



REVISIONS		
Δ	DESCRIPTION	DATE

### GENERAL MECHANICAL NOTES

- ALL WORK SHALL BE IN COMPLIANCE WITH STATE AND LOCAL CODES.
- THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, LICENSES, ETC., NECESSARY FOR PROPER COMPLETION OF THE WORK.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- VERIFY ALL EXISTING CONDITIONS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN CONTRACT DRAWINGS AND ACTUAL CONDITIONS.
- EXISTING UTILITIES TO BE ABANDONED SHALL BE PROPERLY DISCONNECTED AND CAPPED AS REQUIRED BY CODE OR LOCAL ORDINANCE.
- THESE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. ADDITIONAL DATA SHALL BE FROM THE ENGINEER THROUGH WRITTEN CLARIFICATION ONLY. VERIFY ALL EXISTING CONDITIONS, ELEVATIONS, AND DIMENSIONS BEFORE PROCEEDING WITH ANY PORTION OF ANY WORK. THE CONTRACTOR SHALL PROVIDE ALL OFFSETS AND TRANSITIONS REQUIRED TO MEET EXISTING CONDITIONS.
- THE CONTRACTOR SHALL PERFORM WORK IN A SKILLED AND PROFESSIONAL MANNER.
- ALL CONTRACTORS ARE RESPONSIBLE TO FIELD COORDINATE WORK SCHEDULE WITH OWNER REPRESENTATIVE.
- THE CONTRACTOR SHALL WORK AND COORDINATE WITH THE OTHER TRADES.
- ALL EQUIPMENT SHALL BE NEW AND IN UNDAMAGED CONDITION. ANY EQUIPMENT FOUND DEFECTIVE SHALL BE IMMEDIATELY REMOVED FROM THE PROJECT.
- PROVIDE 3 COPIES OF AN OPERATION AND MAINTENANCE MANUAL FOR ALL MAJOR EQUIPMENT REQUIRING SERVICE. MAJOR EQUIPMENT INCLUDES BUT IS NOT LIMITED TO COILS, FANS, AND CONTROL WIRING DIAGRAMS. EACH PIECE OF EQUIPMENT SHALL STATE THE CONTRACT DATE AND THE NAME, ADDRESS AND PHONE NUMBER FOR THE PRIME CONTRACTOR, SUBCONTRACTOR PERFORMING THE INSTALLATION, AND THE LOCAL VENDOR FOR SPARE PARTS. THE MANUALS SHALL CONTAIN MAINTENANCE INSTRUCTIONS REQUIRED FOR THE INSTALLED EQUIPMENT. MANUALS SHALL BE BOUND IN A THREE RING HARD COVER BINDER. O & M MANUALS SHALL BE SUBMITTED TO THE OWNER PRIOR TO FINAL WALK THROUGH OF THE PROJECT.
- PROVIDE 8 HOURS OF OWNER TRAINING FOR THE INSTALLED EQUIPMENT. TRAINING SHALL BE HELD ONLY AFTER ALL OF THE EQUIPMENT IS INSTALLED AND PROPER OPERATION IS VERIFIED.
- CONTRACTOR SHALL SUBMIT A CERTIFIED REPORT INDICATING SYSTEM PERFORMANCE INCLUDING, BUT NOT LIMITED TO, VOLTAGE AND AMPERAGE MEASUREMENTS OF ALL EQUIPMENT GREATER THAN 1/2 H.P. WATER BALANCE MEASUREMENTS OF EACH COIL AND PUMP AIR BALANCE MEASUREMENTS OF OUTSIDE AIR DELIVERY, AIR HANDLING UNIT SUPPLY, SUPPLY DIFFUSERS, EXHAUST AND RETURN GRILLES. AIR BALANCE SHALL BE WITHIN 10% OF DESIGN CONDITIONS. THE REPORT CERTIFICATION SHALL BE AS FOLLOWS:  
  
(name of company) CERTIFY THAT ALL MEASUREMENTS, FIGURES AND STATEMENTS INDICATED IN THIS REPORT WERE TAKEN BY ME OR UNDER MY SUPERVISION AND ARE ACCURATE AS OF (date). DESIGN FLOWS WERE BASED UPON PLANS DATED (xxxxxx).
- DUCT MATERIAL SHALL BE GALVANIZED OR ALUMINUM CONSTRUCTION IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARD 2005 FOR THE PRESSURE AND SEAL CLASS LISTED IN DUCTWORK/INSULATION SCHEDULE.
- DUCT SIZES LISTED ON PLANS ARE THE REQUIRED CLEAR INTERIOR DIMENSIONS.
- SUPPLY AND RETURN BRANCH DUCTS MAY BE INSULATED FLEX DUCT IF THE RUN IS LESS THAN 5 FEET IN LENGTH. ANY LENGTHS OVER 5 FEET SHALL BE RIGID DUCTWORK. DUCT SHALL BE THE SAME SIZE AS THE LISTED DIFFUSER THROAT UNLESS NOTED OTHERWISE.
- PROVIDE VOLUME CONTROL DAMPERS WHERE INDICATED AND AT ALL TAKEOFFS, BOTH SUPPLY AND RETURN SYSTEMS, AND MAJOR DUCT RUNS. DAMPERS SHALL BE FACTORY-FABRICATED WITH ZINC-PLATED, DIE-CAST CONTROL HARDWARE. CONTROL HARDWARE SHALL INCLUDE HEAVY GAUGE DIAL AND HANDLE WITH ELEVATED PLATFORM FOR INSULATED DUCT MOUNTING.
- PROVIDE TURNING VANES IN ALL RECTANGULAR ELBOWS CONFORMING TO SMACNA DUCT CONSTRUCTION STANDARD 2005 FIG. 4-2 TYPE RE-3 WITH STANDARD RADIUS. WHERE SPACE PERMITS, PROVIDE RADIUS ELBOWS IN ACCORDANCE WITH FIGURES 4-2, TYPE RE-1.
- ALL RECTANGULAR MAIN TO RECTANGULAR BRANCH CONNECTIONS, BOTH CONVERGING AND DIVERGING CONFIGURATIONS, SHALL HAVE A 45 DEG. ENTRY TAP CONSTRUCTED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARD 2005 FIG. 4-6.
- DIFFUSER PATTERN 4-WAY UNLESS OTHERWISE INDICATED. PROVIDE FIBERGLASS DUCT INSULATION WITH VAPOR BARRIER AS SCHEDULED UNLESS NOTED OTHERWISE.
- MECHANICAL CONTRACTOR TO REPAIR ANY DAMAGE DONE TO THE FIRE PROOFING WHILE INSTALLING THE MECHANICAL TRADES. SEAL ALL PENETRATIONS THROUGH RATED STRUCTURES WITH UL LISTED FIRE SEAL DESIGNED FOR THE SPECIFIED APPLICATION.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OR AS OTHERWISE REQUIRED IN THE SPECIFICATIONS.
- MECHANICAL CONTRACTOR TO INCLUDE THE TEST AND BALANCE, AND ANY PERMIT FEES IN THEIR BID.
- MECHANICAL CONTRACTOR SHALL VERIFY ALL ROOFTOP EQUIPMENT WEIGHTS, SIZES, LOCATIONS AND OPENINGS REQUIRED AND SHALL COORDINATE ANY CHANGES WITH THE ARCHITECT.
- UPON PROJECT COMPLETION, RECORD (AS-BUILT) DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE BUILDING OWNER. ALL CHANGES MADE TO EQUIPMENT, DUCTWORK, AND GENERAL DESIGN SHALL BE NOTED ON THE DRAWINGS. PROVIDE IN PDF FORMAT OR PRINTED SET AT THE OWNER'S REQUEST.

### MECHANICAL SHEET INDEX

M000	MECHANICAL TITLE SHEET
MD201	MECHANICAL DEMOLITION ROOF PLAN
M101	MECHANICAL FLOOR PLAN
M201	MECHANICAL ROOF PLAN
M601	MECHANICAL SCHEDULES

### MECHANICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
<b>GENERAL</b>	
⬠	KEY NOTE TAG
⬠	REVISION TAG
⬠	NEW EQUIPMENT
EQUIP-1	EQUIPMENT TAG
<b>DUCTWORK</b>	
⬠	SUPPLY AIR DUCTWORK
⬠	RETURN AIR AND OUTSIDE AIR DUCTWORK
⬠	EXHAUST AIR DUCTWORK
⬠	FLEXIBLE DUCTWORK
⬠	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
⬠	RETURN AIR DUCTWORK THROUGH HORIZONTAL PARTITION
⬠	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
⬠	ROUND DUCTWORK
▲	FIRE DAMPER (VERTICAL)
◆	FIRE DAMPER (HORIZONTAL)
⬠	SMOKE DAMPER (VERTICAL)
⬠	SMOKE DAMPER (HORIZONTAL)
⬠	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
⬠	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
⬠	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
⬠	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
<b>SENSORS</b>	
⊕	THERMOSTAT AND TEMPERATURE SENSOR
⊕	HUMIDISTAT
⊕	SMOKE DETECTOR
⊕	HEAT DETECTOR
<b>AIR DEVICES</b>	
⬠	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
⬠	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
⬠	SUPPLY AIR GRILLE WITH THREE-WAY THROW
⬠	SUPPLY AIR GRILLE WITH TWO-WAY THROW
⬠	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
⬠	SUPPLY AIR GRILLE WITH ONE-WAY THROW
⬠	RETURN AIR GRILLE
⬠	RETURN AIR GRILLE WITH SOUND BOOT
⬠	EXHAUST AIR GRILLE
⬠	SUPPLY AIR SIDEWALL GRILLE
⬠	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
<b>RENOVATIONS</b>	
⬠	POINT OF CONNECTION FROM NEW TO EXISTING
⬠	ITEM TO REMAIN
⬠	ITEM TO BE REMOVED

### ABBREVIATIONS

A	AMP	I/O	INPUT/OUTPUT
ADD	ADDENDUM	IN	INCH
ADJ	ADJUSTABLE	LAT	LEAVING AIR TEMPERATURE
AFF	ABOVE FINISH FLOOR	LB	POUND
AHU	AIR HANDLER UNIT	LWT	LEAVING WATER TEMPERATURE
AI	ANALOG INPUT		
ALT	ALTERNATE		
AO	ANALOG OUTPUT	MAX	MAXIMUM
APPRX	APPROXIMATE	MBH	1000 BTU PER HOUR
ARCH	ARCHITECT, ARCHITECTURAL	MC	MECHANICAL CONTRACTOR
		MCA	MINIMUM CIRCUIT AMPS
BDD	BACK DRAFT DAMPER	MECH	MECHANICAL
BLDG	BUILDING	MIN	MINIMUM
BTUH	BRITISH THERMAL UNIT PER HOUR	MFR	MANUFACTURER
C	CENTER	NTS	NOT TO SCALE
CD	CEILING DIFFUSER		
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
CO	CLEAN OUT	OC	ON CENTER
COND	CONDENSATE		
CONT	CONTINUOUS	P	PUMP
COP	COEFFICIENT OF PERFORMANCE	PC	PLUMBING CONTRACTOR
		PLBG	PLUMBING
DB	DRY BULB	PSI	POUNDS PER SQUARE INCH
DET	DETAIL	QTY	QUANTITY
DG	DOOR GRILLE		
DI	DIGITAL INPUT	RA	RETURN AIR
DIA/Ø	DIAMETER	REQD	REQUIRED
DIM	DIMENSION	REV	REVERSE OR REVISION
DN	DOWN	RG	RETURN AIR GRILLE
DO	DIGITAL OUTPUT	RPM	REVOLUTIONS PER MINUTE
DWG	DRAWING	RTU	ROOF TOP UNIT
EA	EXHAUST AIR	SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	SQFT	SQUARE FEET
EC	ELECTRICAL CONTRACTOR	SG	SUPPLY GRILLE
EER	ENERGY EFFICIENCY RATIO	SP	STATIC PRESSURE
EF	EXHAUST FAN	SPEC	SPECIFICATIONS
EG	EXHAUST GRILLE	SS	STAINLESS STEEL
ELEC	ELECTRICAL		
ERV	ENERGY RECOVERY VENTILATOR	T&B	TEST AND BALANCE
ESP	EXTERNAL STATIC PRESSURE	TEMP	TEMPERATURE OR TEMPORARY
EWT	ENTERING WATER TEMPERATURE	TG	TRANSFER GRILLE
EXIST	EXISTING	TYP	TYPICAL
FA	FRESH AIR	V	VOLT
FPM	FEET PER MINUTE	VAR	VARIABLE OR VARIES
FT	FOOT (FEET)	VEL	VELOCITY
		VFD	VARIABLE FREQUENCY DRIVE
GA	GAUGE/GAGE	VTR	VENT THRU ROOF
GALV	GALVANIZED		
GC	GENERAL CONTRACTOR	W	WITH
GPM	GALLONS PER MINUTE	W/N	WITHIN
GYP	GYPSUM	W/O	WITH OUT
		WB	WET BULB
HORIZ	HORIZONTAL	WC	WATER COLUMN (INCHES OF)
HP	HORSEPOWER	WT	WEIGHT
HT	HEIGHT		