipped with mounting brackets, drip pan, drain connection and required controls for a safe and satisfactory operation.

10. Mechanical refrigeration systems used for both refrigerator and freezer applications shall have an automatic air or electric system for defrosting including heaters and time control. Defrost to be time initiated and temperature terminated with built in fail-safe control and fan delay switch as required.

11. Thermostatic type expansion valves, all metal, moisture proof with gas charged bulb clamped to suction end of evaporator (coil).

12. Equip each prefabricated walk-in refrigerated or frozen storage room and refrigerated preparation/assembly rooms with a room sensor to control the solenoid valve. Mount solenoid valves on liquid lines, close to the cooling unit to control flow of refrigerant.

13. Remote condensing units, compressors or multi-plex compressor system in mechanical rooms shall be mounted on racks, welded, primed and painted with black enamel or on concrete pads as specified.

14. Mount components for each system, as specified herein, in a neat and orderly arrangement. Identify the system being serviced with a permanent stenciled label as well as a second permanent label identifying the name and address of the service agency responsible for servicing and warranty work. Show dates of installation and end of warranty period.

    1. Compressors

under 1/2 hp	- 120/1/60 service
1/2 hp to 3/4 hp	- 208/1/60 service
1 hp	- 208/3/60 service
2 hp and over	- 600/3/60 service

15. Provide a contactor for each three (3) phase motor and an ON/OFF switch, rated for the hp served, for each single (1) phase motor.

16. Mount all disconnect switches in an accessible location and clearly identified as to compressor served. Multiple disconnect switches shall be banked together.

17. Condensate drain lines from evaporators (coils) shall be installed by the K.E.C. The Foodservice Contractor shall supply and install the necessary drain line heater cable from freezer drain lines. Co-ordinate drain pitch to ensure a fall of 25mm in 610mm. Wrap all condensate drain lines with insulated, white PVC covering.

18. Install a PVC sleeve in the walk-in refrigerator wall where any pipe passes through. The sleeve shall be larger than the penetrating pipe to allow for a sealant packing and vapour seal.

19. All refrigeration piping shall be type "L" copper tubing hard drawn with "silfos" brazed joints, verified free of leaks. Completely dehydrate piping before charging with refrigerant. During brazing nitrogen must be flowed in piping being brazed.

20. All joints on all lines shall be wrought copper solder joint fitting, with adaptor fittings where screwed connections are necessary.

21. Installation of piping shall conform to applicable requirements of ANSI code for Pressure Piping, Section on "Refrigeration Piping" and Local Standard and Code for "Mechanical Refrigeration Code". Refrigerant piping to obtain a pressure drop of less than 23 kPa per 50 metres in suction lines and 47 Kpa per 50 metres in liquid lines. To increase the velocity and assure proper oil return, install smaller diameter vertical risers on suction lines.

    1. All new refrigerant piping is to be pressure tested to not less than 200psi or as low as required by local codes with dry nitrogen and properly evacuated before recharging with refrigerant.

    2. All refrigerant piping shall be properly identified as to service and direction of flow.

    3. Valves shall be packless type designed and selected for specified refrigerant.

4. Insulate suction lines with 19mm thick Armaflex AP, 25mm thick on freezer system; or approved equivalent fire retardant pipe covering, installed in strict accordance with the manufacturer's recommendations. Tape liquid and suction lines together.

5. Testing and evacuation procedure shall conform to ANSI B31.5 and test pressure shall be in accordance with Local Code.

6. Evacuation shall be accomplished by the use of a two stage vacuum pump to ensure removal of all moisture and non-condensable gases. Minimum evacuation level shall not less than 500 micron.

7. Provide all refrigerant required for charging and placing the system in proper operation. Charging shall be done through a new filter dryer and completed by a licensed refrigeration contractor.

2.18 EXHAUST VENTILATORS AND HOODS

1. The basic requirements of the design, installation and use of exhaust systems components including ventilator(s) (hoods with or without dampers) exhaust ducts, air moving devices, fire suppression systems, and auxiliary equipment shall be supply and installed in accordance to the current edition of the NFPA-96 and NFPA-17a, and ULC standard ULC-S646-98.

2. Fabricate hoods of 10ga mm stainless steel type 304, No. 4 finish with joints and seams fully welded and liquid tight.

3. Provide self-closing dampers if so listed by U.L.C. and approved by authorities having jurisdiction.

4. Duct collars shall be 12ga mm stainless steel all welded c/w 1” flanged perimeter connection.

5. Drains from multiple hood sections shall be manifolded to one common connection.

6. Lights shall be fluorescent recessed vapour type fixtures c/w bulbs. Standard hoods shall have Klein # 2310 incandescent vapour proof fixtures c/w bulbs.

7. Stainless steel removable enclosure panels shall be provided from top of ventilators to underside of finished ceilings.

8. Provide a 12ga stainless steel service chase approximately 12” X 8” to enclose services from top of service wall to underside of ventilators or hoods.

9. Provide the required and engineered number of U.L.C. grease extractors for filter type exhaust hoods. Extractors constructed of stainless steel frame with stainless steel interior air baffles and strategic weep holes to allow drainage into grease trough.

10. Grease trough shall be one piece, at back of hood and below extractors c/w a removable 6”x 6” x 4” grease container drawer.

11. Support and hang ventilators and hoods by means of mild steel threaded rod, secured to structural ceiling member. Utilize turn-buckles to ensure a plumb and level installation.

2.19 CONDENSATE HOODS – NOT APPLICABLE

2.20 FIRE SUPPRESSION SYSTEM

1. The basic requirements for the design, installation and use of a pre-engineered fire suppression system shall be governed by the current edition of the NFPA-17a, NFPA-96, ULC listed, and acceptable to the local authorities having jurisdiction.

2. The hood manufacturer shall supply a wet chemical fire suppression system as specified in the itemized specification.

3. The hood manufacturer shall provide a pre-piped fire suppression system with full coverage in each hood, plenum and duct collar. Each fire suppression drop shall extend from the roof of the hood and shall be chrome plated or stainless steel pipe or sleeve.

4. The hood manufacturer shall provide detector(s) factory installed in each hood and wired to a common junction box on top of each hood. The detectors shall be accessible from the underside of the hood. The quantity and location of the detectors shall be in accordance with the ULC listing and the authority having jurisdiction.

5. A fire condition shall cause the system to automatically discharge above the hazard areas and extinguish the fire.

6. On discharge of the system, all fuel and power to cooking equipment shall be shut off automatically by means of a mechanical or electrical (if so specified) gas valve for gas equipment and/or under voltage shunt trip for electrical equipment.

7. Gas valve(s) shall be supplied by the hood manufacturer for installation in the gas supply line by the Mechanical Division. The hood manufacturer shall supply a gas valve reset station in the fire suppression control panel in the event of a power failure or fire.

8. Shunt trips shall be supplied, installed and wired by the Electrical Division.

9. Provide mechanical or electrical, if so specified, remote fire pull stations at the kitchen exit(s).

10. System discharge nozzles shall have grease caps.

11. The hood manufacturer shall supply and install all field and factory piping in accordance with the ULC listing of the fire suppression system. Conceal all piping above the roof of the hood whenever possible. All exposed piping to be stainless steel or chrome plated and/or sleeved.

12. The system shall be installed to the manufacturer’s specifications, by qualified representatives and in strict accordance to all applicable codes.

13. Supply and installation of the field piping from the hoods shall be by the hood manufacturer in accordance with the ULC listing. The hood manufacturer to supply all thermostatic detection devices, release mechanisms and other accessories and components to form a complete operational and approved system.

14. The hood manufacturer to supply and set-in-place for wiring by the Control Division the electric manual remote pull station for the fire suppression system(s) as required by the local authorities having jurisdiction.

2.21 CONVEYOR SYSTEMS – NOT APPLICABLE

2.22 ITEMIZED EQUIPMENT SPECIFICATIONS

1. The following numbers correspond to those on the Foodservice Equipment Drawings.

2. Where a manufacturer's name and model number is indicated, the item shall be supplied with all standard components, features and materials whether specifically identified or not, and shall be considered inherent in this specification.

3. Items identified as custom fabricated shall be constructed of stainless steel unless otherwise specified. Refer to detail drawings at the end of this section for general fabrication methods for all items.

4. Verify mechanical and electrical services on owner supplied equipment.

5. Approved alternative manufacturers must supply a product that is equal in performance to the specified item.

6. The following itemized list is foodservice equipment required in the **Classroom Space(s):**

ITEM NO. 1.000: HAND SINK

Quantity: One (1) – by K.E.C.
Manufacturer: EAGLE or equivalent by ADVANCE TABCO
Model: HSA-10-FA-P

Components:

- Manufacturer's standard components.
- Stainless steel sink and pedestal.
- Gooseneck faucet with individual hot and cold foot pedals.
- Complete with P-trap and tailpiece.
- Complete with MICROGARD antimicrobial protection.
- Complete with 326696 anti-scald valve.
- Complete with end splashes as required by local health codes.
- Complete with Rubbermaid H-2893 bin (Colour to be grey) with H-1633 swing top.

ITEM NO. 1.001: S.S. CLEAN DISHTABLE W/ HANDSINK

Quantity: One (1) – by K.E.C.
Nominal size: 1440mm long x 762mm wide x 864mm high.
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- 14 ga. s.s. top with rolled edges as per QF drawing Detail 400.
- Full length 305mm high x 102mm wide integral splash at back and 51mm wide on left-hand side, per QF drawing Detail 400, splayed to wall.
- One (1) 305mm long x 406mm wide x 305mm deep sink complete with one (1) one T&S B-0230-134XA wall-mount faucet (including inlet KIT) with gooseneck spout and S.S. apron on front and sides. Stainless steel sink to have all coved edges and corners.
- Open below table to suit food service equipment.
- Table to be sloped from all directions to sink compartment(s).
- Legs and brace sets as required.
- Secure table to the floor.

- Fabricator to verify dimensions on site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.001A: S.S. WALL SHELVING

Quantity: One (1) – by K.E.C.
Nominal size: 2340mm long x 305mm wide x one (1) unit tall.
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- Stainless steel shelf mounted to wall as per drawing Detail 420.
- Fabricator to verify dimensions on-site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.002: SPARE NUMBER

ITEM NO. 1.003: S.S. SOILED DISHTABLE W/ THREE SINKS

Quantity: One (1) – by K.E.C.
Nominal size: 3185mm long x 813mm wide x Height to suit dishwasher
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- 14 ga. s.s. top with rolled edges as per QF drawing Detail 400.
- Full length 305mm high x 102mm wide integral splash at back and 51mm wide on right-hand side, per QF drawing Detail 400, splayed to wall.
- Two (2) 508mm long x 610mm wide x 406mm deep, and one (1) 762mm long x 610mm wide x 406mm deep sink compartments complete with s.s. apron on front and sides. Stainless steel sinks to have all coved edges and corners. Provide removable perforated basket and H-shaped rail as per drawing Detail 900.
- One (1) T&S B-0123-12-CR-BC deck-mount pre-rinse faucet, complete with spray hose and hook, add-on faucet, all attachments including wall bracket and B-0425-KIT install kit. Reduced height 300mm riser required. Refer to drawing Detail 900 for faucet positioning on backsplash.
- One (1) T&S B-0221-CR deck-mount faucet with B-0425-KIT install kit.
- Open below table to suit food service equipment.
- Table to be sloped from all directions to sink compartments.
- Legs and brace sets as required.
- Secure table to the floor.
- Fabricator to verify dimensions on site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.003A: S.S. SORTING SHELF, WALL MOUNT

Quantity: One (1) – by K.E.C.
Nominal size: 550mm long x 406mm wide
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- Stainless steel shelf mounted to wall as per QF-500 series drawing Detail 912.
- Fabricator to verify dimensions on-site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.004: WASTE BIN W/ DOLLY

Quantity: Two (2) – by K.E.C.
Manufacturer: RUBBERMAID or equivalent by CARLISLE
Model: FG262000GRAY

Components:

- Manufacturer’s standard components.
- 20 gallon (76 L) capacity bin, colour to be gray.
- Complete with FG264000BLA dolly.
- Complete with FG261960GRAY gray self-draining lid.

ITEM NO. 1.005: WASTE BIN, SLIM JIM

Quantity: Two (2) – by K.E.C.
Manufacturer: RUBBERMAID
Model: 1971258

Components:

- Manufacturer’s standard components.
- Colour to be grey.
- Complete with dolly.

ITEM NO. 1.006: SHELVING, MOBILE

Quantity: One (1) – by K.E.C.
Manufacturer: METRO or equivalent by CAMBRO/ QUANTUM
Model: Metro Max Q

Components:

- Manufacturer's standard components.
- Three (3) MQ2460G shelves.
- One (1) MQ2460F bottom shelf.
- Four (4) MX63UP posts.
- Four (4) 5MPB all swivel casters.
- Microban coated.

ITEM NO. 1.007: SPARE NUMBER

ITEM NO. 1.008: EXHAUST HOOD

Quantity: One (1) comprised of one (1) section – by K.E.C.
Manufacturer: SPRING AIR or equal by HALTON/GAYLORD
Model: FN-BR-MJ-ZH-7/4.5

Components:

- Manufacturer's standard components.
- Refer to details shown on Exhaust Hood drawings
- The Filter hood shall be a box canopy, VE hood UL/ULC listed, and built in accordance with the NFPA-96.
- The unit casing shall be a minimum 18 GA. stainless steel on all exposed surfaces.
- The filter hood shall include UL/ULC listed VE baffle grease filters mounted in an integral stainless steel rack inclined at 45 degrees. The filter rack shall include a full length stainless steel grease gutter and grease cup.
- The Spring Air Systems cULus listed hood shall be supplied with a cULus listed down ZoneFlow Manual damper. The ZoneFlow shall be factory installed under the exhaust duct collar. The exhaust duct collar shall remain 3" high with a 1" perimeter flange. A locking quadrant shall be accessible from the hood roof panel to adjust the damper position. The Zoneflow damper is accessible for cleaning by removing the filters under the duct collar.The hood shall have 2 LED lights evenly spaced along the length of the hood. All lights common to one section of the hood to be inter-wired by Spring Air Systems.
- Fire suppression system activated by a fusible links.
- LED lights as per Exhaust Hood drawing.
- Duct collar as noted on Exhaust Hood drawings.
- Complete with s.s. removable enclosure panels from top of ventilator to underside of finished ceiling on all exposed sides. Note this is to be L-Shaped to return into the finished ceiling.
- Complete with Spring Air supplied wet chemical surface and duct fire suppression system installed in accordance with NFPA-17A as specified. Mounted on wall in a stainless steel cabinet.

Services:

- Division 16 to provide power to LED light inside of ventilator and interconnect light to panel switch.

ITEM NO. 1.008A: FIRE SUPPRESSION CABINET & CONTROL PANEL

Note: Specified under item 1.012A.

ITEM NO. 1.009: SHELVING, MOBILE

Quantity: Two (2) – by K.E.C.
Manufacturer: METRO or equivalent by CAMBRO/ QUANTUM
Model: Metro Max Q

Components:

- Manufacturer's standard components.
- Three (3) MQ2448G shelves.

- One (1) MQ2448F bottom shelf.
- Four (4) MX63UP posts.
- Four (4) 5MPB all swivel casters.
- Microban coated.

ITEM NO. 1.010: S.S. STUB WALL (SKELETON)

Quantity: One (1) lot – by K.E.C. (top/ wall capping by OTHERS)
Nominal size: One (1) section 4950mm long & (2) two sections 1080mm long x 125mm wide x 1055mm high.
Type: Custom fabricated S.S. construction in accordance with the specification for this section

Components:

- Refer to Detail 2 on QF-500 series drawings.
- 100mm x 50mm s.s. angle frame construction with removable S.S. panels.
- 50mm Corian top/ wall capping by others.
- Removable access panels with recessed handles.
- Provide all necessary service openings for connection of services to equipment.
- Provide S.S. grommets to conceal all openings for services.
- Silicone seal where service wall meets floor, columns, exhaust ventilator etc.
- All electrical junction boxes, receptacles and stainless steel cover plates required for equipment to be supplied and factory-installed by KEC, built fully recessed into the service chase. All conduit and wiring supplied and installed to junction boxes and receptacles and all final connections by Electrical Division. All junction boxes and receptacles to be clearly labelled with the equipment item numbers they are connected to. All cover plates to be stainless steel.

ITEM NO. 1.011: S.S. STUB WALL (SKELETON)

Quantity: Four (4) – by K.E.C. (top/ wall capping by OTHERS)
Nominal size: 5490mm long x 125mm wide x 1055mm high.
Type: Custom fabricated S.S. construction in accordance with the specification for this section

Components:

- Refer to Detail 3 on QF-500 series drawings.
- 100mm x 50mm s.s. angle frame construction with removable S.S. panels.
- 50mm Corian top/ wall capping by others.
- Removable access panels with recessed handles.
- Provide all necessary service openings for connection of services to equipment.
- Provide S.S. grommets to conceal all openings for services.
- Silicone seal where service wall meets floor, columns, exhaust ventilator etc.
- All electrical junction boxes, receptacles and stainless steel cover plates required for equipment to be supplied and factory-installed by KEC, built fully recessed into the service chase. All conduit and wiring supplied and installed to junction boxes and receptacles and all final connections by Electrical

Division. All junction boxes and receptacles to be clearly labelled with the equipment item numbers they are connected to. All cover plates to be stainless steel.

ITEM NO. 1.012, 1.013, & 1.014: EXHAUST HOOD

Quantity: One (1) comprised of three (3) sections – by K.E.C.
Manufacturer: SPRING AIR or equal by HALTON/GAYLORD
Model: FN-B-MB-ZH(D)-11/3.92 & FN-B-MB-ZH(D)-9/3.92 & FN-B-MB-ZH(D)-7.67/3.92

Components:

- Manufacturer's standard components.
- Refer to details shown on Exhaust Hood drawings.
- The Filter hood shall be a box canopy, VE hood UL/ULC listed, and built in accordance with the NFPA-96.
- The unit casing shall be a minimum 18 GA. stainless steel on all exposed surfaces.
- The filter hood shall include UL/ULC listed VE baffle grease filters mounted in an integral stainless steel rack inclined at 45 degrees. The filter rack shall include a full length stainless steel grease gutter and grease cup.
- The Spring Air Systems cULus listed hood shall be supplied with a cULus listed down ZoneFlow Manual damper. The ZoneFlow shall be factory installed under the exhaust duct collar. The exhaust duct collar shall remain 3" high with a 1" perimeter flange. A locking quadrant shall be accessible from the hood roof panel to adjust the damper position. The Zoneflow damper is accessible for cleaning by removing the filters under the duct collar.The hood shall have 2 LED lights evenly spaced along the length of the hood. All lights common to one section of the hood to be inter-wired by Spring Air Systems.
- Fire suppression system activated by a fusible links.
- LED lights as per Exhaust Hood drawing.
- Duct collar as noted on Exhaust Hood drawings.
- Complete with s.s. removable enclosure panels from top of ventilator to underside of finished ceiling on all exposed sides. Note this is to be L-Shaped to return into the finished ceiling.
- Complete with Spring Air supplied wet chemical surface and duct fire suppression system installed in accordance with NFPA-17A as specified. Mounted on wall in a stainless steel cabinet.

Services:

- Division 16 to provide power to LED light inside of ventilator and interconnect light to panel switch.

ITEM NO. 1.012A: FIRE SUPPRESSION CABINET & CONTROL PANEL

Quantity: One (1) – by K.E.C.
Manufacturer: SPRING AIR or equivalent by HALTON/ GAYLORD
Model: WC-28-MH & RPD-P11-AW-TC1-4-SC-AS-BS

Components:

- Manufacturer's standard components.

- ULC listed and CSA approved.
- TruFlow s.s. control panel surface mounted on building wall.
- The wall mounted control panel shall include a touch screen interface, exhaust fan on/off switch and a canopy light on/off switch. The normally open fan and canopy light switches are wired to a J-box located on the top of the hood.
- Panel includes Thermal-Start option per requirements of IMC 2006; duct mounted J-couple assembly including mini-clips, j-box and UL/ULC duct penetration fitting supply by Spring Air Systems and installed by mechanical contractor in main duct leading to exhaust fan, 30 feet of J-couple wire including male and female mini-clip connectors, RPD panel mounted temperature processor set to auto activate exhaust fan at 90F (32C).
- The hood manufacturer shall supply and install a wet chemical surface fire suppression system for the kitchen exhaust hood. The system shall be UL/ULC listed, and supplied and installed in accordance with the NFPA-96, NFPA-17A and all applicable national and local code requirements.
- The fire suppression system shall be factory pre-pipe to match the approved appliance lineup under each hood. Each appliance drop shall extend from the roof of the canopy to reduce grease accumulation on the interior canopy piping and simplify cleaning. Each drop and/or fitting in the canopy shall be chrome placed and connected to a UL/ULC hood penetration fitting. Each drop shall include, on the discharge end, a nozzle to suit the appliance being protected and a swivel fitting.
- The nozzles and fusible links shall be located to protect the appliances, hood plenum, and duct collar. The system shall be complete with two dpdt micro switches, a mechanical gas valve, wet chemical cylinder, and all necessary piping.
- A factory authorized technician shall complete the final hookup on site after all appliance has been set in place under the canopy(s).
- One type K fire extinguisher.
- Refer to details shown on QF-400 series of drawings.
- All remote wiring shall be by electrical division. The electrical division shall supply and install a shunt trip where electrical appliances are present and interlock the system with the building fire alarm panel. The mechanical division shall install the mechanical gas valve.

ITEM NO. 1.015: S.S. PREP TABLE

Quantity: Four (4) – by K.E.C.
Manufacturer: IFAB or equivalent by ANTONEE
Nominal size: 610mm long x 762mm wide x 864mm high
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- 14 ga. s.s. top with boxed edges as per Detail 400.
- Full length 150mm high x 50mm wide integral splash at back and splayed.
- Table to have stainless steel solid base complete with stainless steel intermediate shelf.
- Legs and brace sets as required.
- Secure table to the floor.
- Fabricator to verify dimensions on-site prior to fabrication.

- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.016: S.S. WALL PANEL - HOOD

Quantity: One (1) Lot – by K.E.C.
Nominal size: Refer to Detail B on Drawing QF-200, Height to be from finished floor to underside of exhaust hood – Three (3) sections, approximately 10,100mm, 1400mm, and 1400mm long.
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- 20 ga. 25mm thick mineral wool insulated stainless steel wall paneling to cover the architectural wall from the top of the finished floor to the underside of the exhaust hood. Panel is to be double wall construction.
- Wall panels are to run the full length of the wall below the exhaust hood.
- Wall panel sections are to be equal length, siliconed to the wall and screwed on edges with stainless steel fasteners.
- Edges and fasteners to be concealed with stainless steel “T” strips so that edges and fasteners are concealed and watertight.
- Stainless steel “Z” strip supplied and installed full length at base of wall panel. Top section to fully extend 102mm behind bottom edge of wall panel, fastened and sealed watertight to the architectural wall. Bottom section to extend 25mm down over the floor coving and to be sealed watertight. Refer to Detail 511.
- K.E.C. to provide openings to suit services on site.
- Fabricator to verify dimensions on-site prior to fabrication.
- Refer to Drawing QF-200 for location of wall panel.

ITEM NO. 1.017: HOT HOLDING CABINET, UNDERCOUNTER HEIGHT

Quantity: One (1) – by K.E.C.
Manufacturer: TURBOFAN
Model: H8D-FS-UC

Components:

- Manufacturer’s standard components.
- 220-240v/1/60 electrical.

ITEM NO. 1.017A: S.S. HOOD ENCLOSURE PANEL (FILLER PANEL)

Quantity: One (1) – by K.E.C.
Manufacturer: IFAB or equivalent by ANTONEE
Nominal size: 1220mm long x height to match exhaust hood.
Type: Custom fabricated s/s construction in accordance with the specification for this section (exhaust hoods).

Components:

- Stainless steel filler panel, height and finish to match adjacent exhaust hood(s).

ITEM NO. 1.018: SPARE NUMBER

ITEM NO. 1.019: S.S. TABLE W/ TWO SINKS

Quantity: One (1) – by K.E.C.
Nominal size: 1825mm long x 762mm wide x 864mm high
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- 14 ga. s.s. top with dished and boxed edges as per QF drawing Detail 400.
- Full length 152mm high x 51mm wide integral splash at back and left hand side, splayed to wall.
- Two (2) 406mm long x 508mm wide x 305mm deep sink complete with one (1) T&S UltraRinse B-0231-U12-CR wall-mount mixing faucet with fan spray nozzle and S.S. apron on front and sides. Stainless steel sinks to have all coved edges and corners.
- Open section below to suit undercounter equipment.
- Legs and brace sets as required.
- Secure table to the floor.
- Fabricator to verify dimensions on-site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.019A: S.S. WALL SHELVING

Quantity: One (1) – by K.E.C.
Nominal size: 1825mm long x 305mm wide x two (2) units tall.
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- Stainless steel shelf mounted to wall as per drawing Detail 421.
- Fabricator to verify dimensions on-site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.020: S.S. TABLE W/ HAND SINK

Quantity: One (1) – by K.E.C.
Nominal size: 1340mm long x 762mm wide x 864mm high
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- 14 ga. s.s. top with boxed edges as per QF-500 drawing Detail 400.
- Full length 152mm high x 51mm wide integral splash at back and right hand side, splayed to wall.
- One (1) 305mm long x 406mm wide x 305mm deep sink complete with one (1) one T&S B-0230-134XA wall-mount faucet (including inlet KIT) with gooseneck spout and S.S. apron on front and sides. Stainless steel sink to have all coved edges and corners.

- Open section below to suit undercounter equipment.
- Legs and brace sets as required.
- Secure table to the floor.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.020A: S.S. WALL SHELVING

Quantity: One (1) – by K.E.C.
Nominal size: 1340mm long x 305mm wide x two (2) units tall.
Type: Custom fabricated s/s construction in accordance with the specification for this section.

Components:

- Stainless steel shelf mounted to wall as per drawing Detail 421.
- Fabricator to verify dimensions on-site prior to fabrication.
- Refer to Elevation on QF-300 series of drawings.

ITEM NO. 1.021: SHELVING, MOBILE

Quantity: One (1) – by K.E.C.
Manufacturer: METRO or equivalent by CAMBRO/ QUANTUM
Model: Metro Max Q

Components:

- Manufacturer's standard components.
- Three (3) MQ2454G shelves.
- One (1) MQ2454F bottom shelf.
- Four (4) MX63UP posts.
- Four (4) 5MPB all swivel casters.
- Microban coated.

ITEM NO. 1.022: SPARE NUMBER

ITEM NO. 1.023: S.S. HOOD ENCLOSURE PANEL (FILLER PANEL)

Quantity: One (1) – by K.E.C.
Manufacturer: IFAB or equivalent by ANTONEE
Nominal size: 315mm long x height to match exhaust hood.
Type: Custom fabricated s/s construction in accordance with the specification for this section (exhaust hoods).

Components:

- Stainless steel filler panel, height and finish to match adjacent exhaust hood(s).

ITEM NO. 1.024: CART, UTILITY

Quantity: One (1) – by K.E.C.
Manufacturer: METRO
Model: MY2030-34G MYCART

Components:

- Manufacturer's standard components.
- Three (3) adjustable polymer shelves, integral handle one end, gray.
- Microban antimicrobial protection colour.
- 100mm (102mm) swivel casters.

ITEM NO. 1.025: SPARE NUMBER

ITEM NO. 1.026: STACKED WASHER/ DRYER (ELECTRIC)

Quantity: One (1) – by K.E.C.
Manufacturer: WHIRLPOOL
Model: YWET4027HW

- Components:
- Manufacturer's standard components.
- 120-240v/1Ph/60Hz electrical (30 amp circuit).

ITEM NO. R.000: REACH-IN SOLID DOOR REFRIGERATOR

Quantity: One (1) – by OWNER
Manufacturer: SUB-EQUIP
Model: C-81BR

Note: To be uncrated & set in place by KEC.

ITEM NO. R.001: REACH-IN SOLID DOOR FREEZER

Quantity: One (1) – by OWNER
Manufacturer: SUB-EQUIP
Model: C-81BF

Note: To be uncrated & set in place by KEC.

ITEM NO. R.002: REFRIGERATOR, UNDERCOUNTER

Quantity: Two (2) – by OWNER
Manufacturer: SUB-EQUIP
Model: CUC72

Note: To be uncrated & set in place by KEC.

ITEM NO. R.003: INDUCTION COOKER

Quantity: One (1) – by OWNER
Manufacturer: TURBO RANGE
Model: SL-35-EL400

Note: To be uncrated & set in place by KEC.

ITEM NO. R.004: S.S. PREP TABLE

Quantity: Twelve (12) – by OWNER
Manufacturer: METAL 304 EQUIPMENT
Model: XWTG-3072-416

Note: To be uncrated & set in place by KEC.

ITEM NO. R.005: CONVECTION OVEN, ELECTRIC

Quantity: Two (2) – by OWNER
Manufacturer: TURBO RANGE
Model: TR-COE

Note: To be uncrated & set in place by KEC.

ITEM NO. R.006: RANGE W/ GRIDDLE TOP - GAS

Quantity: Two (2) – by OWNER
Manufacturer: TURBO RANGE
Model: TR-R60-GS24-6B-J

Note: To be uncrated & set in place by KEC.

ITEM NO. R.007: HOT PLATE - GAS

Quantity: One (1) – by OWNER
Manufacturer: TURBO RANGE
Model: TR-HP24HD-J

Note: To be uncrated & set in place by KEC.

ITEM NO. R.008: FRYER (DUAL TANK) - GAS

Quantity: One (1) – by OWNER
Manufacturer: TURBO RANGE
Model: TR-F4-SPTK

Note: To be uncrated & set in place by KEC.

ITEM NO. R.009: SPARE NUMBER

ITEM NO. R.010: S.S. WORK TABLE

Quantity: One (1) – by OWNER
Manufacturer: METAL 304 EQUIPMENT
Model: XWTG-2430-416

Note: To be uncrated & set in place by KEC.

ITEM NO. R.011: S.S. EQUIPMENT STAND

Quantity: One (1) – by OWNER
Manufacturer: METAL 304 EQUIPMENT
Model: XES-3024-418

Note: To be uncrated & set in place by KEC.

ITEM NO. R.012: DISHWASHER, UNDERCOUNTER

Quantity: One (1) – by OWNER
Manufacturer: SUB-EQUIP
Model: H50-ST

Note: To be uncrated & set in place by KEC.

Part 3 Execution

3.1 SITE INSPECTIONS

1. All dimensions shown on the Drawings or listed in this Section of the Specification are to be considered nominal and for guidance only. It is the responsibility of the Foodservice Equipment Sub-contractor to check dimensions on the site and to co-ordinate any adjustments which may be necessary for the proper fabrication and set-in-place of the foodservice equipment.

2. If significant variances are apparent to the Construction Manager or Foodservice Equipment Sub-contractor which may require changes affecting the intent of the contract, immediately notify the consultant.

3. Fabricate equipment in sections that will allow easy access into the building and to final location within the foodservice area. Any damage to the building or the equipment will be the Foodservice Equipment Sub-contractor's responsibility.

4. Verify on the job site all actual dimensions of storerooms and walk-in refrigerators and freezers and adjust if necessary the size of shelving units specified in the item specification.

5. Verify all points of access into the job site and ensure that all pieces of equipment or fabricated items installed or relocated are able to pass through doors, hallways etc. in order to arrive at designated location on plans.

3.2 SAMPLES

1. If requested by the Consultant, submit samples of components or fabrication methods, materials or finishes, for review and approval before proceeding with that aspect of the work. Where necessary,

request a shop inspection of an assembly which cannot be submitted for approval. Include in the base bid price, the cost of samples which may be rejected.

2. Samples must be the precise articles proposed to be furnished.

3. All samples must be supplied in the required quantity and all except one (1) will be returned.

4. Reviewed samples will become the standard of workmanship and material against which installed work will be checked.

5. Obtain from the Owner, all necessary samples of china, baskets, trays, etc. to determine proper sizes for openings, angle slides dispensers, conveyors, dishmachines, carts, wrapping machines, etc.

6. Prior to ordering dishwashing or traywashing equipment, obtain from the Owner a sample of all service wares, trays and carts etc. and assure their compatibility with warewashing or cartwashing equipment.

3.3 DELIVERY STORAGE OF EQUIPMENT

1. The Foodservice Equipment Sub-contractor will coordinate deliveries of equipment in conjunction with construction activity and progress at the site and as dictated by the Construction Manager.

2. The Foodservice Equipment Sub-contractor shall obtain and/or hold equipment ready for delivery in accordance with an agreed schedule which will permit completion of the work at the specific date.

3. Deliver, unpack and set in place all equipment in the designated position, ready for final connection of services, for units with electrical or mechanical connections.

4. Supply to the Construction Manager, in sufficient time, any information or items of service, articles, components or equipment which requires building in or which may overlap or impede the work of others.

5. Provide all necessary information within adequate time and in proper sequence regarding the exact location of openings, chases and any attachments or other fittings required for foodservice equipment.

6. Supply and deliver to the site in sufficient time all inserts, anchors, bolts, sleeves, ferrules and similar items for attaching to, or building into, masonry, concrete and other work for the proper anchorage and fixing of the equipment. Include necessary templates, instructions, directions and/or assistance in the location and installation of all items by other Sub-contractors.

3.4 INSTALLATION

1. Supply to all other trades in sufficient time, any services, articles, or equipment that require “building-in” or overlapping coordination. Also notify exact locations of openings, chases, anchors, floor pan, etc., required for the foodservice equipment covered in this contract.

2. Caulk and seal equipment to walls, base pads, curbs, and adjacent equipment where required.

3. Leave installed work neat, cleaned and polished, well fitted into position, level, and in proper operating condition.

4. Promptly remove all rubbish and debris from the building and site as the work proceeds and on completion.

5. Activate, test and adjust all equipment and apparatus installed under this Contract. Refinish and repair any painted and finished surfaces damaged during erection and installation. Hand over the completed installation in first class condition and working order.

6. Ensure electrical equipment is accompanied by label or certification of approval by Local Authority.

7. Ensure steam pressure equipment is accompanied by a "Certificate of Boiler" to satisfy Federal requirements.

8. Finished work must be perfectly true and plumb with no warping, buckling or open seams. All edges, hidden or exposed must be ground smooth and rounded. Rivet heads, weld marks, or other imperfections are not acceptable.

9. Cutting and repairs for the proper installation of services are part of the work in this Contract.

10. Obtain permits or special inspections. No allowance will be made for costs incurred.

11. Identify equipment with metal plates or labels permanently secured which include, where applicable:

    - Manufacturer's name or recognized trademark
    - Complete model identification
    - Model, serial number and U.L. and NSF identifications
    - Electrical characteristics
    - Direction of drive
    - Controls
    - Circuits, lines, etc.
    - Specific operating instructions

12. Identify equipment with temporary labels showing location and Item number per Specifications.

13. After installation has been completed and all items checked and adjusted where necessary for satisfactory operation, arrange for inspection of equipment. If items are found unsatisfactory, make necessary corrections and adjustments.

3.5 PROTECTION AND CLEANING

1. Protect properly and efficiently all work against any damage. Repair without charge to the Owner any damage to equipment and/or building. Cooperate at all times to keep the area clean and free of all rubbish and debris. At the end, clean all equipment to permit immediate use by the Owner without further cleaning.

3.6 MAINTENANCE MANUALS

1. Supply four (4) sets of manuals, bound and labeled, incorporating operating and maintenance instructions, including spare parts list and optional accessories for all items specified.

2. Identify each item, arrange in proper sequence and ensure that the numbers correspond to the specifications and drawings.

3. Provide an itemized lead sheet at the front of the manual with a list of the contents and the name and phone number of the service company.

3.7 DEMONSTRATION

1. After completion of installation, cleaning, testing and final inspection, instruct the Owner or their authorized personnel in the correct operation and maintenance of the equipment.

2. A demonstration shall be made of each piece of equipment requested by the Consultant, and such demonstration shall be carried out by a competent representative of the manufacturer's equipment.

3. It is the responsibility of the Construction Manager and/or Foodservice Equipment Sub-contractor to correct deficiencies and make adjustments to items which are not functioning properly at the time of demonstration.

4. The Contractor shall co-ordinate the schedule for equipment demonstrations with the Owner representative, with adequate time allowed for each demonstration.

5. Submit to the Foodservice Consultant cleaning, final inspection and testing, a schedule of demonstration by the suppliers of purchased equipment. Indicate clearly the timing for each supplier to Start up and demonstrate the proper use and maintenance of their equipment to the Owner.

6. The Consultant will inspect equipment on substantial completion of work and will issue a deficiency report immediately thereafter. A final inspection will also be made to verify corrected deficiencies.

7. The Owner reserves the right to inspect equipment at the factory of the Foodservice Equipment Sub-contractor, or at other locations as necessary.

8. Rejection of any item of equipment, components or fabrication will be based on degree of conformance to the Specification and Drawings, and is subject to the Conditions of the contract in any matter of dispute.

3.8 GUARANTEE

1. All new equipment shall be guaranteed for a Minimum of Two (2) years from the date of facility takeover against defects in material, manufacture, assembly, labour and installation. Those items or components which have inherent guarantee periods beyond this minimum shall be sustained to the maximum time provided by the manufacturer.

2. This guarantee applies to new purchases and fabricated equipment specified under this Division. Repair and/or replace at no cost to the Owner, parts and labour included, any and all equipment covered in this contract, which proves defective within the guarantee period.

3. The two (2) year warranty shall include service, inspection, and maintenance for the fire extinguishing system as requested by the national and/or local authorities and N.F.P.A. - Code 96.

4. All mechanical refrigeration system components including compressors, condensing units, Refrigeration System and condensors shall be supplied with a One (1) year replacement guaranteed including parts and labour and an additional Five (5) year parts guarantee on compressors.

5. If defects become apparent during the guarantee period, they shall be made good by the Foodservice Equipment Sub-contractor/supplier or authorized service representative. The supplier means the manufacturer of the equipment item, but under all circumstances it is the responsibility of the Construction Manager/Foodservice Equipment Sub-contractor to maintain the obligation of guarantee whether or not the supplier provides this service.

6. If defects identified at any time during the Two (2) year warranty period are not corrected prior to expiration of the warranty period, the warranty period will automatically be extended until the defect is corrected to the “Owners” or “Consultants” satisfaction.

7. If deficiencies identified at the point of substantial completion of the food equipment installation or during the Two (2) year warranty period are not corrected or resolved prior to the expiration of the Two (2) year warranty period, the warranty period will automatically be extended until such time as the outstanding deficiency is corrected to the “Owners” or “Consultants” satisfaction.

8. The guarantee shall not apply where it can be clearly shown that a defect or malfunction is due to misuse or neglect by the Owner or their representatives.

9. The guarantee period shall commence upon acceptance of the equipment by the Owner, or such date(s) as may be mutually agreed upon after facility takeover of the work. In no event shall the period of guarantee begin later than the date upon which the lien holdback expires.

3.9 INSPECTION, REJECTION AND FACTORY TESTING

1. The Owner and Consultant reserve the right to inspect the fabrication of any items at the fabricating plant and they may reject any equipment which does not comply with Plans and/or Specifications. The Contractor will replace without charge all rejected material or equipment within (10) days or rejection.

2. Factory test and verify all items such as cold pans, refrigerated display cases, ice cream freezers, custom built refrigerators, etc., to be sure that they are in proper working order before shipment. Inform the Consultant of the date of these tests in advance in writing so that he may observe and inspect these items in the ship if necessary. Advise the Consultant when installation is complete and ready for inspection.

END OF SECTION 11 40 00