GENERAL NOTES:

1. REFER TO SPECIFICATIONS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. REFER TO ALL PROJECT DRAWINGS FOR DETAILS OF CONSTRUCTION AND INSTALLATION REQUIREMENTS.
3. REFER TO GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE CONTRACT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FULL COORDINATION OF PROJECT INCLUDING THE EQUIPMENT AND INSTALLATION OF THE MECHANICAL WORK.
4. CONTRACTOR SHALL BECOME, PRIOR TO BID, THOROUGHLY FAMILIAR WITH THE REQUIREMENTS OF THESE NOTES AS WELL AS OTHER NOTES SHOWN ON THE CONTRACT DOCUMENTS.
5. THESE DRAWINGS REFLECT A SYSTEM DESIGNED AROUND SPECIFIC REFERENCE PRODUCTS (SEE SCHEDULES). THE SELECTION OF WHICH HAS INFLUENCED THE DESIGNS OF OTHER TRADES (ELECTRICAL, STRUCTURAL, ETC.). IF SUBSTITUTE MANUFACTURERS, SIZES, OR MODEL NUMBERS ARE BID, OR SUBMITTED, IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND ALL HIS SUBCONTRACTORS TO COORDINATE ALL DIFFERENCES PRIOR TO BID. ALL COSTS OF ALL TRADES ASSOCIATED WITH THE SUBSTITUTION SHALL BE INCLUDED IN THE BID.
6. COORDINATION OF ALL MODIFICATIONS TO EACH DISCIPLINE WHICH RESULT FROM SUBSTITUTION OF EQUIPMENT OR MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUBSTITUTIONS WHICH ARE INSTALLED AND SUBSEQUENTLY ARE PROVEN UNSATISFACTORY BY OWNER AND/OR ENGINEER, WITHIN THE WARRANTY PERIOD, SHALL BE REMOVED COMPLETELY BY THE CONTRACTOR AND REPLACED WITH THE ORIGINAL DESIGN OR CORRECTED AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
7. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRICAL RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, SEQUENCE, DEVICE, OPTION, FITTING, OR COMPONENT.
8. INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS OR DETAILS, BUT NOT SHOWN ON PLANS, AND VICE VERSA, SHALL BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.
9. CONTRACTOR SHALL NOT SCALE DRAWINGS. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY THE CONTRACT DOCUMENTS.
10. UNLESS NOTED OTHERWISE, THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM.
11. EXACT LOCATIONS OF ALL EQUIPMENT, ROOF CURBS, DUCTS, DIFFUSERS, ETC. SHALL BE COORDINATED WITH OTHER TRADES. CEILING MOUNTED SPRINKLER, LIGHTING, AND ELECTRICAL REQUIREMENTS TAKE PRECEDENCE OVER CEILING MOUNTED MECHANICAL REQUIREMENTS. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING GRID AND LIGHTING LAYOUT FOR COORDINATION OF FINAL DIFFUSER LOCATIONS.
12. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING DETAILS AND DIMENSIONS.
13. COORDINATE PLACEMENT OF ALL THERMOSTATS, ROOF MOUNTED EQUIPMENT, ETC. WITH ARCHITECTURAL AND STRUCTURAL TRADES.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF OTHER TRADES. REFER TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND OTHER DRAWINGS FOR COMPLETE INFORMATION PRIOR TO BID.
15. ROUGH-IN OR INSTALLATION OF OWNER FURNISHED EQUIPMENT SHALL NOT BEGIN UNTIL APPROVED EQUIPMENT DRAWINGS ARE OBTAINED FROM OWNER OR ARCHITECT. DO NOT SUBMIT SHOP DRAWINGS FOR ANY EQUIPMENT WHICH MAY BE COORDINATED WITH OWNER FURNISHED ITEMS UNTIL THE APPROVED DRAWINGS ARE OBTAINED FROM OWNER OR ARCHITECT. VERIFY THE APPROVED EQUIPMENT HAS THE SAME ROUGH-IN AND FINAL CONNECTION REQUIREMENTS AND DESIGN CRITERIA AS THE DOCUMENTS. NOTIFY ENGINEER OF ANY CHANGES, INCOMPATIBILITY, OR UNUSUAL CONDITIONS IMMEDIATELY. SEE SPECIFICATIONS OR DRAWINGS FOR LIST OF OWNER FURNISHED EQUIPMENT (WHERE APPLICABLE).
16. ALL MECHANICAL CONSTRUCTION DETAILS SHALL BE AS SHOWN AND AS REQUIRED TO MAINTAIN "UL" ASSEMBLY RATINGS AS SHOWN ON ARCHITECTURAL SHEETS. SEAL AROUND ALL PENETRATIONS THOROUGH UL RATED ASSEMBLIES, FIRE AND SMOKE WALLS. COORDINATE WITH GENERAL CONTRACTOR.
17. NO OTHER TRADES, I.E., ELECTRICAL, CEILING, PLUMBING, ETC., SHALL BE SUSPENDED, HUNG, OR SUPPORTED FROM DUCTWORK OR PIPING.
18. ROOFING CONTRACTOR SHALL BE RESPONSIBLE FOR FLASHING AND SEALING OF ALL ROOF PENETRATIONS.
19. SPECIAL CARE SHALL BE TAKEN ON THE ROOFS TO PREVENT DAMAGE. ANY DAMAGE SHALL BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER. COMPLY WITH BONDING REQUIREMENTS OF EXISTING ROOF.
20. REPLACE ALL ARCHITECTURAL FEATURES REMOVED OR DAMAGED DURING THE COURSE OF THE WORK.

CONTROL NOTES:

REFER TO GENERAL NOTES ON DRAWING.

1. ALL CONTROL DEVICES SHALL BE BY ONE MANUFACTURER. ALL CONTROL SET POINTS SHALL BE ADJUSTABLE. THERMOSTATS AND WIRING FOR FANS SHALL BE INCLUDED WITH CONTROLS.
2. THE CONTROL SYSTEM SHALL BE SUITABLE FOR THE LOCATIONS SHOWN ON THE PLANS.
3. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE LOCKABLE COVERS AND GUARDS FOR ALL THERMOSTATS AND SENSORS.
5. ALL THERMOSTATS, SENSORS, AND OTHER EXPOSED CONTROL DEVICE LOCATIONS SHALL BE COORDINATED WITH THE ENGINEER AND ARCHITECT BEFORE ROUGHING IN.
6. ALL CONTROLS SHALL BE TESTED AND CALIBRATED BEFORE TESTING AND BALANCING IS PERFORMED.
7. PROVIDE LAMINATED TAGS AT ALL CONTROL DEVICES INDICATING EQUIPMENT BEING CONTROLLED.
8. INTERLOCK CONTROLS WITH THE ELECTRICAL FIRE AND SMOKE ALARM SYSTEM COORDINATE WITH THE ELECTRICAL SYSTEMS CONTRACTOR FOR INTERFACE REQUIREMENTS OF THE SYSTEMS.
9. PROVIDE AUXILIARY CONTACTORS AS REQUIRED FOR OPERATIONS OF CONTROLSEQUENCES.
10. ALL WIRING SHALL BE IN CONDUIT WHERE ROUTED IN WALLS AND INSIDE MECHANICAL AND ELECTRICAL ROOMS. REFER TO THE SPECIFICATIONS.
11. EF-2 TO BE CONTROLLED BY TIMER IN STORAGE 111. TIMER TO BE PELTEC 600 SERIES LOW-VOLTAGE TIMER WITH RIB RELAY.
12. CONTROL DEVICES AND CONTROL SEQUENCES BY CAPITVEAIRE.

1

HVAC NOTES:

REFER TO GENERAL NOTES ON DRAWING FOR ADDITIONAL REQUIREMENTS.

1. SEE STRUCTURAL PLANS FOR EXACT DIMENSIONS AND DETAILS OF THE BUILDING.
2. ALL ROOF MOUNTED EQUIPMENT SHALL BE PROVIDED WITH STANDARD MANUFACTURER'S FABRICATED CURBS WHICH FACILITATE LEVEL MOUNTING OF THE EQUIPMENT (I.E. FACTORY FABRICATED TO COMPENSATE FOR ROOF SLOPE). OBTAIN ROOF SLOPES AND DIRECTION-OF-SLOPE FROM ARCHITECTURAL AND/OR STRUCTURAL PLANS. ALL ROOF CURBS SHALL BE A MINIMUM OF 8" HIGH. SHIMMING OF CURBS IS NOT ACCEPTABLE. UNLESS OTHERWISE SHOWN, ALL SERVICES TO AND FROM ROOF MOUNTED EQUIPMENT SHALL BE INSIDE PERIMETER OF CURB. ALL EQUIPMENT SHALL BE SET PLUMB AND LEVEL.
3. MAINTAIN MINIMUM CLEAR DISTANCE OF 5'0" BETWEEN PARAPET WALL AND ALL ROOF MOUNTED MECHANICAL EQUIPMENT (FANS, RTU'S, CONDENSERS, ETC.). MAINTAIN A CLEAR DISTANCE OF 10'0" MINIMUM BETWEEN PARAPET WALL AND FLUES FROM GAS BURNING EQUIPMENT.
4. MAINTAIN A MINIMUM OF 10'0" BETWEEN ALL FRESH AIR INTAKES AND PLUMBING VENTS, EXHAUST FAN DISCHARGE, FLUES, ETC. COORDINATE WITH ALL OTHER CONTRACTORS ON SITE.
5. SEAL ALL ROOF AND WALL PENETRATIONS. FLASH AND COUNTERFLASH ROOF PENETRATIONS. MINIMUM HEIGHT OF FLASHING IS EIGHT (8) INCHES ABOVE ROOF.
6. ALL HVAC WORK TO BE PER SMACNA AND ALL APPLICABLE CODES.
7. ALL DUCTS SHALL BE MOUNTED HIGH AS POSSIBLE AGAINST BOTTOM OF JOISTS EXCEPT AS REQUIRED TO AVOID CONFLICTS WITH INTERSECTING DUCTS. DIAGONALLY OFFSET DUCTS IMMEDIATELY BEFORE AND AFTER PASSING UNDER INTERSECTING DUCTS OR LARGE STRUCTURAL MEMBERS TO MAINTAIN DUCT TIGHT TO STRUCTURE.
8. PROVIDE TURNING VANES AT ALL ELBOWS GREATER THAN 45DEGREES. TURNING VANES SHALL BE DOUBLE THICKNESS.
9. MAXIMUM 4'0" FLEX DUCT ON ALL DIFFUSER RUNOUTS. CONNECTIONS TO FLEX DUCT SHALL BE SMOOTH ON AIRFLOW SIDE.
10. PROVIDE INDICATED BRANCH TAKEOFF AND DAMPER AT EACH CONNECTION OF ROUND BRANCH DUCTS TO A RECTANGULAR DUCT.
11. PROVIDE FLEXIBLE CONNECTIONS AND TRANSITIONS ON DUCT INLET AND OUTLET CONNECTIONS TO ALL ROOF TOP UNITS, EXHAUST FANS, AIR BOXES, ETC. WHERE EQUIPMENT HAS ROTATING PARTS (MOTORS, ETC.).
12. SEE ARCH REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED AIR DEVICES.
13. INTERNALLY INSULATE ALL RECTANGULAR SUPPLY AND RETURN AIR DUCTS. ALL BRANCH DUCTS TO BE EXTERNALLY INSULATED WITH FIBERGLASS DUCT INSULATION WRAP.
14. THE DUCT SIZES ON THE DRAWINGS SHALL BE INCREASED IN SIZE TO ACCOMMODATE LINER THICKNESS. SIZES SHOWN ON THE DRAWINGS ARE THE REQUIRED CLEAR INSIDE DIMENSIONS OF THE LINER WHERE USED.
15. PRIOR TO WEATHER-PROOFING EXTERIOR DUCTWORK, APPLY HARD CAST SEALER AT ALL DUCT JOINTS AND SEAMS. INSULATE WITH FIBERGLASS HIGH DENSITY RIGID BOARD INSULATION, 3" THICK, EQUAL TO OWENS CORNING TYPE 705. WEATHER-PROOF EXTERIOR DUCTWORK BY COVERING ALL JOINTS, SEAMS AND HOLES WITH TWO 1/8" THICK WET COATS OF VAPOR BARRIER MASTIC REINFORCED WITH GLASS FABRIC OVER ENTIRE SURFACE. APPLY TWO 1/8" THICK COATS OF BREATHER MASTIC REINFORCED WITH GLASS FABRIC LAPPING ALL JOINTS A MINIMUM OF 2". INSTALL ALUMINUM JACKETING OVER MASTIC.
16. INSTALL SCHEDULED FILTERS AT THE COMPLETION OF CONSTRUCTION. USE ONE SET OF SCHEDULED FILTERS DURING CONSTRUCTION AS INDICATED ON THE SCHEDULE. INSTALL FINAL SET PRIOR TO TEST AND BALANCE.
17. BALANCE AIR SYSTEM TO PROVIDE INDICATED AIRFLOWS. SEE SPECIFICATIONS FOR OTHER TEST AND BALANCE REQUIREMENTS. SUBMIT FINAL BALANCE OF AIR SYSTEMS (FLOW AND TEMPERATURE) FOR REVIEW.
18. MECHANICAL CONTRACTOR (MC) SHALL COORDINATE AND VERIFY THE FOLLOWING WITH THE ELECTRICAL CONTRACTOR (EC) PRIOR TO BID:
    A) ALL STARTERS: FURNISHED BY MC, INSTALLED BY EC.
    B) DUCT SMOKE DETECTORS: FURNISHED BY MC, INSTALLED BY EC.
    C) ELECTRIC DAMPER ACTUATORS: FURNISHED BY MC, INSTALLED BY MC.
    D) DISCONNECTS:
       WHERE NOT FURNISHED WITH EQUIPMENT: FURNISHED BY EC, INSTALLED BY EC.
       WHERE FURNISHED WITH EQUIPMENT: FURNISHED BY MC, INSTALLED BY EC.
19. COORDINATE FINAL PLACEMENT OF ALL THERMOSTATS WITH ARCHITECT AND ENGINEER. ANY THERMOSTAT THAT IS REQUIRED TO BE MOUNTED ON AN EXTERIOR WALL SHALL BE MOUNTED ON AN INSULATED PAD.
20. INSTALL SMOKE DETECTOR IN RETURN DUCT OF ALL INDICATED AIR HANDLERS.
21. PROVIDE HVAC CONDENSATE DRAIN. INSTALL WITH TRAP AND AIR VENT PER CODE AND IS INDICATED AND FULL SIZE OF DRAIN PAN CONNECTION.

KITCHEN HOOD NOTES:

1. EXHAUST DUCT CONSTRUCTION AND INSTALLATION SHALL COMPLY WITH NFPA 96.
2. HOOD SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH NFPA 96 AND INSTALLATION SHALL BE AS COORDINATED WITH HOOD MANUFACTURER.
3. DUCT ROUTING SHALL BE AS INDICATED AND AS DIRECT AS POSSIBLE.
4. EXHAUST DUCT SHALL BE NOT LESS THAN 16 GAUGE CARBON STEEL. ALL SEAMS AND JOINTS ARE TO HAVE A LIQUID TIGHT WELD. DUCT SHALL NOT BE RUN FLAT TO PREVENT COLLECTION OF GREASE RESIDUE. SLOPE DUCT A MINIMUM OF 1/4" PER FOOT TOWARD THE HOOD.
5. EXHAUST DUCT SHALL HAVE ONE LAYER OF 3M FIRE BARRIER DUCT WRAP 15A, OR EQUAL, TO PROVIDE 2-HOUR FIRE RESISTIVE RATING AND ZERO-CLEARANCE FROM COMBUSTIBLES.
6. THE EXHAUST DUCT SHALL HAVE A FIRE RATED ACCESS DOOR FOR CLEANING DUCT AT ALL CHANGES IN DIRECTION. ACCESS SHALL BE AT SIDES OF DUCT AND COMPLY WITH NFPA 96.
7. A SIGNAL FROM FIRE EXTINGUISHING SYSTEM SHALL STOP THE MAKEUP AIR UNIT FAN AND EXHAUST FAN.
8. INSTALLATION SHALL ALLOW FOR EXHAUST DUCT EXPANSION WITHOUT LOSS OF SYSTEM INTEGRITY DURING A FIRE.

HVAC LEGEND

ABBREVIATION OR SYMBOL	DESCRIPTION
AD	AIR DOOR
AH	AIR HANDLING UNIT
A.F.F.	ABOVE FINISHED FLOOR
AV	ATTIC VENT
B	BOILER
BHP	BRAKE HORSE POWER
BTUH	BRITISH THERMAL UNIT PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CV	CONSTANT VOLUME
CVB	CONSTANT VOLUME TERMINAL
DB	DRY BULB TEMPERATURE
DP	DIFFERENTIAL PRESSURE
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE OF THE COIL
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
FAS	FACILITY AUTOMATION SYSTEM
FCU	FAN COIL UNIT
FO	FLAT OVAL
FPMB	FAN POWERED MIXING TERMINAL
FPM	FEET PER MINUTE (VELOCITY)
GH	GRAVITY HOOD
GPM	GALLONS PER MINUTE
GUH	GAS UNIT HEATER
HP	HORSEPOWER
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE OF THE COIL
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX.	MAXIMUM
MBH	1000 BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MIN.	MINIMUM
MHP	MOTOR HORSE POWER
MOCP	MAXIMUM OVER CURRENT PROTECTION
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NK.	NECK
NTS	NOT TO SCALE
OBD	OPPOSED BLADE DAMPER
OFCI	OWNER FURNISHED/CONTRACTOR INSTALLED
OSA	OUTSIDE AIR
P	PUMP
PBD	PARALLEL BLADE DAMPER
PDU	POOL DEHUMIDIFIER UNIT
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RC	REMOTE CONDENSER
RF	RELIEF FAN
RH	RELATIVE HUMIDITY
RHP	RADIANT HEATING PANEL
RPM	REVOLUTION PER MINUTE
RTH	RADIANT TUBE HEATER
RTU	ROOF TOP (AIR CONDITIONING) UNIT
SA	SUPPLY AIR
SC	SENSIBLE CAPACITY
SP	STATIC PRESSURE
SPEC.	SPECIFICATION
TC	TOTAL CAPACITY
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP.	TYPICAL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VAVB	VARIABLE AIR VOLUME TERMINAL
VSD	VARIABLE SPEED (FREQUENCY) DRIVE
WB	WET BULB TEMPERATURE
WG	WATER GAUGE
'	FEET
"	INCHES
Ø	ROUND DUCT

DETAIL/SECTION NUMBER (X / X) — SHEET NUMBER

DETAIL/SECTION DESIGNATION

ABBREVIATION OR SYMBOL	DESCRIPTION
	NEW EQUIPMENT
CS	CEILING SUPPLY
DG	DOOR GRILLE
CE	CEILING EXHAUST
LSD	LINEAR SLOT DIFFUSER
CR	CEILING RETURN
TR	TRANSFER GRILLE
SWE	SIDE WALL EXHAUST
SWS	SIDE WALL SUPPLY
SWR	SIDE WALL RETURN
CS-1 / 150 — MARK / AIR FLOW (CFM)	AIR DEVICE DESIGNATION
	CEILING SUPPLY DIFFUSER
	CEILING RETURN GRILLE
	CEILING EXHAUST GRILLE
	LINEAR SLOT DIFFUSER
	GRILLE OR REGISTER ON BOTTOM OF DUCTWORK
	SIDEWALL SUPPLY/RETURN
18/24	DUCT SIZE (FOR DOUBLE LINE DUCT)
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN OR EXHAUST DUCT UP
	RETURN OR EXHAUST DUCT DOWN
	RECTANGULAR/ROUND TRANSITION (DOUBLE LINE DUCT)
	FLEXIBLE DUCT CONNECTION
F S C	(1) FIRE DAMPER, (2) COMBINATION FIRE/SMOKE DAMPER, (3) SMOKE DAMPER
D C P SD	(1) OPPOSED BLADE DAMPER, (2) PARALLEL BLADE DAMPER, (3) SMOKE DETECTOR
T S C 2	THERMOSTAT OR SENSOR; CO SENSOR; KEYED NOTE

ABBREVIATION OR SYMBOL	DESCRIPTION
CD	CONDENSATE DRAIN
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
RS/RL	REFRIGERANT SUCTION / LIQUID
MUP	MAKE-UP WATER
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GATE VALVE
	GLOBE VALVE
	NEEDLE VALVE
	PLUG VALVE
	PRESSURE REGULATING VALVE
	RELIEF VALVE
S	SOLENOID VALVE
	VALVE IN RISER
	PIPE UNION
	AUTO AIR VENT
	MANUAL AIR VENT
	ECCENTRIC TRANSITION
	CONCENTRIC TRANSITION
	PRESSURE GAUGE
	STEAM TRAP
	STRAINER (Y-TYPE)
	TEMPERATURE & PRESSURE PLUG
	THERMOMETER
	DIRECTION OF FLOW
	DIRECTION OF FLOW
	FLEXIBLE PIPE CONNECTION
	FLEXIBLE PIPE CONNECTION
	FLEXIBLE PIPE CONNECTION
	PIPE DOWN
	TEE DOWN
	PIPE UP
	TEE UP
	BRANCH - BOTTOM OF PIPE
	BRANCH - TOP OF PIPE
	ELBOW
	TEE
	45° ELBOW
	CAP
	END OF LINE CLEANOUT

* NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT

MECHANICAL DRAWING INDEX

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BID DOCUMENTS

ENGLISH PUB

Little Rock, Arkansas

Issue Date:
01.31.25

REVISIONS

NUMBER	DATE	DESCRIPTION
1	02.25.25	Addendum 1

Contents:
MECHANICAL NOTES, LEGEND, & INDEX

STATE OF ARKANSAS — REGISTERED ENGINEER — JOHN WESLEY WHITE — NO. 19419 — 01.31.25

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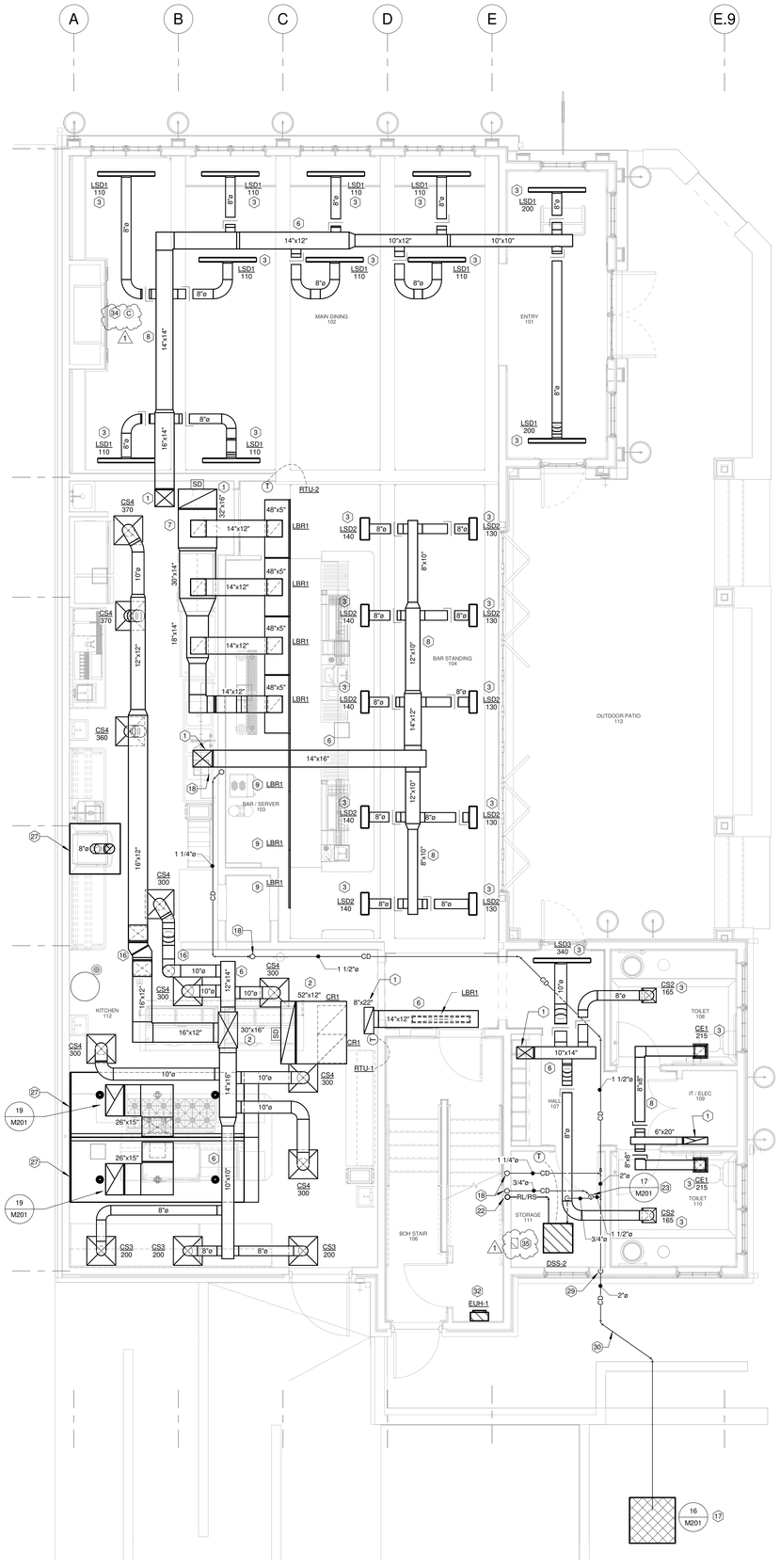
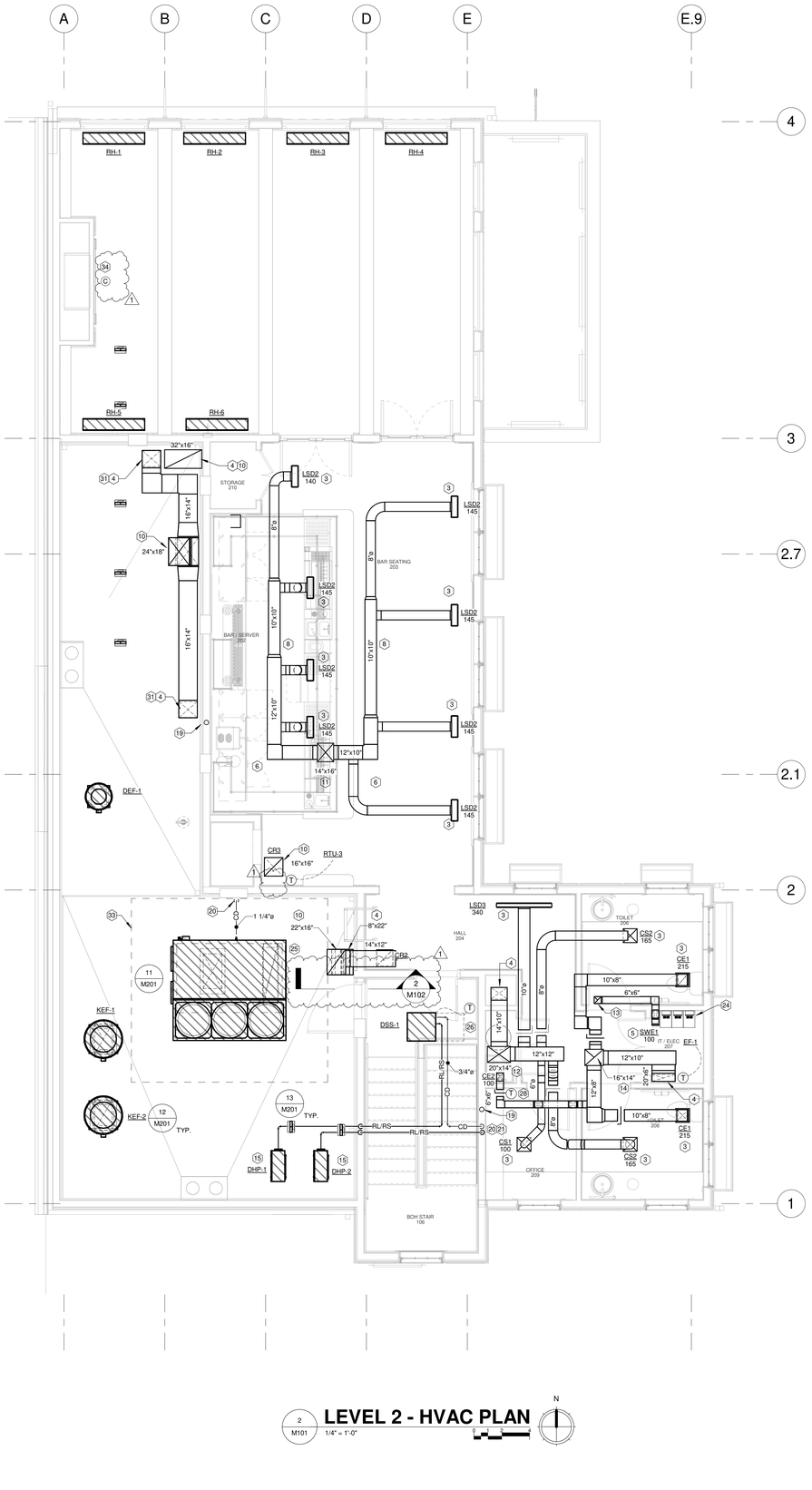
CERTIFICATE OF AUTHORIZATION — BATSON, INC. — No. 99 — ARKANSAS ENGINEERING

M001



1 M101 **LEVEL 1 - HVAC PLAN** 1/4" = 1'-0"



2 M101 **LEVEL 2 - HVAC PLAN** 1/4" = 1'-0"

KEYED NOTES:

1. DUCT RISES TO 2ND FLOOR. SEE 2/M101 FOR CONTINUATION.
2. DUCT DROPS FROM RTU-1 ON 1ST FLOOR ROOF.
3. PROVIDE YOUNG REGULATOR REMOTE DAMPER FOR DIFFUSER LOCATED IN INACCESSIBLE CEILING PER DETAIL 15/M201.
4. DUCT DROPS TO FLOOR BELOW. SEE 1/M101 FOR CONTINUATION.
5. INSTALL EXHAUST GRILLE AS HIGH AS POSSIBLE. INSTALL BALANCING DAMPER AT GRILLE. MAINTAIN REQUIRED CLEARANCE IN FRONT OF AND ABOVE ELECTRICAL EQUIPMENT.
6. ROUTE DUCT UP IN BETWEEN JOISTS.
7. DUCT ROUTED TIGHT TO STRUCTURE, BELOW CEILING IN DEDICATED FURDOWN.
8. ROUTE DUCT THROUGH DEDICATED RECTANGULAR OPENIINGS IN JOISTS.
9. INACTIVE GRILLE. BLANK OFF BACK SIDE OF GRILLE.
10. DUCT RISES TO ROOF ABOVE. SEE 1/M102 FOR CONTINUATION.
11. DUCT DROPS FROM RTU-3 ON 2ND FLOOR ROOF.
12. DUCT DROPS FROM RTU-4 ON 2ND FLOOR ROOF.
13. DUCT DROPS FROM EF-1 ON 2ND FLOOR ROOF.
14. DUCT DROPS FROM EF-2 ON 2ND FLOOR ROOF.
15. HEAT PUMP MOUNTED ON RUBBER BASE MIFAB MODEL CB10-36.
16. DUCT DROPS BELOW STRUCTURAL BEAM AND IMMEDIATELY RISES BACK UP IN BETWEEN STRUCTURE.
17. AREA CONDENSATE DRAIN. SEE CIVIL FOR EXACT LOCATION.
18. CONDENSATE LINE DROPS FROM SECOND FLOOR ABOVE SEE 2/M101 FOR CONTINUATION.
19. CONDENSATE LINE DROPS FROM ROOF ABOVE (SEE 1/M102), AND CONTINUES TO FIRST FLOOR BELOW (SEE 1/M101).
20. CONDENSATE LINE DROPS TO FLOOR BELOW THROUGH PIPING ROOF CURB. SEE 1/M101 FOR CONTINUATION.
21. REFRIGERANT LINE SET DROPS TO FLOOR BELOW. SEE 1/M101 FOR CONTINUATION.
22. REFRIGERANT LINE SET RISES TO SECOND FLOOR SEE 2/M101 FOR CONTINUATION.
23. PUMPED CONDENSATE LINES FROM DSS-1 AND DSS-2 ROUTED TO HUB DRAIN ABOVE CEILING.
24. BROMIC RADIANT HEAT PANEL DIMMER CONTROL PANELS. MOUNT 6'-0" A.F.F. MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES. (TYPICAL OF 3)
25. MAINTAIN MINIMUM OF 10'-0" BETWEEN FAN EXHAUST AND ROOFTOP UNIT INTAKE. (TYPICAL)
26. 24" X 24" ACCESS PANEL PER ARCHITECT.
27. KITCHEN HOOD BY CAPTIVEAIRE.
28. THERMOSTAT FOR RTU-4.
29. CONDENSATE DRAIN LINE DROPS IN EXTERIOR WALL TO BELOW GRADE.
30. CONDENSATE DRAIN LINE ROUTES BELOW SIDEWALK AND EXTENDS TO CONDENSATE DRAIN PIT.
31. DUCT PENETRATES ROOF THROUGH CURB PER DETAIL 10/M201. (TYPICAL).
32. BOTTOM OF UNIT HEATER MOUNTED 18" A.F.F.
33. MANUFACTURER'S REQUIRED CLEARANCE. (TYPICAL)
34. CEILING MOUNTED CARBON MONOXIDE SENSOR. COORDINATE EXACT LOCATION WITH ARCHITECT.
35. PROGRAMMABLE TIMER TO CONTROL EXHAUST FAN EF-2.

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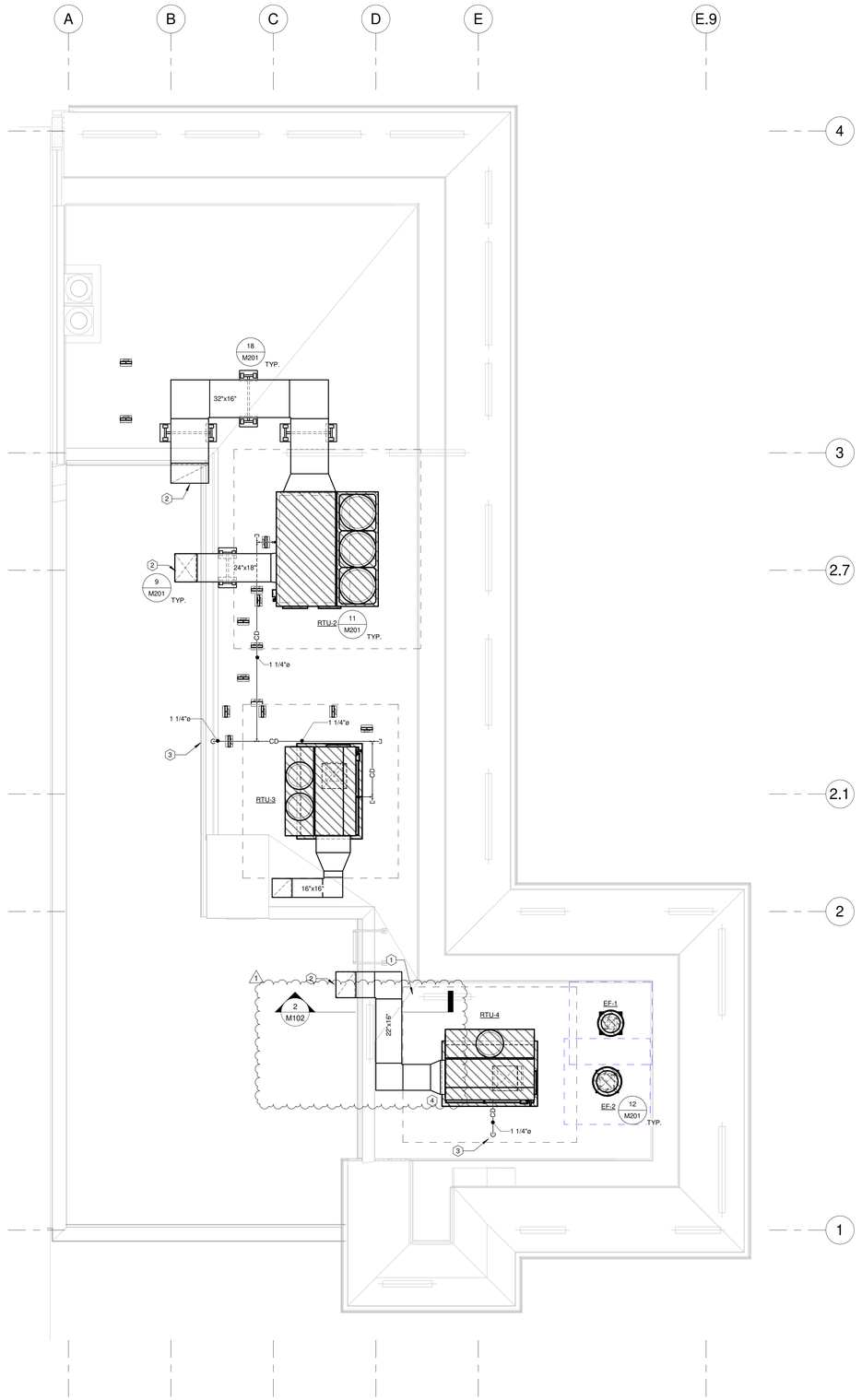
Contents:
HVAC FLOOR PLANS

M101



1 M102 **ROOF HVAC PLAN** 1/4" = 1'-0"

N

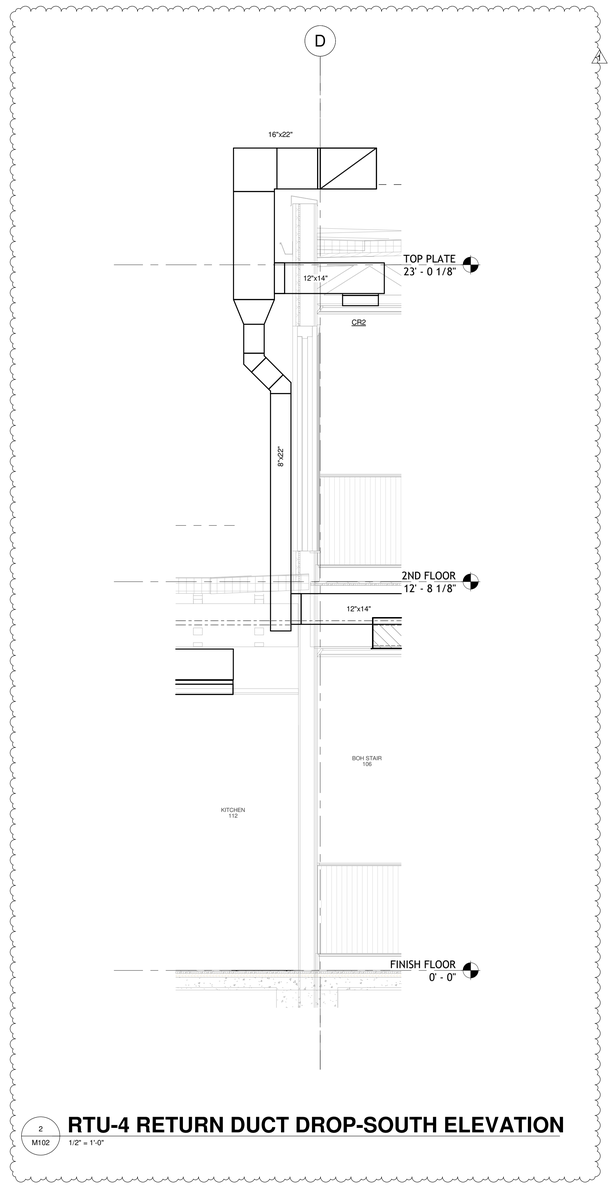
KEYED NOTES:

1 MANUFACTURER'S REQUIRED CLEARANCE. (TYPICAL)

2 DUCT DROPS TO FIRST LEVEL ROOF BELOW. SEE 2/M101 FOR CONTINUATION. OFFSET AS REQUIRED TO AVOID GUTTER SYSTEM BEFORE ROUTING TIGHT TO THE WALL.

3 CONDENSATE LINE DROPS TO FLOOR BELOW THROUGH PIPING ROOF CURB. SEE 2/M101 FOR CONTINUATION.

4 MAINTAIN MINIMUM OF 10'-0" BETWEEN FAN EXHAUST AND ROOFTOP UNIT INTAKE. (TYPICAL)



2 M102 **RTU-4 RETURN DUCT DROP-SOUTH ELEVATION** 1/2" = 1'-0"

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Little Rock, Arkansas

Issue Date:
01.31.25

REVISIONS

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HVAC ROOF PLAN

STATE OF ARKANSAS REGISTERED ENGINEER No. 9119 JAMES WESLEY RHEE 01.31.25

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CERTIFICATE OF AUTHORIZATION BATSON INC. No. 99 ARKANSAS ENGINEER

M102

PACKAGED ROOFTOP UNIT SCHEDULE

MARK	LOCATION	SERVES	COOLING DATA								HEATING DATA			AIRFLOW DATA					ELECTRICAL DATA						WEIGHT	MANUFACTURER	MODEL NO.	REMARKS
			NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	EDB	EWB	LDB	LWB	AMBIENT TEMP. DB / WB	TYPE	INPUT MBH	OUTPUT MBH	SUPPLY AIR CFM	DESIGN OSA CFM	MIN. OSA CFM	MOTOR HP	ESP	VOLTS	PHASE	MCA	MOCP	IEER	ISMRE				
RTU-1	LOWER ROOF	KITCHEN 112	30	349.0	153.9	91.7 °F	80.0 °F	51.2 °F	51.2 °F	91.7 °F / 80.0 °F	NATURAL GAS	357.99	289.97	3500	3500	125	3.0	1.0 IN-WG	208	3	135.2	150	14.9	6.0	3243 LBS.	CAPTIVEAIRE	CAS-HVAC3-I.400-20-30T	1,2,3,4,5,6,7,8,9,10,11,14,15,16,17,18,19,21,22
RTU-2	UPPER ROOF	ENTRY 101, MAIN DINING 102, BAR 104	15	204.3	105.2	84.4 °F	73.0 °F	49.8 °F	49.7 °F	91.7 °F / 80.0 °F	NATURAL GAS	197.63	160.08	2800	1560	755	3.0	1.0 IN-WG	208	3	64	70	18.8	5.7	2529 LBS.	CAPTIVEAIRE	CAS-HVAC3-I.200-18-15T	1,2,3,4,5,6,7,8,9,10,12,14,15,16,17,18,19,21,22
RTU-3	UPPER ROOF	BAR 202	5	63.8	39.9	79.5 °F	67.6 °F	51.3 °F	51.3 °F	91.7 °F / 80.0 °F	NATURAL GAS	66.65	53.98	1300	350	250	1.5	1.0 IN-WG	208	3	26.8	30	17.9	6.1	1216 LBS.	CAPTIVEAIRE	CAS-HVAC1-I.75-15-5T	1,2,3,4,5,6,7,8,9,13,14,15,16,17,18,20,21
RTU-4	UPPER ROOF	1ST & 2ND FLOOR OFFICES AND RESTROOMS	7.5	98.7	52.9	83.0 °F	71.5 °F	49.9 °F	49.9 °F	91.7 °F / 80.0 °F	NATURAL GAS	96.96	78.54	1470	700	40	2.0	1.0 IN-WG	208	3	36.1	40	18.6	12.2	1356 LBS.	CAPTIVEAIRE	CAS-HVAC1-I.100-15-7.5T	1,2,3,4,5,6,7,8,9,13,14,15,16,17,18,20,21

NOTES:

1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR.
2. DIRECT DRIVE PLENUM BLOWER.
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER.
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM.
5. EC MOTOR CONDENSING FANS.
6. ELECTRONIC EXPANSION VALVE.
7. SUCTIONLINE ACCUMULATOR.
8. FACTORY COMMISIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER.
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT.
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION WITH R-13 INSULATION - MINIMUM 20GA EXTERIOR WITH 14GA BASE.
11. 81% EFFICIENT FURNACE WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 15:1 TURNDOWN WITH NG.
12. 81% EFFICIENT FURNACE WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 16:1 TURNDOWN WITH NG.
13. 81% EFFICIENT FURNACE WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG.
14. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE.
15. FULLY MODULATING HOT GAS REHEAT.
16. 15 DEGREE LOW AMBIENT OPERATION.
17. HAIL GUARDS FOR CONDENSING COILS
18. FACTORY INSTALLED COMPRESSOR SOUND BLANKET.
19. DOWN DISCHARGE/DOWN RETURN.
20. DOWN DISCHARGE/SIDE RETURN.
21. ROOF CURB
22. PROVIDE WITH SMOKE DETECTOR

DUCTLESS SPLIT SYSTEM SCHEDULE

MARK	LOCATION	SERVES	SENSIBLE CAPACITY	COOLING CFM HIGH/MED/LOW	HEAT CAPACITY	HEATING CFM HIGH/MED/LOW	ELECTRICAL DATA			SEER	EER	MANUFACTURER	MODEL	REMARKS
							MCA	MFA	VOLTS/PHASE					
DSS-1/DHP-1	STAIR 106/ROOF	STAIR 106	9,100 BTUH	378/339/268	10,000 BTUH	378/339/268	7.8	15	208/1	19.8	12.0	DAIKIN	FFQ09W2VJU9-RX09WMVJU	PROVIDE WITH LOW AMBIENT KIT, THERMOSTAT AND CONDENSATE PUMP, AND 24"X24" DECORATION PANEL.
DSS-2/DHP-2	STORAGE 111/ROOF	STORAGE111	9,100 BTUH	378/339/268	10,000 BTUH	378/339/268	7.8	15	208/1	19.8	12.0	DAIKIN	FFQ09W2VJU9-RX09WMVJU	PROVIDE WITH LOW AMBIENT KIT, THERMOSTAT AND CONDENSATE PUMP, AND 24"X24" DECORATION PANEL.

EXHAUST FAN SCHEDULE

MARK	TYPE	DRIVE	FAN DATA			MOTOR DATA			SONE LEVEL	TOTAL UNIT WEIGHT (LBS)	MANUFACTURER	MODEL	REMARKS
			CFM	ESP	RPM	HP	VOLTS	Ø					
EF-1	ROOF-MOUNTED UPBLAST	DIRECT	100	0.328"	1573	1/15	115	1	4.2	39	GREENHECK	CUE-060-VG	1 - 2 - 3 - 4 - 6
EF-2	ROOF-MOUNTED UPBLAST	DIRECT	960	0.686"	1548	0.25	115	1	9.5	65	GREENHECK	CUE-100-VG	1 - 2 - 3 - 4 - 5
KEF-1	ROOF-MOUNTED UPBLAST	DIRECT	2040	1.25"	1543	1	115	1	15.7	94	CAPTIVEAIRE	DU85HFA	1 - 2 - 3 - 4
KEF-2	ROOF-MOUNTED UPBLAST	DIRECT	2040	1.25"	1543	1	115	1	15.7	94	CAPTIVEAIRE	DU85HFA	1 - 2 - 3 - 4
DEF-1	ROOF-MOUNTED UPBLAST	DIRECT	450	0.2"	1495	0.18	115	1	8.8	57	CAPTIVEAIRE	DU12HFA	1 - 2 - 3

1 DISCONNECT
2 BACK DRAFT DAMPER
3 ROOF CURB
4 SPEED CONTROL
5 7-DAY PROGRAMMABLE TIMER
6 PROVIDE WITH LINE-VOLTAGE THERMOSTAT

AIR DEVICE SCHEDULE

MARK	SYSTEM	STYLE	NECK SIZE	FACE SIZE	MAX CFM	APD	MAX N.C.	MATERIAL	FINISH	MANUFACTURER	MODEL NUMBER	REMARKS
CS1	SUPPLY AIR	SQUARE LOUVERED DIFFUSER	6"ø	12"x12"	100	0.10 IN-WG	30	STEEL	WHITE	PRICE	SMD SERIES	
CS2	SUPPLY AIR	SQUARE LOUVERED DIFFUSER	8"ø	24"x24"	200	0.10 IN-WG	30	STEEL	WHITE	PRICE	SMD SERIES	
CS3	SUPPLY AIR	PERFORATED SUPPLY PLENUM	8"ø	24"x24"	200	0.10 IN-WG	30	STAINLESS STEEL	STAINLESS STEEL	CAPTIVAIRE	DI-PSP SERIES	T-BAR CEILING COMPATIBLE. INTEGRAL RADIAL DAMPER.
CS4	SUPPLY AIR	PERFORATED SUPPLY PLENUM	10"ø	24"x24"	400	0.10 IN-WG	30	STAINLESS STEEL	STAINLESS STEEL	CAPTIVAIRE	DI-PSP SERIES	T-BAR CEILING COMPATIBLE. INTEGRAL RADIAL DAMPER.
LSD1	SUPPLY AIR	LINEAR SLOT DIFFUSER	8"	48"x4"	190	0.10 IN-WG	30	ALUMINUM	SEE ARCHITECT	PRICE	SDBI/SDS 75	2 SLOT, 3/4" SPACING, INTERNALLY INSULATED PLENUM
LSD2	SUPPLY AIR	LINEAR SLOT DIFFUSER	8"	18"x7"	150	0.10 IN-WG	30	ALUMINUM	SEE ARCHITECT	PRICE	SDBI/SDS 75	4 SLOT, 3/4" SPACING, INTERNALLY INSULATED PLENUM
LSD3	SUPPLY AIR	LINEAR SLOT DIFFUSER	10"	48"x7"	325	0.10 IN-WG	30	ALUMINUM	SEE ARCHITECT	PRICE	SDBI/SDS 75	4 SLOT, 3/4" SPACING, INTERNALLY INSULATED PLENUM
CR1	RETURN AIR	EGG CRATE FACE RETURN	22"X22"	24"x24"	2000	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	80 SERIES	
CR2	RETURN AIR	EGG CRATE FACE RETURN	14"X14"	14"x14"	900	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	80 SERIES	
CR3	RETURN AIR	EGG CRATE FACE RETURN	16"X16"	16"x16"	1300	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	80 SERIES	
LBR1	RETURN AIR	LINEAR BAR RETURN GRILLE	48"X5"	50"x7"	750	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	LPB SERIES	15A CORE
CE1	EXHAUST AIR	EGG CRATE FACE RETURN	8"X8"	12"x12"	210	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	80 SERIES	
CE2	EXHAUST AIR	EGG CRATE FACE RETURN	6"X6"	6"x6"	100	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	80 SERIES	
SWE1	EXHAUST AIR	EGG CRATE FACE RETURN	6"X6"	6"x6"	100	0.10 IN-WG	30	ALUMINUM	WHITE	PRICE	80 SERIES	

NOTES:

1 ALL CEILING DIFFUSERS SHALL BE 4-WAY THROW, UNLESS OTHERWISE INDICATED.
2 IF AIR DEVICE NECK SIZE DIFFERS FROM BRANCH DUCT SIZE, PROVIDE TRANSITION AS NEEDED.
3 PROVIDE FRAME STYLE / INSTALLATION TYPE AS REQUIRED FOR CEILING TYPE.
4 PROVIDE RAPID MOUNT FRAMES FOR AIR DEVICES MOUNTED IN CEILINGS OTHER THAN LAY-IN TYPE CEILINGS.

ELECTRIC UNIT HEATER SCHEDULE

MARK	SERVES	TYPE	KW	MOTOR HP	ELECTRICAL DATA			MOUNTING HEIGHT (AFF)	MANUFACTURER	MODEL	REMARKS
					AMP	VOLTS	PHASE				
EUH-1	STAIR 106	SEMI-RECESS WALL MOUNT	1.5	1/125	12.5	120	1	18"	MARKEL	E3323TD-RP	1,2

NOTES:

1. DISCONNECT SWITCH
2. INTEGRAL THERMOSTAT

RADIANT HEATER SCHEDULE

MARK	SERVES	TYPE	KW	ELECTRICAL DATA			MOUNTING HEIGHT (AFF)	MANUFACTURER	MODEL	REMARKS
				AMP	VOLTS	PHASE				
RH-1 THRU 6	SEATING 201	CEILING MOUNTED INFRARED HEATER	4.5	21.6	208	1	9'-0"	BROMIC	PLATINUM SERIES BC3622004	1,2,3

NOTES:

1. PROVIDE WITH DIMMER CONTROL
2. PROVIDE WITH WIFI-CONNECTIVITY OR REMOTE PER OWNER/ARCHITECT
3. PROVIDE WITH CEILING MOUNTING KIT

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STATE OF ARKANSAS REGISTERED ENGINEER JOHN WESLEY WHITE NO. 18119 01.31.25

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