

Z:\Project Directories\7700-7799\7785-Avrih & Bleh\7785-M2-0-MECHANICAL-DETAILS.dwg-EBS. Plot Date/Time: May 19, 2021 1:34:44pm - By: brandon.olson  
 THESE DRAWINGS AND SPECIFICATIONS ARE NOT AUTHORIZED TO BE USED AS CONTRACT DOCUMENTS. THESE DRAWINGS HAVE BEEN PREPARED TO DEMONSTRATE COMPLIANCE WITH APPLICABLE CODES, AND ARE INTENDED TO PROVIDE THE AUTHORITIES HAVING JURISDICTION WITH INFORMATION TO DETERMINE CODE COMPLIANCE. THE INSTALLING CONTRACTOR IS RESPONSIBLE TO ENSURE THAT MEANS, METHODS, AND MATERIALS USED IN CONSTRUCTION ARE INSTALLED IN ACCORDANCE WITH ANY CONTRACTUAL AGREEMENT THAT MAY EXIST WITH AN OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR, ETC.

DIFFUSER, GRILLE, AND REGISTER SCHEDULE					
CALLOUT	DESCRIPTION	FACE SIZE (IN)	INLET SIZE (IN)	MODEL	NOTES
RG-1	EGGCRATE RETURN GRILLE	24x12	22x10	TITUS 50F	#26 WHITE FINISH.
RG-1W	EGGCRATE RETURN GRILLE	24x12	22x10	TITUS 50F	#26 WHITE FINISH.
SDG-1	ALUMINUM SPIRAL DUCT MOUNTED DOUBLE DEFLECTION SUPPLY GRILLE WITH RADIUS END CAP, 3/4" SPACING WITH FRONT BLADES PARALLEL TO THE LONG DIMENSION.	12x5	10x3	TITUS S300FL	AIR SCOOP DAMPER
SDG-5	ALUMINUM SPIRAL DUCT MOUNTED DOUBLE DEFLECTION SUPPLY GRILLE WITH RADIUS END CAP, 3/4" SPACING WITH FRONT BLADES PARALLEL TO THE LONG DIMENSION.	20x8	18x6	TITUS S300FL	AIR SCOOP DAMPER
SR-2	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	12x8	10x6	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.
SR-5	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	20x12	18x10	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.
SRC-1	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	8x8	6x6	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.
SRC-2	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	12x8	10x6	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.

EXISTING-OUTDOOR SPLIT SYSTEM SCHEDULE														
TAG	AREA SERVED	MANUFACTURER	SERIES	MODEL	CLG-MBH	NOMINAL TONS	MN SEER	HEAT-MBH	MIN HSPF	VOLT/PHASE	MCA	MOCP	REFRIGERANT	NOTE
CU-5	REFER TO DRAWINGS	ARMSTRONG												EXISTING TO REMAIN

EXISTING-INDOOR SPLIT SYSTEM SCHEDULE														
TAG	AREA SERVED	MANUFACTURER	SERIES	MODEL	CFM	ESP	HEAT-KW	HP	VOLT/PHASE	MCA	MOCP	MOUNTING	WEIGHT	
GF-5	REFER TO DRAWINGS	ARMSTRONG												EXISTING TO REMAIN

OUTDOOR SPLIT SYSTEM SCHEDULE														
TAG	AREA SERVED	MANUFACTURER	SERIES	MODEL	CLG-MBH	NOMINAL TONS	MN SEER	HEAT-MBH	MIN HSPF	VOLT/PHASE	MCA	MOCP	REFRIGERANT	NOTE
HP-3	REFER TO DRAWINGS	TEMPSTAR	NH4	36KG	36	3	14	36	8.2	208/1	19.5	30	410A	GRADE 170 1

INDOOR SPLIT SYSTEM SCHEDULE														
TAG	AREA SERVED	MANUFACTURER	SERIES	MODEL	CFM	ESP	HEAT-KW	HP	VOLT/PHASE	MCA	MOCP	MOUNTING	WEIGHT	
AHU-3	REFER TO PLANS	TEMPSTAR	FEMX	3600BL	REFER TO PLANS	0.5	REFER TO HEAT KIT SCHEDULE	1/2	208/1					155

HEAT KIT SCHEDULE										
TAG	AREA SERVED	MANUFACTURER	MODEL	HEAT-KW @ 208V	VOLT/PHASE	MCA CIRCUIT #1	MOCP CIRCUIT #1	MCA CIRCUIT #2	MOCP CIRCUIT #2	NOTES
HK-15	REFER TO DRAWINGS	TEMPSTAR	EHK15AKB	11.3	208/1	53.8	60	22.7	25	1,2,3

1. PLUG-IN WIRING HARNESS
2. FUSE LINK SECONDARY HIGH-TEMPERATURE LIMIT CONTROL
3. ETL LISTED.

FAN SCHEDULE													
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	DRIVE	CFM	ESP	WATTS	RPM	VOLT/PHASE	MOUNTING	WEIGHT	NOTES
E-2	EXHAUST	TOILET	PANASONIC	FV-0510V1	DIRECT	70	0.25	11.5	1070	115/60/1	CEILING	9	1

1. FAN IS TO BE ACTIVATED BY LIGHT SWITCH

NATURAL VENTILATION SCHEDULE					
ROOMNAME	AREA	DOOR OPENABLE AREA [SQ. FT.]	WINDOW OPENABLE AREA [SQ. FT.]	TOTAL OPENABLE AREA	4% OF FLOOR AREA
COMMERCIAL 103	794	45	0	45	32
MECH/STORAGE/203					
MEAT MARKET 102					
SPICE ROOM					

REFER TO MECHANICAL VENTILATION SCHEDULE ON SHEET M2.0

NATURAL VENTILATION CALCULATIONS PER SEC 402 OF 2017 OMC

NATURAL VENTILATION OF THE OCCUPIED SPACE SHALL BE THROUGH WINDOWS, DOORS, OR OTHER OPENINGS TO THE SPACE. THE OPERATING MECHANISM FOR SUCH OPENINGS SHALL BE PROVIDED WITH READY ACCESS SO THAT THE OPENINGS ARE READILY CONTROLLABLE BY THE BUILDING OCCUPANTS.

MECHANICAL EXHAUST SCHEDULE - 2017 OHIO MECHANICAL CODE										
ROOM NUMBER	ROOMNAME	OCCUPANCY CLASSIFICATION	AREA (R2)	EXHAUST AIRFLOW RATE (CFM/R2)	FIXTURES				TOTAL EXHAUST AIRFLOW REQ. (CFM)	TOTAL EXHAUST AIRFLOW ACT. (CFM)
					EXHAUST RATE PER FIXTURE (CFM)	LOWER CONTINUOUS RATE?	HIGHER INTERMITTENT RATE?	QTY OF FIXTURES		
103	RESTROOM	PUBLIC SPACES - TOILET ROOM	-	-	50/70	NO	YES	1	70	70

HEATER SCHEDULE												
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	HEAT-MBH	FUEL	HEAT-KW	VOLT/PHASE	FLA	MOUNTING	WEIGHT	NOTES
H-1	WALL HEATER	REFER TO DRAWINGS	BERKO	FRA4020	6.8	ELECTRIC	2	208/1/60	--	SURFACE	30	1,2,3

1. SURFACE MOUNTED, BERKO FRA SURFACE MOUNTING FRAME, MODEL #FRASIM
2. INTEGRAL THERMOSTAT
3. FACTORY WIRED FOR 4 KW, FIELD CONVERTABLE TO 2 KW

BUILDING AIR BALANCE SUMMARY				
	KEF-1	KMUA	GF-5	TOTAL
OUTSIDE AIR	0	2070	230	2300
EXHAUST AIR	2300	0		2300
				0

DUCT INSULATION SCHEDULE					
EQUIPMENT	AHU/3	AIR DISTRIBUTION TYPE			
		SA	RA	OA	EA
GF-5	R-3.5	-	-	-	N/A
	R-3.5	-	-	R-3.5	N/A

DUCT INSULATION REQUIREMENTS ARE BASED ON TABLE 6.8.2B OF ASHRAE 90.1 2010 ENERGY CODE. PROVIDE DUCTWORK OF SUFFICIENT THICKNESS TO MEET THE INSTALLED R-VALUE REQUIREMENTS LISTED ABOVE.

ITEMS NOT REQUIRED TO BE INSULATED:

- \*FIBROUS-GLASS DUCTS
- \*EXPOSED SPIRAL DUCTS
- \*DUCTS WITH LINER THAT MEETS ASHRAE 90.1
- \*FACTORY-INSULATED FLEXIBLE DUCTS
- \*FACTORY-INSULATED PLENUMS AND CASINGS
- \*FLEX CONNECTORS
- \*VIBRATION-CONTROL DEVICES
- \*FACTORY-INSULATED ACCESS PANELS

Duct Thermal Insulation

- Provide external thermal insulation with an integral vapor barrier facing of sufficient thickness and thermal resistance to meet local energy code requirements (minimum 1-1/2" thick, 75 lb. per cu.ft. Density, with FSK jacket, .002 thick reinforced aluminum foil vapor barrier). Do not insulate exposed ductwork and portions of ductwork that are internally lined as noted on drawings. Ductwork exposed to the weather shall be protected with an approved weatherproof barrier/jacketing. Insulation of all ductwork shall be continuous thru all walls and floors. Thermal insulation and sealers shall comply with NFPA flame spread of 25 or less, and smoke developed index of 50 or less.

Zone EXISTING 5 TON Ventilation												
System Primary Airflow:						Zone Air Distribution Effectiveness:						
$P_{sp}$						$E_z$						
1,920 CFM						0.8						
Average Outdoor Air Fraction:						Primary Air Fraction to Zone:						
$X_s$						$E_p$						
0.15						1						
Occupant Diversity:						Secondary Air Fraction to Zone:						
$D$						$E_s$						
1						1						
Uncorrected Air Intake:						Fraction of Supply Air to Zone from Outside Zone:						
$V_{oa}$						$F_o$						
288 CFM						1						
System Ventilation Efficiency:						Fraction of Supply Air to Zone from Fully Mixed Primary Air:						
$E_v$						$F_p$						
0.755						1						
Outdoor Air Intake:						Fraction of Outdoor Air to Zone from Outside Zone:						
$V_{ot}$						$F_o$						
230 CFM						1						
0.12												

Room Information												
Room	Room Type	People Outdoor Air			Area Outdoor Air			Breathing Zone Outside Airflow (CFM)	Zone Outdoor Airflow (CFM)	Zone Discharge Airflow (CFM)	Discharge Outdoor Air Fraction	Zone Ventilation Efficiency
		Rate (CFM/person)	People $P_z$	Total $R_p P_z$	Rate $R_a$	Area $A_z$	Total $R_a A_z$					
101-RETAIL	Food-Kitchen (cooking)	0	4	0	0	243	0	0	985	0	0	1.12
203-MECH/STORAGE	Warehouses	0	0	0	0.06	662	40	40	50	663	0.0754	1.04
HALLWAY	Public Spaces-Corridors	0	0	0	0.06	234	15	15	19	160	0.119	1
SPICE ROOM	Retail-Sales	7.5	2	15	0.12	94.9	12	27	34	114	0.298	0.758

\*VENTILATION CALCULATIONS PER OMC 2017 TABLE 403.3.1.1



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DATE: PERMIT / BID SET  
02.26.21

PERMIT REVISIONS  
05.21.21

MECHANICAL DETAILS

M2.0