SECTION 13038

PREFABRICATED WALK-IN FREEZER

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section includes prefabricated walk-in freezer room. Room shall include modular metal clad construction with essential controls and equipment required to meet the specified environmental conditions.

1. Test major components prior to delivery.
2. Complete pre-assembled remote refrigeration systems.
3. Controls and Instrumentation.
4. Light fixtures.
5. Delivery of equipment to the final location.
6. Assembly includes installation of walk-in cooler, structural assembly of refrigeration system.
7. Start-up and field testing.

B. Related Sections:

1. Joint sealers are specified in Section 07920.
2. Resinous flooring (ERC-1) is specified in Section 09676.
3. Division 15- Mechanical, including condensate drain line.
4. Division 16- Electrical, including electrical power connections and control wiring.

1.02 SUBMITTALS

A. Shop Drawings/Product Data:

1. Indicate on shop drawings, layout, finishes, power requirements, room dimensions, and component locations.
2. Provide a sample of proposed wall panel assembly with the joint method including cam lock and seal.

B. Certifications: Certify that the field tests specified have been performed and that products meet or exceed specified requirements.

C. Operation and Maintenance Manuals: Include instructions for sequential operation, start-up and shut-down, with pertinent control data and schematics, room arrangement, and component parts list.

1.03 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: A company specializing in the manufacture of complete packaged walk-in freezer rooms (only single source suppliers will be acceptable) supplying specified components, with satisfactory installations of similar equipment, in operation for at least 5-years. To indicate familiarity with equipment and components, a minimum of 100 rooms including a minimum of 50 freezer/cooler rooms shall have been installed within the past 5-years.

2. Installer: Company specializing in the work of this section with a minimum 5-years experience.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General:

1. Wrap and crate finished components and assemblies at factory to prevent damage or marring of surfaces during shipping and handling.

2. Protect products and exposed finishes against physical damage during room erection.

3. Do not deliver materials or assemblies to site until installation spaces are ready to receive rooms.

1.05 SITE CONDITIONS

A. Field Measurements: Examine and verify project conditions at the site to assure acceptable access, dimensions, and general conditions.

1.06 WARRANTY

A. Furnish to Owner a written guarantee for prefabricated freezer storage room against defects in materials and workmanship, as specified below:

1. Ten year insulated panel warranty.

2. Five year compressor warranty.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

A. Cold Storage Manufacturing, Inc. #S175 or approved equal.

2.02 MATERIALS AND FABRICATION

A. Panel Construction:

1. Insulation: Nominal 4-inch thick, UL-listed, Class 1 foamed-in-place, 2.2-pound density polyurethane foam having a K-factor of .118; U-factor of .029; flame spread rating of 20; and smoke developed rating of less than 300.

2. Gasket: NSF-approved closed cell foam tape gasket applied to the interior and exterior side of each insulated panel.

3. Panel Fasteners: Cam-lock, steel housing located maximum 46-inches apart.

4. Finishes:

   a. Interior: 22-gauge type 304 stainless steel with No. 4 finish.

   b. Exposed Exterior: 22-gauge type 304 stainless steel with No. 4 finish.

   c. Unexposed Exterior: 24-gauge galvanized steel.

B. Accessories:

1. Audio/Visual Alarm: Econo Max Manufacturing, Inc. "TempSentry Digital Thermometer Alarm" with the following accessories:

   a. Phone Dialer.

   b. Redial Adapter.

   c. Five-day Battery Back-up.

   d. 50-foot Sensor Lead Extension.

2. Light Fixtures: Kason #1803-LG. Light fixtures shall be equipped with wire guards.

3. Pressure Vent: Kason #1832.

4. Trim: 22-gauge type 304 stainless steel with No. 4 finish. Provide to seal between building walls and insulated panels.

C. Door Construction:

1. Opening Size: 36-inches wide x 80-inches high.

2. Finish: Match panels.

3. Insulation: Match panels.

4. Hardware: Fermod #F-3521.

5. Gasket: Fermod freezer gasket #F-3511-K.

6. View Port: Norfab #55082-3, 14-inch x 14-inch heated frame and glass.

7. Threshold: 16-gauge type 2B stainless steel.

8. Style: Sliding door, manually operated with locking mechanism. Sliding door shall be flush with exterior concrete walkway.

D. Refrigeration:

1. Temperature: 0-deg. F.

2. Refrigerant: R-40A.

3. Condensing Unit: Copeland #CIAL-0300-TAC.

4. Evaporator Coil: Bohn #LET-200.

5. Thermostat: Ranco #ETC-111000. Locate inside freezer behind evaporator coil.

6. UL Weather Cover: Kool Star #CS-350.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Inspection: Examine and verify areas and other work for correct dimensions, properly located electrical and mechanical utilities. Report any unsatisfactory conditions to the Architect in writing.

3.02 INSTALLATION

A. General: Install the walk-in cooler in accordance with manufacturer's instructions. Installation includes receiving, unloading, inspection, and unpacking of walk-in freezer components, the panel erection, light fixture mounting, piping, leak testing and startup of the refrigeration system, and testing of complete walk-in freezer.

1. Install Prefabricated Rooms in accordance with the accepted manufacturer's standards and Specifications.

2. Seal or otherwise insure that fastenings do not compromise vapor barriers or insulation. Seal service penetrations for piping and sleeves. Electrical contractor shall seal inside conduit to prevent condensation from accumulating inside light fixtures and junction boxes.

3. Insulate refrigeration lines with insulation in accordance with ASHRAE standards.

4. Seal wall panels to resinous flooring specified in Section 09676. Sealant shall be compatible with the resinous flooring and shall perform at continuous sub-freezing temperatures.

3.03 PERFORMANCE

A. Operating Temperature: After walk-in freezer has reached operating temperature door shall be fully opened to 75-degrees F. ambient for a period of one full minute, room shall recover to operating temperature within 5-minutes after closing door.

B. Control Setpoint: The walk-in freezer shall be designed and set to maintain specified temperature.

C. Temperature Uniformity: The walk-in freezer shall be designed to provide a temperature uniformity of plus/minus 3 degrees C. This is to be defined as an area on a horizontal plane 48 inches above the floor and within 24 inches of the walls. The uniformity is the variation between points across this plane as measured by a multipoint strip chart recorder at a given point in time.

D. Humidity Performance: Humidity control is not required.

E. Lighting levels: Room lighting shall be provided to achieve an illumination level of 60 footcandles at a horizontal plane which is 36-inches above the floor.

3.04 FIELD QUALITY CONTROL

A. Acceptance Testing: Acceptance of the walk-in freezer shall come only after each room has met the parameters as outlined in the performance section of Specifications. It is the responsibility of the Contractor in the presence of a factory-trained representative, to verify the operation of the walk-in freezer and obtain owners written approval.

3.05 CLEANING

A. General: Remove protective material from surfaces. Clean interior and exterior surfaces including components. Remove surplus materials, debris and tools.

3.06 DEMONSTRATION

A. General: Provide a demonstration for designated Owner's Representative to inform them of proper operation and maintenance.

3.07 PROTECTION

A. General: Shut off equipment and lock doors to prevent access by unauthorized persons. Verify in writing that walk-in freezer condition is undamaged and acceptable with the Architect. Forward all keys to Architect for final acceptance and delivery to the Owner.

END OF SECTION