

Exhibit A

TwistAero[✶]

PCAB045480WH Pre-Conditioned Air DX Description and Specification

1.0 Summary

- A. **The PCA045 Pre-Conditioned Air** unit is a Direct Expansion, 45-ton electric powered, self-contained, automatically controlled air conditioning unit that provides ventilation, cooling, dehumidifying, filtering, and heating of air supplied to a parked aircraft. The unit uses direct expansion, vapor cycle technology. The unit is designed to provide comfortable cabin temperatures for passengers and crew during pre-flight, turn-around, overnight parking and maintenance operations.
- B. The Pre Conditioned Air unit contains evaporator coils, evaporator blower, compressors, condenser coils, condenser fans, electric heating coils, refrigeration and temperature controls, safety controls, air filters, smoke detector, complete motor starting equipment, condensate drain pan and pump.

2.0 References

- A. Underwriters Laboratory (UL): The entire PCA system is certified and listed under Underwriters Laboratory (UL) product category Passenger Boarding Bridges. Listing number: SA34023. This direct certification from Underwriters Laboratory requires all components to be UL certified. The PCA Unit is self-marked by Twist, and the UL Listing number is located on the unit data plate.
- B. ISO9001 Manufacturing Practices
- C. 100% Buy American Compliant. Equipment is designed, manufactured, and built in American using goods and materials purchased in coordination with the Buy American Act 49 USC section 50101.

3.0 System Description

- A. Conditions
 - 1. Cooling is provided for outdoor air temperatures of 55 F and above during the cooling season. Ventilation is provided for outdoor temperatures between 45 F and 55 F. The Pre Conditioned Air Unit's electric strip heaters provide heating for outdoor air temperature of 45 F and below.



B. Design Parameters

1. ASHRAE Calculations

- a. A full design calculation based upon location's ASHRAE Dry Bulb and Wet Bulb conditions are taken into account when sizing each PCA for aircraft fleet mix.

4.0 Construction

- A. Frame: Structural Steel, Tubular Frame. Joints engineered to interlock, verifying positive assembly location.
- B. Panels: Aluminum with lift-off type tooled locks.
- C. Insulation: 1" Thick thermal insulation, compliant with NFPA 90 A.
- D. Stainless steel plenum base for condensate drain. Dual drains provided to compensate for bridge elevation changes.
- E. Metal Finishing Standards: The following processes are standard on every metal component incorporated into the PCA. All finishing operations are completed and quality controlled by Twist.
 1. Media Blast (Structural Steel Only)
 2. Iron Phosphate Pressure Wash
 3. Powdercoat Primer
 4. Powdercoat Paint

5.0 Mounting Options

A. Bridge Mounted

1. PCA Unit can be mounted underneath the Passenger Boarding Bridge. Cross Beam brackets are provided on top of the unit, which are connected to additional mounting brackets that are to be welded or bolted to the bridge. Mounting brackets are blasted and painted to match the unit with a 2-step powder coat process.
2. PCA Unit can be either rear condenser fan discharge or top of the unit condenser fan discharge. The unit model is versatile and can be modified during the build process to either option.

B. Stand Mounted

1. PCA unit can be stand mounted for ground mounting applications.



C. Bridge Roof Mounting

1. The PCA can be mounted on the roof of the Passenger Boarding Bridge. Mounting frame is bolted to the roof the PBB and the PCA is bolted to the frame.

D. Mobile Configurations

1. PCA unit can be mounted on a diesel powered trailer, gas powered trailer, electric powered trailer or a skid mount for truck applications.

6.0 Sequence of Operation

A. Cooling

1. Mode is selected based on aircraft to be serviced.
Required ambient air is pulled through the filter to prevent debris accumulation on the face of the evaporator coil.
Blower creates correct airflow and static pressure for the selected aircraft. This is achieved by using a Variable Frequency Drive.
Evaporator Coil cools and removes humidity from the ambient air.
Target temperature at the discharge of the unit while in cooling mode is 34°F to 40°F.
Target temperature of 34°F to 40°F is achieved by staging the compressors into two refrigeration systems and also by VFD control on Condenser Fans, which produces a consistent temperature without the need to defrost or cycle compressors.

B. Heating

1. Mode is selected based on aircraft to be serviced.
Required ambient air is pulled through the filter to prevent debris accumulation on the face of the evaporator coil.
Blower creates correct airflow and static pressure for the selected aircraft. This is achieved by using a Variable Frequency Drive.
Electric Strip Heaters heat air to 100°F to 160°F.
The target temperature of 100°F to 160°F is achieved by staging the bank of heaters into three circuits for capacity control.

7.0 Refrigeration System

- A. Refrigerant: The PCA unit utilizes EPA mandated R-410A refrigerant. R-410A is the worldwide standard refrigerant for air conditioning, due to its low environmental impact and efficient qualities.

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- B. Refrigerant Tubing: Pre-bent tubing is utilized for refrigeration lines, thus reducing solder joints and potential leak paths. Utilizing CNC tube bending technology, the amount of solder connections are reduced by 66%.
- C. DDC Controller: Control of the unit is accomplished by a solid state Direct Digital Controller (DDC) with communication capability. This communication capability can be used to link the unit to a Building Management System using BACnet or Modbus.
- D. Filter-Drier: A sealed filter-drier is installed in the liquid line to remove moisture and contamination from the refrigerant. The filter-drier contains a mesh screen and a molded blend of desiccants for acid and water removal. A combination moisture and liquid indicator is present on the filter drier to indicate visually if a system is compromised.
- E. Expansion Valve: A thermostatic expansion valve is used to automatically meter the refrigerant flow to the evaporator coil by sensing evaporating pressure and temperature of the vapor leaving the evaporator coil.
- F. Electronic Hot Gas Bypass Valve: Located on the discharge line, this valve regulates the evaporator suction pressure by adding hot gas to prevent the outlet temperature from dropping below freezing.
- G. Pressure Transducers: The pressure transducers are fully encapsulated, direct mount. These controls are fitted with a 1/4 inch SAE female flare fitting with an internal depressor for the Schrader valves, located in the piping, to prevent refrigerant loss during replacement.
- H. Access (Schrader) Valves: 1/4 inch SAE male valves are designed for flare connection and used as ports for pressure transducer connections. A 3/8 flare shut off valve is used for vacuuming and charging the system.
- I. Distributor Valves: A brass body valve installed after the thermostatic expansion valve to ensure even distribution of the refrigerant through the evaporator.
- J. Coils
 - 1. Evaporator Coil: The evaporator coil is an aluminum plate fin with seamless copper tube heat exchanger. Copper tubes are rifled and aluminum fins utilize a louvered sine wave pattern for more efficient heat transfer. Fins have drawn collars, are belled and firmly bonded to the tubes by means of expansion.
 - 2. Condenser Coil: The condenser coil is an aluminum plate fin with seamless copper tube heat exchanger. Copper tubes are rifled and

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aluminum fins utilize a louvered sine wave pattern for more efficient heat transfer. Fins have drawn collars, are belled and firmly bonded to the tubes by means of expansion.

- a. Coil headers have additional mechanical bracing to mitigate vibration and strengthen the header.
- b. Condenser coils are mounted in a way that they can be easily slid out by only removing the coil access panel on the exterior of the unit. Each coil is isolated per refrigeration loop, allowing for one loop to be open without affecting the other loops within the system.

K. Compressors

1. The refrigerant compressors are hermetic scroll type, 2-pole motor, unidirectional compressors with a solid mount compressor base assembly. The compressors feature an oil sight glass and oil charging valve.
2. A two loop refrigeration circuit is utilized, consisting of (1) 20 Ton compressor and (1) 25 Ton compressor.
3. The compressors are solid mounted to the frame to prevent the compressors from vibrating during bridge movement. Solid mounting also prevents leaks due to copper pipe flexing.
4. Compressors manufactured by Bitzer.
5. The PCA system contains two compressors with the final stage compressor driven by a VFD for efficient capacity control.
6. Sight Glass: A combination flow and moisture indicator is installed in the liquid line to monitor the flow and moisture content of the refrigerant. The sight glass color indicator changes color on the basis of moisture in the refrigerant.
7. Crank case heaters are provided for each compressor.

L. Vibration Absorbers: Stainless steel, Packless Vibration Absorbers installed on every compressor discharge line to mitigate vibration.

8.0 Blowers and Fans

A. Supply Air Blower

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1. A 25 HP, heavy-duty, direct drive, centrifugal type blower with radial blade. The blower motor runs at 2-pole speeds. The Blower motor is direct connected to the blower impeller, is totally enclosed fan cooled (TEFC) and of NEMA design B, Class H Insulation. The blower is sized for the specified variable volume airflow requirements.
2. Airflow is controlled by a VFD to promote energy reduction, increase efficiency and regulate air volume without the use of a damper. The VFD control also allows for soft starts of the blower assembly.

B. Condenser Fan

1. Axial type, 4-pole motor driven fan with composite material fan blades. The motor is totally enclosed fan cooled (TEFC) of NEMA Design B, Class F insulation, 1.15 Service Factor.
2. Each fan is VDF controlled for head pressure regulation.

C. Filter: 2" washable aluminum mesh filter is used to filter intake ambient air. The dirty filter light on the push button control box illuminates when filter requires cleaning. This light is programmed to illuminate when 50% of the filter is blocked.

D. A Photoelectric Smoke detector is incorporated downstream of the blower. Smoke detector is capable of operating in air speeds as low as 100 ft. per minute.

9.0 Electric Heaters

- A. Electric resistance open coil heaters to provide heat to the supplied air. Three stages of electric heat, totaling 80 KW, are utilized for capacity control and efficiency.
- B. Elements are stainless steel with stainless steel fins. Heater assembly is vertically integrated in a galvanized frame, allowing for the whole assembly to be removed for maintenance.

10.0 Safety Provisions and Components

- A. Circuit Protection: The following items are protected against short-circuit currents or grounds by means of UL approved circuit breakers and motor protectors:
 1. Main Power
 2. Blower Motor



3. Fan Motors
 4. Compressor Motors
 5. Heater Stages
 6. Transformer primary winding (2-pole)
 7. Transformer secondary winding, 120 volts and 24 volt (1-pole)
 8. Condensate Pump
- B. Overload Protection: Each motor is protected from damaging overload currents as follows:
1. Compressor Motors: Internal solid-state and manual reset.
 2. Blower Motor: Manual reset relays with adjustable setting range.
 3. Fan Motors: Manual reset relays with adjustable setting range.
- C. Refrigerant High and Low Pressure Protection: High and low pressure transducers protect each refrigeration system. The transducers monitor the high and low pressures and will shut the compressor off when the pressures exceed safe operating range.
- D. Compressor Short Cycling Protection: Each Compressor Motor is protected against short cycling (multiple starts and stops over a short period) by a run-limit timer. The timer is programmed in the controller and wired to the motor control circuit to provide a delay on re-energizing the compressor motors after each stop.
- E. Noise is less than 85 DBA at 15 feet.

11.0 Pendant Control

- A. The PCA unit will deliver the required airflow and pressure capacity based on type of aircraft selected at the Pendant Control. Based upon aircraft type selected, the unit will deliver preconditioned air, not to exceed the airflow, pressure or temperature limitations for aircraft selected.
- B. Pendant control box included with unit is used to control PCA from the ramp. Enclosure can be fiberglass or Stainless steel depending on customer needs,

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NEMA rated weatherproof. Cover plate is hinged with self-retaining screws. Eradication of water or moisture in box achieved through drain holes.

C. Functions:

1. One push button each for START, STOP and E-STOP.
2. Selector switch for Aircraft Type: REGIONAL JET or NARROW BODY.
3. Selector switch for Operating Mode: COOL, VENT, HEAT, AUTO or OVERNIGHT
4. LED Indicator Lights for POWER, MAINTENANCE REQUIRED FAULT and DIRTY FILTER.

D. Selector Switches are waterproof and weatherproof. UL approval No. E18174.

E. XB7 Illuminated Push Buttons are waterproof, IP65 rated with protective Hexseal Silicon Covering, A-A-59588 Class III GR 60 Conformance.

F. OVERNIGHT mode allows for the PCA unit to efficiently heat or cool the aircraft for an extended time period. This mode is based upon ambient conditions, without the use of the cabin temperature probe, and with the aircraft door closed. Typical use is during long turns at the gate or when aircraft is parked overnight.

G. Maintenance Ports

1. Laptop Maintenance connection port located on pendant control station to monitor data points and modify allowed parameters.

a. Monitoring Points:

- Suction and discharge pressures
- Ambient Temperature
- Discharge Temperature
- Cabin Temperature
- Compressor and Heater status Faults

b. Monitoring and Modification

- Blower Speeds
- Cabin temperature set points



- Temperature set points

H. Remote Diagnostics Connection

1. Remote Diagnostics port is located on the pendant control station.
2. Remote Diagnostics can be accomplished by connecting the Remote Diagnostics Hardware Kit (available for purchase) and calling into the Twist Engineering Support Department. Through this connection, The Twist Engineering Support Department can remotely dial into the PCA unit's program and assist in any troubleshooting/maintenance needs.

I. Optional: BRIDEGCOOL Mode

1. Bridgecool Mode allows for the PBB to be pre-cooled or pre-heated using the PCA, when not connected to an aircraft. This is achieved by a damper box redirecting the air into a plenum and grill assembly, mounted to the side of the PBB. The Bridgecool control is located in the PBB cab and can be affixed to the wall or incorporated into the HMI operator screen.

12.0 Cabin Temperature Probe

1. Cabin Temperature Probe is a weatherproof design with temperature ratings from -20°F to 120°F.
2. The Temperature Probe comes complete with a “jack” type connection to an outlet on the PBB cab wall.
3. Strain reliefs are located at the probe base and at the jack connection. These strain reliefs provide protection from crimping and enhance robust design.

13.0 Air Delivery Equipment

A. Hose Management Operations

1. Air Delivery to the aircraft can be accomplished through a Hose Basket, Hose Reel or Boom-Air® Hose Management System. One of the three below options may be selected/specified for air delivery to the aircraft.
2. Hose Basket
 - a. A single hose basket that will accommodate up to 80 feet of hose. A dual basket is also an option for MD-80 extension requirements. Construction is welded tubular steel with Safety

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Yellow powdercoat finish. Hose baskets are equipped with (4) casters which allow ease of movement with the bridge.

3. Hose Reel

- a. A single hose reel that will accommodate up to 80 feet of hose. A dual reel is also an option for MD-80 extension requirements. Construction is welded tubular steel with Safety Yellow powdercoat finish. Hose reels are equipped with (4) casters which allow ease of movement with the bridge.

4. Boom Air[®]

- a. A Boom-Air Hose Management System with up to 135 feet of 14-inch diameter insulated hose. This option allows the user to deploy only the required amount of hose to the aircraft without kinks.

B. Hose Construction

1. All air hoses are manufactured by Twist. Standard options include:

- 14" X 20' Starter Hose
- 14" X 20' or 25' Layflat Sections
- 14" X 8" Reducer
- Zipper and Velcro Cuffs options

2. Custom Hoses (Length, Diameter, Configuration) Available.

3. Hose Specifications:

- a. Outside Material: 6.5 oz. Synthetic fiber made for high endurance in outdoor applications. High UV stability along with water and mildew resistance.
- b. Inside Liner: Light weight woven nylon with urethane laminate. High UV stability along with water and mildew resistance.
- c. Insulation: Polypropylene fabric with single sided, radiant heat barrier film. Mold, bacteria and fungi resistant.
- d. Stitching: Bonded nylon specifically designed to withstand severe environments. High UV stability along with water and mildew resistance.



- e. Scuff Strip: PVC blend, dual extrusion material that offers improved rigidity and wear for Boom-Air application. Gate hoses utilize single extrusion.

14.0 Testing

A. Factory Testing

1. A comprehensive test in the Twist Environmentally Controlled Test Lab is completed for every unit. Prior to entering the Test Lab, each unit is precisely charged with refrigerant at the Automated Refrigerant Filling Station.
2. Standard Factory Tests Performed
 - a. Temperature, Pressure and Volume are verified in each of the following conditions:
 - AHSRAE Design day conditions in cooling mode. All aircraft modes + Bridgecool.
 - ASHRAE Design day conditions in heating mode. All aircraft modes + Bridgecool.
 - Vent mode testing. All aircraft modes.
 - b. Pendant Controls are tested for functionality.
 - c. Hi-pot Test.
 - d. VFD parameters and functionality.
 - e. Smoke Detector, Condenser Fan, Compressor, Blower Motor, Condensate Pump, and Crankcase Heater functionality.
 - f. Phase, Amps and general wiring checks completed.
 - g. Comprehensive Factory Acceptance Test Report is retained on each unit and can be made available upon request.

15.0 Maintenance

- A. All the components are easily accessible for maintenance and repair without removing the unit from the bridge. The access panels are labeled with specific component access and are completely removable. The following components can be removed and replaced without removing the PCA from the bridge:
 1. Compressors
 2. Blower
 3. Filters
 4. Controls

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5. Condenser Fans
6. Heater Assembly and Elements
 - a. Heater assembly is vertically integrated, allowing for the whole assembly to be removed for maintenance.
7. Coils
 - a. Condenser Coils are mounted in tracks so they can be easily slid out for repair or replacement. Each coil is an isolated circuit, allowing for one circuit to be open without affecting other circuits in the system.



**GENERAL SPECIFICATIONS – 45 TON PCA UNIT
TABLE 1**

MODEL	PCAB045480WH
Tons Nominal (Actual Compressor Tonnage) at 60 HZ Ratings	45
Refrigerant	R-410A
Power (Voltage/Hertz/Phase)	480-60-3
Rated Amps	150
Compressors, Scroll @ 60HZ Rating	1-20 Ton 1-25 Ton
Blower H.P.	25
Design Airflow # /min	225
Static at Aircraft Inches W.C.	25
Cooling Discharge Temperature at the Unit.	34°F– 40°F
Heating Discharge Temperature at the Unit.	100°F – 160°F
PHYSICAL DESCRIPTION	
Length	120"
Width	88"
Height	54"
Weight	5500 #s
Materials of construction	Structural Steel/Aluminum

UL APPROVED ELECTRICAL	PCAB045480WH
RLA	112 AMPS
MCA	135 AMPS
MOP	150 AMPS
Circuit Breaker Inside Unit	150 AMPS
Recommended Power Cable	#2 AWG, 4 Conductor, Type W
Recommended Circuit Breaker at Disconnect	150 AMPS

*** NOTE: These are general performance characteristics. Ambient conditions and alternative unit configurations will alter these general performance characteristic**

Exhibit B

This email confirms that the FAA approves the selection of Twist Aero (PCAs) for the 2018 VALE grant (AIP 3-08-0086-095). Twist Aero has certified that their product meets the Buy American requirements.

Please let me know if you need anything else.

Thanks,

Kandice

Kandice Krull

Environmental Protection Specialist

FAA - Denver Airports District Office

303-342-1261

Exhibit C

ACCESS TO RECORDS AND REPORTS

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Owner, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this contract on the part of the *Contractor* or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide *Contractor* written notice that describes the nature of the breach and corrective actions the *Contractor* must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the *Contractor* must correct the breach. Owner may proceed with termination of the contract if the *Contractor* fails to correct the breach by the deadline indicated in the Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

GENERAL CIVIL RIGHTS PROVISIONS

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

Title VI Clauses for Compliance with Nondiscrimination Requirements

Compliance with Nondiscrimination Requirements:

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor"), agrees as follows:

1. **Compliance with Regulations:** The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the sponsor to enter into any litigation to protect the

interests of the sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

Insert this list in every contract or agreement, unless the sponsor has determined and the FAA concurs, that the contract or agreement is not subject to the Nondiscrimination Acts and Authorities. This list can be omitted if the FAA has determined that the contractor or company is already subject to nondiscrimination requirements.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must

take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 et seq).

CLEAN AIR AND WATER POLLUTION CONTROL

CLEAN AIR AND WATER POLLUTION CONTROL

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC § 740-7671q) and the Federal Water Pollution Control Act as amended (33 USC § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceeds \$150,000.

DISADVANTAGED BUSINESS ENTERPRISES

Contract Assurance (§ 26.13) –

The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of Department of Transportation-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Owner deems appropriate, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the Contractor from future bidding as non-responsible.

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, “Federal Leadership on Reducing Text Messaging While Driving”, (10/1/2009) and DOT Order 3902.10, “Text Messaging While Driving”, (12/30/2009), the Federal Aviation Administration encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or subgrant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding

\$3,500 that involve driving a motor vehicle in performance of work activities associated with the project.

ENERGY CONSERVATION REQUIREMENTS

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 USC 6201 *et seq.*).

LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

CERTIFICATION REGARDING LOBBYING

The Bidder or Offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

PROCUREMENT OF RECOVERED MATERIALS

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- 1) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year;
or
- 2) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

- 1) The applicant represents that it is () is not () a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is () is not () is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twentyfour (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

TERMINATION FOR CONVENIENCE (CONSTRUCTION & EQUIPMENT CONTRACTS)

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the Owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work, and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the Owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

- 1) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
- 2) documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
- 3) reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
- 4) reasonable and substantiated expenses to the Contractor directly attributable to Owner's termination action.

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

TERMINATION FOR DEFAULT (EQUIPMENT)

The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract if the Contractor:

1. Fails to commence the Work under the Contract within the time specified in the Notice-to-Proceed;
2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;

4. Fails to comply with material provisions of the Contract;
5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements; or
6. Becomes insolvent or declares bankruptcy.

If one or more of the stated events occur, the Owner will give notice in writing to the Contractor and Surety of its intent to terminate the contract for cause. At the Owner's discretion, the notice may allow the Contractor and Surety an opportunity to cure the breach or default.

If within [10] days of the receipt of notice, the Contractor or Surety fails to remedy the breach or default to the satisfaction of the Owner, the Owner has authority to acquire equipment by other procurement action. The Contractor will be liable to the Owner for any excess costs the Owner incurs for acquiring such similar equipment.

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for such completed equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

Owner will not terminate the Contractor's right to proceed with the Work under this clause if the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such acceptable causes include: acts of God, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, and severe weather events that substantially exceed normal conditions for the location.

If, after termination of the Contractor's right to proceed, the Owner determines that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the Owner issued the termination for the convenience the Owner.

The rights and remedies of the Owner in this clause are in addition to any other rights and remedies provided by law or under this contract.

TRADE RESTRICTION CERTIFICATION

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror –

- 1) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (USTR);
- 2) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the USTR; and
- 3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18 USC Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

- 1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR or
- 2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list or
- 3) who incorporates in the public works project any product of a foreign country on such USTR list.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The Contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by USTR, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration (FAA) may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.