

REQUEST FOR QUOTATIONS
AMP ROOMS - ADD COOLING
FOR CAPITAL IMPROVEMENT TO U.S. BANK STADIUM
IN MINNEAPOLIS, MINNESOTA

August 10, 2018

A. Project Background and Objectives

In 2012, the State of Minnesota enacted 2012 Minnesota Laws, Chapter 299 (the “Act”), to establish the Minnesota Sports Facilities Authority (“Authority”) and to provide for the construction, financing, and long-term use of a new stadium now known as U.S. Bank Stadium (the “Stadium”) and related stadium infrastructure (the “Stadium Infrastructure”) as a venue for professional football and a broad range of other civic, community, athletic, educational, cultural and commercial activities. As set forth in the Act, the Authority may make capital improvements to design, development and construction of the Stadium and the Stadium Infrastructure, and the certain capital improvements that that Authority is soliciting in this Request for Quotations (“RFQ”) shall be referred to in this RFQ as the “Project”. To that end, the Authority has prepared this RFQ for the Amp Room Cooling project. Those who respond to this RFQ shall be referred to as “Proposers”.

The Project is located at the Stadium [and other additional adjacent land that has been acquired by the Authority in Minneapolis, Minnesota]. The Specification Documents identifying and indicating the scope of the Project are also incorporated within this RFQ as **Exhibit 1**. The Specifications Documents meet the standards required for a National Football League (“NFL”) franchise, as well as additional standards established by the Authority. The Project must be completed by November 13, 2018 (the “Required Completion Date”).

B. Intent and Process of the Request for Quotations

This RFQ is focused on the selection of a Proposer who will provide the best value to the Authority.

Proposers should have experience in similar projects to those that are the subject of this RFQ. It is the desire of the Authority to consider as part of its selection criteria, the commitment of the Proposer to exert good faith efforts to comply with the plan of the Authority to ensure equitable opportunities for Minority Owned Business Enterprises (“MBE”) and Women Owned Business Enterprises (“WBE”) to participate in the Project. The successful Proposer or Proposers must also demonstrate the ability to exert good faith efforts to comply with workforce goals and targeted zip code hiring goals, and work with organizations to develop effective MBE, WBE and workforce recruitment efforts during the Project. The Authority has developed an Equity Plan and each Proposer should provide a plan describing how they will encourage the participation and utilization of appropriate workforce, MBEs and WBEs in the Proposers’ performance of their services. MBEs and WBEs that are interested in acting as the Proposers for the Project are encouraged to respond to the RFQ.

C. Scope of the Project Requirements

Please see Exhibit 1 for project specifications.

D. Requested Qualifications

The Authority reserves the right and discretion to determine the qualifications and responsibility of the Proposers to perform the work and services that are the subject of the RFQ.

E. RFQ Timeline

Advertise and Issue Request for Quotations	August 14, 2018
Site Walk Through (By Appointment Only)	August 25, 2018 to August 30, 2018
Contact Curtis Schmillen at cschmillen@usbankstadium.com for an appointment	

Questions Due	September 6, 2018 by 3PM
Quotations Due	September 11, 2018 by 1PM
Interviews and Final Negotiations	September 13-14, 2018
Selection of Provider	September 17, 2018
Project Completion	November 13, 2018

By submitting a Quotation, the Proposer affirms that this timeline can be met.

F. Proposer Qualifications

The following items shall be included in a Proposal executive summary:

- Proposer's name and address of office that would have central responsibility for the work. Identify the business form of Proposer. If the proposed form of entity is a joint venture, please identify each joint venture participant and their respective percentage of participation. Provide a summary, on one page or less, describing why the Proposer is the most qualified to be the Provider for the Project.
- Proposer agrees that if it is proposing any services including installation work, it shall obtain worker's compensation insurance, vehicle insurance, and any other insurance required by applicable law or regulation. Proposer also agrees that it shall maintain commercial general liability insurance in commercially reasonable amounts, and that proposer shall provide upon request a certificate of insurance evidencing such coverage and additional insured status as requested. The Authority may terminate this purchase order if it determines in its sole discretion that the proposer's insurance coverage is not adequate for this project.
- Exhibit 1 – Scope and Specification Documents. The Authority will complete the Scope and Specification Documents.
- Exhibit 2 – Proposal Scope of Services and Pricing Information. There are two pages for this Exhibit. The first page is for the Proposer to define the scope of professional services, if any, that will be provided to the MSFA. The second page is for the Proposer

to describe the equipment, materials, and installation labor, if any, that will be provided to the MSFA.

- Exhibit 3 – Equity Plan Targeted Business Commitment and Information Form. Proposer must complete the Targeted Business Commitment and Information Form.
- Exhibit 4 – Equity Report. Proposer must complete this form at the completion of the project for all workforce services.
- Exhibit 5 – Purchase Order Form. The Authority will complete this form.

G. Quotations

Quotations are due by September 5, 2018 by 1PM, CT. Two bound copies of each quote and should be enclosed in a sealed envelope addressed to:

Minnesota Sports Facilities Authority
Attention: James Farstad
1005 4th Street South
Minneapolis, Minnesota 55415

An electronic copy should be sent via email to the following parties:

1. **Curtis Schmillen: cschmillen@usbankstadium.com.**
2. **Elizabeth Brady: Elizabeth.brady@msfa.com**
3. **James Farstad: james.farstad@msfa.com**

Questions or Inquiries. All questions must be submitted via email to the following parties:

1. James Farstad at james.farstad@msfa.com
2. Curtis Schmillen at cschmillen@usbankstadium.com

H. Minnesota Government Data Practices

All Quotations are eventually subject to the Minnesota Government Data Practices Act, Minn. Statutes, Chapter 13, but the Act prohibits disclosure of any information derived from Quotations submitted by competing Proposers, and the content of all Quotations is nonpublic data under Chapter 13 until such time as notice to award a contract to the successful Proposer is given by the Authority. Proposers shall note with their Quotation any data in their Quotation that they consider proprietary information or otherwise private and confidential.

EXHIBIT 1

Scope and Specification Documents

Add cooling in two amp (audio) rooms. See attached drawings.

EXHIBIT 3

EQUITY PLAN

TARGETED BUSINESS COMMITMENT AND INFORMATION FORM

Proposer Company Name: _____

Check ONE of the following:

No Targeted Business participation is committed on this project

The following Targeted Business (MBE & WBE) participation is committed on this project:

Firm Name (Legal business name used for Targeted Business certification)	WBE MBE (Check one)		How will firm participate? (subcontractor, consortium, joint venture)	Description of work	Estimated dollar value of participation	Estimated percentage of total bid
	WBE	MBE				

Total WBE % _____

Total MBE % _____

TARGETED BUSINESSES WHO WERE CONSIDERED BUT WERE NOT SELECTED:

Firm Name	Address	Telephone Number

Certification

On behalf of the proposer identified below, I certify that the information provided in this form is true and correct.

Proposer Name: _____

Signature: _____

Date: _____

Name: _____

Title: _____

MISCELLANEOUS		PIPING TYPES			PIPING SYMBOLS			ABBREVIATIONS:							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	DOUBLE LINE PIPING (2' AND ABOVE)	SINGLE LINE PIPING (UP TO 2')	PIPE TYPE	SYMBOL	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
	SECTION NO.		SUPPLY DIFFUSER-4-WAY THROW		CHS	CHILLED WATER SUPPLY		P&T	PRESSURE/TEMPERATURE PORT TAPS		A	AIR (COMPRESSED)		EDR	EFFECTIVE DIRECT RADIATION ENERGY EFFICIENCY RATIO
	SECTION VIEW SHEET NO.		SUPPLY DIFFUSER-3-WAY THROW		CHR	CHILLED WATER RETURN		CR	CONCENTRIC REDUCER		AC	AIR CONDITIONING		EJ	EXPANSION JOINT
	DETAIL DESIGNATION		SUPPLY DIFFUSER-2-WAY THROW		HWS	HEATING WATER SUPPLY		ER	ECCENTRIC REDUCER		ACC	AIR COOLED CHILLER		EMRG	EMERGENCY ENCLOSURE
	POWERED EQUIPMENT DESIGNATION		SUPPLY DIFFUSER-1-WAY THROW		HWR	HEATING WATER RETURN		EJ	EXPANSION JOINT		AD	ACCESS DOOR		ES	END SUCTION
	NON POWERED EQUIPMENT DESIGNATION		CEILING ACCESS PANEL		CWS	CONDENSER WATER SUPPLY		U	UNION		ADJ	ADJUSTABLE		ESP	EMERGENCY SHOWER
	BASEBOARD EQUIPMENT DESIGNATION		RETURN DIFFUSER		CWR	CONDENSER WATER RETURN		T	THERMOMETER W/ THERMOWELL		AF	AIR FILTER		ETP	EXTERNAL STATIC PRESSURE
	SHEET KEY NOTES		EXHAUST DIFFUSER		D	CONDENSATE DRAIN		AP	ACCESS PANEL		AF	ABOVE FINISHED CEILING		ET	EXPANSION TANK
	POINT OF DISCONNECTION		HUMIDIFIER		HPS	HIGH PRESSURE STEAM SUPPLY		APD	AIR PRESSURE DROP		AF	ABOVE FINISHED FLOOR		ETR	EXISTING TO REMAIN
	ARROW INDICATES DIRECTION OF FLOW		HEAT TRACE		MPS	MEDIUM PRESSURE STEAM SUPPLY		ARI	AMERICAN REFRIGERANT INSTITUTE		AFG	ABOVE FINISHED GRADE		EVAP	EVAPORATOR
	EXTERIOR WALL LOUVER (UNDER ARCH SECTION)				LPS	LOW PRESSURE STEAM SUPPLY		AHU	AIR HANDLING UNIT		AHU	AIR HANDLING UNIT		EWT	ENTERING WET BULB
	UNDERCUT DOOR (UNDER ARCH SECTION)				IV	ISOLATION VALVE, RE. SPECS		AL	ALUMINUM		AMB	AMBIENT		EX	TEMPERATURE EXPULSION PROOF
	DOOR LOUVER (UNDER ARCH SECTION)				OS&Y	OUTSIDE STEM AND YOKE		AS	AIR SEPARATOR		F	DEGREE FAHRENHEIT		FBO	FURNISHED BY OTHERS
	LOUVER DOOR FULL HEIGHT (UNDER ARCH SECTION)				DV	DRAIN VALVE W/ HOSE END CONNECTION		ASHRAE	AMERICAN SOCIETY OF HEATING AND REFRIGERATION ENGINEERS		FCO	FLOOR CLEAN OUT		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
					BV	BALL VALVE W/ HOSE CONNECTION		ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS		FD	FIRE DAMPER		NC	NORMALLY CLOSED
					CV	CHECK VALVE WITH INDICATION OF FLOW DIRECTION		ASHRAE	AMERICAN SOCIETY OF HEATING AND REFRIGERATION ENGINEERS		FDS	FIRE DEPARTMENT SIAMESE		NIC	NOT IN CONTRACT
					PRV	PRESSURE REDUCING VALVE		ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS		FDV	FIRE DEPARTMENT VALVE		NO	NORMALLY OPEN
					SV	SOLENOID VALVE		ASHRAE	AMERICAN SOCIETY OF HEATING AND REFRIGERATION ENGINEERS		FG	FIBERGLASS		NO	NUMBER
					FCV	AUTO FLOW CONTROL VALVE W/ TEST PORTS		ASHRAE	AMERICAN SOCIETY OF HEATING AND REFRIGERATION ENGINEERS		FF	FINAL FILTER		NTS	NOT TO SCALE
					CS.BV	CIRCUIT SETTER OR BALANCING VALVE		FH	FIRE HYDRANT		FHC	FIRE HOSE CABINET		OA	OUTSIDE AIR
					GLV	GLOBE VALVE (STRAIGHT PATTERN)		FHP	FIRE HOSE PRIMER		OAF	OUTSIDE AIR FAN		NFPA	NORMAL FIRE PROTECTION ASSOCIATION
					GLV	GLOBE VALVE (ANGLE PATTERN)		FIXT	FIXTURE		OB	OPPOSED BLADE DAMPER		EX	TEMPERATURE EXPULSION PROOF
					BFV	BUTTERFLY VALVE		FLEX	FLEXIBLE		OC	ON CENTER		UD	UNDERFLOW DRAIN
					BV	BALL VALVE		FL	FLOW LINES		OD	OVERHEAD DRAIN		U	URINAL
					TCV	AUTOMATIC TEMPERATURE CONTROL VALVE 2-WAY		FP	FAN POWERED MIXING BOX		TPD	TRAP PRIMER DEVICE		UF	UNDERFLOOR
					TCV	AUTOMATIC TEMPERATURE CONTROL VALVE 3-WAY		FPI	FIRE PUMP		TSP	TOTAL STATIC PRESSURE		UG	UNDERGROUND
					BV	BALANCING VALVE		FS	FIRE SPRINKLER		TY	TYPICAL		UL	UNDERWRITERS LABORATORIES
					STR	STRAINER W/ BLOW-OFF & CAPPED HOSE END CONNECTION		C	CELSIUS		UTR	UP THROUGH ROOF		VA	VOLT-AMPERE
					ST	STEAM TRAP		CAV	CABINET AIR VOLUME		VAC	VACUUM		VAV	VARIABLE AIR VOLUME
								CB	CATCH BASIN		VB	VALVE BOX		VCB	VACUUM BREAKER
								CC	COOLING COIL		VCP	VITRIFIED CLAY PIPE		VD	VOLUME DAMPER
								CDL	CONDENSATE DRAIN LINE		VEL	VELOCITY		VFD	VARIABLE FREQUENCY DRIVE
								CFM	CUBIC FEET PER MINUTE		VERT	VERTICAL		VIB	VALVE IN BOX
								CFS	CUBIC FEET PER SECOND		VOV	VALVE ON VERTICAL		VP	VACUUM PUMP
								CI	CAST IRON		VAV	VARIABLE AIR VOLUME		REH	REHEAT
								CL	CENTERLINE		VSD	VARIABLE SPEED DRIVE		VTR	VENT THROUGH ROOF
								CL	CEILING		W	WATT, WIDTH, WIDTH			
								CMP	CORRUGATED METAL PIPE		QTY	QUANTITY			
								CMU	CONCRETE MASONRY UNIT		(R)	REMOVE			
								CIP	CAST IRON PIPE INSTITUTE		RA	RELOCATE			
								CPVC	CHLORINATED POLYVINYL CHLORIDE		RA	RETURN AIR			
								COMB	COMBINATION		RHG	REFRIGERANT HOT GAS			
								COL	COLUMN		RAF	RETURN AIR FAN			
								CONC	CONCENTRATION		RAG	RETURN AIR GRILLE			
								CONV	CONVERSION		RAT	RETURN AIR TEMPERATURE			
								CA	CONTROL AIR (PNEUMATIC)		RCP	REFLECTED CEILING PLAN			
								BD	BOILER BLOW DOWN		RD	REINFORCED CONCRETE PIPE			
								BF	BOILER FEED		RE	REFERENCE			
								BO	BLOW OFF		RECIRC	RECIRCULATE			
								CF	CHEMICAL FEEDER		RED	REDUCER			
								PCS/R	PROCESS COOLING WATER SUPPLY/RETURN		REFR	REFRIGERATOR			
								HTWS/R	HIGH TEMP. HOT WATER SUPPLY/RETURN		REG	REGISTER			
								PHWS/R	PRIMARY OR DISTRICT HEATING WATER SUPPLY/RETURN		REINF	REINFORCING			
								PCHWS/R	PRIMARY OR DISTRICT CHILLED WATER SUPPLY/RETURN		REQD	REQUIRED			
								PR	PUMPED CONDENSATE RETURN		REV	REVISION			
								(E)	EXISTING PIPING		RF	RETURN FAN			
								(E)	EXISTING PIPING TO BE REMOVED		RH	RELATIVE HUMIDITY			
								dB	DECIBEL		RHG	REFRIGERANT HOT GAS			
								DB	DRY-BULB		RKVA	RUNNING KILOWATT AMPS			
								DDCV	DOUBLE DUCT CONSTANT VOLUME		RL	REFRIGERANT LIQUID			
								DC	DIRECT CURRENT		RM	ROOM			
								DDC	DIRECT DIGITAL CONTROL DESIGNATION		RPM	REFRIGERANT MACHINE			
								DFL	DEFLECTION		RPM	REVOLUTIONS PER MINUTE			
								DET	DETAIL		RS	REFRIGERANT SUCTION			
								DF	DRINKING FOUNTAIN		RV	RELIEF VALVE			
								DIA	DIAMETER		RAF	RETURN AIR FAN			
								DIM	DIMENSION		RAG	RETURN AIR GRILLE			
								DISC	DISCONNECTION		RAT	RETURN AIR TEMPERATURE			
								DN	DOWN		RCP	REFLECTED CEILING PLAN			
								DP	DISCHARGE PLENUM		RD	REINFORCED CONCRETE PIPE			
								DPR	DAMPERS		RE	REFERENCE			
								DS	DOUBLE SUCTION		RECIRC	RECIRCULATE			
								DDVAV	DOUBLE DUCT VAV		RED	REDUCER			
								DW	DISHWASHER		REFR	REFRIGERATOR			
								DWH	DOMESTIC WATER HEATER		REG	REGISTER			
								DX	DIRECT EXPANSION		REINF	REINFORCING			
								(E)	EXISTING		REQD	REQUIRED			
								EACH	EACH		REV	REVISION			
								EAT	ENTERING AIR TEMPERATURE		RF	RETURN FAN			
								EC	ECCENTRIC		RH	RELATIVE HUMIDITY			
								EDB	ENTERING DRY BULB		RHG	REFRIGERANT HOT GAS			
								EDF	ELECTRIC DRINKING FOUNTAIN		RKVA	RUNNING KILOWATT AMPS			
								EDH	ELECTRIC DUCT HEATER		RL	REFRIGERANT LIQUID			
								ELB UP	ELBOW UP		RM	ROOM			
								ELB DN	ELBOW DOWN		RPM	REFRIGERANT MACHINE			
								TEE UP	TEE UP		RPM	REVOLUTIONS PER MINUTE			
								TEE DN	TEE DOWN		RS	REFRIGERANT SUCTION			
								IV	ISOLATION VALVE, RE. SPECS		RV	RELIEF VALVE			

GENERAL MECHANICAL CONTRACT REQUIREMENTS:

GENERAL:

- UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL HVAC, FIRE PROTECTION AND PLUMBING SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN.
- DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS OF THE JOB.
- THE DRAWINGS ARE DIAGRAMMATICAL IN NATURE AND SHALL NOT BE SCALED. THEY SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE DIVISION 21.22 AND 23 WORK AND ITS INTERFACE WITH OTHER WORK. ESTABLISHING THIS RELATIONSHIP IN THE FIELD IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THIS DIVISION SHALL COORDINATE ITS WORK WITH ALL DIVISIONS OF THE WORK AND ADJUST ITS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.

- THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
- CERTAIN SYSTEMS REQUIRE ENGINEERING OF INSTALLATION DETAILS BY CONTRACTOR. UNLESS FULLY DETAILED IN THE CONTRACT DOCUMENTS, SUCH ENGINEERING IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR.

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHERE CLEARANCES ARE LIMITED, AND WHERE INSTALLATION DRAWINGS OR SCHEMATICS, "CONSTRUCTION DRAWINGS" OR COORDINATION DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH, OR IN EXCESS OF, THOSE REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE ALL SUCH COORDINATION DRAWINGS AS PART OF THE BASE CONTRACT. SUCH DRAWINGS MAY BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR RECORD AND COMMENT. ANY WORK INSTALLED WITHOUT APPROVED COORDINATION DRAWINGS IS DONE AT THE CONTRACTOR'S RISK.

- THESE NOTES ONLY SUPPLEMENT, AND DO NOT REPLACE, THE SPECIFICATIONS.
- DEFINITIONS AND TERMINOLOGY

- THE DEFINITIONS OF DIVISION 1 AND THE GENERAL CONDITIONS OF THIS SPECIFICATION ALSO APPLY TO THE DIVISION 21.22 AND 23 CONTRACT DOCUMENTS.

- "CONTRACT DOCUMENTS" CONSTITUTE THE DRAWINGS, SPECIFICATIONS, GENERAL CONDITIONS, PROJECT MANUALS, ETC., PREPARED BY ENGINEER (OR OTHER DESIGN PROFESSIONAL IN ASSOCIATION WITH ENGINEER) FOR CONTRACTOR'S BID OR CONTRACTOR'S NEGOTIATIONS WITH THE OWNER. THE DIVISION 21.22 AND 23 DRAWINGS AND SPECIFICATIONS PREPARED BY THE ENGINEER ARE NOT CONSTRUCTION DOCUMENTS.

- "CONSTRUCTION DOCUMENTS", "CONSTRUCTION DRAWINGS" AND SIMILAR TERMS FOR DIVISION 21.22 AND 23 WORK REFER TO INSTALLATION DRAWINGS, SHOP DRAWINGS AND COORDINATION DRAWINGS PREPARED BY THE CONTRACTOR USING THE DESIGN INTENT INDICATED ON THE ENGINEER'S CONTRACT DOCUMENTS. THESE SPECIFICATIONS DETAIL THE CONTRACTOR'S RESPONSIBILITY FOR ENGINEERING BY CONTRACTOR AND FOR PREPARATION OF CONSTRUCTION DOCUMENTS.

- "N" INDICATES "NEW" EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT.

- "E" INDICATES "EXISTING" EQUIPMENT ON SITE WHICH MAY OR MAY NOT NEED TO BE RELOCATED AS A PART OF THIS WORK.

- "R" INDICATES EXISTING EQUIPMENT TO BE RELOCATED AS PART OF THIS WORK.

- "FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO AN ITEM OF EQUIPMENT.

- "INSTALL" MEANS TO "SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER".

- "PROVIDE" MEANS TO "FURNISH AND INSTALL".

- "EQUIVALENT" MEANS "MEETS THE SPECIFICATIONS OF THE REFERENCE PRODUCT OR ITEM IN ALL SIGNIFICANT ASPECTS." SIGNIFICANT ASPECTS SHALL BE AS DETERMINED BY THE ARCHITECT/ENGINEER.

- "WORK BY OTHER(S) DIVISIONS", "RE: XX DIVISION", AND SIMILAR EXPRESSIONS MEANS WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS, BUT NOT NECESSARILY UNDER THE DIVISION OR SECTION OF THE WORK ON WHICH THE NOTE APPEARS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE THE WORK OF THE CONTRACT BETWEEN FISHER SUPPLIERS, SUBCONTRACTORS AND EMPLOYEES. IF CLARIFICATION IS REQUIRED, CONSULT ARCHITECT/ENGINEER BEFORE SUBMITTING BID.

- BY INFERENCE, ANY REFERENCE TO A "CONTRACTOR" OR "SUB-CONTRACTOR" MEANS THE ENTITY WHICH HAS CONTRACTED WITH THE OWNER FOR THE WORK OF THE CONTRACT DOCUMENTS.

- "ENGINEER" MEANS THE DESIGN PROFESSIONAL FIRM WHICH HAS PREPARED THESE CONTRACT DOCUMENTS. ALL QUESTIONS, SUBMITTALS, ETC. OF THIS DIVISION SHALL BE ROUTED THROUGH THE ARCHITECT TO THE ENGINEER (THROUGH PROPER CONTRACTUAL CHANNELS).

EXISTING BUILDING:

- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE EXISTING BUILDING WILL BE OCCUPIED BY THE OWNER DURING CONSTRUCTION. CONTINUED OPERATION OF THE FACILITY SHALL NOT BE HINDERED BY THIS WORK. THE CONTRACTOR SHALL ACCOUNT FOR ALL ADDITIONAL COSTS WHICH MAY BE INCURRED BY HIM DUE TO THE DIFFICULTY OF WORKING OVER AND AROUND EMPLOYEES, DESKS, EQUIPMENT, ETC., AND DUE TO THE HOURS OF THE DAY IN WHICH AN AREA MAY BE AVAILABLE WHEN SUBMITTING HIS BID.
- MAINTAIN A MARK-UP SET OF DRAWINGS WHICH INDICATE VARIATIONS IN THE ACTUAL INSTALLATION FROM THE ORIGINAL DESIGN. SURRENDER DRAWINGS TO OWNER UPON COMPLETION.
- ALL CAPACITIES ARE SCHEDULED AT JOBSITE ALTITUDE OF 1000 FT. ABOVE SEA LEVEL.
- COORDINATE ALL PENETRATIONS OF THE FLOOR SLAB PRIOR TO COMMENCING WORK. UTILIZE X-RAY AND VISUAL INVESTIGATION OF EXISTING CONDITIONS AS REQUIRED PRIOR TO DRILLING OR CUTTING. COORDINATE ALL NEW PENETRATIONS WITH OTHER DIVISIONS OF THE WORK. ALL CONTRACTORS ARE INDIVIDUALLY RESPONSIBLE FOR ALL PENETRATIONS REQUIRED BY THEIR DIVISIONS.
- ALL WORK TO COMPLY WITH BASE BUILDING SPECIFICATIONS. NOTIFY ENGINEER IF CONTRACTOR DOES HAVE ACCESS TO BASE BUILDING SPECIFICATIONS.

ELECTRICAL COORDINATION:

- VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
- PROVIDE PREMIUM EFFICIENCY MOTORS WITH 1.15 SERVICE FACTOR ON ALL EQUIPMENT. MOTORS SHALL BE CAPABLE OF OPERATING CONTINUOUSLY AT 105°F UNDER JOBSITE CONDITIONS AND ALTITUDE.
- UNLESS OTHERWISE PROVIDED, ALL MECHANICAL EQUIPMENT SHALL BE NOTED WITH HOA SWITCH AND STARTER COMPATIBLE WITH EQUIPMENT AND BMS SYSTEM. STARTERS SHALL BE PROVIDED BY DIVISION 21.22 AND 23 UNLESS IN A MOTOR CONTROL CENTER. ALL DISCONNECTS SHALL BE FURNISHED BY DIVISION 26.
- THE ELECTRICAL POWER FOR CERTAIN EQUIPMENT PROVIDED UNDER DIVISION 21.22 AND 23 HAS NOT BEEN SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS AND MUST BE PROVIDED BY AND FIELD COORDINATED BY THE DIVISION 21.22 AND 23 TRADE REQUIRING SUCH POWER.

SUFFICIENT POWER FOR THIS PURPOSE SHALL BE FURNISHED AS "SPARE" CAPACITIES AND SPECIFICATION ARE SHOWN OR INDICATED ON THE DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SUCH EQUIPMENT IS HEREBY DEFINED AS:

- ELECTRICAL HEAT TRACE. REQUIRED HEAT TRACE LOCATIONS, CAPACITIES AND SPECIFICATION ARE SHOWN OR INDICATED ON THE DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- FIRE PROTECTION AIR COMPRESSORS, DRY-PIPE CONTROL PANELS AND VALVES. REQUIRED CONNECTIONS ARE INCLUDED IN THE DIVISION 21 WORK AND WILL BE SHOWN BY THAT CONTRACTOR'S ENGINEERED SYSTEM DESIGN DRAWINGS.
 - PRE-ACTION SYSTEM INITIATION SIGNALS (SUCH AS SMOKE DETECTORS, OR GENERAL ALARM CONDITIONS IN A PRE-ACTION ZONE) SHALL BE PROVIDED UNDER DIVISION 28 FIRE-ALARM WORK.
 - DIVISION 21 SHALL PROVIDE PRE-ACTION CONTROL PANEL AND INTERCONNECTION BETWEEN NEAREST SUITABLE FIRE ALARM PANEL AND LOCATION OF PRE-ACTION VALVES.
 - DIVISION 28 SHALL PROVIDE INTERCONNECTION BETWEEN FIRE COMMAND CENTER ALARM PANEL (PROVIDED UNDER DIVISION 28) AND REMOTE COMMUNICATION FIRE ALARM PANEL (PROVIDED UNDER DIVISION 28).

- TEMPERATURE CONTROL PANELS, CONTROL AIR COMPRESSORS AND LINE VOLTAGE POWER FOR 24V CONTROL TRANSFORMERS. REQUIRED CONNECTION ARE INCLUDED IN DIVISION 23/9000 AND WILL BE SHOWN BY THAT CONTRACTOR'S CONTROL SUBMITTAL DRAWINGS.

- IT IS NOT PERMISSIBLE TO UTILIZE "SPARE" POWER FROM ADJACENT POWER CIRCUITS TO SERVE ANY OF THE ABOVE LOADS. ALL POWER MUST COME FROM DEDICATED CIRCUITS.

- SMOKE DETECTORS:
 - FOR AIR HANDLING UNITS AND AIR SYSTEMS WITH A CAPACITY EXCEEDING 2000 CFM. PROVIDE UNLISTED SMOKE DETECTORS IN RETURN AIR SYSTEMS IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE AND ELSEWHERE AS SHOWN ON THE DRAWINGS.

- FOR EQUIPMENT LOCATED IN "ACCESSIBLE LOCATIONS" SUCH AS LAY-IN CEILINGS, LOCATE EQUIPMENT TO PROVIDE ADEQUATE SERVICE CLEARANCE FOR NORMAL MAINTENANCE WITHOUT REMOVING ARCHITECTURAL, ELECTRICAL OR STRUCTURAL ELEMENTS SUCH AS THE CEILING SUPPORT SYSTEM, ELECTRICAL FIXTURES, ETC. "NORMAL MAINTENANCE" INCLUDES, BUT IS NOT LIMITED TO FILTER CHANGING, GREASING OF BEARINGS, USING PIT PORTS FOR PRESSURE OR TEMPERATURE MEASUREMENTS, SERVICING CONTROL VALVES AND SERVICING CONTROL PANELS.

- ISOLATE ALL PRESSURIZED PIPE (WATER, ETC.) AT EACH RISER, BRANCH, PIECE OF EQUIPMENT, AND AREA SERVED.

- PROVIDE PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON DRAWINGS. PRIMERS MAY BE CONNECTED TO FLUSH FIXTURES OR BE STAND ALONE. SEE SPECIFICATIONS.

- NO DOMESTIC WATER, CHILLED WATER, OR HEATING WATER LINES SHALL BE LOCATED EXPOSED IN FINISHED SPACES OR BELOW THE BUILDING SLAB UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

- MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONCRETE EQUIPMENT PAD DIMENSIONS, BASED ON THE FINAL EQUIPMENT SELECTION, TO THE STRUCTURAL AND GENERAL CONTRACTOR FOR INCLUSION IN THOSE CONTRACTOR'S WORK AS DESCRIBED BY THE GENERAL CONTRACTOR.

- WARRANTY. AT A MINIMUM, THE ENTIRE MECHANICAL SYSTEM SHALL BE WARRANTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE SYSTEM BY THE OWNER. REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC WARRANTY REQUIREMENTS.

DUCTWORK INSTALLATION:

- SEAL ALL SEAMS (LONGITUDINAL AND TRANSVERSE) AIR TIGHT WITH SEALANT PER SPECIFICATIONS.
- DUCT DIMENSIONS ARE INSIDE CLEAR.
- DIFFUSER NECK SIZE IS SAME AS FLEXIBLE DUCT SIZE.
- UNLESS OTHERWISE NOTED, ALL CHANGES IN DIRECTION SHALL BE MADE WITH RADIUS ELBOWS WITH RADIUS TO CENTERLINE EQUAL TO 1.5 DUCT WIDTH.
- WHERE REQUIRED FOR SPACE CONSTRAINTS, PROVIDE MITERED ELBOWS WITH TURNING VANES AS FOLLOWS:
 - FOR DUCT WIDTHS OF 36" OR LESS, PROVIDE MANUFACTURED SINGLE WIDTH TURNING VANES, WITH NO TRAILING EDGES AND SPACING IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR "STANDARD SPACING".
 - USE DOUBLE THICKNESS (AIRFOIL) BLADES WITHOUT TRAILING EDGES FOR DUCT WIDTHS GREATER THAN 36".

- ALL FLEXIBLE DUCTS SHALL NOT BE LESS THAN 4" OR MORE THAN 10" IN LENGTH. INSTALL FLEXIBLE DUCTWORK SUCH THAT:
 - MINIMUM OVERALL LENGTH OF 3D, STRAIGHT INTO NECK OF DIFFUSER.
 - MAXIMUM OF 135° OF TOTAL TURNING IN ENTIRE LENGTH OF FLEXIBLE DUCT.
 - MINIMUM TURNING RADIUS OF R = 1.5D.

- WHERE:
 - D = FLEXIBLE DUCT DIAMETER
 - R = RADIUS OF TURN AS MEASURED TO CENTERLINE OF DUCT.

- RETURN AIR PLENUM: THE HVAC SYSTEM WILL USE THE SPACE ABOVE THE CEILING AS A RETURN AIR PLENUM. CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA AND LOCAL CODE REQUIREMENTS FOR ALL MATERIAL INSTALLED IN THE RETURN AIR PLENUM.
 - IN ADDITION, THE CONTRACTOR SHALL PROVIDE A COMPLETE RETURN AIR PATH BETWEEN ALL RETURN AIR DEVICES (GRILLES ETC.) AND THEIR RESPECTIVE HVAC UNIT. MAXIMUM VELOCITY OF RETURN AIR IN PLENUM SHALL GENERALLY NOT EXCEED 250 FEET PER MINUTE, NOR EXCEED 750 FEET PER MINUTE AT ANY CROSS-SECTION OF THE RETURN AIR PATH.

- BRANCH LINES:
 - MAKE ALL TAPS TO ROUND DUCTWORK WITH CONICAL TEES.
 - MAKE ALL TAPS TO RECTANGLE DUCTWORK WITH 45° ENTRY OR CONICAL SPIN IN TO ROUND.
 - INCLUDE DAMPERS AT ALL BRANCH LINES.

- DUCT SIZES NOT CALLED OUT SHALL BE DETERMINED BASED ON 0.08" S.P. LOSS OR LESS PER 100 FT. OF LENGTH.

- ASSUME ROUND OR OVAL DUCTS IN EXPOSED AREAS.

- INCLUDE DAMPERS AT ALL BRANCH LINES, WHERE SHOWN ON THE DRAWINGS, AND WHERE OTHERWISE REQUIRED FOR BALANCING.

PIPE INSTALLATION:

- ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE TO PREVENT SAGGING, POKKETING, SWAYING OR DISPLACEMENT BY MEANS OF HANGERS AND SUPPORTS. PIPING IS NOT TO BE SUPPORTED BY EQUIPMENT.

- PROVIDE DIELECTRIC UNIONS BETWEEN DISSIMILAR MATERIALS.

- PROVIDE MANUAL AIR VENTS AND CAPPED HOSE-END DRAINS WITH ISOLATION VALVES AT PIPING HIGH AND LOW POINTS.

- WELD PIPE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS. WELDERS SHALL BE CERTIFIED FOR TYPE OF WORK BEING PERFORMED.

- FLUSH OUT PIPING AND REMOVE CONTROL DEVICES BEFORE PERFORMING PRESSURE TEST. DO NOT USE PIPING SYSTEM VALVES TO ISOLATE SECTIONS WHERE TEST PRESSURE EXCEEDS VALVE PRESSURE RATING. PRESSURIZE PIPING AT 100 PSIG. IF LEAKAGE IS OBSERVED OR IF TEMPERATURE COMPENSATED PRESSURE DROP EXCEEDS 1% OF TEST PRESSURE, REPAIR LEAKS AND RETEST. DO NOT USE AIR PRESSURE TO TEST PLASTIC PIPE.

- PROVIDE SUPPORT UNDER ELBOWS ON PUMP SUCTION AND DISCHARGE LINES.

- ALL STRAINERS SHALL BE FURNISHED WITH A "ROUGHING" SCREEN AND TWO (2) SCREENS FOR NORMAL OPERATION. INSTALL STRAINER WITH ROUGHING SCREEN AND OPERATE SYSTEM FOR 24 HOURS MINIMUM (RUN DOMESTIC WATER SYSTEMS AT MAX FLOW FOR A MINIMUM OF ONE HALF (1/2) HOUR. REMOVE ROUGHING SCREEN AND INSTALL NORMAL SCREEN, AFTER TWO WEEKS OF NORMAL OPERATION INSTALL NEW NORMAL SCREEN.

- PIPING SIZES SHALL BE BASED ON 2' OR LESS HEAD LOSS PER 100 FEET OF LENGTH. VELOCITIES SHALL NOT EXCEED 10 FEET PER SECOND.

- INSTALL ALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHIN THE PIPING SYSTEM. ENSURE ALL REQUIRED PIPE EXPANSION WILL OCCUR IN THE PROPER DIRECTION AND SEGMENT OF PIPE. PROPERLY ANCHOR (RE: SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. COORDINATE PIPE EXPANSION/CONTRACTION TO PREVENT DAMAGE TO ANY AND ALL BUILDING COMPONENTS.

- PROVIDE ISOLATION VALVES AT EVERY HYDRONIC BRANCH LINE.

CONDENSATE DRAINAGE:

- PROVIDE CONDENSATE DRAINAGE FOR ALL COOLING COILS AND OVERFLOW PANS.

- ROUTE CONDENSATE PIPING, FULL SIZE OF DRIP PAN CONNECTION, TO NEAREST CODE APPROVED RECEPTACLE. INSULATE WHERE LOCATED ABOVE FINISHED CEILINGS.

CUTTING, PATCHING AND DEMOLITION:

- KEEP DEMOLITION & CUTTING TO MINIMUM REQUIRED FOR PROPER EXECUTION OF WORK.

- BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR THE COMPLETION OF THE WORK.

- NO CUTTING (NOT SHOWN ON THE CONTRACT DOCUMENTS) SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT AS TO LOCATIONS, METHOD AND EXTENT OF THE CUTTING.

- REPAIR ALL ACCIDENTAL OR INTENTIONAL DAMAGE TO MATCH EXISTING CONSTRUCTION WITH NO NOTICEABLE DIFFERENCE IN CONTINUITY, APPEARANCE OR FUNCTION.

- ALL "CAPPED" SANITARY AND VENT LINES SHALL BE RECONNECTED OR RE-ROUTED AS NECESSARY TO PREVENT "DEAD-ENDS" IN THE PIPING. ALL PIPING SHALL DRAIN TO ACTIVE SANITARY WASTE LINES AND ALL BRANCHES WITH TRAPS SHALL BE ADEQUATELY VENTED.

STRUCTURE:

- DO NOT PENETRATE STRUCTURAL MEMBERS. ALL EQUIPMENT SUPPORTS SHALL BE ATTACHED TO THE LOAD BEARING MEMBERS OF STRUCTURAL ELEMENTS. DO NOT OVER-STRESS ANY STRUCTURAL MEMBERS. CONTACT STRUCTURAL ENGINEER FOR ALLOWABLE LOADS FOR SPECIFIC MEMBERS.
- DO NOT UTILIZE POWER DRIVEN ANCHORS FOR ANY LOCATIONS WHICH REQUIRE THE LOAD TO BE HELD IN TENSION. SEE STRUCTURAL DIVISION FOR ADDITIONAL RESTRICTIONS.
- SEE ALSO STRUCTURAL DIVISION FOR ACCEPTABLE ANCHORING AND SUPPORT MEANS, METHODS, AND LOCATIONS.

- PROVIDE FLEXIBLE CONNECTORS, EXPANSION LOOPS, EXPANSION JOINTS, ADDITIONAL FITTINGS OR EQUIVALENT TO ACCOMMODATE THE THERMAL EXPANSION OF THE BUILDING THROUGH STRUCTURAL EXPANSION JOINTS. PROVIDE SUCH FITTING AT EVERY PIPE, DUCT, CONDUIT, ETC. CROSSING OF A STRUCTURAL EXPANSION JOINT.

CONSTRUCTION VENTILATION:

- WHERE EXISTING OR NEW MECHANICAL SYSTEMS ARE USED FOR TEMPORARY VENTILATION OR CLIMATE CONTROL, MECHANICAL EQUIPMENT INSTALLER SHALL PROVIDE CONSTRUCTION FILTERS, MAINTEAN EQUIPMENT, AND CLEAN, ADJUST AND PUT IN NEW CONDITION BEFORE BUILDING OCCUPANCY. PARTS AND LABOR WARRANTY SHALL NOT BE CONSIDERED TO START UNTIL ACCEPTANCE OF SYSTEM BY OWNER.

- PROVIDE CONSTRUCTION FILTERS INSTALLED AT ALL AIR MOVING DEVICES THROUGHOUT THE CONSTRUCTION. REMOVE FILTERS ONLY FOR BALANCING AND FINAL TURNOVER. INSPECT ALL NON-CONSTRUCTION FILTERS AND REPLACE ALL THOSE DEEMED NECESSARY BY THE ENGINEER PRIOR TO ACCEPTANCE OF THE SYSTEM BY THE OWNER.

FIRE PROTECTION NOTES:

- FIRE PROTECTION NOTES
 - SUBMIT SHOP DRAWINGS SHOWING PROPOSED LAYOUT OF FIRE PROTECTION SYSTEM. DRAWINGS SHALL SHOW ACTUAL EQUIPMENT TO BE USED, DIMENSIONS AND HYDRAULIC CALCULATIONS. SHOP DRAWINGS SHALL BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO SUBMITTAL TO ENGINEER OR ARCHITECT.
 - SHOW THE CONNECTING MAIN AND BRANCH PIPE SIZES FOR ALL RELOCATED EXISTING SPRINKLER HEADS.
 - CONFORM TO HAZARD OCCUPANCY REQUIREMENTS OF NFPA 13.

- THE ENTIRE BUILDING IS SERVED BY A WET PIPE TYPE FIRE SPRINKLER SYSTEM. COORDINATE ELECTRICAL, FIRE PROTECTION AND MECHANICAL SPACE REQUIREMENTS CAREFULLY BEFORE PROCEEDING WITH INSTALLATION.

- EXTEND THE EXISTING SPRINKLER SYSTEM, RELOCATE EXISTING AND ADD NEW SPRINKLER HEADS IN ACCORDANCE WITH NFPA 13, ALL APPLICABLE CODES AND ORDINANCES AND PROJECT REQUIREMENTS TO COMPLETELY PROTECT THE NEW WORK.

- SYSTEM SHALL BE INSTALLED COMPLETE AND OPERATIONAL, INCLUDING WATER FLOW INDICATOR, CONNECTIONS TO EXISTING ALARM, DRAIN PIPING, IDENTIFICATION SIGNS, ETC.

- WORK SHALL BE PERFORMED BY A QUALIFIED FIRE SPRINKLER INSTALLER WITH A MINIMUM OF (5) FIVE YEARS EXPERIENCE IN SIMILAR INSTALLATIONS.

- COORDINATE ALL WORK WITH ALL OTHER TRADES.

FIRE STOPPING:

- FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTANCE MATERIALS INCLUDE: DOW CORNING RTV FIRE STOP FOAM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL CABLE; 3M FIRE DAM 21.22 AND 230 CAULK FOR BARE PIPE, METAL CONDUIT, AND BUILDING CONSTRUCTION; GIPS 3M FS-195 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE.

CRAC SCHEDULE (CHILLED WATER COOLED)																				
TYPE	MARK	MANUFACTURER	MODEL NO.	AREA SERVED	SUPPLY FAN			COOLING COIL				ELECTRICAL								
					CFM	ESP (IN.)	HP	EAT DB (°F)	EAT WB (°F)	TOTAL (MBH)	SENS (MBH)	FLOW (GPM)	WPD (FT)	VOLT	PH	MCA	FUSE	DISCON.	FEEDER	E-PWR (Y/N)
CRAC	8C01	SCHNEIDER	TDCV1200G	AMP RM 08.22.01	6320	0.08	2.5	75	58	112.3	26.4	17.4	460	3	3.3			N	800	
CRAC	8C02	SCHNEIDER	TDCV1200G	AMP RM 08.22.01	6320	0.08	2.5	75	58	112.3	26.4	17.4	460	3	3.3			N	800	
CRAC	8D01	SCHNEIDER	TDCV1200G	AMP RM 08.38.02	6320	0.08	2.5	75	58	112.3	26.4	17.4	460	3	3.3			N	800	
CRAC	8D02	SCHNEIDER	TDCV1200G	AMP RM 08.38.02	6320	0.08	2.5	75	58	112.3	26.4	17.4	460	3	3.3			N	800	

- GENERAL NOTES:
 1) TOP RETURN AND BOTTOM FRONT DISCHARGE CONFIGURATION.
 2) UNIT TO COME WITH WALL MOUNTED MICROPROCESSOR CONTROLLER, SMOKE DETECTOR, 2 LEAK DETECTORS, CONDENSATE PUMP, COOLING COIL WITH 2-WAY CONTROL VALVE.
 3) CHILLED WATER FLOWING 32% P.G. 4454 DWT(LW).
 4) PROVIDE BMS CONNECTION FOR SETPOINT CONTROL, ON/OFF, STATUS AND ALARM.

FAN COIL SCHEDULE (HYDRONIC)																							
TYPE	MARK	MANUFACTURER/ MODEL NO.	AREA SERVED	FAN		COOLING COIL			HEATING COIL				ELECTRICAL										
				AIRFLOW (CFM)	ESP (IN.)	DB	WB	TOTAL (MBH)	SENS (MBH)	FLOW (GPM)	WPD (FT)	TOTAL (MBH)	FLOW (GPM)	WPD (FT)	MOTOR (HP)	VOLT	PH	FLA	DISCON.	BRANCH CIRCUIT	FUSE	E-PWR (Y/N)	WEIGHT (LBS)
FCU	8C01	MULTIAQU MHHW36	ELEC SUB 08.23.01	850	0.00	80.0	63.0	33.1	24.1	7.7	11.8	0	0.0	0	1/12	208	1	3				0	
FCU	8D01	MULTIAQU MHHW36	ELEC SUB 08.38.01	850	0.00	80.0	63.0	33.1	24.1	7.7	11.8	0	0.0	0	1/12	208	1	3				0	

- GENERAL NOTES:
 1. CHILLED WATER: EWT=42F, LWT=52F, 30% PROPYLENE GLYCOL.
 2. HEATING WATER: EWT=180F, LWT=160F, 30% PROPYLENE GLYCOL.
 3. PROVIDE 1" THROW AWAY FILTERS. (TYPE A.)
 4. JOBSITE ELEVATION = 1200 FT.
 5. PROVIDE CONDENSATE PUMP AT MATCHING VOLTAGE POWERED FROM EQUIPMENT. IF TRANSFORMER IS PROVIDED FOR CONDENSATE PUMP OPERATION PROVIDE LINE ITEM COST. GRAVITY DRAINAGE ACCEPTABLE WHERE POSSIBLE.
 6. PROVIDE FACTORY PIPING AND CONTROL PACKAGE.
 7. PROVIDE CONDENSATE SWITCH.
 8. PROVIDE 2-WAY CONTROL VALVES ON HW (IF APPLICABLE) AND CHW COIL CONNECTIONS.
 9. ALL DUCTED UNITS TO BE PROVIDED WITH SUPPLY AND RETURN DUCT COLLARS

CONTROL DAMPER MATRIX			
TYPE MARK	MARK	MODE	
		NORMAL	EMERGENCY
CD	8C03	OPEN	CLOSED
CD	8C04	CLOSED	OPEN
CD	8C05	CLOSED	OPEN
CD	8C06	CLOSED	OPEN
CD	8D03	CLOSED	OPEN
CD	8D04	CLOSED	OPEN
CD	8D05	CLOSED	OPEN
CD	8D06	OPEN	CLOSED

MECHANICAL NOTES & SCHEDULES

Project Number Project Number

Date Issue Date

Drawn By ME

Checked By ME

M0.01

Scale 1/8" = 1'-0"