

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, APPROVING THE PURCHASE OF CERTAIN HVAC EQUIPMENT FOR VARIOUS TOWN FACILITIES FROM TEXAS AIR SYSTEMS IN CONNECTION WITH THE TOWN'S REQUEST FOR PROPOSALS 22-02 ENTITLED "RFP 22-02 HVAC AND GUN RANGE FACILITY UPGRADGES PROJECT"; AUTHORIZING THE CITY MANAGER TO EXECUTE THE PURCHASE DOCUMENTS; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the City Council desires to authorize the purchase of certain HVAC equipment from Texas Air Systems described in the Quotation from Texas Air Systems dated 11/4/2021 and attached hereto as **Exhibit A** (the "Quote").

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:**

**SECTION 1.** The City Council hereby approves a purchase between the Town of Addison and Texas Air Systems for that certain HVAC equipment highlighted in green and described in the Quote dated 11/4/2021 in an amount not-to-exceed of \$511,056, a copy of which is attached to this Resolution as **Exhibit A**. The foregoing HVAC equipment shall be used in connection with the HVAC and Gun Range Facility Upgrades Project and City Manager is hereby authorized to execute such purchase orders and other documents as may be necessary to effectuate the purchase and delivery of the same.

**SECTION 2.** This Resolution shall take effect from and after its date of adoption.

**DULY RESOLVED AND ADOPTED** by the City Council of the Town of Addison, Texas, on this the **9<sup>th</sup>** day of **NOVEMBER 2021**.

**TOWN OF ADDISON, TEXAS**

\_\_\_\_\_  
Joe Chow, Mayor

**ATTEST:**

\_\_\_\_\_  
Irma Parker, City Secretary

EXHIBIT A

# QUOTATION



Date: 11/04/2021

To: McKinstry / Town of Addison  
By: Cody Mason/Sean Moore

Project: Town of Addison  
Engineer: MEPCE  
Based on Plans Dated: 09/21/2021

**Note: Texas AirSystems is a member of the TIPS purchasing program.**

**If the equipment for all of the buildings included in this quote is purchased from Texas AirSystems, Texas AirSystems will offer a deduct of \$20,000 from the total price of this job. This discount will make the total price \$511,056.**

**Pricing Summary: Events Pavilion**

DESCRIPTION	QTY	TAGGING	TOTAL NET PRICE
Champion Split System ( <i>Basis of Design</i> )	4	AHU/CU-1 thru 4	\$18,784

\*FOB Factory, Full Freight Allowed, Tax Not Included

**Bid Note: The pricing on this quote is only valid until December 20, 2021.**

**Champion Split System**

Tags: AHU/CU-1,2,3,4

Four (4) **Champion** modular heat pump split systems designed for 208V/3ph/60Hz and complete as follows:

**Outdoor Condensing Unit:**

- Galvanized steel painted cabinet construction
- Two-step scroll compressor utilizing R-410A refrigerant
- 2-Stage
- Compressor Crank Case heater

**Indoor Unit:**

- Unit cabinet constructed of aluminum or G90 galvanized steel
- G30 Galvanized Steel Case to resist corrosion
- MaxAlloy Aluminum coils for long lasting performance, efficiency and reliability
- Insulated cabinet with foil faced insulation
- Thermal plastic drain pan
- Bolt-on-TXV
- Variable speed ECM Motor

**Accessories:**

- Electric heat kit – ***field mounted and wired by Others***
- 7-Day programmable thermostat – ***field mounted and wired by Others***
- Condensate overflow switch – ***field mounted and wired by Others***
- Dirty Filter Switch – ***field mounted and wired by Others***
- Disconnect switch – ***field mounted and wired by Others***
- MERV-13 Filter

**Warranties:**

- 5 -Year limited parts warranty for indoor unit
- 10-Year Limited parts warranty for outdoor condensing unit

**NOTES:**

1. **Unloading, rigging, installation, wiring, STARTUP, & refrigerant piping are not included and are by others.**
2. **The above pricing does not include housekeeping pads, low ambient controls, interconnecting piping, secondary drain pans, sensors, BAS/EMS controls, or smoke detectors.**

**Pricing Summary: Pump Station (Base Bid)**

DESCRIPTION	QTY	TAGGING	TOTAL NET PRICE
Loren Cook Exhaust Fans <i>(Basis of Design)</i>	2	EF-1 & 2	Included
ABB Variable Frequency Drive	1	For EF-1	Included
Price Industries Air Devices <i>(Basis of Design)</i>	2	E1	Included
<b>TOTAL NET PRICE</b>			<b>\$7,844</b>

\*FOB Factory, Full Freight Allowed, Tax Not Included

**Bid Note: The pricing on this quote is only valid until December 20, 2021.**

**Loren Cook Roof Mounted Hooded Exhaust Ventilators**

Tags: EF-1

**Loren Cook** Model HEE, low profile, direct driven, hooded exhaust ventilator designed for **460V/3Ph/60HZ** power and complete with the following:

- Bolted and welded construction
- Painted, welded steel fan housing with integral spun venturi and welded curb cap / 14 gauge
- Bolted fan housing hood with removable top cap
- Steel fan components have Lorenized baked powder finish
- Extruded aluminum propeller
- Direct Drive Premium Efficiency ODP motor with **shaft grounding ring** suitable for VFD control **\*See VFD scope later\***
- L50 life in excess of 200,000 hours regreasable bearings
- Galvanized birdscreen
- **NEMA-3** toggle disconnect switch – **Factory mounted & wired**
- Gravity backdraft damper
- Lifting Lugs – **Shipped loose for field installation by Mechanical Contractor**

**Not Included:** Curb or curb adapter, DDC controls, thermostats, wall switches, external isolators, installation and/or wiring.

**Cook Roof Mounted Exhaust Fans**

Tags: EF-2

**Loren Cook** Model **ACED** roof mounted direct drive down-blast exhaust fans designed for **120V/1Ph/60Hz** power and complete with the following:

- All aluminum housing
- Removable top cap with stainless steel quick release latches
- Birdscreen
- Non-overloading, backward inclined, aluminum wheel
- ODP motor

- Variable speed controller – **Factory mounted and wired**
- Non fused disconnect switch – **Factory mounted and wired**
- Gravity backdraft damper

**Not Included: Curb or curb adapter, Interlocks, installation, wiring, startup, auxiliary motor starters, or controls not mentioned above.**

**ABB Variable Frequency Drives**

**Tags: For EF-1**

**ABB Model ACH580** variable frequency drives designed for **208V/3Ph/60HZ & 460V/3Ph/60HZ** power and complete as follows:

- Microprocessor based Pulse Width Modulated (PWM) adjustable speed AC drive
- IGBT power switching technology
- NEMA-1 rated enclosure - **For indoor mounting and use only**
- Full graphic multifunction control panel with LCD display in plain English
- Operating range from -10 to 40°C
- (2) programmable analog inputs / (2) programmable analog outputs
- (6) programmable digital inputs / (3) programmable relay outputs
- 5% input line impedance for harmonic mitigation
- **Integral disconnect**
- Integral Johnson Controls N2, Siemens FLN, Modbus & BACnet protocol
- 24- month parts and labor warranty with start-up from Texas AirSystems
- Factory Start-Up by Texas AirSystems

**Not Included: Installation and wiring.**

**Price Industries Air Devices**

**Tags: E1**

Grilles, registers, and diffusers per air device schedule, including:

- White powder coat finish
- Integral OBD – Tag S1 for Stone Cottage
- Aluminum construction
- Insulated backpan – Tag S1 & R1 for Gun Range

**Excludes remote cable dampers, face operable dampers (unless noted), sheet metal fittings, spin-in taps, manual volume dampers, or other accessories not listed as included above.**

**Pricing Summary: Fire Station 2**

DESCRIPTION	QTY	TAGGING	TOTAL NET PRICE
AAON Packaged DX Rooftop Units <i>(Basis of Design)</i>	3	RTU-1,2,3	Included
Space Ray Radiant Heaters <i>(Basis of Design)</i>	2	RH-1 & 2	Included
<b>TOTAL NET PRICE</b>			<b>\$67,362</b>

\*FOB Factory, Full Freight Allowed, Tax Not Included

**Bid Note: The pricing on this quote is only valid until December 20, 2021.**

**AAON Packaged DX Rooftop Units**

**Tag: RTU-1,2,3**

Three (3) **AAON** Models **RN** and **RQ**, roof mounted, air-cooled, vertical airflow, electric cooling, gas heating, packaged Rooftop unit, designed for **208V/3Ph/60HZ** power, and complete as follows:

- R-410A refrigerant

- Double wall, 2" thick, galvanized steel construction with gray polyurethane finish, R-13 foam insulation
- Sloped stainless steel drain pans
- Access doors with full length stainless steel piano hinges and quarter turn, zinc cast lockable handles
- Enthalpy based Economizer
- **Digital scroll compressor** (lead circuit) mounted on RIS isolators – **per schedule**
- Filter section with 2" thick, MERV 8 pre-filters with 4" thick MERV 13 filters – **two (2) sets per RTU per schedule**
- Direct drive backward curved plenum blowers with rubber isolation mounts and integral VFD
- Condenser section with VFD or EC motor on fans

Options and Accessories Included:

- 2-stage aluminized Heat Exchanger
- Modulating hot gas reheat
- Disconnect Switch – **factory mounted & wired**
- Non-Powered Convenience outlet – **factory mounted & wired**
- Condensate Overflow Switch – **factory mounted & wired**
- Condenser Coil Guards – **factory mounted**
- 7-Day Programmable Thermostat – **field installed by Others**

Controls:

- AAON Single-Zone VAV Unit Mounted Controller for SZVAV Cooling and CV Heating

Services and Warranties:

- Standard one-year warranty on all parts
- 5-year non-prorated compressor warranty (parts only)
- 25-year non-prorated Stainless-Steel Heat Exchanger Warranty
- Start-up of RTU by AAON technician

**Coordination Notes:**

- **Roof curb or curb adapters are not included.**
- **Labor warranty is not included and is to be carried by others.**
- **Controls, wiring, rigging, installation are not included.**
- **Smoke Detectors, Secondary GFI Outlets, Clogged Filter Switches are not included**

### **Space-Ray Infrared Radiant Gas Heaters**

Tags: RH-1 & 2

**Space-Ray** model PTS tubular infrared heater designed for 120V/1Ph/60Hz and complete with the following:

- Totally enclosed combustion chamber
- Blower motor totally enclosed in the burner box
- Heavy duty cast iron burner
- Direct spark ignition system and 100% gas shut off safety control
- Pre-purge and post-purge functions
- Diaphragm air switch for proof of venting before gas flow ignition
- Tube Integrity Safety System
- Highly efficient aluminum reflectors
- Chain kit
- 2-stage thermostat – 24V – **Field installed & wired by others**
- Gas flex connectors
- 10-year limited warranty on burner

**Not Included: Installation, wiring, startup, or controls not mentioned above.**

**Pricing Summary: Stone Cottage**

DESCRIPTION	QTY	TAGGING	TOTAL NET PRICE
Champion Split Systems <i>(Basis of Design)</i>	2	AHU/CU-1,2	Included
Loren Cook Exhaust Fan <i>(Basis of Design)</i>	1	EF-1	Included
Price Industries Air Devices <i>(Basis of Design)</i>	6	S1	Included
<b>TOTAL NET PRICE</b>			<b>\$19,466</b>

\*FOB Factory, Full Freight Allowed, Tax Not Included

**Bid Note: The pricing on this quote is only valid until December 20, 2021.**

**Champion Split System**

Tags: AHU/CU-1,2

One (1) **Champion** modular direct expansion split systems designed for 230V/1ph/60Hz and complete as follows:

**Outdoor Condensing Unit:**

- Galvanized steel painted cabinet construction
- Two-step scroll compressor utilizing R-410A refrigerant
- Compressor Crank Case heater

**Indoor Unit:**

- Unit cabinet constructed of aluminum or G90 galvanized steel
- G30 Galvanized Steel Case to resist corrosion
- MaxAlloy Aluminum coils for long lasting performance, efficiency and reliability
- Insulated cabinet with foil faced insulation
- Thermal plastic drain pan
- Bolt-on-TXV
- Variable speed ECM Motor

**Accessories:**

- Electric heat kit – *field mounted and wired by Others*
- 7-Day programmable thermostat – *field mounted and wired by Others*
- Condensate overflow switch – *field mounted and wired by Others*
- Dirty Filter Switch – *field mounted and wired by Others*
- Disconnect switch – *field mounted and wired by Others*
- MERV-13 Filter

**Warranties:**

- 5 -Year limited parts warranty for indoor unit
- 10-Year Limited parts warranty for outdoor condensing unit

**NOTES:**

3. Unloading, rigging, installation, wiring, **STARTUP**, & refrigerant piping are not included and are by others.
4. Condensing units come with enough refrigerant for matching evaporator coils and 15 feet of interconnecting piping – Additional required refrigerant is not included and is by others.
5. The above pricing does not include housekeeping pads, **low ambient controls**, interconnecting piping, secondary drain pans, sensors, BAS/EMS controls, smoke detectors, or disconnect switches.

**Cook Ceiling Exhaust Fans**

Tags: EF-1

**Loren Cook** Model **GC** ceiling mounted exhaust fans designed for 120V/1Ph/60Hz power and complete as follows:

- Injection molded flame resistant fan housing

- Galvanized steel inlet box
- Forward curved polypropylene fan wheel
- Round outlet duct with integral backdraft damper
- **EC motor**
- Plug-style disconnect
- White intake grille
- Isolator kit – **All-Thread rod by Others**

**Not Included:** interlocks, light switches, installation, wiring, startup, transformers, roof or wall caps, flex connections, or controls not mentioned above.

**Price Industries Air Devices**

**Tags: S1**

Grilles, registers, and diffusers per air device schedule, including:

- White powder coat finish
- Integral OBD – Tag S1 for Stone Cottage, Tag S3 for Gun Range
- Aluminum construction
- Insulated backpan – Tag S1 & R1 for Gun Range

**Excludes remote cable dampers, face operable dampers (unless noted), sheet metal fittings, spin-in taps, manual volume dampers, or other accessories not listed as included above.**

**Pricing Summary: Service Center**

DESCRIPTION	QTY	TAGGING	TOTAL NET PRICE
JCI Packaged DX Rooftop Units <i>(Basis of Design)</i>	9	RTU-1 thru 9	Included
Champion Split System <i>(Basis of Design)</i>	1	FCU/CU-1	Included
LG Ductless Mini Split Systems <i>(Basis of Design)</i>	3	FCU/CU-DS-2,3,4	Included
Modine Gas Unit Heaters <i>(Basis of Design)</i>	10	UH-1 thru 10	Included
<b>TOTAL NET PRICE</b>			<b>\$171,394</b>

\*FOB Factory, Full Freight Allowed, Tax Not Included

**Bid Note: The pricing on this quote is only valid until December 20, 2021.**

**JCI Packaged DX Rooftop Unit**

**Tag: RTU-1 thru 9**

Nine (9) **Johnson Controls** packaged rooftop units designed for **460V/3Ph/60Hz** and complete as follows:

- R-410A refrigerant
- 0-100%, low leak, economizer
  - Single enthalpy kit – **field installed by Others**
- 4” MERV-13 Filters – **Two (2) sets per schedule**
- Direct expansion cooling coil with copper tube, aluminum finned cooling coil
- One-stage electric heat exchangers
- Belt drive, single-width, single inlet forward curved centrifugal supply fan
  - Single speed, ODP supply fan motors
- Hinged access doors
- Condenser coil hail guards – **field installed by Others**
- Standard composite drain pans
- Disconnect switch – **field wired by Others**
- 115V Non-powered convenience outlet – **field wired by Others**

- BACnet MS/TP communication interface
- One (1) year parts only warranty
- Five (5) year parts only compressor and electric heater elements warranty
- Ten (10) year parts only aluminized steel tubular heat exchanger warranty

**Not Included: Installation, STARTUP, roof curb or curb adapter, thru the base condensate and gas connections, disconnect switches, smoke detectors, owner training, controls, double wall construction, condensate overflow switch, smoke detectors, thermostat, hot gas reheat, dirty filter switch, fault detection diagnostics, piping, low ambient kit, wiring and any controls not listed above.**

### **Champion Split System**

**Tags:** FCU/CU-1

One (1) **Champion** modular direct expansion split systems designed for 230V/1ph/60Hz and complete as follows:

#### **Outdoor Condensing Unit:**

- Galvanized steel painted cabinet construction
- Two-step scroll compressor utilizing R-410A refrigerant
- Compressor Crank Case heater

#### **Indoor Unit:**

- Unit cabinet constructed of aluminum or G90 galvanized steel
- G30 Galvanized Steel Case to resist corrosion
- MaxAlloy Aluminum coils for long lasting performance, efficiency and reliability
- Insulated cabinet with foil faced insulation
- Thermal plastic drain pan
- Bolt-on-TXV
- Variable speed ECM Motor

#### **Accessories:**

- Electric heat kit – **field mounted and wired by Others**
- 7-Day programmable thermostat – **field mounted and wired by Others**
- Condensate overflow switch – **field mounted and wired by Others**
- Dirty Filter Switch – **field mounted and wired by Others**
- Disconnect switch – **field mounted and wired by Others**
- MERV-13 Filter

#### **Warranties:**

- 5 -Year limited parts warranty for indoor unit
- 10-Year Limited parts warranty for outdoor condensing unit

#### **NOTES:**

6. **Unloading, rigging, installation, wiring, STARTUP, & refrigerant piping are not included and are by others.**
7. **Condensing units come with enough refrigerant for matching evaporator coils and 15 feet of interconnecting piping – Additional required refrigerant is not included and is by others.**
8. **The above pricing does not include housekeeping pads, low ambient controls, interconnecting piping, secondary drain pans, sensors, BAS/EMS controls, or smoke detectors.**



**LG Ductless Split Systems**

**Tag: FCU/CU-2,3,4**

Three (3) **LG** Model **LS** high efficient, ductless heat pump split systems, designed for **208V/1Ph/60HZ** power and complete as follows:

- Cooling & Heating Heat Pump System / Duct free / Single Zone
- Inverter compressor utilizing R-410A refrigerant
- Variable speed compressor
- Low ambient operation to 14°F Cooling / -4°F Heating
- DX Coil with Gold Fin™ Anti-corrosion
- Ultra-quiet fan
- Evaporator frost control
- 3M Micro Protection Filter
- **Dip switch for inverter control & lockout for cooling/heating only applications**
- Auto restart / Auto Changeover / 24-Hour on/off timer
- Programmable wall mounted thermostat – ***field installed by Others***
- Condensate pump – ***field installed by Others***
- Condensing unit rails – ***field installed by Others***
- Hail guards – ***field installed by Others***
- **Standard 5-year Parts & 7-Year Compressor Warranties** (Labor is not Included)

**Not Included:** Installation, rigging, wiring, STARTUP, motor starters, wind baffles, disconnects, low ambient kits, mounting pads, refrigerant line sets, BMS/BAS integration, or controls not mentioned.

**Modine Gas Fired Unit Heater**

**Tag: UH-1 thru 10**

**Modine** Model **HD** gas fired unit heater designed for **115V/1Ph/60Hz** and complete with the following:

- 60MBH
- Heavy gauge metal casing
- Direct spark ignition
- Factory installed finger proof fan guards
- Permanently lubricated motor
- 1/2" gas connection
- Ceiling mounting kit
- Thermostat – **Field installed & wired by others**
- 10-year heat exchanger warranty

**NOT INCLUDED:** Disconnect (by Div. 26 per schedule), roof caps, installation, wiring, STARTUP, flue pipe

**Pricing Summary: Gun Range**

DESCRIPTION	QTY	TAGGING	TOTAL NET PRICE
AAON Packaged DX Rooftop Unit <b>(Basis of Design)</b>	1	RTU-1	Included
JCI Packaged DX Rooftop Unit <b>(Basis of Design)</b>	1	RTU-2	Included
RVD Range Ventilation Control Panel <b>(Basis of Design)</b>	-	As detailed & noted	Included
RVD Laminar Airflow Radial Diffusers <b>(Basis of Design)</b>	6	S2	
Aire-Loc 3-Stage Filter Rack <b>(Basis of Design)</b>	2	As detailed & noted	Included
Loren Cook Exhaust Fan <b>(Basis of Design)</b>	2	EF-1, RF-1	Included

ABB Variable Frequency Drive	2	For EF-1 & RF-1	
Redd-I Electric Unit Heater ( <i>Basis of Design</i> )	1	UH-1	Included
Price Industries Air Devices	14	S1, S3, R1	Included
<b>TOTAL NET PRICE</b>			<b>\$246,206</b>

\*FOB Factory, Full Freight Allowed, Tax Not Included

**Bid Note: The pricing on this quote is only valid until December 20, 2021.**

### AAON Packaged DX Rooftop Units

#### Tag: RTU-1

One (1) **AAON** Models **RN**, roof mounted, air-cooled, vertical airflow, electric cooling, electric heating, packaged Rooftop unit, designed for **208V/3Ph/60HZ** power, and complete as follows:

- R-410A refrigerant
- Double wall, 2" thick, galvanized steel construction with gray polyurethane finish, R-13 foam insulation
- Sloped stainless steel drain pans – **per schedule**
- Access doors with full length stainless steel piano hinges and quarter turn, zinc cast lockable handles
- 4-Stage electric heat
- Enthalpy based Economizer with powered return
- **Digital scroll compressor** (lead circuit) mounted on RIS isolators – as scheduled
- Filter section with 2" thick, MERV 8 pre-filters with 4" thick MERV 13 filters – **two (2) sets per RTU per schedule**
- Direct drive backward curved plenum blowers with rubber isolation mounts and integral VFD
- Condenser section with VFD or EC motor on fans

Options and Accessories Included:

- Condenser Coil Guards
- 4 stage electric Heat Exchanger
- Modulating hot gas reheat – **per schedule**
- Non-Powered Convenience outlet – factory mounted & wired
- Condensate Overflow Switch – factory mounted & wired
- Outside airflow measuring station – factory mounted & wired

Controls:

- AAON Constant Volume Unit Controller

Roof Curbs:

- 14" high, insulated, galvanized steel roof curbs for flat, built up, roof – field installed by Others

Services and Warranties:

- Standard one-year warranty on all parts
- 5-year non-prorated compressor warranty (parts only)
- 25-year non-prorated Heat Exchanger Warranty
- Start-up of RTU by AAON technician

#### Coordination Notes:

- **Labor warranty is not included and is to be carried by others.**
- **Controls, wiring, rigging, installation are not included.**
- **Smoke Detectors, return airflow measuring station, disconnects, Secondary GFI Outlets, Clogged Filter Switches are not included**

### JCI Packaged DX Rooftop Unit

#### Tag: RTU-2

One (1) **Johnson Controls** packaged rooftop units designed for **208V/3Ph/60Hz** and complete as follows:

- R-410A refrigerant
- 0-100%, low leak, economizer

- Single enthalpy kit – ***field installed by Others***
- 4” MERV-13 Filters – **Two (2) sets per schedule**
- Direct expansion cooling coil with copper tube, aluminum finned cooling coil
- One-stage electric heat exchangers
- Belt drive, single-width, single inlet forward curved centrifugal supply fan
  - Single speed, ODP supply fan motors
- Hinged access doors – **per schedule**
- Condenser coil hail guards – ***field installed by Others***
- Standard composite drain pans
- 115V Non-powered convenience outlet – ***field wired by Others***
- BACnet MS/TP communication interface
- 14” high, insulated, galvanized steel roof curb for flat, built up, roof – ***field installed by others***
- One (1) year parts only warranty
- Five (5) year parts only compressor and electric heater elements warranty
- Ten (10) year parts only aluminized steel tubular heat exchanger warranty

**Not Included: Installation, STARTUP, condensate overflow switch, disconnect switches, smoke detectors, owner training, thru the base condensate and gas connections, controls, double wall construction, smoke detectors, thermostat, hot gas reheat, dirty filter switch, fault detection diagnostics, piping, low ambient kit, wiring and any controls not listed above.**

#### **Range Ventilation Design (RVD) Gun Range System**

**Tags: As noted and detailed**

The *RVD* gun range system shall be complete as follows:

- Range ventilation control pane – model RVC-5000-R-R-HCF-R
  - Installation included
  - Control wiring & terminations included
  - Carbon monoxide monitor included
  - System commissioning included
- Qty. (6) Laminar Airflow Radial diffusers – model RD-2400
  - **Field installed by others**
  - Certification for laminar airflow by RVD

#### **NOT INCLUDED:**

1. **Installation of radial diffusers**
2. **Airflow measuring stations**
3. **Continuous RVD presence on-site**
4. **Smoke detectors**
  - a. **RVD panel has capability to shut down all fans if a dry contact closure is brought back to RVD control panel. Dry contact closure is NOT included and to be field installed & wired by others.**
5. **Permits, duties, and other fees are not included.**
6. **Installation, wiring, additional controls, vibration isolation, all-thread rod**

#### ***Aire-Loc* 3-Stage Filtration System**

**Tags: As noted and detailed**

The 3-stage gun range filtration system shall be complete as follows:

- 14ga galvanized steel outer casing
- Weatherproof construction
- Housing rated for +/- 10” W.C.
- Door perimeter sealed with closed cell neoprene gasketing
- Access doors fitted with knurl knob – bolt down latches and uni-hinges
- Housing #1 associated with EF-1

- 50"x60"x27.5" (WxLxH)
- Qty. (2) 24x24x4 MERV8 Pre-Filters
- Qty. (2) 24x24x30 MERV15 Bag Filter
- Qty. (2) 24x24x12 HEPA Filter
- Housing #2 associated with RF-1
  - 74"x60"x52" (WxLxH)
  - Qty. (6) 24x24x4 MERV8 Pre-Filters
  - Qty. (6) 24x24x30 MERV15 Bag Filter
  - Qty. (6) 24x24x12 HEPA Filter

**Coordination Note:** Only Qty. (1) set of filters is included in the base bid. ADD is presented for additional sets of filters if desired.

#### **Loren Cook Roof Mounted Industrial Material Handlers**

**Tags:** EF-1

**Loren Cook** Model MHA, roof mounted, SWSI, backward inclined flat blade, belt driven, exhaust designed for 208V/3Ph/60Hz power and complete with the following:

- Bolted and continuously welded leakproof steel construction utilizing corrosion resistant fasteners
- Rigidly reinforced housing side panels to prevent flexing and vibration
- Steel fan components have Lorenized baked powder finish
- Centrifugal backward inclined steel fan
- Premium Efficiency ODP motor suitable for VFD control **\*See VFD scope later\***
- Steel weather cover with access ports with quick release latches
- OSHA belt guard/weathercover
- L50 life in excess of 200,000 hours regreasable bearings
- Extended lube lines
- Isolation base with isolators
- Integral drain in fan housing
- Gravity shutter

**Does NOT include airflow CFM measurement, DDC controls, thermostats, wall switches, installation and/or wiring.**

#### **Loren Cook Mixed Flow Blowers**

**Tags:** RF-1

**Loren Cook** Model QMXD, tubular, direct driven, mixed flow inline blower designed for 208V/3Ph/60Hz power and complete with the following:

- Bolted construction 14 gauge galvanized steel
- Straightening vanes assure maximum efficiency and low noise
- Adjustable motor plate for positive belt tensioning
- Non-overloading, high efficiency aluminum mixed flow wheel
- Horizontal hanging brackets
- Direct Drive Premium Efficiency ODP motor with shaft grounding ring suitable for VFD control **\*See VFD scope later\***
- Spring isolators – **all-thread rod by others**

**Notes:** Does NOT include airflow CFM measurement, DDC controls, thermostats, wall switches, installation and/or wiring.

### **ABB Variable Frequency Drives**

**Tags: For EF-1 & RF-1**

**ABB Model ACH580** variable frequency drives designed for **208V/3Ph/60HZ & 460V/3Ph/60HZ** power and complete as follows:

- Microprocessor based Pulse Width Modulated (PWM) adjustable speed AC drive
- IGBT power switching technology
- NEMA-1 rated enclosure - **For indoor mounting and use only**
- Full graphic multifunction control panel with LCD display in plain English
- Operating range from -10 to 40°C
- (2) programmable analog inputs / (2) programmable analog outputs
- (6) programmable digital inputs / (3) programmable relay outputs
- 5% input line impedance for harmonic mitigation
- **Integral disconnect**
- Integral Johnson Controls N2, Siemens FLN, Modbus & BACnet protocol
- 24- month parts and labor warranty with start-up from Texas AirSystems
- Factory Start-Up by Texas AirSystems

**Not Included: Installation and wiring.**

### **Redd-i Electric Plenum Heater**

**Tags: UH-1**

**Redd-i Model 7200** electric plenum heater designed for **208V/3Ph/60HZ** and **277V/1Ph/60Hz** power and complete as follows:

- 20ga galvanized cabinet
- Variable speed motor
- 1" fiberglass acoustical insulation
- Access panels on both sides of unit
- 24v controls with disconnect switch
- Air flow switch
- 0" clearance on sides, top and bottom
- Dust tight control enclosure
- Filter rack with throw away filter
- SCR modulating heat control
- Wall thermostat – **Field installed & wired by others**

**NOT INCLUDED: Installation, wiring, additional controls, vibration isolation, all-thread rod**

### **Price Industries Air Devices**

**Tags: S1, S3, R1**

Grilles, registers, and diffusers per air device schedule, including:

- White powder coat finish
- Integral OBD – Tag S3 for Gun Range
- Aluminum construction
- Insulated backpan – Tag S1 & R1 for Gun Range

**Excludes remote cable dampers, face operable dampers (unless noted), sheet metal fittings, spin-in taps, manual volume dampers, or other accessories not listed as included above.**

-This quotation is subject to change without notice and void after 15 days.  
-Add to the prices quoted any sales tax payable on the transaction under any effective Federal or State statute.  
-F.O.B. Factory, FFA, per mutually agreed schedule. No material to be returned without written authorization.  
-Payment terms: Net 30 Days, Upon Receipt of Satisfactory Credit Information.  
-Texas AirSystems equipment will be supplied based upon approved submittal data.  
-Retainage is not allowed. Texas AirSystems is a material supplier, and will be supplying the entire purchase order value upon delivery of equipment.  
-Payment to Texas AirSystems cannot be conditioned on receipt of payment from the owner by a contractor, construction manager, or customer.  
-Texas AirSystems standard warranty, parts only, is for 12 months from start-up date, not to exceed 18 months from ship date.  
-Texas AirSystems is responsible and accountable only for the acts and omissions of Texas AirSystems.  
-Insurance certificates and bonds can/will be provided upon request.