

PACKAGED ROOFTOP AIR CONDITIONING UNITS

MARK	NOM TONS	SEER2/EER2	# STAGES	SUPPLY FAN		OA CFM	GAS HEAT		ELEC		WEIGHT (LBS)	BASIS OF DESIGN		REMARKS
				CFM	ESP (W.G.)		MBH	EFF	V/PH	DISC BY		MANUFACTURER	MODEL	
RTU-1,2	5	13.4/11.4	1	2,000	0.8	330	110	80%	208/3	E.C.	850	CARRIER	48FEEB06	(1)(2)(3)(4)(5)

- UL AND CGA LISTED NAT GAS HEATING FURNACE AND DX COOLING UNIT; HEAVY GAUGE STEEL CABINET, BAKED ENAMEL FINISH; SEAMLESS TOP; REMOVABLE ACCESS PANELS; FWD CURVED, EVAPORATOR FAN W/ADJ BELT DRIVE; ALUMINUM STEEL HEAT EXCHANGER W/INDUCED DRAFT BLOWER AND SPARK PILOT IGNITION; ALUMINUM FIN/COPPER TUBE EVAPORATOR COIL WITH FREEZE/STAT; FILTER RACK WITH 1" PLEATED MEDIA MERV-8 FILTERS; SCROLL COMPRESSOR WITH VIBRATION ISOLATION MOUNTING; THERMOSTATIC EXPANSION VALVE; ALUMINUM FIN/COPPER TUBE CONDENSER COIL W/HAIL GUARD; DIRECT DRIVE PROPELLER TYPE CONDENSER FAN; EXTERNAL SERVICE VALVES; REFRIGERANT FILTER DRYER; CRANKCASE HEATER; COMPRESSOR START ASSIST; SHORT CYCLE, THERMAL AND HI/LO PRESSURE COMPRESSOR OVERLOAD PROTECTION; CONTROL VOLTAGE TRANSFORMER; LOW AMBIENT KIT FOR COOLING OPERATION DOWN TO 0°F; SINGLE POINT ELECTRICAL CONNECTION; R-454B.
- 7-DAY PROGRAMMABLE, AUTOMATIC CHANGEVER COMBINATION THERMOSTAT AND HUMIDISTAT WITH SETPOINT OVERLAP PROTECTION, 5°F DEADBAND, SETBACK CONTROL WITH 4 OCCUPIED/UNOCCUPIED EVENTS PER DAY (75°F COOL/70°F HEAT OCCUPIED, 85°F COOL/55°F HEAT UNOCCUPIED), SYSTEM AUTO/COOL/OFF CONTROL, AND 2-HOUR PROGRAM OVERRIDE. OPTIMUM START CONTROL; 24 HR BATTERY BACK-UP; DEHUMIDIFICATION CYCLE CONTROL.
- 100% OA ECONOMIZER WITH CLASS 1 SEALS, ENTHALPY CONTROL, HIGH LIMIT SHUT-OFF, FAULT DETECTION AND DIAGNOSTICS, AND BAROMETRIC RELIEF.
- MANUFACTURER'S ROOF CURB.
- HOT GAS REHEAT AND HOT LIQUID COOLING DEHUMIDIFICATION SYSTEM. EQUAL TO CARRIER "HUMIDIZER".

DIFFUSERS, REGISTERS, AND GRILLES

MARK	TYPE	MOUNTING	NECK DAMPER	MAX NC	MAX ΔP	SIZE		MAT'L	FINISH	BASIS		REMARKS
						NECK	FRAME			MFGR	MODEL	
S1	4-WAY LOUVERED DIFFUSER	LAY-IN	N	30	0.1"	PER PLANS	24x24	ALUMINUM	(3)	TITUS	TMS-AA	
S2	4-WAY LOUVERED DIFFUSER	SURFACE	Y	30	0.1"	PER PLANS	12x12	ALUMINUM	(3)	TITUS	TDC-AA	
S3	DBL-DEFLECTION REGISTER	LAY-IN	Y	30	0.1"	22x10	23.5x11.5	ALUMINUM	(3)	TITUS	272FS	(1)(2)
R1	FILTER LOUVERED GRILLE	LAY-IN	N	30	0.05"	20x20	24x24	ALUMINUM	(3)	TITUS	3FF	(4)

- INSTALL IN LAY-IN CEILING.
- PROVIDE 12" PLENUM WITH ROUND NECK FOR FLEX DUCT CONNECTION.
- AIR DEVICE COLOR SHALL MATCH COLOR OF CEILING SYSTEM IN WHICH INSTALLED. CONTRACTOR SHALL COORDINATE.
- LOUVERED GRILLE WITH REMOVABLE FACE/CORE. WITH FOUR QUARTER-TURN FASTENERS AND NO HINGE.

FANS

MARK	TYPE	SERVICE	CFM	ESP (W.G.)	MOTOR	ELEC (60 HZ)		MAX SONES	BASIS OF DESIGN		REMARKS
						V/PH	DISC BY		MANUFACTURER	MODEL	
EF-1	CEILING-MTD	RESTROOM	50	0.25	6.1 W	120/1	MC	0.6	GREENHECK	SP-80-VG	(1)

- DIRECT DRIVE, GALVANIZED STEEL FORWARD CURVED FAN, ECM MOTOR; LOW SOUND CONSTRUCTION; HEAVY GAUGE CABINET INTERNALLY LINED WITH 1/2" ACOUSTICAL LINER; CEILING GRILLE; BACKDRAFT DAMPER; ELECTRICAL DISCONNECT. VARIABLE SPEED CONTROLLER; INTERLOCK WITH LIGHTS

OUTDOOR AIR REQUIREMENTS (2018 NC MECH CODE)

SPACE TYPE	AREA (Az)	PEOPLE-RELATED OA			AREA-RELATED OA		MIN BREATHING ZONE OA, Vb (Pz x Rp) + (Az x Ra)
		# OCC (Pz)	CFM/OCC (Rp)	CFM (Pz x Rp)	CFM/SF (Ra)	CFM (Az x Ra)	
DINING	512	20	7.5	150	0.18	92	242
SERVICE COUNTER AND PREP AREA	755	5	7.5	38	0.18	136	174
RESTROOM	58	-	-	-	0.06	3	3
SUB-TOTAL (Vb)							419
ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)							0.8
MINIMUM ZONE OUTDOOR AIR REQUIRED (Voz/Ez)							524
ACTUAL OUTDOOR AIR PROVIDED							660

AIR BALANCE

	OA CFM	EXH CFM
RTU-1,2	660	-
KEH-1	750	1,000
KEH-2	-	400
TOTAL	+1,410	-1,400

FINAL TEST AND BALANCE SHALL PROVIDE FOR SLIGHT OVERALL POSITIVE PRESSURE. RESTROOM EXHAUST FANS ARE CONSIDERED INCIDENTAL (INTERLOCKED WITH LIGHTS) AND ARE IGNORED.

CONTRACTOR FIELD VERIFICATION

THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND MAY NOT REFLECT EXACT FIELD CONDITIONS OR CONSTRAINTS. WHILE REASONABLE EFFORTS HAVE BEEN MADE TO VERIFY THE EXISTING CONDITIONS, THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE EXISTING CONDITIONS SHOWN ON THESE PLANS.

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING THE EXACT LOCATION, MANUFACTURER, MODEL NUMBER, SERIAL NUMBER, AND UTILITY REQUIREMENTS FOR ALL HVAC EQUIPMENT SERVING THIS SPACE. ANY DISCREPANCIES BETWEEN THESE PLANS AND THE ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION PRIOR TO BID. ALL COSTS TO MODIFY THE INSTALLATION TO ACCOMMODATE FIELD CONDITIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID.

LANDLORD SCOPE

THE FOLLOWING ITEMS ARE BY THE LANDLORD. THIS LIST IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL COORDINATE EXACT SCOPE OF LANDLORD WORK WITH FRANCHISEE AND WITH LANDLORD PRIOR TO BID.

- SPACE PROVIDED AS-IS

GENERAL NOTES:

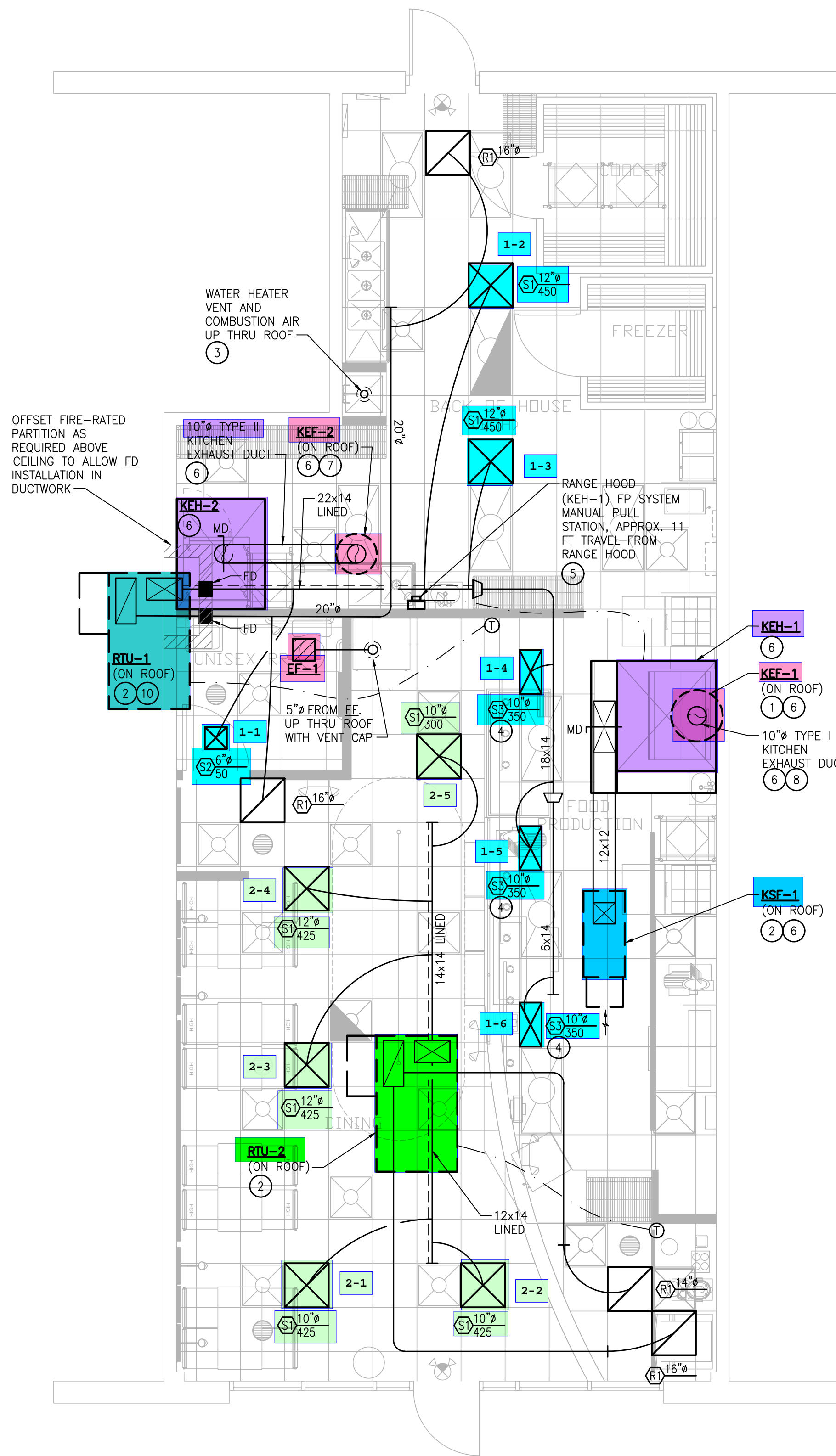
- PROVIDE MINIMUM 10'-0" HORIZONTAL SEPARATION BETWEEN OA INTAKES AND TERMINATIONS OF ALL CONTAMINANT SOURCES (EXHAUST SYSTEMS, PLUMBING VENTS, OR GAS VENTS) WHERE POSSIBLE. CLEARANCE MAY BE REDUCED TO 5'-0" PROVIDED THE OA INTAKE IS NOT LESS THAN 3'-0" BELOW THE CONTAMINANT SOURCE IN ACCORDANCE WITH IMC. FIELD VERIFY LOCATIONS OF EXISTING OA AND EXH/VENT TERMINATIONS, INCLUDING THOSE OF ADJACENT TENANTS, AND ADJUST JERSEY MIKE'S SUBS' INSTALLATION AS REQUIRED TO COMPLY.
- THERMOSTATS IN KITCHEN AREAS SHALL BE MOUNTED MINIMUM 6" ABOVE BACKSPLASH ELEVATION. THERMOSTATS IN DINING ROOM (NOT ADJUSTABLE BY THE PUBLIC) SHALL BE MOUNTED 84" AFF OR AS DIRECTED BY THE OWNER. COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL OTHER THERMOSTATS WITH OWNER.
- PROVIDE FIRE WRAP FOR TYPE I GREASE EXHAUST DUCT, FROM HOOD CONNECTION TO TERMINATION POINT, IF PARTITION BEHIND HOOD IS FRAMED WITH WOOD OR OTHER COMBUSTIBLE CONSTRUCTION - GENERAL CONTRACTOR SHALL FIELD VERIFY.
- THE CONTRACTOR MAY, AT THEIR OPTION, SUBSTITUTE ROUND DUCT FOR RECTANGULAR DUCT AND RECTANGULAR DUCT FOR ROUND DUCT. DUCT SUBSTITUTIONS SHALL PROVIDE EQUIVALENT (SAME OR LOWER) VELOCITY AND PRESSURE DROP. FOR INTERNALLY LINED DUCTWORK THE NET FREE AREA OF THE SUBSTITUTED DUCT SHALL BE EQUIVALENT TO THE NET FREE AREA OF THE DESIGN.
- PROVIDE GUARDS OR FALL ARREST/RESTRAINT ANCHORAGE PER MECHANICAL CODE WHERE REQUIRED.
- PROVIDE STRUCTURAL SUPPORT FOR ALL EQUIPMENT, GUARDS, FALL ARREST/RESTRAINT ANCHORAGE AND ALL OTHER CONNECTIONS TO BUILDING STRUCTURE AS REQUIRED. CONTRACTOR SHALL PROVIDE ALL NECESSARY STRUCTURAL ENGINEERING FOR ANY ADDITIONAL SUPPORTS, FRAMING, AND OTHER STRUCTURAL IMPROVEMENTS REQUIRED BY THE INSTALLATION.

KEYED NOTES:

- KEF-1 DISCHARGE SHALL BE MIN. 40 INCHES ABOVE THE FLAT ROOF SURFACE, MINIMUM 10 FEET HORIZONTALLY FROM OR 3 FEET ABOVE ANY OA INTAKES (INCLUDING THOSE OF ADJACENT TENANTS/BUILDINGS - FIELD VERIFY). MINIMUM 10 FEET HORIZONTALLY FROM VERTICAL WALLS PROJECTING MORE THAN 40 INCHES ABOVE THE ROOF, AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- OA INTAKE SHALL BE MIN 10'-0" FROM KITCHEN HOOD EXHAUST, RESTROOM EXHAUST, GAS VENT (FLUE), OR PLUMBING VENT TERMINATION, INCLUDING THOSE OF ADJACENT TENANTS (CONTRACTOR TO FIELD VERIFY).
- VENT AND COMBUSTION AIR PIPING, TERMINATE WITH CONCENTRIC VENTING KIT - MATERIALS, SIZING AND INSTALLATION SHALL BE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- DIFFUSER SHALL BE ADJUSTABLE, DOUBLE DEFLECTION TYPE AS SCHEDULED-NO EXCEPTIONS. ADJUST REAR BLADES (PARALLEL TO LONG DIMENSION) FOR VERTICAL, DOWNWARD THROW. ADJUST FRONT BLADES (PARALLEL TO SHORT DIMENSION) 2-WAYS, EACH HALF OF BLADES AT 45° FROM VERTICAL. TEST KITCHEN HOOD PERFORMANCE WITH ALL SYSTEMS ON AND AFTER ALL AIR DEVICES ARE ADJUSTED AND BALANCED - ADJUST DIFFUSER THROWS IF REQUIRED TO AVOID INTERFERENCE WITH HOOD'S CAPTURE AND CONTAINMENT PERFORMANCE, AND TO AVOID DISCHARGING AIR DIRECTLY ONTO THERMOSTATS, AND AVOID NUISANCE DRAFTS (OWNERS SATISFACTION).
- MANUAL PULL STATION SHALL BE LOCATED MINIMUM 10FT, MAXIMUM 20FT FROM RANGE HOOD ALONG THE PATH OF EGRESS. INSTALLATION SHALL BE PER IBC. COORDINATE FINAL LOCATION WITH OWNER AND AIA.
- HOOD SYSTEM INSTALLATION AND PERFORMANCE SHALL BE TESTED AND CERTIFIED BY A LICENSED INSTALLER OR AN APPROVED THIRD PARTY AGENCY.
- KEF-2 DISCHARGE SHALL BE MIN. 30 INCHES ABOVE THE FLAT ROOF SURFACE, MINIMUM 10 FEET FROM ANY OA INTAKES OR BUILDING OPENINGS (INCLUDING THOSE OF ADJACENT TENANTS/BUILDINGS - FIELD VERIFY). MINIMUM 30 INCHES HORIZONTALLY FROM VERTICAL WALLS PROJECTING ABOVE THE ROOF, AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- 10"x10" RECTANGULAR DUCT MAY BE USED IN LIEU OF 10" DIAMETER ROUND DUCT.
- PROVIDE SECTORIZING BAFFLE IN NECK OF DIFFUSER TO BLOCK AIRFLOW IN QUADRANT FACING HOOD.
- NEW ROOFTOP UNIT TO REPLACE EXISTING. PROVIDE NEW CURB OR CURB ADAPTER AS REQUIRED.

TESTING, ADJUSTING AND BALANCING

- PROVIDE CERTIFIED TESTING, ADJUSTING, AND BALANCING (TAB) REPORT FOR ALL MECHANICAL CONSTRUCTION SERVING AREAS UNDER THIS SCOPE OF WORK. TAB SHALL BE PERFORMED BY NEBB OR AABC CERTIFIED AGENT, USING PROCEDURES COMPLYING WITH CERTIFYING AUTHORITY. SUBMIT FINAL REPORT TO ENGINEER FOR REVIEW AND APPROVAL.
- REPORT SHALL INCLUDE NAME, CONTACT INFORMATION, AND PROOF OF CERTIFICATION FOR TAB AGENT.
- FINAL BALANCE ALL QUANTITIES TO WITHIN +/-5% OF DESIGN. ADJUST FAN SPEED TO LOWEST POSSIBLE.
- KITCHEN HOODS SHALL BE BALANCED BY TESTING AGENCY CERTIFIED BY HOOD MANUFACTURER.
- ADJUST THROW PATTERN OF ALL SUPPLY AIR DEVICES WITHIN 10FT OF KITCHEN HOODS AND ALL SUPPLY AIR DEVICES BEHIND SERVICE COUNTER TO AVOID INTERFERENCE WITH HOOD OPERATION AND TO ELIMINATE NUISANCE DRAFTS. PROVIDE BAFFLES IN AIR DEVICE NECK OR BEHIND FACE AS REQUIRED FOR DIFFUSERS WITHOUT ADJUSTABLE LOUVERS. FINAL SETTINGS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE.
- AT A MINIMUM, THE FOLLOWING SHALL BE CERTIFIED IN THE REPORT (DESIGN QUANTITIES AND FINAL, BALANCED QUANTITIES):
 - MANUFACTURER, MODEL #, AND SERIAL # OF ALL EXISTING AND NEW EQUIPMENT.
 - ELECTRICAL CHARACTERISTICS OF ALL EXISTING AND NEW EQUIPMENT.
 - AIR CONDITIONING SYSTEM PERFORMANCE: UNIT SUPPLY AIR FLOW, UNIT OUTSIDE AIR FLOW, FAN INLET AND DISCHARGE PRESSURES, UNIT INLET AND DISCHARGE PRESSURES, FAN SPEED AND AMP DRAW, COOLING AND HEATING COIL ENTERING AND LEAVING TEMPERATURES (DRY BULB AND WET BULB), OUTSIDE AIR TEMPERATURE (DRY BULB AND WET BULB).
 - KITCHEN EXHAUST SYSTEM PERFORMANCE: EXHAUST AIRFLOW, FAN INLET AND DISCHARGE PRESSURE, FAN SPEED AND AMP DRAW.
 - KITCHEN MAKE-UP AIR SYSTEM PERFORMANCE: AIRFLOW, FAN INLET AND DISCHARGE PRESSURE, HEAT EXCHANGER INLET AND DISCHARGE TEMPERATURES.
 - AIR DISTRIBUTION: AIRFLOWS AT EACH AIR DEVICE, CONFIRMATION OF DIRECTIONAL ADJUSTMENT OF SUPPLY DIFFUSER PATTERN CONTROLLERS WHERE NOTED ON PLANS.
 - DESCRIPTION OF ANY PROBLEMS NOTED DURING BALANCING.



1 HVAC FLOOR PLAN
H1.1 SCALE: 1/4"=1'-0"

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O2/18/25
ARCHITECT/ENGINEER STAMP

REV. NO.	DATE	DESCRIPTION

PROJECT NO. JMMO-211
DRAWN BY: TD
CHECKED BY: RM
ISSUE DATE:
HVAC FLOOR PLAN

H1.1