	MECHANICAL SPECIFICATIONS			MOTORIZ
PART I:	GENERAL	C.	AIR-	SENSOR COOLED F
A.	THE CONTRACTOR SHALL FURNISH, INSTALL, PROVIDE AND MAKE OPERATIVE ALL EQUIPMENT, MATERIALS, SUPERVISION LABOR AND ANY AND ALL ITEMS NECESSARY FOR THE PROPER INSTALLATION OF A CORRECTLY FUNCTIONING HEATING VENTILATING AND AIR CONDITIONING SYSTEM AND PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.		1.	SHALL E MEET SF
В.	SMALL DETAILS NOT USUALLY INDICATED ON THE DRAWINGS OR SPECIFIED, BUT WHICH ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEM, SHALL BE INCLUDED IN THE WORK AND IN THE CONTRACTOR'S ESTIMATE THE SAME AS IF SPECIFIED OR SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL INSTALL THE EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH THE MANUFACTURER'S RECOMMENDATIONS, IT WILL BE THE		2. 3.	UNIT EN VALUE ( THAT AR PROVIDE GRADE (
C.	CONTRACTOR'S' DUTY TO BRING THIS TO THE ATTENTION OF THE ARCHITECT. ANY ALTERATIONS TO THE PLANS CAUSED BY ALTERNATIVE EQUIPMENT THAT WAS NOT ORIGINALLY SCHEDULED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.			LUBRICA Compon Operatio
PAR	II: CODE REQUIREMENTS		4.	CABINET: PAINT. CONTROI
A.	ORDINANCES, PERMITS AND CODES: THE WORKMANSHIP AND MATERIALS COVERED BY THESE SPECIFICATIONS SHALL CONFORM TO ALL REGULATIONS OF ALL THE AUTHORITIES HAVING JURISDICTION WHETHER SHOWN ON THE DRAWINGS OR NOT.		5.	Compres Winding Sight Gi Compres
Part III: A.	PERMITS THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CONNECTION AND INSPECTION FEES AS REQUIRED FOR THE COMPLETE INSTALLATION OF THE MECHANICAL AND PLUMBING SYSTEMS.		6.	COMPRES CONDENS SEAMLES PRESSUF
PART IV:	SPECIFICATIONS AND DRAWINGS		7	
A.	THE PLANS DEPICT THE LOCATION OF ALL FIXTURES AND EQUIPMENT AND ARE INTENDED TO INDICATE THE GENERAL INTENT OF THE WORK IN SCOPE, LAYOUT AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED TO SHOW IN MINUTE DETAIL EVERY AND ALL ACCESSORIES INTENDED FOR THE PURPOSE OF EXECUTION OF THE WORK, BUT THE CONTRACTOR SHALL UNDERSTAND THAT SUCH DETAILS ARE PART OF THIS WORK.		7.	CONTRO a. PRC COM
В.	THE LOCATION OF DUCTS, PIPE AND EQUIPMENT AS SHOWN ON THE DRAWINGS, IS DIAGRAMMATIC AND SCHEMATIC AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN WORKING LAYOUT TO ELIMINATE ALL STRUCTURAL INTERFERENCES WITHOUT DETRIMENT TO THE STRUCTURAL AND ARCHITECTURAL COMPONENTS OF THE BUILDING.		8.	b. PRO OPE REFRIGEF
C.	THE CONTRACTOR SHALL CAREFULLY VERIFY ALL MEASUREMENTS OF THE SITE, DETERMINE THE EXACT LOCATION OF ALL CHASES AND OPENINGS REQUIRED BY HIS WORK AND SHALL FURNISH AND SET ALL SLEEVES, INSERTS AND HANGERS AS REQUIRED FOR THE WORK HEREIN.			a. FILT REP b. SIGI
D.	ALL CONTRACTORS SUBMITTING PROPOSALS FOR THIS WORK SHALL FIRST EXAMINE THE SITE AND ALL CONDITIONS. ALL PROPOSALS SHALL TAKE INTO CONSIDERATION ALL SUCH CONDITIONS AS MAY THE WORK UNDER THIS CONTRACT.			INDI c. SOL STEI
PART V:	COORDINATION AND CONFLICTS THE CONTRACTOR SHALL COORDINATE HIS WORK SO THAT IT DOES NOT INTERFERE WITH THE WORK OF THE			PRC d. THE
В.	OTHER TRADES. IT SHALL BE THE CONTRACTOR'S DUTY TO SEE THAT THE WORK IS PERFORMED IN A TIMELY MANNER. IN THE EVENT THAT THERE IS A DISCREPANCY OR CONFLICT IN THE PLANS OR SPECIFICATIONS IT SHALL BE THE			STA e. CHA SEA
	CONTRACTOR'S DUTY TO NOTIFY THE ARCHITECT OF THIS CONFLICT OR DISCREPANCY PRIOR TO HIS ACCEPTANCE OF THE PROJECT. UNLESS EXPRESSLY STIPULATED, NO ADDITIONAL ALLOWANCES WILL BE MADE IN THE CONTRACTOR'S AND/OR MANUFACTURER'S FAVOR BY VIRTUE OF ERRORS, AMBIGUITIES AND/OR OMISSIONS WHICH WERE KNOWN TO OR WHICH SHOULD HAVE BEEN KNOWN OR DISCOVERED DURING THE PREPARATION OF THE BID ESTIMATE AND DIRECTED TO THE ARCHITECT'S ATTENTION IN A TIMELY MANNER.	D.	ACCE	f. CHE BON SS PANEL
PART VI:			1.	LAY-IN (
A.	THE CONTRACTOR SHALL BE A REPUTABLE FIRM REGULARLY DOING THIS TYPE OF WORK, WITH SKILLED MECHANICS AND EQUIPMENT CAPABLE OF PROVIDING A FIRST CLASS INSTALLATION IN ACCORDANCE WITH ACCEPTABLE MODERN PRACTICES.			a. REM DIVI INDI
PART VII:			2.	PLASTER a. 16
A.	SUBMITTALS 1. SUBMITTALS MUST BE REVIEWED, AND APPROVED BY SUBMITTING CONTRACTOR.			GEN CON
	2. SUBMIT FOR ALL EQUIPMENT AND SYSTEMS AS INDICATED IN THE RESPECTIVE SPECIFICATION SECTIONS, MARKING EACH SUBMITTAL WITH THAT SPECIFICATION SECTION NUMBER. MARK GENERAL CATALOG SHEETS AND DRAWINGS TO INDICATE SPECIFIC ITEMS BEING SUBMITTED AND PROPER IDENTIFICATION OF EQUIPMENT			USE APF THE SUF
	BY NAME AND/OR NUMBER, AS INDICATED IN THE CONTRACT DOCUMENTS. 3. SUBMIT ALL SHOP DRAWINGS IN PDF FORMAT WITH PAPER COPIES.	E.		
В.	ELECTRICAL FURNACES		1.	IDENTIFY OF BLAC A PRIME
	<ol> <li>SHALL BE MANUFACTUERED BY BRYANT, CARRIER, LENNOX, DAIKIN, TRANE, OR YORK. SUBSTITUTIONS MUST MEET SPECIFICATIONS AND BE APPROVED PRE BIDING BY THE ENGINEER.</li> </ol>			CABINET
	<ol> <li>22 GAUGE STEEL CASING WITH BAKED ENAMEL FINISH OR PRE-PAINTED GALVANIZED STEEL. INSULATE CASING BACK AND SIDE PANELS WITH FOIL FACED FIBERGLASS INSULATION.</li> </ol>			a. STE
	<ol> <li>CENTRIFUGAL TYPE BLOWER FAN STATICALLY AND DYNAMICALLY BALANCED WITH MULTIPLE SPEED, DIRECT DRIVE OR BELT DRIVE FAN MOTOR. PROVIDE LOW ENERGY INDUCED DRAFT BLOWER FOR HEAT EXCHANGER PREPURGE AND COMBUSTION GAS VENTING.</li> </ol>			b. ENG LAM CON BRA
	<ol> <li>PROVIDE UNIT WITH 2" THICK FARR 30/30 OR EQUAL TYPE PANEL AIR FILTER AND FILTER HOLDING RACK</li> <li>PROVIDE SOLID STATE INTEGRAL CONTROL UNIT WITH ALL NECESSARY CONTROLS AND RELAYS INCLUDING BUT NOT LIMITED TO:</li> </ol>		2.	WHERE S USED.
	a. ROLLOUT SWITCH WITH MANUAL RESET TO PREVENT OVER TEMPERATURE IN HEATER AREA.	F.	DUCT	PENETRA
	b. BLOWER ACCESS SAFETY INTERLOCK.		1.	FLOOR C
	c. FACTORY INSTALLED 24 V TRANSFORMER FOR CONTROLS AND THERMOSTAT.		0	AROUND
	<ul> <li>d. LED'S TO INDICATE STATUS AND TO AID IN TROUBLESHOOTING.</li> <li>10. PROVIDE A 7 DAY PROGRAMMABLE THERMOSTAT WITH 2 OCCUPIED PERIODS PER DAY, AUTOMATIC CHANGEOVER, SEPARATE HEATING AND COOLING SET POINTS FOR BOTH OCCUPIED AND UNOCCUPIED MODES. PROVIDE AUXILIARY CONTROLS ON SUB-BASE TO OPEN MINIMUM OUTSIDE AIR DAMPER DURING</li> </ul>		2.	WHERE S WOOL IN OR FLOO PENETRA
	OCCUPIED MODE. EQUAL TO HONEYWELL MODEL T7300 WITH Q7300 SUB-BASE.	G.		ING AND F
	11. DURING OCCUPIED MODE RUN THE SUPPLY FAN CONTINUOUSLY, OPEN THE OUTSIDE AIR DAMPER AND CYCLE THE COOLING OR HEATING AS REQUIRED TO MAINTAIN OCCUPIED SPACE TEMPERATURE COOLING OR HEATING SET POINT. DURING UNOCCUPIED MODE CLOSE THE OUTSIDE AIR DAMPER AND CYCLE THE SUPPLY FAN AND COOLING OR HEATING AS REQUIRED TO MAINTAIN UNOCCUPIED COOLING OR HEATING TEMPERATURE SET POINT.		1.	FIRE AND a. INST PEN MAIN
	12. OUTSIDE AIR BALANCING DAMPER TO BE ADJUSTED TO ALLOW SCHEDULED OUTSIDE AIRFLOW WHILE			PEN

MECHANICAL SPECIFICATIONS						
DRIZED DAMPER IS FULLY OPENED. MOTORIZED DAMPER TO MODULATE IN ACCORDANCE WITH CO2 SOR READING.	2. NON-RATED PARTITIONS:	<ol> <li>WHITE, BAKED</li> <li>HIGH PERFORM</li> </ol>				
D REFRIGERANT COMPRESSOR AND CONDENSING UNITS	a. IN EXTERIOR WALL OPENINGS BELOW GRADE, ASSEMBLE RUBBER LINKS OF MECHANICAL SEAL TO THE PROPER SIZE FOR THE PIPE AND TIGHTEN IN PLACE, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS	C. EGGCRATE GRILLE				
SPECIFICATIONS AND BE APPROVED PRE BIDING BY THE ENGINEER.	INSTRUCTIONS. b. AT ALL INTERIOR PARTITIONS AND EXTERIOR WALLS, PIPE PENETRATIONS ARE REQUIRED TO BE SEALED.	1. ALUMINUM CO				
ENERGY EFFICIENCY RATIO (EER), COEFFICIENT OF PERFORMANCE (COP) AND INTEGRATED PART LOAD E (IPLV) SHALL MEET THE MINIMUM APPLICABLE REQUIREMENTS OF ASHRAE 90.1(2004 EDITION). UNITS ARE LABELED ENERGY STAR® WILL BE ACCEPTABLE.	APPLY SEALANT TO BOTH SIDES OF THE PENETRATION IN SUCH A MANNER THAT THE ANNULAR SPACE BETWEEN THE PIPE SLEEVE OR CORED OPENING AND THE PIPE OR INSULATION IS COMPLETELY BLOCKED.	<ol> <li>2. GRILLE FACE</li> <li>3. GRILLE SIZES</li> </ol>				
VIDE FACTORY ASSEMBLED, OUTDOOR MOUNTED, AIR —COOLED CONDENSING UNIT SUITABLE FOR ON DE OR ROOFTOP INSTALLATION. INCLUDE COMPRESSOR, AIR COOLED CONDENSER, REFRIGERANT, RICATION SYSTEM, INTERCONNECTING WIRING, SAFETY AND OPERATING CONTROLS, MOTOR STARTING PONENTS AND ADDITIONAL FEATURES AS SPECIFIED HEREIN OR REQUIRED FOR SAFE, AUTOMATIC RATION. CAPACITY AND STEPS OF UNLOADING AS INDICATED IN THE EQUIPMENT SCHEDULE.	c. DUCT PENETRATIONS THROUGH NON-RATED PARTITIONS SHALL REQUIRE SHEET METAL ESCUTCHEONS WITH FIBERGLASS OR MINERAL WOOL INSULATION FILL FOR SPACES THAT INCLUDE JANITOR CLOSETS, TOILET ROOMS, MECHANICAL ROOMS, CONFERENCE ROOMS, PRIVATE CONSULTATION ROOMS, AND WHERE NOTED ON DRAWINGS ELSEWHERE.	<ol> <li>WHITE, BAKED</li> <li>5. SCREW HOLES</li> <li>PART XII: DUCT ACCESS:</li> </ol>				
NET: CONSTRUCT CABINET OF HEAVY GAUGE, GALVANIZED STEEL COATED WITH WEATHER RESISTANT T. PROVIDE REMOVABLE ACCESS PANELS TO FACILITATE FULL ACCESS TO THE COMPRESSOR, FAN AND	PART VIII: INSULATION A. ALL INSULATION, INCLUDING JACKET, OR FACING AND ADHESIVE USED TO ADHERE FACING OR JACKET TO THE	A. MANUAL VOLUME DAI				
TROL COMPONENTS. PRESSOR: PROVIDE HERMETIC RECIPROCATING OR SCROLL TYPE COMPRESSOR WITH BUILT IN MOTOR	INSULATION SHALL HAVE A COMPOSITE FIRE AND SMOKE HAZARD RATING TESTED BY THE PROCEDURE RECOMMENDED BY ASTM E84, NFPA 255 OR U.L. 723, NOT EXCEEDING FLAME SPREAD 25, SMOKE DEVELOPED 50. ALL INSULATION ACCESSORIES SHALL ALSO HAVE THE RATINGS LISTED ABOVE.	1. SHALL BE MAI MEET SPECIFIC				
ING TEMPERATURE AND CURRENT PROTECTION, LIQUID AND SUCTION SERVICE VALVES, GAGE PORTS, T GLASS AND LIQUID LINE FILTER DRYER. PROVIDE CRANKCASE HEATER WITH RECIPROCATING TYPE PRESSORS. MOUNT COMPRESSORS ON VIBRATION ISOLATORS.	B. NEW SUPPLY/MAKE UP AIR DUCT SHALL BE INSULATED WITH 2" THICK BLANKET TYPE FIBERGLASS INSULATION WITH A MINIMUM DENSITY OF 1.0 POUND/CUBIC FOOT, AND A FACTORY APPLIED FLAME RETARDANT FOIL BACKED KRAFT FACING. INSULATION SHALL BE WRAPPED ON THE DUCTWORK WITH ALL CIRCUMFERENTIAL JOINTS BUTTED	2. DAMPERS MUS RELATING TO 3. REINFORCE AL				
DENSER: PROVIDE CONDENSER COILS WITH ALUMINUM ALLOY PLATE FINS MECHANICALLY FASTENED TO ILESS COPPER TUBING WITH INTEGRAL SUBCOOLER. CONSTRUCT COILS WITH DESIGN WORKING SURE SUITABLE FOR THE REFRIGERANT. LOUVERED CONDENSER <u>HAIL GUARD</u> SHALL BE PROVIDED.	AND LONGITUDINAL JOINTS OVERLAPPED A MINIMUM OF 2". ADHERE INSULATION WITH 4" STRIPS OF INSULATION BONDING ADHESIVE AT 8" CENTERS. FIBERGLASS SERIES ED100 OR EQUAL.	MULTIPLE SEC SECURE INDIVI WITH LOCKING				
NTROLS:	C. NEW RETURN/EXHAUST DUCT SHALL BE INSULATED WITH 1–1/2" THICK BLANKET TYPE FIBERGLASS INSULATION WITH A MINIMUM DENSITY OF 1.0 POUND/CUBIC FOOT, AND A FACTORY APPLIED FLAME RETARDANT FOIL BACKED KRAFT FACING. INSULATION SHALL BE WRAPPED ON THE DUCTWORK WITH ALL CIRCUMFERENTIAL JOINTS BUTTED	PLATFORM ON PENETRATING				
PROVIDE HIGH/LOW REFRIGERANT PRESSURE CUTOUTS WITH MANUAL RESET AND ANTI-SHORT CYCLE COMPRESSOR UNIT.	AND LONGITUDINAL JOINTS OVERLAPPED A MINIMUM OF 2". ADHERE INSULATION WITH 4" STRIPS OF INSULATION BONDING ADHESIVE AT 8" CENTERS. FIBERGLASS SERIES ED100 OR EQUAL.	B. TURNING VANES 1. CONSTRUCT TU				
PROVIDE "LOW AMBIENT" CONTROLS AND ACCESSORIES NEEDED SO THAT UNIT IS CAPABLE OF OPERATING DOWN TO AMBIENT TEMPERATURE OF OF.	D. RIGID FIBERGLASS INSULATION: MINIMUM NOMINAL DENSITY OF 3 LBS. PER CU. FT., AND THERMAL CONDUCTIVITY OF NOT MORE THAN 0.23 AT 75 DEGREES F, MINIMUM COMPRESSIVE STRENGTH OF 25 PSF AT 10% DEFORMATION, RATED FOR SERVICE TO 450 DEGREES F.	AND FIG. 2–4 ELBOWS AND 2–5 AND FIG.				
IGERANT PIPING ACCESSORIES:	E. ALL INSULATION TO CREATE A CONTINUOUS VAPOR BARRIER BETWEEN MAIN AND BRANCH DUCTWORK.	C. FIRE DAMPERS				
FILTER DRYERS: FOR CIRCUITS BELOW 15 TONS PROVIDE STRAIGHT PATTERN FILTER DRYERS WITHOUT REPLACEABLE CORE.	F. ACCEPTABLE MANUFACTURER'S ARE OWENS CORNING, JOHNS MANVILLE, ARMSTRONG OR CERTAINTEED.	1. FIRE DAMPERS VENTILATING, ( SPECIFICATION				
SIGHT GLASSES: TWO PIECE BRASS CONSTRUCTION WITH SOLDER END CONNECTIONS. INCLUDE COLOR INDICATOR FOR SENSING MOISTURE.	PART IX: DUCTWORK  A. ALL DUCTWORK SHALL BE CONSTRUCTED OF THE BEST BLOOM GALVANIZED SHEET METAL SHEETS, FREE FROM	D. ACCESS DOORS				
SOLENOID VALVES: TWO WAY NORMALLY CLOSED WITH TWO PIECE BRASS BODY, FULL PORT, STAINLESS STEEL PLUG, STAINLESS STEEL SPRING, TEFLON DIAPHRAGM AND SOLDER END CONNECTIONS. PROVIDE REPLACEABLE COIL ASSEMBLY.	BLISTER IMPERFECTIONS, AND WITH GAUGES, JOINTS, BRACING AND SUPPORTS TO BE IN STRICT ACCORDANCE WITH SMACNA STANDARDS, 1993 EDITION. PROVIDE "PAINT GRIP" FINISH FOR DUCTWORK THAT WILL BE PAINTED.	1. ACCESS DOOR THE DOOR IS LOCK. HINGES				
THERMOSTATIC EXPANSION VALVES: BRASS BODY, BRONZE DISC, NEOPRENE SEAT, BRONZE BONNET, STAINLESS STEEL SPRING AND SOLDER END CONNECTIONS.	<ol> <li>GALVANIZED STEEL SHEET: USE ASTM A 653 GALVANIZED STEEL SHEET OF LOCK FORMING QUALITY. GALVANIZED COATING TO BE 1.25 OUNCES PER SQUARE FOOT, BOTH SIDES OF SHEET, G90 IN ACCORDANCE WITH ASTM A90. PROVIDE "PAINT GRIP" FINISH FOR DUCTWORK THAT WILL BE PAINTED.</li> </ol>	MAY BE SECU PROVIDE SUFF CLOSED. DO M MINIMUM 1" D				
CHARGING VALVES: PROVIDE $\%$ " SAE BRASS MALE FLARE ACCESS PORTS WITH FINGER TIGHT, QUICK SEAL CAPS. PROVIDE 2-INCH LONG COPPER EXTENSION SECTIONS.	<ol> <li>STAINLESS STEEL SHEET: USE ASTM A167, TYPE 304 OR 316 STAINLESS STEEL SHEET AS SPECIFIED, 316L IF WELDED DUCTWORK, WITH NO. 2B FINISH FOR CONCEALED WORK AND NO. 3 FINISH FOR EXPOSED WORK.</li> </ol>	GALVANIZED S GALVANIZED S ACCESS DOOR DUCTWORK. P				
CHECK VALVES: SPRING LOADED TYPE WITH BRONZE BODY, BRONZE DISC, NEOPRENE SEAT, BRONZE BONNET, STAINLESS STEEL SPRING AND SOLDER END CONNECTIONS.	B. CROSS BREAK FLAT SIDES OF DUCTS. REDUCTION IN DUCT SIZES SHALL BE MADE WITH A MAXIMUM SLOPE OF 30 DEGREES.	DOCTWORK. P DOOR AND FR EQUIPMENT PF DUCTWORK OF				
NELS AND DOORS	C. DOUBLE THICKNESS TURNING VANES SHALL BE USED IN ALL 90 DEGREE SUPPLY AIR ELBOWS.	BE ACCEPTED. 2. USE INSULATE				
IN CEILINGS: REMOVABLE LAY-IN CEILING TILES IN 2 X 2 FOOT OR 2 X 4 FOOT CONFIGURATION PROVIDED UNDER DIVISION 9 ARE SUFFICIENT; NO ADDITIONAL ACCESS PROVISIONS ARE REQUIRED UNLESS SPECIFICALLY INDICATED.	D. DUCT HANGERS FOR HORIZONTAL DUCT SHALL NOT BE OVER 8'-0" O.C. #16 U.S. GAUGE, ONE INCH WIDE FOR DUCTS 35" INCHES GREATEST DIMENSION, 6'-0" UP TO 59" GREATEST DIMENSION, AND 4'-0" FOR DUCTS OVER 60". DUCT HANGERS SHALL EXTEND TO THE BOTTOM OF THE DUCT. SUPPORTS SHALL BE 18 GAUGE. EACH SECTION OF DUCT SHALL HAVE AT LEAST ONE PAIR OF SUPPORTS.	PART XIII: FANS A. IN-LINE CENTRIFUGA 1. SHALL BE MAI				
TER WALLS AND CEILINGS	E. ALL DUCTWORK SHALL BE MADE AIRTIGHT WITH MASTIC AND PRESSURE SENSITIVE TAPE.	MEET SPECIFIC				
16 GAUGE FRAME WITH NOT LESS THAN A 20 GAUGE HINGED DOOR PANEL, PRIME COATED STEEL FOR GENERAL APPLICATIONS, STAINLESS STEEL FOR USE IN TOILETS, SHOWERS, AND SIMILAR WET AREAS, CONCEALED HINGES, SCREWDRIVER OPERATED CAM LATCH FOR GENERAL APPLICATIONS, KEY LOCK FOR	F. ALL ACCESSORY ITEMS SUCH AS TURNING VANES, DAMPER, ETC., SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS.	2. CONSTRUCT H STREAMLINED NOISE AND RE				
USE IN PUBLIC AREAS, UL LISTED FOR USE IN FIRE RATED PARTITIONS IF REQUIRED BY THE APPLICATION. USE THE LARGEST SIZE ACCESS OPENING POSSIBLE, CONSISTENT WITH THE SPACE AND THE EQUIPMENT NEEDING SERVICE; MINIMUM SIZE IS 12" BY 12". PAINT TO MATCH SURROUNDING SURFACE.	<ul> <li>G. ALL EXPOSED DUCTWORK TO BE PAINTED. COLOR BY ARCHITECT. SEAL ALL JOINTS AIR-TIGHT WITH NON-SILICONE SEALANT.</li> <li>H. DUCT SEALANT</li> </ul>	FOR INSPECTION THE WHEEL C MOTORS ON A TYPE WITH GR				
ON	1. SILICONE SEALANTS ARE NOT ALLOWED IN ANY TYPE OF DUCTWORK INSTALLATION	CLEANING AND 3. ALL FANS WIT				
TIFY ALL MECHANICAL EQUIPMENT BY STENCILING EQUIPMENT NUMBER AND SERVICE WITH ONE COAT BLACK ENAMEL AGAINST A LIGHT BACKGROUND OR WHITE ENAMEL AGAINST A DARK BACKGROUND. USE RIMER WHERE NECESSARY FOR PROPER PAINT ADHESION. DO NOT LABEL EQUIPMENT SUCH AS	<ol> <li>INSTALL SEALANTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, PAYING SPECIAL ATTENTION TO TEMPERATURE LIMITATIONS. ALLOW SEALANT TO FULLY CURE BEFORE PRESSURE TESTING OF DUCTWORK, OR BEFORE STARTUP OF AIR HANDLING SYSTEMS.</li> </ol>	PART XIV: TEST AND BALAN				
NET HEATERS AND CEILING FANS IN OCCUPIED SPACES. MECHANICAL EQUIPMENT INCLUDES BUT IS NOT ED TO: FURNACES, CONDENSERS, RTU'S, AND OTHER SCHEDULED EQUIPMENT.	J. GASKETS	ALL TESTING, ADJUS TO BE PERFORMED				
STENCILS: NOT LESS THAN 1 INCH HIGH LETTERS/NUMBERS FOR MARKING PIPE AND EQUIPMENT. ENGRAVED NAME PLATES: WHITE LETTERS ON A BLACK BACKGROUND, 1/16 INCH THICK PLASTIC	1. 2 INCH PRESSURE CLASS AND LOWER: SOFT NEOPRENE OR BUTYL GASKETS IN COMBINATION WITH DUCT SEALANT FOR FLANGED JOINTS.	1. TEST, ADJUST, DEVICE MEETS				
LAMINATE, BEVELED EDGES, SCREW MOUNTING, SETONPLY STYLE 2060 BY SETON NAME PLATE COMPANY OR EMEDOLITE- STYLE EIP BY EMED CO., OR EQUAL BY MARKING SERVICES, OR W. H. BRADY.	PART X: REINFORCEMENT: A. ALL DUCTS REQUIRING REINFORCEMENT SHALL BE REINFORCED ACCORDING TO THE LATEST EDITION OF THE	2. PERMANENTLY DEVICES ALLO				
RE STENCILING IS NOT APPROPRIATE FOR EQUIPMENT IDENTIFICATION, ENGRAVED NAME PLATES MAY BE	SMACNA MANUAL. MATERIALS FOR THE REINFORCING SHALL BE GALVANIZED STEEL. ALL SCREWS AND WASHERS SHALL BE PLATED OR GALVANIZED.	3. QUALIFICATION: FOR A MINIMU				
TRATIONS:	PART XI: AIR DISTRIBUTION: A. SHALL BE AS SCHEDULED ON THE DRAWINGS. FINISH SHALL BE OFF—WHITE. NC SHALL NOT EXCEED 24.	4. SUBMIT TESTIN OR AABC CER				
JLAR SPACE BETWEEN DUCT (WITH OR WITHOUT INSULATION) AND THE NON-RATED PARTITION OR	ACCEPTABLE MANUFACTURER SHALL BE TITUS, PRICE, CARNES, KRUEGER. B. SQUARE CEILING DIFFUSERS – HIGH PERFORMANCE	CONTRACTOR,				
IR OPENING SHALL NOT BE LARGER THAN 2". WHERE EXISTING OPENINGS HAVE AN ANNULAR SPACE ER THAN 2", THE SPACE SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION TO WITHIN 2" JND THE DUCT. INSULATION TO MAINTAIN CONTINUOUS VAPOR BARRIER THROUGH PENETRATION.	1. DIFFUSERS TO BE STEEL UNLESS OTHERWISE INDICATED, LOUVERED FACE FURNISHED WITH FRAME TYPE APPROPRIATE TO INSTALLATION	PART XV: WALK THRU: A. THE GENERAL CONTF				
RE SHOWN OR SPECIFIED, PACK ANNULAR SPACE WITH FIBERGLASS BATT INSULATION OR MINERAL L INSULATION. PROVIDE 4" SHEET METAL ESCUTCHEON AROUND DUCT ON BOTH SIDES OF PARTITION FLOOR TO COVER ANNULAR SPACE. INSULATION TO MAINTAIN CONTINUOUS VAPOR BARRIER THROUGH TRATION.	<ol> <li>DIFFUSER SHALL HAVE THROW CHARACTERISTICS OF A ROUND DIFFUSER HAVING A 360° HORIZONTAL BLOW PATTERN.</li> <li>LOUVER CONES SHALL BE ONE-PIECE CONSTRUCTION WITH NO CORNER JOINTS.</li> </ol>	OPERATION OF THE B. PROVIDE A MINIMUM EQUIPMENT.				
ID FIRESTOPPING						
AND/OR SMOKE RATED PENETRATIONS:						
INSTALL APPROVED PRODUCT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WHERE PIPES PENETRATE A FIRE/SMOKE RATED SURFACE. WHEN PIPE IS INSULATED, USE A PRODUCT WHICH MAINTAINS THE INTEGRITY OF THE INSULATION AND VAPOR BARRIER. PROVIDE A UL LABEL AT EACH PENETRATION.						

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# WDB ENGINEERING

CIVIL

SALAS O'BRIEN

MECHANICAL / ELECTRICAL



KF drawn by

DMG checked by

MAY 2023

date

revisions

# MOORE PUBLIC SCHOOLS BOARD OF EDUCATION MOORE, OKLAHOMA



LOCKER ROOM ADDITION MOORE WEST JUNIOR HIGH SCHOOL

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WHITE, BAKED ENAMEL FINISH OR POWDER COAT FINISH, UNLESS OTHERWISE INDICATED. HIGH PERFORMANCE TYPE DIFFUSER INCORPORATING SHORT THROWS AND LOW NC LEVELS. RATE GRILLE

ALUMINUM CONSTRUCTION WITH FRAME TYPE APPROPRIATE TO INSTALLATION.

GRILLE FACE 1/2" X 1/2" OR 1" X 1" GRID PATTERN 1" DEEP WITH A MINIMUM OF 85% FREE AREA. GRILLE SIZES AND FINISHES AS SHOWN ON DRAWINGS AND/OR AS SCHEDULED.

WHITE, BAKED ENAMEL FINISH OR POWDER COAT FINISH, UNLESS OTHERWISE INDICATED.

SCREW HOLES ON SURFACE COUNTER SUNK TO ACCEPT RECESSED TYPE SCREWS.

### ICT ACCESS: VOLUME DAMPERS

SHALL BE MANUFACTUERED BY RUSKIN, VENT PRODUCTS, AIR BALANCE, OR GREENHECK. SUBSTITIONS MUST MEET SPECIFICATIONS AND BE APPROVED PRE BIDING BY THE ENGINEER.

DAMPERS MUST BE CONSTRUCTED IN ACCORDANCE WITH SMACNA FIG. 2-12, FIG. 2-13, AND NOTES RELATING TO THESE FIGURES, EXCEPT AS MODIFIED BELOW.

REINFORCE ALL BLADES TO PREVENT VIBRATION, FLUTTER, OR OTHER NOISE. CONSTRUCT DAMPERS IN MULTIPLE SECTIONS WITH MULLIONS WHERE WIDTH IS OVER 48 INCHES. USE RIVETS OR TACK WELDS TO SECURE INDIVIDUAL COMPONENTS; SHEET METAL SCREWS WILL NOT BE ACCEPTED. PROVIDE OPERATORS WITH LOCKING DEVICES AND DAMPER POSITION INDICATORS FOR EACH DAMPER; USE AN ELEVATED PLATFORM ON INSULATED DUCTS. PROVIDE END BEARINGS OR BUSHINGS FOR ALL VOLUME DAMPER RODS PENETRATING DUCTWORK CONSTRUCTED TO A 3" W.C. PRESSURE CLASS OR ABOVE.

CONSTRUCT TURNING VANES AND RUNNERS FOR SQUARE ELBOWS IN ACCORDANCE WITH SMACNA FIG. 2-3 AND FIG. 2-4 EXCEPT USE ONLY AIRFOIL TYPE VANES. CONSTRUCT TURNING VANES FOR SHORT RADIUS ELBOWS AND ELBOWS WHERE ONE DIMENSION CHANGES IN THE TURN IN ACCORDANCE WITH SMACNA FIG. 2–5 AND FIG. 2–6.

FIRE DAMPERS SHALL BE MANUFACTUERED BY AIR BALANCE, ADVANCED AIR, AMERICAN WARMING AND VENTILATING, GREENHECK, PHILIPS-AIRE, PREFCO, RUSKING, OR SAFE-AIR. SUBSTITIONS MUST MEET SPECIFICATIONS AND BE APPROVED PRE BIDING BY THE ENGINEER.

## DOORS

ACCESS DOOR TO BE DESIGNED AND CONSTRUCTED FOR THE PRESSURE CLASS OF THE DUCT IN WHICH THE DOOR IS TO BE INSTALLED. DOORS IN EXPOSED AREAS SHALL BE HINGED TYPE WITH CAM SASH LOCK. HINGES SHALL BE STEEL FULL LENGTH CONTINUOUS PIANO TYPE. DOORS IN CONCEALED SPACES MAY BE SECURED IN PLACE WITH CAM SASH LATCHES. FOR BOTH HINGED AND NON HINGED DOORS PROVIDE SUFFICIENT NUMBER OF CAMP SASH LATCHES TO PROVIDE AIR TIGHT SEAL WHEN DOOR IS CLOSED. DO NOT USE HINGED DOORS IN CONCEALED SPACES IF THIS WILL RESTRICT ACCESS. USE MINIMUM 1" DEEP 24 GAUGE GALVANIZED STEEL DOUBLE WALL ACCESS DOORS WITH MINIMUM 24 GAUGE GALVANIZED STEEL FRAMES. FOR NON-GALVANIZED DUCTWORK, USE MINIMUM 1" DEEP DOUBLE WALL ACCESS DOOR WITH FRAME THAT SHALL USE MATERIALS OF CONSTRUCTION IDENTICAL TO ADJACENT DUCTWORK. PROVIDE DOUBLE NEOPRENE GASKET THAT SHALL PROVIDE SEALS FROM THE FRAME TO THE DOOR AND FRAME TO THE DUCT. WHEN ACCESS DOORS ARE INSTALLED IN INSULATED DUCTWORK OR EQUIPMENT PROVIDE INSULATED DOORS WITH INSULATION EQUIVALENT TO WHAT IS PROVIDED FOR ADJACENT DUCTWORK OR EQUIPMENT. ACCESS DOORS CONSTRUCTED WITH SHEET METAL SCREW FASTENERS WILL NOT BE ACCEPTED. USE INSULATED 1-1/2 HOUR UL 1978 LISTED AND LABELED ACCESS DOORS IN KITCHEN EXHAUST DUCTS.

CENTRIFUGAL FANS

SHALL BE MANUFACTUERED BY LOREN COOK, GREENHECK, PENN, OR TWIN CITY. ANY SUBSTITIONS MUST MEET SPECIFICATIONS AND BE APPROVED PRIOR TO BID BY THE ENGINEER.

CONSTRUCT HOUSING OF WELDED STEEL WITH REINFORCING TO PREVENT DISTORTION. FURNISH WITH STREAMLINED INLET CONES AND MULTIPLE STRAIGHTENING VANES FOLLOWING THE FAN WHEEL TO MINIMIZE NOISE AND REDUCE TURBULENCE. PROVIDE EACH HOUSING WITH A BOLTED AND GASKETED ACCESS DOOR FOR INSPECTION OF DRIVE AND FAN WHEEL. USE NON-OVERLOADING AIRFOIL BLADE FANS WELDED TO THE WHEEL CONES. ISOLATE BELT DRIVES FROM AIRSTREAM WITH A BELT TUBE. EXTERNALLY MOUNT MOTORS ON AN ADJUSTABLE BASE. BEARINGS TO BE GREASE LUBRICATED, SELF-ALIGNING BALL BEARING TYPE WITH GREASE SEAL AND EXTERNAL GREASE FITTING. PAINT FANS WITH A PRIME COAT AFTER METAL CLEANING AND SURFACE PREPARATION. APPLY A SECOND COAT OF PAINT TO ALL EXTERIOR SURFACES. ALL FANS WITH BELTS TO USE OSHA APPROVED BELT GAURDS THAT TOTALLY ENCLOSE THE ENTIRE DRIVE.

AND BALANCE: CONTRACTOR WILL SEPARATELY CONTRACT WITH AN INDEPENDENT TEST AND BALANCE AGENCY TO PERFORM ESTING, ADJUSTING, AND BALANCING OF AIR SYSTEMS REQUIRED FOR THIS PROJECT. TESTING PROCEDURES PERFORMED IN ACCORDANCE WITH AABC OR NEBB.

TEST, ADJUST, AND BALANCE ALL AIR SYSTEMS SO THAT EACH ROOM, PIECE OF EQUIPMENT OR TEMRINAL DEVICE MEETS THE DESIGNED REQUIREMENTS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. PERMANENTLY MARK EQUIPMENT SETTINGS, INCLUDING DAMPER POSITIONS, CONTROL SETTINGS, AND SIMILAR DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.

QUALIFICATIONS: AN INDEPENDENT FIRM SPECIALIZING IN THE TESTING AND BALANCING OF HVAC SYSTEMS FOR A MINIMUM OF 3 YEARS.

SUBMIT TESTING, ADJUSTING, AND BALANCING REPORTS BEARLING THE SEAL AND SIGNATURE OF THE NEBB OR AABC CERTIFIET TEST AND BALANCE SUPERVISOR. DISTRIBUTE COPIES OF THE REPORT TO THE CONTRACTOR, THE LEAD CONTRACTOR, THE OWNER, AND THE PRIME ARCHITECT/ENGINEER.

# LK THRU:

SENERAL CONTRACTOR SHALL PERFORM AN INSTRUCTIONAL WALK THRU WITH THE OWNER TO EXPLAIN THE ATION OF THE HVAC SYSTEM.

DE A MINIMUM OF 4 HOURS OF OWNER TRAINING. TRAINING TO INCLUDE HOW TO OPERATE AND MAINTAIN

