LINETYPES LEGEND:

- NEW
- NEW – ON ROOF
- EXISTING
- EXISTING – ON ROOF
- DEMOLITION

DUCTWORK LEGEND:

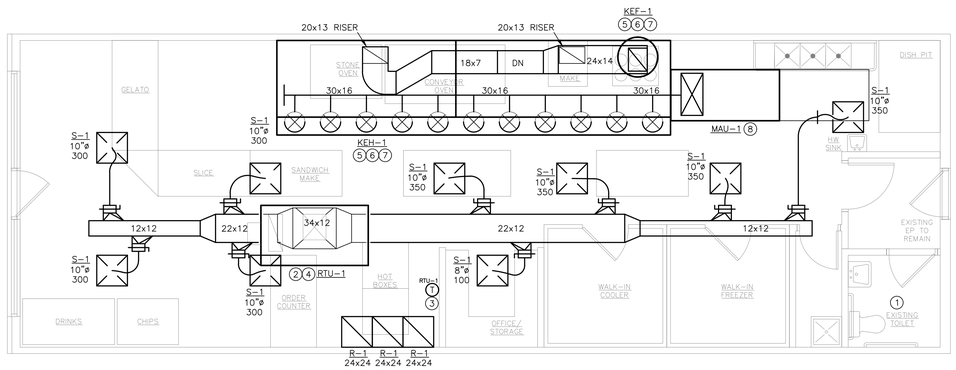
- DUCT (SINGLE LINE)
- DUCT (DOUBLE LINE)
- ROUND O/A OR S/A DOWN
- ROUND O/A OR S/A UP
- ROUND E/A OR R/A DOWN
- ROUND E/A OR R/A UP
- RECTANGULAR O/A OR S/A DOWN
- RECTANGULAR O/A OR S/A UP
- RECTANGULAR E/A OR R/A DOWN
- RECTANGULAR E/A OR R/A UP
- O/A OR S/A DIFFUSER
- E/A OR R/A GRILLE
- AIR DEVICE WITH FLEX DUCT CONNECTION
- AIR DEVICE WITH HARD DUCT CONNECTION
- FLEXIBLE CONNECTION TO EQUIPMENT
- DUCT BREAK/CONTINUATION
- MANUAL BALANCING DAMPER
- MOTOR–OPERATED DAMPER
- BACKDRAFT DAMPER
- FIRE DAMPER
- FIRE/SMOKE DAMPER
- SMOKE DAMPER
- THERMOSTAT

ANNOTATION LEGEND:

- ABC–1 EQUIPMENT / FIXTURE TAG
- PLAN NOTE
- CONNECT TO EXISTING
- AIR FLOW DIRECTION
- S–1 / 8ø / 300 G/R/D TAG, NECK SIZE, AIR FLOW (CFM)

ABBREVIATIONS LEGEND:

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
BAS	BUILDING AUTOMATION SYSTEM
CAV	CONSTANT AIR VOLUME
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CU	CONDENSING UNIT
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DDC	DIRECT DIGITAL CONTROL
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
FCU	FAN COIL UNIT
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FPM	FEET PER MINUTE
FT.WG	FEET WATER GAUGE
GPM	GALLONS PER MINUTE
HC	HEATING CAPACITY
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE (>30 PSIG)
HPS	HIGH PRESSURE STEAM (>30 PSIG)
HUM	HUMIDIFIER
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
IFB	INTEGRAL FACE AND BYPASS
IN.WG	INCHES WATER GAUGE
LAT	LEAVING AIR TEMPERATURE
LPC	LOW PRESSURE CONDENSATE (<15 PSIG)
LPS	LOW PRESSURE STEAM (<15 PSIG)
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1,000 BTUH
MIN	MINIMUM
MPC	MEDIUM PRESSURE CONDENSATE (15<MPC<30 PSIG)
MPS	MEDIUM PRESSURE STEAM (15<MPS<30 PSIG)
NC	NOISE CRITERIA
OA	OUTDOOR AIR
PSC	PUMPED STEAM CONDENSATE
QTY	QUANTITY
RA	RETURN AIR
REA	RELIEF AIR
REFR	REFRIGERANT
RF	RETURN FAN
RG	RETURN GRILLE
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SC	SENSIBLE COOLING CAPACITY
SD	SUPPLY DIFFUSER
STM	STEAM
TC	TOTAL COOLING CAPACITY
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TRA	TO ROOF ABOVE
TSP	TOTAL STATIC PRESSURE
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
WPD	WATER PRESSURE DROP



1 MECHANICAL PLAN
SCALE: 1/4" = 1'–0"

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
12/27/2022

Joe Frogge
Digitally signed by Joe Frogge
DN: C=US, E=joe.frogge@5by5eng.com, O=5BY5 Engineers, OU=Mechanical, CN=Joe Frogge
Date: 2022.12.27 08:29:46 -06'00'

ROOFTOP UNIT SCHEDULE

TAG	MANUF	MODEL	SERIES	TONS	SUPPLY FAN				COOLING						HEATING (GAS)			ELECTRICAL			WEIGHT (LBS)	NOTES
					CFM	OA CFM	HP	ESP (IN)	TYPE	TOT CAP (MBH)	SENS CAP (MBH)	EAT (DB/WB)	LAT (DB/WB)	IEER (MIN)	OUTPUT (MBH)	INPUT (MBH)	STAGES	VOLTAGE	MCA	MOCP		
RTU–1	YORK	ZR090	SUNPRO	7.5	2700	900	3	0.6	R–410A	90	64.8	80/67	59.4/57.2	13.8	144	180	2	208/3	42.4	50	1300	ALL

NOTES:
1. PROVIDE WITH CONTROLLER AND CONTROL DEVICES BY MANUFACTURER. REFER TO SEQUENCES OF OPERATION.
2. PROVIDE WITH WI-FI COMPATIBLE 7-DAY PROGRAMMABLE THERMOSTAT.
3. PROVIDE WITH FIXED DRY BULB TYPE ECONOMIZER ASSEMBLY.
4. PROVIDE NEW CURB AT EXISTING CURB LOCATION. CONTRACTOR OPTION TO PROVIDE MANUFACTERER'S STANDARD CURB ADAPTER TO CONNECT TO EXISTING ROOFTOP UNIT CURB INSTEAD.
5. PROVIDE WITH NON-POWERED WEATHER-PROOF DUPLEX RECEPTACLE.
6. PROVIDE WITH 2" THICK, MINIMUM MERV-8 FILTERS.
7. PROVIDE WITH FACTORY-MOUNTED RETURN AIR SMOKE DETECTOR.
8. PROVIDE WITH CONDENSER COIL GUARDS.
9. UNIT SIZED FOR 100°F AMBIENT CONDENSING TEMPERATURE.
10. PROVIDE WITH MANUFACTURER'S STANDARD DISCONNECT SWITCH.
11. PROVIDE WITH HOT GAS REHEAT COIL FOR DEHUMIDIFICATION CONTROL SEQUENCE.
12. PROVIDE SPACE MOUNTED HUMIDITY SENSOR TO ENABLE DEHUMIDIFICATION.
13. PROVIDE RTU WITH HINGED AND TOOLESS ACCESS WITH SLIDE OUT BLOWER MOTOR ASSEMBLY.

OUTDOOR AIR CALCULATIONS (MECHANICAL VENTILATION)

TAG	OCCUPANCY CLASSIFICATION	AREA (FT^2)	OCCUPANTS (QTY)	R_p (CFM/PERSON)	MIN OCCUPANT O/A FLOW (CFM)	R_A (CFM/FT^2)	MIN AREA O/A FLOW (CFM)	MIN REQ'D O/A FLOW (CFM)	PROVIDED MIN O/A FLOW (CFM)	NOTES
RTU–1	WAITING	368	6	5	30	0.06	23	234	900	ALL
	OFFICE	39	1	5	5	0.06	3			
	KITCHEN	618	13	7.5	97.5	0.12	75			

NOTES:
1. R_p REPRESENTS PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE PER TABLE 403.3.
2. R_A REPRESENTS AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE PER TABLE 403.3.

GRILLES, REGISTERS AND DIFFUSERS

TAG	MANUFACTURER	MODEL	MOUNTING	FACE SIZE	MAX NC	MAX DP	NOTES
S-1	PRICE	SCD	CEILING	24x24	30	0.1	ALL
R-1	PRICE	PDDR	CEILING	24x24	30	0.1	3,4

NOTES:
1. NECK SIZE SHOWN ON PLANS.
2. 4 WAY THROW UNLESS INDICATED OTHERWISE ON PLANS.
3. BAKED ENAMEL FINISH, WHITE TO MATCH CEILING/WALL COLOR. VERIFY WITH ARCHITECT PRIOR TO ORDER.
4. FRAME TYPE TO MATCH CEILING/WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN.

MAKEUP AIR UNIT

TAG	AREA SERVED	MANUFACTURER	MODEL	MOUNTING	AIR FLOW (CFM)	ESP (IN.WG)	MOTOR POWER	DRIVE TYPE	EAT (DEGF)	LAT (DEGF)	GAS INPUT (MBH)	OUTPUT (MBH)	V/PH	MCA	MOCP	NOTES
MAU-1	KITCHEN HOODS	GREENHECK	DGX	ROOF	4000	0.75	3 HP	DIRECT	0	60	250.0	230.0	208/3	13.7	20	ALL

NOTES:
1. PROVIDE WITH MANUFACTURER'S RECOMMENDED ROOF CURB ADAPTER WITH FINAL FILTER CABINET. OUTSIDE AIR INTAKE SHALL BE A MINIMUM OF 36" ABOVE THE FINISHED ROOF.
2. PROVIDE FANS WITH VARIABLE FREQUENCY DRIVES FOR BALANCING PURPOSES ONLY.
3. PROVIDE ELECTRICAL WIRING AS REQUIRED FOR A SINGLE DISCONNECT MEANS.
4. REPLACE FILTERS AT COMPLETION OF WORK.
5. EXTERNAL STATIC PRESSURE (ESP) ACCOUNTS FOR DUCTWORK AND AIR DISTRIBUTION LOSSES, PLUS AN ALLOWANCE FOR DIRTY FILTERS. INTERNAL LOSSES (COIL PRESSURES, CLEAN FILTERS, ETC.) SHALL BE INCLUDED IN THE FAN TOTAL STATIC PRESSURE (TSP).
6. INTERLOCK MAKE-UP AIR UNIT WITH HOOD SYSTEM TO OPERATE WHEN THE HOOD IS IN OPERATION.

MECHANICAL PLAN NOTES:

1. EXISTING BATHROOM TO REMAIN. NO NEW WORK.
2. PROVIDE NEW ROOFTOP UNIT AT EXISTING ROOFTOP UNIT LOCATION. PROVIDE NEW ROOFTOP UNIT CURB AS REQUIRED.
3. PROVIDE NEW THERMOSTAT WHERE INDICATED ON PLAN. PROVIDE NEW CONTROL WIRING AS REQUIRED TO ACCOMMODATE NEW LOCATION. WIRE TO HVAC UNIT CONTROLLER PER INSTALLATION INSTRUCTIONS.
4. EXTEND SUPPLY AND RETURN AIR DROPS FROM RTU'S TO BELOW STRUCTURE. EXTEND SUPPLY DUCT HORIZONTALLY AS SHOWN.
5. ROUTE EXHAUST DUCT FROM HOOD TO ROOF MOUNT UPBLAST EXHAUST FAN (FAN AND HOOD BY OWNER). LOCATE DISCHARGE AT MINIMUM OF 10'–0" FROM ANY BUILDING OPENINGS, OUTDOOR AIR INTAKES OR FIRE SEPARATIONS. SEE KITCHEN HOOD EXHAUST EQUIPMENT DRAWINGS FOR INFORMATION RELATED TO EXHAUST FANS, HOODS, AND THEIR INSTALLATION. KITCHEN EXHAUST SYSTEM DRAWINGS PROVIDED BY OWNER. COORDINATE WITH APPROVED SHOP DRAWINGS.
6. INSTALL KITCHEN EXHAUST HOODS AND DUCTWORK FROM HOOD TO EXHAUST FAN PER MANUFACTURER'S RECOMMENDATIONS. SEE KITCHEN EXHAUST DRAWINGS FOR INFORMATION RELATED TO EXHAUST FAN AND INSTALLATION. KITCHEN EXHAUST SYSTEM DRAWINGS PROVIDED BY OWNER. COORDINATE WITH APPROVED SHOP DRAWINGS.
7. NEW KITCHEN EXHAUST HOOD SYSTEM TO BE PROVIDED BY OWNER. HOOD SHALL BE FULLY COMPLIANT WITH THE 2018 INTERNATIONAL MECHANICAL CODE SECTION 506 AND INCLUDE THE FOLLOWING: EXHAUST HOOD WITH DIMENSIONS THAT EXTEND MINIMUM OF 6" BEYOND THE APPLIANCES IT SERVES, HOOD EXHAUST FAN AND EXHAUST CONNECTION AND HOOD MAKE–UP AIR UNIT AND SUPPLY PLENUM WITH MAKE–UP AIR CONNECTIONS. EXHAUST DUCTWORK SHALL BE BLACK IRON DUCTWORK WITH 2 LAYERS OF FIRE WRAP AS REQUIRED BY SECTION 506 OF THE INTERNATIONAL MECHANICAL CODE.
8. PROVIDE NEW MAKE UP AIR UNIT AS SHOWN FOR MAKE–UP AIR TO EXHAUST HOOD SUPPLY PLENUM. COORDINATE EXACT CONNECTION REQUIREMENTS WITH OWNER PROVIDED HOOD DRAWINGS. COORDINATE WITH STRUCTURAL ENGINEER FOR EXACT LOCATION.

MECHANICAL GENERAL NOTES:

- DRAWINGS ARE SCHEMATIC IN NATURE AND BASED ON PRELIMINARY SITE OBSERVATION AND ORIGINAL DESIGN DRAWINGS (WHEN AVAILABLE). CONTRACTOR SHALL INVESTIGATE THE PROJECT SITE AND BECOME FULLY AWARE OF ALL FIELD CONDITIONS, CURRENT SYSTEM OPERATION, AS WELL AS COORDINATION REQUIREMENTS. COORDINATE ALL MECHANICAL WORK WITH ARCHITECTURAL DRAWINGS, EXISTING CONDITIONS, AND OTHER TRADES PRIOR TO START OF WORK.
- MECHANICAL WORK SHALL CONFORM TO APPLICABLE CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- COORDINATE WITH ELECTRICAL CONTRACTOR FOR REQUIRED ELECTRICAL POWER WIRING AND ROUGH–IN FOR LOW–VOLTAGE CONTROL WIRING. PROVIDE ALL CONTROL WIRING AND FINAL CONTROL DEVICE (E.G. THERMOSTATS).
- FABRICATE AND INSTALL DUCTWORK PER SMACNA RECOMMENDATIONS FOR THE PRESSURE CLASSIFICATIONS ENCOUNTERED.
  - LOW PRESSURE SUPPLY AIR: +2.0 IN.WG
  - RETURN AIR: –2.0 IN.WG
  - EXHAUST AIR (UPSTREAM OF FAN): –2.0 IN.WG
  - EXHAUST AIR (DOWNSTREAM OF FAN): +1.0 IN.WG
- PROVIDE MITERED ELBOWS AT CHANGES IN DIRECTION IN RECTANGULAR DUCTWORK. PROVIDE TURNING VANES IN ALL ELBOWS WHERE AIRFLOW CHANGES DIRECTION AT ANGLES 45° AND GREATER, EXCEPT FOR RETURN AIR TRANSFER DUCTS.
- PROVIDE DUCT WRAP INSULATION FOR ALL ROUND AND RECTANGULAR SUPPLY AIR DUCTWORK. DUCT WRAP INSULATION SHALL BE 2" THICK, MINIMUM R–6.0 FIBERGLASS DUCT WRAP WITH VAPOR BARRIER.
- CONTRACTOR OPTION: PROVIDE INTERNAL LINER INSULATION FOR SUPPLY AIR DUCTWORK. INTERNAL LINER INSULATION SHALL BE 1" THICK, 2 LB/FT^3 ACOUSTICAL DUCT LINER INSULATION WITH MINIMUM R–6.0. DUCT LINER IS NOT ALLOWED FOR HOSPITAL USE.
- PROVIDE INTERNAL LINER INSULATION FOR ALL RECTANGULAR RETURN AIR TRANSFER DUCTWORK. INTERNAL LINER INSULATION SHALL BE 1" THICK, 2 LB/FT^3 ACOUSTICAL DUCT LINER INSULATION.
- DUCT DIMENSIONS SHOWN ON THE PLANS INDICATE THE FREE AREA DIMENSIONS. INCREASE SHEET METAL DIMENSIONS AS REQUIRED TO MEET FREE AREA DIMENSIONS WITH LINER INSTALLED.
- FLEXIBLE DUCTWORK SHALL HAVE 2" THICK, MINIMUM R–6.0 INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'–0" IN LENGTH FOR SUPPLY AIR APPLICATIONS AND 3'–0" IN LENGTH FOR RETURN AIR AND EXHAUST AIR APPLICATIONS.
- PROVIDE BALANCING DAMPERS IN DUCT TAKE–OFFS TO AIR DEVICES IN LAY–IN CEILINGS, IN THE NECKS OF AIR DEVICES IN GYP BOARD CEILINGS, AND IN THE NECKS OF SIDE WALL AIR DEVICES FOR PROPER AIR BALANCING.
- TOILET ROOM EXHAUST FANS SHALL BE AS SCHEDULED. PROVIDE A MINIMUM OF 75 CFM EXHAUST PER FLUSH FIXTURE.
- COORDINATE ALL REQUIRED ROOF PENETRATIONS WITH ROOFING CONTRACTOR TO AVOID ROOF WARRANTY CONFLICTS.
- VERIFY AVAILABLE SPACE ABOVE ALL CEILINGS PRIOR TO FABRICATION OR INSTALLATION OF ANY DUCTWORK. COORDINATE DUCT INSTALLATION WITH OTHER TRADES.
- ALL DIMENSIONS SHOWN ON PLAN ARE IN INCHES, UNLESS EXPLICITLY LABELED OTHERWISE.
- PROVIDE A COMPLETE TEST AND BALANCE BY A NEBB CERTIFIED TEST AND BALANCE AGENCY.
- PROVIDE ACCESS PANELS AND ADEQUATE CLEARANCE FOR ACCESS TO ALL EQUIPMENT, VALVES, DAMPERS AND DEVICES.
- INSPECT ALL EXISTING MECHANICAL EQUIPMENT TO REMAIN. REPORT ANY DEFICIENCIES TO OWNER PRIOR TO START OF WORK.
- LABEL ALL DUCTWORK, PIPING, MAINTENANCE DEVICES, AND EQUIPMENT WITH MANUFACTURER STANDARD LABELING SYSTEMS. COORDINATE WITH OWNER FOR FINAL EQUIPMENT DESIGNATIONS.

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BROCK CENTLIVRE
NUMBER PE–2014007261
PROFESSIONAL ENGINEER
12/1/22
LICENSE #: PE–2014007261
BROCK CENTLIVRE, LICENSED ENGINEER

A Tenant Finish for:
The Pizzeria
805 NE Lakewood Boulevard
Lee's Summit, MO 64064

Date	1/14/2022
Job Number	22-001
Drawn By	
Checked By	

Revisions

Number	Date	Description
1	07/19/2022	MISC. REV.
2	10/24/2022	HOOD DWGS

M1.0