1. GENERAL

1.1 Summary

A. The plumbing system shall include sanitary drainage, waste, and vent piping; roof drains and interior downspouts; domestic cold water, hot water, and hot water recirculating piping; plumbing fixtures, special fixtures, and floor drains; and, a domestic water heater. Plumbing work shall comply with The International Plumbing Code, NFPA Fuel Gas Codes 54 and 58, current editions, and Unified Facilities Criteria (UFC).

B. Plumbing Design Analysis.

1. Provide plumbing load analysis and calculations with all design submittals.

2. In the design analysis, include the following:

3. Plumbing calculations complete with all assumptions (i.e., water supply, future requirements, sewage estimate, etc.).

4. Provide records of available water pressures and hydrant flow tests.

5. Investigation results of the availability of heat source for heating the domestic hot water.

6. Design calculations to verify the hot water systems capacity to provide the water required in paragraph above will be specifically included in the design analysis.

7. Include an economic analysis on heat source in the design calculations.

8. No forced sewer mains shall pass below the building.

1.2 New Store Concept:

A. Current marketing trend eliminates suspended ceiling in Sales Area and renders ceiling structure visible. This impact on plumbing systems is immediate. The design Mechanical Engineer shall provide guidance to the design Architect for appropriate visual appearance of the plumbing systems. Accomplish this by protecting overhead exposed plumbing lines from excessive condensation by applying appropriate insulation (or other means of catching condensate) and by paralleling structural support runs with piping runs.

1.3 Remodel Concept:

A. Incorporate new store concepts during major remodeling of existing facilities. Many will not apply. The design Mechanical Engineer shall coordinate with the design Architect on those marketing concepts to include in the construction documents. The same requirements for new store projects shall apply for remodel projects to the extent feasible.

B. Phasing of work to accomplish the desired changes will be an important consideration to incorporating the changes. Clearly discuss the effect of the work on the plumbing systems in the design analysis. Discuss any conflicts or problems with attempting to incorporate the new marketing concept application.

1.4 Water Heater/Service:

A. Domestic Hot Water

1. In addition to normal domestic hot water requirements, provide adequate 140 degree F hot water for preparation room wash down and hose stations used for wash down purposes (Fish Market, Meat Processing, Meat Wrapping and Deli/Bakery Rooms).

2. Provide a source of heat available for domestic hot water system year round. Ensure any installation central system used for heat source is available throughout the year.

3. Equip the hot water system with adjustable, but automatic (thermostatically controlled) water mixing valve(s) that will meter water to supply 115 degree F hot water to all hose bibbs, lavatories and hand wash sinks.

4. For economy, consider using point-of-use water heaters for remote store areas such as restrooms, break rooms, Medical Food Inspector's office, etc. which require hot water service.

5. Heat Reclaim:

   a. Domestic water supplied to the hot water heater shall be preheated with reclaimed waste heat from the low temperature refrigeration system(s).

   b. Heat recovered from the refrigeration system for water preheating shall be 25 percent of the total heat of rejection of the compressor system.

   c. For hot water systems with refrigerant heat reclaim units, see Design Standard 220500-7 Plate for piping schematic.

   d. Do not credit heat recovery units to determine the required hot water heater capacity.

6. Meat Processing/Wrapping Washdown Load: In addition to normal building hot water requirements, incorporate the following meat processing/wrapping wash down load into the building hot water heater load:

   a. On facilities of 60,000 SF and larger, use a meat prep wash down load of 400 gallons of 140 degree F water used during a two hour period in building hot water load calculations.

   b. On facilities less than 60,000 SF, use a meat prep wash down load of 200 gallons 140 degree F water used during a two hour period in building hot water load calculations.

7. Water heater shall be sealed or separated combustion type with ducted combustion air and not utilizing a draft hood or barometric damper when located in refrigeration equipment rooms.

8. Small remote loads (i.e. toilet rooms, janitor's closets, etc.) may utilize instantaneous electric heaters where substantial reduction of piping installed cost would result.

B. Water Meter. Provide one on building service.

C. Sanitary Drainage System. Provide single grease trap outside building, except that in extremely cold climates locate indoors with the concurrence of DeCA Project Manager. Size as indicated in Design Standard Plate 22 05 00-04. Route discharge from plumbing fixtures in Meat Processing / Wrapping, and floor drains from Meat Department through grease trap. Install no plumbing below freezer walk-in boxes. Connect drains from other departments, as identified elsewhere in this criteria, to grease trap.

D. Gas meter: Provide on building gas service.

2. PRODUCTS

2.1 Fixtures and Equipment. See Division 11 for detailed equipment information.

A. Water Heater/Service

1. Provide hot and cold water service at each lavatory, sink, and service sink. Also provide hot and cold wash down stations (WS) with hose racks, and hot and cold hose stations (HS) with hose racks.

B. Lavatories and other areas as required below. Provide soap dispensers and paper towel dispensers at all locations that have hand-wash sinks as contractor-furnished contractor-installed (CF/CI) equipment.

C. Fixtures. Commercial quality and equipped with water conserving devices. Provide water closets and urinals with battery powered, sensor activated flush valves. Provide lavatories with battery powered sensor activated faucet, fitted with devices to limit water discharge to 2L/s (0.5gpm). Provide work sinks with combination hot and cold mixing faucets without flow control devices.

D. Plumbing Fixtures: The A/E shall develop fixture schedules meeting the following criteria:

1. WC-1 Water Closet. Standard wall hung, elongated rim, low consumption, 1.28 gpf. Provide battery powered, sensor activated flush valves with override button for temporary use when sensor is inoperative. Provide standard trim.

2. WC-2 Water Closet. Handicapped; same as P-1 except seat at 17" - 19" above floor and over-ride button installed on wide side of stall.

3. UR-1 Urinal. Standard, wall hung, flush valve, washout with rim 17” maximum above floor. Provide low consumption 0.5 gpf. Provide battery powered, sensor activated flush valves with override button for temporary use when sensor is inoperative. Provide standard trim. Note that typically only one urinal is provided in each of the men’s restrooms within a Commissary facility. If more than one urinal is provided in any individual men’s restroom, only one needs to be mounted for handicap accessibility. The other can be mounted at standard height of 24” above floor.

4. L-1 Wall Mount Lavatory. Standard, wall hung, slab lavatory, concealed arms, 20" by 18". Mount rim 34” above floor for handicap accessibility and provide required clearance and insulation for drain piping. Specify sink with extra right hand hole for deck mounted soap dispenser. Equip lavatory with battery powered, sensor activated faucet and limit water flow to 0.5 gpm max. Provide faucet with sensor range adjustments, variable time-out settings (3 seconds min. to 20 minutes max.), back check valves for hot/cold mixing, thermostatic mixing valve and trim plates. Size transformer to operate specified number of fixtures within room. Provide note on Drawings that contractor shall locate control module for automatic faucet tight to underside side of lavatory and concealed from view when standing in front of lavatory. Connect all control modules using concealed wiring to single transformer that is located above ceiling or within wall construction with access panel. USE THIS LAVATORY IN SINGLE USER FAMILY RESTROOMS AND EMPLOYEE RESTROOMS.

5. L-2 Undercounter Mount Lavatory. Universal access, 19-1/4” by 16-1/4” undercounter mount sink with drain outlet near back of bowl to allow use of standard p-trap. Equip lavatory with battery powered, sensor activated faucet and limit water flow to 0.5 gpm max. Provide faucet with sensor range adjustments, variable time-out settings (3 seconds min. to 20 minutes max.), back check valves for hot/cold mixing, thermostatic mixing valve and trim plates. Size transformer to operate specified number of fixtures within room. Provide note on Drawings that contractor shall locate control module for automatic faucet tight to underside side of counter and concealed from view when standing in front of lavatory. Connect all control modules using concealed wiring to single transformer that is located above ceiling or within wall construction with access panel. USE THIS LAVATORY IN SEPARATE GENDER MULTI-STALL CUSTOMER RESTROOMS.

6. Sinks: Supply all sinks with both hot and cold water. Specific water temperature requirements for various sinks throughout the commissary are outlined below. Provide

domestic hot water system with thermostatically controlled mixing valve(s) to provide 115 degree F hot water to hand wash sinks and controls.

a. Medical Food Inspection Office:

1) 4CKT Sink. Two compartment, stainless steel, kitchen counter type. Provide with cold and 120 degree F water.

b. Janitor Closets:

1) Floor sinks: Stern-Williams Model Number HL-2100-BP or equal, with splashguard and manufacturer's mop rack. Provide with cold and 120 degree F water.

c. Employee Breakroom:

1) 4CKT Sink. Two compartment, stainless steel, kitchen counter type. Provide with cold and 120 degree F water.

7. Special Sinks: Supply all sinks with both hot and cold water. Specific water temperature requirements for various sinks throughout the commissary are outlined below. Provide domestic hot water system with thermostatically controlled mixing valve(s) to provide 115 degree F hot water to hand-wash sinks and controls. See the Guide Specification, Section 22 05 19 Plumbing Specialties.

a. Dairy Storage Room:

1) 4S01 L or R as required Sink.

a) One compartment stainless steel, drain board, self-standing.

b) Provide with cold and 140 degree F water.

c) Provide one faucet with pre-rinse spray assembly, centered on sink compartment.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

b. Damage Merchandise Room:

1) 4S02 D Sink.

a) Two compartment stainless steel, drain boards, self-standing,

b) Provide with cold and 120 degree F water.

c) Provide one faucet with pre-rinse spray assembly, centered on sink compartment divider.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

c. Meat Processing Room:

1) 4S03 D Sink.

a) Three compartment stainless steel, drain boards, self-standing.

b) Provide with cold and 140 degree F water.

c) Provide two faucets with pre-rinse spray assembly, centered on sink compartment dividers.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

2) 4S00 Sink.

a) Hand wash sink, stainless steel, single compartment, single pedal foot controls, thermostatic mixing valve, and front operated temperature adjustment.

b) Provide with cold and 115 degree F water.

c) Furnish with integral paper towel, and liquid soap dispenser, and trash receptacle.

d. Meat Wrapping Room:

1) 4S00 Sink.

a) Hand wash sink, stainless steel, single compartment, single pedal foot controls, thermostatic mixing valve, and front operated temperature adjustment.

b) Provide with cold and 115 degree F water.

c) Furnish with integral paper towel, liquid soap dispenser, and trash receptacle.

e. Produce Processing:

1) 4S03 D Sink.

a) Three compartment stainless steel, drain boards, self-standing.

b) Provide with cold and 120 degree F water.

c) Provide two faucets with pre-rinse spray assembly, centered on sink compartment dividers.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

f. Deli/Bakery:

1) 4S00 Sink.

a) Hand wash sink, stainless steel, single compartment, single pedal foot controls, thermostatic mixing valve, and front operated temperature adjustment.

b) Provide with cold and 115 degree F water.

c) Furnish with integral paper towel, liquid soap dispenser, and trash receptacle.

2) 4S03 D Sink for bakery.

a) Three compartment stainless steel, two drain boards, self-standing.

b) Provide with cold and 140 degree F water.

c) Provide two faucets with pre-rinse spray assembly, centered on sink compartment dividers.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

3) 4S03 D Sink for deli.

a) Three compartment stainless steel, two drain boards, self-standing.

b) Provide with cold and 140 degree F water.

c) Provide two faucets with pre-rinse spray assembly, centered on sink compartment dividers.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

4) NOTE: Separate sink required in deli for processing chickens.

g. Clerk Service Fish Market:

1) 4S00 Sink.

a) Hand wash sink, stainless steel, single compartment, single pedal foot controls, thermostatic mixing valve, and front operated temperature adjustment.

b) Provide with cold and 115 degree F water.

c) Furnish with integral paper towel, liquid soap dispenser, and trash receptacle.

2) 4S03 D Sink.

a) Three compartment stainless steel, two drain boards, self-standing.

b) Provide with cold and 140 degree F water.

c) Provide two faucets with pre-rinse spray assembly, centered on sink compartment dividers.

d) Provide floor sink beneath sink indirect connection to building sanitary system.

E. Special Drains:

1. All processing room drains shall be extra heavy duty with hinged grates strategically located for optimal water drainage.

2. Provide chrome finished strainer for drains at finished floors.

3. Slope all floors requiring drainage downward to floor drains with a minimum slope to drain of 1 percent, maximum slope of 2 percent.

4. Slope floors in all cold storage rooms, except freezers, to allow for positive drainage. Rim elevation of floor drains shall be set 1" to 1-1/2" below finish floor with drain spacing to provide an approximate floor slope of 1/8" per foot. Coordinate location and rim elevation of floor drains within each cold storage room. **Provide cold storage rooms with indirect waste piping for all floor drains. Run separate waste pipes from each cold storage room, each with an indirect connection to the building sanitary drainage system incorporating an air gap to preclude the backflow of sewage into food storage areas. Provide a trap at each floor drain**

5. Vent all traps.

6. Floor drains may be connected to separate drainage line discharging into an outside receptor, though an air gap. Maintain freeze protection in cold climates.

F. Drain Types:

1. FD-1 Floor Drain.
   a. Provide at finished floors.
   b. 5" diameter
   c. Chrome finish strainer.

2. FD-2 Floor Drain.
   a. Provide at unfinished floors, Mechanical, Boiler, and Receiving Areas.
   b. 9" diameter
   c. Deep set tractor grate or ductile iron grate for light traffic.

3. FD-3 Floor Drain.
   a. Provide below cases.

b. Hub drain
c. 4.94" minimum diameter hub
d. Set flush with floor; see Design Standard Plate 22 05 00-03.
e. 3" drain.

4. FD-4 Floor Drain.
   a. Provide Near MHE Area.
   b. 12” square top rated for tractor traffic.
   c. Heavy duty grate
   d. Sediment bucket.

5. FD-5 Floor Drain.
   a. Provide at all walk-in coolers
   b. 8" square top.
   c. Heavy duty type hinged grate, epoxy finish.
   d. 4" drain.
   e. Provide drains in all Meat Department walk-in coolers with sediment buckets and run to grease trap.

6. FD-6 Floor Drain.
   a. Provide for all walk-in condensate lines.
   b. 7” diameter rim with 5" diameter strainer.
   c. Secured slotted grate and extended rim.
   d. See Design Standard Plate 22 05 00-01.

7. FD-7 Floor Sink.
   a. 12” x 12”.
   b. A.R.E. interior.
   c. Anti splash strainer.
   d. 8” deep A.R.E. bucket.
   e. ¾ Grate

8. RD-1 Roof Drain.
   a. Cast iron integral gravel stop with sump and wide roof flange.
   b. 9" high dome.

9. Overflow Roof Drain.
   a. Same as RD-1 with 2" high raised rim.

G. Locations and Specifics:

1. Meat Processing and Meat Wrapping Rooms:
   a. Provide FD-5 floor drains with 4" waste line each.
   b. Provide drain lines with adequate slope to minimize fat build-up in the lines.

c. Ensure that all floor drains in meat processing, meat wrapping, and meat storage rooms lead to a grease interceptor located outside the building. [*note to Specifier: sub artic locations may require interior grease interceptors*].

d. See Design Standard 22 05 00-04.

e. Provide FD-6 condensate drains for unit coolers and locate to prevent damage to condensate lines.

f. Provide FD-5 floor drains with 4" waste lines centrally located for drainage.

2. Dairy Storage:

a. Provide FD-5 floor drains with 4" waste lines centrally located for drainage.

b. Provide FD-6 condensate drains for unit coolers and locate to prevent damage to condensate lines.

c. Milk Roll-In Carts at 1G11 Glass Display Doors:

1) Provide one FD-5 floor drain with 3” waste line at each end of 1G11 cart corrals. For 15 or more doors, provide 3 drains. Drains shall be centered on cart corral width and located to clear cart wheels.

2) Floor around drains in roll in cart area shall be flat, not pitched to drain.

3. Produce Processing:

a. Provide FD-5 floor drains with 4" waste lines centrally located for drainage.

b. Provide FD-6 condensate drain with 3" waste line located next to ice flaker.

c. Provide FD-7 floor sink with 4" waste line located below the three compartment sink drain board.

4. Frozen Food Storage:

a. Provide FD-5 floor drain with 4" waste lines within 2' to 3' outside each door, and centered on door opening.

b. Locate drain out of traffic path.

5. Damaged Merchandise:

a. Provide FD-2 floor drain with 4” waste line, centrally located.

6. MHE Pad Area:

a. Provide FD-4 floor drain with 4” waste line near the eyewash.

7. Receiving Area:

a. Do not provide drains in the Receiving Area.

8. Deli/Bakery Area:

a. Deli Preparation Area, Bakery Preparation Area:

1) Provide FD-1 floor drains with 4” waste lines, centrally located in each area.

2) Ensure all floor drains are connected to a grease interceptor located outside of the building. This is usually the same grease interceptor provided for the meat department.

3) See Design Standard Plate 22 05 00-04.

b. Bakery Freezer, Bakery Cooler and Deli Cooler:

1) Provide FD-5 floor drain with 4” waste line, immediately outside door. Provide level floor within small coolers and freezers. Larger sized medium temperature chill storage may have interior floor drains with sloped floors.

c. Bakery Oven: Provide FD-6 condensate drain with 4” waste line in front and to right side (facing oven) for condensate from steam system used for baking. Do not locate this drain beneath equipment.

d. Retarder / proofer: Provide FD-6 condensate drain with 4” waste line in front and to right side (facing oven) for condensate from steam system used for baking. Do not locate this drain beneath equipment.

9. Restrooms:

a. Provide FD-1 floor drain with 3” waste line centered in each room.

10. Fish Market:

a. Clerk Service Area: Provide FD-1 floor drains with 4” waste lines centrally located for drainage.

b. Provide FD-6 condensate drain with 3” waste line, located next to the Ice Flaker.

c. Provide FD-6 condensate drain with 3” waste line, located next to the steamer.

11. Sales Area Refrigerated Display Case Area:

a. Provide one FD-3 hub drain for each two refrigerated display cases.

b. Place rim flush with finished floor.

c. Locate drains completely under the cases and do not extend them into aisles.

d. See details in Design Standards 22 05 00 - 03.

2.2 Wash down Stations/Hose Stations:

A. Provide complete mixing unit with single valve controls.

B. Provide with hot and cold water supply with thermostatic mixing valve for complete mixing of water to any desired temperature.

C. Provide each station with check valve on hot and cold water supply line, easily accessible and an integral vacuum breaker at the hose connection.

D. See Design Standard Plate 22 05 00-06 for details.

1. Designer Note: Hose stations and wash down stations located on cold storage room wall panels must be located in areas where both sides of cold storage room wall panel is accessible.

E. Provide hot and cold wash down stations (WS) with 50'-0" heavy duty hose with water gun and hose racks.

F. Provide hot and cold hose stations (HS) with 50'-0" heavy-duty hose with water gun and hose racks.

G. Locations and Specifics:

1. Wash down Station with Stainless Steel Hose Rack (WS):

a. Provide hot (140 degree F) and cold water service at each Wash down station.

b. Provide 3/4" supply.

c. Provide quantity specified at the following locations:

1) One in Meat Processing (RM. 55) near door to Bulk Meat Storage (RM. 59).

d. One in Meat Wrapping (RM. 56) near door to Bulk Meat Storage (RM. 59).

e. Provide 7.5 gpm for Wash down stations (WS).

2. Hose Station with Stainless Steel Hose Rack (HS):

a. Provide hot (120 degree F) and cold water service at each hose station.

b. Provide 1/2" supply.

c. Provide quantity specified at the following locations:

1) Provide one in Dairy Chill Storage adjacent to sliding cold storage room door at entrance to room and adjacent to stainless steel sink.

a) Provide one additional hose station in Dairy Chill storage when a single 50 foot hose cannot reach all locations within the room. Locate on opposite side of cold storage room.

2) Provide one at Produce Chill Storage near door to Receiving Aisle.

3) Provide one at Produce Processing near door to Produce Chill Storage.

d. Provide 3 gpm for hose stations (HS).

2.3 Miscellaneous:

A. HB Hose Bibbs, cold water only, except as noted, locate to provide coverage with 75' hose.

1. Provide 3 gpm for cold water supply.

2. Provide at the following locations:

a. MHE Pad:

1) Provide one, cold water supply only.

b. Sales Area:

1) Provide one in recessed wall enclosure at end of type 1G02 cases (hot 120 degree F and cold water).

2) Provide one at end of 1P02 cases (hot 120 degree F and cold water).

3) Provide one in recessed wall enclosure located to best serve the meat cases (hot 120 degree F and cold water).

4) Provide in additional locations as required to enable wash down of all cases with 75' hose.

c. Exterior Front end and Trash Platform Areas:

1) FPWH Freeze Proof Wall Hydrant:

a) Provide two hose bibbs, one at each end of the exterior of the front of the building, so as to best service it (to permit landscape watering).

b) Provide one hose bibb at the exterior to service the trash platform area.

c) Salient Features:

(1) Non-freeze cold water

(2) Josam #71050, Hydrasan 1, or equal.

(3) Cast bronze.

(4) Non-freeze.

(5) "T" handle.

(6) Polished nickel-alloy face.

(7) Integral vacuum breaker.

(8) Bronze wall casing.

d. Exterior Roof:

1) FPWH Freeze Proof Wall Hydrant:

a) Provide one hose bibb at each rooftop refrigeration mechanical center.

(1) Locate on exterior wall of mechanical center facing air cooled condensers.

b) Salient Features:

(1) Non-freeze cold water hose bibb.

(2) Josam #71050, Hydrasan 1, or equal.

(3) Cast bronze.

(4) Non-freeze.

(5) "T" handle.

(6) Polished nickel-alloy face.

(7) Integral vacuum breaker.

(8) Bronze wall casing.

e. Produce Processing:

1) Provide one with 1/2" cold water connection for Ice Flaker 1P04.

f. Fish Market:

1) Provide one with 1/2" cold water connection near the clerk-service fish case 1F00 for connection to case flushing system.

2) Provide one each with 1/2" cold water connection for Ice Flaker 1F02.

3) Provide a 1/2" cold water connection to the steamer 1F07.

g. Exterior Ground Level Receiving:

1) FPWH Freeze Proof Wall Hydrant:

a) Provide one hose bibb.

b) Salient Features:

(1) Non-freeze cold water hose bibb.

(2) Josam #71050, Hydrasan 1, or equal.

(3) Cast bronze.

(4) Non-freeze.

(5) "T" handle.

(6) Polished nickel-alloy face.

(7) Integral vacuum breaker.

(8) Bronze wall casing.

B. Pressure Reducing Valve (PRV):

1. Provide PRV and water piping to serve the water spray kits on the produce display cases.

2. Locate PRV behind an accessible wall panel.

3. PRV shall be adjustable 0-50psi.

C. Eye/Face and Body Sprays:

1. Locate in vicinity of operations which pose potential for chemical eye injury (e.g., the battery charging area or the place where undiluted and corrosive degreasers, sanitizers, or other cleaning agents are drawn and mixed). Requirement may necessitate locating two eye hazardous operations adjacent to one another. If possible, allow use of single eyewash unit to satisfy requirement for both operations.

2. Provide separate floor drain: Not required in existing facilities. Provide in new facilities.

3. Place no further than 10 seconds travel distance from and on the same level as the hazardous location.

4. When used to protect against strong acid or caustic chemicals, locate immediately adjacent to hazard.

5. Path of travel to eyewash stations: Free of obstructions that may inhibit immediate use of equipment.

6. Identify with highly visible sign positioned to be visible within area served.

7. Lighting level at basin: 550lux (50fc).

8. Features:
   a. Hands-free operation.
   b. Capable of delivering flushing fluid to both eyes simultaneously for duration of fifteen minutes continuously at rate not less than 3.0 gpm per minute.

9. Water Temperature: Water delivered should be tepid. Tepid is defined to be between 60 and 100 degrees F

10. If potential for larger splashes or spills exists: provide body drenching and flushing apparatus. Capability may be afforded with drench hose and nozzle attached to unit to allow low water pressure in copious quantities.

11. Types:
    a. 2M06 Eyewasher.
       1) Locate 39" above finished floor, next to hand-wash sink.
       2) Locations:
          a) Meat Processing Area.
          b) Produce Processing Area.
          c) Deli/Bakery Prep Area.
    b. 2R05 Eyewasher.
       1) Floor mounted.
       2) Stainless steel receptor.
       3) Twin eye wash heads.

4) Drain: 1-1/4".

5) Location: Battery Charging Area.

c. Provide a thermostatic mixing valve to maintain the water discharged at 75 degrees F.

d. See the Guide Specification Section 22 05 19 Plumbing Specialties.

D. EWC-1 Drinking Fountains:

1. Provide one each standard wall-mounted drinking fountain (high type) and one each wheel chair type (low type).

2. Supply: 7 gph at 50 degree F.

3. Locations:

a. Customer restrooms.

b. Employee restrooms not contiguous with or adjacent to a break room.

c. Each employee breakroom.

E. Condensate Floor Drains:

1. Provide quantity as required and type shown by Design Standard Plate 22 05 00-01.

F. Locate drains outside the rooms when temperatures below 32 degree F are expected, unless otherwise directed in Para. 2.1G.

G. WH-1 Water Heater:

1. Heater: Powered gas burner, separated combustion type.

2. Provide water heater and storage tank to meet building hot water load based on 100 degree F temperature rise, 140 degree F output water temperature.

H. Grease Interceptor.

1. Cast-in-place or pre-cast reinforced concrete.

2. 1,500 gallon capacity.

3. Refer to Design Standard Plate 22 05 00-04.

4. Locate outside the building. [sub artic locations may require interior grease interceptors]

5. Waste from meat wrapping, meat processing, and the Deli shall go to the grease interceptor.

6. All sink and floor drains in the meat and deli/bakery departments including floor drains in meat storage rooms shall go to the grease interceptor. See also 2.1.D.7 for air gap requirements.

2.4 Hot & Cold Water Fittings. Wrought copper.

A. Hot & Cold Water Pipe.

B. Above Ground. Type L copper, hard drawn.

C. Below Ground. Type K copper, hard or soft drawn.

2.5 Waste & Vent

A. 2" and Larger. "ABS" plastic pipe and fittings above grade in concealed locations, Service weight cast iron pipe and fittings in exposed locations and below grade. Use only hubless joint above grade.

B. 1-1/2 " and Smaller. "ABS" plastic pipe and fittings above grade in concealed locations and hard tempered "DWV" copper with cast brass drainage fittings in exposed locations and below grade.

C. ABS and PVC may be used below grade where corrosive soils are present only with the concurrence of DeCA.

2.6 Water Meters

A. Water meters shall conform to American Water Works Association (AWWA) C700.

B. Meters shall be positive displacement, oscillating piston, or disc nutation type.

C. Features:

1. Magnetic drive, with magnetic shielding.

2. Straight reading sealed register graduated in cubic feet.

3. All bronze split case.

4. Integral strainer.

5. Threaded ends.

6. Pulse switch initiator.

7. Meter shall be suitable for accurately measuring and handling water at pressure, temperatures, and flow rates to be encountered.

8. Pulse initiator shall provide maximum number of pulses up to 500 per minute that is obtainable from the manufacturer.

9. It shall not provide less than 1-pulse per 100-gallons.

2.7 Gas Meters:

A. Gas meters shall conform to Federal Specification GG-M-2802, Style B.

B. Meters shall be suitable for accurately measuring and handling gas at pressures, temperatures and flow rates to be encountered.

C. Meters shall have a pulse switch initiator capable of operating up to speeds of 500-pulses per minute with no false pulses and shall require no field adjustments.

D. Initiators shall provide the maximum number of pulses up to 500 per minute that is obtainable from the manufacturer.

E. It shall not provide less than 1-pulse per $100ft^3$ of gas.

3. GENERAL

3.1 Do not locate plumbing within pre-fabricated cooler panel walls. Provide surface-mounted plumbing in walk-in refrigerated rooms.

3.2 Do not locate sewer, storm or water lines below slabs in following rooms and Equipment:

A. Frozen Food storage.

B. Bakery Freezer storage.

C. Bakery Oven.

D. Bakery Retarder/Proofer.

3.3 Coordinate gas and water meter connections to RMCS, see Section 23 09 16.

3.4 Contract Documents check list:

A. At lavatories with automatic low flow faucets, the HWR piping shall connect to the HW within 18" of the faucet.

B. Coordinate roof overflow with site work to prevent erosion.

C. Do not use AGA draft hoods on water heaters unless the heater is in a room by itself with combustion air makeup and no exhaust.

D. Coordinate roof mounted equipment mounting with Architect and Structural engineer to assure structural adequacy and adequate detailing of structure and roof flashing.

E. Where possible in new and add/alter projects consolidate the mechanical equipment into a single equipment room unless space availability, line length or other factors make this impractical.

F. Coordinate size of sinks with available countertop dimensions.

G. In replacement projects, insure that hot water will be continuously available by providing an alternate location for the new heater and leaving the existing heater in place until the new heater is operational.

H. Detail janitor’s sink to prevent water accumulation below sink and wicking up walls.

I. Water heaters shall be separated combustion type with ducted combustion air when located in Refrigeration Equipment Rooms to satisfy codes.

J. Where load on existing under floor drains is to increase with the add/alter program, conduct video survey of line before reusing.

K. Be certain that vents are 10' or more from air intakes.

L. Install water hammer arrestors at all fixtures, groups of fixtures, and quick closing valves.

M. Verify that counter mounted sinks will fit within cabinet.

N. Where sump pumps or lift stations are required, connect discharge to the building sewer outside the building.

O. Locate grease trap on exterior of building. (Exception: arctic locations).

END OF SECTION