

TABLE OF CONTENTS

- 1- GENERAL REQUIREMENTS**
- 2- DEMOLITION**
- 3- WALK IN FREEZER DESCRIPTION**
- 4- INSTALLATION OF WALK IN FREEZER**

1- **GENERAL REQUIREMENTS**

1.1 **General**

This statement of work covers the works required for replacing the existing walk in freezer at Cairo 1 – 4th floor and EMR at the US Embassy Compound, Garden City. The existing walk in freezer shall be dismantled and transferred to the loading dock at the Embassy compound.

The contract will be a firm fixed price contract. No additional sums will be payable on account of any escalation in the cost of materials, equipment or labor, or because of the contractor's failure to properly estimate or accurately predict the cost or difficulty of achieving the results required by this contract. **The contractor should carefully review this document including all attachments.** If a requirement is in one it is considered to be in all and shall be priced accordingly. Nor will the contract price be adjusted on account of fluctuations in the currency exchange rates. Changes in the contract duration and/or cost will be made only due to changes made by the Government in the work to be performed, or by delays caused by the Government.

1.2 **Summary of work**

1. Demolition of existing walk in freezer, compressors, piping and all related parts. The dismantled unit shall be done in a proper way. The final destination for the old units and its accessories shall be the loading dock of the US Embassy compound.
2. Install the new walk in freezer per the manufacturer recommendation to include the compressors, the electrical field installations and the mechanical piping.
3. The installation shall include the copper Freon piping, copper drain line to nearest floor drain and installation of all piping with silver and aluminum cladding the whole piping runs.
4. Use existing main power feeder to include conduits, boxes, disconnect switches for the compressor and the evaporator units. The work includes also providing power and controlling cables between the units to achieve a complete working system according to the NEC 2014.
5. The contractor scope shall also include the lifting and rigging of the new compressor, panel sections, flooring and all related accessories.
6. Provide vibration isolator for the equipment units as needed to meet the seismic application zone 2B.
7. Close and seal the structural opening and walls of the walk in freezer.

1.3 **Contractor provided services**

All construction and materials shall be in accordance with the U.S. and local codes and as approved by the COR.

1.4 **Submittals**

The contractor shall submit **as part of his bid, the following:**

1. A Construction schedule by working days as detailed in item 1.8.
2. Installation details for the walk in freezer.
3. Electrical and mechanical materials needed for the installations.

1.5 Grades, lines and levels

Where new work is to connect to existing work, dimensions and elevations of existing work must be verified. Any discrepancy between drawings and/or specifications and existing conditions shall be referred to the COR for adjustment before work affected has been performed. In the event of the contractor's failure to give such notice, he will be held responsible for results of any discrepancies and costs of rectifying them. The submission of the bid will be conclusive evidence that the bidder has complied with all conditions related to the character, quality and quantity of work requirements to be performed. No claims for additional time or compensation due to variations between existing and conditions encountered during construction will be honored.

1.6 Construction work procedure

- 1.6.1 Where new work under this project disturbs existing work, the affected surfaces shall be repaired or refinished to match the existing and left in as good condition as existed before the commencement of the work. Materials and workmanship used in such repair work, unless otherwise indicated or specified, shall conform in type, quality and appearance to the original existing construction.
- 1.6.2 The contractor shall be subject to and shall at all times conform to the Contracting Office Representative's (COR) requirements for the protection of the Complex, plants, equipment, and materials. Welding, burning, and cutting operations in existing areas are prohibited unless otherwise approved in advance by the COR.
- 1.6.3 Field supervision: At all times, during any performance of the work conducted by the contractor, the contractor shall have English speaking technically qualified representative on site. The COR shall have the right to determine whether the proposed representative has sufficient technical and lingual capabilities, and the contractor shall immediately replace any individual not acceptable to the COR at no change in contract price.
- 1.6.4 Trash and building materials removed under this contract shall be removed from site on a daily basis. After completion of all work, the contractor shall remove all remaining materials and any equipment that does not belong to the United States Government (USG), leaving the site neat and clean with all functions operating.

1.7 Special project procedures

- 1.7.1 The contractor shall provide and maintain safe access and relatively quiet operation with maximum possible dust and noise control during working hours.
- 1.7.2 The Embassy Compound is a fully operational facility. For this reason, the contractor shall be limited in his access to the area in which his personnel, material, and equipment can be permitted.
- 1.7.3 Loading, unloading, temporary storage and trash removal shall be limited to the Embassy loading dock.
- 1.7.4 All work shall be performed during the Embassy regular working hours from 8:00 a.m. to 4:30 p.m., Sunday through Thursday except for the holidays identified in the holiday schedule attached, which are considered non-working days. Other hours may be approved by the COR with at least 24 hours advance written request.

1.8 Construction Schedule

The contractor shall submit, as part of his bid, a detailed schedule showing each activity along with its duration, predecessors, and successors for each project. A computerized schedule is preferred; however, a scaled bar chart may be acceptable. Duration of the project shall not exceed 30 working days.

1.9 Security Procedures

1.9.1 All of the contractor's personnel shall be subject to all the security procedures required for clearance of personnel working inside U.S. Embassy residential Compounds. These requirements shall include:

1. Submission of valid finger prints, addressed to the US Embassy and copy of the Egyptian ID, two week prior to the required date to access the site.
2. Access for trucks shall be granted on a 48 hours (two working days) advance notice showing: 1) Drivers name 2) Copy of driver's ID 3) Truck description and plate number, and 4) Date and time access required.
3. Access for daily laborers can be given for three days, with a 48 hours advance notice showing the name of the persons, ID #, date and place of issue, and a copy of the ID. Laborers for three days access will be given that for one time only.
4. All contractor personnel shall be subject to a daily check (in and out) by the government guard personnel.

1.9.2 Failure of the contractor to fulfill any security requirement in a timely manner shall not be constructed as a base for any time and money extension. Delay or suspension of work due to the US government security regulations or requirements shall not be a base for claims.

1.10 Safety Requirements

Contractors shall comply with the latest version of (SAFETY AND HEALTH REQUIREMENTS) Manual No EM 385-1-1. Copies of this manual are available electronically on the USACE Safety and Occupational Health Office web site: http://www.hq.usace.army.mil/soh/hqusace_soh.htm

2- DEMOLITION

2.1 The extent of the demolition work is as listed in the summary of work. The contractor shall salvage the existing walk in freezer, compressors and its accessories to the loading dock area at the US Embassy compound.

2.2 The contractor shall maintain existing adjacent items and surfaces indicated to remain and protect them against damage during the demolition operations. Damages caused by demolition operations, shall be repaired by the contractor at no additional cost to the Government.

- 2.3 The contractor shall transport from site all debris, rubbish, and materials resulting from demolition operations and dispose off site on a daily basis in accordance with local regulations.

3. WALK IN FREEZER DESCRIPTION

Furnish and install walk-in freezers. Include all insulated walls, ceilings, floors, doors, hardware, refrigeration systems, mechanical systems, internal electrical systems, controls, gages, internal lighting, and other ancillary items required for a completely fabricated and operational. Maintain freezer temperature of $-20^{\circ}\text{C} +2^{\circ}\text{C}$ (no lower limit).

3.1 SUBMITTALS

- a. Submit two (2) copies to be retained and distributed by the COR. Submit complete materials list, including catalog data of all materials, equipment and products for Work in this Section. Include refrigeration calculations and electrical calculations.
- b. Submit complete shop fabrication and installation drawings, including plans, elevations, sections, and details. Drawings shall be in the form of reproducible or photocopies and not to exceed 11 inches x 17 inches is size.
- c. Submit detailed anchorage and attachment drawings and calculations provided by a licensed engineer. Rooms shall be designed and constructed to meet the requirements for the seismic zone 2B.
- d. Submit record "As-Built" drawings.
- e. Submit complete operating and maintenance manuals that describe proper operating procedures, maintenance and replacement parts.

3.2 QUALITY ASSURANCE

- a. Walk-in supplier shall have a minimum of ten (10) years of documented experience and be an established organization and production facility specializing in this type of equipment.
Supplier shall have the demonstrated ability to produce the specified equipment of the required quality and the proven capacity to complete an installation of this size and type within the required time limits.
- b. Use all means necessary to protect Work of this Section before, during and after installation.

3.3 COORDINATION

- a. Work in this Section requires close coordination with work in Electrical, Mechanical, Fire Sprinkler and Architectural Sections. Coordinate all work to assure an orderly progress in the project.
- b. Walk-in supplier has full responsibility to provide structural backing for all wall mounted shelving, furnishings and equipment.

c. Walk-in supplier has full responsibility for the following:

1. Making openings for service penetrations to and from the walk-in.
2. Properly sealing all service penetrations into the freezer.
3. Field checks all dimensions and makes any adjustments in the walk-in size for a proper fit.

3.4 EXTENDED GUARANTEE

a. Walk-in supplier shall provide a written guarantee of ten (10) years that the insulated structure shall be free of defects in material and workmanship and that it will not deteriorate excessively or otherwise fail to perform.

b. Walk-in supplier shall provide a written guarantee of five (5) years for each compressor.

3.5 INSULATED ROOMS

a. Wall and ceiling panels:

1. Insulated panels shall be minimum 4" thick, be of modular construction incorporating wall and ceiling panels and be of "woodless" type construction. Panels shall consist of insulation sandwiched between interior and exterior metal skin. Panel edges to have tongues and grooves that cam-lock together assuring an air tight vapor proof joint.

Construction shall allow disassembly for possible relocation or expansion at a later date.

2. All panel insulation shall be HCFC Free Class I "foamed-in-place" 2.2 lb. density poly urethane foam insulation expanded with "Ozone Safe" 245 and UL certified as having a flame spread rating of ≤ 25 and smoke developed rating ≤ 450 in accordance with ASTM E84. Urethane insulation as herein specified shall be foamed in place and cured to a solid rigid state between metal panel skins at an average density of two (2) pounds per cubic foot, with a K factor of .125. Urethane insulation shall be both vermin-proof and odor-proof. This insulation shall have 97% closed cell structure and conform to international standards for ozone depletion contribution.

3. The sheet metal finish will be:

* Interior surface = 26 GA stainless steel finish.

* Exposed exterior surfaces = 26 GA stainless steel finish.

b. Door construction:

Door construction shall match the insulated panels. Each entrance to have a clear minimum opening of 36"W by 78"H. Doors shall be flush mounted, in-fitting and have a replaceable magnetic gasket on three sides and a neoprene adjustable gasket at the sill. The frame is to include an easily replaceable heater wire to prevent condensation and frost formation. Door hardware shall include three (3) Kason #1248 hinges, Kason #1094 door closer and a Kason #K-77C/487 latch/release. In addition, each door shall be equipped with a 14" x 14" heated viewing window.

c. Insulated floors

1 Freezers are to include 4" thick insulated floor panels capable of withstanding loads of up to 500 PSF. Wearing surface to be 18 GA type 304 #4 stainless steel over 1/2" non-wood underlayment. An ADA compliant transition ramp to be built into the insulated floor panel at each door.

- d. If ceiling supports are required to support the insulated ceiling panels, steel support system is to be external to the room with no visible connections from the interior.
- e. Closure panel trim of the same material and finish as adjacent panels shall be provided to close openings between insulated panels and building walls.
- f. Seal all joints, openings, piping, electrical and ductwork penetrations (regardless of trade). Seal both sides of penetrations (if possible) and inside electrical conduit once wires have been pulled.
- g. All construction to be NSF labeled.

3.6 CONTROLS

- a. Each walk-in is to be provided with a control panel consisting of the following components:
 - 1. Painted steel enclosure meeting NEMA 4 & 12 ratings.
 - 2. Allen-Bradley Micrologix series programmable controller including analog temperature input & Ethernet adapter.
 - 3. More EA7-T8C 8" color touch screen including room temperature display, temperature setting adjustment, alarm setting adjustment, alarm monitoring, alarm logging & temperature logging to a USB drive.
 - 4. Alarm contacts for remote monitoring.
- b. If refrigeration redundancy is called for, include a lead-lag controller capable of automatically switching the refrigeration systems on a daily basis and should an alarm condition occur, the stand-by system should automatically come online to maintain a constant temperature.

3.7 LIGHTING

Provide 4' 2-tube fluorescent light fixtures suitable for the environment in each cold room. Ballasts to be T5HO with -20°F temperature rating. A minimum light level of 60 Fc as measured 40" AFF is to be provided. Each door section shall include an interior and exterior light switch. The interior light switch to have a constant burning pilot light and the exterior switch to have an indicating pilot light.

3.8 REFRIGERATION SYSTEMS

- a. General – the refrigeration system shall use refrigerants acceptable to the Authority having jurisdiction. Utilize R-404A refrigerant, or approved equal. No CFC type refrigerants will be acceptable.
- b. Defrost cycle: System shall incorporate an automatic defrost system. Defrost system to include heaters to prevent condensate pan or drain line from freezing. A nominal temperature rise will be acceptable during each defrost cycle. Automatic defrost system shall be factory pre-wired to the control panel with all the necessary programming.
- c. All refrigeration piping required shall be furnished and installed by the walk-in manufacturer.
- d. All refrigeration line joints shall be brazed with Stay-Silv 15 brazing alloy. All piping shall be pressure leak tested and witnessed by the Owner.

- e. Condensing units and evaporator coils to be from the same manufacturer and be UL listed.
- f. Condensing units must be of adequate capacity to achieve and maintain the individual room operating temperature requirements and must be sized to handle additional loads appropriate for the application. Units to be complete in all respects including high/low pressure control, receiver, sight glass, liquid line drier, expansion valve and all other necessary equipment to achieve the cited performance. Units to be air-cooled and located per the drawings.
- g. All inter-connecting piping between the evaporator coils and condensing units shall be installed under the section. Refrigeration lines shall be insulated to prevent any condensation. Insulation exposed to the weather must have additional protection from the elements. Where piping passes through floor slabs, core drill slab and install pipe sleeves. Provide fire stopping at penetrations to achieve the specified fire rating. All hangers to support tubing to meet local codes and conditions. Provide seismic bracing if required. Space hangers appropriately for the smallest diameter line.
- h. Condensate drain line to be run in copper tubing to nearest floor sink. To prevent condensation, drain line is to be insulated where it exits the insulated panels.
- i. Pressurize and leak test the entire refrigeration system.

3.9 ELECTRICAL

- a. All electrical components utilized within each walk-in shall be UL listed.
- b. Work performed under NEC 2011 shall provide the appropriate circuits to each condensing unit and a pull box located above each walk-in. All interconnecting and control wiring to be verified by walk-in supplier.
- c. Exposed conduit inside the freezer shall be kept to a very minimum. Verify placement of all exposed piping and conduit with the Owner's Representative prior to installation.
- d. Wiring to be THHN or THWN conductors and EMT conduit.
- e. To minimize penetrations, all electrical circuits shall enter the room via a minimum number of conduits, preferably one. The conduit through the wall or roof and all conduits inside the walk-ins shall be PVC. A seal-off fitting Crouse-Hinds type or EZS or equal shall be placed immediately outside the room and properly sealed.
- f. Data receptacles, cabling and wall plates to be provided by others.
- g. Provide a recessed junction box as required for the building fire alarm system.
- h. Emergency disconnect switch to cut off all cooling and internal air movement.
- i. Door mounted ax.
- j. Telephone which direct connects to the operator – similar to the elevator phone.
- k. Panic alarm which with an A/V device installed in the kitchen– the audio must be a minimum 70 db.
- l. Smoke detector Emergency light – may need to locate battery remote.

- m. All electrical raceways exposed to different temperatures such as the thermostat and lighting wiring shall be sealed with an explosion proof seal according to NEC 300.7 (A).
- n. Expansion fittings for the electrical conduits exposed to different temperatures as mentioned in NEC 300.7 (B).
- o. An inside handle for both doors shall be provided to be able to get out from the freezer.
- p. A disconnect mean within sight from a readily accessible as mentioned in NEC 440.14.
- q. The type of bulb used inside the walk in freezer.
- r. Provide Digital thermostat.
- s. Motor compressor shall include an overload relay and rated as according to NEC 440.52.

3.10 PLUMBING

The cold room supplier shall install a condensate drain line from each evaporator coil to drain located outside the walk-in. Insulate drain lines on exterior side of CER to prevent the formation of condensate. Final connection of condensate drain line to waste system shall be verified on site.

4- INSTALLATION OF WALK IN FREEZER

4.1 SITE CONDITIONS

- a. Prior to installation of walk-ins, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- b. Verify the work can be installed in strict accordance with all pertinent codes and regulations, the original design, approved submittals, and manufacturer's recommendations.
- c. In the event of a discrepancy, immediately notify the Architect in writing.

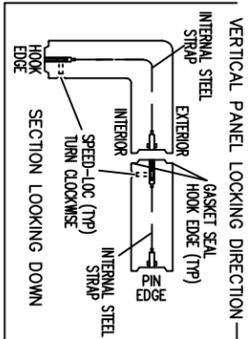
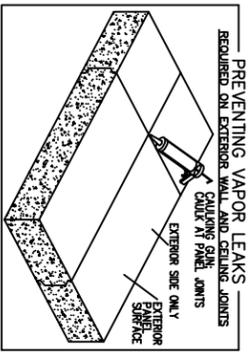
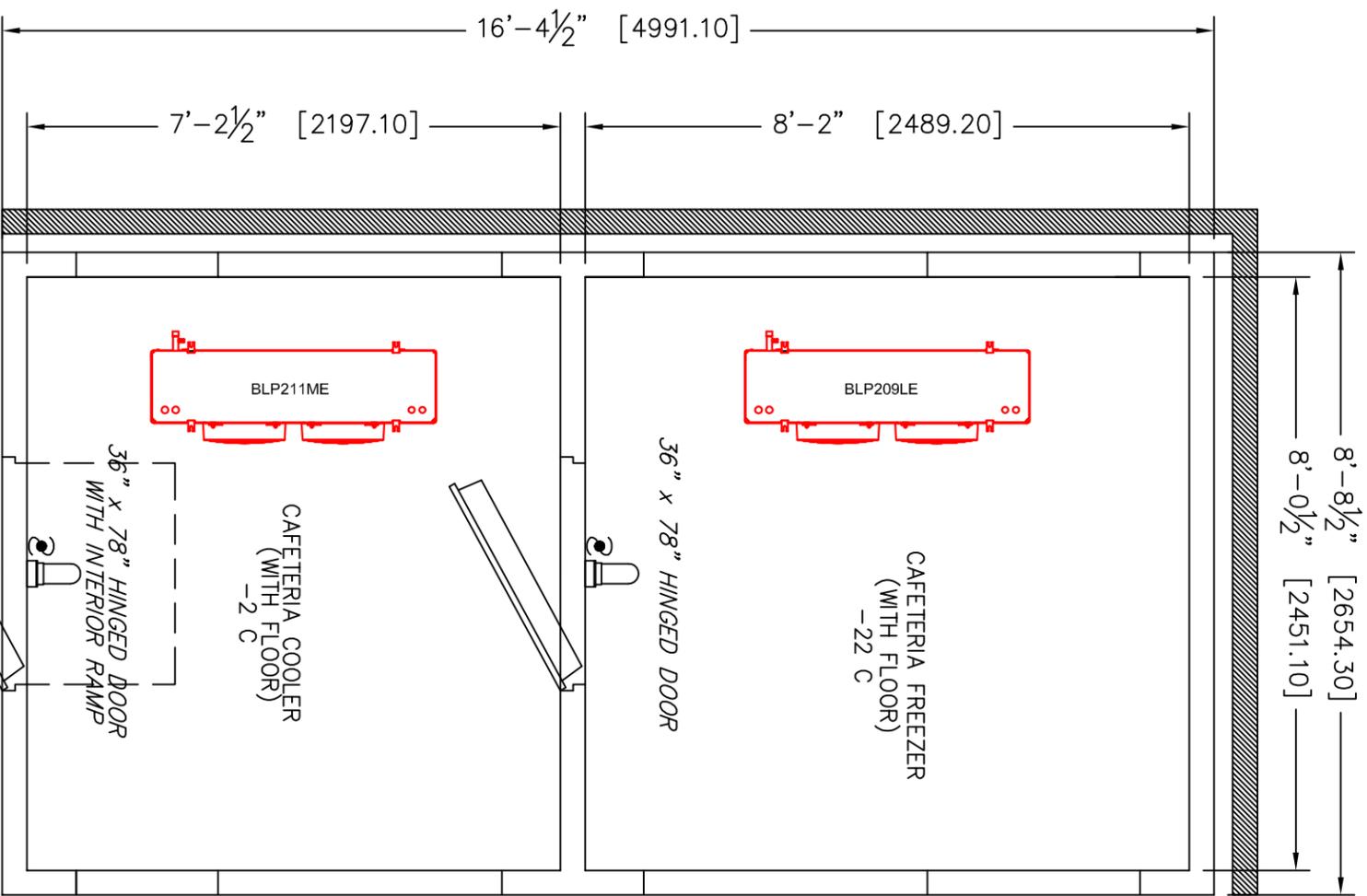
4.2 INSTALLATION

- a. Install all freezers in accordance with manufacturer's written instructions and reviewed shop drawings.
- b. Install sheet metal closure trim that matches insulated panel finish between all building walls and insulated panels.
- c. Install interconnecting accessories in accordance with the manufacturer's written recommendations and located for ease of servicing. Provide piping in accordance with good engineering practice.
- d. Suction line insulation shall be sized and installed to prevent condensation.
- e. Provide individual traps for condensate drains.
- f. Walk-in supplier is responsible for the proper sealing of all penetrations of the insulated panels.

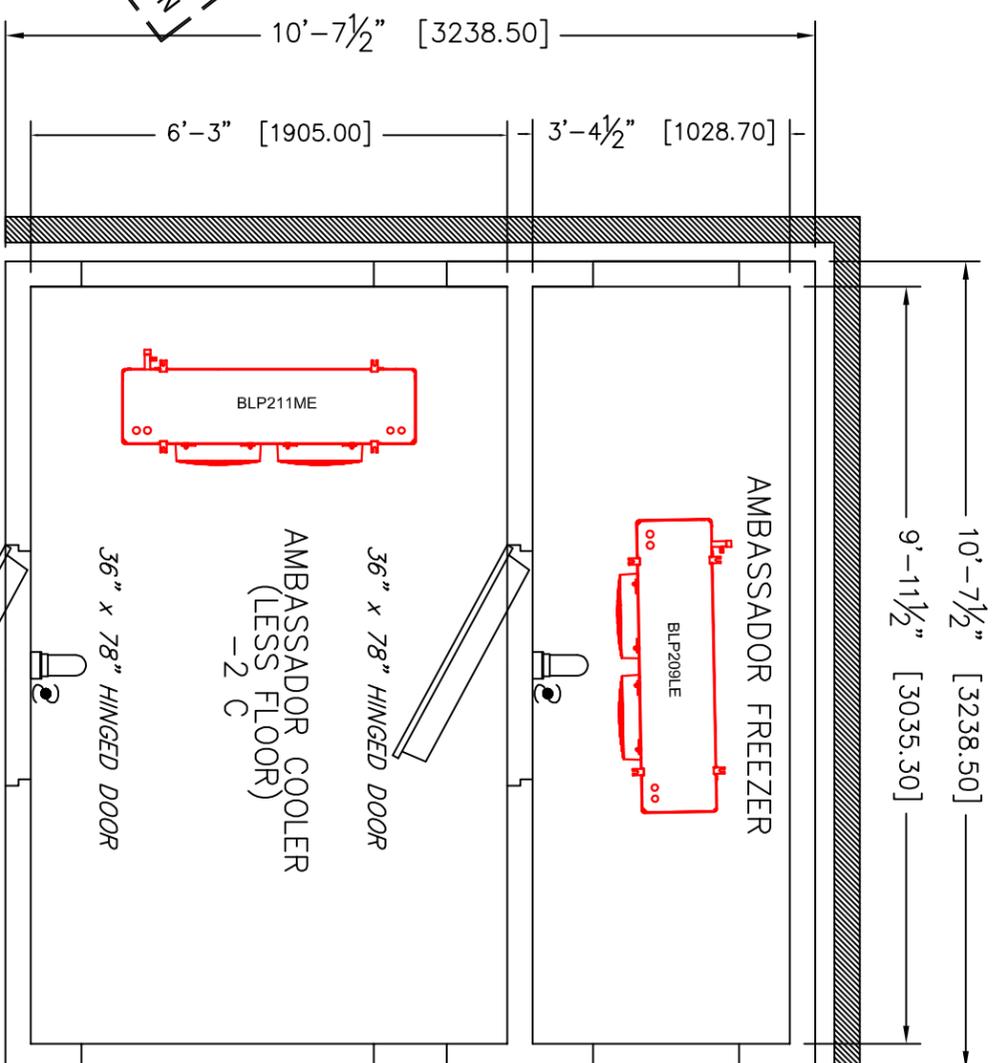
g. Test all equipment operation and performance of each freezer. Make all adjustments and repairs as required.

h. Clean all rooms inside and out, including the roof of each freezer. Remove all debris and marks.

End of specifications.



PRELIMINARY DRAWING
NOT FOR CONSTRUCTION



SPECIFICATIONS CAFETERIA AREA
8'-8 1/2" X 16'-4 1/2" X 8'-6" W/ 4" PANELS

- INSTALLATION
- INDOOR
 - LOADING HEIGHT - AT LEAST 24" OF OPEN SPACE MUST BE MAINTAINED BETWEEN TOP OF PRODUCT AND CEILING PANELS
- INSULATION
- FOAMED IN-PLACE POURED URETHANE
- EXTERIOR FINISH
- EXPOSED WALLS- STAINLESS STEEL 22 Gd
 - UNEXPOSED WALLS- 0.22 GALVALUME
- INTERIOR FINISH
- STAINLESS STEEL 22 Gd
 - STAINLESS STEEL 16 Gd, WITH 1/2" PLYWOOD
- FLOOR FINISH
- STAINLESS STEEL 16 Gd, WITH 1/2" PLYWOOD
- DOORS/ACCESSORIES
- (2) 36" X 78" RIGHT SWING 4" HINGED WALK-IN DOOR.
- DOOR OPTIONS:
- KASON #1094 HYDRAULIC FLUSH MOUNT CLOSER
 - KASON #1248 CHROME HINGE
 - KASON #270C DEADBOLT LATCH
 - OBSERVATION WINDOW 14" X 24"
- REFRIGERATION
- | | | |
|---------|-----------------|-----------------|
| ROOM | EVAPORATOR UNIT | CONDENSING UNIT |
| FREEZER | BLP209LE-S6B | BXS4021L6-IS64 |
| COOLER | BLP211ME-S6B | BXS4020M6-IS64 |

SPECIFICATIONS AMBASSADOR AREA
10'-7 1/2" X 10'-7 1/2" X 8'-2" W/ 4" PANELS

- INSTALLATION
- INDOOR
 - LOADING HEIGHT - AT LEAST 24" OF OPEN SPACE MUST BE MAINTAINED BETWEEN TOP OF PRODUCT AND CEILING PANELS
- INSULATION
- FOAMED IN-PLACE POURED URETHANE
- EXTERIOR FINISH
- EXPOSED WALLS- STAINLESS STEEL 22 Gd
 - UNEXPOSED WALLS- 0.22 GALVALUME
- INTERIOR FINISH
- STAINLESS STEEL 22 Gd
- DOORS/ACCESSORIES
- (2) 36" X 78" RIGHT SWING 4" HINGED WALK-IN DOOR.
- DOOR OPTIONS:
- KASON #1094 HYDRAULIC FLUSH MOUNT CLOSER
 - KASON #1248 CHROME HINGE
 - KASON #270C DEADBOLT LATCH
 - OBSERVATION WINDOW 14" X 24"
- REFRIGERATION
- | | | |
|---------|-----------------|-----------------|
| ROOM | EVAPORATOR UNIT | CONDENSING UNIT |
| FREEZER | BLP209LE-S6B | BXS4021L6-HS6B |
| COOLER | BLP211ME-S6B | BXS4020M6-HS6B |

SIGNED APPROVAL

SIGNED _____

DATE _____

PLEASE READ

THIS DRAWING HAS BEEN PREPARED BY OUR ENGINEERING DEPARTMENT AND IS SUBJECT TO THE STANDARD TERMS AND CONDITIONS OF OUR CONTRACT. APPROVAL BY CERTAIN THAT YOU CHECK WITH US BEFORE ANY WORK BEGINS. WE ARE NOT RESPONSIBLE FOR PRODUCTION TIME AFTER WE APPROVE DRAWINGS BY MAIL.

DMIL TECHNOLOGIES, LLC

4915 Arendell St., #313
Morehead City, NC 28557
U.S.A.
Tel: (252) 727-0994
Fax: (252) 727-0996
E-Mail: dmil@dmil.com
Visit Our Website at: www.dmil.com

PROPOSAL NUMBER 08147LH

ORDER NUMBER 11 X17

PROJECT MANAGER Luisca Bise

DRAWN BY Luisca Bise

PROJECT NAME US EMBASSY

PROJECT LOCATION CAIRO, EGYPT

DWG. NAME LAYOUT

SCALE Not to Scale

DWG. DATE 07/10/14

SHEET

REV. DATE

D-100