

MISSISSIPPI STATE
UNIVERSITY FORM P-4
Telephone: (662) 325-2550

THIS IS NOT AN
ORDER

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
1	2.00 EA	20 TON COMPUTER ROOM AIR CONDITIONING UNITS (MATERIAL ONLY) PER ATTACHED SPECIFICATIONS RFX - 3160002161 BIDDERS SHALL SUBMIT THEIR BIDS, EITHER, IN A SEALED ENVELOPE OR ELECTRONICALLY. SEALED BIDS SHALL INCLUDE THE BID NUMBER ON THE FACE OF THE ENVELOPE, AS WELL AS THE NAME OF THE BIDDER. FOR ELECTRONIC BIDS, THE BIDDER SHALL GO TO THE FOLLOWING SITE; https:// www.ms.gov/dfa/contract_bid_search ALL QUESTIONS REGARDING THIS BID SHOULD BE DIRECTED TO THE OFFICE OF PROCUREMENT AND CONTRACTS AT 662-325-2550 When using a delivery service or hand delivering, the address is: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762	\$ _____	\$ _____
Vendor Name and Address		Authorized Signature	Terms	
		Title	Please Bid FOB Destination	
		Company Bid No.	Method of Shipment	
		Offer Firm for _____ days	Delivery can be made in _____ Days	
Telephone No:				
Date:				



MISSISSIPPI STATE
UNIVERSITY™

OFFICE OF PLANNING, DESIGN AND
CONSTRUCTION ADMINISTRATION

Specifications & Materialman's Proposal

For

Replacement Computer Room Air Conditioning Units for Allen Hall (Material Only)

March 1, 2018

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REPLACEMENT COMPUTER ROOM AIR CONDITIONING
UNITS FOR MCARTHUR HALL
(MATERIAL ONLY)
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

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INSTRUCTIONS TO BIDDERS

REPLACEMENT COMPUTER ROOM AIR CONDITIONING
UNITS FOR MCARTHUR HALL
(MATERIAL ONLY)
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

Bids that are sent by mail shall be clearly marked "Bid Enclosed" or "Bid Envelope Enclosed" as appropriate. The sealed envelope containing the bid shall have the following information shown on the envelope:

BID 18-30 ENCLOSED

BIDDER: _____

ADDRESS: _____

Bids that are sent by parcel delivery service should be addressed to:

Mr. Don Buffum, Director
Office of Procurements & Contracts
Mississippi State University
245 Barr Avenue, 610 McArthur
Hall Mississippi State, Mississippi
39762

Bids that are sent by mail should be addressed to:

Mr. Don Buffum, Director
Office of Procurements & Contracts
Mississippi State University
P.O. Box 5307
Mississippi State, Mississippi 39762

Questions and Clarifications:

Submit all questions about the specifications to the Office of Procurement and Contracts, in writing. Questions can be emailed to Debra Raines at draines@procurement.msstate.edu. Replies will be issued to all prospective Bidders of Record. The Owner will be responsible for oral clarifications. Reference the bid number in all correspondence.

Substitutions:

Where equipment is specified by listing one or more manufacturers, additional manufacturers of comparable equipment shall be acceptable if equal in all consequential respects. Only a proposed product that varies from a product specified in one or more consequential characteristics, reference standards, or technical performance requirements shall be considered a substitution.

Where equipment is specified by "performance" or "basis of design" criteria (e.g. one or manufacturers are not named) necessary to meet project or Owner requirements, proposed product shall meet all critical performance and technical requirements detailed in the specification for that product. Proof of merit of proposed substitution or suitability of product to meet "performance" requirements is upon bidder. The Owner's decision to approve or not approve proposed product will be final.

Bid Preparation Instructions:

Bidders shall complete all blank spaces on the Materialman's Proposal Form for each item of equipment being bid in accordance with these specifications and terms and conditions. Bidder should insert the unit price in the blank under the Unit Price heading and multiply this unit price by the number shown in the Number Required heading and enter the product of this multiplication in the blank under the heading Total Price for each bid item on the Materialman's Proposal Form. The bidder shall sum the Total Bid Price for each Bid Item and enter this sum in the Total Bid Price.

Bidder shall insert the delivery time in weeks after receipt of an order for each item of equipment bid in the blank provided. Bidder shall also indicate equipment being bid by the manufacturer's name and catalog number in the blanks provided on the Materialman's Proposal Form. In the event MATERIALMAN proposes to Bid substituted equipment, MATERIALMAN shall provide substitution data as specified in the Specifications.

Bidder shall complete both copies of the Materialman's Proposal Forms bound in these Specifications and shall submit both copies to the OWNER at the time that the bids are due. Bidders taking exceptions to any part of the specifications, conditions, or payment terms specified herein shall show such exception on the Materialman's Proposal Form in the space provided. If

exceptions are not shown on the Proposal Form, Bidder must supply equipment specified herein under the terms and conditions specified herein. Proposals that are modified, excepted, or in any way changed from the proposal that the OWNER is requesting in this request for proposals may be rejected by the OWNER.

MATERIALMAN'S PROPOSAL

REPLACEMENT COMPUTER ROOM AIR CONDITIONING
UNIT FOR MCARTHUR HALL
(MATERIAL ONLY)
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

To: Mr. Don Buffum, Director
Office of Procurements & Contracts
Mississippi State University
Barr Avenue, 610 McArthur Hall
Mississippi State, Mississippi 39762

The undersigned (hereinafter called the MATERIALMAN) acknowledges by his signature that he has received and examined the documents entitled "Specifications and Materialman's Proposal for "REPLACEMENT COMPUTER ROOM AIR CONDITIONING UNIT FOR MCARTHUR HALL (MATERIAL ONLY)" for Mississippi State University, dated March 1, 2018, and has included the provisions of the Specifications in his Proposal. The MATERIALMAN further acknowledges that he has received the following addenda:

Addendum No. _____ Dated _____

The Materialman hereby proposes to sell and deliver to Mississippi State University, Mississippi State, Mississippi (hereinafter called OWNER), upon the terms and conditions herein stated, the equipment specified in the attached specification for the following sums:

<u>BID ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>NO. REQUIRED</u>	<u>UNIT</u>	<u>TOTAL PRICE</u>
1	Computer Room Air Conditioning Unit, 20-ton,	_____	2	EA	_____
2	ALTERNATE - Moisture Sensor w/dry contacts, (1 sensor per unit)	_____	2	EA	_____

- A. The prices set forth above shall include delivery to the Mississippi State University Facilities Management; Oktibbeha County; Starkville, Mississippi; tested and ready for OWNER's use.

- B. The OWNER will unload the mechanical equipment at MSU Facilities Management.
- C. The prices set forth herein do not include any sums which are or which may be payable by the Materialman on account of taxes imposed by any taxing authority upon the sale, purchase, or use of the equipment. If any such tax is applicable to the sale, purchase, or use of the equipment, the amount thereof shall be added to the purchase price and paid by the OWNER.
- D. The base price shall be firm if accepted within forty-five (45) days of the bid due date and time.
- E. The MATERIALMAN shall include engineering data with his proposal as specified and as required to evaluate bid.
- F. The times of delivery shall be as follows:

BID ITEM NO. 1 _____

BID ITEM NO. 2 (ALTERNATE) _____

- G. The items included in each of the above bid prices are as follows:

BID ITEM NO. 1

MANUFACTURER _____

CATALOG NO. _____

BID ITEM NO. 2 (ALTERNATE)

MANUFACTURER _____

CATALOG NO. _____

- H. Title of the equipment shall pass to the Owner upon:

1. Delivery to location specified.
2. Satisfactory inspection for in-transit damage.
3. Acceptance by the Owner.

- I. Bidder hereby certifies that he is:

() Manufacturer

() Manufacturer's Authorized Mississippi Representative

() Manufacturer's Authorized Mississippi Distributor

J. Exceptions: _____

K. It is understood by the undersigned that the OWNER retains the privilege of accepting or rejecting all or any part of this proposal and to waive any informalities or technicalities therein. Counter-proposals or qualified bids shall be subject to rejection at the discretion of the OWNER.

It is also understood by the undersigned that the OWNER reserves the right to conduct investigations to evaluate the proposals received and to award the bid for this equipment to the lowest Bidder, who in the OWNER's evaluation will provide the equipment which will be in the best interest of the OWNER.

MATERIALMAN

BY: _____

TITLE: _____

ADDRESS: _____

TELEPHONE NO.: _____

DATE SIGNED: _____

MATERIALMAN'S PROPOSAL

REPLACEMENT COMPUTER ROOM AIR CONDITIONING
UNIT FOR MCARTHUR HALL
(MATERIAL ONLY)
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

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BID ITEM NO. 2 _____

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CATALOG NO. _____

BID ITEM NO. 2

MANUFACTURER _____
CATALOG NO. _____

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1. Delivery to location specified.
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MATERIALMAN

BY: _____

TITLE: _____

ADDRESS: _____

TELEPHONE NO.: _____

DATE SIGNED: _____

COMPUTER ROOM AIR CONDITIONING UNITS

1.0 GENERAL

1.1 SUMMARY

These specifications describe requirements for a Computer Room Air Conditioning System (CRAC). The system shall be designed to control temperature and humidity conditions in rooms containing electronic equipment, with good insulation and vapor barrier. The manufacturer shall design and furnish all equipment to be fully compatible with heat-dissipation requirements of the room.

1.2 DESIGN REQUIREMENTS

The CRAC shall be a self-contained, factory-assembled unit. Standard 60 Hz units shall be CSA-certified to the harmonized U.S. and Canadian product safety standard, "CSA C22.2 No 236/UL 1995 for Heating and Cooling Equipment" and are marked with the CSA c-us logo.

The system shall be AHRI Certified™, the trusted mark of performance assurance for heating, ventilation, air conditioning and commercial refrigeration equipment, using AHRI Standard 1360.

System capacities shall be as follows:

- Nominal capacity at Ent Air 75 Deg DB and 61.1 deg WB and at 105 deg outdoor ambient.
- System shall have a minimum 220 kBtu/hr net total cooling capacity and 205 kBtu/hr net sensible cooling capacity

1.3 SUBMITTALS

Submittals shall be provided with the proposal and shall include: Single-Line Diagrams; Dimensional, Electrical, and Capacity Data; Piping and Electrical Connection Drawings.

1.4 SERVICEABILITY/ ACCESS

The cabinet shall be designed so that all components are easily accessible for service and maintenance through the unit's side and front.

1.5 QUALITY ASSURANCE

The specified system shall be factory-tested before shipment. Testing shall include, but shall not be limited to: Quality Control Checks, "Hi-Pot." The system shall be designed and manufactured according to world-class quality standards. The manufacturer shall be ISO 9001 certified.

2.0 Product

2.1 FRAME

The frame shall be MIG welded, formed sheet metal. It shall be protected against corrosion using the autophoretic coating process. The frame shall be capable of being separated into three parts in the field to accommodate rigging through small spaces.

The indoor unit shall comply with the following overall dimensions:

- Maximum Width = 100 inches
- Maximum Depth = 35 inches
- Maximum Height = 76 inches

2.1.1 Downflow Air-flow Configurations

2.1.2 Downflow Air Supply

The supply air shall exit from the bottom of the unit.

2.1.3 Downflow Air Return

The return air shall enter the unit from the top.

2.1.4 Exterior Panels

The exterior panels shall be insulated with a minimum 1 in. (25 mm), 1.5 lb. (0.68 kg) density fiber insulation. The main front panel shall have captive quarter turn fasteners. The main unit color shall be Black Gray Matte. The accent color shall be Black Gray Matte.

2.2 FILTERS

For Downflow units, the filter chamber shall be located within the cabinet, and filters shall be removable from the top of the unit. Filters shall be arranged in a flat bank configuration.

2.2.1 Filters, 4 in. MERV8

Filters shall be deep pleated 4 in. filters with an ASHRAE 52.2 MERV8 rating (45% ASHRAE 52.1).

2.2.1 Locking DISCONNECT SWITCH

The manual disconnect switch shall be mounted in the high-voltage section of the electrical panel. The switch shall be accessible from the outside of the unit with the door closed, and shall prevent access to the high voltage electrical components until switched to the Off position.

2.4 FAN SECTION

2.4.1 Electronically Commutated (EC) Fan

The fans shall be plug/plenum type, single inlet and shall be dynamically balanced. The drive package shall be direct drive, electronically commutated and variable speed. The fans shall be located to draw air over the A-frame coil to ensure even air distribution and maximum coil performance. EC fans shall be available on downflow models, and fans may be lowered into a raised floor with a minimum height of 24 in. (610 mm). EC fans may operate within the cabinet, instead of under the floor.

2.5 HUMIDIFIER

A humidifier shall be factory-installed inside the unit. Bypass air slots shall be included to enable moisture to be absorbed into the air stream. The humidifier shall be removable from the front of the cabinet. Humidifier shall be adequately sized to address anticipated space conditions.

2.5.1 Infrared Humidifier

The humidifier shall be of the infrared type, consisting of high-intensity quartz lamps mounted above and out of the water supply. The humidifier pan shall be stainless steel and arranged to be removable without disconnecting high-voltage electrical connections. The complete humidifier section shall be pre-piped, ready for field connection to the water supply. The humidifier shall be equipped with an automatic water-supply system and shall have an adjustable water-overfeed to prevent mineral precipitation. A high-water detector shall shut-down the humidifier to prevent overflowing. A minimum 1 in. (24 mm) air-gap shall prevent back-flow of the humidifier supply water.

2.6 REHEAT

The environmental control unit shall include a factory-installed reheat to control temperature during dehumidification.

2.6.1 Three-Stage Electric Reheat

The electric reheat coils shall be low watt density, 304/304 stainless steel fin tubular construction, protected by thermal safety switches, shall be 15 or 25 kW depending on unit size controlled in three stages. The reheat elements shall be removable from the front of the cabinet.

2.7 REFRIGERATION SYSTEM

2.7.1 Dual Refrigeration System

Each unit shall include two (2) independent refrigeration circuits and shall include hot gas mufflers (semi hermetic compressors units only), liquid line filter dryers, refrigerant sight glasses with moisture indicator, externally equalized expansion valves and liquid line solenoid valves. Compressors shall be located outside the air stream and shall be removable and serviceable from the front of the unit.

2.7.2 Digital Scroll Compressors

The compressor shall be scroll-type with a variable capacity operation capability. The compressor solenoid valve shall unload the compressor and allow for variable capacity operation. The compressor shall be suction gas cooled motor, vibration isolators, thermal overloads, automatic reset high-pressure switch with lockout after three failures, rotalock service valves, pump down low pressure transducer, suction line strainer and a maximum operating speed of 3500 rpm.

2.7.3 Evaporator Coil

The evaporator coil shall be A-frame design on downflow units with offset orientation and shall be 3 rows deep. It shall be constructed of rifled copper tubes and aluminum fins. A stainless-steel condensate drain pan shall be provided.

2.7.4 R-407C Refrigerant

The system shall be designed for use with R-407C refrigerant, which meets the EPA clean air act for phase-out of HCFC refrigerants.

3.0 Control System

3.1 MICROPROCESSOR CONTROL WITH COLOR TOUCHSCREEN

The control system shall be microprocessor-based with a minimum 9 in. color touchscreen display and shall be mounted in an ergonomic, aesthetically pleasing housing. The display and housing shall be viewable while the front panel is open or closed. The controls shall be menu-driven. The system shall display user menus for active alarms, event log, graphic data, unit view/status overview (including the monitoring of room conditions, operational status in percentage of each function, date and time), total run hours, various sensors, display setup and service contacts. A password shall be required to make system changes. Service menus shall include set-points, standby settings (lead/lag), timers/sleep mode, alarm setup, sensor calibration, maintenance/wellness settings, options setup, system/network setup, auxiliary boards and diagnostics/service mode.

- Password Protection - The control system shall contain two unique passwords to protect against unauthorized changes. An auto hide/show feature shall allow the user to see applicable information based on the login used.
- Unit Backup/Restore - The Backup function saves a copy of the settings in a file based on the system name assigned during startup. The backup can be used to restore only the unit where it was created and serve as a recovery if a display fails. The backup file includes network settings, the unit name, panel configuration and other details specific to the control system display. The Restore function copies the backup settings file to a Control system/display so that it functions exactly as it did before the unwanted change or as it did on the Control system that was replaced.
- Unit Export/Import - The Export function makes a copy of the settings from the Control system display that may be stored on a local disk or USB drive. The settings may be imported to a second Control system, resulting in two systems with identical display properties. The Control system will automatically recognize USB drives and display them in the relevant screens. Multiple backup files may be put on the same USB drive as long as each system name is unique. The Import function allows previously exported settings files to be loaded to a second Control system. This allows display settings, including panel configurations and custom labels, to be copied from one display to another.
- Parameter Download - The Control system shall enable the user to download a report that lists parameter names, factory default settings and user programmed settings in .csv format for remote reference.
- Parameter Search - The Control system shall have search fields for efficient navigation and parameter lookup.
- Parameter Directory - The Control system shall provide a directory that lists all parameters in the control. The list shall provide Line ID numbers, parameter labels, and current parameter values.
- Setup Wizards - The Control system shall contain step-by-step tutorials or wizards to provide easy setup of the control.
- Context-Sensitive Help - The Control system shall have an on-board help database. The database shall provide context-sensitive help to assist with setup and navigation of the menus.
- Display Setup - The user shall be able to configure the display information based on the specific user's preference. Language, units of measure, screen contrast, home screen layout, back-light timer and the hide/show of certain readouts shall be configurable through the display.
- Additional Readouts - The display shall enable the user to configure custom widgets on the main screen. Widget options will include items such as fan speed, call for cooling, call for free-cooling,

maintenance status, call for hot water reheat, call for electric reheat, call for dehumidification, call for humidification, airflow, static pressure, fluid flow rate and cooling capacity.

- Status LED's - The Control system shall show the unit's operating status using an integral LED. The LED shall indicate if the unit has an active alarm; if the unit has an active alarm that has been acknowledged; or if the unit is On, Off or in Standby status.
- Event Log - The Control system shall automatically store the last 400 or more unit-only events (messages, warnings, and alarms).
- Service Contact Information - The Control system shall be able to store the local service or sales contact information.
- Upgradeable - Control system upgrades shall be performed through a USB connection.
- Timers/Sleep Mode – The menus shall allow various customer settings for turning the unit On or Off.
- Menu Layout - The menus shall be divided into two main menus: User and Service. The User screen shall contain the menus to access parameters required for basic unit control and setup. The Service screen shall be designed for service personnel and shall provide access to advanced control setup features and diagnostic information.
- Sensor Calibration - The menus shall allow unit sensors to be calibrated with external sensors.
- Maintenance/Wellness Settings - The menus shall allow reporting of potential component problems before they occur.
- Options Setup - The menus shall provide operation settings for the installed components.
- Auxiliary Boards - The menus shall allow setup of optional expansion boards.
- Various Sensors: The menus shall allow setup and display of optional custom sensors. The control shall include four customer accessible analog inputs for field-supplied sensors. The analog inputs shall accept a 4 to 20mA signal. The user shall be able to change the input to 0 to 5VDC or 0 to 10VDC. The gains for each analog input shall be programmable from the front display. The analog inputs shall be able to be monitored from the front display.
- Diagnostics/Service Mode - The Control system control shall be provided with self-diagnostics to aid in troubleshooting. The microcontroller board shall be diagnosed and reported as pass/not pass. Control inputs shall be indicated as On or Off at the front display. Control outputs shall be able to be turned On or Off from the front display without using jumpers or a service terminal. Each control output shall be indicated by an LED on a circuit board.

3.2 ALARMS

All unit alarms shall be annunciated through both audio and visual cues, clearly displayed on the screen, automatically recorded in the event log and communicated to the customers Building Management System/Building Automation System. The Control system control shall activate an audible and visual alarm in event of any of the following conditions:

- High Temperature
- Low Temperature
- High Humidity
- Low Humidity
- EC Fan Fault
- Change Filters
- Loss of Air Flow
- Loss of Power

- Compressor Overload (Optional)
- Humidifier Problem
- High Head Pressure
- Low Suction Pressure

3.2.1 Custom Alarms

Custom alarm inputs shall be provided to indicate facility-specific events. Custom alarms can be identified with programmable labels. Frequently used alarm inputs include:

- Leak Under Floor
- Smoke Detected
- Standby Unit On

Each alarm (unit and custom) shall be separately enabled or disabled, selected to activate the common alarm and programmed for a time delay of 0 to 255 seconds.

3.3 CONTROL SYSTEM METHODS AND OPTIONS

The Control system shall be factory-set to allow precise monitoring and control of the condition of the air entering and leaving the unit. This control shall include predictive methods to control air flow and cooling capacity based control sensors installed. Proportional and Tunable PID shall also be user-selectable options.

3.3.1 Controlling Sensor Options

Control system shall be flexible in the sense that it shall allow for controlling the capacity and fan from multiple different sensor selections. The sensor selections shall be:

Cooling Capacity

- Supply
- Remote
- Return

Fan Speed

- Supply
- Remote
- Return
- Manual (for diagnostic or to receive a signal from the BMS through the remote monitoring devices or analog input)
- Static Pressure

3.3.2 Temperature Compensation

The Control system shall be able to adjust the capacity output based on supply and return temperature conditions to meet owner requirements while operating to highest efficiency.

3.3.3 Humidity Control

Dew point and relative humidity control methods shall be available (based on user preference) for humidity control within the conditioned space.

3.4 MULTI-UNIT COORDINATION

Control system teamwork shall save energy by preventing multiple units in an area from operating in opposing modes. Teamwork allows the control to optimize a group of connected cooling units equipped with control system using the U2U (Unit-to-Unit) network. There shall be three modes of teamwork operation:

- Teamwork Mode 1 (Parallel): Is best in small rooms with balanced heat loads. The controlling temperature and humidity sensor readings of all units in operation (fan On) are collected to be used for an average or worst case sensor reading (user selectable). The master unit shall send the operating requirements to all operating units in the group. The control band (temperature, fan and humidity) is divided and shared among the units in the group. Each unit will receive instructions on how to operate from the Master unit based on how far the system deviates from the set-points. Evaporator fans and cooling capacity are ramped in parallel.
- Teamwork Mode 2 (Independent): The Control system calculates the worse-case demand for heating, cooling humidification and dehumidification. Based on the greatest demand within the group, each unit operates independently, meaning that the unit may respond to the thermal load and humidity conditions based on the unit's controlling sensors. All sensor readings are shared.
- Teamwork Mode 3 (Optimized Aisle): May be employed in large and small rooms with varying heat loads. Optimized Aisle is the most efficient teamwork mode that allows the unit to match cooling capacity with heat load. In the Optimized Aisle mode, the fans operate in parallel. Fans can be controlled exclusively by remote temperature or using static pressure with a secondary remote temperature sensor(s) as an override to ensure that the inlet rack temperature is being met. Cooling (Compressors or Economizer) is controlled through unit supply air conditions. Control system calculates the average or worst-case sensor reading (user-selectable) for heating, cooling humidification and dehumidification. Based on the demand within the group, units will be allowed to operate within that mode until room conditions are satisfied. This is the best form of control for a room with an unbalanced load.

3.5 STANDBY LEAD-LAG

The Control system shall allow scheduled rotation to keep equal run time on units and provide automated emergency rotation of operating and standby units.

3.6 STANDBY UNIT CASCADING

The Control system cascade option shall allow the units to turn On and Off based on heat load when utilizing Teamwork Mode 1, Independent mode or Teamwork Mode 3, Optimized Aisle mode with remote temperature sensors. In Teamwork Mode 1, Cascade mode will stage units On based on the temperature and humidity readings and their deviation from set-point. In Teamwork 3 Mode, Cascade mode dynamically coordinates the fan speed to save energy and to meet the cooling demands. For instance, with a Control system group of six units and only 50% of the heat load, the Control system shall operate only four units at 80% fan speed and leave the other two units in standby. As the heat load increases, the Control system shall automatically respond

to the additional load and bring on another unit, increasing the units in operation to five. As the heat load shifts up or down, the control shall meet the needs by cascading units On or putting them into standby.

3.7 WIRED SUPPLY SENSOR

Each Control system shall have one factory-supplied and connected supply air sensor that may be used as a controlling sensor or reference. When multiple sensors are applied for control purposes, the user shall be able to control based on a maximum or average temperature reading.

3.8 VIRTUAL MASTER

As part of the robust architecture of the Control system control, it shall allow for a virtual master that coordinates operation. The Virtual Master function shall provide smooth control operation if the group's communication is compromised. When the lead unit, which is in charge of component staging in teamwork, unit staging and standby rotation, becomes disconnected from the network, the Control system shall automatically assign a virtual master. The virtual master shall assume the same responsibilities as the master until communication is restored.

3.9 VIRTUAL BACK-DRAFT DAMPER

The Control system shall allow the use of a virtual back-draft damper, eliminating the need for a mechanical damper. This shall allow the fans to spin slower (15% or less) to act as a damper.

3.10 COMPRESSOR SHORT CYCLE CONTROL

To help maximize the life of the compressor(s), there shall be start-to-next start delay for each single compressor. The control shall monitor the number of compressor starts in an hour. If the compressor starts more than 10 times in 60 minutes, the local display and remote monitoring shall notify the user through a Compressor 1 or 2 Short Cycle event.

3.11 CONDENSER CONTROL

Units may be matched to a premium-efficiency condenser control with enhanced monitoring, alarming and diagnostics. The condenser control shall have an automated, low-noise mode and fan reversal for cleaning mode.

3.12 SYSTEM AUTO RESTART

The auto restart feature shall automatically restart the system after a power failure. Time delay shall be programmable. An optional capacitive buffer may be provided for continuous control operation through a power failure.

3.13 SEQUENTIAL LOAD ACTIVATION

On initial startup or restart after power failure, each operational load shall be sequenced with a minimum delay of one second to minimize total inrush current.

3.14 LOW-PRESSURE MONITORING

Units shall ship standard with low-pressure transducers for monitoring individual compressor suction pressure. If the pressure falls due to loss of charge or other mechanical cause, the corresponding circuit shall shut down to prevent equipment damage. The user shall be notified of the low-pressure condition through the local display and remote monitoring.

3.15 WINTER START TIME DELAY—AIR-COOLED MODELS

An adjustable software timer shall be provided to assist with compressor starting during cold weather. When the compressor starts, the low-pressure input shall be ignored for the period set in the user-adjustable timer. Once the time period has elapsed after the compressor start, the low-pressure input should remain in the normal state. If the low-pressure input does not remain in the normal state when the time delay has elapsed, the circuit shall lock out on low pressure. The low-pressure alarm shall be announced on the local display and communicated to remote monitoring systems.

3.16 ADVANCED FREEZE PROTECTION

Units shall ship standard with advanced freeze protection enabled. The advanced freeze protection shall monitor the pressure of each circuit using a transducer. The control system shall interact with the fan and compressor to prevent the unit coil from freezing if circuit suction pressure drops. Applying fan speed to direct expansion systems requires limitations to avoid freezing condensate on the coil when the unit operates below 100% fan speed. Control system's advanced freeze protection provides the ability to predict freeze conditions and correct this condition automatically by adjusting fan speed and compressor capacity. If a freeze condition is detected, the user shall be notified through the local display and remote monitoring systems.

3.17 REFRIGERANT PRESSURE TRANSDUCER FAILURE

The control system shall monitor the high-side and low-side refrigerant pressure transducers. If the control senses the transducer has failed, has been disconnected, has shorted or the reading has gone out of range, the user shall be notified through an event on the local display and remote monitoring. The corresponding circuit that the failure has occurred on shall be disabled to prevent unit damage.

3.18 OIL RETURN PROTECTION

The control system shall monitor compressor operation and staging to ensure that liquid and hot gas velocity are maintained for proper oil return to the compressor.

3.19 DIGITAL SCROLL HIGH-TEMPERATURE PROTECTION

The control system shall monitor digital scroll temperature during unit operation. A compressor temperature limit shall be imposed to help prevent damage to the compressor. If the temperature reaches the maximum temperature limit, the compressor shall be locked out for 30 minutes and an alarm shall be annunciated on the local display and through monitoring. After the initial lockout, the control system shall continue to monitor compressor temperature during the off-cycle and re enable the circuit once a safe operating temperature is reached and the 30 minutes has elapsed. The control system shall store the number of high temperature trips. The number of trips shall be accessible through the local display.

3.20 DIGITAL SCROLL SENSOR FAILURE

The control system shall monitor the status of the digital scroll sensor(s). If the control system senses that the thermistor is disconnected, shorted or the reading goes out of range, the user shall be notified through an event on the local display and remote monitoring.

3.21 COMPRESSOR SEQUENCING

A user-selectable compressor sequencing parameter shall be provided and shall be accessible through the local display. This sequencing parameter shall present the user with three choices:

- Always use Compressor 1 as the lead compressor.
- Always use Compressor 2 as the lead compressor.
- Auto: The unit shall automatically stage compressors to keep each unit's run time within 8 hours of the other's run time. NOTE: The Auto setting attempts to maintain equal run times between compressors. However, the control system will not turn Off a compressor to equalize run time when it is needed to control the space.

First priority: If the safety timings are acceptable for only one compressor, then it is the next to be started/stopped.

Second priority: If both compressors are Off: The compressor with fewer working hours is the next to start.

Third priority: If both compressors are in operation: the compressor that has been operating longer since the last start is the next to be stopped.

3.22 COMPRESSOR HIGH- AND LOW-TEMPERATURE LIMIT PROTECTION

The control system shall monitor the return air to ensure that the compressor(s) are operated within the manufacturer's defined window of operation. If the return air temperature deviates from the manufacturer's window of operation, the Control system shall automatically adjust to prevent damage to the cooling unit or reduction in its reliability.

3.23 COMPRESSOR RUN TIME MONITORING

The control shall log these compressor statistics:

- Number of compressor starts
- Run hours
- Average run time
- Starts per day
- Starts per day worst
- Number of high-pressure alarms
- Operating phase in which the high-pressure alarm occurred
- Number of low-pressure alarms
- Operating phase in which the low-pressure alarm occurred
- Number of compressor overloads
- Number of high-temperature alarms (scroll compressors)

The user shall have the ability to monitor compressor operating temperature and pressure from the local display to be used as a diagnostic tool.

3.24 MANUAL COMPRESSOR DISABLEMENT

The user shall have the ability to disable compressor operation using a set of either normally open or normally closed dry contacts tied directly to the control system or through remote monitoring. An additional enable/disable feature shall be provided to allow the user to permanently disable an individual compressor circuit for maintenance using the local display.

3.25 MANUAL COMPRESSOR OPERATION

The user shall be able to operate each compressor(s) manually from the local display. The user shall be able to energize refrigeration components including liquid line solenoid valves, compressor contactors, electronic expansion valves and adjust capacity for troubleshooting or repair. The control system shall monitor the compressor during manual operation and shall shut the compressor down if needed to prevent electrical or mechanical damage.

3.26 FLOODED START PROTECTION

The control shall isolate each compressor through a dedicated circuit liquid line solenoid valve and/or electronic expansion valve. These devices, combined with a spring-closed discharge check valve and compressor crankcase heater (air-cooled models), shall help ensure refrigerant does not migrate/carry oil out of the compressor case during the off cycle.

3.27 COMPRESSOR DEHUMIDIFICATION

The control shall system shall permit the user to specify which compressor is used for dehumidification. The choices shall be 1st compressor, 2nd compressor, 1 or 2, or BOTH.

4.0 Additional Features

4.1 HIGH TEMPERATURE SENSOR

The high-temperature sensor shall immediately shut down the environmental control system when activated. The high-temperature sensor shall be mounted in the electrical panel with the sensing element in the return air.

4.2 SMOKE SENSOR

The smoke sensor shall immediately shut-down the environmental control system and activate the alarm system when activated. The smoke sensor shall be mounted in the electrical panel with the sensing element in the return-air compartment. The smoke sensor is not intended to function as or replace any room smoke-detection system that may be required by local or national codes. The smoke sensor shall include a supervision contact closure.

4.3 CONDENSATE PUMP, DUAL FLOAT

The condensate pump shall have a minimum capacity of 145 GPH (548 l/h) at 20 ft. (58 kPa) head. It shall be complete with integral dual-float switches, pump-and-motor assembly and reservoir. The secondary float shall send a signal to the local alarm and shall shut down the unit upon high water condition.

4.4 LOW-VOLTAGE TERMINAL PACKAGE

Factory-installed and factory-wired terminals shall be provided.

- Remote Shutdown Terminals - Two additional pairs of terminals provide the customer with additional locations to remotely shut down the unit by field-installed devices or controls.
- Extra Common Alarm Contacts - Two additional pairs of terminals provide the customer with normally open contacts for remote indication of unit alarms.

4.5 REMOTE MONITORING

A factory-installed communication card shall be provided for monitoring and/or control. The communication card shall be capable of connecting to Building Management System/Building Automation System using the following protocols:

- BACnet IP—BACnet over Internet Protocol)
- SNMP

The communications card shall be capable of connecting to two of these protocols at once.

5.0 Heat Rejection

5.1 AIR-COOLED CONDENSER

The indoor evaporator unit shall include refrigerant piping, with a factory holding charge of nitrogen. The hot-gas and liquid lines shall be spun shut and shall include a factory-installed Schrader valve. Field-relief of the Schrader valve shall indicate a leak-free system.

5.1.1 Condenser Summary

These specifications describe requirements for an air-cooled condenser. The condenser shall be designed to reject waste heat to outdoor air and to control refrigerant head pressure as indoor equipment loading and outdoor ambient conditions change. The manufacturer shall design and furnish all equipment in the quantities and configurations shown on the project drawings.

Standard 60 Hz units shall be CSA-certified to the harmonized U.S. and Canadian product safety standard "CSA C22.2 No 236/UL 1995 for Heating and Cooling Equipment" and shall be marked with the CSA c-us logo.

5.1.2 Condenser Design Requirements

The air-cooled condenser shall be a factory-assembled unit, complete with integral electrical panel, designed for outdoor installation. The condenser shall be a draw-through design.

5.1.3 Condenser Standard Features

Condenser shall consist of microchannel condenser coil(s), propeller fan(s) direct-driven by individual fan motor(s), electrical controls, housing and mounting legs. The air-cooled condenser shall provide positive refrigerant head pressure control to the indoor cooling unit by adjusting heat rejection capacity. Microchannel coils shall provide superior heat transfer, reduce air-side pressure drop, increase energy efficiency and significantly reduce the system refrigerant volume required. EC fans and fan operating techniques shall reduce sound levels. Various methods shall be available to match indoor unit type, maximum outdoor design ambient and maximum sound requirements.

Provide low-ambient control for winter operation down to -20 F ambient.

5.1.4 Condenser Coil

Condenser coils shall be constructed of aluminum microchannel tubes, fins and manifolds. Tubes shall be flat and contain multiple, parallel-flow microchannels and span between aluminum headers. Full-depth louvered aluminum fins shall fill spaces between the tubes. Tubes, fins and aluminum headers shall be oven-brazed to form a complete refrigerant-to-air heat exchanger coil. Copper stub pipes shall be electric resistance-welded to aluminum coils and joints protected with polyolefin to seal joints from corrosive environmental elements. Coil assemblies shall be factory leak tested at a minimum of 300 psig (2068 kPag). Hot -gas and liquid lines shall be copper and shall be brazed using nitrogen gas flow to the stub pipes with spun-closed ends for customer piping connections. Complete coil/piping assembly shall be then filled and sealed with an inert gas holding charge for shipment.

5.1.5 Condenser Fan Motor/Blade Assembly

The fan motor/blade assembly shall have an external rotor motor, fan blades and fan/finger guard. Fan blades shall be constructed of cast aluminum or glass-reinforced polymeric material. Fan guards shall be heavy gauge,

close-meshed steel wire, coated with a black, corrosion-resistant finish. Fan terminal blocks shall be in an IP54 enclosure on the top of the fan motor. Fan assemblies shall be factory-balanced, tested before shipment, and mounted securely to the condenser structure.

- **Condenser EC Fan Motor**

The EC-fan motors shall be electronically commutated for variable-speed operation and shall have ball bearings. The EC fans shall provide internal overload protection through built-in electronics. Each EC-fan motor shall have a built-in controller and communication module linked via RS485 communication wire to each fan and the Premium Control Board, allowing each fan to receive and respond to precise fan speed inputs from the Premium Control Board.

5.1.6 Condenser Electrical Controls

Electrical controls and service-connection terminals shall be provided and factory-wired inside the attached control panel section. Only high-voltage supply wiring and low-voltage indoor-unit communication/interlock wiring are required at condenser installation.

- **EC Fan Speed and Premium Control**

The EC fan/Premium Control System shall include an electronic control board, EC-fan motor(s) with internal overload protection, refrigerant and ambient temperature thermistors and refrigerant pressure transducers. The Premium Control Board shall communicate directly with the indoor unit's Control system control via field-supplied CANbus communication wires and via field-supplied low-voltage interlock wires. The control board shall use sensor and communication inputs to maintain refrigerant pressure by controlling each EC fan on the same refrigerant circuit to the same speed. The Premium control board shall be rated to a temperature of -30°F to 125°F. The premium control shall be factory-set for fan speed control.

- **Locking Disconnect Switch**

A locking-type disconnect switch shall be factory-mounted and wired to the electrical panel and be capable of disrupting the flow of power to the unit and controlled via an externally-mounted locking and lockable door handle. The locking disconnect shall be lockable in support of lockout/tagout safety programs.

- **Short Circuit Current Rating**

The electrical panel shall provide at least 65,000 A SCCR.

- **Cabinet**

The condenser cabinet shall be constructed of bright aluminum sheet and divided into individual fan sections by full-width baffles. Internal structural support members, including coil support frame, shall be galvanized steel for strength and corrosion resistance. Panel doors shall be provided on two sides of each coil/fan section to permit coil cleaning. An electrical panel shall be contained inside a factory-mounted NEMA 3R weatherproof electrical enclosure.

5.1.7 Condenser Unit Mounting Legs Standard Aluminum Legs

Aluminum legs shall be provided to mount unit for vertical air discharge with rigging holes for hoisting the unit into position. Standard height is 18 in. (457 mm).

5.1.9 Fusible Plug Kit

A fusible plug kit shall be field-installed on the liquid line for compliance with building codes requiring refrigerant relief during high-temperature and building-fire conditions.

6.0 Execution

6.1 WARRANTY START-UP AND CONTROL PROGRAMMING

Upon completion of installation by owner, provide all resources necessary to complete manufacturer certified warranty start-up by qualified field service technician to provide warranty start-up. Assist in programming of unit(s) controls and ancillary panels supplied by owner.

- Provide 5-year material warranty on all system components.

7.0 Alternates

7.1 ALTERNATE – Moisture Sensors

- Provide 2 (two) solid state water sensors under the raised floor. One sensor per Unit.
- Provide additional dry contacts on each unit necessary for generating unit shutdown from moisture sensors.

END OF SECTION

ATTACHMENT 1

GENERAL CONDITIONS (MSU September 2007 Edition)

Bidders must comply with all rules, regulations and statutes relating to purchasing in the State of Mississippi in addition to the requirements of this form.

ALL BIDS SUBMITTED MUST BE IN COMPLIANCE WITH THE GENERAL CONDITIONS SET FORTH HEREIN. ALL VENDORS ARE OBLIGATED TO READ, UNDERSTAND, AND AGREE TO THESE CONDITIONS WHEN SUBMITTING A BID FOR A BID TO BE CONSIDERED RESPONSIVE.

1. PREPARATION OF BIDS

- 1.1 Failure to examine any drawings, specifications, and instructions will be at bidder's risk.
- 1.2 All prices and notations must be printed in ink or typewritten. No erasures permitted. Errors may be crossed out and corrections printed in ink or typewritten adjacent, and must be initialed in ink by person signing bid.
- 1.3 Pricing must be quoted on a "per unit" basis, extended as indicated. Any trade discounts included must be itemized and deducted from extended prices. Bidder guarantees product or service offered will meet or exceed specifications included as part of this Invitation for Bid. Bid prices must be net. In case of error in the extension of prices in the bid, the unit price will govern. No bid shall be altered or amended after the specified time for opening bids.
- 1.4 Brand Names: Any reference to brand names and numbers in the Invitation for Bids is descriptive, but not restrictive, unless otherwise specified. Bids on equivalent items meeting the standards of quality thereby indicated will be considered, unless otherwise specified, providing the bid clearly describes the article offered and how it differs from the referenced brands. If equipment or supplies of another brand or of other construction than that specified herein is offered by bidder, such bidder shall set forth in his bid a detailed statement indicating wherein each item offered deviates from these specifications. Unless the bidder specifies otherwise in his bid, it is understood that the bidder is offering a referenced brand item as specified in the Invitation for Bids. Mississippi State University reserves the right to determine whether a substitute offer is equivalent to and meets the standard of quality indicated by the brand name referenced, and Mississippi State University may require a bidder offering a substitute to supply additional descriptive material and a sample. When merchandise received from a successful bidder is not considered an equal by the requisitioner, it will be returned to the vendor, shipping charges collect.
- 1.5 Specification: It is understood that reference to available specifications shall be sufficient to make the terms of such specifications binding on the contractor.
- 1.6 Information and Descriptive Literature: Bidders must furnish all information requested in the spaces provided on the bid form. Further, as may be applicable, each bidder must submit for bid evaluation cuts, sketches, and descriptive literature and technical specifications covering the product offered. Reference to literature submitted with a previous bid or on file with the buyer will not satisfy this provision.
- 1.7 Samples: Samples of items, when called for, must be furnished free of expense, and if not destroyed in testing will, upon request, be returned at the bidder's expense. Request for the return of samples must be made within ten (10) days following opening bids. Each individual sample must be labeled with bidder's name, manufacturer's brand name and number, bid number and item reference.
- 1.8 Time of performance: The number of calendar days in which delivery will be made after receipt of order shall be stated in the bid. Bid should show number of days required to place material in receiving agency's designated location under normal conditions. Failure to state delivery time obligates supplier to complete delivery in 14 calendar days. Unrealistically short or long delivery promises may cause bid to be disregarded. If delay is foreseen, supplier shall give written notice to MSU. MSU has the right to extend delivery date if reasons appear valid to MSU. Default in promised delivery (without accepted reasons) or failure to meet specifications authorizes MSU to purchase supplies elsewhere and charge full increase, if any, in cost and handling to defaulting supplier. No substitutions or cancellation permitted without written approval of the MSU DEPARTMENT OF PROCUREMENT AND CONTRACTS. Delivery shall be made during normal working hours only, unless prior approval for late delivery has been obtained from MSU.

2. SUBMISSION OF BIDS

- 2.1 Bids must be signed and sealed with bidder's name and address on outside of envelope, and the time and date of the bid opening and the bid file number shown in the lower-left corner of the envelope.
- 2.2 Bids and modifications or corrections thereof received after the closing time specified will not be considered.
- 2.3 Only bids submitted on bid forms furnished by Mississippi State University or copies thereof will be considered. Name of person executing bid must be in longhand.
- 2.4 Bids shall be submitted F.O.B. destination. Bids not submitted F.O.B. destination will not be considered. We do not accept fax bids.

3. ACCEPTANCE OF BIDS

MSU reserves the right to accept or reject all or any part of any bid, waive minor technicalities and award the bid to best serve the interests of the State. If a bidder fails to state the time within which a bid must be accepted, Mississippi State University shall have 60 days from bid opening date to accept.

4. DISCOUNT PERIOD

Time in connection with discount offered will be computed from date of delivery at destination, or from the date correct invoices are received, if the latter date is later than the date of delivery. Cash discounts will not be considered in the award process.

5. AWARD

- 5.1 A response to an IFB is an offer to contract with MSU based upon the terms, conditions and specifications contained in the IFB. Bids do not become contracts until they are accepted and an authorized purchase order is issued. The contract shall be governed, construed and interpreted under the laws of the State of Mississippi excluding its choice of law provisions. Contracts and purchases will be made or entered into with the lowest responsible bidder meeting specifications, except as otherwise specified in the Invitation. Where more than one item is specified in the Invitation, Mississippi State University reserves the right to determine the low bidder either on the basis of the individual items or on the basis of all items included in its Invitation for Bids, or as expressly provided in Mississippi State University Invitation for Bids.
- 5.2 Unless the bidder specified otherwise in the bid, Mississippi State University may accept any item or group of items of any kind. Mississippi State University reserves the right to modify or cancel in whole or in part its Invitation for Bids.
- 5.3 A Written purchase order or contract award mailed, or otherwise furnished, to the successful bidder within the time of acceptance specified in the Invitation for Bid results in a binding contract without further action by either party and without modification of MSU's terms and conditions regardless of any terms or conditions that the Bidder normally may have or use. The contract shall not be assignable by the vendor in whole or in part without the written consent of Mississippi State University.

6. INSPECTION

Final inspection and acceptance or rejection may be made at delivery destination, but all materials and workmanship shall be subject to inspection and test at all times and places, and when practicable. During manufacture, the right is reserved to reject articles which contain defective material and workmanship. Rejected material shall be removed by and at the expense of the contractor promptly after notification or rejection. Final inspection and acceptance or rejection of the materials or supplies shall be made as promptly as practicable, but failure to inspect and accept or reject materials or supplies shall not impose liability on the State of Mississippi or any subdivision thereof for such materials or supplies as are not in accordance with the specification. In the event necessity requires the use of materials or supplies not conforming to the specification, payment therefore may be made at a proper reduction in price. All goods will be subject to inspection and testing by MSU to the extent practicable at all times and places. Authorized MSU personnel shall have access to any supplier's place of business for the purpose of inspecting merchandise. Tests shall be performed on samples submitted with the bid or on samples taken from regular shipment. In the event products tested fail to meet or exceed all conditions and requirements of the specifications, the cost of the sample used and the cost of the testing shall be borne by the supplier. Goods which have been delivered and rejected in whole or in part may, at MSU's option, be returned to the supplier or held for disposition at supplier's risk and expense. Latent defects may result in revocation of acceptance.

7. TAXES

Mississippi State University is exempt from Federal excise taxes and state and local sales or use taxes and bidders must quote prices which do not include such taxes. Exemption certificates will be furnished upon request. Contractors making improvements to, additions to or repair work on real property on behalf of Mississippi State University are liable for any applicable sales or use tax on purchase of tangible personal property for use in connection with the contracts. Contractors are likewise liable for any applicable use tax on tangible personal property furnished to them by Mississippi State University for use in connection with their contracts.

8. GIFTS, REBATE, GRATUITIES

- 8.1 Acceptance of gifts from contractors prohibited. No officer or employee of the Office of Procurement and Contracts, nor any head of any state department, institution or agency, nor any employee of any state department, institution or agency charged with responsibility of initiating requisitions, shall accept or receive, directly or indirectly, from any person, firm or corporation to whom any contract for the purchase of materials, supplies, or equipment for the State of Mississippi may be awarded, by rebate, gifts, or otherwise, any money or anything of value whatsoever, or any promise, obligation or contract for future rewards or compensation.
- 8.2 Bidding by state employees prohibited. It is unlawful for any state official or employee to bid on, or sell, or offer for sale, any merchandise equipment or material, or similar commodity to the State of Mississippi during the tenure of his office or employment, or for the period prescribed by law thereafter, or to have any interest in the selling of the same to the State.

9. BID INFORMATION

Bid files may be examined during normal working hours by bid participants. Nonparticipants will be prohibited from obtaining any information relative to the bid until the official award has been made.

10. CONDITIONS

Should a conflict exist between the General Conditions and any Special Conditions, the Special Conditions shall take precedence if applicable.

11. WAIVER

The Office of Procurement and Contracts reserves the right to waive any General Condition, Special Condition, or minor specification deviation when considered to be in the best interest of Mississippi State University, so long as such waiver is not given so as to deliberately favor any single vendor and would have the same effect on all vendors.

12. CANCELLATION

Any Contract or item award may be canceled for cause by either party with the giving of 30 days written notice of intent to cancel. Cause for Mississippi State University to cancel shall include, but is not limited to, cost exceeding current market prices for comparable purchase; request for increase in prices during the period of the Contract; or failure to perform to Contract conditions. The Contractor will be required to honor all purchase orders that were prepared and dated prior to the date of expiration or cancellation if received by the Contractor within a period of 30 days following the date of expiration or cancellation. Cancellation by Mississippi State University does not relieve the Contractor of any liability arising out of a default or nonperformance. Cause for the vendor to cancel shall include, but is not limited to, the item(s) being discontinued and unavailable from the manufacturer.

13. SUBSTITUTIONS DURING CONTRACT

During the term of a contract if adequate documentation is provided that supports the claim that the contract item(s) are not available, then items which meet the minimum specifications may be substituted if approved by the Office of Procurement and Contracts and are deemed to be in the best interest of Mississippi State University.

14. APPLICATION

14.1 It is understood and agreed by the Vendor that this contract is entered into solely for the convenience of Mississippi State University and all purchases made by MSU for products included under the provisions of this contract shall be purchased from the vendor receiving the award unless exempt by special authorization from the Office of Procurement and Contracts. Employees of the Office of Procurement and Contracts have acted exclusively as employees of Mississippi State University for the award, consummation, administration and all other matters related to this contract and are not liable for any performance or nonperformance by Mississippi State University.

14.2 The supplier agrees to protect MSU from claims involving infringement of patents or copyrights.

14.3 Supplier hereby assigns to MSU any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States 15 U.S.C.A. Section 1, et seq. (1973), and which arise under the antitrust laws of the State of Mississippi.

14.4 Signing this bid with a false statement is a material violation and shall void the submitted bid or any resulting contracts, and the bidder shall be removed from all bid lists. By signature hereon affixed, the bidder hereby certifies that:

14.4.1 The bidder has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted bid.

14.4.2 The bidder is not currently delinquent in the payment of any franchise tax owed the State of Mississippi.

14.4.3 The bidder certifies that the individual or business entity named in this bid is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and/or payment withheld if this certification is inaccurate. Neither the bidder nor the firm, corporation, partnership or institution represented by the bidder, or anyone acting for such firm, corporation or institution has violated the antitrust laws of this State, or the Federal Antitrust Laws, nor communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business.

14.4.4 The bidder has not received compensation for participation in the preparation of the specifications for this IFB.

14.4.5 The supplier shall defend, indemnify, and hold harmless the State of Mississippi, all of its officers, agents and employees from and against all claims, actions, suits, demands, proceedings costs, damages, and liabilities, from any acts or omissions of supplier or any agent, employee, subcontractor, or supplier of supplier in the execution or performance of this purchase order.

14.4.6 Bidder agrees that any payments due under this contract will be applied towards any debt, including but not limited to delinquent taxes and child support that is owed to the State of Mississippi.

- 14.5 Any terms and conditions attached to a bid will not be considered unless the bidder specifically refers to them on the front of this bid form and encloses a legible and complete copy of the same without the need for further reference to any other document or source of information.

WARNING: Such terms and conditions may result in disqualification of the bid (e.g. bids with the laws of a State other than Mississippi, requirements for prepayment, limitations on remedies, etc.).

- 14.6 Information, documentation, and other material in connection with this solicitation or any resulting contract may be subject to public disclosure pursuant to the Mississippi Public Records Act.

16. ADDENDA

Addenda modifying plans and/or specifications may be issued if time permits. Should it become necessary to issue an addendum within the three-day period prior to the bid opening, the bid date will be reset giving bidders ample time to answer the addendum. When replying to a bid request on which an addendum has been issued, the bid shall indicate that provisions of the addendum have been noted and that the bid is being offered in compliance therewith. Failure to make this statement may result in the bid being rejected as not being in accordance with the revised specifications or plans.

17. ALTERNATE BIDS

Alternate bids unless specifically requested will not be considered. An alternate is considered to be a bid that does not comply with the minimum provisions of the specification.

18. SPECIFICATION CLARIFICATION

Inquiries pertaining to IFBs must include the IFB number and opening date. It shall be incumbent upon all bidders to understand the provisions of the specification and to obtain clarification from the MSU Office of Procurement and Contracts prior to the time and date set for the bid opening. Such clarification will be answered only in response to a written request. No clarification will be offered as a response to a telephone request.

19. BID OPENINGS

Bid openings will be conducted open to the public. However, they will serve only to open, read and tabulate the bid price on each bid. No discussion will be entered into with any vendor as to the quality or provisions of the specifications and no award will be made either stated or implied at the bid opening.

20. PAYMENT

Supplier shall submit one copy of an itemized invoice showing order number and agency purchase order number. MSU will incur no penalty for late payment if payment is made in 45 or fewer days from receipt of goods or services and an uncontested invoice.

21. FIRM BID PRICE

Prices quoted shall be firm for the term of the contract except that Mississippi State University shall receive the benefit of any price decrease in excess of five per cent (5). The contractor must provide written price reduction information within ten (10) days of its effective date.

22. EQUAL EMPLOYMENT OPPORTUNITY

This purchase will be subject to the provisions of Executive Order 11246 if it is not otherwise exempt. Except in contracts exempted in accordance with Section 204 of the Executive Order 11246, As Amended, all Government contracting agencies shall include in every Government contract hereafter entered into the following provisions. During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advancements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965,

and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the contractor may request the United States to enter into such litigation to protect the interests of the United States." [Sec. 202 amended by EO 11375 of Oct. 13, 1967, 32 FR 14303, 3 CFR, 1966-1970 Comp., p. 684, EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

END OF GENERAL CONDITIONS

ATTACHMENT 2

SPECIAL CONDITIONS

Bidders must comply with all rules, regulations and statutes relating to purchasing in the State of Mississippi in addition to the requirements of this form.

- ☐ None
- ☐ See Attached Drawings, Specifications or Instructions