



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 1/3 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:

I (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 (xx/xx/xx).
- 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.

I (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 (xx/xx/xx).

ABBREVIATIONS			
A	AMP	IN	INCH
ADD	ADDENDUM		
ADJ	ADJUSTABLE		
AFF	ABOVE FINISH FLOOR	LAT	LEAVING AIR TEMPERATURE
AHU	AIR HANDLER UNIT	LB	POUND
AI	ANALOG INPUT	LWT	LEAVING WATER TEMPERATURE
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
		NTS	NOT TO SCALE
C	CENTER		
CD	CEILING DIFFUSER	OA	OUTSIDE AIR
CFM	CUBIC FEET PER MINUTE	OC	ON CENTER
CO	CLEAN OUT		
COND	CONDENSATE	P	PUMP
CONT	CONTINUOUS	PC	PLUMBING CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE	PLBG	PLUMBING
		PSI	POUNDS PER SQUARE INCH
DB	DRY BULB	QTY	QUANTITY
DET	DETAIL	RA	RETURN AIR
DG	DOOR GRILLE	RECD	REQUIRED
DI	DIGITAL INPUT	REV	REVERSE OR REVISION
DIA OR Ø	DIAMETER	RG	RETURN AIR GRILLE
DIM	DIMENSION	RPM	REVOLUTIONS PER MINUTE
DN	DOWN	RTU	ROOF TOP UNIT
DO	DIGITAL OUTPUT	SA	SUPPLY AIR
DWG	DRAWING	SOFT	SQUARE FEET
		SC	SUPPLY GRILLE
EA	EXHAUST AIR	SP	STATIC PRESSURE
EAT	ENTERING AIR TEMPERATURE	SPEC	SPECIFICATIONS
EC	ELECTRICAL CONTRACTOR	SS	STAINLESS STEEL
EER	ENERGY EFFICIENCY RATIO		
EF	EXHAUST FAN	T&B	TEST AND BALANCE
EG	EXHAUST GRILLE	TEMP	TEMPERATURE OR TEMPORARY
ELEC	ELECTRICAL	TG	TRANSFER GRILLE
ERV	ENERGY RECOVERY VENTILATOR	TYP	TYPICAL
ESP	EXTERNAL STATIC PRESSURE	V	VOLT
EW	ENTERING WATER TEMPERATURE	VAR	VARIABLE OR VARIES
EXIST	EXISTING	VEL	VELOCITY
		VFD	VARIABLE FREQUENCY DRIVE
FA	FRESH AIR	VTR	VENT THRU ROOF
FPM	FEET PER MINUTE		
FT	FOOT (FEET)	W/	WITH
		W/IN	WITHIN
GA	GAUGE/GAGE	W/O	WITHOUT
GALV	GALVANIZED	WB	WET BULB
GC	GENERAL CONTRACTOR	WC	WATER COLUMN (INCHES OF)
GPM	GALLONS PER MINUTE	WT	WEIGHT
GYP	GYPSONUM		
HORIZ	HORIZONTAL		
HP	HORSEPOWER		
HT	HEIGHT		
I/O	INPUT/OUTPUT		

MECHANICAL HVAC LEGEND			
EXHAUST AIR DUCT (DOWN)			EXHAUST AIR DUCT (UP)
RETURN AIR DUCT (DOWN)			RETURN AIR DUCT (UP)
OUTSIDE OR SUPPLY AIR DUCT (DOWN)			OUTSIDE OR SUPPLY AIR DUCT (UP)
DUCT SIZE			NEW DUCTWORK
FLEX DUCT			EXISTING DUCTWORK
DEMOLITION LINETYPE			SUPPLY AIR CEILING DIFFUSER
RETURN AIR GRILLE			EXHAUST AIR GRILLE
DIFFUSER, GRILLE, AND REGISTER CALL-OUTS			SCHEDULED EQUIPMENT TAG
MANUAL BALANCING DAMPER			PIPE PENETRATION THROUGH FIRE RATED WALL
FIRE DAMPER			SMOKE DAMPER
MOTORIZED DAMPER			FIRE/SMOKE DAMPER
THERMOSTAT			HUMIDISTAT
REMOTE SENSOR			CARBON DIOXIDE SENSOR
DUCT SMOKE DETECTOR			

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