INVITATION TO QUOTE (ITQ)

PART I. ITQ OVERVIEW AND GENERAL TERMS AND CONDITIONS

A. Information

ITQ No.: MDAD-67621-JM	**ITQ Due Date and Time:** 4.24.2023 at 2:00 pm (Local Time)
ITQ Title: Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at MIA	
This ITQ is issued pursuant to Miami-Dade County Pool of Prequalified Vendors No. RTQ-01841, Passenger Loading Bridges Prequalification Pool, GROUP 1 Pre-Qualified Vendors	
☒ Sealed Quotes must be received by the due date and time, in a sealed envelope, identified on its outside as a quote for the above given ITQ number. Deliver sealed quotes to: Miami-Dade Aviation Department (MDAD) Procurement & Materials Management Division 4331 NW 22nd Street, Building 3040, Miami, Florida 33122 Attn: Juliana Manjarres	
County Department: Miami-Dade Aviation Department (MDAD)	
Department Contact: Juliana Manjarres	**E-Mail:** jmanjarres@flymia.com
Method of Award: Award of this Contract will be made to the lowest responsive and responsible Bidder in the aggregate for items 1 through 36 in this ITQ. If a Bidder fails to submit an offer for all items, its offer may be rejected.	

B. Instruction to All Bidders

1. Section 1, General Terms and Conditions of Miami-Dade County (County) shall apply to all resultant contracts from this ITQ. This Section is available on demand at the County's Strategic Procurement Division's (SPD) webpage: https://www.miamidade.gov/procurement/library/boilerplate/general-terms-and-conditions-r21-2.pdf
   General Terms and Conditions of Section 1 are non-negotiable. The following articles in Section 1, General Terms and Conditions, are not applicable to this ITQ:
   - Section 1.6 Contract Extension
   - Section 1.22 Insurance Requirements
   - Section 1.25 Termination for Convenience
   - Section 1.26 Termination for Default
   - Section 1.27 Breaches and Dispute Resolution

2. All questions must be submitted in writing by April 13, 2023 to the attention of the department contact, via e-mail address indicated above, with a copy sent to Clerk.Board@miamidade.gov. The County will issue responses to inquiries and any changes to the ITQ via written addenda issued prior to this ITQ due date and time.

3. Pursuant to Section 2-11.1 (t) of the Code of Miami-Dade County, as amended, a "**Cone of Silence**" is imposed upon issuance of this ITQ after advertisement and terminates at the time a written recommendation is issued.

4. Complete **PART IV. Pricing Form** and **PART V. ITQ Submittal Form** and ascertain their timely submission as stipulated in this ITQ.

5. If there is a conflict between or among the provisions of this ITQ, the order of precedence is as follows: 1) any associated addenda issued under ITQ No. MDAD-67621-JM , 2) the Scope of Services under ITQ No. MDAD-67621-JM, 3) technical specifications attached to ITQ No. MDAD-67621-JM, and 4) the Contractor's Quote.

6. Sealed Quotes must include the following:
   - Completed **PART IV. Pricing Form**
   - Completed and signed **PART V. ITQ Submittal Form**
   - Completed **Contractor Due Diligence Affidavit**

- Completed **Certificate of Assurance**
- Specification sheets for proposed alternate product, if applicable

C. Definitions

When used in these Contract Documents (defined below), or in related documents, the following terms, shall have the meanings given below:

- Addendum: A modification of the Plans, Specifications or other Contract Documents distributed to prospective Bidders prior to the opening of Bids.
- Air Operations Area: The Air Operations Area (AOA) shall mean any area of the airport used or intended to be used for landing, taking off or surface maneuvering of aircraft. An air operation area shall include paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway or apron.
- Allowance Account(s): Account(s) in which stated dollar amount(s) are included in the Contract for the purpose of funding portions of the Work which are unforeseeable at the time of execution of the Contract, or for construction changes, for adjustments of quantities, for unit price work items or for special work deemed desirable by the Owner to be incorporated into the Contract. Performance of Work, if any, under Allowance Account(s) will be authorized by written Work Order(s) issued by the MDAD Project Manager.
- Change Order: A written agreement executed by the Owner, the Contractor and the Contractor's Surety, covering modifications to the Contract, recommended by the MDAD and approved by the consulting engineers.
- Contract Documents: Bid Documents, Change Orders, Payment and Performance Bonds, Work Orders, Approved Schedule, all Contractual Forms, Approved Shop Drawings and Approved Working Drawings.
- Consulting Engineers: HNTB, Consulting Engineers/Supervising Architects to the Miami-Dade Aviation Department.
- County: A political subdivision of the State of Florida, whose governing body is the Board of County Commissioners of Miami-Dade County, Florida.
- Critical Path: Longest sequence of activities in a project's schedule which defines the project completion date and which must be completed on time in order for the project to be completed on schedule.
- Days: Reference made to Days shall mean consecutive calendar days.
- Direct Costs: Direct Costs recoverable by the Contractor as a result of changes in the Work shall be limited to the actual additional costs of labor and materials installed as part of the Work and for the reasonable additional cost of rental for any Special Equipment or Machinery. Labor shall be limited to site labor costs, including Employer's Payroll Burden. Specifically excluded from labor are the costs of general foremen and site office personnel. Materials are limited to permanent materials required by the drawings and specifications and materials approved by the MDAD Project Manager as necessary to install the permanent materials in an efficient and workmanlike manner. Rental for Special Equipment and Machinery, not already mobilized on the airport, shall be an amount equal to the appropriate daily, weekly, or monthly rental rate for such equipment, in accordance with the current issue of Associated Equipment Distributor (AED) "Compilation of Nationally Averaged Rental Rates and Model Specifications for Construction Equipment" (notwithstanding the caveats contained therein that such rental rates are not for use by government agencies) for each and every rental period (in days, weeks, or months as applicable) that the Special Equipment or Machinery is in use on the work plus any required mobilization. Payment for Special Equipment and Machinery already mobilized on the airport shall not exceed the monthly rate stated in the AED divided by one hundred and seventy-six (176) to establish a per hour rate that the Special Equipment and Machinery is in use on the work, plus any required re-mobilization. For Special Equipment or Machinery not listed in said document the Contractor shall be paid a rental rate corresponding to the average prevailing rental rate for such equipment or machinery in Miami-Dade County, Florida, subject to approval by the MDAD Project Manager. No additional payment shall be made to the Contractor for fuel, lubricants, fair wear and tear, transportation, insurance or depreciation. Any equipment or machinery not designated by the MDAD Project Manager as Special Equipment and Machinery shall be considered Overhead.
- Equal Brand: The mention of a particular manufacturer's brand name or style number in the specifications does not imply that this particular product is the only one that will be considered for purchase. This reference is intended solely to designate the style, type or quality of merchandise that will be acceptable. Bidders are to list the make and model number should an alternate be offered. In addition, Bidders are to provide product specification sheets for the alternate product prior to the bid due date via a question. Approval of the alternate specifications being proposed will be provided via Addendum prior to the bid submittal date. The "equal" equipment/device specification(s) submitted by the Bidder for approval shall meet or exceed the style, quality, and functionally of those listed in this document. The determination as to whether any alternate product is or is not equal shall

be made solely by The County and such determination shall be final and binding upon all Bidders. The County may request additional information, samples, and/or request a demonstration of the equipment in order to make such a determination.

- Extra Work: An item of work not provided for in the awarded Contract as previously modified by Change Order or Work Order, but which is found by the MDAD Project Manager to be necessary to complete the work within the intended scope of the Contract.
- Indirect Costs: The total daily compensation for approved compensable delays, which consist of all costs associated with: project bond premiums, project insurance premiums, costs of supervision, coordination, superintendents, general foremen, consultants, schedulers, cost controllers, accountants, office administrative personnel, time keepers, clerks, secretaries, watch persons, small tools, equipment or machinery not designated by the MDAD Project Manager as Special Equipment or Machinery, utilities, rent, telephones, facsimile machines, computers, word processors, printers, plotters, computer software, home office expense, all expendable items, job site and general office expenses, profit, extended jobsite general conditions, interest on monies retained by the Owner, escalated costs of materials and labor, decreased productivity, home office expenses or any cost incurred that may be allocated from the headquarters of the Contractor or any of its subcontractors, loss of any anticipated profits, loss of bonding capacity or capability losses, loss of business opportunities, loss of productivity on this or any other project, loss of interest income on funds not paid, costs to prepare a bid, cost to prepare a quote for a Change in the Work, costs to prepare, negotiate or prosecute claims, costs of legal and accounting work, costs spent to achieve compliance with applicable laws and ordinances, loss of projects not bid upon, loss of productivity or inefficiencies in the execution of the Work.
- Liquidated Damages: The amount that the Contractor accepts, as stipulated in the Contract Documents, that will be deducted from the Contract Sum for each Day of delay due to a Non-excusable Delay.
- Miami-Dade Aviation Department (MDAD): A department of Miami-Dade County government.
- Notice To Proceed (NTP): The written communication issued by the Owner to the Contractor directing the Contractor to begin Contract Work and establishing the date of commencement of the work.
- Owner: Miami-Dade Aviation Department (MDAD).
- Phase: A completion date as defined in this ITQ.
- Performance and Payment Bond: Bond executed by the Contractor and its Surety, on the attached form, assuring that the Contractor will, in good faith, perform and guarantee the work in full conformity with the terms of the Contract Documents and will promptly pay all persons supplying the Contractor with labor, materials, or supplies, used directly or indirectly by the Contractor in the prosecution of the Work.
- Project: The sequence of tasks that must be completed by the Contractor to provide the goods and services further described in PART II. Section 2.1. Provision and Installation of equipment.
- Schedule: The final schedule delivered under the Contract including time and deliverable schedule. Refer to Part III, Section 3.
- Subcontractor: Any individual, firm, partnership, joint venture or corporation supplying the Contractor with labor, materials, supplies and equipment used directly or indirectly by the Contractor in the prosecution of the Work.
- Substantial Completion: Substantial Completion of the Work shall occur when the MDAD Project Manager certifies that the Work is sufficiently complete, in accordance with the Contract Documents, so that the Owner may use the Work for the use for which it is intended or for such other use which the Owner in its sole discretion may determine to be appropriate under the circumstances, and after receipt of the final certificate of occupancy.
- Work: The services required by the Contract Documents, which includes all labor, materials, equipment, and services to be provided by the Contractor to fulfill the Contractor's duties and obligations imposed by the Contract Documents or, if not specifically imposed by the Contract Documents, which can be reasonably assumed as necessary to fulfill the intent of the Contract Documents to provide a complete, fully functional and satisfactory project.

PART II. ADDITIONAL TERMS

1. Term of Contract

The Contract shall become effective on the first calendar day of the month succeeding approval of the Contract by the County Mayor or designee, unless otherwise stipulated in the Purchase Order issued by the Aviation Department and shall continue through the last day of the forty-eight (48th) month.

2. **Small Business Enterprise (SBE)** – ***Please refer to Exhibit A***

3. **Insurance Requirements**

A. The contractor shall furnish to the MDAD Purchasing or MDAD Risk Management, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

1. Worker's Compensation Insurance for all employees of the vendor as required by Florida Statute 440.
2. Commercial General Liability Insurance on a comprehensive basis in an amount not less than $5,000,000.00 combined single limit per occurrence for bodily injury and property damage. Miami-Dade County must be shown as an additional insured with respect to this coverage.
3. Automobile liability Insurance covering all owned, non-owned and hired vehicles used in connection with the work, in an amount not less than $5,000,000.00 combines single limit per occurrence for bodily injury and property damage.

B. All required insurance policies shall be issued by companies authorized to do business under the laws of the State of Florida, with the following qualifications:

The company must be rated no less than "A-" as to management, and no less than "Class VII" as to financial strength, by the latest edition of Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey or its equivalent, subject to the approval of the MDAD Risk Management Division OR,

The company must hold a valid Florida Certificate of Authority as shown in the latest "List of All Insurance Companies Authorized or Approved to do Business in Florida", issued by the State of Florida Department of Financial Services

C. Certificates of Insurance must meet the following requirements:

1. Certificate must indicate that no modification or change in insurance shall be made without thirty (30) days written advance notice to the certificate holder.
2. Signature of agent must be included.
3. If Automobile Liability Insurance is required above, insurance must be provided for all of the following vehicles:
   a) Owned
   b) Non-owned
   c) Hired
4. If General or Public Liability Insurance is required above, Certificate of Insurance must show Miami-Dade County as an additional insured for that coverage.
5. Certificate Holder must read EXACTLY as presented below:
   Miami Dade Aviation Department Attn.: Risk Management Division PO BOX 025504
   Miami, FL 33102

D. Compliance with the requirements in this Section shall not relieve the successful Bidder of its liability and obligation under this, or under any other, section of the Contract. The successful Bidder shall provide to the County the insurance documents within ten (10) business days after notification of recommendation to award. If the certificate submitted does not include the coverages outlined in the terms and conditions of this solicitation, the successful Bidder shall have an additional five (5) business days to submit a corrected certificate to the County. Failure of the successful Bidder to provide the required insurance documents in the manner and within the timeframes prescribed within five (5) business days may result in the bidder being deemed non-responsible and the issuance of a new award recommendation. No work shall be authorized or shall commence under the Contract until the successful Bidder has complied with the foregoing insurance requirements.

E. The successful Bidder shall assure that the Certificates of Insurance required in conjunction with this Section remain in full force for the term of the Contract, including any renewal or extension periods that may be exercised by the County. If the Certificate(s) of Insurance is scheduled to expire during the term of the Contract, the successful Bidder shall submit new or renewed Certificate(s) of Insurance to the County a minimum of ten (10) calendar days before such expiration.

F. In the event that expired Certificates of Insurance are not replaced or renewed to cover the Contract period, the County may suspend the Contract until the new or renewed certificates are received by the County in the manner prescribed herein. If such suspension exceeds thirty (30) calendar days, the County may, at its sole discretion, terminate the Contract for cause and the successful Bidder shall be responsible for all direct and indirect costs associated with such termination.

4. Pre-Bid Conference and Site Visit

A highly recommended pre-bid conference and site visit shall be held on April 11, 2023, at 9:30 a.m., at Miami-Dade County Aviation Department, Building 3030, 4331 NW 22 ST, Miami FL 33122, first-floor lobby. Bidder(s) are advised to carefully examine the requirements and specifications in this solicitation, and to become thoroughly aware regarding all conditions and requirements that may in any manner affect the work to be performed under the contract. No additional allowances will be made because of lack of knowledge of these conditions. It shall be the responsibility of the Bidder(s) to examine the equipment and sites prior to the submittal of their bid.

Attendees that do not have an existing MDAD badge at the time of the Pre-Bid Conference and Site-Visit must submit via email to jmanjarres@flymia.com, a copy of their driver's license and the last four digits of their Social Security number no later than 9:00 a.m. (local time), Wednesday, April 5, 2023 to obtain the required security clearance to attend the site-visit.

5. Performance/Payment Bond Requirements

The vendor to whom a contingent award is made after a quotation process shall duly execute and deliver to the County a Performance and Payment Bond in an amount that represents 100% of the total contract price. The Performance and Payment Bond Form supplied by the County shall be the only acceptable form for these bonds. No other form will be accepted. The completed form shall be delivered to the County within the time frame agreed by the vendor and County Department after formal notice of award. If the vendor fails to deliver the payment and performance bond within this specified time, including granted extensions, the County shall declare the vendor in default of the contractual terms and conditions, and the vendor shall surrender its offer guaranty/bid bond, and the County shall not accept any offer from that vendor for a twelve (12) month period following such default.

The following specifications shall apply to any bond provided:

A. All bonds shall be written through surety insurers authorized to do business in the State of Florida as surety, with the following qualifications as to management and financial strength according to the latest edition of Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey:

Bond Amount	Best Rating
500,001 to 1,500,000	B V
1,500,001 to 2,500,000	A VI
2,500,001 to 5,000,000	A VII
5,000,001 to 10,000,000	A VIII
Over 10,000,000	A IX

B. On contract amounts of $500,000.00 or less, the bond provisions of Section 287.0935, Florida Statutes (2007) shall be in effect and surety companies not otherwise qualifying with this paragraph may optionally qualify by:

1. The surety company is licensed to do business in the State of Florida;
2. The surety company holds a certificate of authority authorizing it to write surety bonds in this state;
3. Providing evidence that the surety has twice the minimum surplus and capital required by the Florida Insurance Code at the time the solicitation is issued;
4. Certifying that the surety is otherwise in compliance with the Florida Insurance Code; and
5. Providing a copy of the currently valid Certificate of Authority issued by the United States Department of the Treasury under SS. 31 USC 9304-9308.

Surety insurers shall be listed in the latest Circular 570 of the U.S. Department of the Treasury entitled "Surety Companies Acceptable on Federal Bonds", published annually. The bond amount shall not exceed the underwriting limitations as shown in this circular.

C. For contracts in excess of $500,000 the provisions of Section B will be adhered to plus the company must have been listed for at least three consecutive years or holding a valid Certificate of Authority of at least 1.5 million dollars and on the Treasury List.

D. Surety Bonds guaranteed through U.S. Government Small Business Administration or Contractors Training and Development Inc. will also be acceptable.

E. In lieu of a bond, an irrevocable letter of credit or a cash bond in the form of a certified cashier's check made out to the Board of County Commissioners will be acceptable. All interest will accrue to Miami-Dade County during the life of this contract and/or as long as the funds are being held by Miami-Dade County.

F. The attorney-in-fact or other officer who signs a contract bond for a surety company must file with such bond a certified copy of power of attorney authorizing the officer to do so. The contract bond must be counter signed by the surety's resident Florida agent.

7. Special Security Requirements at Miami-Dade Aviation Department

The Miami-Dade County Aviation Department operates under strict security regulations. These regulations involve the issuance of special identification (ID) badge after performing an FBI fingerprint based criminal history records check (CHRC) and security threat assessment (STA) vetting of individuals who are employed, hired or who are required to frequently (more than 5 times within a 90-day period) enter the restricted areas of the Miami International Airport. These credentials are required for access and are issued by the Miami-Dade Aviation Department at the current cost of $38.00 for fingerprints and $20.00 for the ID badge, per applicant. Renewals are every 2 years or less depending on employment eligibility and or contract expiration date. Fingerprint fee is for initial CHRC, break in access over 30 days, or if the badge expires. Therefore, the awarded vendor(s) under this group shall obtain and pay for ID cards for each of his /her employees and/or agents who will be frequently visiting or performing services at the Miami International Airport restricted areas. For more information concerning Credentialing, registering the company, or additional information you may contact the Miami-Dade Aviation Department ID Section at 30-876-7188 or email miaco@miami-airport.com .

A. The Vendor must follow all security procedures required of workers at MDAD. This will include his will include submitting and successfully passing a Criminal History Record's Check (CHRC) and Security Threat Assessment (STA) for SIDA/SECURE/ STERILE badge issuance. Or successfully passing vetting for pass issuance for all employees, a special driving course for those who operate a vehicle on the aircraft operating area (AOA), additional badges to work within the US Customs service area and may include bonding for a Customs I.D.

For Customs ID, call 305-345-6528 or email miamiairportsecurityoffice@cbp.dhs.gov for information. Vendors are responsible for all costs incurred in obtaining security badges. Security clearance must be obtained prior to start of contract. CBP may require new fingerprints every 2 years or upon badge renewal or break in access.

When performing work at the County's Aviation Department, the awarded vendor(s) shall acquire approval to access the Airside Operations Area (AOA). Vendor(s) shall gain access to the AOA and shall comply with all AOA drivers training requirements and endorsements for each employee assigned to MIA. (Note: Section - Insurance requirements)

B. Vendor(s) and their sub-contractors are required to register their companies separately as only employees who are actively on payroll are authorized to obtain ID badges with the MDAD Credentialing section. Miami Dade Aviation Department (MIA) are subject to complying with ISO 14001 regulations regarding Environmental responsibility. Vendor(s) will receive training and familiarization about the ISO 14001 protocol from the Miami Dade Aviation Department.

PART III. SCOPE OF WORK/TECHNICAL SPECIFICATIONS

1. Background/Purpose

The Owner, Miami Dade Aviation Department (MDAD) is requesting prices to add and/or replace, and provide maintain and support services for Pre-Conditioned Air and 400Hz systems for 14 Passenger Loading Bridges at Concourse F: Gates F3, F5, F8, F9, F10, F11, F12, F14, F15, F16, F17, F18, F19, and F23 for the Miami International Airport Project Number V008F and the plans labeled MIA Concourse F Phase 2 Aircraft Ground Support Services Modifications no plans will be provided for the work at Concourse G.

F3	A3-44/78	F5	A3-50/95	F8	WS-750-T-023
F9	TB33/17.0-3	F10	TB37/18.5-3	F11	A3-65/99
F12	A3-50/95	F14	TB35/17.5-3	F15	TB37/18.5-3
F16	TB35/17.5-3	F17	TB35/17.5-3	F18	TB43/20.5-3
F19	TB35/17.5-3	F23	TB35/17.5-3		

Add Pre-Conditioned Air and 400Hz systems for 4 Passenger Loading Bridges at Concourse G: Gates G4, G6, G16, and G19.

G4	JW XX 50/95	G6	JW XX 60/119	G16	JW XX 60/119
G19	JW XX 58/110				

It shall be the Bidder's responsibility to evaluate the site constraints of each gate location, the conditions affecting the installation of the units above, securing the building at each Gate, power supply and any other physical or material requirement necessary to perform the work. Note that utilities at any gate location which serve other gates and/or tenants shall not be interrupted; any temporary re-routing shall be the Contractor's responsibility. Site Visits, if requested, will be conducted in conjunction with the Pre-Bid Meeting, affording Bidders the opportunity to inspect the locations under this project.

2. Detailed Description of the Intended Results or Deliverables

2.1 Provision, and Installation of Equipment

The Contractor will provide any and all procurement, design, engineering, engineering stamp and validation for payment purposes, permits, electrical infrastructure, infrastructure upgrades, wire, breakers, enclosures, cables, conduit, support structures, equipment and labor to install 400Hz Gate Boxes, 400Hz Solid State Converters, Pre Conditioned Air units, Precool systems, Potable Water Cabinets, exhaust fans, fire alarm integration, hose reels, service baskets, aircraft interfaces, and all other work required to deliver complete working systems at the Gate locations as detailed below and in the attached plans. Contractor's Florida registered A/E will be required to sign off on all contractor invoices.

A. For Gates F14, F15, F16, F17 and F19 (180kva Central Plant System). Remove existing equipment and install 2 (Two)-90kVA ASC Service Gate Boxes with specifications equivalent or exceeding Dabico Model ASC 51-90L per each location system and 2 electric cable hoists to be mounted on the Passenger Bridge near the cab at each Gate location including but not limited to infrastructure upgrades, conduit, wiring, mounting brackets, push button control station or stations, 400Hz cable assemblies min 85lf, electric cable hoists, Kellums Grip Cords and packaging to deliver a complete operational exterior mounted weather protected system. 5 (Five) 180kva integrated systems total. Please refer to Exhibit B, PBB_SECTION_263226_CP_400HZ_17.04.12 for additional information.

B. For Gates F10 and F23 (180kva Solid State Frequency Converter, Point of Use type system). Remove existing equipment and install 2 (Two) -90kva Service Gate Boxes working together as a 180kva system with specifications equivalent or exceeding Dabico Model 2500+ 90KVA and 2 (Two) electric cable hoists to be mounted on the Passenger Bridge near the cab at each Gate location including but not limited to infrastructure upgrades, conduit, wiring, mounting brackets, push button control station or stations, 400Hz cable assemblies min 85lf, electric cable hoists, Kellums grips and packaging to deliver a complete operational exterior mounted weather protected system. 2 (Two) 180kva integrated systems total. Please refer to Exhibit C, PBB_SECTION_263543_POU -400HZ for additional information.

C. For Gates F3, F5, F8, F9, F11, F12, and F18 (90kva Solid State Frequency Converter, Point of Use type system). Remove existing equipment and install 1 (One)-90kva Service Gate Box with specifications equivalent or exceeding Dabico Model 2500+ 90KVA and 1 (One) electric cable hoist to be mounted on the Passenger Bridge near the cab at each Gate location including but not limited to infrastructure upgrades, conduit, wiring, mounting brackets, push button control station or stations, 400Hz cable assemblies min 65lf, Kellums grips and packaging to deliver a complete operational exterior mounted weather protected system. 7 (Seven) 90kva integrated systems total. Please refer to Exhibit C, PBB_SECTION_263543_POU -400HZ, for additional information.

D. For Gate F12 Remove existing equipment and install 1(One) - Pre Conditioned Air Unit with specifications equivalent or exceeding the Dabico Model PDX45C bridge mounted unit at each Gate location including but not limited to infrastructure upgrades, fire alarm integration, exhaust fan and needed duct work, conduit, wiring, mounting brackets, 3-position push button control station, pre-cool assembly, 60Ft hose assembly, cabin temperature probe, condensate removal system to allow for the removal of the condensate without spilling on to the pavement, all hoses, aircraft interface with specifications equivalent or exceeding J & B Aviation part number: JB 729 and clamps. 1 (One) integrated system Total. Please refer to Exhibit D, PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12 for additional information.

E. For Gates F8 and F18 Remove existing equipment and install 1 (One) - Pre Conditioned Air Unit at each location with specifications equivalent or exceeding the Dabico Model PDX60C bridge mounted unit at each Gate location including but not limited to infrastructure upgrades, fire alarm integration, exhaust fan and needed duct work, conduit, wiring, mounting brackets, 3-position push button control station, pre-cool system, 1 (One) 60Ft hose assembly, cabin temperature probe, condensate removal system to allow for the removal of the condensate without spilling on to the pavement, all hoses, aircraft interface with specifications equivalent or exceeding J & B Aviation part number: JB 729 and clamps. 2 (Two) integrated systems total. Please refer to Exhibit D, PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12, for additional information.

F. For Gates F10,F14,F15,F16,F17,F19 and F23 Remove existing equipment and install 1(One)-Pre Conditioned Air Unit with specifications equivalent or exceeding the Dabico Model PDX90C bridge mounted unit at each Gate location including but not limited to infrastructure upgrades, fire alarm integration, exhaust fan and needed duct work, conduit, wiring, mounting brackets, 4-position push button control station, pre-cool system, 2(Two) 85Ft hose assemblies, cabin temperature probe, condensate removal system to allow for the removal of the condensate without spilling on to the pavement, all hoses, two (2) aircraft interfaces with specifications equivalent or exceeding (J & B Aviation part number: JB 729) and clamps. 7 (Seven) integrated systems total. Please refer to Exhibit D, PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12, for additional information.

G. For Gates F3, F5, F9 and F11 add exhaust fan assemblies including all interconnects, fire alarm integration, control systems, cabling and infrastructure upgrades to deliver a fully integrated system.

H. PCA and 400Hz Control Push Button Station Cables to be 18-12C TYPE SOOW BLACK JACKET 600V 90C or equal with control stations mounted on the bogie side nearest to the aircraft parking centerline.

I. Additional Installation notes for Gate F3. Existing STU; run new electrical cables.

J. Additional Installation notes for Gates F5, F9, F11 and F19. Existing STU; remove existing electrical cables & Glycol Hoses and run new electrical cables.

K. Additional Installation notes for Gate F8. No STU at Passenger Boarding Bridge (PBB) run cables underneath the PBB. Install 1(One) Hose reel as manufactured by J & B Aviation Services JB680 or approved equal, and 1 (One) Hose basket as manufactured by Dabico 058-HB or approved equal. Remove and replace existing Potable Water Cabinet with a new one (Semler SI-100 or approved equal with side mounted connections).

L. Additional Installation notes for Gates F10, F12, F14, F15, F16, F17, F18, F19 and F23. Install 2 (Two) hose reels as manufactured by J & B Aviation Services JB680 or approved equal, 1(One) hose basket or as manufactured by Dabico 058-HB or approved equal, remove existing electrical cables and Glycol Hoses and run new electrical cables in the STU. Remove and

replace existing Potable Water Cabinet with a new one (Semler SI-100 or approved equal with side mounted connections). 9 (Nine) locations.

M. For Gates G16 and G19 (180kva Solid State Frequency Converter, Point of Use type system). Install 2 (Two)-90kva Service Gate Boxes working together as a 180kva system with specifications equivalent or exceeding Dabico Model 2500+ 90KVA and 2 (Two) electric cable hoists to be mounted on the Passenger Bridge near the cab at each Gate location including but not limited to infrastructure upgrades, conduit, wiring, mounting brackets, push button control station or stations, 400Hz cable assemblies min 85lf, Kellums grips and packaging to deliver a complete operational exterior mounted weather protected system. 2 (Two) 180kva integrated systems total. Please refer to Exhibit C, PBB_SECTION_263543_POU -400HZ, for additional information.

N. For Gates G4 and G6 (90kva Solid State Frequency Converter, Point of Use type system). Install 1 (One) - 90kva Service Gate Box with specifications equivalent or exceeding Dabico Model 2500+ 90KVA and 1 (One) electric cable hoist to be mounted on the Passenger Bridge near the cab at each Gate location including but not limited to infrastructure upgrades, conduit, wiring, mounting brackets, push button control station or stations, 400Hz cable assemblies min 65lf, Kellum grips and packaging to deliver a complete operational exterior mounted weather protected system. 2 (Two) 90kva integrated systems total. Please refer to Exhibit C, PBB_SECTION_263543_POU -400HZ, for additional information.

O. For Gates G4 and G6 Install 1(One) – Pre Conditioned Air Unit at each location with specifications equivalent or exceeding the Dabico Model PDX60C bridge mounted unit at each Gate location including but not limited to infrastructure upgrades, fire alarm integration, exhaust fan and needed duct work, conduit, wiring, mounting brackets, 3-position push button control station, pre-cool system, 1 (One) 60Ft hose assembly, cabin temperature probe, condensate removal system to allow for the removal of the condensate without spilling on to the pavement, all hoses, aircraft interface with specifications equivalent or exceeding (J & B Aviation part number: JB 729 and clamps. 2 (Two) integrated systems total. Please refer to Exhibit D, PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12, for additional information.

P. For Gates G16 and G19 Install 1 (One) - Pre Conditioned Air Unit with specifications equivalent or exceeding the Dabico Model PDX90C bridge mounted unit at each Gate location including but not limited to infrastructure upgrades, fire alarm integration, exhaust fan and needed duct work, conduit, wiring, mounting brackets, 4-position push button control station, pre-cool system, 2 (Two) 85Ft hose assemblies, cabin temperature probe, condensate removal system to allow for the removal of the condensate without spilling on to the pavement, all hoses, 2 (Two) aircraft interfaces with specifications equivalent or exceeding (J & B Aviation part number: JB 729 and clamps. 2 (Two) integrated systems total. Please refer to Exhibit D, PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12, for additional information.

Q. For Gates G4, G6, G16 and G19 add exhaust fan assemblies including all interconnects, fire alarm integration, control systems, cabling and infrastructure upgrades to deliver a fully integrated system.

R. PCA and 400Hz Control Push Button Station Cables to be 18-12C TYPE SOOW BLACK JACKET 600V 90C or equal with control stations mounted on the bogie side nearest to the aircraft parking centerline.

S. For all Gate locations G4, G6, G16 and G19 Remove existing equipment if existing and install a new potable water cabinet Semler SI-100 or approved equal with side mounted connections including all power and water supply lines as required to deliver a fully functional system. Four (4) locations.

T. For all Gate locations G4, G6, G16 and G19, Install One (1) new cable carrier side trolley system. Trolley system is to be of a similar design that matches or exceeds the existing systems located at concourse G. All wiring for new PCAir and 400Hz units to be routed through the new trolley system. Four (4) systems total.

U. For Gates G4 and G6. Install One (1) Hose reel as manufactured by J & B Aviation Services JB680 or approved equal, and 1 (One) Hose basket as manufactured by Dabico 058-HB or approved equal. Two (2) locations.

V. For Gates G16 and G19. Install Two (2) hose reels as manufactured by J & B Aviation Services JB680 or approved equal, 1 (One) hose basket as manufactured by Dabico 058-HB or approved equal. Two (2) locations.

W. The work is comprised of the replacement and/or the addition of PCAir and 400Hz systems on the existing passenger boarding bridges (PBBs) at the above designated gates as specified below. All work shall be done in- place.

X. The site and access to the site is controlled by MDAD's Division of Safety and Security and Airside Operations. Only one PBB may be worked on at a time. Site utilization shall be coordinated with the Owner.

Y. The Contractor shall coordinate PBB Shutdowns with MDAD Project Manager (PM) and/or their designated representative. All Matrix-controlled Dash doors at the PBB/building interface are to be locked for the duration of the work at each PBB/Gate location. Contractor must engage Honeywell for the Honeywell system integration.

Z. Work at each Gate shall include the scope listed above and shown in the supplied plans labeled MIA Concourse F Phase 2 Aircraft Ground Support Services Modifications excluding any work shown for gate F21. Please refer to Exhibit E, Drawings, for additional information.

AA. No work will be executed for Gate F21 under this contract.

BB. All work shall be in accordance with the Contract Documents and equipment manufacturer's original specifications. All materials to be approved by MDAD Project Manager or his designee prior to use. Allow 2 weeks for the review of any submissions.

CC. Contractor shall comply with all safety regulations. MOT barricades shall be required at all work sites. Barricades, as approved by MDAD on the contractor's Safety Plans, shall not be moved, or removed without the approval of the Owner. Barricades may be water-filled plastic.

DD. All worksites shall be swept clean daily, and all debris removed by the Contractor. PBB Maintenance will inspect the site for compliance.

EE. The MDAD Project Manager or his designee will inspect the work and the operation of the PBB and prepare a punch-list. Satisfactory completion of all punch-list items is required for Acceptance of the work at the Gate location.

FF. It shall be the Bidder's responsibility to visit the Site (MIA) and evaluate the site access, constraints of each gate location, the conditions affecting the work, securing the gates, power supply, extent of modifications required for the PBB at each gate location, and any other physical or material requirement necessary to perform the work. Note that utilities at any gate location which serve other gates and/or contractors shall not be interrupted; any temporary re-routing shall be the Contractor's responsibility.

3. Schedule, Time Period

A. The Project shall be completed within 384 calendar days from issuance of Notice to Proceed.

B. The Contractor shall submit for approval, within 15 days after award and issuance of the NTP, a Progress Schedule reflecting the work to deliver the items in the Schedule of Prices Bid. The Progress Schedule submitted for approval shall include the shop drawings submittal date and review period and sequence of construction activity for each Gate including manufacturing times, any upgrades and/or foundation work if required. A revised Schedule shall be submitted showing all progress and any revisions to future work for approval with each application for payment.

C. The Contractor shall prosecute the Work in accordance with the approved Schedule or most recently approved revision to the Schedule. In the event that progress along the critical path is delayed, the Contractor shall revise their planning to include additional forces, equipment, shifts or hours as necessary to meet the time or times of completion specified in this Contract at no additional cost to the Owner. In addition, the Contractor shall revise their schedule to reflect these recovery actions and submit it to the Owner for review and approval it being understood that such approval will be as to the format and composition of the schedule and not the Contractor's means and methods. Additional costs resulting therefrom will be borne by the Contractor. Delayed progress is defined as:

1. A delay in the start or finish of any activity on the critical path (critical path is defined as the path with the least amount of float) of the approved Schedule or most recently approved revision to the Schedule; or
2. A delay in the start or finish of any non-critical activity which consumes more than the available float shown on the approved Schedule or most recently approved revision to the Schedule, thereby making the activity critical and late; or
3. A projected completion date shown on a schedule update which is later than the contractual completion date; or
4. Any combination of the above.

D. Failure of the Contractor to comply with the requirements under this section will be grounds for determination that the Contractor is not prosecuting the Work with such diligence as will ensure completion within the Contract Time. Upon such determination, the Owner may terminate the Contractor's right to proceed with the Work, or any separate part thereof, in accordance with the Contract Documents. If in the Contractor's estimation, the cause(s) of delay are beyond the Contractor's control, the Contractor shall adhere to the sections of the Contract Documents related to extensions of time, claims and others as appropriate.

E. The Contractor shall be responsible for scheduling and coordinating the work of all crafts and trades, subcontractors and suppliers, required to perform the Work and to complete the Work within the prescribed time. Any inefficiency or loss of productivity in the labor, materials, or special equipment of the Contractor or its subcontractors of any tier, from any cause, shall be the responsibility of the Contractor. No reimbursement of these or any other costs can be requested by or granted to the Contractor or any of its subcontractors of any tier for inefficiency or loss of productivity in labor, materials, or special equipment. Additional costs may only be paid to the Contractor as a result of additional Work added to the Contract scope of work.

4. Extensions of Time and Classification of Types of Delays

A. Once a delay has been identified and it has been established through a scheduling analysis that a delay affects the Project's end date or contractually mandated milestone date, the delay must be classified to determine responsibility and to compute damages, if any. Before the Contractor can submit a request for time extension, claim or any request for additional compensation involving or related to time, the Contractor must classify the delay(s) in accordance with the following classifications. These delay classifications shall be used by the Owner and the Contractor in resolving any time-related disputes. Delays fall into three basic categories: non-excusable, excusable, and compensable.

1. Non-excusable delays are those delays to the critical path which were foreseeable at the time of contract award or delays caused by the Contractor due to the Contractor's fault or negligence or his/her own inefficiencies or problems, due to his/her inability to coordinate subcontractors and/or other flaws in his/her planning. In these types of delays the Contractor is not entitled to extra time or compensation and the Owner may be allowed to assess Liquidated Damages or actual damages, depending on the contract provisions.
2. Excusable delays are those delays to the critical path beyond the Contractor's control and without the active interference of the Owner, such as extreme weather (force majeure), strikes and delays caused by third parties (i.e. not the Contractor or the Owner). Contractors are granted a time extension but no additional compensation for the extended time of performance for excusable delays.
3. Compensable delays are delays to the critical path caused by active interference or participation of the Owner or Owner's consultant. Examples of compensable delays are failure of the Owner to provide right-of-way, introducing late design changes, late review of shop drawings by the Owner and failure of the Owner to coordinate the work of various prime Contractors. In the case of a compensable delay, the compensation for the extended period of performance may cover the direct cost due as a result of the changes.
4. Concurrent delays involve two or more delays to the critical path occurring at the same time, either of which, had it occurred alone, would have affected the end date of the Project. In that event, the Contractor's sole remedy is a time extension and relief of Liquidated Damages with no compensation for extended cost for the concurrency delay period.
5. The compensability of concurrent delays depends on the types of delays involved. The following shall determine the effects of concurrent delays on time extensions and compensable costs:

   i. EXCUSABLE DELAY CONCURRENT WITH A NON-EXCUSABLE DELAY. For excusable delays concurrent with non-excusable delays, the Contractor is entitled to a time extension only. For example, it rains the day footings are to be excavated (excusable delay) but the excavation equipment was down for repairs (non-excusable delays).

   ii. NON-EXCUSABLE DELAY CONCURRENT WITH A COMPENSABLE DELAY. For non-excusable delays

concurrent with compensable delays, the Contractor is entitled to a time extension only. For example, if the Owner introduces a design change for a beam but the Contractor has failed to submit the shop drawings for said beam in a timely manner. This would be an example of a non-excusable delay (late shop drawings) concurrent with a compensable delay (Owner introducing design change).

iii. EXCUSABLE DELAY CONCURRENT WITH A COMPENSABLE DELAY. For excusable delays concurrent with compensable delays, the Contractor is entitled to a time extension only. For example, the Owner does not provide the necessary right-of-way to begin construction (compensable delay) but the Contractor's forces are on strike (excusable delay).

B. Time Extensions: The Contractor may be granted an extension of time and will not be assessed Liquidated Damages for any portion of the delay in completion of the Work, arising from acts of nature, acts of the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, strikes, labor disputes, or weather more severe than the norm, provided that the aforesaid causes were not foreseeable and did not result from the fault or negligence of the Contractor, and provided further that the Contractor has taken reasonable precautions to prevent further delays owing to such causes, and has given to the MDAD Project Manager immediate verbal notification, with written confirmation within 48 hours, of the cause or causes of delay. Within thirty (30) days after the end of the delay, the Contractor shall furnish MDAD Project Manager with detailed information concerning the circumstances of the delay, the number of days actually delayed, the appropriate Contract Document references, and the measures taken to prevent or minimize the delay. All requests for extension of time shall be submitted in accordance with the Contract Documents. Failure to submit such information will be sufficient cause for denying the delay claims. The Owner will ascertain the facts and the extent of the delay and its findings thereon will be final and conclusive subject to the dispute provisions in the Contract Documents. The extensions of time granted for these reasons shall be considered excusable and shall not be the basis for any additional compensation.

1. Weather more severe than the norm shall apply only as it affects particular portions of the Work and operations of the Contractor, as determined by the MDAD Project Manager. Weather more severe than the norm is defined as any situation exceeding the mean data as recorded by The National Climatic Data Center, Asheville, North Carolina and published by the National Oceanic and Atmospheric Administration (This data is taken from the table of normals, means, and extremes in the latest version of the "Local Climatological Data, Annual Summary with Comparative Data, Miami, Florida"). For the calculation of delays due to rain, precipitation of 0.01 inches or more a day shall be considered to be a rain day if the rain actually prevented the Contractor from performing work. The effects of weather less severe than the norm may be taken into account in granting time extensions at the Owner's sole discretion.

2. An extension of time will not be granted for a delay to the critical path caused by a shortage of materials, except Owner-furnished materials, unless the Contractor furnishes to MDAD documentary proof that he has diligently made every effort to obtain such materials from every known source within reasonable reach of the Work. The Contractor shall also submit proof, in the form of a CPM network analysis data, that the inability to obtain such materials when originally planned, did in fact cause a delay in final completion of the Work which could not be compensated for by revising the sequence of his operations. Only the physical shortage of material will be considered under these provisions as a cause for extension of time. No consideration will be given to any claim that material could not be obtained at a reasonable, practical, or economical cost, unless it is shown to the satisfaction of the MDAD Project Manager that such material could have been obtained only at exorbitant prices, entirely inconsistent with current rates taking into account the quantities involved and the usual practices in obtaining such quantities.

C. Delays Caused the Owner: If the Contractor's performance of the Work along the critical path is delayed by any condition or action directly caused by the Owner, and which was not foreseeable by the Contractor at the time the Contract was entered into, the Contractor shall, provide notification in accordance with the Contract Documents, of any such delay and of the anticipated results thereof. The Contractor shall cooperate with the Owner and use its best efforts to minimize the impact on the schedule of any such delay.

D. Delays Beyond Contractor's Control Not Caused by Consultant and/ or the Owner: If Contractor's performance of the Work along the critical path is delayed by any conditions beyond the control and without the fault or negligence of Contractor and not caused by the Owner, and which was not foreseeable by Contractor at the time this Contract was entered into, Contractor shall, provide immediate verbal notification with written notification in accordance with the Contract Documents, of any such delay and of the anticipated results thereof. Within two (2) calendar days of the termination of any such delay, Contractor shall file a written notice with the MDAD Project Manager specifying the actual duration of the delay. If the Owner determines that the delay was

beyond the control and without the fault or negligence of the Contractor and not foreseeable by the Contractor at the time this Contract was entered into, the Owner will determine the duration of the delay and may extend the time of performance of this Contract provided, however, that Contractor shall cooperate with the Owner and use its best efforts to minimize the impact on the schedule of any such delay. These delays shall be considered excusable and the Contractor shall not be entitled to, and hereby expressly waives recovery of, any damages suffered by reason of the delays contemplated by this paragraph and extension of time shall constitute Contractor's sole remedy for such delays.

E. In addition to the delays in the Work specified in this section, delays in the Work directly caused by an act or omission by an owner of an adjoining property will not be considered an Owner-controlled delay. An owner of an adjoining property is a person, firm, corporation, partnership, or other organization who either owns or occupies, or both, structures or parcels or both, immediately adjacent to the Work Site. Extension of time for those delays will be considered excusable and shall be treated as specified in this Section, provided that:
1. The Contractor has, in accordance with this Section, given to the MDAD Project Manager immediate verbal justification, with written confirmation within forty-eight (48) hours of the delay; and
2. The Contractor establishes, to the satisfaction of the MDAD Project Manager, that:
    i. The delay was caused directly by an act or omission by the owner of the adjoining property; and
    ii. The Contractor has taken reasonable precautions and has made substantial effort to minimize the delay.

F. A Work Order will be furnished to the Contractor within a reasonable period of time of a request for extension of time, specifying the number of days allowed, if any, and the new dates for completion of the Work or specified portions of the Work. All requests for time extension shall be in accordance with the Contract Documents.

G. For the proper format to be used in submitting requests or claims for time extensions, refer to applicable sections of the Contract Documents.

H. Extensions of time shall be in accordance with Section 9-3 of the Code of Miami-Dade County, as applicable.

5. Final Acceptance

A. When the Contractor believes that all the Work or designated portion thereof required by the contract is completed. The Contractor shall prepare a preliminary punch list and notify the MDAD Project Manager in writing to schedule a walkthrough to verify compliance with the contract document.

B. If any of the conditions listed in this Section are not met and the Work has not been completed, or the Contractor determines that the final Punch List cannot be completed within sixty (60) days, the Contractor shall continue work, reducing the number of items on the Punch List that were not met. Additional inspections shall be scheduled as necessary until the work is completed. However, costs incurred by the Owner for any inspections beyond a second inspection will be charged back to the Contractor.

C. In the event the Contractor fails to complete the work within the period specified in the Contract for completion, the Contractor shall be liable for Liquidated Damages and the Owner has, as its option, the right to, after ten (10) calendar days notice to the Contractor, have the work performed by others and backcharge the Contractor for all Direct and Indirect Costs related to performing this work. In the event that the Owner chooses to have the work completed by others, there shall not be any further non-excusable delays charged to the Contractor beyond the ten (10) days following notice to the Contractor. However, the Contractor shall not be relieved of any non- excusable delays incurred through the date of termination. The Punch List and the Contract shall remain open until all the Work is complete and accepted. The current retainage will be used to offset any Liquidated Damages and any backcharges, after which, any surplus retainage will be released to the Contractor. If the retainage is insufficient to cover the Liquidated Damages and any backcharge, the Owner will bill the Contractor for the balance and the Contractor shall promptly remit to the Owner an amount equal to the billing.

D. Final Completion: When the Owner or MDAD Project Manager considers all Work indicated on the Punch List to be complete, the Contractor shall submit written certification that:
1. Work has been inspected for the compliance with the Contract Documents.
2. Work has been completed in accordance with the Contract Documents, and that deficiencies listed within the Certificate of Substantial Completion and its attachments have been corrected.

3. Work is completed and ready for final inspection.

E. Should the Owner and/or MDAD Project Manager inspection find that Work is incomplete, he will promptly notify the Contractor in writing listing all observed deficiencies. The Contractor shall be responsible for all Direct and Indirect Costs to the County resulting from the Contractor's failure to complete the Punch List items within the time allowed for completion.

F. The Contractor shall remedy deficiencies and send a second certification. Another inspection will be made that shall constitute the final inspection. Provided that work has been satisfactorily completed, the MDAD Project Manager will notify the Contractor in writing of Final Acceptance as of the date of this final inspection.

G. Prior to Final Acceptance, the Contractor shall deliver to the MDAD Project Manager complete As-Builts, all approved Shop Drawings, maintenance manuals, pamphlets, charts, parts lists and specified spare parts, operating instructions and other necessary documents required for all installed materials, equipment, or machinery, all applicable warranties and guarantees, and the appropriate Certificate of Occupancy.

H. Upon notification of Final Acceptance to the Contractor, the MDAD Project Manager will request and consider closeout submittals from the Contractor including but not limited to the final Contractor's Affidavit and Release of All Claims.

I. The Contractor, without prejudice to the terms of the Contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

J. Re-Inspection Fees: Should the status of completion of the Work require re-inspection of the Work by the Owner and the MDAD Project Manager due to failure of the Work to comply with the Contractor's representations regarding the completion of the Work, the Owner will deduct from the final payment to the Contractor, fees and costs associated with re-inspection services in addition to scheduled Liquidated Damages.

6. Use and Possession

The Owner shall have the right to beneficially occupy, take possession of or use any completed or partially completed portions of the Work. Such possession or use will not be deemed an acceptance of work not completed in accordance with the Contract. While the Owner is in such possession, the Contractor, notwithstanding the provisions of the Contract Documents, will be relieved of the responsibility for loss or damage to the Work other than that resulting from the Contractor's fault or negligence or breach of warranty. If such prior possession or use by the Owner delays the progress of the Work or causes additional expense to the Contractor, a Contract change in the Contract price or the time of completion will be made and the Contract will be modified in writing accordingly.

7. Liquidated Damages

A. The parties to the Contract agree that time, in the completion of the Work, is of the essence. The Owner and the Contractor recognize and agree that the precise amount of actual damages for delay in the performance and completion of the Work is impossible to determine as of the date of execution of the Contract and that proof of the precise amount will be difficult. Therefore, the Contractor shall be assessed Liquidated Damages on a daily basis for each Day that individual milestones, both interim and cumulative as specified in the Contract Documents, are not timely achieved or that Contract Time is exceeded due to a non-excusable delay. These Liquidated Damages shall be assessed, not as a penalty, but as compensation to the Owner for expenses which are difficult to quantify with any certainty and which were incurred by the Owner due to the delay. Therefore, in accordance with this section (Liquidated Damages) failure to complete the work within the stipulated PBB Installation phases and/or overall completion indicated preliminary schedule, or the project schedule as approved by MDAD: the Contractor and his sureties will be assessed Liquidated Damages as follows:

1. An amount of $332.00 per calendar day will be assessed for every day beyond the approved scheduled installation duration if the PBB at the affected gate location fails to return to service, not as a penalty, but as liquidated damages for each day or fraction thereof of delay until the PBB is complete and in service.

2. An amount of $500.00 per calendar day will be assessed for every day beyond the approved scheduled project completion date, not as a penalty, but as liquidated damages for each day or fraction thereof of delay until the milestone delivery date is met.

B. The amount of Liquidated Damages assessed shall be an amount, as stipulated above, per day for each calendar day that individual milestones as specified in the Contract are not timely achieved or that the Project is delayed due to a non-excusable delay.

C. In the event the Contractor fails to perform any other covenant or condition (other than time-related) of this Contract relating to the Work, the Contractor shall become liable to the Owner for any actual damages which the Owner may sustain as a result of such failure on the part of the Contractor. The Owner reserves the right to retain these amounts from monies due the Contractor.

D. Nothing in this Section shall be construed as limiting the right of the Owner to terminate the Contract and/or to require the Surety to complete said Project and/or to claim damages for the failure of the Contractor to abide by each and every one of the terms of this Contract as set forth and provided for in the Contract Documents.

8. Claims and Disputes

A. Notice of Claims

1. The Contractor will not be entitled to additional time or compensation otherwise payable for any act or failure to act by the Owner, the happening of any event or occurrence, or any other cause, unless he shall have given the MDAD Project Manager a written notice of claim therefore as specified in this Section.

2. The Contractor shall provide immediate verbal notification with written confirmation within forty-eight (48) hours of any potential claims and of the anticipated time and/or cost impacts resulting thereof. The written notice of claim shall set forth the reasons for which the Contractor believes additional compensation and/or time will or may be due, the nature of the costs involved and the approximate amount of the potential claim.

3. It is the intention of this Section, that differences between the parties arising under and by virtue of the Contract shall be brought to the attention of the MDAD Project Manager at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken.

4. The notice requirements of this Section are in addition to those required in other Sections of these Contract Documents.

5. The Contractor shall segregate all costs associated with each individual claim including but not limited to labor, equipment, material, subcontractor and supplier costs, and all other costs related to the claim. In the event that the Contractor has multiple claims, the Contractor will segregate each claim individually including the respective costs associated with each claim. Failure to segregate claims and their respective costs will be grounds for the Owner's rejection of the claim. No “total cost claims” shall be allowed under this Contract.

6.The Contractor must maintain a cost accounting system as a condition for making a claim against the Owner. The cost accounting system must segregate the costs of the work under the Contract (non-claims-related) from claims-related and other Contractor costs through the use of a job cost ledger and be otherwise in compliance with general accounting principles.

7.If the Owner decides to pay all or part of a claim for which notice was not timely made, the Owner does not waive the right to enforce the notice requirements in connection with any other claim.

8.Inasmuch as the notice of claim requirements of this Section are intended to enable the MDAD Project Manager to investigate while facts are fresh and to take action to minimize or avoid a claim which might be filed thereafter, the Contractor's failure to make the required notice on time is likely to disadvantage the Owner. Therefore, a claim that does not comply with the notice requirements above shall not be considered unless the Contractor submits with his claim proof showing that the Owner has not been prejudiced by the Contractor's failure to so comply and, in the event the Owner has been prejudiced by the Contractor's failure to submit a timely notice of claim, the Owner will reduce any equitable adjustment claimed by the Contractor to reflect the damage.

B. Claim Submittals

1. Claims or requests for equitable adjustments filed by the Contractor shall be filed in full accordance with this Section no later than 30 calendar days after the act giving rise to the claim and in sufficient detail to enable the Owner to ascertain the basis and amount of said claims. In the case of continuing or on-going claim events, the Contractor shall be allowed to periodically amend his claim to more accurately reflect the impact of said claim, until the end of the claim event. No claims for additional compensation, time extension or for any other relief under the Contract shall be recognized, processed, or treated in any manner unless the same is presented in accordance with this Section. Failure to present and process any claim in accordance with this Section shall be conclusively deemed a waiver, abandonment or relinquishment of any such claim, it being expressly understood

and agreed that the timely presentation of claims, in sufficient detail to allow proper investigation and prompt resolution thereof, is essential to the administration of this Contract.

2. The Owner will review and evaluate the Contractor's claims. It will be the responsibility of the Contractor to furnish, when requested by the Architect/Engineer, such further information and details as may be required to determine the facts or contentions involved in his claims. The cost of claims preparation or Work Order negotiations shall not be reimbursable under this Contract.

3. Any work performed by the Contractor prior to Notice-to-Proceed (NTP) shall not be the basis for a claim from the Contractor of any kind.

4. Each claim must be certified by the Contractor as required by the Miami-Dade Code, False Claims Act (see Code Section 21-255, et seq.), and accompanied by all materials required by Miami-Dade County Code Section 21-257. A "certified claim" shall be made under oath by a person duly authorized by the claimant, and shall contain a statement that:

a. The claim is made in good faith;
b. The claim's supporting data is accurate and complete to the best of the person's knowledge and belief;
c. The amount of the claim accurately reflects the amount that the claimant believes is due from the Owner; and
d. The certifying person is duly authorized by the claimant to certify the claim.

5. In order to substantiate time-related claims (delays, disruptions, impacts, etc.), the Contractor shall, if applicable and as determined by the Owner, submit, in triplicate, the following information:

a. Copy of Contractor's notice of claim in accordance with this Section. Failure to submit the notice is sufficient grounds to deny the claim.

b. The approved, as-planned Schedule in accordance with the applicable section of the Contract Documents and computer storage media, if applicable.

c. The as-built Schedule reflecting changes to the approved schedule up to the time of the impact in question and computer storage media if applicable.

d. The basis for the duration of the start and finish dates of each impact activity and the reason for choosing the successor and predecessor events affected in the schedule shall be explained. Also, the basis for the duration of any lead/lags inserted into the schedule and the duration in related activity duration shall be explained.

e. A marked-up as-built Schedule indicating the causes responsible for changes between the as- planned and as-built schedule and establishing the required cause and effect relationships.

f. After indicating specific time related changes on the as-built schedule, the documentation must be segregated into separate packages with each package documenting a specific duration change identified previously. This documentation package shall include Change Orders, Change Notices, Work Orders, written directions, meeting minutes, etc., related to the change in duration.

g. The Contractor assumes all risk for the following items, none of which shall be the subject of any claim and none of which shall be compensated:

(1) home office expenses or any Direct Costs incurred allocated from the headquarters of the Contractor; (2) loss of anticipated profits on this or any other project, (3) loss of bonding capacity or capability; (4) losses due to other projects not bid upon; (5) loss of business opportunities; (6) loss of productivity on this or any other project; (7) loss of interest income on funds not paid; (8) costs to prepare, negotiate or prosecute claims and (9) costs spent to achieve compliance with applicable laws and ordinances (excepting only sales taxes paid shall be reimbursable expense subject to the provisions of the Contract Documents).

h. All non-time-related claim items for additional compensation for Direct Costs shall be properly documented and supported with copies of invoices, time sheets, rental agreements, crew sheets and the like.

i. Cost information shall be submitted in sufficient detail to allow for review. The basis for the budgeted or actual costs shall include man-hours by trade, labor rates, material and equipment costs etc. These costs shall be broken down by pay item and Construction Specification Institute (CSI) Division.

j. The documentation for budgeted cost shall, as a minimum, include:

i. Copies of all the Contractor's bid documents, bid quotes, faxed quotes, etc.
ii. Copies of all executed subcontracts.
iii. Other related budget documents as requested by the MDAD Project Manager.

k. The documentation for actual cost shall, as a minimum, include:

i. Time Sheets.
ii. Materials invoices

iii. Equipment invoices
iv. Subcontractors' payments
v. Other related documents as required by the Architect/Engineer.
l. The Contractor shall make all his books, employees, work sites and records available to the Owner or its representatives for inspection and audit.

m. No payment shall be made to the Contractor by the Owner for loss of anticipated profit(s) from any deleted work.

6. As indicated above, the MDAD Project Manager shall be allowed full and complete access to all personnel, documents, work sites or other information reasonably necessary to investigate any claim. Within sixty (60) days after a claim has been received, the claim shall either be rejected with an explanation as to why it was rejected or acknowledged. Once the claim is acknowledged, the parties shall attempt to negotiate a satisfactory settlement of the claim, which settlement shall be included in a subsequent Work Order. If the parties fail to reach an agreement on a recognized claim, the Owner shall pay to the Contractor the amount of money it deems reasonable, less any appropriate retention, to compensate the Contractor for the recognized claim.

C. Failure of the Contractor to make a specific reservation of rights regarding any such disputed amounts in the body of the Work Order which contains the payment shall be construed as a waiver, abandonment, or relinquishment of all claims for additional monies resulting from the claims embodied in said Work Order. However, once the Contractor has properly reserved rights to any claim, no further reservations of rights shall be required and the Contractor shall not be required to repeat the reservation in any subsequent work order. Prior reservation of rights may however be modified, by express reference, in subsequent work orders. Notwithstanding the aforementioned, at the time of final payment under the Contract, the Contractor shall specify all claims which have been denied and all claims for which rights have been reserved in accordance with this section. Failure to so specify any particular claim shall be constructed as a waiver, abandonment, or relinquishment of such claim.

D. Disputes

1) The following provisions shall govern disputes under this Contract unless the Special Provisions to this Contract contain the requirement for the use of an alternate dispute resolution method. For example, for large projects of great complexity, a Dispute Review Board (DRB) may be employed by the Owner to settle disputes in lieu of the Department Director or OOM designee as specified below. In this case, the DRB alternative shall be specified by the individual department in the Special Provisions and, if utilized, shall supersede this dispute provision.

a. In the event the Contractor and Owner are unable to resolve their differences concerning any determination made by the MDAD Project Manager or Owner on any dispute or claim arising under or relating to the Contract (referred to in this Section as a "Dispute"), either the Contractor or Owner may initiate a dispute in accordance with the procedure set forth in this Section. Exhaustion of these procedures shall be a precondition to any lawsuit permitted hereunder.

b. For contracts with a value of $5 million or less, all Disputes under this Contract shall be decided by the Department Director or his designee. For contracts valued at more than $5 million, Disputes shall be decided by a designee appointed by the Office of the Mayor (OOM). Decisions rendered by the Department Director or OOM designee shall not be binding but shall be admissible in a court of competent jurisdiction.

c. As soon as practicable, the Department Director or OOM designee shall adopt a schedule for the Contractor and Owner to file written submissions stating their respective positions and the bases therefore. The written submissions shall include copies of all documents and sworn statements in affidavit form from all witnesses relied on by each party in support of its position. Within 20 working days of the date on which such written submissions are filed, the Department Director or OOM designee shall afford each party an opportunity to present a maximum of one hour of argument. The Department Director or OOM designee may decide the Dispute on the basis of the affidavits and other written submissions if, in his opinion, there is no issue of material fact and the party is entitled to a favorable resolution pursuant to the terms of this Contract. As part of such decision, the Department Director or OOM designee shall determine the timeliness and sufficiency of each notice of claim and claim at issue as provided in this Section. The Department Director or OOM designee shall have the authority to rule on questions of law, including disputes over contract interpretation, and to resolve claims, or portions of claims, via summary judgment where there are no disputed issues of material fact. Furthermore, the Department Director or OOM designee is authorized by both parties to strike elements of claims seeking relief or damages not available under the contract (such as, but not limited to, claims for lost profits, off-site overhead, loss of efficiency or productivity claims or claim's preparation costs) by summary disposition.

d. In the event that the Department Director or OOM designee determines that the affidavits or other written submissions present issues of material fact, he shall allow the presentation of evidence in the form of lay or expert testimony directed solely to the

issues which he may specifically identify to require factual resolution. The testimonial portion of the process shall not exceed one day in duration per side, including opening statements and closing arguments, if allowed by the Department Director or OOM designee at his reasonable discretion.

e. No formal discovery shall be allowed in connection with any proceeding under this Section. Notwithstanding the foregoing, both parties agree that all of the audit, document inspection, information and documentation requirements set forth elsewhere in this contract shall remain in force and effect throughout the proceeding. The Department Director or OOM designee shall not schedule the hearing until both parties have made all their respective records available for inspection and reproduction and the parties have been afforded reasonable time to analyze the records. The continued failure of a party to comply with the document inspection, examination, or submission requirements set forth in this contract shall constitute a waiver of that party's claims and/or defenses, as applicable. Hearsay evidence shall be admissible but shall not form the sole basis for any finding of fact. Failure of any party to participate on a timely basis, to cooperate in the proceedings, or to furnish evidence in support or defense of a claim shall be a criteria in determining the sufficiency and validity of a claim.

f. The Department Director or OOM designee shall issue a written decision within 15 working days after conclusion of any testimonial proceeding and, if no testimonial proceeding is conducted, within 45 days of the filing of the last written submission. This written decision shall set forth the reasons for the disposition of the claim and a breakdown of any specific issues or subcontractor claims. As indicated previously, the decision of the Department Director or OOM designee is not binding on the parties, but will be admissible in a court of competent jurisdiction.

g. If either party wishes to protest the decision of the Department Director or OOM designee, such party may commence an action in a court of competent jurisdiction, within the periods prescribed by law, it being understood that the review of the court shall be limited to the question of whether or not the Department Director or OOM designee's determination was arbitrary and capricious, unsupported by any competent evidence, or so grossly erroneous to evidence bad faith.

h. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with MDAD's interpretation. Any presentation or request by the Contractor under this Section will be subject to the same requirements for Submittal of Claims in this Section.

9. Termination

A. Termination for Convenience

1. The Owner may at its option and discretion terminate the Contract, in whole or, from time to time in part, at any time without any default on the part of the Contractor by issuing a written Notice of Termination to the Contractor and its Surety, specifying the extent to which performance of work under the Contract is terminated and the date upon which such termination becomes effective, at least ten (10) days prior to the effective date of such termination.

2. In the event of Termination for Convenience, the Owner shall pay the Contractor for all labor performed, all materials and equipment furnished by the Contractor and its Subcontractors, materialmen and suppliers and manufacturers of equipment less all partial payments made on account prior to the date of cancellation as determined by the MDAD Project Manager. The Contractor will be paid for:

i. The value of all work completed under the Contract, based upon the approved Schedule of Values and/or Unit Prices,

ii. The value of all materials and equipment delivered to but not incorporated into the work and properly stored on the site,

iii. The value of all bonafide irrevocable orders for materials and equipment not delivered to the construction site as of the date of cancellation. Such materials and equipment must be delivered to the Owner to a site or location designated by the Department prior to release of payment for such materials and equipment.

iv. The values calculated under i., ii. and iii. above shall be as determined by the MDAD Project Manager.

3. In the event of termination under this article, the Contractor shall not be entitled to any anticipated profits for any work not performed due to such termination.

4. In the event of termination under this article, the Owner does not waive or void any credits otherwise due the Owner at the time of termination, including Liquidated Damages, and back charges for defective or deficient work.

5. Upon termination as indicated above, the MDAD Project Manager shall prepare a certificate for Final Payment to the Contractor.

B. Termination for Default of Contractor

1. The Contract may be terminated in whole or, from time to time in part, by the Owner for failure of the Contractor to comply with any requirements of the Contract Documents including but not limited to:

i. Failure to perform the work or failure to provide sufficient workers, equipment or materials to assure completion of work in accordance with the terms of the Contract, and the approved Schedule, or
ii. Failure to provide the Schedule for the Project by the date due, or
iii. Failure to provide adequate shop drawings by the dates indicated in the approved Schedule for the Project, or
iv. Failure to replace the superintendent in the time allotted, if required, or
v. Performing the work unsuitably or neglecting or refusing to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, after written directions from the MDAD Project Manager, or
vi. Violating the terms of the Contract or performing work in bad faith, or
vii. Discontinuing the prosecution of the work, or
viii. Failure to resume work which has been discontinued within a reasonable time after notice to do so, or
ix. Abandonment of the Contract, or
x. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or failure to maintain a qualifier, or
xi. Allowing any final judgment to stand against him unsatisfied for a period of 10 days, or
xii. Making an assignment for the benefit of creditors, or
xiii. For any other cause whatsoever, fails to carry out the work in an acceptable manner or to comply with any other Contract requirement.

2. Before the Contract is terminated, the Contractor and its Surety will be notified in writing by the MDAD Project Manager of the conditions which make termination of the Contract imminent. The Contract will be terminated by the Owner ten (10) days after said notice has been given to the Contractor and its Surety unless a satisfactory effort acceptable to the Owner has been made by the Contractor or its Surety to correct the conditions. If the Contractor fails to satisfactorily correct the conditions giving rise to the termination, the Owner may declare the Contract breached and send a written Notice of Termination to the Contractor and its Surety.

3. The Owner reserves the right, in lieu of termination as set forth in this article, to withhold any payments of money which may be due or become due to the Contractor until the said default(s) have been remedied. In the event of Termination for Default, the Owner also reserves the right, in cases where the damages calculated by the Owner are expected to exceed the amount the Owner anticipated recovering from the Surety, to withhold amounts for work already performed.

4. In the event the Owner exercises its right to terminate the Contract for default of the Contractor as set forth herein, the Owner shall have the option of finishing the work, through any means available to the Owner, or having the Surety complete the Contract in accordance with its terms and conditions. In case that the Owner decides to have the Surety take over the remaining performance of the Work, the time or delay between Notice of Default and start of work by the Surety is a non-excusable delay. If the Surety fails to act promptly, but no longer than thirty (30) calendar days after the Owner notifies the Surety of the Owner's decision to have the Surety complete the work, or after such takeover fails to prosecute the Work in an expeditious manner, the Owner may exercise any of its other options including completing the Work by whatever means and method it deems advisable. No claims for loss of anticipated profits or for any other reason in connection with the termination of the Contract shall be considered.

5. Payments for the various Bid Items listed in the Bid Form will constitute full compensation for all expenses incurred in consequence of discontinuance of all or any portion of the Work except as provided in this section of the Contract Documents. In no event will compensation be made for anticipatory profits or consequential damages as a result of a discontinuance of all or any portion of the Work.

6. The Contractor shall immediately upon receipt communicate any Notice of Termination for Default issued by the Owner to the affected Subcontractors and suppliers at any tier.

7. If, after Notice of Termination of the Contractor's right to proceed under the provisions of this article, it is determined for any reason that the Contractor was not in default under the provisions of this article, or that the Contractor was entitled to an extension of time under the Contract Documents, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to the section of this article dealing with Termination for Convenience.

C. Termination for National Emergencies

1. The Owner shall terminate the Contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction Contract as a direct result of an Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.

2. When the Contract, or any portion thereof, is terminated before completion of all items of work in the Contract, payment will be made for the actual number of units or items of work completed at the Contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits or for any other reason in connection with the termination of the Contract shall be considered.

D. Implementation of Termination

1. If the Owner cancels or terminates the Contract or any portion thereof, the Contractor shall stop all work on the date and to the extent specified in the Notice of Termination and shall:

i. Cancel all orders and Subcontracts, to the extent that they relate to the performance of the work terminated and which may be terminated without costs;

ii. Cancel and settle other orders and Subcontracts, except as may be necessary for completion of such portion of the Work not terminated, where the cost of settlement will be less than costs which would be incurred were such orders and subcontracts to be completed, subject to prior approval of the MDAD Project Manager;

iii. Settle outstanding liabilities and claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Owner, to the extent it may require, which approval or ratification shall be final for the purposes of this Section;

iv. Transfer title and deliver to the Owner, in the manner, at the time, and to the extent, if any, directed by it, in accordance with directions of the Field Representative, all fabricated or un-fabricated parts, all materials, supplies, work in progress, completed work, facilities, equipment, machinery or tools acquired by the Contractor in connection with the performance of the work and for which the Contractor has been or is to be paid;

v. Assign to the Owner in the manner, at the times and to the extent directed by it, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Owner will have the right, at its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

vi. Deliver to the MDAD Project Manager As-Built Documents, complete as of the date of cancellation or termination, plans, Shop Drawings, sketches, permits, certificates, warranties, guarantees, specifications, three (3) complete sets of maintenance manuals, pamphlets, charts, parts lists, spare parts (if any), operating instructions required for all installed or finished equipment or machinery, and all other data accumulated by the Contractor for use in the performance of the work.

vii. Perform all work as may be necessary to preserve the work then in progress and to protect materials, plant and equipment on the site or in transit thereto. The Contractor shall also take such action as may be necessary, or as the MDAD Project Manager may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Owner has or may acquire an interest.

viii. Complete performance of each part of the work not terminated by the Notice of Termination;

ix. Use his best efforts to sell, in the manner, at the time, to the extent, and at the price or prices directed or authorized by the Owner, property of the types referred to above; provided, however, that the Contractor

(a) shall not be required to extend credit to any purchaser, and (b) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner; provided, further, that the proceeds of any such transfer or disposition will be applied in reduction of any payments to be made by the Owner to the Contractor under this Contract or will otherwise be credited to the price or cost of the work covered by this Contract or paid in such other manner as the Owner may direct;

x. Termination of the Contract or a portion thereof shall neither relieve the Contractor of its responsibilities for the completed work nor shall it relieve its Surety of its obligation for and concerning any just claim arising out of the work performed.

xi. In arriving at the amount due the Contractor under this article, there will be deducted, (1) any claim which the Owner may have against the Contractor in connection with this Contract and (2) the agreed price for, or the proceeds of sale of materials, supplies or other items acquired by the Contractor or sold, pursuant to the provisions of this article, and not otherwise recovered by or credited to the Owner.

E. Suspension of Work

1. The Owner reserves the right to temporarily suspend execution of the whole or any part of the Work without compensation to the Contractor.

2. In case the Contractor is actually and necessarily delayed by any act or omission on the part of the Owner, as determined by the Owner in writing, the time for completion of the Work shall be extended by the amount of the time of such delay as determined by the Owner, and an allowance may be made for actual direct costs, if any, which may have been borne by the Contractor. Such requests for additional time and/or compensation must be made in accordance with the applicable sections of the Contract Documents.
3. Only the actual delay necessarily resulting from the causes specified in this Article, shall be grounds for extension of time. In case the Contractor is delayed at any time or for any period by two or more of the causes specified in this Article, the Contractor shall not be entitled to a separate extension for each one of the causes but only one period of extension will be granted for the delay.
4. In case the Contractor is actually and necessarily delayed in the performance of the Work from one or more of the causes specified in this Article, the extension of time to be granted to the Contractor shall be only for such portion of the Work so delayed. The Contractor shall not be entitled by reason of such delay to an extension of time for the completion of the remainder of the Work. If the Contractor shall be so delayed as to a portion of the Work he shall nevertheless proceed continuously and diligently with the prosecution of the remainder of the Work. No demand by the Contractor that the Owner determine and certify any matter of extension of time for the completion of the Work or any part thereof will be of any effect whatsoever unless the demand be made in writing at least 30 days before the completion date of the Work or any part thereof for which Liquidated Damages are established when meeting those dates is claimed to have been delayed by a suspension under this Article. Owner's determination as to any matter of extension of time for completion of the Work or any part thereof shall be binding and conclusive upon the Contractor.
5. Permitting the Contractor to finish the Work or any part thereof after the time fixed for completion or after the date to which the time for completion may have been extended or the making of payments to the Contractor after any such periods shall not operate as a waiver on the part of the Owner of any rights under this contract.
6. The Contractor shall insert in each subcontract a provision that the Subcontractor shall comply immediately with a written order of the Owner to the Contractor to suspend the Work, and that they shall further insert the same provision in each subcontract of any tier.

10. Payments

A. Payment for the quantities measured as described shall be made at the prices listed in Section III Pricing Form below which prices and payments shall be full compensation for furnishing all labor, materials and incidentals necessary to complete all the work as specified on this solicitation. For the purposes of progress payments, a lump sum amount unit price item may be paid on a percent complete basis at the sole discretion of the MDAD Project Manager.

i. In making such progress payments, a maximum of 5 percent (5%), as may be amended in the Contract Documents, of the estimated amount shall be retained from each progress payment made to the Contractor until completion of all the work under this ITQ.

B. Payments will be made in accordance with following: Line Items on the Pricing Form will be paid on a percent complete basis, monthly.

C. Allowance Accounts

1. Certain portions of work which may be required to be performed by the Contractor under this Contract are either unforeseeable or have not yet been designed, and the value of such work, if any, is included in the Contract as a specific line item(s) entitled "Allowance Account(s)."

a. The Allowance Account 1. (Contingency) can be used to reimburse the Contractor for 1) furnishing all labor, materials, equipment and services necessary for modifications or Extra Work required to complete the Project because of unforeseeable conditions and; 2) for performing construction changes required to resolve: oversight in design, Owner oversight, unforeseen conditions, revised regulations, technological and product development, operational changes, schedule requirements, program interface, emergencies and delays.

2. When work is to be performed under the Allowance Account(s), if any, the work shall be incorporated into all respects of this Contract as awarded.

3. The Work Order for the required work will be issued by MDAD upon receipt from the Contractor of a satisfactory proposal for performance of the work, and the acceptance thereof by MDAD. If the Contractor and MDAD are unable to agree upon an amount of compensation or; if the nature of the work is such that a Unit Price or Lump Sum price is not economically practical

or if the change work is deemed essential to the Project and actual conditions require work to be swiftly conducted to avoid or minimize delays, the Work Order may be issued to perform the work on a Force Account basis. If an equitable adjustment for the said change work cannot be arrived at, either by mutual agreement or under the dispute provisions of the Contract Documents, the compensation hereunder will be the total compensation for this work.

4. No Work Orders shall be issued against an Allowance Account if such Work Orders in the aggregate exceed the authorized amount of that Allowance Account, provided however that such excess may be authorized by appropriate Change Order.

5. The unexpended amounts under the allowance accounts shall remain with MDAD and the Contractor shall have no claim to the same.

6. Work Orders/ Change Order/ Force Account

i. If the Owner and the Contractor cannot reach agreement on an equitable adjustment to the Contract Price for any work as prescribed above in Section 10.D of this bid document, then Extra Work will be performed on Force Account basis as directed by the MDAD Project Manager and paid for as specified below.

ii. The following percentages will be allowed as mark-ups over Direct Costs for all negotiated adjustments to the Contract Amount or for work performed on either a negotiated lump sum basis or a Force Account basis:

1. Extra Work Performed directly by Contractor's Own Forces: The Contractor may add up to a maximum fifteen percent (15%) mark-up on the actual Direct Cost of the Extra Work, subject to review and approval by the MDAD Project Manager, as direct compensation for Overhead. A 10% mark-up will be added to all negotiated credit amounts for deleted work not performed to cover Overhead.

2. Extra Work Performed by a Subcontractor or any Sub-tier Subcontractor: The Subcontractor may add up to a maximum fifteen percent (15%) mark-up on the actual Direct Cost of the Extra Work as direct compensation for Overhead. The Contractor may add a five percent (5%) mark-up on the Subcontractor's actual Direct Cost as Contractor's Overhead. A 10% additional credit will be added to all Subcontractor negotiated credit amounts for deleted work not performed to cover quality control, supervision, coordination, overhead, small tools and incidentals.

iii. In the event Extra Work is performed on a Force Account basis, then the Contractor and the Subcontractor(s), as appropriate, shall maintain itemized daily records of costs, quantities, labor and the use of authorized Special Equipment or Machinery. Copies of such records, maintained as follows, shall be furnished to the Architect/Engineer daily for approval, subject to audit.

a. Comparison of Record: The Contractor, including its Subcontractor(s) of any tier performing the work, and the MDAD Project Manager shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor, the Subcontractor performing the work, and the MDAD Project Manager or their duly authorized representatives.

b. Statement: No payment will be made for work performed on a force account basis until the Contractor has furnished the MDAD Project Manager with duplicate itemized statements of the cost of such force account work detailed as follows:

c. Name, classification, date, daily hours, total hours, rate and extension for each laborer, tradesman, and foreman.

d. Designation, dates, daily hours, total hours, rental rate, and extension of each unit of special machinery and equipment.

e. Quantities of materials, prices, and extensions.

D. Transportation of materials: The statements shall be accompanied and supported by a receipted invoice of all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from its stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

E. Authorization of Special Equipment and Machinery: No compensation for special equipment or machinery shall be made without written authorization from the MDAD Project Manager. The MDAD Project Manager shall review and evaluate any special equipment or machinery proposed by the Contractor for use on a force account basis. As part of its evaluation, the MDAD Project Manager shall determine whether any of the special equipment or machinery being proposed by the Contractor will be concurrently used on the Project, including approved changes, or on other force account work on the Project. If the MDAD Project Manager determines that such a concurrent use of special equipment or machinery is being proposed by the Contractor, prior to the authorization of such special equipment or machinery, the MDAD Project Manager and thereto Contractor shall establish a straight-line prorated billing mechanism based on the actual percentage of time that the equipment or machinery is required to be used on the force account work(s). Special equipment or machinery which is approved for use by the MDAD

Project Manager shall be reviewed and accounted for on a daily basis as provided in the Comparison of Record and Statement paragraphs of this section of the Contract.

F. Inefficiency in the Prosecution of the Work: If in the Owner's or MDAD Project Manager's opinion, the Contractor or any of its Subcontractors, in performing Force Account Work, is not making efficient use of labor, materials or equipment, or is proceeding in a manner which makes Force Account Work unnecessarily more expensive to the Owner, the Owner or MDAD Project Manager may, in whole or part, direct the Contractor in the deployment of labor, material and equipment. By way of illustration, inefficiency may arise in the following ways, including but not limited to: (1) the timing of the Work, (2) the use of unnecessary labor or equipment, (3) the use of a higher percentage of journeymen than in non-force account Work, (4) the failure to procure materials at lowest price, or (5) using materials of quality higher than necessary.

11. Environmental Management System (EMS)

The Contractor shall conduct contract activities in accordance with MDAD's environmental procedures in accordance with the contract, all applicable federal, state, and local environmental laws, regulation, directives, ordinances, and other governmental authorizations, and certifies that all required licenses, certifications and permits are current and available upon request to MDAD. Contractor acknowledges that it is responsible for ensuring that its employees and subcontractors who perform services on site (now and in the future) shall receive and review all relevant information and material on MDAD's EMS and shall comply with its procedures. Please refer to the attached Exhibit F, Emergency Management System, for additional information.

12. Service Calls

Contractor shall have a present work force based in Miami to include factory trained personnel. Contact information for all personnel shall be provided to ensure timely response to trouble calls. The Contractor shall respond (via phone/person) to the Owner within 2 hours of the telephone calls followed up by fax, and / or email requests to provide any emergency service to the Owner. Contractor shall respond to all non-emergency service calls within 1 day and will complete 80% of routine repairs within 2 business days from receipt of work order or notice to proceed from MDAD. Contractor shall provide factory authorized services on an as needed basis for complex issues with an on-site time not to exceed 2 calendar days from the initial request from the Owner. The Owner may request cost estimates for emergency service. Upon receiving the request from the Owner's Project manager or designee, the Contractor shall provide a proposal and/or price for the service requested. The Owner may negotiate the statement of work and prices to be paid by the Owner for such services. Depending upon the situation, MDAD may issue a Notice-To-Proceed via a work order to the Contractor to start providing the emergency work. Contractor shall respond to any and all calls that the Owner, in its sole discretion, determines an "emergency service". The Owner shall not be responsible for the cost of any spare part until such time as a repair is required and the part is provided to the County. If a spare part is not readily available, it will be ordered immediately upon completion of the initial service call. Additional parts and components purchased by the County from the Contractor shall be made in accordance with the Scope of Services.

13. Spare Parts

Contractor's Miami Office location will maintain sufficient stock of spare parts for prompt completion of routine type repairs (as approved by MDAD). The Contractor shall provide a complete spare parts list (for review and approval by MDAD) for all equipment purchased by the Owner as it relates to this contract. Contractor will warrant against defects of material and workmanship under normal use and service for a period of twelve (12) months from completion of repair work performed, subject to limitations due to life expectancy of equipment, ordinary wear and tear, and obsolescence.

14. Reporting

A. Corrective Measures Reports

During PM inspections, Contractor shall advise MDAD of any corrective measures (i.e., repair work that is outside of the normal wear and tear) recommendations. MDAD can then consider and prioritize the recommended corrective measures and, if desired, issue Work Orders for authorization. No corrective maintenance by Contractor shall commence without a notice to proceed issued by the County's Project manager or designee.

B. Trending Reports
Contractor shall on a monthly basis provide documentation of equipment review and field reports to Facilities Maintenance Division, for the basis of a Facility Maintenance trending report. The reports shall be in an excel spreadsheet to reflect the importance or the grading of the observed problems on site. Trending reports shall be prepared and coincide with the monthly billing cycle.

15. Warranty Requirements

A. The Contractor/manufacturer shall warrant all components, accessories, and labor for one year following beneficial use of completed installation of Preconditioned Air Units (PCA-POU), Exhaust Fans (EXF) and 400HZ Point of Use Units (400HZ POU) at each PBB as well as the Central Plant Based 400 HZ Units. The equipment shall perform to the design function for a minimum period of 10 years from the date of final acceptance by the Owner. Failures caused by normal wear and tear, Acts of Nature, and modifications by the Owner, which have not been approved by the manufacturer, will be excluded from the coverage in this section.

The Contractor/manufacturer of the equipment agrees to repair or replace (parts and labor), at his expense within 24 hours any defect which constitutes a breach of warranty, provided the Contractor is notified of such defect within one year following the date of formal written acceptance of the equipment by the Owner.

B. The Contractor shall warrant that all components are new and manufactured using new U.S. produced materials, and are of good quality, suitable for aircraft use, and are free and clear from liens, encumbrances, and title defects.

16. Extended Warranty and Support Services

As part of the extended warranty, the Contractor will be required to provide the following maintenance and support services to MDAD:

16.1 Preventative Maintenance

The Contractor will provide Preventative Maintenance Inspection (PMI) services, including all labor, material and equipment for a three (3) year period following expiration of the Warranty Period listed above. Central Plant Based 400 HZ Units installed under this contract are specifically excluded from the PMI scope.

The Contractor will provide and maintain a comprehensive PMI program following, at a minimum, the recommended quarterly and annual inspection procedures included below. Field inspections shall begin three months after beneficial completion of equipment installation on each PBB. The Contractor will perform inspections and tests in accordance with OEM manuals and guidelines. The Contractor may expand on the inspection procedures based on their experience and expertise. The Contractor will maintain field reports of each PMI occurrence and will provide certified copies of field reports to the designated MDAD representative within five business days of each inspection. Trending reports will be included with field reports when unsatisfactory conditions are found during quarterly/annual inspections and will include all corrective actions made to or needed for the equipment.

16.2 PCA Point of Use Air Handler System Maintenance

The PM inspection program shall consist of two (2) efforts, Quarterly and Annual. Each effort will have specific requirements to ensure the continued performance and compliance with factory standards for the equipment subject to changes in condition due to life expectancy of the equipment, ordinary wear and tear, and obsolescence. The following table reflects a partial listing of tasks performed during the completion of the two PM efforts which will include at a minimum the efforts listed in the tables below and any additional manufacturer recommendations to achieve on all subject equipment.

Quarterly Preventative Maintenance (4 Events Per Unit Per Year)	Annual Preventative Maintenance (1 Events Per Unit Per Year) (Performed with quarterly maintenance)
Confirm function of refrigerant system	Clean the evaporator and condenser and all vents and ducting
Confirm function of operation under various aircraft settings	Pressure flush condensate drain and verify proper operation
Confirm function of blower drive motor	Clean and wash PCA Unit
Lubricate motor bearings	Re-torque all power terminations
Check all panels, doors, latches for proper operation and functional	Confirm integrity of all control terminations
Confirm function of temperature sensors	Open Push Button (PB) Station clean and spray contacts with protectant
Check condition of air hoses and ducts	Inspect, test and report on condition of the remote-control unit if installed
Supply and install all new filters	Check bridge mounting hardware
Clean& flush condensate pump basin	Inspect and test Passenger Loading Bridge PBB exhaust fans
Perform Infra-Red scan on all power terminations	Inspect exhaust fan belt and replace as needed
Perform full systems check	Wash exterior of unit
Record Compressor Amps	Check subcooling and service with refrigerant to proper levels (up to 5lbs annually per unit)
Record Utility Voltage	Check superheat and adjust mechanical Thermostatic Expansion Valve TXV (if installed)
Record Blower Motor Amps	Check static pressure and velocity at PCA hose end and adjust based on aircraft serviced
Record refrigerant system pressures	Test bridge PCA interlocks
Check for alarm conditions	
Check proper operation of smoke detector	

16.3 Exhaust Fans

Exhaust fans will be inspected quarterly for proper operation.

16.4 Preventative Maintenance Inspections 400 Hz POU

The PM program shall consist of two (2) efforts, Quarterly and Annually. Each effort will include at a minimum the items listed in the tables below and any additional manufacturer recommendations to achieve a comprehensive inspection with specific requirements to ensure the continued performance and compliance with factory standards. (subject to changes in condition due to life expectancy of the equipment, ordinary wear and tear and obsolescence.) The following table reflects a partial listing of tasks performed during the completion of the two Periodic Maintenance groupings on all equipment listed in an annual period.

QUARTERLY PREVENTIVE MAINTENANCE (4 Events Per Unit Per Year)	ANNUAL PREVENTIVE MAINTENANCE (1 Event Per Unit Per Year) (Performed with quarterly maintenance)
Clean interior of cabinet	Perform annual resistive load test at 50% and 100% load
Inspect cabinet, doors and latches	Perform annual reactive load test at 50% and 100% load
Inspect for corrosion	Check output transient voltages
Inspect all controls and indicators	Check bridge mounting hardware
Inspect aircraft service cable	Check output harmonics
Perform complete operational and systems check	Clean exterior of unit
Check condition of air hoses/ducting.	Treat minor corrosion
Perform minor voltage and line drop adjustments	
Perform infrared scan on input power terminations	
Test protective circuits	
Inspect and clean all printed circuit boards	
Record input and output voltage/frequency	
Check for alarm conditions	
Check bridge interlocks	

The Contractor will locally stock replacement parts that are most commonly needed to maintain proper operation of PCA-POU, EXF and 400HZ POU equipment. In addition, the Contractor will locally stock all parts with a procurement lead time of greater than one (1) week. All equipment installed under this contract is to be maintained at a minimum level of 90% useability at all times. The Contractor will submit a comprehensive parts list with prices to MDAD for review and approval within 30 days of NTP. The Contractor may submit an updated parts price list and labor rates once a year to MDAD for review and approval. All Contractor PMI inspections, repair labor and parts are to be provided at no cost to MDAD during the one-year warranty period. The Contractor will update the list of stocked replacement parts, as needed, based on the number and types of equipment failures that occur during the duration of the project. Following the warranty period, the Contractor will provide PMI inspections, labor and parts on a time and materials (T&M) basis for deficiencies found during PMI services. MDAD will be responsible for only the cost of replacement parts after they are installed in equipment. The Contractor will warrant all installed replacement parts for the remaining life of the project or a minimum of one (1) year whichever is greater.

MDAD reserves the right to purchase remaining stocked parts in possession of the Contractor at the completion of the project.

All proposed systems will have Miami-Dade County pre-qualified vendors for local equipment support services that are able to be onsite within 24 hours to deliver maintenance and/or emergency services without additional or travel charges.

PART IV. PRICING FORM

A. The Bidder's prices per this Section, shall be inclusive of all costs associated with providing the services herein, which shall include manufacturing, delivery and installation of new PCAs/400hz systems including infrastructure upgrades.

1. Mobilization shall consist of the preparatory work and operations for beginning work on the Project; costs of bonds and required insurance; costs of operations necessary to move personnel, badging, equipment, supplies, and incidentals to the site; costs of establishment of temporary offices, shops, safety equipment and first aid supplies; and other costs associated with or required by the Contract Documents and any Federal, State, and/or local laws and regulations. No separate cost will be paid for mobilization. All costs related to mobilization shall be considered incidental to and included in the unit cost prices.
2. The Bidder's prices shall include all engineering, labor, permit(s), materials, tools, and equipment; all other direct and indirect costs necessary to complete the item of Work and to coordinate it with adjacent work; and shall include all overhead and profit.
3. All handling or storage costs incurred by the Contractor shall be considered incidental to the installation of the equipment and as such will not be considered for additional compensation.

B. The Bidder's prices per this Section, shall be inclusive of all costs associated with providing Work described in PART III, Section 2.

NOTE: All expenses involved with the preparation and submission of the Quotes to the County, or any work performed in connection therewith, shall be borne by the Bidder(s).

ITEM	QTY	UOM	DESCRIPTION	PRICE
1	1	LS	Work at Gate location F3 Complete	$
2	1	LS	Work at Gate location F5 Complete	$
3	1	LS	Work at Gate location F8 Complete	$
4	1	LS	Work at Gate location F9 Complete	$
5	1	LS	Work at Gate location F10 Complete	$
6	1	LS	Work at Gate location F11 Complete	$
7	1	LS	Work at Gate location F12 Complete	$
8	1	LS	Work at Gate location F14 Complete	$
9	1	LS	Work at Gate location F15 Complete	$
10	1	LS	Work at Gate location F16 Complete	$
11	1	LS	Work at Gate location F17 Complete	$
12	1	LS	Work at Gate location F18 Complete	$
13	1	LS	Work at Gate location F19 Complete	$
14	1	LS	Work at Gate location F23 Complete	$
15	1	LS	Work at Gate location G4 Complete	$
16	1	LS	Work at Gate location G6 Complete	$
17	1	LS	Work at Gate location G16 Complete	$
18	1	LS	Work at Gate location G19 Complete	$
CONTINGENCY ALLOWANCE ACCOUNT (10% OF TOTAL BID FOR ITEMS 1-18)				MDAD WILL FILL IN AT TIME OF AWARD

C. The Bidder's prices per this Section, shall be inclusive of all costs associated with providing the Extended Warranty and Support Services described PART III, Section 16.

ITEM	QTY	UOM	DESCRIPTION	PRICE
19	1	Month	Maintenance Services at Gate location F3	$
20	1	Month	Maintenance Services at Gate location F5	$
21	1	Month	Maintenance Services at Gate location F8	$
22	1	Month	Maintenance Services at Gate location F9	$
23	1	Month	Maintenance Services at Gate location F10	$
24	1	Month	Maintenance Services at Gate location F11	$
25	1	Month	Maintenance Services at Gate location F12	$
26	1	Month	Maintenance Services at Gate location F14	$
27	1	Month	Maintenance Services at Gate location F15	$
28	1	Month	Maintenance Services at Gate location F16	$
29	1	Month	Maintenance Services at Gate location F17	$
30	1	Month	Maintenance Services at Gate location F18	$
31	1	Month	Maintenance Services at Gate location F19	$
32	1	Month	Maintenance Services at Gate location F23	$
33	1	Month	Maintenance Services at Gate location G4	$
34	1	Month	Maintenance Services at Gate location G6	$
35	1	Month	Maintenance Services at Gate location G16	$
36	1	Month	Maintenance Services at Gate location G19	$

PART V. SUBMITTAL FORM

Bidder's Legal Name (include d/b/a if applicable):

Federal Tax Identification Number:

A. SMALL BUSINESS ENTERPRISE CONTRACT MEASURES (if applicable):

A Small Business Enterprise (SBE) must be certified by the Small Business Development Division (SBD) for the type of goods and/or services the Bidder provides in accordance with the applicable Commodity Code(s) for this Solicitation. For certification information, contact SBD at (305) 375-3111 or access http://www.miamidade.gov/smallbusiness/certification-programs.asp. The SBE must be certified by this Solicitation's submission deadline, at Contract award, and for the duration of the Contract to remain eligible for the preference. Firms that graduate from the SBE Program during the Contract may remain on the Contract.

☐ Place a check mark here **only** if affirming Bidder is a Miami-Dade County Certified Small Business Enterprise.

IN ACCORDANCE WITH CFR 200.319 (b), SMALL BUSINESS ENTERPRISE MEASURES SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

B. LOCAL PREFERENCE CERTIFICATION:

For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "local business" is a business located within the limits of Miami-Dade County that has a valid Local Business Tax Receipt issued by Miami-Dade County at least one year prior to bid submission; has a physical business address located within the limits of Miami-Dade County from which business is performed and which served as the place of employment for at least three full time employees for the continuous period of one year prior to bid submittal (by exception, if the business is a certified Small Business Enterprise, the local business location must have served as the place of employment for one full time employee); and contributes to the economic development of the community in a verifiable and measurable way. This may include, but not be limited to, the retention and expansion of employment opportunities and the support and increase to the County's tax base.

☐ Place a check mark here **only** if affirming the Bidder meets requirements for Local Preference. **Failure to complete this certification at this time may render the vendor ineligible for Local Preference**.

IN ACCORDANCE WITH CFR 200.319 (b), LOCAL PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

C. LOCALLY HEADQUARTERED BUSINESS CERTIFICATION:

For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "locally headquartered business" is a Local Business as defined above, which has a "principal place of business" in Miami-Dade County. "Principal place of business" means the nerve center or the center of overall direction, control, and coordination of activities of the Bidder. If the Bidder has only one business location, such business location shall be its principal place of business.

☐ Place a check mark here **only** if affirming the Bidder meets requirements for the Locally Headquartered Preference (LHP). **Failure to affirm this certification at this time may render the vendor ineligible for the LHP**. The address of the Locally Headquartered office is:

IN ACCORDANCE WITH CFR 200.319 (b), LOCALLY HEADQUARTERED BUSINESS PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

D. LOCAL CERTIFIED VETERAN'S BUSINESS ENTERPRISE CERTIFICATION:

A Local Certified Veteran's Business Enterprise is a firm that is: (a) a local business pursuant to Section 2-8.5 of the Code of Miami-Dade County, and (b) prior to bid submission is certified by the State of Florida Department of Management Services as a veteran business enterprise pursuant to Section 295.187 of the Florida Statues.

☐ Place a check mark here **only** if affirming the Bidder is a Local Certified Veteran's Business Enterprise. **A copy of the certification must be submitted with the bid.**

IN ACCORDANCE WITH CFR 200.319 (b), LOCAL CERTIFIED VETERAN'S BUSINESS ENTERPRISE PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

E. CONVICTION DISCLOSURE:

Pursuant to Section 2-8.6 of the Code of Miami-Dade County, any individual, corporation, partnership, joint venture or other legal entity having an officer, director, or executive who has been convicted of a felony during the past ten (10) years shall disclose this information at the time of bid submittal.

☐ Place a check mark here **only** if the Bidder has such conviction to disclose to comply with this requirement.

F. CONFLICT OF INTEREST DISCLOSURE:

Pursuant to Section 2-11.1 (c) and (d) of the Code of Miami-Dade County, please respond to the following questions posed.

1. ARE ANY OWNERS/PRINCIPALS/PERSONS WITH OWNERSHIP INTEREST IN THE COMPANY, A MIAMI-DADE COUNTY ELECTED OFFICIAL, AGENCY BOARD MEMBER OR EMPLOYEE(S)?

☐ **YES** or ☐ **NO**

If Yes, **attach Conflict-of-Interest Opinion provided by Miami-Dade County Commission on Ethics and Public Trust.**

2. ARE ANY IMMEDIATE FAMILY MEMBERS OF THE COMPANY'S OWNERS/PRINCIPALS/PERSONS WITH OWNERSHIP INTEREST IN THE COMPANY, A MIAMI-DADE COUNTY ELECTED OFFICIAL, AGENCY BOARD MEMBER OR EMPLOYEE?

☐ **YES** or ☐ **NO**

If Yes, attach Conflict-of-Interest Opinion provided by Miami-Dade County Commission on Ethics and Public Trust.

G. WAIVER OF CONFIDENTIALITY AND TRADE SECRET TREATMENT OF BID:

The Bidder acknowledges and agrees that the submittal of the Bid is governed by Florida's Government in the Sunshine Laws and Public Records Laws, as set forth in Florida Statutes Section 286.011and Chapter 119. As such, all material submitted as part of, or in support of, the Bid will be available for public inspection after opening of bids and may be considered by the County in public.

By submitting a bid pursuant to the Solicitation, Bidder agrees that all such materials may be considered public records. The Bidder shall not submit any information in response to the Solicitation which the Bidder considers to be a trade secret, proprietary or confidential. If the Bid contains a claim that all or a portion of the Bid submitted contains confidential, proprietary or trade secret information, the Bidder, **by signing below**, knowingly and expressly **waives** all claims made that the Bid, or any part thereof no matter how indicated, is confidential, proprietary or a trade secret and authorizes the County to release such information to the public for any reason.

Acknowledgment of Waiver:

Bidder's Authorized Representative's Signature:

Date:

Representative's Name:

Representative's Title:

H. BIDDER'S CONTACT INFORMATION

Bidder's Contact Person:

Email Address:

Phone Number (include area code):

INVITATION TO QUOTE (ITQ)

I. ACKNOWLEDGEMENT OF BINDING OFFER

The execution of this form constitutes the consent of the Bidder to be bound by the terms of its Bid and the Solicitation. Failure to sign where indicated below by an authorized representative shall render the Bid non-responsive. The County may, however, in its sole discretion, accept any response that includes an executed document which unequivocally binds the Bidder to the terms of its Bid and the Solicitation.

Bidder's Authorized Representative's Signature:

Date:

Representative's Name:

Representative's Title:

This ITQ includes the following attachments:

- ☐ Exhibit A - Small Business Development Division, Project Worksheet
- ☐ Exhibit B - PBB_SECTION_263226_CP_400HZ_17.04.12
- ☐ Exhibit C - PBB_SECTION_263543_POU -400HZ
- ☐ Exhibit D - PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12
- ☐ Exhibit E - Drawings
- ☐ Exhibit F - Environmental Management System
- ☐ Contractor Due Diligence Affidavit
- ☐ Certificate of Assurance

ITQ No.: MDAD-67621-JM

Exhibit A

Small Business Development Division, Project Worksheet

Small Business Development Division

Project Worksheet

Project/Contract Title:	**Cc. F and Cc. G Phase 2 400 Hz /PCA Installations**	**Received Date:**	**12/28/2022**
Project/Contract No:	**AV-067621-22-JM (under RTQ-01841)**	**Funding Source:**	**Other**
Department:	**Aviation**		
Estimated Cost of Project/Bid:	**$8,875,645.00**		
Description of Project/Bid:	**A invitation to quote under RTQ-01841, Passenger Boarding Bridges for the purchase, installation and maintenance of pre-conditioned air and 400 Hz systems at Miami International Airport.**		

Contract Measures

Measure	Program	Goal Percent
Goal	SBE - Con	15.69%
Goal	SBE - Goods	0.63%

Reason for Recommendation

SBD reviewed this project pursuant to Implementing Order 3-22 for SBE-Con measures. Project information analyzed included the project's scope of services, estimated project cost, minimum requirements/qualifications and funding source. Additional factors included the Verification of Availability process, which included follow-up phone calls were made to determine availability and assignment of the noted measure. Three hundred three (303) certified in the work description codes below were contacted via the Verification of Availability process, including the four (4) SBE firms prequalified under group 1 of RTQ-01841;, however, three (3) or more firms did not respond as being able to perform the scope of work. As such, a 15.69% SBE-Con Subcontractor Goal (NAICS 238210, Electrical Contractors) and a 0.63% SBE-Goods subcontractor goal (NIGP 28500, Electrical Equipment) are applicable to this solicitation.

Miami-Dade County Responsible Wages are applicable to this solicitation. The prevailing wage type is building construction.

The work description codes assigned based on the scope are:

NIGP 285 ELECTRICAL EQUIPMENT AND SUPPLIES (EXCEPT CABLE AND WIRE), NIGP 28514 Circuit Breakers, Load Centers, Boxes, and Panel Boards, NAICS 238220 Plumbing, Heating, and Air-Conditioning Contractors, NIGP 28500 ELECTRICAL EQUIPMENT AND SUPPLIES, EXCEPT CABLE AND WIRE, NAICS 238210 Electrical Contractors and Other Wiring Installation Contractors

Living Wages:	**YES**		**NO**	X	**Highway:**	**YES**		**NO**	X	**Heavy Construction:**	**YES**		**NO**	X
Responsible Wages:	**YES**	X	**NO**		**Building:**	**YES**	X	**NO**						

SBD Director

1-11-23

Date

ITQ No.: MDAD-67621-JM

Exhibit B

PBB_SECTION_263226_CP_400HZ_17.04.12

SECTION 263226 - FREQUENCY CONVERTERS – CENTRAL PLANT 400-HZ SYSTEMS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This specification describes and defines the performance and documentation required to be provided by the Vendor to furnish, install, and test the completed system, including all required design documents and plans necessary to provide 400-HZ power to Passenger Boarding Bridges (PBB) at Miami International Airport (MIA).

B. This Section applies only where the use of an existing 400-HZ central plant system has been approved for use to provide service to a PBB, as further detailed elsewhere in the specifications.

C. This Section includes furnishing and installing, but is not necessarily limited to, materials, equipment, labor and all other items necessary to deliver a complete and operable 400-HZ power source to new PBBs as directed by MDAD.

D. All codes, standards, and similar publications referenced in this Section shall be understood to be the latest version adopted by the issuing organization.

1.2 REFERENCE

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only:

1) Anti-Friction Bearing Manufacturers Association, Inc. (AFBMA). AFBMA 9 Load Rating and Fatigue Life for Ball Bearings.

2) American National Standards Institute, Inc. (ANSI).
ANSI C2 National Electrical Safety Code.
ANSI C 12.11 2007 Instrument Transformers for Revenue Metering.

3) Federal Communication Commission (FCC).
FCC, PART 18, CFR TITLE 47, Radio Frequency Interference Suppression.

4) International Electrical Testing Association (NETA)
Acceptance testing Specifications for Electrical Power Distribution Equipment and Systems.

5) National Electrical Manufacturers Association (NEMA).

NEMA AB 1 Molded Case Circuit Breakers.

NEMA ICS 1 Industrial Control and Systems: General Requirements.

NEMA ICS 6 Enclosures.

NEMA WD 1 Wiring Devices.

NEMA WD 6 Wiring Devices -Dimensional Requirements.

NEMA 250 Enclosures for Electrical Equipment (1000 volts maximum).

6) National Fire Protection Association (NFPA).

7) NFPA 70 National Electrical Code.

8) Underwriters Laboratories, Inc. (UL).

UL 467 Grounding and Bonding Equipment.

UL 489 Molded-Case Circuit Breakers and Circuit Breaker Enclosures.

UL 506 Specialty Transformers.

UL 508 Industrial Control Equipment.

1.3 QUALITY ASSURANCE:

A. Listing and Labeling: Provide products that are listed and labeled as defined by NFPA 70, Article 100, by a testing agency acceptable to the Authority Having Jurisdiction and marked for the intended use and for the location and environment in which they are installed.

1) All equipment, circuit breakers, panelboards and appurtenances shall be designed and UL listed for 400-HZ systems applications.

B. Factory Testing:

1) 400-HZ Gate Box Assemblies:

a) The gate box assemblies shall be tested at the factory to verify the following parameters:

i. Transformer Voltage Regulation.
ii. Load Contactor Automatic Opening:

Due to overvoltage.

Due to under voltage.

Due to overload.

iii. Line Drop Compensator(s) Voltage Regulation.

C. Field Testing:

1) Submit field testing as specified in Paragraph 3.2 “System Testing.”

D. System Warranty: Provide a warranty of one year from the date of Substantial Completion for all parts and labor for the system and all equipment.

1.4 DELIVERY, STORAGE AND HANDLING

A. Delivery, Storage and Handling shall comply with the requirements listed below in addition to any other requirements found elsewhere in the specifications.

1) Transport using manufacturer provisions and in accordance with manufacturer recommendations.

2) Store in dry, dust-free location and cover completely to exclude contaminants.

3) Provide temporary heat if condensation is likely to occur.

1.5 EXTRA MATERIALS

A. Extra Materials:

1) Spare and extra parts shall be identified for all products, but not provided. Include spare parts information in Operation and Maintenance Manuals.

a) Fuses: Provide 2 of each size and type used.
b) Filters: Provide one spare circuit board for each critical circuit.
c) Bulbs: Provide 2 of each size, type and color used.

1.6 SYSTEM DESCRIPTION

A. The central plant 400-HZ central ground power system is capable of providing all 400-HZ to the system output locations. Source voltage shall be 480Y/277 Volt, 3-phase, 4-wire, 400-HZ, 575 VAC, 3-phase, 4-wire, is distributed from 312 KVA, vertical motor generators (three), via individual branch circuits to each aircraft service connection. The motor generators are capable of unmanned automatic paralleling, automatic master assignment and rotation, and auto-restart. The 400-HZ power is fed from solid-state electronic trip circuit breakers housed in the main distribution switchboard. All distribution wire shall be factory twisted and bundled, 3 or 7-conductor XHHW-2 copper run in non-

ferrous conduits or raceways and shall be installed by the Vendor as indicated on the drawings. The power shall be delivered across the passenger boarding bridge via cable housed in a new over-bridge device. The power shall be delivered to the aircraft from a gate box that is mounted on the loading bridge. The gate box transforms the 575 V, 400-HZ power to 118/204 V, 3-phase, 4 wire, 400-HZ and contains various controls and protective devices. Each output of each gatebox shall contain a line drop compensator to compensate for the inductive line losses in the circuit. An aircraft cable connected in the gate box and plugged into the aircraft completes the circuit.

1.7 SYSTEM PERFORMANCE

A. System Voltage Requirements: The 400-HZ distribution system shall deliver an average steady state voltage in the range between 112.0 and 118.5 VAC using a constant voltage motor generator. All components for each branch circuit, including gate box, line drop compensator (LDC), wire and circuit breaker, shall be rated 180 KV A, as indicated on the plans and schedules. The LDC's will be set to maintain reactive load voltages in the 117-118.5 V range and the wire sized to limit the full load voltage drop within 6.5 volts for a minimum delivery voltage of 112 V. The transient voltages shall be within the range of 102- 130 VAC. The transient recovery for a 90 KVA load change shall be less than 80 milliseconds.

1.8 EQUIPMENT DOCUMENTATION

A. Equipment Submittal: Submit manufacturer's technical product data, including performance and operating criteria, physical dimensions and installation procedures. Product data shall be provided for the following:

1) Modifications to the Distribution Switchboard, including specific information on the circuit breakers.
2) Pushbutton station at PBB.
3) PBB Wire, Cable and Raceway.
4) Gate Box (each type).
5) Aircraft Cable.
6) Cable Hoist/Cable Retrieve.

B. System Shop Drawings: Submit shop drawings detailing the equipment installation, system electrical single-line diagrams, voltage line drop calculations, central room layout, modifications, adjustments and typical bridge equipment arrangement and modifications.

C. Operation and Maintenance Manuals:

1) Operating and Maintenance manuals shall contain, at a minimum:

a) Equipment operating and maintenance information, control diagrams, wiring schematics, physical description, major parts list.
b) List of special tools required, troubleshooting information, spare parts lists and warranty explanation.
c) Catalog information and shop drawings for each major component and for each system layout.
d) Instructions for starting and operating converters and all associated equipment.
e) Routine preventative maintenance and lubrication schedule.
f) Description of operating limits which may result in hazardous or unsafe conditions, or in equipment damage.

D. Design Calculations

1) The system provider is responsible for complete design calculations based on the actual equipment provided in accordance with the identified aircraft mix for each gate. Submit all required structural calculations for mounting of gate equipment to PBB. Submit complete design calculations regarding voltage drop calculations for each gate to include all assumptions, design considerations, design data, equipment selection table. Include in bid all necessary equipment and cable sizes required to meet the performance specifications herein. Provide wire sizes as required to meet specified criteria, at no additional cost to MDAD. 400-HZ distribution wire shall be sized based on LDC settings no greater than 10 percent.

PART 2 - PRODUCTS

2.1 PBB CABLE AND WIRE

A. General Description:

1) Refer to Section 260519

B. PBB Small Power and Control Cable:

1) Multiple conductor control and small power cables used outdoors on the passenger boarding bridges, shall be portable power cable. Cables shall be sized as indicated on the drawings or sized as required by the equipment furnished. Cable shall have green equipment ground conductor with equal size as phase conductors. Cables to be jacketed 600 volts SO type. Cable connectors shall be non-ferrous, steel case liquid tight sized for cable diameter and shall use strain relief gland fitting to prevent tension on conductor terminals. Where cable drops are indicated on the drawings, use non- ferrous wire mesh strain relief cable grips at both ends of cable drops. Conductors shall be stranded copper. Cable shall be suitable for use outdoors, sunlight resistant, moisture resistant and oil resistant.

C. STU Assembly

1) Flexible, 400-HZ cable shall be provided within the passenger boarding bridge (PBB) utility carrier (or STU) where indicated on plans or in schedules. Cable shall be type W, round, portable power cable suitable for outdoor use, sunlight resistant, moisture resistant, and oil resistant. Provide (4) #2/0, stranded conductors with 600/2000 volt, 90 degrees C, EPR insulation. Conductors shall be color coded. Jacket shall be lead cured thermoset or reinforced neoprene. Cable assembly shall be U.L. listed. Provide length required by PBB to span full travel of STU plus 30 feet at each end.

2.2 GATE BOX

A. General Description:

1) The gatebox assembly shall be a stand-alone device to provide transformation of 400-HZ, 575 V AC to 115/200 V AC, 3-phase, 4-wire with grounded neutral power for aircraft use. The gatebox assembly shall be 90 KVA single output or 180 KVA dual output, as indicated by the aircraft mix requested by MDAD. Output power rating shall be continuous at 0.8 power factor lagging. Each component of the gatebox assembly listed below shall be configured with the KVA rating of the assembly unless otherwise noted.

B. Enclosure:

1) The gate box cabinet shall be welded #11-gauge steel with stainless steel door piano hinge. The finish shall be two (2) coats of primer and one coat of polyurethane paint. The color to be as specified by the customer. The top shall be removable to facilitate complete paint coverage. The unit shall be NEMA 3R compliant.

2) The enclosure top cover shall have threaded connections for lifting eyes.

3) Storage receptacle for spare bulbs and fuses shall be located on the interior of the gate box door.

C. Transformer:

1) The gate box shall contain 400-HZ dry type step down isolation transformers with 575V delta connected primary and 118/204 V wye connected secondary. Transformers shall be sized equal to the output rating of the gate box.

2) Insulation shall be class "H" varnish impregnation, two coats.

3) The minimum B.I.L. shall be 10,000 volts.

4) The voltage regulation of the line to neutral, no load to full load shall be 0.6% at unity power factor and 1.5% at 0.8 Jagging power factor.

5) The transformer shall have continuous duty rating equal to rated KVA.

D. Contactor:

1) Provide 600V, 325 Amp, 400-HZ rated load contactors as required. The contactors will be provided with lugs capable of landing two #2/0 wires per phase. The coil shall be 100 VDC.

E. Line Drop Compensator

1) Provide required line drop compensators for gateboxes. The line drop compensator is used to eliminate the reactive voltage losses (line drop) in long runs of 400-HZ power distribution. The line drop compensator shall be rated at its KVA rating, 575 volts, 3-phase, 400-HZ continuous load at 0.8 power factor lagging. The compensator shall be capable of correcting a minimum of 16% inductive impedance at its KVA rating and shall be step adjustable with a minimum of six steps. The line drop compensator shall be UL 508 rated.

2) Transformers:

a) Each LDC shall contain three 90 KV A, 400-HZ dry type, current transformers, one for each phase (A, B, and C). The maximum ampere rating of each transformer shall be according to its KVA rating, which at the 16% setting will give a 53-volt boost per phase, minimum.
b) The insulation shall be class "H" varnish impregnation, two coats.
c) The transformers shall have multiple taps on the secondary windings for adjustment of the reactive compensation for various combinations of cable lengths and sizes to provide voltage boost from 6% to 16% in 2% increments. The secondary taps shall be positioned in an accessible location to allow adjustment without reaching over or around the primary taps in order to reduce the possibility of coming into contact with the 575-volt power. The taps shall be of the quick connect terminal type. A decal shall show the boost connections. The temperature rise of the magnetic components shall show the boost connections. The temperature rise of the magnetic components shall not exceed 80 degrees Celsius over 40 degrees Celsius ambient under rated load conditions. The design of the compensator shall not require the use of fans for cooling.

3) Capacitors:

a) Two capacitors will be connected in parallel across the secondary windings of each transformer to reflect capacitive reactance into the main transmission line and cancel the inductive reactance. Capacitors shall be non-PCB type.
b) Capacitor voltage rating to be such that if one capacitor fails, the second will withstand the increase in voltage and current. The compensator shall handle a 250 percent load transient without interruption of service or system degradation.
c) Provide line drop compensation, as determined from the system provider's voltage drop calculations in order to furnish the correct voltage at the aircraft cable plug. Maximum allowable setting during system start-up of LDC shall be 10 percent. Size conductors based on a maximum 10 percent boost.

F. Controls and Indicators

1) A 600V, 3 pole, manually operated disconnect isolation switch shall be provided on the fixed portion of the enclosure and shall be lockable with internal and external override. The ampere rating of the isolation disconnect switch shall be sized according to the rating of the gatebox.

2) The gate box assembly shall be equipped with individual industry standard PC boards, factory adjusted, to provide over voltage, under voltage and overload protection.

3) E/F feedback circuit shall use relay logic to insure proper aircraft interlock and safety for each output. This circuit shall also be equipped with an MOY to eliminate any 400-HZ induced voltage from the single jacketed aircraft cable.

4) 12-volt cluster LED, minimum 100,000 hours, indicating lights and illuminated pushbuttons shall be located on the exterior of the gate box cabinet. Buttons and lights shall be 30 mm diameter.

Buttons and lights shall be provided as follows:

a) Power Available Light - Power is available in the gate box.
b) Overload Light - An overload fault has occurred.
d) Under Voltage Light - An under voltage fault has occurred.
e) Over Voltage Light - An over voltage fault has occurred.
f) Reset Button - Resets the assembly after a fault has occurred.
g) Test Button Illuminates all lamps.
h) Contactor Closed Light -Lights to indicate that power is being supplied to

the aircraft.

5) All lights, local and remote pushbutton, and controls, shall be 12 VDC with a continuous duty power supply rated from 1.7 to 5 amps, depending on the design conditions. Spare bulbs and fuses of each type provided.

6) Voltmeter: The output voltmeter shall have a single 0 to 300 VAC scale in order to read line-to-line and line-to-neutral voltages. The voltmeter shall be calibrated for 400-HZ and have an accuracy of +2 percent full scale.

7) Voltmeter Selector Switch: Seven (7) position selector switches with "OFF" position shall be provided to monitor line-to-line and line-to-neutral voltages.

8) Ammeter: The Output Ammeter shall have a single 0 to 400-A. RMS scale in order to read output phase currents. The Ammeter shall be calibrated for 400 HZ and shall have an accuracy of +2 percent full scale.

9) Ammeter selector switch: A four (4) position selector switch shall be provided to monitor output phase currents:" A", "B", "C" with an "OFF" position.

10) Frequency meter: Output frequency meter with range of 360 HZ to 400-HZ and accuracy of +5 percent full scale.

11) Elapsed time meter: Shall be non-resettable type with 0 to 99,999 Hr.

G. Gate Box Test Panel:

1) The gate box shall contain a silk screened or equivalent schematic and component legend on a sixteen-point test panel for troubleshooting the following conditions:

a) Output voltage of each of the three phases.
b) Output voltage of the DC power supply.
c) Contactor auxiliary contacts.
d) Contactor auxiliary relay.
e) Under voltage relay contacts.
f) Over voltage relay contacts.
g) Overload relay contacts.
i) Overload relay.
j) Protective Monitor

2) Test switches to facilitate testing and troubleshooting.

3) E/F bypass switch for test purposes when 28 VDC power, is not available.

4) Contactor disable switch to disable the gate box output, but still leave input power to the box enabled.

5) A "Back Feed" receptacle, to allow 400-HZ, 115/200 V external power for purposes of testing normal gate box operation, over voltage and under voltage protection, shall be provided on the face of the test panel.

6) Provide dry alarm contacts for interface with PCA Air Handler Unit Controller for the following:

a) 400-HZ On/Off.
b) 400-HZ Fault

2.3 400-HZ AIRCRAFT CABLE

A. CABLE ASSEMBLIES

1) Multi Conductor Banded

The 400-HZ Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Each lead Shall consist of a single conductor. Phase A, B, C, & N shall be approximately 2/0 AWG. Control leads E & F shall be #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. The plug shall be Anderson Power Products or approved equal, field attachable, MS25486-3/(R67G36B). Each cable assembly shall be approximately 65 feet and 85 foot in lengths and banded together with stainless steel bands.

Lug Terminals for A, B, C,	Phase shall be MS20659-1 20
Lug Terminals for N	Phase shall be MS20659-136
Lug Terminals for E & F	Phase shall be MS20659-106

Lug terminals shall be attached to one end of the cable and plug attached to the other end. A ball stop is to be attached to the cable approximately 2-1/2 feet behind plug. Some cablesentire length should be protected with orange scuff cover.

2) Single Jacketed Multi-Conductors

The 400-HZ Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Phase A, B, C shall be approximately 1/0 AWG. Phase N (Neutral) shall consist of 3#6 AWG Control leads E & F shall be #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. All wire shall be manufactured Anderson Power Products or approved equal, field attachable, R67G76B. Each cable assembly shall be approximately 65 feet and 85 foot in length as required.

Lug Terminals for A, B, C,	Phase shall be MS20659-18B
Lug Terminals for N	Phase shall be MS20659-143
Lug Terminals for E & F	Phase shall be MS20659-106

3) Lug terminals shall be attached to one end of the cable and plug attached to the other end. Plug shall be yellow fluorescent in color.

2.4 400-HZ AIRCRAFT CONNECTOR

A. The Aircraft Connector shall be a molded portable connector consisting of a specially formulated Hypolon® rubber material, as manufactured by Anderson Airmotive Products Co., Inc. Portable Plug Catalog No. R67, or MDAD approved equal, configured to accommodate the characteristics of cables specified for this project. The portable plug shall meet the following additional specifications:

1) Shock-proof, highly abrasion and chemically resistant material

2) Replaceable contacts, silver-plated copper-tellurium alloy

3) Replaceable connector front part

4) Replaceable rubber protectors with wear indicators

5) Short, main contacts for low voltage drop

6) Applicable norms: 2006/42/EC Machinery Directive, VG 95319, ISO 461, MS 25486, DFS 400

7) Push and pull forces meet DIN EN 61984 ≤ 445 N

8) Operating temperature range -40°C to +125°C (-40°F to +257°F)

9) Resistant to UV radiation, oil, hydrolysis and microbial attack

10) Nominal voltage: 115/200 V, 400-HZ

11) Current carrying capacity: 260 A/90 KVA

12) Current overload: 600 A/30 min, 1000 A/3 min, 2000 A/3 sec

13) Test voltage: 4 KV at 400-HZ main wires/2 KV at 28 V control wires

14) Protection class: IP 68 for mounted connector

2.5 CABLE HOIST

A. General Description:

1) The Cable Hoist is used to raise the flexible aircraft cable to a stowed position along the side of the bridge out of the path of moving vehicles. It allows the operator to lower the cable to power aircraft at the gate. The hoist shall be designed for mounting on top of or on the side of the bridge. The cable hoist shall be U.L. labeled. Provide two hoists at each gate.

B. Enclosure:

1) The hoist cabinet shall be welded # 10-gauge steel. The finish shall be two coats of primer and one coat of white polyurethane paint. The unit shall be rated NEMA 3R. The hoist shall be constructed with a removable or hinged cover for ease of maintenance and access to major components.

C. Motor:

1) Provide an electric open drip proof gear motor rated at 1/2 HP, 480 VAC, 60 HZ, 3Phase. Provide a PBB-mounted, NEMA 3R, overcurrent/disconnecting means. The gear reducer shall be NEMA rated Class 0. Provide a magnetic disc brake to prevent the wire rope drum from unwinding when the hoist is shut off.

D. Controls:

1) A 600V, 3 pole, 10 amps manually operated disconnect isolation switch shall be provided in the control panel. The panel door shall not be capable of being opened unless the disconnect switch is in the OFF position.

2) Provide a reversing contactor and control circuitry.

3) Provide raise/lower push-button controls for mounting on the bridge drive column.

4) Provide a 24-volt adjustable counter to control the IN and OUT limits of the wire rope.

5) A step down transformer shall be provided for the low voltage circuits.

E. Drum, Fairlead, Cable and Saddles:

1) Provide a single drum with flanges to contain the wire rope.

2) Provide a roller fairlead to guide the cable onto the drum. The fairlead shall be positioned to prevent the cable from rubbing on metal surfaces of the hoist.

3) Provide 3/16" diameter nylon coated stainless steel braided wire rope of sufficient length to raise the aircraft cable level with the underside of the bridge.

2.6 PUSHBUTTON STATION

A. Description:

1) A stainless steel, weatherproof enclosure shall be provided at each bridge-mounted gate box for use as a remote control pushbutton station. The pushbuttons shall be non-illuminated recessed type. Indicating light shall be a 12 bolt cluster LED, minimum l 00,000 hour. Buttons and lights shall be 30 mm diameter. Buttons and lights shall be provided as follows:

a) "ON" pushbutton - Contactor closes, energizing the aircraft cable. Provide two for each gate with 180 KVA.
b) "OFF" pushbutton - Contactor opens, de-energizing the aircraft cable. Provide two for each gate with 180 KVA.
c) "RESET" pushbutton - In the event the protective controls are activated in the gatebox, the contactor cannot be closed until the condition has been corrected and the control circuit reset by depressing the "RESET" button.
d) "Raise" pushbutton - (Used only with cable hoist installation) When depressed, energizes the cable hoist to raise the aircraft cable to its storage position. Provide two for each gate.
e) "Lower" pushbutton - (Used only with cable hoist installation) When depressed, energizes the cable hoist to lower the aircraft cable from its storage position. Provide two for each gate.

i. Location of the pushbutton station shall be as shown on the project drawings and as coordinated with loading bridge manufacturer and with existing conditions.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Existing Conditions: Examine elements and surfaces to receive equipment for compliance with installation tolerances and other conditions affecting performance, including, but not limited to, ambient temperature, cooling air circulation, contaminants and disassembly and maintenance space. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Conduits and Raceways: Provide and install non-ferrous conduits and raceways for all 400-HZ wiring. Conduit shall be as shown on the drawings or sized per NEC when size is indicated. All raceways elements shall be reviewed and acceptable to system designer.

C. Passenger boarding Bridge Equipment Installation: Where 400-HZ equipment is installed on passenger boarding bridges; the work shall be coordinated with the bridge manufacturer. Welding shall be performed in the PBB manufacturer's factory in accordance with the bridge manufacturer's written welding procedure. Surface preparation and painting of areas affected by welding or during equipment installation shall be in accordance with the bridge manufacturer's requirements.

D. Over PBB Devices: The installation of cable in new over-PBB devices shall be coordinated with the PBB manufacturer. Brackets shall be supplied and attached to the PBB prior to factory painting.

3.2 SYSTEM TESTING:

A. General Start-up Requirements:

1) Qualified personnel from the equipment manufacturer shall perform the checkout and testing of the 400-HZ system.

2) The Vendor shall furnish qualified personnel to provide the initial set-up and adjustment of the solid-state electronic trip circuit breakers. Prior to energizing all installed wire, all wiring shall be tested for continuity and faults. The initial settings of the breakers shall be recorded in tabular form for each individual position and be made a part of the final documentation provided with the equipment.

3) The Vendor shall furnish qualified personnel to perform the on-site set-up and testing of the line drop compensators and gate boxes. Each branch circuit shall be tested at full load using the procedures stated below.

4) The following list of test equipment, or equivalent substitute, is required for testing the 400-HZ equipment and system and shall be provided by the supplier. Supplier shall be responsible for providing all other test equipment required to successfully perform all tests.

   a) Certified and calibrated digital AC voltmeter. Model Fluke 87 or 8020.
   b) Certified and calibrated clamp-on AC Ammeter
   c) Combination Resistive and Reactive Load Bank. A total capacity of 90 KVA consisting of 54 KV AR reactive load bank and a 72 KW resistive load bank. For dual output gate boxes 2 sets of load banks shall be employed.

5) On-Site Testing:

   a) Proper circuit breaker fault isolation shall be verified.
   b) Testing of each complete system, after installation, shall be done on-site with the Vendor furnishing their own load banks and all other required test equipment.

C. Testing Requirements:

1) Each individual position and each output shall be checked for no load and full load voltage drop using both a resistive and a reactive load attached to the output of the aircraft cable.

   a) Test each Jumbo position with a 180 KVA load, 90 KVA on each cable at 0.80 power factor. Testing will be at no load, full reactive load, full resistive load and 0.80 power factor load.

D. Test ground fault on the feeder side of each gate box.

E. Check phase rotation with load bank or phase rotation tester, rearrange phase wiring, if required.

F. The overvoltage, under voltage and overload protection provided by the gate box shall be verified.

G. The proper operation of the gate box control buttons shall be verified.

H. The test points located in the gate box test panel shall be used to verify the following parameters:

1) Output voltage of each of the three phases.

2) Output voltage of the DC power supply.

3) Contactor auxiliary contacts.

4) Contactor auxiliary relay.

5) Under-voltage relay contacts.

6) Over-voltage relay contacts.

7) Overload relay contacts.

8) Overload relay.

9) Protective Monitor

3.3 ACCEPTANCE

A. Final System Acceptance:

1) Final acceptance for each of the PBBs will be at the jobsite after all requirements of this Specification have been met. Provide a test report showing compliance with design requirements and calculations at each position as part of the Operations and Maintenance Manuals.

END OF SECTION 263226

ITQ No.: MDAD-67621-JM

Exhibit C

PBB_SECTION_263543_POU -400HZ

SECTION 263543 - STATIC FREQUENCY CONVERTERS – POINT-OF-USE 400 HZ SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and specification, apply to this section, as described below.

1.2 SUMMARY

A. This Section specifies the design, manufacture, testing, and furnishing 400 Hz Distribution Equipment System to deliver power to parked aircraft at the Miami-International Airport.

B. The converters will be connected to the 400 Hz cables as specified.

C. The Vendor shall provide and install all relevant equipment for a correct connection to get a complete and operable system.

PART 2 - GROUND POWER UNIT QUALIFICATION

2.1 EXPERIENCE

A. The manufacturer shall have a minimum of five- (5) years of experience in designing, producing and supplying Ground Power Unit for aircraft applications with operation in the USA.

B. Demonstrate that the manufacturer has satisfactorily provided 400 Hz system installations of similar scope with a record of successful in-service performance.

C. Demonstrate the manufacturer has installations under multiple ambient conditions in tropical environments such as found in South Florida or cold countries, in dry or humid areas and indoor or outdoor installations.

D. The manufacturer shall manufacture the circuit boards and magnetic components to guarantee the converter integrity.

E. The design, production and supply of GSE equipment within the aviation industry shall be one of the manufacturer’s core businesses.

F. The manufacturer must also have equipment references with at least one of the world’s leading aircraft manufacturers or airlines.

G. Products that are not manufactured in the US will not be qualified. Proof of US

manufacturing facility shall be presented at time of bid.

H. The product must be UL 1012 certified. Certification of proposed model must be submitted at time of bid.

I. The 400 Hz aircraft plug shall ensure the system integrity and comply with MDAD's universal plug specifications for use throughout Miami International Airport gates.

J. The manufacturer shall have a registered office in the United States to support after sales service.

2.2 APPLICABLE CODES AMD STANDARDS

A. The standards and codes applicable to only a portion of the work specified in this Section are referenced in the relevant parts or clauses. Standards and codes which are generally applicable to the work of this section are listed below:

ANSI C 12.11:	Instrument Transformers for Metering Purposes, 15 KV and less.
ANSI C 19.1:	Electrical Analog Indicating Instruments.
ANSI C 57.13:	Instrument Transformers.
ATA SPEC - 101:	Ground equipment technical data.
NFPA 70:	National Electrical Code.
UL 1012:	Under Writers Laboratories, INC. (UL).
BS 2G 219:	General Requirements for Ground Support Equipment.
DFS-400:	400 Hz aircraft ground power.
IEEE STD 127:	Aerospace Equipment and Frequency Rating.
ISO-6858:	Aircraft Ground Power Supplies.
ISO-461:	Connectors for Ground Electrical Supplies.
ISO-1540:	Aerospace. Characteristics of Aircraft Electrical Systems.
SAE-ARP-5015:	Ground Equipment 400 Hz Ground Power Performance Requirements.
MIL-S-19500:	Semiconductor devices.
IEC-60146:	Semiconductor Converters.
ST-20-1972(R-1978):	Dry type transformer for general application.
IEC-60310:	Traction Transformers and Inductors.

EN-50124:	Insulation Coordination. Part 1. Clearances and Creepage Distances for all Electrical and Electronic Systems.
EN-61000:	Electromagnetic Compatibility.
MIL-STD-461:	Electromagnetic emission and susceptibility requirements for the control of electro-magnetic interference.
IEC-60529:	Classification of Degrees of Protection Provided by Enclosures.
EN-1915-1:	Aircraft ground support equipment. General requirements. Basic safety requirements.
EN-12312-20:	Aircraft ground support equipment. Specific Requirements. Part 20. Ground Power Equipment.
BS-EN-61558:	Safety of Power Transformers, Power Supplies, Reactors and Similar Products.
EN-62040 1.1:	Uninterruptible power systems (UPS) –Part 1-1: General and safety requirements for UPS used in operator access areas.
IEEE STD 500:	Reliability Data.

2.3 APPLICABLE SUBMITTALS

A. Product Data: For each type of product indicated, including dimensions and data on features, performance, electrical characteristics, ratings, and finishes. Submittals are to include also operating parameters and limitations, ambient conditions, heat dissipation, power requirements, live load, and the like.

B. Product data submittal shall include the following as minimum:

1) Schedule of equipment proposed, with catalog reference number.
2) Name and address of the manufacturer and country of origin of the product.
3) Compliance statement to specification, with necessary supporting documents.
4) Catalog pages of proposed equipment.
5) Basic system architecture.
6) Name and address of the authorized local representative/dealer.
7) Installation details, operation and maintenance of each component.

C. Shop Drawings: Detail assemblies of standard components that are custom assembled for specific application on this Project.

1) Full layout, location of the converters and all related equipment.
2) Dimensioned plan and elevations.
3) Transformers, panels, circuit breakers, cables (as applicable).
4) Instruction manuals.

D. Coordination Drawings: Plans drawn coordinating locations of converters. Show the following:

1) Converters.
2) All related equipment.
3) Coordination with the rotunda's technical rooms.
4) Coordination with PBB Manufacturer.
5) Electrical Wiring Diagram.
6) Control Wiring Diagram.

E. Product Certificates: Signed by manufacturers components certifying that products furnished comply with requirements.

F. Instruction manuals:

1) Provide complete operation and maintenance manuals when the final shop drawings are submitted.
2) Provide additional complete instruction manuals, including any required factory corrections, after the equipment has been factory tested.
3) Each instruction manual shall contain the following:

a) Calibration data curves, wiring diagrams and other pertinent information on every component furnished.
b) Operation procedures, both manual and automatic.
c) Recommended preventive maintenance schedules.
d) Supplied Spare Parts List.
e) Recommended Spare Parts List.

G. Field Quality-Control Test Reports: Indicate and interpret test results for compliance with performance requirements of installed systems. Tests shall be carried out in coordination with 400 Hz cables (and pits if part of the project) for a complete and operable system.

H. As-Built Drawings: At project close-out, submit record drawings in accordance with requirements of the specification, including two- (2) sets of electronic files. Electronic files shall be AutoCAD, CAD data transfer in a single file with no Xrefs and Acrobat pdf file formats. All AutoCAD, CAD data transfer files for each discipline shall contain all reference drawings including final title block with all revisions to reflect as-built conditions.

I. Operation and Maintenance Data: In addition to items specified, include the following:

1) Documented ratings of systems and of each major component.
2) Unit description and specification.
3) Instructions for installation, prestart, starting, and operating procedures.
4) Maintenance and troubleshooting instructions.
5) Routine preventative maintenance and lubricating schedule.

6) Description of operating limits which may result in hazardous or unsafe conditions, or equipment damage
7) List of special tools, maintenance materials and replacement parts, and list of recommended spare parts.
8) Instructions for procedures to check, repair, and test equipment during typical malfunctions.
9) List of spare parts and replacement components recommended to be stored at the site for ready access.
10) Complete record drawings, including as-builts for schematics, wiring diagrams, and plans of the complete equipment.
11) System documentation. Compile approved site inspections and test results.
12) All other information that is necessary for proper installation, service, repair and maintenance of all material, equipment and components furnished under this Section.

2.4 PROJECT CONDITIONS

A. Environnemental Conditions:

1) System shall be able to withstand the project environmental conditions without structural or electrical damage or degradation of operating capability.
2) The converters shall be installed outdoor with direct exposure to sunlight. It is the Vendor's responsibility to ensure proper operation of the converters in the installed conditions.

2.5 WARRANTY

A. Warranty Terms shall be ten (10) years from the date of Substantial Completion.

B. The Vendor warrants the products to be free of defects of design, material and workmanship under normal use and service for the period as defined above for all aircraft support equipment and systems.

2.6 SPARE PARTS AND SPECIAL TOOLS

A. A minimum of the following Spare Parts in the 400 Hz distribution equipment shall be furnished to MDAD for each Passenger Boarding Bridge:

1) Complete set of Control PCB.
2) Fans.
3) Components of Fuse and Input/output Contactor.

B. Furnish one set of all special tools required for the installation, operation, and maintenance of all equipment furnished and installed under this Section.

C. One complete set of diagnostic tools. Hardware toolkit to check the converter parameters shall be provided to MDAD.

D. Furnish a list of recommended spare parts for the 400 Hz distribution equipment and accessories. The list shall contain the prices and availability of the spare parts recommended.

2.7 AVAILABILITY OF SPARE PARTS AND FORWARD COMPATIBILITY

A. The Vendor shall obtain and submit a written undertaking from the manufacturer that spare parts of the system to be installed shall be made available upon request for at least ten (10) years from the date of Substantial Completion.

PART 3 - STANDARD COMMERCIAL PRODUCTS

The proposed products shall be standard commercial products and not engineered specifically for the project.

3.1 SYSTEM DESCRIPTION

A. The 400 Hz Distribution Equipment System is made of 400 Hz solid state frequency converter to operate under a passenger boarding bridge (PBB) or ground mounted. The solid-state frequency converter will deliver power using a 400 Hz aircraft service cable as described in the specification below.

3.2 DESIGN REQUIREMENT

A. The 400 Hz Converter output shall be pulse width modulated, complete unit with components and accessories coordinated so that the unit shall function as specified and shall be capable of continuously running under full load conditions per specification. Unit shall be designed so that under full load conditions all points on printed circuit boards shall not be accessible and will interrupt power once the covers and/or doors are open. The frequency converter enclosure and accessories shall be manufacturer's standard design.

B. The 400 Hz Converter shall be a stand-alone, self-contained unit capable of converting 47 - 63.5 Hz input power to 400 Hz output power for combinations of linear and nonlinear loads in aircraft electrical systems.

C. The 400 Hz Converter shall be of modular design with solid state electronic construction with easily replaceable subassemblies and components wherever possible.

D. The enclosure shall be free standing with provisions for PBB mounting.

E. The enclosure shall have hinged doors or easily removable covers to provide access for maintenance, repair, and replacement of modular components and subassemblies. It shall be weatherproof for outdoor operation.

F. The 400 Hz Converter shall have Built-In-Test-Equipment and alarm functions to continuously monitor, control, and provide diagnostics. The converter shall include a

Google or Apple app to be able to monitor or diagnose a minimum 150 systems.

G. Components of the Converter shall be UL and or CE recognized or listed for their intended application.

H. The converter and inverter sections of the frequency changer shall be modularized solid state IGBT components. The standard construction shall have no moving parts and shall require a minimum service or maintenance.

I. Components shall be cooled by convection, natural draft cooling, use of heat sinks, or by forced draft cooling provided the overall efficiency of the unit is not reduced by use of fans.

J. The power transformers shall be mounted in separate compartments from the solid-state equipment.

K. The electronics shall be completely sealed from the environment.

L. The frequency converter shall be constructed in a way that adjustments and repairs can be easily made by maintenance personnel.

M. All major components and sub-assemblies shall be stenciled or labeled with identification number or letter code on or near the device. The code shall be readily visible when servicing the frequency converter.

N. The enclosure shall be designed to be suitable for the intended environmental conditions in accordance with NEMA Type- 3R or IP54 (IP55 for the electronic compartment).

O. Suitable warning labels or covers shall be provided where internal voltages decay slowly after shutdown.

P. All steel surfaces shall be prepped per ISO 8504 and coated for coastal environments.

Q. All Aluminum surfaces shall be anodized per ASTM B 580 or coated with manufacturer's standard coating.

3.3 SUPPLY INPUT POWER

A. Input Voltage: Nominal voltage is 400 Vac – 480 Vac ± 15%. (320 V to 552 V).

B. Input Phase Connection: No phase dependence.

C. Inrush Current: Shall not exceed 100% of rated full load current and shall be equipped with a fully automatic input soft start circuit. On start-up, the GPU shall withstand inrush current of up to 100% of that input current required when the GPU is operating at rated load output. Manufacturer shall identify as part of submittals the design and circuitry utilized to provide a true input soft start feature. This feature shall be

demonstrated as part of factory acceptance testing.

D. Input Phase Rotation: The GPU shall be input phase rotation independent, allowing the GPU to be connected to the incoming power without regard for phase rotation (not phase sensitive).

E. Input Power Break: The GPU shall be capable of supplying uninterrupted power to the aircraft during a micro break in the input power.

F. Input Circuit Breaker: the GPU shall contain an internally mounted circuit breaker on the input power line to allow the input power to be removed in the case of a fault or for maintenance.

G. Input Power Protection: The frequency converter shall be equipped with the following input power protection:

1) Phase loss protection.
2) Phase sequence protection.
3) Over\Under voltage protection.
4) Thermal overload protection.
5) Overcurrent protection.
6) Short circuit protection.

H. Voltage Operating Range: The frequency converter output voltage shall be capable of being adjusted over a range of +15% from rated voltage.

I. Input Current Harmonics: When connected to a 50/60 Hz power supply Input current harmonics shall not exceed 3% within normal load range. Harmonic traps are not acceptable as they would also be affecting other electrical equipment. Input current harmonics shall be demonstrated as part of the factory acceptance test. Units that do not meet the specified harmonics at time of factory testing shall not be accepted for shipment.

J. Input power shall be confirmed at time of factory acceptance test. Units which require more input current than specified shall not be accepted.

3.4 OUTPUT POWER

A. Output Power Rating: Load capacity of the frequency converters shall be continuous.

B. Output Voltage: The output voltage shall be 115/200 volt, 3-phase, 4 wires, with grounded neutral in accordance with the international aircraft electrical power requirements.

C. Output Phase Rotation: Shall be 3 phase, 4 wire, ABC (clockwise) rotation.

D. Output Frequency: Shall be 400 Hz (0.1% under all load conditions).

E. Voltage Regulation: Voltage regulation from no-load to rated load and from rated load to no-load shall not be more than 0.5% of nominal voltage and shall be maintained with input line voltage variations of ±15%.

F. Voltage Recovery: Transient voltage recovery shall meet or exceed not more than 50m Sec for 100% load change.

G. Voltage Phase Balance: With frequency changer operating at any load within the rated KVA the maximum difference in all line-to-neutral voltages shall not exceed 1% for balanced loads and shall be within 2.5% for 30% unbalanced load.

H. Phase Voltage Displacement: Shall be 120° +1.0° for balanced loads 120°+2.0° for 30% unbalanced.

I. Voltage Trim Adjustment: The output voltage trim adjustment shall be +15% of nominal output span.

J. Crest Factor: Shall be 1.414 +/-3%.

K. Frequency Regulation: Shall be 400 Hz +/- 0.01% and shall not be affected by load.

L. Harmonic Distortion: The maximum total harmonic distortion at 100% linear load at 0.8 pf shall not exceed 2.0% when measured line-to-line or line-to-neutral. Any single harmonic shall be less than 1.5%.

M. Line Drop Compensation: Independent compensation for resistive and reactive cable impedance per phase. Shall be 0 to 15% of voltage span and shall be adjustable.

N. Overload Capacity: After reaching stabilized temperature at full load, the frequency converter shall be capable of carrying the following overloads:

1) 125% over load for 600 sec.
2) 150% over load for 90 sec.
3) 200% over load for 30 sec.
4) 300% over load for 15 sec.
5) 400% over load for 3 sec.
6) 500% over load for 1.5 sec.

Note: MDAD Project Manager/representative to witness and verify test.

O. Efficiency: The efficiency of the frequency converter shall be 94% or better at full load. Efficiency shall be demonstrated as part of factory acceptance testing. Efficiency shall be demonstrated immediately following a full load 24-hour heat run, before the converter is shut down. MDAD or authorized representative to witness and verify test.

P. Over/Under Voltage Protection: An over/under voltage output protection shall be provided to automatically isolate the converter output power from the aircraft when it is exceeding limits of the MIL-STD-704F.

Q. Overload/Short Circuit: The frequency converter shall be isolated from the aircraft load by over-load/short circuit protection specifically rated for 400 Hz operation. The converter shall be equipped with an instantaneous electronic overload alarm circuit designed to operate at not less than 500% of rated capacity.

R. No Break Power Transfer: The frequency converter shall be designed with an energy management system that will provide continuous, trip free operation of aircraft designed for No Break Power Transfer operations during ground servicing at the gate.

3.5 CONTROL CIRCUITS

A. Controls: The frequency converter shall be designed to start and stop by means of depressing momentary push buttons, located on the control door. There shall be provisions for remote operation. All controls shall be isolated from each other and withstand output rated voltages without degradation to the system or operation.

B. Output Contactor: The frequency converter output shall be connected to an output contactor of sufficient capacity to handle rated load and overload specified. The output contactor shall be electrically interlocked with input circuitry so that frequency converter will be immediately isolated when converter is being shut down. The operating push-button and associated light indicators shall be mounted on the front door.

C. Line Drop Compensation: The voltage regulation means shall include an electronic line drop compensation circuit for maintaining the voltage regulation at a single point distance from the converter and shall be adjustable at full load to at least 15% of rated output voltage. The frequency converter shall have an independent compensation circuit for resistive and reactive cable impedance per phase compensation.

D. Aircraft Interlock Circuit: The E and F interlock circuit shall instantaneously isolate the converter output in the absence of a 28 VDC signal from the aircraft. The E and F interlock circuit indicator shall be provided to display the status of E and F interlock. E and F indication shall be provided via an LED light inside the control compartment and LCD display. In the event of E and F absence the control system shall record and time stamp when the event was acknowledged, the duration and cleared.

E. Aircraft Bypass Switch: For testing purposes an aircraft bypass switch shall be provided inside the converter to allow the unit to deliver the output power without the 28 VDC (E and F feedback) power from the aircraft. An indicator shall be provided to indicate that the BYPASS circuit has been selected. In the event of Bypass, the control system shall record and time stamp when the event was acknowledged, the duration and cleared.

F. Output Voltage Adjust: A voltage adjusting potentiometer shall be provided to permit adjustment of the converter output voltage per phase and overall three phase. Range of adjustment shall be ±15%.

G. Alarm Indicator Reset: A push-button shall be provided to reset all indicators from cleared alarm signals.

3.6 METERS AND INDICATORS

A. Human Machine-Interface (HMI):

1) The converter shall be equipped with an integrated Human Machine Interface (HMI) and be factory tested with all control sequences and alarms simulated.
2) The integrated controller shall be pre-programmed with project specific data for easy start-up and commissioning.
3) The HMI shall include the following features:

a) Sunlight readable LCD colored touch screen (Minimum size of 6”).
b) Capacity of being connected and integrated with the airport BMS.
c) The HMI shall be provisioned for being connected to the gate operator terminal where the airport gate layout can be displayed with the specific gate and ensures the visualization of the gate equipment and status of operation.

B. TCP/IP connection

1) The GPU manufacturer shall provide TCP/IP connection point to enable the access to critical operational status data of the GPU. Such data are required for the remote monitoring of the operation of the GPU through the Building Management System (BMS). These data shall include but not be limited to:

a) GPU 1 ON.
b) GPU 2 ON (if applicable).
c) GPU 1 OFF.
d) Power Available.
e) Summary Fault.
f) E/F signal present.
g) Emergency Stop.
h) Logic Power Supply Voltage.
i) Pilot switch (cable inserted).
j) Enable/Disable Signal bit 0 zero signal.
k) Phase Voltage (V).
l) Line Voltage (V).
m) Phase Current (I).
n) Frequency (Hz)
o) Power Factor (P.F.).
p) Kilowatts.
q) KVA.

C. Elapsed Time Meter: Shall be non-resettable type with 0 to 99,999 hrs.

D. Diagnostic Information: The solid-state frequency converter shall be equipped with a complete diagnostic system including alarm message system. All of the converter's vital function shall be continuously monitored by the diagnostic system. Additionally, the converter shall be capable of diagnosing status of the aircraft cable assembly. All time stamped events shall be downloadable via a USB or Ethernet connection.

3.7 ENVIRONMENTAL

A. The solid-state pulse width modulated frequency converter and the modular coiler shall successfully operate under the following conditions:

1) Ambient Temperature Range: 0°F to 140°F (-40°C to +60ºC) – A 3rd party certificate shall be provided.
2) Humidity: 0% to 100% noncondensing.
3) Altitude: 0 to 9850 feet w/o de-rating.
4) Wind: Up to 185 MPH and Exposure C (exposure is identified in the Florida Building Code).
5) Audible Noise Level: Shall be not more than 65 dB at 3 feet and 3.37 inches.

3.8 ENVIRONMENTAL 400 HZ SYSTEM ACCESSORIES

A. Cable Assemblies:

1) Multi Conductor Banded

Cable assemblies shall be in accordance with MIL-C-7974D Specification. The 400 Hz Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Each lead shall consist of a single conductor MIL-C5756C cable. Phase A, B, C, & N shall be approximately 2/0 AWB. Control leads E & F shall also be per MIL-C-575C #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. Each cable assembly shall be approximately 6 feet and 85 foot in lengths and banded together with stainless steel bands.

Lug Terminals for A, B, C	Phase shall be MS20659-120
Lug Terminals for N	Phase shall be MS20659-136
Lug Terminals for E & F	Phase shall be MS20659-106

Lug Terminals shall be attached to one end of the cable and plug attached to the other end. A ball stop is to be attached to the cable approximately 2-1/2 feet behind the plug. Entire cable length shall be protected with orange scuff cover.

2) Single Jacketed Multi-Conductors

Cable assemblies shall be in accordance with MIL-C-7974D Specification. The 400 Hz Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Phase A, B, C shall be approximately 1/0 AWG. Phase N (Neutral) shall consist of 3 #6 AWG Control Leads E & F shall also be per MIL-C-5756C #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. All

wire shall be manufactured by Anderson Power Products or approved equal, field attachable, R67G76B. Each cable assembly shall be approximately 65 feet and 85 foot in length as required.

Lug Terminal for A, B, C	Phase shall be MS20659-18B
Lug Terminals for N	Phase shall be MS20659-143
Lug Terminals for E & F	Phase shall be MS20659-106

3) Lug terminals shall be attached to one end of the cable and plug attached to the other end. Plug shall be yellow fluorescent in color.

B. 400 Hz Aircraft Connector

The Aircraft Connector shall be a molded portable connector consisting of a specially formulated Hypolon® rubber material, as manufactured by Anderson Airmotive Products Co., Inc. Portable Plug Catalog No. R67, or MDAD approved equal, configured to accommodate the characteristics of cables specified for this project. The portable plug shall meet the following additional specifications:

1) Shock-proof, highly abrasion and chemically resistant material.
2) Replaceable contacts, silver-plated copper-tellurium alloy.
3) Replaceable connector front part.
4) Replaceable rubber protectors with wear indicators.
5) Short, main contacts for low voltage drop.
6) Applicable norms: 2006/42/EC Machinery Directive, VG 95319, ISO 461, MIL-C-7974D, MS 25486, DFS 400.
7) Push and pull forces meet DIN EN 61984 ≤ 445 N.
8) Operating temperature range -40°C to +125°C (-40°F to +257°F).
9) Resistant to UV radiation, oil, hydrolysis and microbial attack.
10) Nominal voltage: 115/200 V, 400 Hz.
11) Current carrying capacity: 260 A/90 KVA.
12) Current overload: 600 A / 30 min, 1000 A 3 min, 2000 A/3 sec.
13) Test voltage: 4 kV at 400 Hz main wires/2 KV at 28 V control wires.
14) Protection class: IP 68 for mounted connector.
15) Acceptable Manufacturers:

    a) Cavotec-Inet US, Inc.
    b) J&B Aviation.
    c) MCM Engineering.
    d) US Airmotive GSE.

3.9 FACTORY TESTS

A. The manufacturer shall have its own testing facility at the location of the converter manufacturing. This testing facility shall test the converter under +60°C ambient conditions and running the overload tests up to 500%.

B. A factory Test Report shall be furnished for each frequency converter including test

results, instrument used, test procedures, and final conclusions. Each Test Report shall be dated and signed by authorized personnel and shall be neat, readily legible and self-explanatory.

C. Manufacturer shall submit proposed factory acceptance test for review a minimum of 60 days before original unit test is scheduled. Factory testing is not to be done until procedure is approved by MDAD Project Manager/representative. Delay in shipment due to delay in submittal of an acceptable test procedure shall be the responsibility of the Vendor.

D. A converter shall be tested at no load and full load conditions and shall be given a "burn-in" test for at least 24 continuous hours.

E. In addition to load tests the following tests shall be performed:

1) Output Voltage Wave Form.
2) Transient Voltage Recovery Time (For 50% And 100% Load Shocks).
3) Output Voltage Regulation.
4) Efficiency Test At 25%, 50%, 75% And 100% Load.
5) Output Voltage Balance.
6) Output Frequency Regulation.
7) Overload Capabilities.
8) Operation of Safety and Control Devices.
9) LDC Circuit.
10) Input Current Harmonics.

3.10 INSTALLATION

A. General: All equipment, wiring and installation shall be in accordance with current, applicable codes and per current industry standards.

B. Packaged frequency converters: The frequency converters shall be delivered to the site completely assembled and tested.

C. Final Connections: The Vendor shall make final electrical connections from the pre-wired utility connections.

D. Final Field Test: the frequency converter manufacturer, in the presence of MDAD Project Manager/representative, shall operate each unit to verify performance compliance relative to output voltage, control functions and operating controls.

3.11 DESIGN LIFE

A. The converter shall be designed for a useful life of not less than 20 years.

B. MTTR shall be maximum 20 minutes.

3.12 WARRANTY SERVICE AND PARTS

A. Manufacturer shall warrant that its products and work shall meet all applicable specifications, codes and other specific product and work requirements (including those of performance) and shall be free from defects in material and workmanship for a period of one year from the date of Substantial Completion for each PBB. Upon submittal of a warranty claim, Vendor shall repair or replace items necessary to restore the GPU to satisfactory condition. This warranty does not include consumables. The terms and stipulations of the warranty period shall be submitted with the proposal. Warranty shall be valid in the State of Florida.

B. In addition to the proposal for fabrication, delivery and installation of systems, the Proposer shall provide a recommended spare parts list, the cost for each part, the extended cost, the consigned cost, and any terms and conditions applicable to this proposal.

PART 4 – EXECUTION

4.1 DELIVERY, STORAGE, AND HANDLING

A. The electrical equipment shall be contained in a dust and moisture-impervious shrouding and shall be adequately packaged to ensure protection from transit damage and exposure to the weather.

B. Packaging shall be labelled and numbered so that each section or assembly may be identified before being opened. Any items not fully assembled to the unit substation structure shall be packaged and shipped separately.

C. Adequate means shall be provided for lifting by fork lifts and cranes and for moving the equipment on rollers. Lift points shall be marked on each crate. Electrical equipment handling shall be in accordance with the manufacturer's written instructions.

D. Where panels sections must be separated for shipment, all information, materials, and equipment necessary to facilitate reassembly and reconnection of interconnecting bus work and wiring in the field shall be furnished. Shipping lengths of the assembled equipment shall be in accordance with construction site handling limitations.

E. Touch up any damage to finishes to match adjacent surfaces.

4.2 INSTALLATION

A. Converter shall be transported within the construction site, unloaded, and handled, stored, installed, including assembly of all components parts, and wired in accordance with manufacturer's instructions and recommendations and the requirements specified herein.

B. The equipment shall be installed in accordance with the manufacturer’s recommendations.

C. Regulations for Electrical Installations, except where in conflict with the aircraft requirements, where the latter shall take precedence.

4.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory authorized and trained service representative to inspect field-assembled components and equipment installation and supervise pretesting, testing, and results.

B. Inspection: Verify that equipment and fittings are properly installed connected, and labelled, and that wires are identified.

C. Field tests shall be performed in accordance with the manufacturer’s recommendations, applicable standards, as required in this Section and /or as directed by MDAD.

D. Carry out specified tests and submit test sheets as per attached Annex and the requirements for test records as specified here-under.

E. After integrity and component tests have been successfully completed, the equipment shall be subject to operational testing.

F. Test Schedule: Schedule tests after pretesting has been successfully completed and system has been in normal functional operation for at least 14 days. Provide a minimum of 10 days' notice of test schedule.

G. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation. Test equipment for proper operation in all functional modes.

4.4 COMPONENTS TESTS:

A. Perform all component checks and tests indicated on the test plan submitted to MDAD Project Manager approval.

B. Perform all inspections, checks, adjustments, and tests recommended by the equipment manufacturers and as directed by the MDAD Project Manager/representative; documentation of the inspections, checks, adjustments, and tests performed shall be submitted to the MDAD Project Manager/representative on the completed test forms.

C. Calibration tests on metering and instrumentation.

D. Operational tests in all control and instrumentation.

4.5 TYPE OF RECORD

A. Maintain complete and accurate records of all tests. These records shall include the following:

1) Equipment or circuit identification, description, and location.
2) Complete nameplate data, including serial number.
3) Readings and measurements taken, including temperature and humidity.
4) Description of test, including data and tester's signature.
5) Description of test equipment used, including serial numbers.
6) Test results (written description).
7) Other observable data applicable to equipment tests.
8) Description of any necessary corrective actions.
9) Certification of satisfactory completion of wiring and installation in accordance with applicable items of this section.

B. Certified test reports as specified in this Section.

1) Remove and replace malfunctioning items and retest as specified above.
2) Record test results for each piece of equipment.
3) Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

4.6 TESTS

A. On completion of the works the entire 400 Hz distribution equipment shall be subject to a full functional test to prove the performance as specified, including the operation of all protective devices.

1) The Vendor shall be responsible for testing and commissioning of the equipment and provision of test equipment, load banks and personnel.
2) All equipment shall be factory tested and test certificates submitted for each item.
3) The Vendor shall inform the MDAD Project Manager/representative when tests are due to take place at place of manufacture so that the MDAD Project Manager/representative may be present to witness all tests.

4.7 MATERIAL AND WORKMANSHIP

A. Unless otherwise specified all materials shall be new.

B. Vendor shall be responsible for defects in equipment and devices furnished by the Vendor. Exposed finishes and other features shall match in all respects. The Vendor alone shall be responsible for all errors of fabrication and for correct fitting of all components that must be erected and joined in the field.

4.8 CLEANING

A. Clean installed using methods and materials recommended in writing by manufacturer.

4.9 PROTECTION

A. Protect 400 Hz distribution equipment and facilities against damage, mechanical or

otherwise and provide maintenance until issuance of the Certificate of Substantial Completion. The 400 Hz distribution equipment shall be kept clean, dry, and protected.

4.10 DEMONSTRATION AND TRAINING

A. The Vendor shall provide start-up of the converter after installation and conduct on-site operation training.

B. Engage a factory-authorized service representative to train MDAD's maintenance personnel.

1) Train MDAD's maintenance personnel on procedures and schedules for servicing and maintaining equipment.
2) Review equipment list and data in maintenance manuals.
3) Conduct a minimum of 4 hours training as specified in instructions to MDAD maintenance representatives.

END OF SECTION

ITQ No.: MDAD-67621-JM

Exhibit D

PBB_SECTION_238122_POU_PCA_AHUs_ STUs_and_EQPT_17.04.12

SECTION 238122 – POINT-OF-USE PRE-CONDITIONED AIR SELF-CONTAINED DX UNITS, SERVICE TRANSPORT UNITS (STU'S), AND EQUIPMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. General and Supplementary Conditions and Division 01 specifications Sections. Apply to this Section.

1.2 GENERAL DESCRIPTION

A. This Section covers new pre-conditioned self-contained air cooled DX PCA units to service aircraft; self-contained air cooled DX units to cool Passenger Boarding Bridges (PBBs) and Fixed walkways. It also covers the installation of Boom-Air hose management system.

1.3 SCOPE OF WORK

A. Provide new PCA units to service aircraft; self-contained air cooled DX units to cool PBBs and Fixed walkways herein.

B. Provide new Hose Management System (Boom-Air) unit as specifications herein.

C. The Vendor shall employ a Professional Engineer registered in the State of Florida to prepare calculations and construction documents for aircraft pre-conditioned self-contained DX PCA units and associated equipment. The Delegated Engineer shall have a minimum of 5-years' experience in the design of this type of work.

1.4 SUBMITTALS

A. General: Submit the following manufacturer's data and shop drawings before ordering any materials, equipment or commencement of work:

1) Product data for selected model, including specialties, accessories and the following:

a) Unit performance curve with system operating conditions indicated.

b) Motor ratings and electrical characteristics plus motor and fan accessories.

c) Variable Frequency Drives.

d) Material, gages, and finishes.

e) Dampers, including housings, linkages, and operators.

f) Submit air filter manufacturer's technical product data including dimensions, weight, required clearances and access, flow capacity including initial and final pressure drop at rated air flow, efficiency and test method, fire classification, and installation instructions.

g) NEBB test apparatus certification report.

h) Unit air flow control, capacity control and defrost control.

i) Service transport units.

j) Hose Management System Unit (Boom-Air).

k) Flexible hoses.

l) Bridge air ducts.

m) PBB interface with PCA equipment: Installation details, field measurements, support details.

2) Shop drawing from manufacturer detailing equipment assemblies and indicating dimensions, weight, required clearance, components, and location and size of field connections.

3) Wiring diagrams that detail power, signal and control wiring. Differentiate between manufacturer-installed wiring and field installed wiring.

4) Maintenance data for complete new PCA unit with controller.

5) Maintenance data for complete new Boom-Air Hose Management System.

6) Maintenance data for all components.

1.5 COMPLIANCE REQUIREMENTS

A. ANSI/AHRI Compliance: Air filter equipment shall comply with ANSI/AHRI 850.

B. ASHRAE Compliance: Air filters shall comply with ASHRAE Standard 52 - latest edition for method of testing, and for recording and calculating air flow rates.

C. NFPA Compliance: Comply with applicable portions of NFPA 70, NFPA 90 A&B, for components and installation of air conditioning equipment.

D. NEMA Compliance: Motors, enclosures and electrical accessories shall comply with

NEMA standards.

E. ETL Compliance: All components used in the air handler unit shall be ETL or CSA listed or recognized.

F. Comply with the Florida Building Code – latest edition.

G. Comply with MDAD Design Guidelines Manual (DGM).

1.6 QUALITY ASSURANCE

A. It is the intent of this Contract that the aircraft PCA unit, the PBBs and Fixed walkways air-conditioning equipment, be obtained from a single manufacturer. The equipment manufacturer shall have experience in all areas of equipment design, manufacturing, supply and installation, aircraft cooling system design and analysis by in-house engineering and programming, development and installation of complete integrated monitoring and control systems. The Vendor shall have a minimum of three (3) prior installations at other airports of size, climate and complexity similar to Miami International Airport. This experience shall include systems where the Vendor has had turn-key responsibility direct to the Owner for system analysis, design, supply of all major equipment, installation, programming, testing, system start-up and training. All data base generation and other programming efforts shall be accomplished by in-house engineering/programming personnel employed by the Vendor.

B. The Vendor shall submit a record of experience for successfully completed operating systems that provide sub-freezing air to aircraft utilizing central ethylene glycol systems with thermal storage. The experience list shall include a summary of that Vendor's experience, including system location, Owner, major subcontractors and equipment suppliers used, on-line date and contact name and telephone number. The summary shall also name the individual engineers and programmers that the Vendor has employed to be involved in the project, their assignments and responsibilities for the three prior projects. The Vendor shall be responsible to directly supervise the installation of all bridge mounted equipment and controls. Such supervision shall be in the direct employ of the Vendor. This supervision effort shall not be subcontracted to a third party.

C. The Vendor shall coordinate all work to ensure that the resulting installed system functions as specified in all aspects. This coordination shall cover installation of equipment as well as interfaces with piping, power and controls.

D. The temperature control systems shall be warranted to be new and free of defects in material and workmanship under normal service and use for a period of 12-months from the date of Substantial Completion. If, within this period, any equipment proves defective, it shall be repaired or replaced at no cost to MDAD.

E. Equipment and material shall be catalogued products of manufacturers regularly engaged in the productions of temperature control systems. Products shall be manufacturer's latest

standard design and must have been tested and proven in actual use for low temperature systems.

F. It is the intention that certain items of major equipment, PCA units, air conditioning equipment, process instrumentation and controls be standardized throughout all parts of the system. The Vendor shall include in the equipment and material submittals evidence of such coordination between major equipment suppliers, including Trane/Cristopia, BRDG-TNDR Corporation, Honeywell, and Cavotec-Inet US, Inc. Airport Systems.

G. ANSI/AHRI Compliance: Air filter equipment shall comply with ANSI/AHRI 850.

H. ASHRAE Compliance: Air filters shall comply with ASHRAE Standard 52 - latest edition for method of testing, and for recording and calculating air flow rates.

I. NFPA Compliance: Comply with applicable portions of NFPA 70, NFPA 90A & B, for components and installation of air conditioning equipment.

J. NEMA Compliance: Motors, enclosures and electrical accessories shall comply with NEMA Standards.

K. UL (Underwriters Laboratory) Compliance: Air conditioning equipment handler units shall be UL-listed and labeled.

L. Comply with the Florida Building – current edition.

M. Comply with MDAD Design Guidelines Manual (DGM) available on request from MDAD.

N. The Vendor shall be fully responsible to directly supervise the installation of all PBB mounted and control equipment.

1) Coordination shall cover installation of equipment as well as interface of piping, power, and controls, etc. The Vendor shall coordinate the work to ensure the resulting installed system functions as specified in all respects.

2) All work related to attaching support brackets, members, etc. to PBBs shall be done at the loading bridge factory. All of this work, which must be field retrofitted, must be strictly coordinated with and performed under the direct supervision of the bridge manufacturer, who shall provide field supervision for this work.

1.7 DELIVERY, STORAGE AND HANDLING

A. Lift and support units with the manufacturer’s suggested lifting supporting points. Replace any supports that are damaged or rusted.

B. Provide units that do not require any disassembly and reassembly for movement into the final location following manufacturer's written instruction.

C. Deliver factory-assembled units to the extent allowable by shipping limitation, with protective crating and covering.

D. Store all equipment and material off the floor in a weather protected environment.

PART 2 – PRODUCT

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following.

1) Aircraft Pre-Conditioned Units:

a) Cavotec/INET US, Inc.

2) Air Filters:

a) American Air Filter Company.
b) Farr Company.
c) Eco Air.

3) PBB and walkway cooling units:

a) Temptrol.
b) Carrier.
c) Trane.

4) Aircraft Adapter Nozzle:

a) Cavotec/INET US, Inc.
b) J&B Aviation Services, Inc.
c) JBT Aerotech.
d) MCM Engineering.
e) US Airmotive GSE.

5) Preconditioned Air Hose Baskets:

a) Cavotec/INET US, Inc.
b) AirTech, Inc.
c) Trilectron Industries, Inc.
d) Aviation Systems, Inc.
e) BFM Transport Dynamics Corporation.
f) J&B Aviation Services, Inc.

2.2 GENERAL DESCRIPTION

A. Provide compact, light-weight, and low-noise, insulated, self-contained, air cooled, direct expansion PCA unit that can be mounted under the PBB such that the operational characteristics of the PBB are unrestricted and the bridge's structural integrity is uncompromised. It is MDAD's intent to have the air handling units hung underneath the bridge to the maximum extent possible. Acceptable location for mounting underneath the bridge include behind or in front of the bogie wheels. An alternate unit location of mounting on the bridge rotunda shall be allowed only where the maximum weight limitations of the PBB tunnels is exceeded.

B. The new self-contained DX PCA unit at the PBBs shall have a minimum of two distinct assemblies:

1) A weatherproof control assembly which contains the low voltage (Class II) logic and control circuits and,

2) The main blower/coil/refrigeration section, consisting of inlet filter(s), blower means of modulating air flow, evaporator coil, condensers, compressors, refrigeration accessories, applicable electrical strip heaters, complete motor starting equipment, outlet plenum and condensate drain pan to provide the required cooled or ventilated air to maintain the aircraft cabin temperature specified.

C. The DX PCA unit shall have the capacity required to sufficiently cool the largest designed aircraft, parked at each gate, as designated in Section 011000 - SUMMARY. Units serving wide-body gates shall also operate properly when serving a narrow-body aircraft at the same gate.

D. The blower shall be centrifugal type and sized for the appropriate volume airflow requirements. The unit size shall be selected so that the fan brake horsepower does not exceed the maximum required over the design operating range of the unit at the total static pressure.

E. Unit external static pressure shall be defined as the gauge pressure measured at the outlet of the air handling unit. The Vendor shall present the gauge pressure this unit can produce at its outlet and at the aircraft connection through 100feet of hose and with an aircraft adapter nozzle in the shop drawing submittal.

F. Horsepower shall be selected based on the equipment that affects the external resistance of the system. The Vendor shall furnish the fan motor and unit size adequate for final total static pressure and maximum brake horsepower requirements.

G. The construction of the unit shall be of a material sufficient to provide adequate structural rigidity for frame and enclosure; of a non-corrosive nature; and provided with thermal insulation for conditions encountered in normal usage. Equipment exterior shall be primed and painted to match the PBB. Equipment interior shall be manufacturer's standard. All

hardware shall be corrosion resistant, suitable for exterior use exposed to all weather conditions.

H. The maximum sound level for the DX PCA unit at maximum cooling shall not exceed 85 dBA at a distance of 14 feet from the unit. Sound power level radiated by the unit outlet and at the unit inlet when the unit is operated at the designated capacity shall be furnished with the shop drawing submittal.

I. Capacity control and defrost control shall be identified and explained in the shop drawing submittal.

J. Return air to the unit shall not be utilized.

K. Locate DX PCA Unit as required for proper access to the following:

1) Blower and VFD.
2) Filters.
3) Coils.
4) Compressors.

L. A condensate pump and drain pan shall be provided for each air handling unit. The condensate pump shall be lightweight, self-priming, and capable of running dry. Minimum pump rating shall be 3 gpm, 40-foot head, 1/3 hp or as required by the specific bridge configuration. Position the drain pan under the coil section. Drain pan shall be stainless steel with capability of complete drainage leaving no standing water in pan. Condensate pump shall be provided with a summer/winter switch or internal float switch actuated assembly

M. All DX PCA units shall be prepared with all necessary rails and mounting assemblies to be hung from the underside of the PBBs.

2.3 DX PCA UNIT CONTROL ASSEMBLY

The Controller assembly for the new DX PCA Unit shall be designed for mounting directly onto the PCA Unit or for mounting remotely from the PCA Unit.

H. The DX PCA Unit controller shall contain the following door mounted controls and displays:

1) Lighted ON and OFF push buttons. The ON push button shall be operable in the manual mode only.
2) Summary FAULT indicator (overloads, compressor circuits).
3) "Change Filter" light.

I. The controller shall contain the following operator controls located within the controller cabinet.

1) Auto/Manual Mode Switch.
2) Manual override controls (dials or keypad) to manually vary the outlet air temperature and air flow.
3) Manual secondary hose damper switch to open or close the second hose damper (jumbo gate air handler units only).
4) Connections for remote on/off push-button, aircraft type selector switch, cabin temperature sensor and remote monitoring system.
5) Connection for shutdown and display of smoke alarm indication.
6) Connection for PBB cooling functions and system network cabling.

J. The DX PCA Unit controller shall utilize direct digital control (DDC) using microprocessor technology for all control, regulation, modulation, alarm shut-down, and response to/from remote signals.

K. The controller shall automatically control the DX PCA Unit outlet air temperature in response to the cabin temperature as sensed by the companion cabin temperature sensor.

L. The controller shall automatically sense a failure of the cabin temperature sensor and automatically begin outlet air temperature control based upon sensed inlet ambient temperature. During this backup mode of automatic temperature control, the remote monitoring system shall be supplied with a signal indicating the failure of the cabin temperature sensor.

M. The controller shall, in addition to the above functions, provide for local data display and program updates with a laptop computer connected directly to the controller. In addition, the controller shall provide full networking capabilities and built-in control and monitoring communication means with remote devices including, as a minimum, the following points:

1) Air handler ON and OFF status and SUMMARY ALARM.
2) STOP Switch.
3) Designation of each alarm condition, by type.
4) Air outlet and ambient temperatures.
5) Motor speed as % of full rated speed if VFD.
6) Totalized PCA DX Unit running time.
7) Running time since last air filter change-out.
8) Readout of, and control of, both cabin temperature set point.
9) Readout of actual cabin temperature as measured by cabin temperature probe used by the controller logic.
10) Signal to prohibit starting the PCA DX Unit (enable/disable).
11) Readout of, and control of, mode changeover points and slope versus ambient temperature (backup temperature control in event of cabin temperature sensor failure).
12) Control of auto filter alarm timer set point.
13) Second hose status (open/closed) - Jumbo gates only.

14) Nighttime cabin temperature set-up mode control including on/off control, set-up temperature set point, mode automatic start and stop times and remote override capabilities to adjust start and stop times.
15) 400 Hertz gate box on/off and fault status.
16) PCA DX Unit mode of operation, i.e., aircraft cooling or PBB cooling.
17) Coil freeze up.

N. The PCA DX Unit controller shall contain an internal read-time clock with s battery of minimum 30-day life. The battery shall be capable of being changed without losing any internal history, such as total running time or time since last filter change.

O. The controller shall be capable of stand-alone automatic operation in the event of failure of the data/control network.

P. The controller assembly shall be housed in a NEMA 3R gasketed enclosure and be suitable for direct mounting on the blower/coil unit or remotely mounted.

2.4 CABIN TEMPERATURE CONTROL

A. Each gate shall be equipped with controls to automatically maintain the set cabin temperature within ± 2 deg F at the sensing point. This shall be by use of a small temperature probe connected to the system by way of a small cable and jack in the bridge cab.

B. The PCA Cabin Temperature Sensor assembly shall consist of a cord mounted sensor element mounted in a Delrin Plastic housing and a mating wall receptacle design for mounting in the cab of a PBB.

1) The sensor element shall be rated for ambient temperatures listed on ASHRAE Climatic Region Tables most stringent column, be an RTD or solid state element type and be fully compatible with the specified PCA DX Unit controller.
2) The sensor shall be housed in the Delrin plastic housing and provide full sealing of the sensor against all weather conditions. The upper end of the housing shall provide openings sufficient to provide necessary air flow across the sensor element while protecting the element form damage when in use or being stored. The sensor shall be connected to a neoprene retractable cable, 0.2" diameter, with three 2.3 AWG conductors. The cable length shall be approximately four feet retracted and twenty feet extended and be retrained to the sensor housing by a screw-on type waterproof strain relief with O-ring seat.

   The receptacle mating end of the cable shall be terminated with 90 deg angle, waterproof type plug with a screw cap for securing to the wall receptacle. The mating receptacle shall be mounted on a stainless-steel cover plate. A bracket shall be provided in the PBB cab next to the cover plate for easy storage of the sensor assembly when not in use.

2.5 PERFORMANCE SPECIFICATION OF PCA UNITS

A. Specification of PCA DX Units.

1) A wide-body PCA DX Unit shall be capable of delivering a minimum of 244 lb/min of 26 deg F air at the outlet of the unit. The unit shall be capable of 28 inches gage pressure, minimum at the outlet of the unit at the above flow and temperature conditions at summer design inlet conditions.
2) A Jumbo (A380) PCA DX unit shall be capable of delivering a minimum of 440 lb/min of 26 deg F air at the outlet of the unit. The unit shall be capable of 31 inches of gauge pressure, minimum, at the outlet of the unit at the above flow and temperature conditions at summer design inlet conditions.

B. All PCA DX units shall be capable of a 45 minute "pull down" for their respective heat "soaked" aircraft from a cabin temperature of 100 deg F to 80 deg F.

2.6 DX UNIT COMPONENTS

A. Casing: Manufacturer's standard casing construction, having corrosion protection coating, and exterior finish. Where the unit is provided as a utilized enclosure construction, casing shall have removable panels or access doors for inspection and access to internal parts; provide manufacturer's standard internal thermal insulation, knockouts for electrical and exterior condensate drain connection, and lifting provisions. Casing shall be prime coated prior to final assembly. Final color to match the PBB color.

B. Supply Air Blower:

1) The blower shall be forward curved, of the centrifugal type, direct drive fans; permanently lubricated motor bearings (where bearings are not accessible for greasing and sized for the appropriate variable volume airflow requirement.
2) Blower and Shafts: Statically and dynamically balanced and designed for continuous operation at the maximum rated fan speed and motor horsepower. Blower Shaft: Turned, ground and polished steel designed to operate at no more than 70% of the first critical speed at the top of the speed range of the fan's class.
3) Shaft Bearings: Provide bearings having a median life "Rating Life" (AFBMA L50) of 200,000 calculated in accordance with AFBMA 9 for ball bearings or AFBMA 11 for roller bearings.

C. Evaporator and Condenser Coils:

1) Coils shall be seamless copper tube type with aluminum plate fins and removable from the unit. Coils shall have a galvanized steel casing. Coils shall be mounted on the coil casing with same end connections accessible for service. The coils shall be removable from the unit. Coil section shall be completely insulated.
2) The number of tubes and fins spacing shall be submitted on coil selections made. Coils shall be constructed and tested in general accordance with ASHRE 15 - latest

edition and ANSI/AHRI 410.

3) Coils shall be proof tested at 400 psig and leak tested at 250 psig tested with air pressure under water, then cleaned, dehydrated and sealed with a holding charge of nitrogen.

D. Compressors and Related Components: Compressors shall be serviceable, hermetic "scroll type". Each refrigeration circuit shall have thermal expansion valves, filter drivers, sight glasses, fan cycling control for low ambient control to 45 degrees. Low pressure cutout, high pressure cutout compressor motor overload, manual reset, anti-recycling timer, adjustable low-ambient lockout, and compressor over temperature safety module.

E. Airflow Control: Airflow control shall be by variable frequency drive control.

F. Inlet Air Filters: Provide medium efficiency pleated disposable air filters suitable for installation in holding frames; with 2"-inch thick minimum for WB or NB units, 4"-inch thick minimum for jumbo units; constructed of non-woven cotton fabric type. The enclosing frame shall be constructed of rigid, heavy duty, high wet-strength beverage board to the filter pack materials. The filter media internal support shall have welded wire grid. Holding frames shall be fabricated metal construction complete. For WB and NB units, provide filter with rated face velocity of 500 fpm, initial resistance of not greater than 0.30-inch water gauge, final rated resistance of 0.50-inch water gauge and average arrestance of 80%. For jumbo units, provide filters with rated face velocity of 600 fpm. The filter rack and filters shall be sized such that the rate face velocity of the filters shall be sized such that the rated face velocity of the filters is not exceeded at specified DX Unit mass flow and design inlet ambient temperature conditions.

2.7 BRIDGE DELIVERY EQUIPMENT

A. Each PBB with the DX Unit at the cab end, shall be provided with a service transport unit (STU). Each STU shall carry services like, 400 Hz cables, condensate drain hoses, power to DX Unit, data/communication control, etc., to the PBB end in a single, low profile package.

B. Moving parts within the slides assembly of the STU shall be minimized. Cables and pulleys are not allowed in the operation of the STU. The STU shall be designed to allow easy access for maintenance and inspection at ramp level.

C. All gates with WB or NB DX Units shall be provided with a single primary air delivery hose. All gates with jumbo air handler units shall be provided with a primary and secondary hose. Each hose end shall be provided with an aircraft PCA connection nozzle, Milo mini-adapter, or equal, approved for use by the MDAD Project Manager/representative. In addition, all PBBs shall be provided with MD-80 extension hoses of suitable length to reach the aircraft PCA connection with a quick connect fitting to mate with the primary hose nozzle. The other end of the extension, hose shall include a sewn "ell/reducer" hose to minimize kinking of the hose when connected to the MD-80 aircraft and terminated with the same type of nozzle as the primary hose.

D. Air flexible hose shall be of the lightweight insulated type, maximum thermal conductance of 1.28 BTU/Hr /Ft /deg F, pressure rated for 50-inches of water maximum. Hose shall be flat when not in use, manufacturer by Flex-fab, Air Tech, Inc., or similar approved quality, 14-inch diameter flat type. Hose is to be supplied in sections of no more than 25-feet in length, connected by a closed nylon zipper device, or Velcro connectors with a 14- to 8-inch diameter reducing adapter on the end section.

E. Boom Air Hose Management System (hose storage and retrieval system) shall be provided for each PBB. Fully integrate the installation of units for A380 service and other aircraft to be serviced at the PBB.

2.8 BRIDGE TRANSPORT UNIT

A. The service transport unit (STU) shall meet the mechanical and electrical requirements for an Across the Bridge Service Transport Unit designed for top mounting on a two or three tunnel telescoping ramp drive PBB.

B. The general design and construction of the STU shall be in conformance with sound engineering practices and all equipment and material shall be new.

C. There shall be no cables and pulleys used in the operation of the device. The STU shall be mounted on the side or top of the PBB.

D. The complete STU shall be fully operational under the logical combinations of the following conditions:

1) Blowing winds up to 60 MPH in the operation mode and 186 MPH in the non-operational mode.
2) Ambient temperature range: 32 degF to 120 degF.
3) All components and connections shall be designed in accordance with FBC and ASCE - 7, latest editions.

E. The STU shall be capable of containing, protecting and transporting across the telescoping tunnels of the PBB, DX Unit power cable ,400 HZ power cable AHU condensate drain hose, network cable and control cable.

F. The assembly shall consist of two (for 3 tunnel bridges) identical sliding tubes within a main box, designed to mount at three (3) tunnel passenger loading bridge. The sliding tubes and box will extend and retract in synchronism with the movements of the PBB.

G. When installed on the PBB, the STU shall permit the PBB to fully extend and react (within normal operating limits) without limiting or restricting PBB movement or imposing excessive loads on the PBB structure.

H. The main box and sliding tube shall be constructed of aluminum.

I. The main box shall have a three-piece top cover. The top shall be made of aluminum sheet. The top shall be removable for ease of access to interior components.

J. Each sliding tube shall have sealed ball bearings mounted under the inboard side of the tube to allow for smooth movement.

K. The brackets that support the STU shall be designed to be welded or bolted to the structural members of each PBB tunnel.

L. The STU shall be supplied complete with mounting brackets, support assemblies and hardware to secure to the PBB, either in the field or at the PBB factory. Each bolted joint shall be provided with washers and lock nuts.

M. The exterior surfaces of the STU shall be painted to match the PBB.

N. PCA DX Unit Power Cable:

1) The air handler power cable shall be compatible with the size and configuration of the AHU, design ambient temperature conditions and local codes. Cable to be Type W Round with EP insulation, neoprene jacket rated 600/2000 volt, UL listed and 4 conductor #1/0 AWG max.
2) The cable shall be continuous from a junction box at the Terminal building to a junction box at the aircraft end of the PBB.

O. 400 Hertz Power Cable

1) The 400 Hertz power cable shall be compatible with the size and configuration of the 400 Hertz central system power, design ambient temperature conditions and local codes. Cable to be Type W round with EP insulation, neoprene jacket and rated 600/2000 volt, 4 conductors 2/0 AWG max.
2) The cable shall be continuous from a junction box at the Terminal building to the Aircraft Service Cabinet at the aircraft end of the PBB.

P. Network Cable

1) A cable shall be provided for system monitoring of the Pre-Conditioned Air System and PBB and Fixed Walkway units. The cable shall consist of three (3) twisted shielded pair single jacket daisy chain installed in conduit. Conduit size one- (1") minimum (larger diameter where required). The cable shall be Belden 9773-18/3TSP. Provide Belden 9774 18/4 TSP from j-box to STU. All cables shall be UL recognized.
2) The cable shall be continuous from the network terminal box at the building to a terminal box or DX Unit controller located at the aircraft end of the PBB.

Q. Control Cable

1) A single control cable shall be provided to provide for control of components located external to the DX Unit, including any bridge exhaust fans, smoke detectors, boost pumps and control valves. The cable shall provide the required number and type of conductors to provide of those devices where specified.

2.10 PBB AND FIXED WALKWAY COOLING

A. The Vendor shall furnish PBB cooling and Fixed Walkway cooling at each gate as required. Provide self-contained, air cooled DX units to accomplish PBB and Fixed Walkway cooling.

B. Controls for PBB and Fixed Walkway units shall be located at the entrance to the PBB.

C. Temperature controls shall be protected from damage.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Furnish all necessary support, brackets, guard posts, safety rails, etc. for properly installing all air-handling units. Field verify bridge connection points prior to manufacturer of supports.

B. Install units to provide access space around PCA units for service and maintenance.

C. The DX Units shall be properly aligned, adjusted and lubricated and field tested before final acceptance.

D. Perform water and air system testing and balancing.

E. Apply color coded physical hazard stripe on PCA unit in accordance with manufacturer's suggested practice.

3.2 CONNECTIONS

A. Connect unit to condensate drain piping.

B. Connect unit to electrical power wiring.

C. Connect unit to control system.

D. Coordinate location of outside air louvers with bridge stairs prior to ordering and installing PCA units. On 3-tunnel bridges outside air intake shall be opposite the bridge stairs.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Inspection: Arrange and pay for a factory authorized service representative to perform the following:

1) Inspect the field assembly of components and installation of air handling units including ductwork and electrical connections.
2) Prepare a written report on findings and recommended corrective actions.

3.4 ADJUSTING, CLEANING, AND PROTECTING

A. Check dampers for proper damper operation.

B. Clean unit cabinet interiors to remove foreign material and construction dirt and dust. Vacuum clean fan wheel and cabinet.

C. Provide factory paint touch kits and remove any surface rust and re-finish as required to prevent corrosion and rust.

D. Insulate unit cabinet to prevent condensation.

E. Check and adjust condensate float switch. Check that the hose is not obstructed in anyway.

F. Clean and comb EG/W cooling coil fins.

3.5 COMMISSIONING (Refer to Section 019113)

A. Final checks before start-up: perform the following operations and checks before start-up:

1) Remove shipping, blocking and bracing.
2) Verify that the unit is secure on mountings and supporting devices and that connections for piping, ductwork, and electrical wiring are complete. Verify proper thermal overload protection is installed in motors, starters and disconnects.
3) Perform cleaning and adjusting specified in Section.
4) Lubricate bearings and other moving parts with manufacturer recommended lubricants.
5) Verify manual and automatic volume controls.
6) Disable automatic temperature control operators. Reconnect and verify their proper operation.

B. Starting Procedures for DX Unit:

1) Energize Unit: Verify proper operation of compressors, motor, drive system, blower wheel, condenser fan and controls. Replace faulty components as required.
2) Measure and record electrical value for voltage and amperage for the DX Unit.
3) Check and demonstrate automatic operation of smoke detectors.

4) Check and demonstrate variable frequency drive operation for wide body and narrow body aircrafts.

C. Refer to Division 23, Section 230594 – PCA Test and Balance for procedures for testing, adjusting and balancing PCA cooling systems, PBB and Fixed Walkway cooling systems.

3.6 DEMONSTRATION

A. Demonstration Services: The Vendor shall arrange and pay for a factory-authorized service representative to train MDAD's maintenance personnel on the following:

1) Procedures and schedules related to start-up and shutdown, troubleshooting, servicing, preventative maintenance, and how to obtain replacement parts.
2) Familiarization with contents of Operating and Maintenance Manuals specified in Division 23, Section 230010, PCA General Requirements.

B. The Vendor shall schedule training with at least seven- (7) days advance notice.

3.7 TRAINING

A. During the checkout and test phases, the appropriate MDAD personnel shall be invited to witness and to receive over-the-shoulder operation/adjustment training. Immediately prior to or within one week after Substantial Completion, the Vendor shall conduct a five-day training class for up to 12 MDAD Maintenance Personnel. The class shall consist of 50% classroom and 50% hands-on operation. This class shall be aimed at operating and maintenance personnel for basic operation, preventative maintenance, adjustments, and initial fault response.

B. The Vendor shall arrange and pay for a factory authorized representative to assist in training.

END OF SECTION

ITQ No.: MDAD-67621-JM

Exhibit F

Environmental Management System

ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

MDAD's Maintenance Unit has identified those operations and activities that are associated with the identified significant environmental aspects in line with the environmental policy of MDAD Maintenance's Environmental Management System (EMS) mentioned above. The EMS will continuously be establishing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the organization and will be communicating relevant procedures and requirements to suppliers and Contractors.

These procedures include but are not limited to MDAD's Maintenance Unit Operational Controls (OCS) which cover a variety of activities. The Contractor shall adhere to the following OCS as applicable:

OC-l CHEMICALS AND CHEMICAL WASTE HANDLING & DISPOSAL

Right to Know Centers are located in all shops and are equipped with Material Safety Data Sheets (MSDS) listed in alphabetical order for all chemicals utilized at that shop location. Ensure oily/combustible scrap, debris, and waste materials (oily rags, etc.) are always stored in covered metal receptacles and disposed of promptly.

OC-3 ELECTRIC LAMP DISPOSAL

Fluorescent lamps need to be handled and disposed of carefully. When one breaks or implodes, it releases mercury into the environment, and anyone nearby may be exposed to the vapors. Used lamps shall be stored so they do not break in original shipping container or other approved containers.

All disposal containers must be properly labeled with the words "USED LAMPS" and delivered to the warehouse at east end of Building 3040 for disposal and recycling.

OC-4 BALLAST DISPOSAL

Never dispose PCB-containing ballasts in trash can or dumpster.

Dispose of PCB-containing ballasts into an MDAD-provided 55-gallon steel drum that will be closed and labeled with the words "PCB Ballasts”.

OC-5 GENERAL BATTERY DISPOSAL

Do not dispose of any batteries in the trash.

Dispose of spent batteries in designated PVC plastic containers located at each shop and labeled "Used Batteries" with a DOT Class 8 secondary label.

OC-6 COMPRESSED GASES/AEROSOL CAN HANDLING, USE, STORAGE & DISPOSAL All cylinders must be legibly marked at the shoulder with the gas content and must not be easily removable.

Compressed gas cylinders in Contractor vehicles and or temporary jobsites will be secured in carts or storage areas with a strap above its center of gravity and capped with a threaded-valve protection cap.

Cylinders, valves, couplings, regulators, and hoses will be kept free from oily or greasy hoses. Users of oxygen cylinders must have oil-free hands, clothes, and gloves.

OC-8 SPILL CLEANUP

If you encounter a spill, secure the area with safety devices. Do not touch an unknown substance.

Call MDAD control room (OCR at 305-876-0385) for spill notification, see the number also on the back side of your ID badge. Only properly trained employees shall clean up unknown spills.
For known substances, follow label and MSDS directions. Use proper personal protective equipment (PPE) and absorbent material to control and collect the spilled material. Remember to follow Spill Pollution Control Countermeasures Plan (SPCCP) cleanup procedures for spills greater than 5 gallons for any petroleum products. The SPCC Plans are available at each shop.

OC-9 HANDLING & STORAGE OF FERTILIZER & PESTICIDES

When handling pesticides mix carefully to avoid spills, use appropriate personal protective equipment (PPE); when finished wash your hands thoroughly with soap, before handling food, drinking or smoking. Pesticide containers must be rinsed 3 times and punctured to prevent re-use. Discard in a designated disposal location - NEVER REUSE CONTAINERS.

Refrigerant Management

A certified HVAC technician must properly capture, transport and dispose of any excess refrigerant removed from MDAD equipment.

Equipment Disposal and Removal

Before any mechanical equipment is relocated, drained of its contents or disposed of, it must be reported to the MDAD Project Manager for approval.

Hazardous Material Control

Prior to bringing hazardous material on site a Material Safety Data Sheet (MSDS) must be provided to the job superintendent and kept on file and accessible throughout the full term of the job.

Handling and Disposal of Hazardous Waste

Hazardous waste generated by Service/Maintenance Suppliers and Construction Contractors must be adequately documented, transported outside MDAD property and disposed in accordance to all applicable federal, state and local requirements.

Medical Waste

The Contractor shall adequately dispose of their own medical waste generated while performing services on MDAD property.

Trash Management

The Contractor shall adequately dispose of their own trash generated while performing their services on MDAD property. The Contractor shall adequately dispose of their own waste generated while performing construction services on MDAD property.

BID BOND

State of _____ **County of** _____
We, _____ **as Principal**
and _____ **as Surety**, are held and firmly bound unto Miami-Dade County, Florida hereinafter called the County, in the **Penal sum of** _____**Dollars** ($ _____)[1] lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. The Principal has submitted the attached Bid, **dated**_____, 20___, for **Project Name:** Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) **Bid No:** MDAD-67621-JM.

The Principal shall at time of bid opening furnish all documents and information required by the Contract Documents, and shall not withdraw said Bid within the time stipulated in the advertisement for bids and shall within the time stipulated in the Instructions to Bidders execute and deliver to the County, the Contract Summary, Performance Bond, Payment Bond, and satisfactory evidence of all required Insurance. The Principal shall give a Performance and Payment Bond with good and sufficient surety, as required by the Contract Documents, for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith. Having met these obligations shall render this Bond void and of no effect; or in the event of withdrawal of said Bid within the period specified, or in the event of the failure to comply with the Contract Documents, or in the event of failure to enter into such Contract and give such Bonds and evidence of insurance within the time specified, if the Principal shall pay the County the difference between the amounts specified in said Bid and the amount for which the County may procure the required work and supplies, provided the latter amount be in excess of the former, then the above obligations shall be void and of no effect; otherwise, to remain in full force and virtue.

The above parties have caused this Bond to be executed by their appropriate officials as of the____ day of _____, 20___.

CORPORATION

_____ _____
Witness **By:**
_____ **Title** _____

PARTNERSHIP OR JOINT VENTURE *

_____ _____
Witness **By:**
_____ **Title**_____

_____ _____
Witness **By:**
_____ **Title** _____

* Note: All Partners or Joint Venture Members shall sign and submit documentation proving their authority to sign on behalf of the Partnership or Joint Venture.

(Corporate Seal)

COUNTERSIGNED BY RESIDENT FLORIDA AGENT OF SURETY: **SURETY:**

_____ _____
By: Attorney-in-Fact

(A copy of Agent's current Identification Card as issued by State of Florida Insurance Commissioner must be attached.)

(THIS FORM MUST BE SUBMITTED IN DUPLICATE - ONE ORIGINAL AND ONE COPY)

[1] **Bid Bond equivalent to five percent (5%) of the Bid Price**

SURETY PERFORMANCE BOND

By this Bond, We _____, as Principal, whose principal business address is , as Contractor under the contract dated _____, 20 ___, between Principal and Miami-Dade County for the construction of Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) Bid No: MDAD-67621-JM. (herein after referred to as "Contract") the terms of which Contract are incorporated by reference in its entirety into this Bond and _____
, a corporation, whose principal business address is _____

_____
as Surety, are bound to Miami-Dade County (hereinafter referred to as "County") in the sum of _____ (U.S. dollars) $_____,[1] for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs all the work under the Contract, including but not limited to guarantees, warranties and the curing of latent defects, said Contract being made a part of this bond by reference, and in the times and in the manner prescribed in the Contract, including any and all damages for delay; and

2. Pays County all losses, damages, including damages for delay, expenses, costs and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Contract, including but not limited to a failure to honor all guarantees and warranties or to cure latent defects in its work or materials within the time period provided in Section 95.11(3)(c), Florida Statutes; and

3. Performs the guarantee of all work and materials furnished under the contract for the time specified in the Contract, including all warranties and curing all latent defects within the time period provided in Section 95.11(3)(c), Florida Statutes;

then this bond is void; otherwise it remains in full force.

Surety specifically assumes liability for any and all delay damages arising from Principal's default of the Contract, as well as all latent defects uncovered in the work of the Principal after final acceptance of the work by the County.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

This Bond shall remain in full force and effect for such period or periods of time after the date of acceptance by the County of the Contract work as are provided for in the Contract by which Principal guarantees to repair or replace any or all work performed or materials and equipment furnished, which were not performed or furnished according to the terms of the Contract. If no specific periods of warranty are stated in the Contract for any particular item or work, material or equipment, the warranty shall be deemed to be a period of one (1) year from the date of final acceptance by the County; provided however, that this limitation does not apply to suits seeking damages for latent defects in materials or workmanship, such actions being subject to the limitations found in Section 95.11(2)(b), Florida Statutes.

SURETY PERFORMANCE BOND (Cont'd)

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the _____ day of _____, 20 __.

CONTRACTOR

_____
(Contractor Name)

BY:

_____
(President) (Managing Partner or Joint Venturer)

(SEAL)

COUNTERSIGNED BY RESIDENT
FLORIDA AGENT OF SURETY:

SURETY:

_____

_____
(Copy of Agent's current
Identification Card as issued by
State of Florida Insurance Commissioner must be attached)

By: _____
Attorney-in-Fact

(CORPORATE SEAL)

(Power of Attorney must be attached)

[1] **Performance Bond must be equivalent to one hundred percent (100%) of the Contract price.**

SURETY PAYMENT BOND

By this Bond, We _____, as Principal, whose principal business address is _____, as Contractor under the contract dated , 20 ___, between Principal and Miami-Dade County for the construction of Project: Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) Bid No: MDAD-67621-JM. (herein after referred to as "Contract") the terms of which Contract are incorporated by reference in its entirety into this Bond and _____, a corporation, whose principal business address is _____
as Surety, are bound to Miami-Dade County (hereinafter referred to as "County") in the sum of _____ (U.S. dollars) $_____,[1] for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1.Promptly makes payments to all claimants, as defined in Section 255.05(l), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract; provided, however, that any action instituted by such claimant under this paragraph for payment must be in accordance with notice and time limitation provisions in Section 255.05(2), Florida Statutes; and

2. Pays County all losses, damages, expenses, costs and attorney's fees, including appellate proceedings, that County sustains because of a failure by Principal to make any such payments;

then this bond is void; otherwise it remains in full force.

A claimant shall have a right of action against the Principal and the Surety for the amount due it. Such action shall not involve the County in any expense.

A claimant, except a laborer, who is not in privity with the Principal and who has not received payment for its labor, materials, or supplies shall, within 45 days after beginning to furnish labor, materials, or supplies for the prosecution of the work, furnish the Principal with a notice that it intends to look to the bond for protection. A claimant who is not in privity with the Principal and who has not received payment for its labor, materials, or supplies shall, within 90 days after performance of the labor or after complete delivery of the materials or supplies, deliver to the Principal and to the Surety written notice of the performance of the labor or delivery of the materials or supplies and of the nonpayment.

No action for labor, materials or supplies may be instituted against the Principal or the Surety unless both notices have been given. No action shall be instituted against the Principal or the Surety on the bond after one (1) year from the performance of the labor or completion of delivery of the materials or supplies. A claimant may not waive in advance its right to bring an action under the bond against the surety.

Any changes in or under the Contract Documents and compliance or non-compliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

SURETY PAYMENT BOND (Cont'd)

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the _____ day of _____, 20___.

.

(CONTRACTOR)

_____
(Contractor Name)

BY:

_____
(President) (Managing Partner or Joint Venturer)

COUNTERSIGNED BY RESIDENT FLORIDA AGENT OF SURETY:

SURETY:_____

(Copy of Agent's current Identification Card as issued by State of Florida Insurance Commissioner must be attached)

By: _____
Attorney-in-Fact

(CORPORATE SEAL)

(Power of Attorney must be attached)

[1] **Surety Payment Bond must be equivalent to one hundred percent (100%) of the Contract price.**

Miami-Dade County
Contractor Due Diligence Affidavit

Per Miami-Dade County Board of County Commissioners (Board) Resolution No. R-63-14, County Vendors and Contractors shall disclose the following as a condition of award for any contract that exceeds one million dollars ($1,000,000) or that otherwise must be presented to the Board for approval:

(1) Provide a list of all lawsuits in the five (5) years prior to bid or proposal submittal that have been filed against the firm, its directors, partners, principals and/or board members based on a breach of contract by the firm; include the case name, number and disposition;

(2) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has defaulted; include a brief description of the circumstances;

(3) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

All of the above information shall be attached to the executed affidavit and submitted to the Procurement Officer overseeing this solicitation/ contract/purchase order. The Vendor/Contractor attests to providing all of the above information, if applicable, to the County.

NOTE: "Pursuant to Florida Statutes s. 92.525, under penalties of perjury....." vendors who are unable to obtain a Notary Public during the COVID-19 declared emergency are permitted to use the below declaration in lieu of (notarized) affidavits for responses to solicitations.

Written Declaration: Pursuant to Florida Statutes s. 92.525, under penalties of perjury, I declare that I have read the foregoing Contractor Due Diligence Affidavit and that the facts stated in it (attached to it) are true.

Contract No. :

Federal Employer Identification Number (FEIN):

Contract Title:

Printed Name of Affiant | Printed Title of Affiant | Signature of Affiant

Name of Firm | Date

Address of Firm | State | Zip Code

Notary Public Information

Notary Public – State of _____ County of _____

Subscribed and sworn to (or affirmed) before me this _____ day of, _____ by _____

_____ He or she is personally known to me or has produced identification

_____

Signature of Notary Public | Serial Number

_____ _____

Print or Stamp of Notary Public | Expiration Date | Notary Public Seal

rev. COVID-19 declared emergency

SMALL BUSINESS DEVELOPMENT
CERTIFICATE OF ASSURANCE

SMALL BUSINESS PARTICIPATION ON COUNTY A&E AND DESIGN/BUILD PROJECTS

This completed form must be submitted with proposal documents by all proposers on a Miami-Dade County project with Small Business Enterprise ("SBE") program measure(s).

Project No.: _____ Project Title: _____

Name of Proposer: _____ FEIN _____

Address: _____ City _____ State _____ ZIP _____

Telephone Number: _____ Email address: _____

The proposer is committed to meeting the established SBE measure(s) assigned to this project:

_____% SBE-A/E, _____% SBE-Con, _____% SBE-G, and/or _____% SBE-S.

(For Goals, write in the percentage. For Set-aside, put a check mark or x.)

To satisfy the requirements for Step 1 –Proposal Submittal and Compliance with Small Business Enterprise Program Measure(s), the following is required:

1. Acknowledge the SBE program measure(s) (i.e., *SBE-Architecture & Engineering, SBE-Construction, SBE-Goods and/or SBE-Services*) established for this project via this Certificate of Assurance.
2. Acknowledge and confirm that there is an established relationship with the certified Miami-Dade County Small Business Enterprise firm(s) to be subcontracted to achieve the established SBE program measure(s) as indicated in the Project Documents.
3. Acknowledge that all SBE-A/E firms are properly listed on the Letter of Qualifications submitted as part of the proposal documents and will be utilized, if selected to provide services based on their approved technical certification(s) required for the project.

To satisfy the requirements for Step 2 – Proposal Evaluation and Recommendation for Award, please attest that:

I understand that my company will be deemed non-compliant and not eligible to be considered for an award if I fail to (1) submit this Certificate of Assurance with my proposal documents, or (2) complete the Utilization Plan listing all certified Miami-Dade County SBEs to be subcontracted to satisfy the project's established SBE measure(s) via the County's Business Management Workforce System ("BMWS"), within the specified time frame, upon email notification from Small Business Development ("SBD") or BMWS. Each SBE-A/E sub-consultant listed on the Letter of Qualifications must confirm their sub-contractual relationship (i.e., work to be performed, and the value or percentage of said work) in the Utilization Plan via BMWS, for approval by SBD.

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

BEFORE ME, an officer duly authorized to administer oaths and take acknowledgement, personally appeared _____, who being first sworn deposes and affirms that the provided information statements are true and correct to the best of his/her knowledge information and belief.

_____

Prime Proposer's Signature (Owner/Officer)

SWORN TO and subscribed before me this _____ day of _____, 20_____

_____

Signature of Notary Public-State of Florida

My Commission Expires:

ADDENDUM NO. 1

DATE: APRIL 18, 2023

TO: ALL PROSPECTIVE BIDDERS

SUBJECT: Solicitation No. MDAD-67621-JM

TITLE: Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400Hz System at MIA

This Addendum becomes a part of the subject solicitation.

A. The following are changes to the solicitation.

1. The Bid Closing date for Solicitation No. MDAD-67621-JM, has been extended through 2:00 p.m., on May 5th, 2023.

2. PART II, Section 3.A, has been revised as follows:

3. Please delete Exhibit A – Small Business Development Division, Project Worksheet, in its entirety and replace it with the revised attached Exhibit A – Small Business Development Division, Project Worksheet.

4. The following sections have been added to PART II of the solicitation document:

   8. **Bid Guaranty**
   8.1 Each Bid must be accompanied by a bid guaranty in the form of a Cashier's or certified check on any national or state bank, made payable to Miami-Dade County, Florida, or a Bid Bond equivalent to five percent (5%) of the Bid Price prepared on the form attached hereto, duly executed by the Bidder as Principal and having a Surety thereon meeting the requirements set forth in the Bid Documents. Proceeds of bid guaranty checks will be held by the County without interest to the Bidder. Failure to include the specified Bid Guaranty shall render the Bid non-responsive.

   8.2 The Bid guaranty furnished shall be in an amount not less than five percent (5%) of the Total Amount Bid, including all alternates.

   8.3 All checks submitted as a Bid guaranty will be cashed and the proceeds returned after the bid opening to all but the three (3) apparent lowest bidders. The proceeds of the remaining cash Bid guarantees will be returned after the County and the successful Bidder have executed the Contract for the Work. The County will return the proceeds of all checks submitted as bid guaranty. No interest will be paid on Bid Guaranties.

   8.4 Bid Bonds will not be returned to any Bidder.

9. **Power of Attorney and Countersignature**

9.1 Attorneys-in-fact, who sign the Bid Bond, Performance Bond and Payment Bond, must file with such Bonds, certified copies of their current power of attorney to sign such Bonds. All Bonds must be countersigned by a Florida Resident agent of the Surety, with a copy of the agent's current identification card, as issued by the State of Florida Insurance Commissioner, attached thereto.

10. **Community Workforce Program**

Prior to entering into a contract and according to the Miami-Dade Code 2-1701 and amended by Ordinance 13-66, the contractor on a construction contract subject to a Community Workforce (CWP) goal, must submit a Small Business Development (SBD) through the contracting officer, a workforce plan outlining how the CWP goal will be met. Additional information, including the Workforce Plan forms, are available at https://www.miamidade.gov/smallbusiness/construction-contract-requirements.asp#0.

The contractor must submit a Workforce Plan to the Miami-Dade County Internal Services Department, Small Business Development Division within fifteen (15) days of notification of award of the contract. The County will not enter into the contract until it receives the contractor's Workforce Plan and deems the Plan acceptable.

B. The following Exhibits have been added to the Solicitation document, and enclosed to this Addendum:

Exhibit G – Bid Bond
Exhibit H – Surety Performance Bond
Exhibit I – Surety Payment Bond

C. The following are the pre-bid questions received and corresponding County responses:

Q1. In order to have enough time to prepare our proposal the best way possible, we kindly request an extension to send our questions until Tuesday April 18th and an extension to submit our proposal until Wednesday May 10th.

Answer: Please refer to PART A, Section 1, for the revised Bid Closing Date.

Q2. Could you please provide the sign-in sheet from the pre-bid conference?

Answer: Please find attached a copy of the sign-in sheet from the pre-bid conference.

Q3. Is a Bid Bond required for this project?

Answer: Please refer to PART A, Section 4, of this Addendum.

Q4. PART III, Section 16.1 - The Contractor will provide Preventative Maintenance Inspection (PMI) services, including all labor, material and equipment for a three (3) year period following expiration of the Warranty Period listed above. The Pricing Form only gives option to state one pricing, can you advise if the price quoted will be to be held for the three years or the contractor has the option to adjust prices after the first year?

Answer: The price quoted in PART IV, Pricing Form, Section C, of the ITQ, shall be inclusive of all costs associated with providing the Preventative Maintenance Inspection (PMI) described in PART III, Section 16, of the ITQ. The rate is to be quoted, per gate, per month.

Q5. The PMI is only to contain the equipment currently included the ITQ specs per gate?

Answer: The PMI required under PART III, Section 16, of the ITQ, is to include all point of use (POU) PCA and 400Hz units. Plant 400Hz service cabinets and water cabinets are not included.

Q6. PART VI., Pricing Form - The Bidder's prices per this Section shall be inclusive of all costs associated with providing the Extended Warranty and Support Services described PART III, Section 16. Pricing form has the UOM Monthly, per gate and the Preventative Maintenance Inspections 400 Hz POU and PCA Point of Use Air Handler System Maintenance; are both conducted quarterly and annually. Can you please clarify if the cost of the quarterly and annual inspections for each gate, would then be averaged out and stated monthly?

Answer: Yes. The cost of the quarterly and annual inspections for each gate are to be included in PART VI., Section C, of the ITQ.

Q7. Preventive Maintenance Pricing – Can you please confirm that the monthly price quoted for the PMI, would remain effective for the three years?

Answer: The price quoted for PART IV., Section C, of the ITQ, is to remain firm for the entire term of the contract.

Q8. Preventive Maintenance – Since the PMI will be initiated after the warranty expires, can you advise how any Corrective Maintenance labor needed would be invoiced to MDAD?

Answer: All labor associated with the services to be provided under Section16, Extended Warranty and Support Services is to be included in the monthly rates submitted under PART VI., Section C, of the ITQ.

Q9. Since the PMI will be initiated after the warranty expires, can you advise how the cost of the replacement part is to be invoiced to MDAD?

Answer: The cost of the replacement parts will be invoiced in accordance with PART III, Section 16.4, of the ITQ.

Q10. Is CWP applicable to this solicitation?

Answer: Yes, please refer to Part A, Section 5, of this Addendum.

Q11. Please provide location on plans to where the room F1812 is located.

Answer: Please refer to Dwg. E-300. This is the main switchgear room, which is also shown on several other drawings.

Q12. Please provide interior pictures for the F1812 for installation purposes.

Answer: Please refer to the Scope of Work, and drawings provided with the Solicitation document.

Q13. Please provide interior pictures for conduit routing to the different gate's feeds.

Answer: Please refer to the Scope of Work, and drawings provided with the Solicitation document.

Q14. What type (EMT, IMC, GRS, PVC) of conduit is required to be used?

Answer: Please refer to drawings. Underground conduits can be RGS or PVC encased in concrete. Above ground conduits must be IMC or RGS above ground on first level or where physical damage is possible. EMT on elevations above 8'-0", second level or above. Aluminum conduit must be used in all 400 Hz applications.

Q15. What is the AIC rating required for the new enclosed circuit breakers feeding the jetways?

Answer: This project does not affect the electrical service to the PLB's (or Jetways). This project only affects equipment for the PCA and 400 Hz systems serving the aircraft.

Q16. Feeders for Gate F23 are to be new from SWBD DSC, are we supposed to provide new breaker in the swithgear or is there an existing breaker already in the unit. If a new breaker is required, can we have a picture of the name tag of the switchboard to procure the correct breaker?

Answer: Drawings require new trip setting units to be provided per switchboard schedules. Existing breakers in both switchboards have been tested and refurbished (under a separate contract) and are in good working condition.

Q17. Feeders for Gate F10 are to be new from SWBD DSB, are we supposed to provide new breaker or is there an existing breaker already in the unit. If a new breaker is required, can we have a picture of the name tag of the switchboard to procure the correct breaker?

Answer: Drawings require new trip setting units to be provided per switchboard schedules. Existing breakers in both switchboards have been tested and refurbished (under a separate contract) and are in good working condition.

Q18. For each of the gates there is an existing pull box from where we are feeding the line gutter. How do we tap inside the pull box?

Answer: How taps are made is a means and method issue by the contractor. The method for making taps is up to the contractor's preference, as long as it is code compliant. The existing pullboxes are sufficiently sized to make any needed electrical tap for feeders serving new line gutters.

Q19. Request for time extension to evaluate equal equipment substitution.

Answer: Please refer to Part A, Section 1 of this Addendum.

Q20. Gate F21 is shown as new work on Electrical drawings. However, the ITQ shows no work to be performed on F21. Please clarify.

Answer: No work is to be performed at Gate F21.

Q21. Exhaust Fans- The current sequence of operations for all recently installed Exhaust fans, will use the Existing Smoke Detector installed in the throat of the gate. Upon activation the smoke activation, thru programming the Fire Alarm control module will activate and shut down the Exhaust fan. Therefore, not having the need for Duct detectors. Please confirm if we can use this sequence.

Answer: Please refer to mechanical drawings (Exhibit E) which show the still valid sequence of operations and how fans are controlled.

Q22. Exhaust Fans - During pre-bid I asked the question regarding the controllers for the exhaust fans. I was told that they were taken out and a simple starter will be used. Plan Sheet M/P 500 is still showing the using the controllers (vfd). Please clarify?

Answer: Please refer to mechanical drawings (Exhibit E) which show the still valid sequence of operations and how fans are controlled.

Q23. Project Duration- Due to the long lead times on equipment delivery dates, the specified time of 384 days to complete this project is totally unreasonable. Please consider extending the project duration.

Answer: The project duration provided in the ITQ document will remain at 384 calendar days from issuance of Notice to Proceed. Please refer to PART III, Section 4, Extension of Time and Classification of Types of Delays, for information on how delays will be addressed with the awarded Contractor.

Q24.Time Extension- We would like to request an extension to the bid due date, this will allow us to process all the answers from the RFI's and adjust our pricing accordingly.

Answer: Please refer to Part A, Section 1 of this Addendum.

Q25. Invitation to Quote, page 5 of 31, section 5. Performance/Payment Bond Requirements. Can you please clarify if a Bid Bond is required. If yes, can you please provide the amount (e.g., 5%, 10%, etc. of the contract value). We understand that a Payment & Performance is required, but it is not clear if a bid bond is also required.

Answer: Please refer to Part A, Section 5 of this Addendum.

Q26. Can you kindly clarify if Boom Air hose management systems are required in all of the 18 gates. It is mentioned in Exhibit D but no mention of it in the ITQ document. See below:

Exhibit D
1.2 GENERAL DESCRIPTION
A. It also covers the installation of Boom-Air hose management system.
The Invitation to Quote (ITQ)

PART III. SCOPE OF WORK/TECHNICAL SPECIFICATIONS, does not state Boom Air Hose management as part of the equipment scope.

Answer: The Scope of Work (Sections K, L, U, and V) refers to J & B Aviation JB680 Hoses Reel or approved equals.

Q27. For all Gate locations G4, G6, G16 and G19 Remove existing equipment if existing and install a new potable water cabinet Semler SI-100 or approved equal with side mounted connections including all power and water supply lines as required to deliver a fully functional system. Four (4) locations.

Answer: For all Gate locations G4, G6, G16 and G19 Remove existing equipment if existing and install a new potable water cabinet Semler SI-100 or approved equal with side mounted connections including all power and water supply lines as required to deliver a fully functional system. Four (4) locations.

All other information remains the same.

Miami-Dade County,

Juliana Manjarres
Aviation Purchasing Specialist

c: Clerk of the Board

Addendum No. 1

ITQ No.: MDAD-67621-JM

Exhibit A

Small Business Development Division, Project Worksheet

Small Business Development Division

Project Worksheet

Project/Contract Title:	**Cc. F and Cc. G Phase 2 400 Hz /PCA Installations**	**Received Date:**	**12/28/2022**
		Revised Date:	**4/12/2023**
Project/Contract No:	**AV-067621-22-JM (under RTQ-01841)**	**Funding Source:**	**Other**
Department:	**Aviation**		
Estimated Cost of Project/Bid:	**$8,875,645.00**		
Description of Project/Bid:	**A invitation to quote under RTQ-01841, Passenger Boarding Bridges for the purchase, installation and maintenance of pre-conditioned air and 400 Hz systems at Miami International Airport.**		

Contract Measures

Measure	Program	Goal Percent
Goal	SBE - Con	15.69%
Goal	SBE - Goods	0.63%
Goal	CWP	10.00%

Reason for Recommendation

SBD revised this project worksheet to include a 10.00% Community Workforce Program Goal, and to memorialize that Employ Miami and Residents First are both applicable.

SBD reviewed this project pursuant to Implementing Order 3-22 for SBE-Con measures. Project information analyzed included the project's scope of services, estimated project cost, minimum requirements/qualifications and funding source. Additional factors included the Verification of Availability process, which included follow-up phone calls were made to determine availability and assignment of the noted measure. Three hundred three (303) certified in the work description codes below were contacted via the Verification of Availability process, including the four (4) SBE firms prequalified under group 1 of RTQ-01841;, however, three (3) or more firms did not respond as being able to perform the scope of work. As such, a 15.69% SBE-Con Subcontractor Goal (238210, Electrical Contractors) and a 0.63% SBE-Goods subcontractor goal (28500, Electrical Equipment) are applicable to this solicitation.

Miami-Dade County Responsible Wages are applicable to this solicitation. The prevailing wage type is building construction.

This project will take place in the central enterprise zone. As such, a 10.00% Community Workforce Program (CWP) goal is applicable to this solicitation.

Employ Miami and Residents First are also applicable to this solicitation.
NIGP 285 ELECTRICAL EQUIPMENT AND SUPPLIES (EXCEPT CABLE AND WIRE), NIGP 28514 Circuit Breakers, Load Centers, Boxes, and Panel Boards, NAICS 238220 Plumbing, Heating, and Air-Conditioning Contractors, NIGP 28500 ELECTRICAL EQUIPMENT AND SUPPLIES, EXCEPT CABLE AND WIRE, NAICS 238210 Electrical Contractors and Other Wiring Installation Contractors

Living Wages:	**YES**		**NO**	X	**Highway:**	**YES**		**NO**	X	**Heavy Construction:**	**YES**		**NO**	X
Responsible Wages:	**YES**	X	**NO**		**Building:**	**YES**	X	**NO**						

SBD Director

4-12-23
Date

BID BOND

State of _____ **County of** _____
We, _____ **as Principal**
and _____ **as Surety**, are held and firmly bound unto Miami-Dade County, Florida hereinafter called the County, in the **Penal sum of** _____**Dollars** ($ _____)[1] lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. The Principal has submitted the attached Bid, **dated**_____, 20___, for **Project Name:** Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) **Bid No:** MDAD-67621-JM.

The Principal shall at time of bid opening furnish all documents and information required by the Contract Documents, and shall not withdraw said Bid within the time stipulated in the advertisement for bids and shall within the time stipulated in the Instructions to Bidders execute and deliver to the County, the Contract Summary, Performance Bond, Payment Bond, and satisfactory evidence of all required Insurance. The Principal shall give a Performance and Payment Bond with good and sufficient surety, as required by the Contract Documents, for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith. Having met these obligations shall render this Bond void and of no effect; or in the event of withdrawal of said Bid within the period specified, or in the event of the failure to comply with the Contract Documents, or in the event of failure to enter into such Contract and give such Bonds and evidence of insurance within the time specified, if the Principal shall pay the County the difference between the amounts specified in said Bid and the amount for which the County may procure the required work and supplies, provided the latter amount be in excess of the former, then the above obligations shall be void and of no effect; otherwise, to remain in full force and virtue.

The above parties have caused this Bond to be executed by their appropriate officials as of the____ day of _____, 20___.

CORPORATION

_____ _____
Witness **By:**
_____ **Title** _____

PARTNERSHIP OR JOINT VENTURE *

_____ _____
Witness **By:**
_____ **Title**_____

_____ _____
Witness **By:**
_____ **Title** _____

* Note: All Partners or Joint Venture Members shall sign and submit documentation proving their authority to sign on behalf of the Partnership or Joint Venture.

(Corporate Seal)

COUNTERSIGNED BY RESIDENT FLORIDA AGENT OF SURETY: **SURETY:**

_____ _____
By: Attorney-in-Fact

(A copy of Agent's current Identification Card as issued by State of Florida Insurance Commissioner must be attached.)

(THIS FORM MUST BE SUBMITTED IN DUPLICATE - ONE ORIGINAL AND ONE COPY)

[1] **Bid Bond equivalent to five percent (5%) of the Bid Price**

SURETY PERFORMANCE BOND

By this Bond, We _____, as Principal, whose principal business address is , as Contractor under the contract dated _____, 20 ___, between Principal and Miami-Dade County for the construction of Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) Bid No: MDAD-67621-JM. (herein after referred to as "Contract") the terms of which Contract are incorporated by reference in its entirety into this Bond and _____
, a corporation, whose principal business address is _____

_____
as Surety, are bound to Miami-Dade County (hereinafter referred to as "County") in the sum of _____ (U.S. dollars) $_____,[1] for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs all the work under the Contract, including but not limited to guarantees, warranties and the curing of latent defects, said Contract being made a part of this bond by reference, and in the times and in the manner prescribed in the Contract, including any and all damages for delay; and

2. Pays County all losses, damages, including damages for delay, expenses, costs and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Contract, including but not limited to a failure to honor all guarantees and warranties or to cure latent defects in its work or materials within the time period provided in Section 95.11(3)(c), Florida Statutes; and

3. Performs the guarantee of all work and materials furnished under the contract for the time specified in the Contract, including all warranties and curing all latent defects within the time period provided in Section 95.11(3)(c), Florida Statutes;

then this bond is void; otherwise it remains in full force.

Surety specifically assumes liability for any and all delay damages arising from Principal's default of the Contract, as well as all latent defects uncovered in the work of the Principal after final acceptance of the work by the County.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

This Bond shall remain in full force and effect for such period or periods of time after the date of acceptance by the County of the Contract work as are provided for in the Contract by which Principal guarantees to repair or replace any or all work performed or materials and equipment furnished, which were not performed or furnished according to the terms of the Contract. If no specific periods of warranty are stated in the Contract for any particular item or work, material or equipment, the warranty shall be deemed to be a period of one (1) year from the date of final acceptance by the County; provided however, that this limitation does not apply to suits seeking damages for latent defects in materials or workmanship, such actions being subject to the limitations found in Section 95.11(2)(b), Florida Statutes.

SURETY PERFORMANCE BOND (Cont'd)

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the _____ day of _____, 20 __.

CONTRACTOR

_____
(Contractor Name)

BY:

_____
(President) (Managing Partner or Joint Venturer)

(SEAL)

COUNTERSIGNED BY RESIDENT
FLORIDA AGENT OF SURETY:

SURETY:

_____

_____
(Copy of Agent's current
Identification Card as issued by
State of Florida Insurance Commissioner must be attached)

By: _____
Attorney-in-Fact

(CORPORATE SEAL)

(Power of Attorney must be attached)

[1] **Performance Bond must be equivalent to one hundred percent (100%) of the Contract price.**

SURETY PAYMENT BOND

By this Bond, We _____, as Principal, whose principal business address is _____, as Contractor under the contract dated , 20 ___, between Principal and Miami-Dade County for the construction of Project: Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) Bid No: MDAD-67621-JM. (herein after referred to as "Contract") the terms of which Contract are incorporated by reference in its entirety into this Bond and _____, a corporation, whose principal business address is _____
as Surety, are bound to Miami-Dade County (hereinafter referred to as "County") in the sum of _____ (U.S. dollars) $_____,[1] for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1.Promptly makes payments to all claimants, as defined in Section 255.05(l), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract; provided, however, that any action instituted by such claimant under this paragraph for payment must be in accordance with notice and time limitation provisions in Section 255.05(2), Florida Statutes; and

2. Pays County all losses, damages, expenses, costs and attorney's fees, including appellate proceedings, that County sustains because of a failure by Principal to make any such payments;

then this bond is void; otherwise it remains in full force.

A claimant shall have a right of action against the Principal and the Surety for the amount due it. Such action shall not involve the County in any expense.

A claimant, except a laborer, who is not in privity with the Principal and who has not received payment for its labor, materials, or supplies shall, within 45 days after beginning to furnish labor, materials, or supplies for the prosecution of the work, furnish the Principal with a notice that it intends to look to the bond for protection. A claimant who is not in privity with the Principal and who has not received payment for its labor, materials, or supplies shall, within 90 days after performance of the labor or after complete delivery of the materials or supplies, deliver to the Principal and to the Surety written notice of the performance of the labor or delivery of the materials or supplies and of the nonpayment.

No action for labor, materials or supplies may be instituted against the Principal or the Surety unless both notices have been given. No action shall be instituted against the Principal or the Surety on the bond after one (1) year from the performance of the labor or completion of delivery of the materials or supplies. A claimant may not waive in advance its right to bring an action under the bond against the surety.

Any changes in or under the Contract Documents and compliance or non-compliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

SURETY PAYMENT BOND (Cont'd)

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the _____ day of _____, 20___.

.

(CONTRACTOR)

_____
(Contractor Name)

BY:

_____
(President) (Managing Partner or Joint Venturer)

COUNTERSIGNED BY RESIDENT FLORIDA AGENT OF SURETY:

SURETY:_____

(Copy of Agent's current Identification Card as issued by State of Florida Insurance Commissioner must be attached)

By: _____
Attorney-in-Fact

(CORPORATE SEAL)

(Power of Attorney must be attached)

[1] **Surety Payment Bond must be equivalent to one hundred percent (100%) of the Contract price.**

MIAMI INTERNATIONAL AIRPORT

AV-67621-23-JM Pre-Bid Conference and Walk-through

Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400Hz systems at MIA

April 11, 2023 – 9:30 a.m.

Name	*Company*	*Phone Number*	*Email Address*
Allan Mairena	Satc	786 493 3990	allan@satesol.com
Glenda Leake	TK Airport Solutions	682-373-0729	glenda.Leake@tkelevator.com
PATRICIA CABARCOS	DABICO	305-240-0952	PATRICIA.CABARCOS@DABICO.COM
MANUEL TORRES	TK AIRPORT SOLUTIONS	817.773.5523	manuel.torres@tkelevator.com
ARMANDO PEREZ	ADELTE	786-593-3900	aperez@arjvl.com
PATRICK JONES	CLEARVIEW	305-5970488	Prjones.pj@Gmail.Com
EUGENE STROZIER	MDAD	305 876 0220	CSTROZIER@MIAMI-AIRPORT.COM
TIM DUNN	HNTB	305 551-8100	tdunn@HNTB.COM
ANNA RACZ	"	"	ARACZ@HNTB.COM
Juliana Manjarres	MDAD Prowiement	305-869-3010	Jmanjarres@flymia.com

TK Airport Solutions, Inc. | 3201 North Sylvania Avenue Suite 117, Fort Worth, TX 76111

Glenda Leake
P +1 682 201-5081
Glenda.leake@tkelevator.com
05.04.2023

Quote# 2122-0024-MIA ITQ 67621

May 4, 2023

Juliana Manjarres
Miami-Dade Aviation Department (MDAD)
Procurement & Materials Mgmt. Division
4331 NW 22nd Street, Building 3040
Miami, FL 33122

Reference: ITQ No: MDAD-67621-JM
Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at MIA

Dear Ms. Manjarres,

TK Airport Solutions is pleased and excited about the opportunity of providing you our proposal to add/and or replace, and provide, maintain, and support services for Pre-Conditioned Air and 400Hz systems for 14 Passenger Boarding Bridges at Concourse F: Gates F3, F5, F8, F9, F10, F11, F12, F14, F15, F16, F17. F18, F19, and F23 for the Miami International Airport Project Number V008F.

Works under this proposal include the addition of Pre-conditioned Air and 400Hz systems for (4) Passenger boarding bridges at Concourse G: Gates G4, G6, G16, and G19, along with all other equipment mentioned in the specification, drawings and addendum 1. Which also includes the extended warranty and support services listed under Item 16 of this ITQ.

Our proposal is comprehensive and meets all the requirements of this ITQ. Please note that we are not including any exemptions, or submitting substitutions.

We would like to highlight that our proposal meets the SBE goals set forth in this ITQ.

If you have any questions, please feel free to contact us.

Kind Regards,

Glenda Leake
Business Development Manager
TK Airport Solutions
Fort Worth, TX 76111
Tel: (682) 201-5081
glenda.leake@tkelevator.com

TABLE OF CONTENTS

PART IV. PRICING FORM

A. The Bidder's prices per this Section, shall be inclusive of all costs associated with providing the services herein, which shall include manufacturing, delivery and installation of new PCAs/400hz systems including infrastructure upgrades.

1. Mobilization shall consist of the preparatory work and operations for beginning work on the Project; costs of bonds and required insurance; costs of operations necessary to move personnel, badging, equipment, supplies, and incidentals to the site; costs of establishment of temporary offices, shops, safety equipment and first aid supplies; and other costs associated with or required by the Contract Documents and any Federal, State, and/or local laws and regulations. No separate cost will be paid for mobilization. All costs related to mobilization shall be considered incidental to and included in the unit cost prices.
2. The Bidder's prices shall include all engineering, labor, permit(s), materials, tools, and equipment; all other direct and indirect costs necessary to complete the item of Work and to coordinate it with adjacent work; and shall include all overhead and profit.
3. All handling or storage costs incurred by the Contractor shall be considered incidental to the installation of the equipment and as such will not be considered for additional compensation.

B. The Bidder's prices per this Section, shall be inclusive of all costs associated with providing Work described in PART III, Section 2.

NOTE: All expenses involved with the preparation and submission of the Quotes to the County, or any work performed in connection therewith, shall be borne by the Bidder(s).

ITEM	QTY	UOM	DESCRIPTION	PRICE
1	1	LS	Work at Gate location F3 Complete	$ 551,391.00
2	1	LS	Work at Gate location F5 Complete	$ 525,489.00
3	1	LS	Work at Gate location F8 Complete	$ 649,358.00
4	1	LS	Work at Gate location F9 Complete	$ 480,306.00
5	1	LS	Work at Gate location F10 Complete	$ 796,711.00
6	1	LS	Work at Gate location F11 Complete	$ 479,317.00
7	1	LS	Work at Gate location F12 Complete	$ 629,864.00
8	1	LS	Work at Gate location F14 Complete	$ 855,252.00
9	1	LS	Work at Gate location F15 Complete	$ 778,747.00
10	1	LS	Work at Gate location F16 Complete	$ 854,837.00
11	1	LS	Work at Gate location F17 Complete	$ 854,837.00
12	1	LS	Work at Gate location F18 Complete	$ 676,146.00
13	1	LS	Work at Gate location F19 Complete	$ 851,796.00
14	1	LS	Work at Gate location F23 Complete	$ 841,127.00
15	1	LS	Work at Gate location G4 Complete	$ 503,978.00
16	1	LS	Work at Gate location G6 Complete	$ 503,978.00
17	1	LS	Work at Gate location G16 Complete	$ 634,454.00
18	1	LS	Work at Gate location G19 Complete	$ 621,236.00
CONTINGENCY ALLOWANCE ACCOUNT (10% OF TOTAL BID FOR ITEMS 1-18)				MDAD WILL FILL IN AT TIME OF AWARD

C. The Bidder's prices per this Section, shall be inclusive of all costs associated with providing the Extended Warranty and Support Services described PART III, Section 16.

ITEM	QTY	UOM	DESCRIPTION	PRICE
19	1	Month	Maintenance Services at Gate location F3	$ 1,568.00
20	1	Month	Maintenance Services at Gate location F5	$ 1,568.00
21	1	Month	Maintenance Services at Gate location F8	$ 3,505.00
22	1	Month	Maintenance Services at Gate location F9	$ 3,136.00
23	1	Month	Maintenance Services at Gate location F10	$ 5,073.00
24	1	Month	Maintenance Services at Gate location F11	$ 1,568.00
25	1	Month	Maintenance Services at Gate location F12	$ 3,505.00
26	1	Month	Maintenance Services at Gate location F14	$ 1,938.00
27	1	Month	Maintenance Services at Gate location F15	$ 1,938.00
28	1	Month	Maintenance Services at Gate location F16	$ 1,938.00
29	1	Month	Maintenance Services at Gate location F17	$ 1,938.00
30	1	Month	Maintenance Services at Gate location F18	$ 3,505.00
31	1	Month	Maintenance Services at Gate location F19	$ 1,938.00
32	1	Month	Maintenance Services at Gate location F23	$ 5,073.00
33	1	Month	Maintenance Services at Gate location G4	$ 3,505.00
34	1	Month	Maintenance Services at Gate location G6	$ 3,505.00
35	1	Month	Maintenance Services at Gate location G16	$ 5,073.00
36	1	Month	Maintenance Services at Gate location G19	$ 5,073.00

MIAMI-DADE COUNTY

INVITATION TO QUOTE (ITQ)

PART V. SUBMITTAL FORM

Bidder's Legal Name (include d/b/a if applicable):

TK Airport Solutions, Inc.

Federal Tax Identification Number:

52-2089962

A. SMALL BUSINESS ENTERPRISE CONTRACT MEASURES (if applicable):

A Small Business Enterprise (SBE) must be certified by the Small Business Development Division (SBD) for the type of goods and/or services the Bidder provides in accordance with the applicable Commodity Code(s) for this Solicitation. For certification information, contact SBD at (305) 375-3111 or access http://www.miamidade.gov/smallbusiness/certification-programs.asp. The SBE must be certified by this Solicitation's submission deadline, at Contract award, and for the duration of the Contract to remain eligible for the preference. Firms that graduate from the SBE Program during the Contract may remain on the Contract.

☐ Place a check mark here **only** if affirming Bidder is a Miami-Dade County Certified Small Business Enterprise.

IN ACCORDANCE WITH CFR 200.319 (b), SMALL BUSINESS ENTERPRISE MEASURES SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

B. LOCAL PREFERENCE CERTIFICATION:

For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "local business" is a business located within the limits of Miami-Dade County that has a valid Local Business Tax Receipt issued by Miami-Dade County at least one year prior to bid submission; has a physical business address located within the limits of Miami-Dade County from which business is performed and which served as the place of employment for at least three full time employees for the continuous period of one year prior to bid submittal (by exception, if the business is a certified Small Business Enterprise, the local business location must have served as the place of employment for one full time employee); and contributes to the economic development of the community in a verifiable and measurable way. This may include, but not be limited to, the retention and expansion of employment opportunities and the support and increase to the County's tax base.

☐ Place a check mark here **only** if affirming the Bidder meets requirements for Local Preference. **Failure to complete this certification at this time may render the vendor ineligible for Local Preference**.

IN ACCORDANCE WITH CFR 200.319 (b), LOCAL PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

C. LOCALLY HEADQUARTERED BUSINESS CERTIFICATION:

For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "locally headquartered business" is a Local Business as defined above, which has a "principal place of business" in Miami-Dade County. "Principal place of business" means the nerve center or the center of overall direction, control, and coordination of activities of the Bidder. If the Bidder has only one business location, such business location shall be its principal place of business.

☐ Place a check mark here **only** if affirming the Bidder meets requirements for the Locally Headquartered Preference (LHP). **Failure to affirm this certification at this time may render the vendor ineligible for the LHP**. The address of the Locally Headquartered office is:

IN ACCORDANCE WITH CFR 200.319 (b), LOCALLY HEADQUARTERED BUSINESS PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

D. LOCAL CERTIFIED VETERAN'S BUSINESS ENTERPRISE CERTIFICATION:

A Local Certified Veteran's Business Enterprise is a firm that is: (a) a local business pursuant to Section 2-8.5 of the Code of Miami-Dade County, and (b) prior to bid submission is certified by the State of Florida Department of Management Services as a veteran business enterprise pursuant to Section 295.187 of the Florida Statues.

☐ Place a check mark here **only** if affirming the Bidder is a Local Certified Veteran's Business Enterprise. **A copy of the certification must be submitted with the bid.**

IN ACCORDANCE WITH CFR 200.319 (b), LOCAL CERTIFIED VETERAN'S BUSINESS ENTERPRISE PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASES.

E. CONVICTION DISCLOSURE:

Pursuant to Section 2-8.6 of the Code of Miami-Dade County, any individual, corporation, partnership, joint venture or other legal entity having an officer, director, or executive who has been convicted of a felony during the past ten (10) years shall disclose this information at the time of bid submittal.

☐ Place a check mark here **only** if the Bidder has such conviction to disclose to comply with this requirement.

F. CONFLICT OF INTEREST DISCLOSURE:

Pursuant to Section 2-11.1 (c) and (d) of the Code of Miami-Dade County, please respond to the following questions posed.

1. ARE ANY OWNERS/PRINCIPALS/PERSONS WITH OWNERSHIP INTEREST IN THE COMPANY, A MIAMI-DADE COUNTY ELECTED OFFICIAL, AGENCY BOARD MEMBER OR EMPLOYEE(S)?

☐ YES or ☑ NO

If Yes, attach Conflict-of-Interest Opinion provided by Miami-Dade County Commission on Ethics and Public Trust.

2. ARE ANY IMMEDIATE FAMILY MEMBERS OF THE COMPANY'S OWNERS/PRINCIPALS/PERSONS WITH OWNERSHIP INTEREST IN THE COMPANY, A MIAMI-DADE COUNTY ELECTED OFFICIAL, AGENCY BOARD MEMBER OR EMPLOYEE?

☐ YES or ☑ NO

If Yes, attach Conflict-of-Interest Opinion provided by Miami-Dade County Commission on Ethics and Public Trust.

G. WAIVER OF CONFIDENTIALITY AND TRADE SECRET TREATMENT OF BID:

The Bidder acknowledges and agrees that the submittal of the Bid is governed by Florida's Government in the Sunshine Laws and Public Records Laws, as set forth in Florida Statutes Section 286.011and Chapter 119. As such, all material submitted as part of, or in support of, the Bid will be available for public inspection after opening of bids and may be considered by the County in public.

By submitting a bid pursuant to the Solicitation, Bidder agrees that all such materials may be considered public records. The Bidder shall not submit any information in response to the Solicitation which the Bidder considers to be a trade secret, proprietary or confidential. If the Bid contains a claim that all or a portion of the Bid submitted contains confidential, proprietary or trade secret information, the Bidder, **by signing below**, knowingly and expressly **waives** all claims made that the Bid, or any part thereof no matter how indicated, is confidential, proprietary or a trade secret and authorizes the County to release such information to the public for any reason.

Acknowledgment of Waiver:

Bidder's Authorized Representative's Signature:

Date: 5/4/2032

Representative's Name: Manuel Torres, Brooke Smiddy

Representative's Title: President, Secretary

H. BIDDER'S CONTACT INFORMATION

Bidder's Contact Person: Paul Alvarado

Email Address: Paul.Alvarado@TKElevator.com

Phone Number (include area code): (909) 913-1746

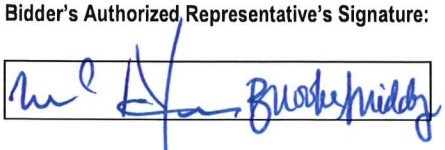
MIAMI-DADE COUNTY

INVITATION TO QUOTE (ITQ)

I. ACKNOWLEDGEMENT OF BINDING OFFER

The execution of this form constitutes the consent of the Bidder to be bound by the terms of its Bid and the Solicitation. Failure to sign where indicated below by an authorized representative shall render the Bid non-responsive. The County may, however, in its sole discretion, accept any response that includes an executed document which unequivocally binds the Bidder to the terms of its Bid and the Solicitation.

Bidder's Authorized Representative's Signature:



Date:

5/4/2023

Representative's Name:

Manuel Torres, Brooke Smiddy

Representative's Title:

President, Secretary

This ITQ includes the following attachments:

- [X] Exhibit A - Small Business Development Division, Project Worksheet
- [X] Exhibit B - PBB_SECTION_263226_CP_400HZ_17.04.12
- [X] Exhibit C - PBB_SECTION_263543_POU -400HZ
- [X] Exhibit D - PBB_SECTION_238122_POU_PCA_AHUs_STUs_and_EQPT_17.04.12
- [X] Exhibit E - Drawings
- [X] Exhibit F - Environmental Management System
- [X] Contractor Due Diligence Affidavit
- [X] Certificate of Assurance

Addendum No. 1

ITQ No.: MDAD-67621-JM

Exhibit A

Small Business Development Division, Project Worksheet

Small Business Development Division

Project Worksheet

Project/Contract Title:	**Cc. F and Cc. G Phase 2 400 Hz /PCA Installations**	**Received Date:**	**12/28/2022**
		Revised Date:	**4/12/2023**
Project/Contract No:	**AV-067621-22-IM (under RTQ-01841)**	**Funding Source:**	**Other**
Department:	**Aviation**		
Estimated Cost of Project/Bid:	**$8,875,645.00**		
Description of Project/Bid:	**A invitation to quote under RTQ-01841, Passenger Boarding Bridges for the purchase, installation and maintenance of pre-conditioned air and 400 Hz systems at Miami International Airport.**		

Contract Measures

Measure	Program	Goal Percent
Goal	SBE - Con	15.69%
Goal	SBE - Goods	0.63%
Goal	CWP	10.00%

Reason for Recommendation

SBD revised this project worksheet to include a 10.00% Community Workforce Program Goal, and to memorialize that Employ Miami and Residents First are both applicable.

SBD reviewed this project pursuant to Implementing Order 3-22 for SBE-Con measures. Project information analyzed included the project's scope of services, estimated project cost, minimum requirements/qualifications and funding source. Additional factors included the Verification of Availability process, which included follow-up phone calls were made to determine availability and assignment of the noted measure. Three hundred three (303) certified in the work description codes below were contacted via the Verification of Availability process, including the four (4) SBE firms prequalified under group 1 of RTQ-01841;, however, three (3) or more firms did not respond as being able to perform the scope of work. As such, a 15.69% SBE-Con Subcontractor Goal (238210, Electrical Contractors) and a 0.63% SBE-Goods subcontractor goal (28500, Electrical Equipment) are applicable to this solicitation.

Miami-Dade County Responsible Wages are applicable to this solicitation. The prevailing wage type is building construction.

This project will take place in the central enterprise zone. As such, a 10.00% Community Workforce Program (CWP) goal is applicable to this solicitation.

Employ Miami and Residents First are also applicable to this solicitation.
NIGP 285 ELECTRICAL EQUIPMENT AND SUPPLIES (EXCEPT CABLE AND WIRE), NIGP 28514 Circuit Breakers, Load Centers, Boxes, and Panel Boards, NAICS 238220 Plumbing, Heating, and Air-Conditioning Contractors, NIGP 28500 ELECTRICAL EQUIPMENT AND SUPPLIES, EXCEPT CABLE AND WIRE, NAICS 238210 Electrical Contractors and Other Wiring Installation Contractors

Living Wages:	YES [ ]	NO [X]	**Highway:**	YES [ ]	NO [X]	**Heavy Construction:**	YES [ ]	NO [X]
Responsible Wages:	YES [X]	NO [ ]	**Building:**	YES [X]	NO [ ]			

SBD Director

4-12-23
Date

ITQ No.: MDAD-67621-JM

Exhibit B

PBB_SECTION_263226_CP_400HZ_17.04.12

SECTION 263226 - FREQUENCY CONVERTERS – CENTRAL PLANT 400-HZ SYSTEMS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This specification describes and defines the performance and documentation required to be provided by the Vendor to furnish, install, and test the completed system, including all required design documents and plans necessary to provide 400-HZ power to Passenger Boarding Bridges (PBB) at Miami International Airport (MIA).

B. This Section applies only where the use of an existing 400-HZ central plant system has been approved for use to provide service to a PBB, as further detailed elsewhere in the specifications.

C. This Section includes furnishing and installing, but is not necessarily limited to, materials, equipment, labor and all other items necessary to deliver a complete and operable 400-HZ power source to new PBBs as directed by MDAD.

D. All codes, standards, and similar publications referenced in this Section shall be understood to be the latest version adopted by the issuing organization.

1.2 REFERENCE

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only:

1) Anti-Friction Bearing Manufacturers Association, Inc. (AFBMA). AFBMA 9 Load Rating and Fatigue Life for Ball Bearings.

2) American National Standards Institute, Inc. (ANSI).
ANSI C2 National Electrical Safety Code.
ANSI C 12.11 2007 Instrument Transformers for Revenue Metering.

3) Federal Communication Commission (FCC).
FCC, PART 18, CFR TITLE 47, Radio Frequency Interference Suppression.

4) International Electrical Testing Association (NETA)
Acceptance testing Specifications for Electrical Power Distribution Equipment and Systems.

5) National Electrical Manufacturers Association (NEMA).

NEMA AB 1 Molded Case Circuit Breakers.

NEMA ICS 1 Industrial Control and Systems: General Requirements.

NEMA ICS 6 Enclosures.

NEMA WD 1 Wiring Devices.

NEMA WD 6 Wiring Devices -Dimensional Requirements.

NEMA 250 Enclosures for Electrical Equipment (1000 volts maximum).

6) National Fire Protection Association (NFPA).

7) NFPA 70 National Electrical Code.

8) Underwriters Laboratories, Inc. (UL).

UL 467 Grounding and Bonding Equipment.

UL 489 Molded-Case Circuit Breakers and Circuit Breaker Enclosures.

UL 506 Specialty Transformers.

UL 508 Industrial Control Equipment.

1.3 QUALITY ASSURANCE:

A. Listing and Labeling: Provide products that are listed and labeled as defined by NFPA 70, Article 100, by a testing agency acceptable to the Authority Having Jurisdiction and marked for the intended use and for the location and environment in which they are installed.

1) All equipment, circuit breakers, panelboards and appurtenances shall be designed and UL listed for 400-HZ systems applications.

B. Factory Testing:

1) 400-HZ Gate Box Assemblies:

a) The gate box assemblies shall be tested at the factory to verify the following parameters:

i. Transformer Voltage Regulation.
ii. Load Contactor Automatic Opening:

Due to overvoltage.

Due to under voltage.

Due to overload.

iii. Line Drop Compensator(s) Voltage Regulation.

C. Field Testing:

1) Submit field testing as specified in Paragraph 3.2 "System Testing."

D. System Warranty: Provide a warranty of one year from the date of Substantial Completion for all parts and labor for the system and all equipment.

1.4 DELIVERY, STORAGE AND HANDLING

A. Delivery, Storage and Handling shall comply with the requirements listed below in addition to any other requirements found elsewhere in the specifications.

1) Transport using manufacturer provisions and in accordance with manufacturer recommendations.

2) Store in dry, dust-free location and cover completely to exclude contaminants.

3) Provide temporary heat if condensation is likely to occur.

1.5 EXTRA MATERIALS

A. Extra Materials:

1) Spare and extra parts shall be identified for all products, but not provided. Include spare parts information in Operation and Maintenance Manuals.

a) Fuses: Provide 2 of each size and type used.
b) Filters: Provide one spare circuit board for each critical circuit.
c) Bulbs: Provide 2 of each size, type and color used.

1.6 SYSTEM DESCRIPTION

A. The central plant 400-HZ central ground power system is capable of providing all 400-HZ to the system output locations. Source voltage shall be 480Y/277 Volt, 3-phase, 4-wire, 400-HZ, 575 VAC, 3-phase, 4-wire, is distributed from 312 KVA, vertical motor generators (three), via individual branch circuits to each aircraft service connection. The motor generators are capable of unmanned automatic paralleling, automatic master assignment and rotation, and auto-restart. The 400-HZ power is fed from solid-state electronic trip circuit breakers housed in the main distribution switchboard. All distribution wire shall be factory twisted and bundled, 3 or 7-conductor XHHW-2 copper run in non-

ferrous conduits or raceways and shall be installed by the Vendor as indicated on the drawings. The power shall be delivered across the passenger boarding bridge via cable housed in a new over-bridge device. The power shall be delivered to the aircraft from a gate box that is mounted on the loading bridge. The gate box transforms the 575 V, 400-HZ power to 118/204 V, 3-phase, 4 wire, 400-HZ and contains various controls and protective devices. Each output of each gatebox shall contain a line drop compensator to compensate for the inductive line losses in the circuit. An aircraft cable connected in the gate box and plugged into the aircraft completes the circuit.

1.7 SYSTEM PERFORMANCE

A. System Voltage Requirements: The 400-HZ distribution system shall deliver an average steady state voltage in the range between 112.0 and 118.5 VAC using a constant voltage motor generator. All components for each branch circuit, including gate box, line drop compensator (LDC), wire and circuit breaker, shall be rated 180 KV A, as indicated on the plans and schedules. The LDC's will be set to maintain reactive load voltages in the 117-118.5 V range and the wire sized to limit the full load voltage drop within 6.5 volts for a minimum delivery voltage of 112 V. The transient voltages shall be within the range of 102- 130 VAC. The transient recovery for a 90 KVA load change shall be less than 80 milliseconds.

1.8 EQUIPMENT DOCUMENTATION

A. Equipment Submittal: Submit manufacturer's technical product data, including performance and operating criteria, physical dimensions and installation procedures. Product data shall be provided for the following:

1) Modifications to the Distribution Switchboard, including specific information on the circuit breakers.
2) Pushbutton station at PBB.
3) PBB Wire, Cable and Raceway.
4) Gate Box (each type).
5) Aircraft Cable.
6) Cable Hoist/Cable Retrieve.

B. System Shop Drawings: Submit shop drawings detailing the equipment installation, system electrical single-line diagrams, voltage line drop calculations, central room layout, modifications, adjustments and typical bridge equipment arrangement and modifications.

C. Operation and Maintenance Manuals:

1) Operating and Maintenance manuals shall contain, at a minimum:

a) Equipment operating and maintenance information, control diagrams, wiring schematics, physical description, major parts list.
b) List of special tools required, troubleshooting information, spare parts lists and warranty explanation.
c) Catalog information and shop drawings for each major component and for each system layout.
d) Instructions for starting and operating converters and all associated equipment.
e) Routine preventative maintenance and lubrication schedule.
f) Description of operating limits which may result in hazardous or unsafe conditions, or in equipment damage.

D. Design Calculations

1) The system provider is responsible for complete design calculations based on the actual equipment provided in accordance with the identified aircraft mix for each gate. Submit all required structural calculations for mounting of gate equipment to PBB. Submit complete design calculations regarding voltage drop calculations for each gate to include all assumptions, design considerations, design data, equipment selection table. Include in bid all necessary equipment and cable sizes required to meet the performance specifications herein. Provide wire sizes as required to meet specified criteria, at no additional cost to MDAD. 400-HZ distribution wire shall be sized based on LDC settings no greater than 10 percent.

PART 2 - PRODUCTS

2.1 PBB CABLE AND WIRE

A. General Description:

1) Refer to Section 260519

B. PBB Small Power and Control Cable:

1) Multiple conductor control and small power cables used outdoors on the passenger boarding bridges, shall be portable power cable. Cables shall be sized as indicated on the drawings or sized as required by the equipment furnished. Cable shall have green equipment ground conductor with equal size as phase conductors. Cables to be jacketed 600 volts SO type. Cable connectors shall be non-ferrous, steel case liquid tight sized for cable diameter and shall use strain relief gland fitting to prevent tension on conductor terminals. Where cable drops are indicated on the drawings, use non- ferrous wire mesh strain relief cable grips at both ends of cable drops. Conductors shall be stranded copper. Cable shall be suitable for use outdoors, sunlight resistant, moisture resistant and oil resistant.

C. STU Assembly

1) Flexible, 400-HZ cable shall be provided within the passenger boarding bridge (PBB) utility carrier (or STU) where indicated on plans or in schedules. Cable shall be type W, round, portable power cable suitable for outdoor use, sunlight resistant, moisture resistant, and oil resistant. Provide (4) #2/0, stranded conductors with 600/2000 volt, 90 degrees C, EPR insulation. Conductors shall be color coded. Jacket shall be lead cured thermoset or reinforced neoprene. Cable assembly shall be U.L. listed. Provide length required by PBB to span full travel of STU plus 30 feet at each end.

2.2 GATE BOX

A. General Description:

1) The gatebox assembly shall be a stand-alone device to provide transformation of 400-HZ, 575 V AC to 115/200 V AC, 3-phase, 4-wire with grounded neutral power for aircraft use. The gatebox assembly shall be 90 KVA single output or 180 KVA dual output, as indicated by the aircraft mix requested by MDAD. Output power rating shall be continuous at 0.8 power factor lagging. Each component of the gatebox assembly listed below shall be configured with the KVA rating of the assembly unless otherwise noted.

B. Enclosure:

1) The gate box cabinet shall be welded #11-gauge steel with stainless steel door piano hinge. The finish shall be two (2) coats of primer and one coat of polyurethane paint. The color to be as specified by the customer. The top shall be removable to facilitate complete paint coverage. The unit shall be NEMA 3R compliant.

2) The enclosure top cover shall have threaded connections for lifting eyes.

3) Storage receptacle for spare bulbs and fuses shall be located on the interior of the gate box door.

C. Transformer:

1) The gate box shall contain 400-HZ dry type step down isolation transformers with 575V delta connected primary and 118/204 V wye connected secondary. Transformers shall be sized equal to the output rating of the gate box.

2) Insulation shall be class "H" varnish impregnation, two coats.

3) The minimum B.I.L. shall be 10,000 volts.

4) The voltage regulation of the line to neutral, no load to full load shall be 0.6% at unity power factor and 1.5% at 0.8 Jagging power factor.

5) The transformer shall have continuous duty rating equal to rated KVA.

D. Contactor:

1) Provide 600V, 325 Amp, 400-HZ rated load contactors as required. The contactors will be provided with lugs capable of landing two #2/0 wires per phase. The coil shall be 100 VDC.

E. Line Drop Compensator

1) Provide required line drop compensators for gateboxes. The line drop compensator is used to eliminate the reactive voltage losses (line drop) in long runs of 400-HZ power distribution. The line drop compensator shall be rated at its KVA rating, 575 volts, 3-phase, 400-HZ continuous load at 0.8 power factor lagging. The compensator shall be capable of correcting a minimum of 16% inductive impedance at its KVA rating and shall be step adjustable with a minimum of six steps. The line drop compensator shall be UL 508 rated.

2) Transformers:

a) Each LDC shall contain three 90 KV A, 400-HZ dry type, current transformers, one for each phase (A, B, and C). The maximum ampere rating of each transformer shall be according to its KVA rating, which at the 16% setting will give a 53-volt boost per phase, minimum.

b) The insulation shall be class "H" varnish impregnation, two coats.

c) The transformers shall have multiple taps on the secondary windings for adjustment of the reactive compensation for various combinations of cable lengths and sizes to provide voltage boost from 6% to 16% in 2% increments. The secondary taps shall be positioned in an accessible location to allow adjustment without reaching over or around the primary taps in order to reduce the possibility of coming into contact with the 575-volt power. The taps shall be of the quick connect terminal type. A decal shall show the boost connections. The temperature rise of the magnetic components shall show the boost connections. The temperature rise of the magnetic components shall not exceed 80 degrees Celsius over 40 degrees Celsius ambient under rated load conditions. The design of the compensator shall not require the use of fans for cooling.

3) Capacitors:

a) Two capacitors will be connected in parallel across the secondary windings of each transformer to reflect capacitive reactance into the main transmission line and cancel the inductive reactance. Capacitors shall be non-PCB type.
b) Capacitor voltage rating to be such that if one capacitor fails, the second will withstand the increase in voltage and current. The compensator shall handle a 250 percent load transient without interruption of service or system degradation.
c) Provide line drop compensation, as determined from the system provider's voltage drop calculations in order to furnish the correct voltage at the aircraft cable plug. Maximum allowable setting during system start-up of LDC shall be 10 percent. Size conductors based on a maximum 10 percent boost.

F. Controls and Indicators

1) A 600V, 3 pole, manually operated disconnect isolation switch shall be provided on the fixed portion of the enclosure and shall be lockable with internal and external override. The ampere rating of the isolation disconnect switch shall be sized according to the rating of the gatebox.

2) The gate box assembly shall be equipped with individual industry standard PC boards, factory adjusted, to provide over voltage, under voltage and overload protection.

3) E/F feedback circuit shall use relay logic to insure proper aircraft interlock and safety for each output. This circuit shall also be equipped with an MOY to eliminate any 400-HZ induced voltage from the single jacketed aircraft cable.

4) 12-volt cluster LED, minimum 100,000 hours, indicating lights and illuminated pushbuttons shall be located on the exterior of the gate box cabinet. Buttons and lights shall be 30 mm diameter.

Buttons and lights shall be provided as follows:

a) Power Available Light - Power is available in the gate box.
b) Overload Light - An overload fault has occurred.
d) Under Voltage Light - An under voltage fault has occurred.
e) Over Voltage Light - An over voltage fault has occurred.
f) Reset Button - Resets the assembly after a fault has occurred.
g) Test Button Illuminates all lamps.
h) Contactor Closed Light -Lights to indicate that power is being supplied to

the aircraft.

5) All lights, local and remote pushbutton, and controls, shall be 12 VDC with a continuous duty power supply rated from 1.7 to 5 amps, depending on the design conditions. Spare bulbs and fuses of each type provided.

6) Voltmeter: The output voltmeter shall have a single 0 to 300 VAC scale in order to read line-to-line and line-to-neutral voltages. The voltmeter shall be calibrated for 400-HZ and have an accuracy of +2 percent full scale.

7) Voltmeter Selector Switch: Seven (7) position selector switches with "OFF" position shall be provided to monitor line-to-line and line-to-neutral voltages.

8) Ammeter: The Output Ammeter shall have a single 0 to 400-A. RMS scale in order to read output phase currents. The Ammeter shall be calibrated for 400 HZ and shall have an accuracy of +2 percent full scale.

9) Ammeter selector switch: A four (4) position selector switch shall be provided to monitor output phase currents:" A", "B", "C" with an "OFF" position.

10) Frequency meter: Output frequency meter with range of 360 HZ to 400-HZ and accuracy of +5 percent full scale.

11) Elapsed time meter: Shall be non-resettable type with 0 to 99,999 Hr.

G. Gate Box Test Panel:

1) The gate box shall contain a silk screened or equivalent schematic and component legend on a sixteen-point test panel for troubleshooting the following conditions:

a) Output voltage of each of the three phases.
b) Output voltage of the DC power supply.
c) Contactor auxiliary contacts.
d) Contactor auxiliary relay.
e) Under voltage relay contacts.
f) Over voltage relay contacts.
g) Overload relay contacts.
i) Overload relay.
j) Protective Monitor

2) Test switches to facilitate testing and troubleshooting.

3) E/F bypass switch for test purposes when 28 VDC power, is not available.

4) Contactor disable switch to disable the gate box output, but still leave input power to the box enabled.

5) A "Back Feed" receptacle, to allow 400-HZ, 115/200 V external power for purposes of testing normal gate box operation, over voltage and under voltage protection, shall be provided on the face of the test panel.

6) Provide dry alarm contacts for interface with PCA Air Handler Unit Controller for the following:

a) 400-HZ On/Off.
b) 400-HZ Fault

2.3 400-HZ AIRCRAFT CABLE

A. CABLE ASSEMBLIES

1) Multi Conductor Banded

The 400-HZ Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Each lead Shall consist of a single conductor. Phase A, B, C, & N shall be approximately 2/0 AWG. Control leads E & F shall be #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. The plug shall be Anderson Power Products or approved equal, field attachable, MS25486-3/(R67G36B). Each cable assembly shall be approximately 65 feet and 85 foot in lengths and banded together with stainless steel bands.

Lug Terminals for A, B, C,	Phase shall be MS20659-1 20
Lug Terminals for N	Phase shall be MS20659-136
Lug Terminals for E & F	Phase shall be MS20659-106

Lug terminals shall be attached to one end of the cable and plug attached to the other end. A ball stop is to be attached to the cable approximately 2-1/2 feet behind plug. Some cablesentire length should be protected with orange scuff cover.

2) Single Jacketed Multi-Conductors

The 400-HZ Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Phase A, B, C shall be approximately 1/0 AWG. Phase N (Neutral) shall consist of 3#6 AWG Control leads E & F shall be #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. All wire shall be manufactured Anderson Power Products or approved equal, field attachable, R67G76B. Each cable assembly shall be approximately 65 feet and 85 foot in length as required.

Lug Terminals for A, B, C,	Phase shall be MS20659-18B
Lug Terminals for N	Phase shall be MS20659-143
Lug Terminals for E & F	Phase shall be MS20659-106

3) Lug terminals shall be attached to one end of the cable and plug attached to the other end. Plug shall be yellow fluorescent in color.

2.4 400-HZ AIRCRAFT CONNECTOR

A. The Aircraft Connector shall be a molded portable connector consisting of a specially formulated Hypolon® rubber material, as manufactured by Anderson Airmotive Products Co., Inc. Portable Plug Catalog No. R67, or MDAD approved equal, configured to accommodate the characteristics of cables specified for this project. The portable plug shall meet the following additional specifications:

1) Shock-proof, highly abrasion and chemically resistant material

2) Replaceable contacts, silver-plated copper-tellurium alloy

3) Replaceable connector front part

4) Replaceable rubber protectors with wear indicators

5) Short, main contacts for low voltage drop

6) Applicable norms: 2006/42/EC Machinery Directive, VG 95319, ISO 461, MS 25486, DFS 400

7) Push and pull forces meet DIN EN 61984 $\leq$ 445 N

8) Operating temperature range -40°C to +125°C (-40°F to +257°F)

9) Resistant to UV radiation, oil, hydrolysis and microbial attack

10) Nominal voltage: 115/200 V, 400-HZ

11) Current carrying capacity: 260 A/90 KVA

12) Current overload: 600 A/30 min, 1000 A/3 min, 2000 A/3 sec

13) Test voltage: 4 KV at 400-HZ main wires/2 KV at 28 V control wires

14) Protection class: IP 68 for mounted connector

2.5 CABLE HOIST

A. General Description:

1) The Cable Hoist is used to raise the flexible aircraft cable to a stowed position along the side of the bridge out of the path of moving vehicles. It allows the operator to lower the cable to power aircraft at the gate. The hoist shall be designed for mounting on top of or on the side of the bridge. The cable hoist shall be U.L. labeled. Provide two hoists at each gate.

B. Enclosure:

1) The hoist cabinet shall be welded # 10-gauge steel. The finish shall be two coats of primer and one coat of white polyurethane paint. The unit shall be rated NEMA 3R. The hoist shall be constructed with a removable or hinged cover for ease of maintenance and access to major components.

C. Motor:

1) Provide an electric open drip proof gear motor rated at 1/2 HP, 480 VAC, 60 HZ, 3Phase. Provide a PBB-mounted, NEMA 3R, overcurrent/disconnecting means. The gear reducer shall be NEMA rated Class 0. Provide a magnetic disc brake to prevent the wire rope drum from unwinding when the hoist is shut off.

D. Controls:

1) A 600V, 3 pole, 10 amps manually operated disconnect isolation switch shall be provided in the control panel. The panel door shall not be capable of being opened unless the disconnect switch is in the OFF position.

2) Provide a reversing contactor and control circuitry.

3) Provide raise/lower push-button controls for mounting on the bridge drive column.

4) Provide a 24-volt adjustable counter to control the IN and OUT limits of the wire rope.

5) A step down transformer shall be provided for the low voltage circuits.

E. Drum, Fairlead, Cable and Saddles:

1) Provide a single drum with flanges to contain the wire rope.

2) Provide a roller fairlead to guide the cable onto the drum. The fairlead shall be positioned to prevent the cable from rubbing on metal surfaces of the hoist.

3) Provide 3/16" diameter nylon coated stainless steel braided wire rope of sufficient length to raise the aircraft cable level with the underside of the bridge.

2.6 PUSHBUTTON STATION

A. Description:

1) A stainless steel, weatherproof enclosure shall be provided at each bridge-mounted gate box for use as a remote control pushbutton station. The pushbuttons shall be non-illuminated recessed type. Indicating light shall be a 12 bolt cluster LED, minimum 1 00,000 hour. Buttons and lights shall be 30 mm diameter. Buttons and lights shall be provided as follows:

a) "ON" pushbutton - Contactor closes, energizing the aircraft cable. Provide two for each gate with 180 KVA.
b) "OFF" pushbutton - Contactor opens, de-energizing the aircraft cable. Provide two for each gate with 180 KVA.
c) "RESET" pushbutton - In the event the protective controls are activated in the gatebox, the contactor cannot be closed until the condition has been corrected and the control circuit reset by depressing the "RESET" button.
d) "Raise" pushbutton - (Used only with cable hoist installation) When depressed, energizes the cable hoist to raise the aircraft cable to its storage position. Provide two for each gate.
e) "Lower" pushbutton - (Used only with cable hoist installation) When depressed, energizes the cable hoist to lower the aircraft cable from its storage position. Provide two for each gate.

i. Location of the pushbutton station shall be as shown on the project drawings and as coordinated with loading bridge manufacturer and with existing conditions.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Existing Conditions: Examine elements and surfaces to receive equipment for compliance with installation tolerances and other conditions affecting performance, including, but not limited to, ambient temperature, cooling air circulation, contaminants and disassembly and maintenance space. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Conduits and Raceways: Provide and install non-ferrous conduits and raceways for all 400-HZ wiring. Conduit shall be as shown on the drawings or sized per NEC when size is indicated. All raceways elements shall be reviewed and acceptable to system designer.

C. Passenger boarding Bridge Equipment Installation: Where 400-HZ equipment is installed on passenger boarding bridges; the work shall be coordinated with the bridge manufacturer. Welding shall be performed in the PBB manufacturer's factory in accordance with the bridge manufacturer's written welding procedure. Surface preparation and painting of areas affected by welding or during equipment installation shall be in accordance with the bridge manufacturer's requirements.

D. Over PBB Devices: The installation of cable in new over-PBB devices shall be coordinated with the PBB manufacturer. Brackets shall be supplied and attached to the PBB prior to factory painting.

3.2 SYSTEM TESTING:

A. General Start-up Requirements:

1) Qualified personnel from the equipment manufacturer shall perform the checkout and testing of the 400-HZ system.

2) The Vendor shall furnish qualified personnel to provide the initial set-up and adjustment of the solid-state electronic trip circuit breakers. Prior to energizing all installed wire, all wiring shall be tested for continuity and faults. The initial settings of the breakers shall be recorded in tabular form for each individual position and be made a part of the final documentation provided with the equipment.

3) The Vendor shall furnish qualified personnel to perform the on-site set-up and testing of the line drop compensators and gate boxes. Each branch circuit shall be tested at full load using the procedures stated below.

4) The following list of test equipment, or equivalent substitute, is required for testing the 400-HZ equipment and system and shall be provided by the supplier. Supplier shall be responsible for providing all other test equipment required to successfully perform all tests.

   a) Certified and calibrated digital AC voltmeter. Model Fluke 87 or 8020.
   b) Certified and calibrated clamp-on AC Ammeter
   c) Combination Resistive and Reactive Load Bank. A total capacity of 90 KVA consisting of 54 KV AR reactive load bank and a 72 KW resistive load bank. For dual output gate boxes 2 sets of load banks shall be employed.

5) On-Site Testing:

   a) Proper circuit breaker fault isolation shall be verified.
   b) Testing of each complete system, after installation, shall be done on-site with the Vendor furnishing their own load banks and all other required test equipment.

C. Testing Requirements:

1) Each individual position and each output shall be checked for no load and full load voltage drop using both a resistive and a reactive load attached to the output of the aircraft cable.

   a) Test each Jumbo position with a 180 KVA load, 90 KVA on each cable at 0.80 power factor. Testing will be at no load, full reactive load, full resistive load and 0.80 power factor load.

D. Test ground fault on the feeder side of each gate box.

E. Check phase rotation with load bank or phase rotation tester, rearrange phase wiring, if required.

F. The overvoltage, under voltage and overload protection provided by the gate box shall be verified.

G. The proper operation of the gate box control buttons shall be verified.

H. The test points located in the gate box test panel shall be used to verify the following parameters:

1) Output voltage of each of the three phases.

2) Output voltage of the DC power supply.

3) Contactor auxiliary contacts.

4) Contactor auxiliary relay.

5) Under-voltage relay contacts.

6) Over-voltage relay contacts.

7) Overload relay contacts.

8) Overload relay.

9) Protective Monitor

3.3 ACCEPTANCE

A. Final System Acceptance:

1) Final acceptance for each of the PBBs will be at the jobsite after all requirements of this Specification have been met. Provide a test report showing compliance with design requirements and calculations at each position as part of the Operations and Maintenance Manuals.

END OF SECTION 263226

ITQ No.: MDAD-67621-JM

Exhibit B

PBB_SECTION_263226_CP_400HZ_17.04.12

SECTION 263226 - FREQUENCY CONVERTERS – CENTRAL PLANT 400-HZ SYSTEMS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This specification describes and defines the performance and documentation required to be provided by the Vendor to furnish, install, and test the completed system, including all required design documents and plans necessary to provide 400-HZ power to Passenger Boarding Bridges (PBB) at Miami International Airport (MIA).

B. This Section applies only where the use of an existing 400-HZ central plant system has been approved for use to provide service to a PBB, as further detailed elsewhere in the specifications.

C. This Section includes furnishing and installing, but is not necessarily limited to, materials, equipment, labor and all other items necessary to deliver a complete and operable 400-HZ power source to new PBBs as directed by MDAD.

D. All codes, standards, and similar publications referenced in this Section shall be understood to be the latest version adopted by the issuing organization.

1.2 REFERENCE

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only:

1) Anti-Friction Bearing Manufacturers Association, Inc. (AFBMA). AFBMA 9 Load Rating and Fatigue Life for Ball Bearings.

2) American National Standards Institute, Inc. (ANSI).
ANSI C2 National Electrical Safety Code.
ANSI C 12.11 2007 Instrument Transformers for Revenue Metering.

3) Federal Communication Commission (FCC).
FCC, PART 18, CFR TITLE 47, Radio Frequency Interference Suppression.

4) International Electrical Testing Association (NETA)
Acceptance testing Specifications for Electrical Power Distribution Equipment and Systems.

5) National Electrical Manufacturers Association (NEMA).

NEMA AB 1 Molded Case Circuit Breakers.

NEMA ICS 1 Industrial Control and Systems: General Requirements.

NEMA ICS 6 Enclosures.

NEMA WD 1 Wiring Devices.

NEMA WD 6 Wiring Devices -Dimensional Requirements.

NEMA 250 Enclosures for Electrical Equipment (1000 volts maximum).

6) National Fire Protection Association (NFPA).

7) NFPA 70 National Electrical Code.

8) Underwriters Laboratories, Inc. (UL).

UL 467 Grounding and Bonding Equipment.

UL 489 Molded-Case Circuit Breakers and Circuit Breaker Enclosures.

UL 506 Specialty Transformers.

UL 508 Industrial Control Equipment.

1.3 QUALITY ASSURANCE:

A. Listing and Labeling: Provide products that are listed and labeled as defined by NFPA 70, Article 100, by a testing agency acceptable to the Authority Having Jurisdiction and marked for the intended use and for the location and environment in which they are installed.

1) All equipment, circuit breakers, panelboards and appurtenances shall be designed and UL listed for 400-HZ systems applications.

B. Factory Testing:

1) 400-HZ Gate Box Assemblies:

a) The gate box assemblies shall be tested at the factory to verify the following parameters:

i. Transformer Voltage Regulation.
ii. Load Contactor Automatic Opening:

Due to overvoltage.

Due to under voltage.

Due to overload.

iii. Line Drop Compensator(s) Voltage Regulation.

C. Field Testing:

1) Submit field testing as specified in Paragraph 3.2 "System Testing."

D. System Warranty: Provide a warranty of one year from the date of Substantial Completion for all parts and labor for the system and all equipment.

1.4 DELIVERY, STORAGE AND HANDLING

A. Delivery, Storage and Handling shall comply with the requirements listed below in addition to any other requirements found elsewhere in the specifications.

1) Transport using manufacturer provisions and in accordance with manufacturer recommendations.

2) Store in dry, dust-free location and cover completely to exclude contaminants.

3) Provide temporary heat if condensation is likely to occur.

1.5 EXTRA MATERIALS

A. Extra Materials:

1) Spare and extra parts shall be identified for all products, but not provided. Include spare parts information in Operation and Maintenance Manuals.

a) Fuses: Provide 2 of each size and type used.
b) Filters: Provide one spare circuit board for each critical circuit.
c) Bulbs: Provide 2 of each size, type and color used.

1.6 SYSTEM DESCRIPTION

A. The central plant 400-HZ central ground power system is capable of providing all 400-HZ to the system output locations. Source voltage shall be 480Y/277 Volt, 3-phase, 4-wire, 400-HZ, 575 VAC, 3-phase, 4-wire, is distributed from 312 KVA, vertical motor generators (three), via individual branch circuits to each aircraft service connection. The motor generators are capable of unmanned automatic paralleling, automatic master assignment and rotation, and auto-restart. The 400-HZ power is fed from solid-state electronic trip circuit breakers housed in the main distribution switchboard. All distribution wire shall be factory twisted and bundled, 3 or 7-conductor XHHW-2 copper run in non-

ferrous conduits or raceways and shall be installed by the Vendor as indicated on the drawings. The power shall be delivered across the passenger boarding bridge via cable housed in a new over-bridge device. The power shall be delivered to the aircraft from a gate box that is mounted on the loading bridge. The gate box transforms the 575 V, 400-HZ power to 118/204 V, 3-phase, 4 wire, 400-HZ and contains various controls and protective devices. Each output of each gatebox shall contain a line drop compensator to compensate for the inductive line losses in the circuit. An aircraft cable connected in the gate box and plugged into the aircraft completes the circuit.

1.7 SYSTEM PERFORMANCE

A. System Voltage Requirements: The 400-HZ distribution system shall deliver an average steady state voltage in the range between 112.0 and 118.5 VAC using a constant voltage motor generator. All components for each branch circuit, including gate box, line drop compensator (LDC), wire and circuit breaker, shall be rated 180 KV A, as indicated on the plans and schedules. The LDC's will be set to maintain reactive load voltages in the 117-118.5 V range and the wire sized to limit the full load voltage drop within 6.5 volts for a minimum delivery voltage of 112 V. The transient voltages shall be within the range of 102- 130 VAC. The transient recovery for a 90 KVA load change shall be less than 80 milliseconds.

1.8 EQUIPMENT DOCUMENTATION

A. Equipment Submittal: Submit manufacturer's technical product data, including performance and operating criteria, physical dimensions and installation procedures. Product data shall be provided for the following:

1) Modifications to the Distribution Switchboard, including specific information on the circuit breakers.
2) Pushbutton station at PBB.
3) PBB Wire, Cable and Raceway.
4) Gate Box (each type).
5) Aircraft Cable.
6) Cable Hoist/Cable Retrieve.

B. System Shop Drawings: Submit shop drawings detailing the equipment installation, system electrical single-line diagrams, voltage line drop calculations, central room layout, modifications, adjustments and typical bridge equipment arrangement and modifications.

C. Operation and Maintenance Manuals:

1) Operating and Maintenance manuals shall contain, at a minimum:

a) Equipment operating and maintenance information, control diagrams, wiring schematics, physical description, major parts list.
b) List of special tools required, troubleshooting information, spare parts lists and warranty explanation.
c) Catalog information and shop drawings for each major component and for each system layout.
d) Instructions for starting and operating converters and all associated equipment.
e) Routine preventative maintenance and lubrication schedule.
f) Description of operating limits which may result in hazardous or unsafe conditions, or in equipment damage.

D. Design Calculations

1) The system provider is responsible for complete design calculations based on the actual equipment provided in accordance with the identified aircraft mix for each gate. Submit all required structural calculations for mounting of gate equipment to PBB. Submit complete design calculations regarding voltage drop calculations for each gate to include all assumptions, design considerations, design data, equipment selection table. Include in bid all necessary equipment and cable sizes required to meet the performance specifications herein. Provide wire sizes as required to meet specified criteria, at no additional cost to MDAD. 400-HZ distribution wire shall be sized based on LDC settings no greater than 10 percent.

PART 2 - PRODUCTS

2.1 PBB CABLE AND WIRE

A. General Description:

1) Refer to Section 260519

B. PBB Small Power and Control Cable:

1) Multiple conductor control and small power cables used outdoors on the passenger boarding bridges, shall be portable power cable. Cables shall be sized as indicated on the drawings or sized as required by the equipment furnished. Cable shall have green equipment ground conductor with equal size as phase conductors. Cables to be jacketed 600 volts SO type. Cable connectors shall be non-ferrous, steel case liquid tight sized for cable diameter and shall use strain relief gland fitting to prevent tension on conductor terminals. Where cable drops are indicated on the drawings, use non- ferrous wire mesh strain relief cable grips at both ends of cable drops. Conductors shall be stranded copper. Cable shall be suitable for use outdoors, sunlight resistant, moisture resistant and oil resistant.

C. STU Assembly

1) Flexible, 400-HZ cable shall be provided within the passenger boarding bridge (PBB) utility carrier (or STU) where indicated on plans or in schedules. Cable shall be type W, round, portable power cable suitable for outdoor use, sunlight resistant, moisture resistant, and oil resistant. Provide (4) #2/0, stranded conductors with 600/2000 volt, 90 degrees C, EPR insulation. Conductors shall be color coded. Jacket shall be lead cured thermoset or reinforced neoprene. Cable assembly shall be U.L. listed. Provide length required by PBB to span full travel of STU plus 30 feet at each end.

2.2 GATE BOX

A. General Description:

1) The gatebox assembly shall be a stand-alone device to provide transformation of 400-HZ, 575 V AC to 115/200 V AC, 3-phase, 4-wire with grounded neutral power for aircraft use. The gatebox assembly shall be 90 KVA single output or 180 KVA dual output, as indicated by the aircraft mix requested by MDAD. Output power rating shall be continuous at 0.8 power factor lagging. Each component of the gatebox assembly listed below shall be configured with the KVA rating of the assembly unless otherwise noted.

B. Enclosure:

1) The gate box cabinet shall be welded #11-gauge steel with stainless steel door piano hinge. The finish shall be two (2) coats of primer and one coat of polyurethane paint. The color to be as specified by the customer. The top shall be removable to facilitate complete paint coverage. The unit shall be NEMA 3R compliant.

2) The enclosure top cover shall have threaded connections for lifting eyes.

3) Storage receptacle for spare bulbs and fuses shall be located on the interior of the gate box door.

C. Transformer:

1) The gate box shall contain 400-HZ dry type step down isolation transformers with 575V delta connected primary and 118/204 V wye connected secondary. Transformers shall be sized equal to the output rating of the gate box.

2) Insulation shall be class "H" varnish impregnation, two coats.

3) The minimum B.I.L. shall be 10,000 volts.

4) The voltage regulation of the line to neutral, no load to full load shall be 0.6% at unity power factor and 1.5% at 0.8 Jagging power factor.

5) The transformer shall have continuous duty rating equal to rated KVA.

D. Contactor:

1) Provide 600V, 325 Amp, 400-HZ rated load contactors as required. The contactors will be provided with lugs capable of landing two #2/0 wires per phase. The coil shall be 100 VDC.

E. Line Drop Compensator

1) Provide required line drop compensators for gateboxes. The line drop compensator is used to eliminate the reactive voltage losses (line drop) in long runs of 400-HZ power distribution. The line drop compensator shall be rated at its KVA rating, 575 volts, 3-phase, 400-HZ continuous load at 0.8 power factor lagging. The compensator shall be capable of correcting a minimum of 16% inductive impedance at its KVA rating and shall be step adjustable with a minimum of six steps. The line drop compensator shall be UL 508 rated.

2) Transformers:

a) Each LDC shall contain three 90 KV A, 400-HZ dry type, current transformers, one for each phase (A, B, and C). The maximum ampere rating of each transformer shall be according to its KVA rating, which at the 16% setting will give a 53-volt boost per phase, minimum.

b) The insulation shall be class "H" varnish impregnation, two coats.

c) The transformers shall have multiple taps on the secondary windings for adjustment of the reactive compensation for various combinations of cable lengths and sizes to provide voltage boost from 6% to 16% in 2% increments. The secondary taps shall be positioned in an accessible location to allow adjustment without reaching over or around the primary taps in order to reduce the possibility of coming into contact with the 575-volt power. The taps shall be of the quick connect terminal type. A decal shall show the boost connections. The temperature rise of the magnetic components shall show the boost connections. The temperature rise of the magnetic components shall not exceed 80 degrees Celsius over 40 degrees Celsius ambient under rated load conditions. The design of the compensator shall not require the use of fans for cooling.

3) Capacitors:

a) Two capacitors will be connected in parallel across the secondary windings of each transformer to reflect capacitive reactance into the main transmission line and cancel the inductive reactance. Capacitors shall be non-PCB type.
b) Capacitor voltage rating to be such that if one capacitor fails, the second will withstand the increase in voltage and current. The compensator shall handle a 250 percent load transient without interruption of service or system degradation.
c) Provide line drop compensation, as determined from the system provider's voltage drop calculations in order to furnish the correct voltage at the aircraft cable plug. Maximum allowable setting during system start-up of LDC shall be 10 percent. Size conductors based on a maximum 10 percent boost.

F. Controls and Indicators

1) A 600V, 3 pole, manually operated disconnect isolation switch shall be provided on the fixed portion of the enclosure and shall be lockable with internal and external override. The ampere rating of the isolation disconnect switch shall be sized according to the rating of the gatebox.

2) The gate box assembly shall be equipped with individual industry standard PC boards, factory adjusted, to provide over voltage, under voltage and overload protection.

3) E/F feedback circuit shall use relay logic to insure proper aircraft interlock and safety for each output. This circuit shall also be equipped with an MOY to eliminate any 400-HZ induced voltage from the single jacketed aircraft cable.

4) 12-volt cluster LED, minimum 100,000 hours, indicating lights and illuminated pushbuttons shall be located on the exterior of the gate box cabinet. Buttons and lights shall be 30 mm diameter.

Buttons and lights shall be provided as follows:

a) Power Available Light - Power is available in the gate box.
b) Overload Light - An overload fault has occurred.
d) Under Voltage Light - An under voltage fault has occurred.
e) Over Voltage Light - An over voltage fault has occurred.
f) Reset Button - Resets the assembly after a fault has occurred.
g) Test Button Illuminates all lamps.
h) Contactor Closed Light -Lights to indicate that power is being supplied to

the aircraft.

5) All lights, local and remote pushbutton, and controls, shall be 12 VDC with a continuous duty power supply rated from 1.7 to 5 amps, depending on the design conditions. Spare bulbs and fuses of each type provided.

6) Voltmeter: The output voltmeter shall have a single 0 to 300 VAC scale in order to read line-to-line and line-to-neutral voltages. The voltmeter shall be calibrated for 400-HZ and have an accuracy of +2 percent full scale.

7) Voltmeter Selector Switch: Seven (7) position selector switches with "OFF" position shall be provided to monitor line-to-line and line-to-neutral voltages.

8) Ammeter: The Output Ammeter shall have a single 0 to 400-A. RMS scale in order to read output phase currents. The Ammeter shall be calibrated for 400 HZ and shall have an accuracy of +2 percent full scale.

9) Ammeter selector switch: A four (4) position selector switch shall be provided to monitor output phase currents:" A", "B", "C" with an "OFF" position.

10) Frequency meter: Output frequency meter with range of 360 HZ to 400-HZ and accuracy of +5 percent full scale.

11) Elapsed time meter: Shall be non-resettable type with 0 to 99,999 Hr.

G. Gate Box Test Panel:

1) The gate box shall contain a silk screened or equivalent schematic and component legend on a sixteen-point test panel for troubleshooting the following conditions:

a) Output voltage of each of the three phases.
b) Output voltage of the DC power supply.
c) Contactor auxiliary contacts.
d) Contactor auxiliary relay.
e) Under voltage relay contacts.
f) Over voltage relay contacts.
g) Overload relay contacts.
i) Overload relay.
j) Protective Monitor

2) Test switches to facilitate testing and troubleshooting.

3) E/F bypass switch for test purposes when 28 VDC power, is not available.

4) Contactor disable switch to disable the gate box output, but still leave input power to the box enabled.

5) A "Back Feed" receptacle, to allow 400-HZ, 115/200 V external power for purposes of testing normal gate box operation, over voltage and under voltage protection, shall be provided on the face of the test panel.

6) Provide dry alarm contacts for interface with PCA Air Handler Unit Controller for the following:

a) 400-HZ On/Off.
b) 400-HZ Fault

2.3 400-HZ AIRCRAFT CABLE

A. CABLE ASSEMBLIES

1) Multi Conductor Banded

The 400-HZ Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Each lead Shall consist of a single conductor. Phase A, B, C, & N shall be approximately 2/0 AWG. Control leads E & F shall be #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. The plug shall be Anderson Power Products or approved equal, field attachable, MS25486-3/(R67G36B). Each cable assembly shall be approximately 65 feet and 85 foot in lengths and banded together with stainless steel bands.

Lug Terminals for A, B, C,	Phase shall be MS20659-1 20
Lug Terminals for N	Phase shall be MS20659-136
Lug Terminals for E & F	Phase shall be MS20659-106

Lug terminals shall be attached to one end of the cable and plug attached to the other end. A ball stop is to be attached to the cable approximately 2-1/2 feet behind plug. Some cablesentire length should be protected with orange scuff cover.

2) Single Jacketed Multi-Conductors

The 400-HZ Cable Assemblies shall consist of A, B, C Phase & N (Neutral) supply wires. Phase A, B, C shall be approximately 1/0 AWG. Phase N (Neutral) shall consist of 3#6 AWG Control leads E & F shall be #12 AWG (2) conductors. Provide jumper wire between pins E & F in the plug. All wire shall be manufactured Anderson Power Products or approved equal, field attachable, R67G76B. Each cable assembly shall be approximately 65 feet and 85 foot in length as required.

Lug Terminals for A, B, C,	Phase shall be MS20659-18B
Lug Terminals for N	Phase shall be MS20659-143
Lug Terminals for E & F	Phase shall be MS20659-106

3) Lug terminals shall be attached to one end of the cable and plug attached to the other end. Plug shall be yellow fluorescent in color.

2.4 400-HZ AIRCRAFT CONNECTOR

A. The Aircraft Connector shall be a molded portable connector consisting of a specially formulated Hypolon® rubber material, as manufactured by Anderson Airmotive Products Co., Inc. Portable Plug Catalog No. R67, or MDAD approved equal, configured to accommodate the characteristics of cables specified for this project. The portable plug shall meet the following additional specifications:

1) Shock-proof, highly abrasion and chemically resistant material

2) Replaceable contacts, silver-plated copper-tellurium alloy

3) Replaceable connector front part

4) Replaceable rubber protectors with wear indicators

5) Short, main contacts for low voltage drop

6) Applicable norms: 2006/42/EC Machinery Directive, VG 95319, ISO 461, MS 25486, DFS 400

7) Push and pull forces meet DIN EN 61984 $\leq$ 445 N

8) Operating temperature range -40°C to +125°C (-40°F to +257°F)

9) Resistant to UV radiation, oil, hydrolysis and microbial attack

10) Nominal voltage: 115/200 V, 400-HZ

11) Current carrying capacity: 260 A/90 KVA

12) Current overload: 600 A/30 min, 1000 A/3 min, 2000 A/3 sec

13) Test voltage: 4 KV at 400-HZ main wires/2 KV at 28 V control wires

14) Protection class: IP 68 for mounted connector

2.5 CABLE HOIST

A. General Description:

1) The Cable Hoist is used to raise the flexible aircraft cable to a stowed position along the side of the bridge out of the path of moving vehicles. It allows the operator to lower the cable to power aircraft at the gate. The hoist shall be designed for mounting on top of or on the side of the bridge. The cable hoist shall be U.L. labeled. Provide two hoists at each gate.

B. Enclosure:

1) The hoist cabinet shall be welded # 10-gauge steel. The finish shall be two coats of primer and one coat of white polyurethane paint. The unit shall be rated NEMA 3R. The hoist shall be constructed with a removable or hinged cover for ease of maintenance and access to major components.

C. Motor:

1) Provide an electric open drip proof gear motor rated at 1/2 HP, 480 VAC, 60 HZ, 3Phase. Provide a PBB-mounted, NEMA 3R, overcurrent/disconnecting means. The gear reducer shall be NEMA rated Class 0. Provide a magnetic disc brake to prevent the wire rope drum from unwinding when the hoist is shut off.

D. Controls:

1) A 600V, 3 pole, 10 amps manually operated disconnect isolation switch shall be provided in the control panel. The panel door shall not be capable of being opened unless the disconnect switch is in the OFF position.

2) Provide a reversing contactor and control circuitry.

3) Provide raise/lower push-button controls for mounting on the bridge drive column.

4) Provide a 24-volt adjustable counter to control the IN and OUT limits of the wire rope.

5) A step down transformer shall be provided for the low voltage circuits.

E. Drum, Fairlead, Cable and Saddles:

1) Provide a single drum with flanges to contain the wire rope.

2) Provide a roller fairlead to guide the cable onto the drum. The fairlead shall be positioned to prevent the cable from rubbing on metal surfaces of the hoist.

3) Provide 3/16" diameter nylon coated stainless steel braided wire rope of sufficient length to raise the aircraft cable level with the underside of the bridge.

2.6 PUSHBUTTON STATION

A. Description:

1) A stainless steel, weatherproof enclosure shall be provided at each bridge-mounted gate box for use as a remote control pushbutton station. The pushbuttons shall be non-illuminated recessed type. Indicating light shall be a 12 bolt cluster LED, minimum 1 00,000 hour. Buttons and lights shall be 30 mm diameter. Buttons and lights shall be provided as follows:

a) "ON" pushbutton - Contactor closes, energizing the aircraft cable. Provide two for each gate with 180 KVA.
b) "OFF" pushbutton - Contactor opens, de-energizing the aircraft cable. Provide two for each gate with 180 KVA.
c) "RESET" pushbutton - In the event the protective controls are activated in the gatebox, the contactor cannot be closed until the condition has been corrected and the control circuit reset by depressing the "RESET" button.
d) "Raise" pushbutton - (Used only with cable hoist installation) When depressed, energizes the cable hoist to raise the aircraft cable to its storage position. Provide two for each gate.
e) "Lower" pushbutton - (Used only with cable hoist installation) When depressed, energizes the cable hoist to lower the aircraft cable from its storage position. Provide two for each gate.

i. Location of the pushbutton station shall be as shown on the project drawings and as coordinated with loading bridge manufacturer and with existing conditions.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Existing Conditions: Examine elements and surfaces to receive equipment for compliance with installation tolerances and other conditions affecting performance, including, but not limited to, ambient temperature, cooling air circulation, contaminants and disassembly and maintenance space. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Conduits and Raceways: Provide and install non-ferrous conduits and raceways for all 400-HZ wiring. Conduit shall be as shown on the drawings or sized per NEC when size is indicated. All raceways elements shall be reviewed and acceptable to system designer.

C. Passenger boarding Bridge Equipment Installation: Where 400-HZ equipment is installed on passenger boarding bridges; the work shall be coordinated with the bridge manufacturer. Welding shall be performed in the PBB manufacturer's factory in accordance with the bridge manufacturer's written welding procedure. Surface preparation and painting of areas affected by welding or during equipment installation shall be in accordance with the bridge manufacturer's requirements.

D. Over PBB Devices: The installation of cable in new over-PBB devices shall be coordinated with the PBB manufacturer. Brackets shall be supplied and attached to the PBB prior to factory painting.

3.2 SYSTEM TESTING:

A. General Start-up Requirements:

1) Qualified personnel from the equipment manufacturer shall perform the checkout and testing of the 400-HZ system.

2) The Vendor shall furnish qualified personnel to provide the initial set-up and adjustment of the solid-state electronic trip circuit breakers. Prior to energizing all installed wire, all wiring shall be tested for continuity and faults. The initial settings of the breakers shall be recorded in tabular form for each individual position and be made a part of the final documentation provided with the equipment.

3) The Vendor shall furnish qualified personnel to perform the on-site set-up and testing of the line drop compensators and gate boxes. Each branch circuit shall be tested at full load using the procedures stated below.

4) The following list of test equipment, or equivalent substitute, is required for testing the 400-HZ equipment and system and shall be provided by the supplier. Supplier shall be responsible for providing all other test equipment required to successfully perform all tests.

   a) Certified and calibrated digital AC voltmeter. Model Fluke 87 or 8020.
   b) Certified and calibrated clamp-on AC Ammeter
   c) Combination Resistive and Reactive Load Bank. A total capacity of 90 KVA consisting of 54 KV AR reactive load bank and a 72 KW resistive load bank. For dual output gate boxes 2 sets of load banks shall be employed.

5) On-Site Testing:

   a) Proper circuit breaker fault isolation shall be verified.
   b) Testing of each complete system, after installation, shall be done on-site with the Vendor furnishing their own load banks and all other required test equipment.

C. Testing Requirements:

1) Each individual position and each output shall be checked for no load and full load voltage drop using both a resistive and a reactive load attached to the output of the aircraft cable.

   a) Test each Jumbo position with a 180 KVA load, 90 KVA on each cable at 0.80 power factor. Testing will be at no load, full reactive load, full resistive load and 0.80 power factor load.

D. Test ground fault on the feeder side of each gate box.

E. Check phase rotation with load bank or phase rotation tester, rearrange phase wiring, if required.

F. The overvoltage, under voltage and overload protection provided by the gate box shall be verified.

G. The proper operation of the gate box control buttons shall be verified.

H. The test points located in the gate box test panel shall be used to verify the following parameters:

1) Output voltage of each of the three phases.

2) Output voltage of the DC power supply.

3) Contactor auxiliary contacts.

4) Contactor auxiliary relay.

5) Under-voltage relay contacts.

6) Over-voltage relay contacts.

7) Overload relay contacts.

8) Overload relay.

9) Protective Monitor

3.3 ACCEPTANCE

A. Final System Acceptance:

1) Final acceptance for each of the PBBs will be at the jobsite after all requirements of this Specification have been met. Provide a test report showing compliance with design requirements and calculations at each position as part of the Operations and Maintenance Manuals.

END OF SECTION 263226

Miami-Dade County
Contractor Due Diligence Affidavit

Per Miami-Dade County Board of County Commissioners (Board) Resolution No. R-63-14, County Vendors and Contractors shall disclose the following as a condition of award for any contract that exceeds one million dollars ($1,000,000) or that otherwise must be presented to the Board for approval:

(1) Provide a list of all lawsuits in the five (5) years prior to bid or proposal submittal that have been filed against the firm, its directors, partners, principals and/or board members based on a breach of contract by the firm; include the case name, number and disposition;

(2) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has defaulted; include a brief description of the circumstances;

(3) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

All of the above information shall be attached to the executed affidavit and submitted to the Procurement Officer overseeing this solicitation/ contract/purchase order. The Vendor/Contractor attests to providing all of the above information, if applicable, to the County.

NOTE: "Pursuant to Florida Statutes s. 92.525, under penalties of perjury....." vendors who are unable to obtain a Notary Public during the COVID-19 declared emergency are permitted to use the below declaration in lieu of (notarized) affidavits for responses to solicitations.

Written Declaration: Pursuant to Florida Statutes s. 92.525, under penalties of perjury, I declare that I have read the foregoing Contractor Due Diligence Affidavit and that the facts stated in it (attached to it) are true.

Contract No. : ITQ No.: MDAD-67621-JM

Federal Employer Identification Number (FEIN): 52-2089962

Contract Title: Purchase, Installation, Extended Warranty and Support Services, of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) Bid No. MDAD -67621-JM

Manuel Torres, Brooke Smiddy	President, Secretary	Brooke Smiddy
Printed Name of Affiant	Printed Title of Affiant	Signature of Affiant

TK Airport Solutions, Inc.	5/4/2023
Name of Firm	Date

3201 N. Sylvania Ave., Suite 117	Fort Worth, TX	76111
Address of Firm	State	Zip Code

Notary Public Information

Notary Public – State of Texas County of Tarrant

Subscribed and sworn to (or affirmed) before me this 4th day of, May 2023 by

Manuel Torres / Brooke Smiddy He or she is personally known to me or has produced identification ✓

Signature of Notary Public — Serial Number: 131069555

Andrea Jackson — Print or Stamp of Notary Public

03-31-2025 — Expiration Date

Notary Public Seal

ANDREA JACKSON
Notary Public, State of Texas
Comm. Expires 03-31-2025
Notary ID 131069555

rev. COVID-19 declared emergency

Pending/ Past 5 Years Litigation Matters

As of March 31, 2023, active and past five-year litigations against TK Airport Solutions, Inc.

Parties	Loss Description	Status
Sherry Rogers v. TK Airport Solutions Union County, North Carolina	Minor vehicular Accident involving TKAS employee (no longer employed) 2021	Closed
Rawia Maayah	American Airlines Passenger bridged partially collapsed near the entrance of the aircraft causing her to fall. 2020	Closed with no liability to thyssenkrupp as the bridge involved is not TKAS bridge
Gregory Roberts Vs. Miami-Dade County and thyssenkrupp Airport Systems, Inc.	Product liability Case/Reference No: 2020-004158-CA-01 2018	Closed

MIAMI-DADE COUNTY

SMALL BUSINESS DEVELOPMENT
CERTIFICATE OF ASSURANCE

SMALL BUSINESS PARTICIPATION ON COUNTY A&E AND DESIGN/BUILD PROJECTS

This completed form must be submitted with proposal documents by all proposers on a Miami-Dade County project with Small Business Enterprise ("SBE") program measure(s).

Project No.: MDAD-67621-JM

Project Title: Purchase, Installation, Extended Warranty and Support Services, of Pre-Conditioned Air and 400 Hz Systems at Miami ~~International Airport (MIA) Bid No. MDAD-67621-JM~~

Name of Proposer: TK Airport Solutions, Inc. FEIN 52-2089962

Address: 3201 N. Sylvania Ave., Suite 117 City Fort Worth State TX ZIP 76111

Telephone Number: (909) 913-1746
817-210-5000

Email address: Paul.Alvarado@TKElevator.com

The proposer is committed to meeting the established SBE measure(s) assigned to this project:

0 % SBE-A/E, 15 % SBE-Con, 0 % SBE-G, and/or 0 % SBE-S.

(For Goals, write in the percentage. For Set-aside, put a check mark or x.)

To satisfy the requirements for Step 1 –Proposal Submittal and Compliance with Small Business Enterprise Program Measure(s), the following is required:

1. Acknowledge the SBE program measure(s) (i.e., *SBE-Architecture & Engineering, SBE-Construction, SBE-Goods and/or SBE-Services*) established for this project via this Certificate of Assurance.
2. Acknowledge and confirm that there is an established relationship with the certified Miami-Dade County Small Business Enterprise firm(s) to be subcontracted to achieve the established SBE program measure(s) as indicated in the Project Documents.
3. Acknowledge that all SBE-A/E firms are properly listed on the Letter of Qualifications submitted as part of the proposal documents and will be utilized, if selected to provide services based on their approved technical certification(s) required for the project.

To satisfy the requirements for Step 2 – Proposal Evaluation and Recommendation for Award, please attest that:

I understand that my company will be deemed non-compliant and not eligible to be considered for an award if I fail to (1) submit this Certificate of Assurance with my proposal documents, or (2) complete the Utilization Plan listing all certified Miami-Dade County SBEs to be subcontracted to satisfy the project's established SBE measure(s) via the County's Business Management Workforce System ("BMWS"), within the specified time frame, upon email notification from Small Business Development ("SBD") or BMWS. Each SBE-A/E sub-consultant listed on the Letter of Qualifications must confirm their sub-contractual relationship (i.e., work to be performed, and the value or percentage of said work) in the Utilization Plan via BMWS, for approval by SBD.

STATE OF ~~FLORIDA~~ Texas

COUNTY OF ~~MIAMI-DADE~~ Tarrant

BEFORE ME, an officer duly authorized to administer oaths and take acknowledgement, personally appeared Manuel Torres | Brooke Smiddy, who being first sworn deposes and affirms that the provided information statements are true and correct to the best of his/her knowledge information and belief.

Brooke Smiddy

Prime Proposer's Signature (Owner/Officer)

SWORN TO and subscribed before me this 4th day of May, 20 23

Signature of Notary Public-State of ~~Florida~~ Texas

My Commission Expires: 03-31-2025

ANDREA JACKSON
Notary Public, State of Texas
Comm. Expires 03-31-2025
Notary ID 131069555

BID BOND

State of Florida **County of** Miami-Dade

We, TK Airport Solutions, Inc. **as Principal**

and United States Fire Insurance Company **as Surety**, are held and firmly bound unto Miami-Dade County, Florida hereinafter called the County, in the **Penal sum of** Five Percent of Amout Bid **Dollars** ($ 5%)[1] lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. The Principal has submitted the attached Bid, **dated** May 5, 2023, for **Project Name:** Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at Miami International Airport (MIA) **Bid No:** MDAD-67621-JM.

The Principal shall at time of bid opening furnish all documents and information required by the Contract Documents, and shall not withdraw said Bid within the time stipulated in the advertisement for bids and shall within the time stipulated in the Instructions to Bidders execute and deliver to the County, the Contract Summary, Performance Bond, Payment Bond, and satisfactory evidence of all required Insurance. The Principal shall give a Performance and Payment Bond with good and sufficient surety, as required by the Contract Documents, for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith. Having met these obligations shall render this Bond void and of no effect; or in the event of withdrawal of said Bid within the period specified, or in the event of the failure to comply with the Contract Documents, or in the event of failure to enter into such Contract and give such Bonds and evidence of insurance within the time specified, if the Principal shall pay the County the difference between the amounts specified in said Bid and the amount for which the County may procure the required work and supplies, provided the latter amount be in excess of the former, then the above obligations shall be void and of no effect; otherwise, to remain in full force and virtue.

The above parties have caused this Bond to be executed by their appropriate officials as of the 5th day of May, 2023.

TK Airport Solutions, Inc.
CORPORATION

Karen Waller
Witness
Bid / Sales Coordinator

By:
Title MANAGING DIRECTOR

PARTNERSHIP OR JOINT VENTURE *

Witness

By:
Title

Witness

By:
Title

* Note: All Partners or Joint Venture Members shall sign and submit documentation proving their authority to sign on behalf of the Partnership or Joint Venture.

(Corporate Seal)

Non-Resident
COUNTERSIGNED BY ~~RESIDENT~~ FLORIDA AGENT OF SURETY:

Sarah E. Green #W467549

SURETY: United States Fire Insurance Company

By: Attorney-in-Fact Paula M. Eby

(A copy of Agent's current Identification Card as issued by State of Florida Insurance Commissioner must be attached.)

(THIS FORM MUST BE SUBMITTED IN DUPLICATE - ONE ORIGINAL AND ONE COPY)

[1] **Bid Bond equivalent to five percent (5%) of the Bid Price**

ACKNOWLEDGEMENT OF SURETY

STATE OF OHIO
COUNTY OF FRANKLIN

On this 5th day of May, 2023, before me personally came Paula M. Eby to me known, who being by so duly sworn, did depose and say that she is the Attorney-In-Fact of:

United States Fire Insurance Company.

The Corporation described in and which executed the foregoing instrument; that she knows the seal of said Corporation; that the seal affixed by authority granted to her in accordance with By-Laws of the said Corporation, and that she signed her name thereto by like authority.

Jillian R. Siefert, Notary Public

NOTARIAL SEAL
STATE OF OHIO

Jillian R. Siefert
Notary Public, State of Ohio
My Commission Expires:
May 01, 2026

POWER OF ATTORNEY
UNITED STATES FIRE INSURANCE COMPANY
PRINCIPAL OFFICE - MORRISTOWN, NEW JERSEY

KNOW ALL MEN BY THESE PRESENTS: That United States Fire Insurance Company, a corporation duly organized and existing under the laws of the state of Delaware, has made, constituted and appointed, and does hereby make, constitute and appoint:

Kimberly Bragg; Sarah E. Green; Paula M. Eby; Susan Landreth; Rebecca Josephson

each, its true and lawful Attorney(s)-In-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver: Any and all bonds and undertakings of surety and other documents that the ordinary course of surety business may require, and to bind United States Fire Insurance Company thereby as fully and to the same extent as if such bonds or undertakings had been duly executed and acknowledged by the regularly elected officers of United States Fire Insurance Company at its principal office, in amounts or penalties: **One Hundred Twenty Five Million Eight Hundred Thousand Dollars ($125,800,000)**

This Power of Attorney limits the act of those named therein to the bonds and undertakings specifically named therein, and they have no authority to bind United States Fire Insurance Company except in the manner and to the extent therein stated.

This Power of Attorney revokes all previous Powers of Attorney issued on behalf of the Attorneys-In-Fact named above.

This Power of Attorney is granted pursuant to Article IV of the By-Laws of United States Fire Insurance Company as now in full force and effect, and consistent with Article III thereof, which Articles provide, in pertinent part:

Article IV, Execution of Instruments - Except as the Board of Directors may authorize by resolution, the Chairman of the Board, President, any Vice-President, any Assistant Vice President, the Secretary, or any Assistant Secretary shall have power on behalf of the Corporation:

(a) to execute, affix the corporate seal manually or by facsimile to, acknowledge, verify and deliver any contracts, obligations, instruments and documents whatsoever in connection with its business including, without limiting the foregoing, any bonds, guarantees, undertakings, recognizances, powers of attorney or revocations of any powers of attorney, stipulations, policies of insurance, deeds, leases, mortgages, releases, satisfactions and agency agreements;
(b) to appoint, in writing, one or more persons for any or all of the purposes mentioned in the preceding paragraph (a), including affixing the seal of the Corporation.

Article III, Officers, Section 3.11, Facsimile Signatures. The signature of any officer authorized by the Corporation to sign any bonds, guarantees, undertakings, recognizances, stipulations, powers of attorney or revocations of any powers of attorney and policies of insurance issued by the Corporation may be printed, facsimile, lithographed or otherwise produced. In addition, if and as authorized by the Board of Directors, dividend warrants or checks, or other numerous instruments similar to one another in form, may be signed by the facsimile signature or signatures, lithographed or otherwise produced, of such officer or officers of the Corporation as from time to time may be authorized to sign such instruments on behalf of the Corporation. The Corporation may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Corporation, notwithstanding the fact that he may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, United States Fire Insurance Company has caused these presents to be signed and attested by its appropriate officer and its corporate seal hereunto affixed this 28th day of September, 2021.

UNITED STATES FIRE INSURANCE COMPANY

Matthew E. Lubin, President

State of New Jersey}
County of Morris }

On this 28th day of September, 2021, before me, a Notary public of the State of New Jersey, came the above named officer of United States Fire Insurance Company, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of United States Fire Insurance Company thereto by the authority of his office.

MELISSA H. D'ALESSIO
NOTARY PUBLIC OF NEW JERSEY
Commission # 50125833
My Commission Expires 4/7/2026

Melissa H. D'Alessio (Notary Public)

I, the undersigned officer of United States Fire Insurance Company, a Delaware corporation, do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is still in force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of United States Fire Insurance Company on the 5th day of May 2023

UNITED STATES FIRE INSURANCE COMPANY

Michael C. Fay, Senior Vice President

*For verification of the authenticity of the Power of Attorney, please contact SuretyInquiries@amyntagroup.com

FLORIDA DEPARTMENT OF FINANCIAL SERVICES

SARAH E GREEN

License Number : W467549

Non Resident Insurance License

- 0920 - NONRES GEN LINES (PROP & CAS)

Issue Date

02/08/2018

NOTICE - This non-resident license is limited to the classes of insurance reflected above and is further limited to ONLY those classes of insurance for which you are licensed in your home state.

Please Note: A licensee may only transact insurance with an active appointment by an eligible insurer or employer. If you are acting as a surplus lines agent, public adjuster, or reinsurance intermediary manager/broker, you should have an appointment recorded in your own name on file with the Department. If you are unsure of your license status you should contact the Florida Department of Financial Services immediately. This license will expire if more than 48 months elapse without an appointment for each class of insurance listed. If such expiration occurs, the individual will be required to re-qualify as a first-time applicant. If this license was obtained by passing a licensure examination offered by the Florida Department of Financial Services, the licensee is required to comply with continuing education requirements contained in 626.2815 or 648.385, Florida Statutes. A licensee may track their continuing education requirements completed or needed in their MyProfile account at https://dice.fldfs.com. To validate the accuracy of this license you may review the individual license record under "Licensee Search" on the Florida Department of Financial Services website at http://www.MyFloridaCFO.com/Division/Agents

Jimmy Patronis
Chief Financial Officer
State of Florida

ACKNOWLEDGEMENT OF SURETY

STATE OF OHIO
COUNTY OF FRANKLIN

On this 5th day of May, 2023, before me personally came Paula M. Eby to me known, who being by so duly sworn, did depose and say that she is the Attorney-In-Fact of:

United States Fire Insurance Company.

The Corporation described in and which executed the foregoing instrument; that she knows the seal of said Corporation; that the seal affixed by authority granted to her in accordance with By-Laws of the said Corporation, and that she signed her name thereto by like authority.

Jillian R. Siefert, Notary Public

NOTARIAL SEAL
STATE OF OHIO

Jillian R. Siefert
Notary Public, State of Ohio
My Commission Expires:
May 01, 2026

POWER OF ATTORNEY
UNITED STATES FIRE INSURANCE COMPANY
PRINCIPAL OFFICE - MORRISTOWN, NEW JERSEY

KNOW ALL MEN BY THESE PRESENTS: That United States Fire Insurance Company, a corporation duly organized and existing under the laws of the State of Delaware, has made, constituted and appointed, and does hereby make, constitute and appoint:

Kimberly Bragg; Sarah E. Green; Paula M. Eby; Susan Landreth; Rebecca Josephson

each, its true and lawful Attorney(s)-In-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver: Any and all bonds and undertakings of surety and other documents that the ordinary course of surety business may require, and to bind United States Fire Insurance Company thereby as fully and to the same extent as if such bonds or undertakings had been duly executed and acknowledged by the regularly elected officers of United States Fire Insurance Company at its principal office, in amounts or penalties: **One Hundred Twenty Five Million Eight Hundred Thousand Dollars ($125,800,000)**

This Power of Attorney limits the act of those named therein to the bonds and undertakings specifically named therein, and they have no authority to bind United States Fire Insurance Company except in the manner and to the extent therein stated.

This Power of Attorney revokes all previous Powers of Attorney issued on behalf of the Attorneys-In-Fact named above.

This Power of Attorney is granted pursuant to Article IV of the By-Laws of United States Fire Insurance Company as now in full force and effect, and consistent with Article III thereof, which Articles provide, in pertinent part:

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(a) to execute, affix the corporate seal manually or by facsimile to, acknowledge, verify and deliver any contracts, obligations, instruments and documents whatsoever in connection with its business including, without limiting the foregoing, any bonds, guarantees, undertakings, recognizances, powers of attorney or revocations of any powers of attorney, stipulations, policies of insurance, deeds, leases, mortgages, releases, satisfactions and agency agreements;
(b) to appoint, in writing, one or more persons for any or all of the purposes mentioned in the preceding paragraph (a), including affixing the seal of the Corporation.

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IN WITNESS WHEREOF, United States Fire Insurance Company has caused these presents to be signed and attested by its appropriate officer and its corporate seal hereunto affixed this 28th day of September, 2021.

UNITED STATES FIRE INSURANCE COMPANY

Matthew E. Lubin, President

State of New Jersey}
County of Morris }

On this 28th day of September, 2021, before me, a Notary public of the State of New Jersey, came the above named officer of United States Fire Insurance Company, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of United States Fire Insurance Company thereto by the authority of his office.

MELISSA H. D'ALESSIO
NOTARY PUBLIC OF NEW JERSEY
Commission # 50126833
My Commission Expires 4/7/2026

Melissa H. D'Alessio (Notary Public)

I, the undersigned officer of United States Fire Insurance Company, a Delaware corporation, do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is still in force and effect and has not been revoked.

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UNITED STATES FIRE INSURANCE COMPANY

Michael C. Fay, Senior Vice President

*For verification of the authenticity of the Power of Attorney, please contact SuretyInquiries@amyntagroup.com

FLORIDA DEPARTMENT OF FINANCIAL SERVICES

SARAH E GREEN

License Number : W467549

Non Resident Insurance License

- 0920 - NONRES GEN LINES (PROP & CAS)

Issue Date

02/08/2018

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Please Note: A licensee may only transact insurance with an active appointment by an eligible insurer or employer. If you are acting as a surplus lines agent, public adjuster, or reinsurance intermediary manager/broker, you should have an appointment recorded in your own name on file with the Department. If you are unsure of your license status you should contact the Florida Department of Financial Services immediately. This license will expire if more than 48 months elapse without an appointment for each class of insurance listed. If such expiration occurs, the individual will be required to re-qualify as a first-time applicant. If this license was obtained by passing a licensure examination offered by the Florida Department of Financial Services, the licensee is required to comply with continuing education requirements contained in 626.2815 or 648.385, Florida Statutes. A licensee may track their continuing education requirements completed or needed in their MyProfile account at https://dice.fldfs.com. To validate the accuracy of this license you may review the individual license record under "Licensee Search" on the Florida Department of Financial Services website at http://www.MyFloridaCFO.com/Division/Agents

Jimmy Patronis
Chief Financial Officer
State of Florida

MIAMI-DADE COUNTY
miamidade.gov

Internal Services Department
Small Business Development
111 NW 1 Street, 19th Floor
Miami, Florida 33128
T 305-375-3111
F 305-375-3160

August 13, 2020

Patrick Jones
CLEARVIEW ELECTRIC, INC.
4150 NW 7TH ST
Suite 202
MIAMI, FL 33126-5535

Approval Date: August 11, 2020 - Small Business Enterprise - Construction (SBE-Con)
Expiration Date: August 31, 2023

Dear Patrick Jones,

Miami-Dade County Small Business Development (SBD), a division of the Internal Services Department (ISD) has completed the review of your application and attachments submitted for certification. Your firm is officially certified as a Miami-Dade County Small Business Enterprise - Construction (SBE-Con). The Small Business Enterprise (SBE) programs are governed by sections 2-8.1.1.1.1; 2-8.1.1.1.2; 2-10.4.01; 10-33.02 of Miami-Dade County's Codes.

This Small Business Enterprise - Construction (SBE-Con) certification is valid for three years provided that you submit a "Continuing Eligibility Affidavit" on or before your anniversary date, August 11, 2021. The affidavit must indicate any changes or no changes in your firm pertinent to your certification eligibility. The submittal of a "Continuing Eligibility Affidavit" annually with specific supporting documents on or before your Anniversary Date is required to maintain the three-year certification. You will be notified of this responsibility in advance of the Anniversary Date. Failure to comply with the said responsibilities may result in immediate action to decertify the firm.

At any time there is a material change in the firm including, but not limited to, ownership, officers, director, scope of work being performed, daily operations, affiliation(s) with other businesses or the physical location of the firm, you must notify this office in writing within (30) days. Notification should include supporting documentation. You will receive timely instructions from this office as to how you should proceed, if necessary. This letter will be the only approval notification issued for the duration of your firm's three years' certification. If the firm attains graduation or becomes ineligible during the three-year certification period, you will be properly notified following an administrative process that your firm's certification has been removed pursuant to the code.

Your firm's name and tier level will be listed in the directory for all SBE certified firms, which can be accessed through Miami-Dade County's SBD website: http://www.miamidade.gov/smallbusiness/certification-lists.asp. The categories as listed below affords you the opportunity to bid and participate on contracts with Small Business Enterprise measures.

It is strongly recommended that you register your firm as a vendor with Miami-Dade County. To register, you may visit: http://www.miamidade.gov/procurement/vendor-registration.asp. Thank you for your interest in doing business with Miami-Dade County. If you have any questions or concerns, you may contact our office at 305-375-3111 or via email at sbdcert@miamidade.gov.

Sincerely,

Claudious Thompson, Section Chief
Small Business Development

CATEGORIES: (Your firm may bid or participate on contracts only under these categories)

NAICS 238210: ELECTRICAL CONTRACTORS AND OTHER WIRING INSTALLATION CONTRACTORS

MIAMI-DADE COUNTY
miamidade.gov

Internal Services Department
Small Business Development
111 NW 1 Street, 19th Floor
Miami, Florida 33128
T 305-375-3111
F 305-375-3160

July 22, 2022

Ramon C. Rodriguez
RCR PLUMBING SERVICES, INC.
14707 S. Dixie Highway
Suite 315
Miami, FL 33176

Approval Date: July 21, 2022 Small Business Enterprise - Construction (SBE-Con)
Expiration Date: July 31, 2025

Dear Ramon C. Rodriguez,

Miami-Dade County Small Business Development (SBD), a division of the Internal Services Department (ISD), has completed the review of your application and attachments submitted for certification. Your firm is officially certified as a Miami-Dade County Small Business Enterprise. The Small Business Enterprise (SBE) programs are governed by Sections 2-8.1.1.1.1; 2-8.1.1.1.2; 2-10.4.01; 10-33.02 of Miami-Dade County's Codes. This Small Business Enterprise - Construction (SBE-Con) certification is valid for three (3) years. However, to validate continuing eligibility, SBD may conduct random audit(s) within the three (3) year certification period. **Failure to provide required documentation for a random audit will initiate the decertification process.**

At the time of expiration, your firm will submit a Re-certification Application at least one hundred and eighty (180) days, but not less than, ninety (90) days, prior to the end of the three (3) year certification term via the County's web-based system, Business Management Workforce System (BMWS). This will ensure sufficient time for process by SBD. **Failure to provide the re-certification application and required supporting documentation will initiate the decertification process.**

If at any time there is a material or business structure change in the firm including, but not limited to, ownership, officers, director, scope of work being performed, daily operations, affiliations(s) with other businesses or the physical location of the firm, you must notify this office within thirty (30) calendar days of the effective date of the change(s) via the BMWS. Notification should include supporting documentation. You will receive timely instructions from this office as to how you should proceed, if necessary. **Failure to notify SBD of any changes may result in immediate action to decertify the firm.**

This letter will be the only approval notification issued for the duration of your firm's three-year certification. If the firm attains graduation or becomes ineligible during the three-year certification period, you will be properly notified following an administrative process that your firm's certification has been removed pursuant to the code. Your firm's name and tier level will be listed in the directory for all SBE certified firms, which can be accessed through Miami-Dade County's SBD website: https://www.miamidade.gov/global/business/smallbusiness/home.page. The categories as listed below affords you the opportunity to bid and participate on contracts with Small Business Enterprise measures.

It is strongly recommended that you register your firm as a bidder with Miami-Dade County. To register, you may visit: https://www.miamidade.gov/global/business/procurement/home.page. Thank you for your interest in doing business with Miami-Dade County. If you have any questions or concerns, you may contact our office at 305-375-3111 or via email at sbdcert@miamidade.gov.

Sincerely,

Jeanise Cummings-Labossiere
Section Chief, Small Business Development

CATEGORIES: (Your firm may bid or participate on contracts only under these categories)
CSI 220: PLUMBING
NAICS 238220: PLUMBING, HEATING, AND AIR-CONDITIONING CONTRACTORS

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "THYSSENKRUPP AIRPORT SYSTEMS INC.", CHANGING ITS NAME FROM "THYSSENKRUPP AIRPORT SYSTEMS INC." TO "TK AIRPORT SOLUTIONS, INC.", FILED IN THIS OFFICE ON THE NINETEENTH DAY OF FEBRUARY, A.D. 2021, AT 3:41 O`CLOCK P.M.

Jeffrey W. Bullock, Secretary of State

2877443 8100
SR# 20210538140

Authentication: 202593023
Date: 02-25-21

You may verify this certificate online at corp.delaware.gov/authver.shtml

State of Delaware
Secretary of State
Division of Corporations
Delivered 03:41 PM 02/19/2021
FILED 03:41 PM 02/19/2021
SR 20210538140 - File Number 2877443

STATE OF DELAWARE
CERTIFICATE OF AMENDMENT
OF CERTIFICATE OF INCORPORATION

ThyssenKrupp Airport Systems Inc.

a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware

DOES HEREBY CERTIFY:

FIRST: That by Unanimous Consent of the Board of Directors of ThyssenKrupp Airport Systems Inc. resolutions were duly adopted setting forth the following proposed Amendment of the Certificate of Incorporation of said corporation, declaring said Amendment to be advisable and directing that the Amendment be submitted to the sole shareholder for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED: That the Certificate of Incorporation of this corporation be amended by changing the Article therefor numbered "1" so that, as amended, said Article shall read as follows:

"The name of the corporation is TK Airport Solutions, Inc."

SECOND: That thereafter, pursuant to resolution of its Board of Directors, the holder of all of the outstanding stock of said corporation having a right to vote consented in writing to the aforesaid Amendment in accordance with Section 228 of the General Corporation law of the State of Delaware.

THIRD: That said Amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

FOURTH: That the capital of said corporation shall not be reduced under or by reason of said amendment.

IN WITNESS WHEREOF, said Corporation, ThyssenKrupp Airport Systems Inc., has caused this Certificate to be signed by Barbara Vecchio, an Authorized Officer, this 19th day of February, 2021.

By: 

Name: Barbara Vecchio

Title: Senior Finance Manager

State of Delaware

Office of the Secretary of State

98 SEP -3 AM 10:08

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "THYSSEN STEARNS INC." IS DULY INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL CORPORATE EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE THIRTY-FIRST DAY OF AUGUST, A.D. 1998.

AND I DO HEREBY FURTHER CERTIFY THAT THE FRANCHISE TAXES HAVE NOT BEEN ASSESSED TO DATE.

Edward J. Freel

Edward J. Freel, Secretary of State

2877443 8300

981340229

AUTHENTICATION: 9279677

DATE: 08-31-98

TK AIRPORT SOLUTIONS, INCORPORATED

WRITTEN CONSENT OF THE BOARD OF DIRECTORS

ACKNOWLEDGEMENT OF REMOVAL OF AARON PANKONIN AS CORPORATE OFFICER

The undersigned, being all of the Directors of TK Airport Solutions, Incorporated, a Delaware corporation (hereinafter the "Corporation"), hereby declare that as of the date set forth below, they adopted the following resolutions, and as for the actions of the Board of Directors of the Corporation, without convening a formal meeting of the same:

1. Removal of Aaron Pankonin as Corporate Officer.

WHEREAS, on April 14, 2023, the Board unanimously voted to remove Aaron Pankonin from his role as a corporate officer, serving as Treasurer.

RESOLVED, the Board hereby acknowledges removal of Aaron Pankonin from his role as corporate officer.

FURTHER RESOLVED, that the following individuals have been appointed to the office set forth opposite their names, each to serve until his or her successor is duly appointed and qualified or until his or her resignation or removal, whichever shall first occur:

President: Manuel Torres
Vice-President: Inigo Landa
Secretary: Brooke Smiddy
Tax Officer: David Turnage

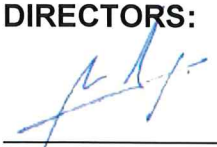
2. Authorization and Counterparts.

RESOLVED, that each officer of the Corporation is empowered to do all necessary acts to effectuate the foregoing resolutions, including the preparation, execution, filing and delivery of any required document.

FURTHER RESOLVED, that this consent may be executed in separate written counterparts with original, electronic or PDF signatures and may be delivered via facsimile, electronic mail or traditional method of delivery, each of which shall be deemed to be an original, but all of which together shall be deemed to be one and the same document.

IN WITNESS WHEREOF, the undersigned, being all of the Directors of TK Airport Solutions, Inc. have executed this Consent as of the 14th day of April 2023 and have caused it to be filed with the minutes of the Board of Directors.

DIRECTORS:



Manuel Alvarez

Iñigo Landa

Manuel Torres

State of Florida
Department of State

I certify from the records of this office that TK AIRPORT SOLUTIONS, INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on September 23, 1998.

The document number of this corporation is F98000005331.

I further certify that said corporation has paid all fees due this office through December 31, 2023, that its most recent annual report/uniform business report was filed on February 22, 2023, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the First day of May, 2023

Secretary of State

Tracking Number: 6054821432CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
09/15/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Aon Risk Services, Inc of Florida 1001 Brickell Bay Drive Suite 1100 Miami FL 33131 USA	**CONTACT NAME:** **PHONE (A/C. No. Ext):** (866) 283-7122 **FAX (A/C. No.):** (800) 363-0105 **E-MAIL ADDRESS:**

INSURER(S) AFFORDING COVERAGE		**NAIC #**
INSURER A:	Indemnity Insurance Co of North America	43575
INSURER B:	ACE American Insurance Company	22667
INSURER C:	HDI Global Insurance Company	41343
INSURER D:		
INSURER E:		
INSURER F:		

INSURED
TK Airport Solutions, Inc.
3201 N. Sylvania Avenue
Fort Worth TX 76111 USA

COVERAGES **CERTIFICATE NUMBER:** 570095312822 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
C	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			GLD5668802 SIR applies per policy terms & conditions	10/01/2022	10/01/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$5,000,000 $100,000 $5,000 $5,000,000 $10,000,000 $10,000,000
B	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			ISA H10757599	10/01/2022	10/01/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$4,000,000
C	X **UMBRELLA LIAB** X OCCUR **EXCESS LIAB** CLAIMS-MADE DED X RETENTION $25,000			CUD5669102	10/01/2022	10/01/2023	EACH OCCURRENCE AGGREGATE	$1,000,000 $1,000,000
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y/N ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WLRC50730736 AOS	10/01/2022	10/01/2023	X PER STATUTE OTH-ER	
B				WLRC50726836 CA MA	10/01/2022	10/01/2023	E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	$1,000,000 $1,000,000 $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Evidence of Insurance.

CERTIFICATE HOLDER

Thyssenkrupp Airport Systems
3201 N. Sylvania Ave., Suite 117
Fort Worth TX 76111 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Inc. of Florida

Holder Identifier :

Certificate No : 570095312822

AGENCY CUSTOMER ID: 570000090090
LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Aon Risk Services, Inc of Florida	TK Airport Solutions, Inc.
POLICY NUMBER: See Certificate Number: 570095312822	
CARRIER: See Certificate Number: 570095312822 / NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER	
INSURER	
INSURER	
INSURER	

ADDITIONAL POLICIES If a policy below does not include limit information, refer to the corresponding policy on the ACORD certificate form for policy limits.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
	WORKERS COMPENSATION							
A		N/A		WLRC50726897 TX	10/01/2022	10/01/2023		

AON

Feb 15, 2023

To Whom it May Concern,

Please accept the following as confirmation of workers' compensation coverage information for the State of Texas:

Policy # of the Texas work comp policy you are insured under and policy limits.
Policy #: WLRC50726897

Limits:
Bodily injury by Accident - $1,000,000 each accident
Bodily injury by disease - $1,000,000 policy limit
Bodily injury by disease - $1,000,000 each employee

Company name, address and FEIN the contract was issued to is insured under the policy
TK Airport Solutions Inc.
210 N. University Drive Suite 804
Coral Springs, Florida 33071

Fed ID 522089962

Texas workers comp class codes on the policy (that relate to the work being performed onsite)
Class Code: 5160

Experienced Modification Rate
.83

DocuSigned by:
Sarah Borner du Cane
64E7FDF3838E424...
Sarah Borner du Cane

Managing Director, Account Executive Aon Risk Services, Inc. of Florida
cc: Scott Silitsky – TKE

the standard in safety

Underwriters Laboratories

File E332865 Vol 1 Issued: 2009-08-31
Revised: 2009-08-31

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

PASSENGER BOARDING BRIDGES
(QGLA)

Manufacturer: THYSSENKRUPP AIRPORT SYSTEMS INC
(100238-823) 3201 N SYLVANIA AVE
FORT WORTH TX 76111-3117

Applicant: SAME AS MANUFACTURER
(100238-823)

Listee: SAME AS MANUFACTURER
(100238-823)

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc.(UL), or any authorized licensee of UL, only on products covered by this Procedure, in accordance with the applicable UL Services Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. (UL) or any authorized licensee of UL, upon request.

This PROCEDURE, and any subsequent revision, is the property of Underwriters Laboratories Inc.(UL) and the authorized licensee of UL and is not transferable.

Underwriters Laboratories Inc.

Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

Certificate of Compliance

Certificate Number 20090515 – E192681
Report Reference E192681, 1998 May 15
Issue Date 2009 May 15

Underwriters Laboratories Inc.®

Issued to: **THYSSEN STEARNS INC**

SUITE 100E
3201 N SYLVANIA AVE
FT WORTH, TX 76111 USA

This is to certify that representative samples of

Industrial Control Panels

Model Descriptions: Industrial control panel – General Coverage

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety:

The basic standards used to investigate products in this category are UL 508A, "Industrial Control Panels" and CSA-C22.2 No. 14, "Industrial Control Equipment."

Additional Information:

None

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers: c(UL)us the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product

Issued by: *Jim Larin*
Jim Larin, Customer Service Specialist
Underwriters Laboratories Inc.

Reviewed by: *William Bartunek*
William Bartunek, Senior Staff Engineer
Underwriters Laboratories Inc.

MIAMI-DADE COUNTY

SMALL BUSINESS DEVELOPMENT
CERTIFICATE OF ASSURANCE

SMALL BUSINESS PARTICIPATION ON COUNTY A&E AND DESIGN/BUILD PROJECTS

This completed form must be submitted with proposal documents by all proposers on a Miami-Dade County project with Small Business Enterprise ("SBE") program measure(s).

Project No.: MDAD-67621-JM

Project Title: Purchase, Installation, Extended Warranty and Support Services, of Pre-Conditioned Air and 400 Hz Systems at Miami ~~International Airport (MIA) Bid No. MDAD-67621-JM~~

Name of Proposer: TK Airport Solutions, Inc. FEIN 52-2089962

Address: 3201 N. Sylvania Ave., Suite 117 City Fort Worth State TX ZIP 76111

Telephone Number: (909) 913-1746
817-210-5000

Email address: Paul.Alvarado@TKElevator.com

The proposer is committed to meeting the established SBE measure(s) assigned to this project:

0 % SBE-A/E, 15 % SBE-Con, 0 % SBE-G, and/or 0 % SBE-S.

(For Goals, write in the percentage. For Set-aside, put a check mark or x.)

To satisfy the requirements for Step 1 –Proposal Submittal and Compliance with Small Business Enterprise Program Measure(s), the following is required:

1. Acknowledge the SBE program measure(s) (i.e., *SBE-Architecture & Engineering, SBE-Construction, SBE-Goods and/or SBE-Services*) established for this project via this Certificate of Assurance.
2. Acknowledge and confirm that there is an established relationship with the certified Miami-Dade County Small Business Enterprise firm(s) to be subcontracted to achieve the established SBE program measure(s) as indicated in the Project Documents.
3. Acknowledge that all SBE-A/E firms are properly listed on the Letter of Qualifications submitted as part of the proposal documents and will be utilized, if selected to provide services based on their approved technical certification(s) required for the project.

To satisfy the requirements for Step 2 – Proposal Evaluation and Recommendation for Award, please attest that:

I understand that my company will be deemed non-compliant and not eligible to be considered for an award if I fail to (1) submit this Certificate of Assurance with my proposal documents, or (2) complete the Utilization Plan listing all certified Miami-Dade County SBEs to be subcontracted to satisfy the project's established SBE measure(s) via the County's Business Management Workforce System ("BMWS"), within the specified time frame, upon email notification from Small Business Development ("SBD") or BMWS. Each SBE-A/E sub-consultant listed on the Letter of Qualifications must confirm their sub-contractual relationship (i.e., work to be performed, and the value or percentage of said work) in the Utilization Plan via BMWS, for approval by SBD.

STATE OF ~~FLORIDA~~ Texas

COUNTY OF ~~MIAMI-DADE~~ Tarrant

BEFORE ME, an officer duly authorized to administer oaths and take acknowledgement, personally appeared Manuel Torres | Brooke Smiddy, who being first sworn deposes and affirms that the provided information statements are true and correct to the best of his/her knowledge information and belief.

Brooke Smiddy

Prime Proposer's Signature (Owner/Officer)

SWORN TO and subscribed before me this 4th day of May, 20 23

Signature of Notary Public-State of ~~Florida~~ Texas

My Commission Expires: 03-31-2025

ANDREA JACKSON
Notary Public, State of Texas
Comm. Expires 03-31-2025
Notary ID 131069555

BID TALLY SHEET

Solicitation Number: MDAD-67621-JM
Contract Number: RTQ-01841
Bid Open Date: 5.5.23
Buyer: Carolina A. Londoño
Bid/Other:
Claudia Portocarrero for Juliana Manjarres Juliana Manjarres

Note: When all prices are entered, highlight low priced vendor in yellow

Vendor Name:	TK Airport Solutions, Inc.
Is the bid responsive (if no, state reason below):	
SBE-Micro Tier/ Vendor Preference	No Preference
Local Vendor (Yes/No)	No
Local Headquarterd Vendor (Yes/No)	No
Certificate of Assurance Submitted (Yes/No)	Yes
Contractor Due Diligence Affidavit (Yes/No)	Yes

Items being procured per current solicitation

Item no.	Description	QTY	UOM	Unit Price	Extended Price	Extended Price Including 3 yr. Maintenance for entire contract term and Contingency Allowance
1	Work at Gate location F3 Complete	1	LS	$ 551,391.00	$ 551,391.00	$ 12,088,824.00
2	Work at Gate location F5 Complete	1	LS	$ 525,489.00	$ 525,489.00	$ 1,208,882.40
3	Work at Gate location F8 Complete	1	LS	$ 649,358.00	$ 649,358.00	$ 664,164.00
4	Work at Gate location F9 Complete	1	LS	$ 480,306.00	$ 480,306.00	$ 664,164.00
5	Work at Gate location F10 Complete	1	LS	$ 796,711.00	$ 796,711.00	$ 664,164.00
6	Work at Gate location F11 Complete	1	LS	$ 479,317.00	$ 479,317.00	$ 15,290,198.40
7	Work at Gate location F12 Complete	1	LS	$ 629,864.00	$ 629,864.00	
8	Work at Gate location F14 Complete	1	LS	$ 855,252.00	$ 855,252.00	
9	Work at Gate location F15 Complete	1	LS	$ 778,747.00	$ 778,747.00	
10	Work at Gate location F16 Complete	1	LS	$ 854,837.00	$ 854,837.00	
11	Work at Gate location F17 Complete	1	LS	$ 854,837.00	$ 854,837.00	
12	Work at Gate location F18 Complete	1	LS	$ 676,146.00	$ 676,146.00	
13	Work at Gate location F19 Complete	1	LS	$ 851,796.00	$ 851,796.00	
14	Work at Gate location F23 Complete	1	LS	$ 841,127.00	$ 841,127.00	
15	Work at Gate location G4 Complete	1	LS	$ 503,978.00	$ 503,978.00	
16	Work at Gate location G6 Complete	1	LS	$ 503,978.00	$ 503,978.00	
17	Work at Gate location G16 Complete	1	LS	$ 634,454.00	$ 634,454.00	
18	Work at Gate location G19 Complete	1	LS	$ 621,236.00	$ 621,236.00	
			Sub-Total Section 2		$ 12,088,824.00	
			10% Contingency Allowance Account		$ 1,208,882.40	
19	Maintenance Services at Gate location F3	1	Month	$ 1,568.00	$ 1,568.00	
20	Maintenance Services at Gate location F5	1	Month	$ 1,568.00	$ 1,568.00	
21	Maintenance Services at Gate location F8	1	Month	$ 3,505.00	$ 3,505.00	
22	Maintenance Services at Gate location F9	1	Month	$ 3,136.00	$ 3,136.00	
23	Maintenance Services at Gate location F10	1	Month	$ 5,073.00	$ 5,073.00	
24	Maintenance Services at Gate location F11	1	Month	$ 1,568.00	$ 1,568.00	
25	Maintenance Services at Gate location F12	1	Month	$ 3,505.00	$ 3,505.00	
26	Maintenance Services at Gate location F14	1	Month	$ 1,938.00	$ 1,938.00	
27	Maintenance Services at Gate location F15	1	Month	$ 1,938.00	$ 1,938.00	
28	Maintenance Services at Gate location F16	1	Month	$ 1,938.00	$ 1,938.00	
29	Maintenance Services at Gate location F17	1	Month	$ 1,938.00	$ 1,938.00	
30	Maintenance Services at Gate location F18	1	Month	$ 3,505.00	$ 3,505.00	
31	Maintenance Services at Gate location F19	1	Month	$ 1,938.00	$ 1,938.00	
32	Maintenance Services at Gate location F23	1	Month	$ 5,073.00	$ 5,073.00	
33	Maintenance Services at Gate location G4	1	Month	$ 3,505.00	$ 3,505.00	
34	Maintenance Services at Gate location G6	1	Month	$ 3,505.00	$ 3,505.00	
35	Maintenance Services at Gate location G16	1	Month	$ 5,073.00	$ 5,073.00	
36	Maintenance Services at Gate location G19	1	Month	$ 5,073.00	$ 5,073.00	
			Sub-Total Section 16		$ 55,347.00	
			Total Raw Price:		$ 13,408,400.40	
			Evaluation Adjustment 10 % Micro / SBE Preference:		$ -	
			Evaluation Adjustment 5 % Micro / SBE Preference:		$ -	
			Evaluation Adjustment 5 % Veteran's Preference		$ -	
			Total Evaluated Price:		$ 13,408,400.40	

Vendors that did not submit a quote:
ADELTE, AeroBridge Works, Satesol

Identify Non-responsive vendors and reason/Comments:
None

THIS TALLY SHEET IS AN INDICATION OF PRICES ONLY AND IS NOT A
DETERMINATION OF THE LOWEST RESPONSIVE/RESPONSIBLE BIDDER(S)

Miami Dade Aviation Department
P O Box 025504
Miami, Florida 33102-5504

May 26, 2023

Glenda Leake
TK Airport Solutions
3201 North Sylvania Avenue, Suite 117
Fort Worth, TX 76111

Re: Purchase, Installation, Extended Warranty and Support Services of Pre-Conditioned Air and 400 Hz Systems at MIA

Dear Ms. Leake,

In accordance with Sections 2-8.3 and 2-8.4 of the Code of Miami-Dade County and Implementing Order 3-21, this letter serves to notify you that your firm has been recommended for award of the referenced Project based on the bid submitted on May 4, 2023. Pursuant to the referenced legislation, the three (3) day protest period shall commence upon the filing of this recommendation to award with the Clerk of the Board. This contract award will be effective only in accordance with the conditions of the solicitation, which requires execution by both parties of the Notice to Proceed (NTP).

The value at award is **$15,290,198.40**. This includes your base bid amount of **$14,081,316.00,** and a **Contingency Allowance** in the amount of **$1,208,882.40**. The contract term is 48 months, and the Project shall be completed within **384** calendar days. The SBD Requirements, which include the approval of the Utilization Plan in BMWS to identify the SBEs that will be utilized in this Project to meet the requirements under PART II, Section 2, Small Business Enterprise (SBE), have been received and are currently being reviewed by the County. The award is contingent upon following:

1. Submit Insurance Certificates listing the required coverage for Workers Compensation, Commercial General Liability, and Automobile Liability as required in PART II, Additional Terms, Section 3, Insurance Requirements, of the ITQ.

2. Submit a duly executed Performance and Payment Bond in an amount that represents 100% of contract awarded amount as required under Section 4, Performance/Payment Bond Required, of the ITQ.

3. Sign and return Non-Collusion Affidavit (Attachment 1) attached to this award letter.

4. VERIFICATION OF EMPLOYMENT ELIGIBILITY (E-VERIFY)
   By entering the Contract, the Awarded Bidder becomes obligated to comply with the provisions of Section 448.095, Florida Statute, titled “Verification of Employment Eligibility.” This includes but is not limited to utilization of the U.S. Department of Homeland Security’s E-Verify System to verify the employment eligibility of all newly hired employees by the Awarded Bidder effective, January 1, 2021, and requiring all Subcontractors to provide an affidavit attesting that the Subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Failure to comply may lead to termination of this Awarded Bidder, or if a Subcontractor knowingly violates the statute, the subcontract must be terminated immediately. Any challenge to termination under this provision must be filed in the Circuit Court no later than twenty (20) calendar days after the date of termination. If

Miami Dade Aviation Department
P O Box 025504
Miami, Florida 33102-5504

this Contract is terminated for a violation of the statute by the Awarded Bidder, the Awarded Bidder may not be awarded a public contract for a period of one year after the date of termination, and the Awarded Bidder may be liable for any additional costs incurred by the County resulting from the termination of the Contract. Public and private employers must enroll in the E-Verify System (http://www.uscis.gov/e-verify) and retain the I-9 Forms for inspection

The preceding Documents are required as outlined within the RTQ project specification. They must be submitted to the Aviation Department within **5 business** days of receipt of this letter.

This letter shall also serve as a reminder that all work must be performed in accordance with the scope of work and contract terms and conditions, all permits and inspections and in accordance with all applicable Federal, State, and local laws, codes and regulations.

Should you have any questions please contact Juliana Manjarres at 305-869-3010 or via email at jmanjarres@flymia.com.

Thank you,

Juliana Manjarres
Aviation Contracts Analyst

DATE: June 20, 2023

Memorandum

MIAMI-DADE COUNTY

TO: Sylvia Novela, Division Director 2
Procurement & Materials Management Division
Miami-Dade Avaiation Department

FROM: Gary Hartfield, Division Director
Internal Services Department
Small Business Development

SUBJECT: Compliance Review
Invitation to Quote No. AV-067621-22JM (under RTQ-01841)
Cc. F and Cc. G Phase 2 400 Hz/PCA Installations

Small Business Development (SBD), a division of the Internal Services Department has completed its review of the subject project for compliance with Implementing Order 3-22, Small Business Enterprise Construction Services Program (SBE-Con) and Implementing Order 3-41, Small Business Enterprise Goods Program (SBE-G). The small business measures established for this invitation ot quote are a 15.69% SBE-Con subcontractor goal, a 0.63% SBE-Goods subcontractor goal and a 10.00% Community Workforce Program goal.

The Procurement & Materials Management Division of the Avivation Department submitted a Certificate of Assurance affidavit from the prequalified frim listed below. A Utilization Plan (UP) was requested from the firm via SBD's Business Managaement Workforce System (BMWS). The bidder submitted a UP identifying the certified SBE subcontractors that will be utilized to meet the required SBE measures. The following is the pre-award compliance status and summary:

FIRMS	**STATUS:**
1. TK Airport Solutions, Inc.	Compliant

SUMMARY:

TK Airport Solutions, Inc. (#1), a non-certified SBE-Con firm submitted a utilization plan via BMWS committing to utilize the following certified SBE-Con firms to satisfy the 15.69% SBE-Con subcontractor goal: Clearview Electric, Inc. to perform electrical work at 14.834% and RCR Plumbing Services, Inc to perform plumbing work at 0.856%.

TK Airport Solutions, Inc. also committed to utiling the following certified SBE-Goods firm to meet the 0.63% SBE-Goods subcontractor goal: Generating Systems, Inc., a certified SBE-Goods firm to provide equipment at 0.64%.

Each subcontractor confirmed their participation via BMWS. The Utilization Plan submitted by TK Airport Solutions, Inc. was approved pursuant to the firm's commitment to achieve an overall 15.69% SBE-Con subcontractor goal and 0.64% SBE-Goods subcontractor goal.

TK Airport Solutions, Inc in compliance with the 15.69% SBE-Con subcontractor goal and the 0.63% SBE-Goods subcontractor goal established for this contract. TK Airport Solutions, Inc is compliant with Implementing Order 3-22, which governs the SBE-Con program and Implementing Order 3-41, which governs the SBE-Goods program..

SBD has verified that the aforementioned firm is not listed with an open violation on the Compliance Report of Open and Closed Small Business, Wage and/or Workforce Violations in the last three (3) years as of June 20, 2023.

Please note that SBD's review is specific to the SBE measures Pre-award Compliance process applied to this project. The Procurement & Materials Management Division of the Aviation Department is responsible for any other issues that may exist. Should you have any questions or need any additional information, please do not hesitate to call Tyrone White, SBD Section Manager at (305) 375-2824 or via email twj@miamidade.gov.

c: Laurie Johnson, SBD, ISD
Juliana Manjarres, MDAD