

GENERAL NEW NOTES:

- PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- WHERE SHUTDOWN OF EXISTING SYSTEMS IS REQUIRED DURING NEW WORK, COORDINATE SHUTDOWN TIME AND DURATION WITH THE OWNER TO MINIMIZE DOWNTIME. NOTIFY OWNER SEVEN (7) DAYS PRIOR TO INTERRUPTION OF SERVICE.
- DURING INSTALLATION OF NEW WORK, AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN. REPAIR DAMAGE CAUSED DURING CONSTRUCTION AT NO EXTRA COST TO THE OWNER.
- ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.
- NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
- REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.
- COORDINATE LOCATION OF ROOF MOUNTED HVAC EQUIPMENT WITH THE ARCHITECTURAL DRAWINGS.
- INDOOR AIR QUALITY MEASURES: PROTECT INSIDE OF (INSTALLED AND DELIVERED) DUCTWORK AND HVAC UNIT FROM EXPOSURE TO DUST, DIRT, PAINT AND MOISTURE. REPLACE INSULATION THAT HAS GOTTEN WET AT ANY TIME DURING CONSTRUCTION, DRYING THE INSULATION IS NOT ACCEPTABLE. SEAL ANY TEARS OR JOINTS OF INTERNAL FIBERGLASS INSULATION. REMOVE DEBRIS FROM CEILING/RETURN AIR PLENUM INCLUDING DUST. AN INDEPENDENT, PROFESSIONAL DUCT CLEANING COMPANY SHALL VACUUM CLEAN ANY DUCTWORK CONNECTED TO HVAC UNITS THAT WERE OPERATED DURING THE CONSTRUCTION PERIOD AFTER NEW FILTERS ARE INSTALLED AND PRIOR TO TURNING SYSTEM OVER TO THE OWNER.
- INSTALL DUCTWORK PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
- OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF EXCEPT WHERE CONCRETE INSERTS IN CONCRETE SLABS ARE ALLOWED BY THE SPECIFICATIONS.
- COORDINATE LOCATION OF EQUIPMENT SUPPORTS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.
- SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.
- COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL AND DUCT INSTALLATION REQUIREMENTS.
- ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
- LOCATE AND SET THERMOSTATS AT LOCATIONS SHOWN ON PLANS. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. INSTALL DEVICES WITH TOP OF DEVICE AT MAXIMUM 48" AFF TO MEET ADA REQUIREMENTS UNLESS NOTED OTHERWISE ON PLANS. INSTALL WIRING IN CONDUIT PROVIDED BY DIVISION 16.
- COORDINATE THE LOCATION AND ELEVATION OF WALL-MOUNTED DEVICES WITH PRESENTATION BOARDS, DISPLAY CABINETS, SHELVES OR OTHER COMPONENTS SHOWN ON THE ARCHITECTURAL DRAWINGS THAT ARE TO BE INSTALLED UNDER OTHER DIVISIONS. CONTRACTOR WILL NOT BE REIMBURSED FOR RELOCATION OF WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION.
- PROVIDE A MANUAL BALANCING DAMPER IN EACH BRANCH DUCT TAKEOFF FROM MAIN SUPPLY, RETURN, OUTDOOR AND EXHAUST AIR DUCTS.
- PROVIDE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS AND GRILLES.
- RIGID DUCTWORK INSULATION: PROVIDE 3/4 LB DENSITY, 2" (R-5) THICK, INSULATION WRAP ON RIGID ROUND, CONCEALED, SUPPLY AND RETURN AIR DUCTS. PROVIDE 1-1/2" (R-5) THICK 1-1/2 LB DENSITY INTERNAL DUCT LINER ON RECTANGULAR SUPPLY AND RETURN AIR DUCTS. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE AIRFLOW DIMENSIONS, INCREASE SHEET METAL SIZES ACCORDINGLY.
- PROVIDE THERMAFLEX TYPE M-KE, FLEXMASTER TYPE B, OR APPROVED EQUAL FLEXIBLE DUCTWORK. FLEXIBLE DUCTWORK SHALL BE LISTED UNDER UL 181 AS CLASS 1 AIR DUCT AND BE PROVIDED WITH INTEGRAL R-5, 3/4 LB DENSITY FIBERGLASS INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORTED TO AVOID SHARP BENDS AND SAGGING.
- PROVIDE A NEW SET OF AIR FILTERS IN UNITS PRIOR TO TESTING, ADJUSTING AND BALANCING, AND BEFORE TURNING SYSTEM(S) OVER TO OWNER.
- ALL CEILING GRILLES AND DIFFUSERS TO MATCH CEILING TILES.
- GC TO PROVIDE A CERTIFIED TEST AND BALANCE REPORT TO THE ARCHITECT, WWF1, AND OWNER PRIOR TO COMPLETION.

MECHANICAL PLAN NOTES:

- EXISTING TO REMAIN 75-TON ROOF TOP UNIT, WITH EXISTING SUPPLY AND RETURN AIR DUCT DROPS. ROUTE NEW SUPPLY AND RETURN AIR DUCTWORK ABOVE CEILING AS INDICATED ON MECHANICAL FLOOR PLAN. MECHANICAL CONTRACTOR TO INSTALL NEW OUTSIDE AIR INTAKE ON ROOF TOP UNIT AND BALANCE TO THE AIRFLOW INDICATED ON PLAN. VERIFY EXISTING DUCT SMOKE DETECTOR ON THE RETURN AIR DUCT OR INSTALL NEW PER SPECIFICATIONS.
- NEW 4-TON ROOF TOP UNIT TO REPLACE EXISTING ROOF TOP UNIT. PROVIDE NEW ROOF CURB. ROUTE NEW SUPPLY AND RETURN AIR DUCT DROPS FROM ROOF TOP UNIT DOWN THROUGH ROOF AND TRANSITION NEW SUPPLY AND RETURN AIR DUCTWORK ABOVE CEILING AS INDICATED ON MECHANICAL FLOOR PLAN. MECHANICAL CONTRACTOR TO INSTALL NEW DUCT SMOKE DETECTOR IN THE RETURN DUCT AND ELECTRICAL CONTRACTOR SHALL PROVIDE DUCT SMOKE DETECTOR. SMOKE DETECTOR TO SHUT DOWN UNIT SUPPLY FAN UPON THE DETECTION OF SMOKE.
- EXISTING TO REMAIN RESTROOM EXHAUST FAN.
- EXHAUST PLENUM SERVING OVEN; EXHAUST PLENUM BY CAPTIVE-AIRE PLENUM CONSTRUCTION SHALL BE STAINLESS STEEL AND NOT LESS THAN 24 GA THICKNESS. REFER TO EXHAUST PLENUM INFORMATION SCHEDULE, ON SHEET M2, FOR HOOD INFORMATION, SIZE AND MATERIAL TYPE.
- ROOF MOUNTED KITCHEN EXHAUST FAN, KEF-1. COORDINATE LOCATION OF FAN TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM FRESH AIR INTAKES. ROUTE 10" EXHAUST DUCT FROM EXHAUST PLENUM TO EXHAUST FAN, KEF-1. SLOPE HORIZONTAL DUCT RUNS AT 1/4" PER LINEAR FOOT. EXHAUST DUCT SHALL BE CONSTRUCTED OF 24GA GALVANIZED STEEL.

OUTSIDE AIR REQUIREMENTS

AREA PURPOSE	GROSS FLOOR AREA (SQ. FT.)	CODE OUTSIDE AIR REQUIREMENTS				SYSTEM NUMBER	ACTUAL OUTSIDE AIR (CFM PER UNIT)
		CFM PER SQ. FT.	CFM PER PERSON	NO. OF PEOPLE	CFM REQD.		
DINING	770	0.18	139	7.5	36	270	460
SERVICE	320	0.06	19	5.0	3	15	240
PREP	255	0.06	15	5.0	3	15	
TOTAL =						173	700

VENTILATION RATE CALCULATED IN ACCORDANCE WITH 2012 IMC TABLE 403.3
ACTUAL OCCUPANCY RATES USED PER SEATING COUNT.

AIR BALANCE SCHEDULE

EXHAUST EQUIPMENT	AREA/EQUIPMENT SERVED	EXHAUST (CFM)	TOTAL (CFM)
KEF-1	KITCHEN	45	
EF-1	RESTROOM	75	
EF-2	RESTROOM	75	
			600

OUTDOOR AIR EQUIPMENT	AREA/EQUIPMENT SERVED	SUPPLY AIR (CFM)	DESIGN (CFM)	PERCENT A/A
RTU-1	DINING/KITCHEN	300	300	3%
RTU-2	DINING/KITCHEN	400	400	100%
TOTAL AIRFLOW		4,600	700	

PERCENT POSITIVE AIR FLOW 100
PERCENT POSITIVE AIR FLOW 14.3%

GRILLE, REGISTER AND DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING LOCATION	FACE SIZE (IN)	MAX. NC	MAX. PRESS. DROP (IN. W.C.)	NOTES
CD-1	TITUS	TMS	CONE	LAY-IN	24x24	30	0.05	A-E
CD-2	TITUS	TMS	CONE	GYP.	12x12	30	0.05	A-E
RG-1	TITUS	PAR	PERFORATED	LAY-IN	24x24	30	0.05	A-E
RG-2	TITUS	PAR	PERFORATED	GYP.	12x12	25	0.1	A,C,D

- NOTES:
 A. FACE SIZE SHOWN ON DRAWINGS. PROVIDE NECK FOR DUCT CONNECTION.
 B. FAN THROW PATTERN UNLESS OTHERWISE SHOWN ON DRAWINGS.
 C. BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
 D. BAKED ENAMEL FINISH, WHITE TO MATCH CEILING COLOR.
 E. FRAME TYPE TO MATCH CEILING CONSTRUCTION. COORDINATE WITH ARCHITECTURAL RCP.

FAN SCHEDULE

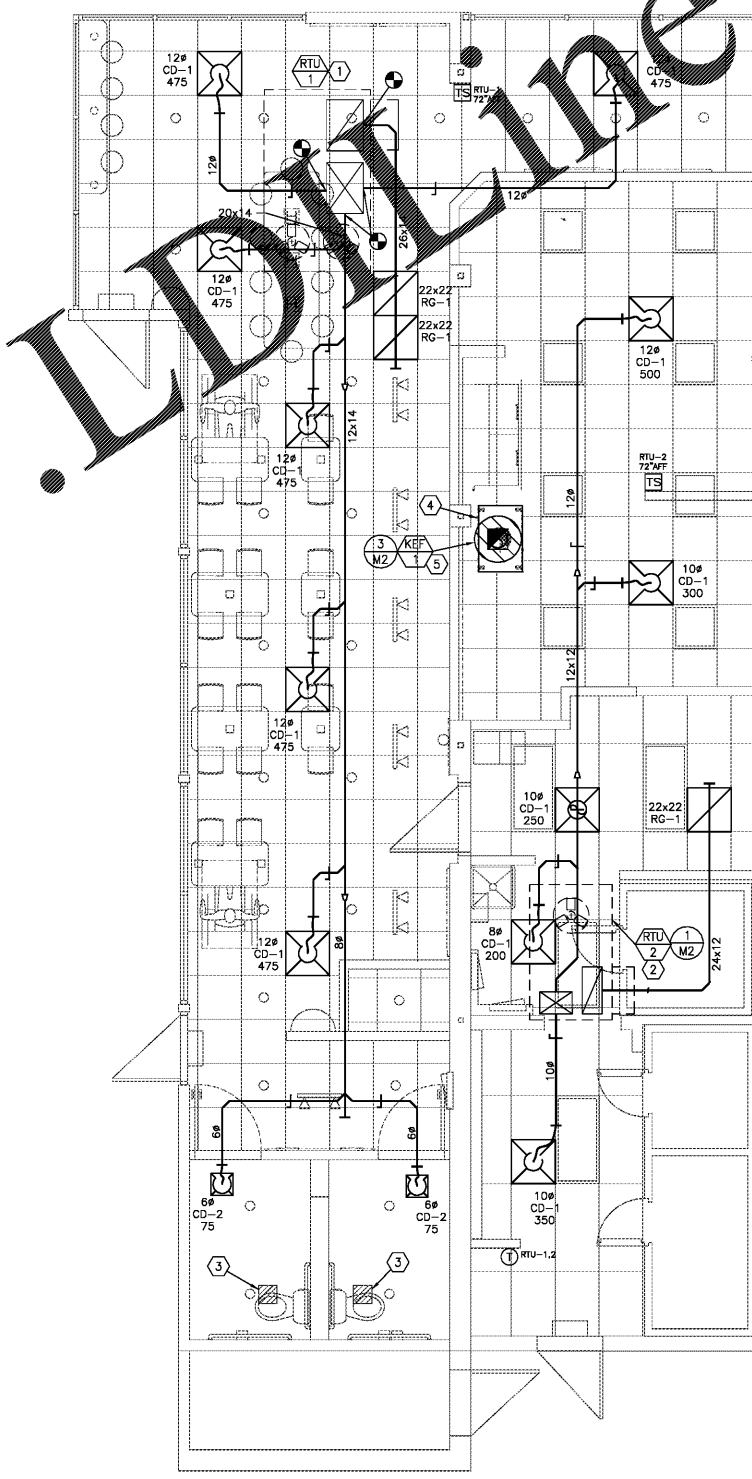
MARK	SERVICE (EA, RA, SA)	MANUFACTURER	MOUNTING	MODEL	CFM	ESP (IN)	DRIVE (BELT/DIRECT)	MIN HP	FAN RPM	ELECTRICAL V/PH FLA	NOTES
KEF-1	EXHAUST	CAPTIVE-AIRE	ROOF	DU30HFA	450	0.5	DIRECT	0.25	1131	120/1 4.0	A, B

- NOTES:
 A. DIVISION 16 CONTRACTOR TO FURNISH DISCONNECT SWITCH.
 B. INTERLOCK FAN OPERATION WITH SPACE TIME CLOCK TO RUN DURING HOURS OF OPERATION.

ROOF TOP UNIT SCHEDULE (NATURAL GAS HEAT)

MARK	MANUFACTURER	MODEL	SUPPLY FAN				COOLING COIL					HEAT EXCHANGER				MIN. O/A CFM	MIN. SEER	MCA	MOCF	V/PH	WEIGHT LBS	NOTES					
			FAN TYPE	CFM	MIN HP	ESP (IN)	REFR. TYPE	TH (MBH)	SH (MBH)	COIL DB	WB DB	LAT (F)	MIN. OUTPUT (MBH)	MIN. EFF. (%)	NOM. INPUT (MBH)								MIN. NO. STAGES	LAT (F)			
RTU-1 (EXISTING)	LENOX	TGA090S2B	FC	3,000	2.00	0.7	R-22	90.0	-	-	-	-	-	-	144	-	180	2	-	460	10.1	EER	42	50	208/3	--	D,F,G,K
RTU-2	CARRIER	48KDA05	FC	1,600	1.50	0.5	R-410A	48.0	37	76.0	64.0	58.0	57.0	59	80	72	1	90	240	14.0	24	30	208/3	700	A-J		

- NOTES:
 A. PROVIDE 100% DRY-BULB ECONOMIZER WITH BAROMETRIC RELIEF.
 B. PROVIDE LOW AMBIENT CONTROL TO 25°F.
 C. EQUIPMENT SIZED FOR 105°F AMBIENT TEMPERATURE.
 D. PROVIDE 2" 30% EFFICIENT PLEATED THROWAWAY AIR FILTERS.
 E. PROVIDE MANUFACTURER'S STANDARD INSULATED ROOF CURB WITH MINIMUM HEIGHT OF 14".
 F. PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT WITH STAGED HEATING AND COOLING CAPABILITY AS REQUIRED FOR OPERATION OF STAGED HEATING, ECONOMIZER AND COOLING CONTROLS.
 G. DIVISION 16 CONTRACTOR SHALL PROVIDE SMOKE DETECTORS IN RETURN AIR DUCTS.
 H. DISCONNECT SWITCH FURNISHED BY DIVISION 16 CONTRACTOR.
 J. PROVIDE HEATER TO MEET OR EXCEED SCHEDULED MINIMUM MBH OUTPUT. NOMINAL INPUT IS BASED ON LISTED MANUFACTURER'S STANDARD PRODUCT. MEET MINIMUM EFFICIENCY SCHEDULED.
 K. COORDINATE EQUIPMENT GAS LOAD WITH PLUMBING CONTRACTOR IF DIFFERENT FROM THAT SCHEDULED.
 L. CONTRACTOR TO ADD 25% MANUAL OUTSIDE AIR DAMPER HOOD TO EXISTING ROOF TOP UNIT.



1 MECHANICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

RUN RUN DESIGN

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PROJECT NAME AND LOCATION :



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1	--	--
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SHEET NAME:
MECHANICAL FLOOR PLAN & SCHEDULES

BID SET

project no: 17-085
 dwg no: M1

Order Plans