

JAMES E. WILKERSON

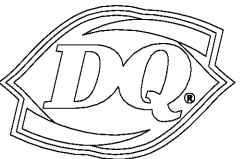
A.I.A.

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FLA REG. FE 74427
JOB NO. 202016

DQ GRILL & CHILL
US HWY 90 (LOT 2)
GLEN ST MARY, FL
32040



GRILL & CHILL

AMERICAN DAIRY QUEEN
MINNEAPOLIS, MN U.S.A.

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BUILDING TYPE:
DAIRY QUEEN GRILL & CHILL
CORE66
STORE NO. 45961

DRAWN, CHECKED, & APPROVED BY: ADQ
DESIGN-ARCHITECTURE-CONSTRUCTION
(DAC) DEPARTMENT

THIS IS "PLAN" NORTH
FOR ACTUAL BUILDING
ORIENTATION REFER TO
SITE PLAN (BY OTHERS)

ISSUE DATE: 10/30/2020

REVISION DATE:

10/30/2020 Δ ISSUE FOR CONSTRUCTION

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MECHANICAL
SPECIFICATIONS

SHEET NUMBER:

MP1

MECHANICAL SPECIFICATIONS

GENERAL PROVISIONS

General Conditions

The General Conditions, Special Conditions, Supplementary Conditions and Mechanical Specifications of the Specifications and "General Conditions of the Contract", current edition, established in standard form by the American Institute of Architects shall apply to all work on this project except as modified below. This Contractor shall familiarize himself with these provisions and adhere to these requirements. Contractor shall coordinate his work with other trades prior to installation.

Related Documents

This Contractor is referred to the Architectural and Electrical Plans and Specifications. Such Plans and Specifications are a part of the Contract Documents. Contractors shall visit the site and familiarize themselves with all conditions surrounding the work. If any of the conditions require a modification of the systems indicated by these Plans and Specifications, the Contractor shall include the cost of such modifications in his bid. No extra compensation will be allowed because of failure to field verify existing conditions prior to submitting bids.

Modifications to Plans and Specifications

Throughout the course of the work, minor changes and adjustments to Plans and Specifications may be requested by the Owner. The Contractor shall make such adjustments without additional cost to the Owner, where such adjustments are necessary for the proper installation and operation and within the intent of the Contract Documents.

It is the intent of the Plans and Specifications to form a guide for a complete installation. Everything necessary for the completion and successful operation of the work, whether or not herein definitely specified or indicated on the drawings shall be furnished and installed as well and as faithfully as if so specified or indicated without additional costs to the Owner. The Mechanical Contractor shall verify all dimensions and lengths prior to installation.

If any errors, discrepancies or omissions appear in the Drawings, Specifications or other Contract Documents, the Contractor shall notify the Owner in writing of such error or omission. In the event of the Contractor failing to give such notice before construction and/or fabrication of the work, he will be held responsible for the results of any such errors, discrepancies or omissions and the cost to rectifying same.

Code Compliance

Contractor shall comply with the requirements of all State, Local and National Codes regulating this work.

Permits, Fees, Licenses

This Contractor shall pay all fees and related charges required for permits, licenses, etc., required for installation of the mechanical systems.

Equipment Substitution

This Contractor shall reimburse the Electrical contractor, without any charge to Owner, any costs the Electrical Contractor incurs due to this Contractor's substitution of mechanical equipment having different electrical service requirements than the specified equipment.

Shop Drawings

This Contractor shall provide the Owner with a minimum of five certified copies of all shop and equipment drawings for his approval, two of which shall be retained by the Owner, and the remaining being returned to the Contractor. Drawings shall be submitted before start of construction. Failure of compliance with this paragraph will result in withholding of final payment.

Warranty

This Mechanical Contractor shall warrant his work to be free from defects in materials and workmanship for a period of one year.

BASIC MATERIALS AND METHODS

All workmanship and materials shall be of the highest quality in every respect. All materials and equipment shall be new, of the latest design and free of defects. All materials and equipment shall conform to the latest amended edition of all applicable standards, including but not limited to, SMACNA, UL, and NEMA Standards.

Provide vibration isolation devices for all moving machinery. Provide flexible connections to all moving machinery.

Design all piping and ductwork to present a neat and orderly appearance. Run all lines parallel with building walls and construction. Keep piping and ductwork free from contact with structural equipment to prevent noise transmission, allowing clearance for expansion and contraction. Provide access doors or panels for all valves, cleanouts, dampers, controls, devices, etc.

Water Supply Piping

Below ground water supply pipe shall be Type L hard temper copper water pipe complying with ASTM B88. All fittings shall be wrought copper complying with ANSI B89 & B16.18A. Dielectric couplings shall be used between steel and copper connections. All below ground water supply pipe shall be Type K copper water pipe.

Sanitary, Waste and Vent Piping

All sanitary, waste and vent lines below grade or floor:

Schedule 40 PVC (ASTM Spec. 2669, wall thickness .257") except where local authorities require Schedule 40 ABS. For PVC use solvent type fittings; clean joint with compound before applying solvent.

Interior sanitary, waste, and vent lines above floor (except for connections from tailpieces of pot sinks and other food service equipment, to hub drains). PVC or ABS in Paragraph 1 above, or Schedule 40 galvanized steel pipe with cast iron drainage type fittings. Pipe from tailpieces of pot sinks to hub drain: DWV copper, with cast brass trap with cleanout, McQuire No. 8412. Pipe from other food service equipment drains to hub drains: type L or M copper, with sweat fittings. Insulate cold lines as noted on drawings.

Sanitary or waste outside with 30" or more cover: PVC as above. With less than 30" cover: B & S, O-ring, or hubless cast iron.

Gas Piping

Gas piping schedule 40 black steel. When below grade protect with "Scotch-wrap" applied per manufacturer's best instructions.

Fittings: As approved by local code. Exposed fixture connections shall be chrome plated. Unions to have ground joints.

Refrigerant Piping

The refrigerant piping installed between any condensing unit and its associated equipment shall be ACR Type L hard drawn copper with wrought copper fittings and #8/32 soldered joints and shall be installed per detail and shall be sized per equipment manufacturer's recommendation after confirming vertical and horizontal distances between equipment. Coordinate the routing with the Landlord.

Pipe Hangers and Supports

Support horizontal piping adequately from slabs or other structural members at intervals specified below. Use Grinnell #260 hangers, or approved equal, having adjustable wrought clevis, solid rods and sockets. Piping installed along walls shall be supported by Grinnell #14, or approved equal, steel angle brackets. The spacing for pipe supports for steel pipe 3/4" to 2" shall be 10'-0" and for copper pipe size up to 2" shall be 6'-0". Hangers in contact with copper shall be copper plated and shall be equal to Grinnell Figure GT-85. Hanger rods shall be 3/8" diameter for pipes up to 2" in size.

Pipe Sleeves and Openings

The Mechanical Contractor shall cut all openings in prepared floors and walls required for penetration of piping. Patch all openings for sound deadening and fire separation. General Contractor shall perform all finish patching as required by Architectural Specifications. All horizontal piping which penetrates walls shall be fitted with pipe sleeves made up of similar materials as pipe, 1" greater in diameter than outside diameter of pipe and pipe insulation. The void between pipe and sleeve shall be sealed with rope and filled with Expando (non-shrinking) cement. Sleeves shall be of such length that they end flush with wall finish on both sides of wall. Where uncovered exposed pipes pass thru walls, they shall be fitted with Crane #10, or equal, wall plates. Sleeves through water proof floors shall extend 2" above finished floor.

Valves

The Contractor shall furnish and install valves where indicated on plan and necessary for proper system operation and component isolation. Provide valves rated for 125 psi or greater working pressure in water piping.

Check Valve up to 3"-	Apollo 61-104 61-500 or NIBCO T-415-15
Globe Valve up to 3"-	Crane No. 1240, 1241, or equal
Gate Valve up to 3"-	Crane No. 428, 1854, or equal
Ball Valve up to 3"-	Apollo Series 70-100 or 70-200
Temp. & Press. Relief Valve	Matts 10L Mod. M4, or equal, 3/4" M X 3/4"
Shockstop	Matts #10 (hot), Made #5 (cold)
Backflow Preventer	Matts No. 4D, or equal
Vacuum Relief Valve	Matts No. 36A - 3/4", equal
Pressure Reducing Valve	Matts No. U5
Trap Seal Primer	Josam No. 88250

Air Distribution System

The Air Distribution system shall be fabricated as recommended in the latest edition of the SMACNA low velocity duct manual and installed where shown on HVAC Plan. Contractor shall be responsible for furnishing all required dampers, transitions, and connections to air terminals necessary for a complete operating system.

Diffusers, Grilles and Registers

Install, diffusers, grilles and registers as shown and specified

System Balance

Adjust and test all air moving equipment, air distribution, heating system, exhaust, and make-up air systems as specified, including kitchen hood exhaust and makeup air systems, and as indicated on the plan. The hood system will be balanced per schedule on MIB, JCA THIRD PARTY HVAC CONTRACTOR that specializes in Restaurant Air Balancing. The building will maintain a positive pressure.

Balancing and testing shall not begin until all systems are completed and in full working order and before construction is opened to business.

Changes in drive temperature, condition of dampers, control devices or gauges required for correct balancing required, shall be made at no additional cost to owner.

All instruments, forms and procedures shall meet the requirements set forth by the National Environmental Balancing Bureau (NEBB).

Check equipment and systems to check for correct wiring and sequencing. A test balance report shall be submitted to the owner after the building has been properly balanced.

Insulation

Insulation shall be required on all surfaces to retard undesirable heat transfers and prevent condensation. Insulation shall be applied to pipe lines, ductwork and equipment only after they have been tested, inspected and all surfaces thoroughly cleaned of all moisture, foreign material, grease and rust. Insulation shall be continuous through walls, floors, partitions, sleeves, etc., except where otherwise indicated or specified. All insulation adhesives, sealers and coatings shall have a fire hazard rating not to exceed 25/50/50 flame spread, fuel contributed and smoke developed in accordance with UL T25 and ASTM-E84. Provide insulation for hot and cold water piping, refrigerant piping, supply air, return air and exhaust air sheet metal ductwork.

All domestic water piping shall be insulated with 1" fiberglass insulation and have an all service vapor barrier jacket with sealed joints.

Supply & return air ductwork shall be wrapped with 2" thick duct wrap with foil vapor barrier or approved equal. Internally lined ductwork is not allowed. Toilet Exhaust air ductwork shall be wrapped with 2" fiberglass batt insulation w/ foil vapor barrier. Kitchen hood exhaust shall be wrapped with "Fire Wrap" insulation. Insulated flexible duct shall be General Environmental Corporation type 650A, or approved equal. Flexible duct runs shall be limited to a maximum length of 5'-0" and shall have only one 45 DEG maximum elbow.

Equipment Identification

This contractor shall mark roof mounted equipment with two inch high letters.

Equipment Order

The Contractor shall order all equipment required within ten days upon receipt of Contract in order to ensure timely receipt of material. Substitutions after the date due to lack of placement of order will not be approved.

PLUMBING FIXTURES

Water Meter

Hersey Products, Model 562, or equal, magnet drive, positive displacement, rotating disc type. Meter shall comply with all performance and material standards of the AWWA. Provide remote digital readout at 5'-0" A.F.F. Coordinate location with Owner.

All water piping shall run above floor of Plan on which shown unless otherwise indicated. All drain and waste piping shall run below floor of Plan on which shown unless otherwise indicated. F-1, FD-1, etc., refer to fixtures listed in Schedules and located on Architectural Plans.

SPACE TEMPERATURE CONTROL

General

The Mechanical Contractor shall furnish and install thermostats, sensors, controllers, relays, contactors, dampers, actuators and all other materials necessary for a complete and properly operating temperature control system as specified below and as shown on the drawings.

Cooling Cycle - Occupied Space Condition

Upon a rise in space temperature above the setting of thermostat, the air conditioning unit shall be activated to provide the necessary cooling to the space. The supply air blower shall operate continuously and the refrigeration unit shall cycle as required to maintain the space temperature.

Cooling Cycle - Unoccupied Space Condition

Upon a rise in space temperature above the 80 DEGF setting of thermostat, the first stage only of the air conditioning unit shall be activated to provide the necessary cooling to the space. The supply air blower and the refrigeration unit shall cycle as required to maintain the space temperature.

Heating Cycle - Occupied Space Condition

Upon a drop in space temperature below the 68 DEGF setting of thermostat, the HVAC unit shall operate as required to maintain space temperature. The supply air blower shall operate continuously.

Heating Cycle - Unoccupied Space Condition

When the space temperature drops below the 60 DEGF setting of thermostat, the supply air blower shall be energized to provide heating to the space. When the thermostat is satisfied, the HVAC units shall be deactivated.

AIR COOLED CONDENSING UNITS

A. The contractor shall install air-cooled condensing units as shown as scheduled on the contract documents. The units shall be installed in accordance with this specification and perform at the conditions as scheduled.

GENERAL UNIT DESCRIPTION

A. Self contained, packaged, factory assembled and pre-wired units suitable for outdoor use consisting of condenser(s), compressor(s), condensing coil and fan(s), integral subcooling circuit(s), filter driers(s), and controls. Provide expansion valve(s) and check valve for system heat pump unit(s).

B. Performance ratings Energy Efficiency Rating (EER) and Coefficient of Performance (COP) not less than prescribed by ANSI/ASHRAE 90A.

CASING

A. House components in 18 gauge zinc-coated galvanized steel frame and panels. Panels weather resistant, baked enamel finish. Units surface shall be tested 500 hours in salt spray test.

B. Mount controls in weatherproof panel provided with removable panels and/or access doors with quick opening fasteners.

CONDENSER COILS

A. Coils: Aluminum fins mechanically bonded to seamless copper tubing. Provide subcooling circuit(s). Factory leak test under water to 450 psig, and vacuum dehydrate. Seal with holding charge of nitrogen.

FANS AND MOTORS

A. Vertical discharge direct driven propeller type condenser fans with fan guard on discharge. Fans shall be statically and dynamically balanced.

B. Weatherproof motors suitable for outdoor use, with permanently lubricated parts and automatic type pistons, rings to prevent gas leakage internal suction and discharge valves and crankcase heater. Motor shall be suction gas-cooled with internal temperature and current sensitive motor overload. Internally isolated motors on springs. External high and low pressure cutoff devices shall be provided.

COMPRESSORS

A. Compressor(s): Direct-drive hermetic, reciprocating type compressor(s) with centrifugal oil pump providing positive lubrication to moving parts and automatic type pistons, rings to prevent gas leakage internal suction and discharge valves and crankcase heater. Motor shall be suction gas-cooled with internal temperature and current sensitive motor overload. Internally isolated motors on springs. External high and low pressure cutoff devices shall be provided.

B. Each unit with two refrigerant circuits with integral subcooling. Each circuit shall have factory-supplied filter driers, suction and liquid line service valves, all piped by the contractor.

CONTROLS

A. Factory-wired condensing units with 24 volt control circuit with internal fusing and control transformers, contactor pressure lugs and/or terminal block for power wiring. Contractor to provide field installed unit mounted disconnect switch. Units shall have single point power connections.

B. 24-volt, either 5 or 7 minute fixed-off timer that will prevent compressor short cycling upon shutdown.

EXECUTION

INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide for connection to electrical service.

C. Install units on vibration isolation.

D. Install units on concrete base as indicated.

E. Provide connection to refrigeration piping system and evaporators.