AIR BALANCE SCHEDULE

TAG	SUPPLY AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	EXHAUST AIRFLOW (CFM)	SUBTOTAL (CFM)
EF-1	0	0	2550	-2550
EF-2	0	0	150	-150
MAU-1	1300	0	0	1300
RTU-1	3000	2500	0	500
RTU-2	3400	2400	0	1000
			NET PRESSURIZATION	100

VENTILATION CALCULATIONS

Ventilation Calculations Comply with: ASHRAE 62.1

Room Name	Room Area (Az)	Room Type	Zone Air Distribution Effectiveness (Ez)	Number of People (Pz)	CFM/Person (Rp)	CFM/sqft	Breathing Zone OA (Vbz)	Zone Outdoor Airflow (Voz)	System Ventilation Efficiency (Ev)	Required Outdoor Air Intake (Vot)	Outside Air Provided
RTU-1 & MAU-1 - KITCHEN (MULTIPLE ZONE WITH SINGLE RECIRC)											
104 - POS	225	Cafeteria, fast food	0.8	23	7.5	0.18	213	267	0.65	**949**	**1000**
106 - SERVING	81	Cafeteria, fast food	0.8	8	7.5	0.18	75	94			
107 - COOKING	354	Kitchens (cooking)	0.7 CFM/SF EXHAUST								
108 - KITCHEN (FOOD PREP)	350	Cafeteria, fast food	0.8	35	7.5	0.18	326	407			
109 - OFFICE	45	Office spaces	0.8	1	5	0.06	8	10			
Total							**621**	**778**			
RTU-2 - DINING (SINGLE ZONE)											
101 - DINING/ORDERING	714	Dining rooms	0.8	42	7.5	0.18	457	571	N/A	**577**	**500**
102 - UTENSIL	74	Dining rooms									
103 - PASSAGE	68	Corridors	0.8	0	0	0.06	4	6			
Total							**461**	**577**			

HVAC MATERIAL SCHEDULE

TYPE	APPLICATION	ALLOWABLE MATERIAL
DUCT	CONCEALED, GENERAL EXHAUST	RECTANGULAR OR ROUND AS SHOWN
DUCT	CONCEALED, RETURN	RECTANGULAR OR ROUND AS SHOWN, LINED OR INSULATED
DUCT	CONCEALED, SUPPLY	RECTANGULAR OR ROUND AS SHOWN, LINED OR INSULATED
DUCT	CONCEALED, TYPE I HOOD EXHAUST	RECTANGULAR 16 GA. BLACK IRON WITH WRAP OR UL 1978 FACTORY-MANUFACTURED DUCT WITH WRAP (SUBMIT SHOP DRAWINGS FOR FACTORY-MANUFACTURED DUCT PRIOR TO ORDERING FOR APPROVAL)
DUCT	EXPOSED GENERAL EXHAUST	RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC
DUCT	EXPOSED RETURN	RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC
DUCT	EXPOSED SUPPLY	RECTANGULAR LINED OR ROUND AS SHOWN, NO EXPOSED DUCT-SEALING MASTIC

AIR DEVICE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	MATERIAL	FINISH	MOUNTING	FACE SIZE	NECK SIZE	OPPOSED BLADE DAMPER	SERVICE	MAXIMUM NOISE CRITERIA (NC)	NOTES
CD-1	PERFORATED CEILING DIFFUSER	NAILOR	4320A TYPE L	ALUMINUM	WHITE	LAY-IN	24" X 24"	SEE PLANS	YES	SUPPLY	35	2, 3, 5
CD-2	PERFORATED CEILING DIFFUSER	NAILOR	4320A TYPE L	ALUMINUM	WHITE	SURFACE	24" X 12"	SEE PLANS	YES	SUPPLY	35	2, 3, 4, 5
CD-3	PERFORATED CEILING DIFFUSER	NAILOR	4320A TYPE S	ALUMINUM	WHITE	SURFACE	20" X 20"	SEE PLANS	YES	SUPPLY	35	2, 3, 5
ER-1	PERFORATED CEILING EXHAUST	NAILOR	4330R TYPE S	ALUMINUM	WHITE	SURFACE	12" X 12"	SEE PLANS	YES	EXHAUST	35	2, 3
RG-1	PERFORATED CEILING RETURN	NAILOR	4330R TYPE L	ALUMINUM	WHITE	LAY-IN	48" X 24"	SEE PLANS	NO	RETURN	35	2, 3
RG-3	PERFORATED CEILING RETURN	NAILOR	4330R TYPE S	ALUMINUM	WHITE	SURFACE	48" X 24"	SEE PLANS	NO	RETURN	35	2, 3
SR-1	ADJUSTABLE TURBO NOZZLE	AIRCONCEPTS	ANR14	ALUMINUM	WHITE	WALL	NECK + 1-2"	SEE PLANS	YES	SUPPLY	35	2, 3
SR-2	DOUBLE DEFLECTION SUPPLY REGISTER	NAILOR	51DH	ALUMINUM	WHITE	WALL	NECK + 2"	SEE PLANS	YES	SUPPLY	35	2, 3, 5

NOTES:
1. SEE ELECTRICAL PLAN FOR CONNECTION INFORMATION.
2. MAXIMUM STATIC PRESSURE DROP OF 0.15"WC UNLESS OTHERWISE NOTED.
3. SEE PLANS FOR SIZES AND QUANTITIES.
4. REMOVE 4-WAY DEFLECTORS.
5. PROVIDE WITH INTEGRAL OBD.

CONDENSING UNIT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	NUMBER OF		REFRIGERANT		WEIGHT	ELECTRICAL				NOTES
				COMPRESSORS	CIRCUITS	TYPE	CHARGE		MOCP	FLA	V/P/H		
CU-1	CONDENSING UNIT - WALK IN COOLER	HARFORD	KPCL99MZOP-3E	1	1	R-404A	10.4 LB	250 LBS	15 A	9 A	208/3/60		1, 2
CU-2	REMOTE CONDENSER - LOW CAPACITY ICE MAKER	HOSHIZAKI	URC-9F	0	1	R-404A	11.46 LB	100 LBS			120/1/60		1, 3
CU-3	REMOTE CONDENSER - SODA MACHINE ICE MAKER	HOSHIZAKI	URC-5F	0	1	R-404A	3.86 LB	100 LBS			120/1/60		1, 3

NOTES:
1. EQUIPMENT SPECIFIED BY OTHERS, SHOWN FOR REFERENCE ONLY.
2. FURNISHED WITH WALK-IN COOLER.
3. FURNISHED WITH ICE MAKER.

EXHAUST FAN SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	SERVICE	LOCATION	FAN DATA			ELECTRICAL DATA						NOTES
						AIRFLOW	E.S.P.	MOUNT	DRIVE	MOTOR POWER	FLA	VOLTAGE	PHASE		
EF-1	UPBLAST UL762 EXHAUST FAN	CAPTIVEAIRE	DU180HFA	KITCHEN HOOD	ROOF	2,550 CFM	1.45"WC	ROOF CURB	DIRECT	2.0 HP	8.3	208	3		1-4
EF-2	DOWNBLAST RESTROOM EXHAUST FAN	CAPTIVEAIRE	DR12HFA	RESTROOMS	ROOF	150 CFM	0.6"WC	ROOF CURB	DIRECT	0.25 HP	2.9	115	1		5-7

NOTES:
1. WEATHERPROOF DISCONNECT.
2. 20" HIGH VENTED ROOF CURB
3. GREASE DRAIN.
4. ENVIROMATIC VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM (VG-1).
5. INTEGRAL DISCONNECT.
6. SPEED CONTROL.
7. 26" CURB WITH BACKDRAFT DAMPER.
8. E.S.P. INCLUDES E.S.P. OF EXHAUST PLENUM LISTED IN KITCHEN HOOD SCHEDULE.

KITCHEN HOOD SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	MAX COOKING TEMP	EXHAUST PLENUM							PERFORATED SUPPLY PLENUMS								# OF LIGHT FIXTURES	WEIGHT	NOTES
					AIRFLOW	E.S.P.	WIDTH	LENGTH	DUCT COLLARS			WIDTH	LENGTH	MAKEUP AIR PLENUM				HVAC PLENUM				
									#	WIDTH	LENGTH			AIRFLOW	DUCT COLLARS			AIRFLOW	DUCT COLLARS			
															#	WIDTH	LENGTH		#	DIAMETER		
HD-1	TYPE 1 CANOPY HOOD WITH PERFORATED MAU AND HVAC SUPPLY PLENUMS	CAPTIVEAIRE	5424 ND-2-ACPSP-F	600 DEG. F.	2,550 CFM	0.97" WC	4'-3"	13'-9"	3	6"	2'-4"	1'-10"	15'-3"	1,300 CFM	3	6"	2'-4"	700 CFM	6	8"	8	1,150 LBS	1-11

NOTES:
1. 18 GAUGE TYPE 430 STAINLESS STEEL CONSTRUCTION.
2. FURNISHED WITH VAPORPROOF INCANDESCENT LIGHT FIXTURES.
3. 16" TALL HE SS FILTERS.
4. INTEGRAL UTILITY CABINET.
5. ANSUL SYSTEM.
6. DUCT COLLAR TEMPERATUER SENSOR.
7. PREWIRE PACKAGE.
8. SPARE FIRE SYSTEM DRY CONTACT.
9. 4-POLE 20A CONTACTOR.
10. DVC-1 KITCHEN FAN CONTROL CENTER TO ENGAGE ASSOCAITED MAKE-UP AIR UNIT AND EXHAUST FAN AND CONTROL LIGHTS.
11. UL LISTED FIRE SUPPRESSION AND GREASE COLLECTION SYSTEM.

SANITIZING EQUIPMENT SCHEDULE

TAG	COUNT	DESCRIPTION	MANUFACTURER	MODEL	FURNISHED BY	INSTALLED BY	REMARKS
SB-1	2	BATHROOM AIR PURIFICATION UNIT	RGF ENVIRONMENTAL GROUP	BRU ASSEMBLY	TUV	GC	SEE ELECTRICAL SHEETS FOR CONNECTION INFORMATION
SH-1	2	HVAC AIR PURIFICATION UNIT	RGF ENVIRONMENTAL GROUP	REME-HALO	TUV	GC	SEE DETAIL 6/M700 FOR INSTALLATION INFORMATION.
SI-1	3	ICE MACHINE TREATMENT SYSTEM	RGF ENVIRONMENTAL GROUP	IMS-B-GA	TUV	GC	SEE PLUMBING DRAWINGS FOR INSTALLATION INFORMATION.

MAKEUP AIR UNIT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	SERVICE	AIRFLOW	E.S.P.	HEATING DATA			ELECTRICAL DATA				WEIGHT	NOTES
							INPUT	OUTPUT	TEMP RISE	MOTOR POWER	FLA	VOLTAGE	PHASE		
MAU-1	DIRECT-FIRED MAKEUP AIR UNIT	CAPTIVEAIRE	A1-D.250-15D	KITCHEN HOOD	1,300 CFM	0.5"WC	90.4 MBH	83.2 MBH	60 DEG. F.	1.0 HP	3.1	208	3	495 LBS	1-7

NOTES:
1. 12.5:1 MAXIMUM TURNDOWN.
2. FURNISHED WITH DISCONNECT.
3. 20" ROOF CURB.
4. SCREENED INTAKE.
5. WASHABLE ALUMINUM FILTERS.
6. DOWN DISCHARGE SUPPLY AIR.
7. INTERLOCKED WITH KITCHEN HOOD.

ROOFTOP UNIT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	NOMINAL CAPACITY	AIRFLOW			COOLING DATA						HEATING DATA			ELECTRICAL DATA					NOTES
					SUPPLY AIR	OUTSIDE AIR	E.S.P.	REFRIGERANT	EAT (°F)	EWBT (°F)	TOTAL CAPACITY (NET)	SENSIBLE CAPACITY (NET)	EER	IEER	FUEL	INPUT	OUTPUT	MOCP	MCA	VOLTAGE	PHASE	
RTU-1	KITCHEN ROOFTOP UNIT	CARRIER	48FCDM08A3M5-6U0C0	7.5 TONS	3,000 CFM	500 CFM	0.61"WC	R-410A	78.2	65.8	91.64 MBH	65.46 MBH	11.2	15	N. GAS	125 MBH	103 MBH	50	40	208	3	1-9
RTU-2	DINING ROOM ROOFTOP UNIT	CARRIER	48FCDM08A3M5-6U0C0	8.5 TONS	3,400 CFM	1000 CFM	0.64"WC	R-410A	79.8	67.2	105.58 MBH	78.95 MBH	11.2	15	N. GAS	180 MBH	148 MBH	50	42	208	3	1-9

NOTES:
1. FURNISHED WITH ENTHALPY ECONOMIZER AND BAROMETRIC RELIEF.
2. SMOKE DETECTOR WITH REMOTE KEYED ANNUNCIATOR/RESET.
3. MOTORIZED OUTSIDE AIR DAMPER.
4. MERV-8 FILTERS.
5. ROOF CURB.
6. HAIL GUARD.
7. TOOL-LESS HINGED ACCESS PANELS.
8. UNIT DISCONNECT.
9. UNIT-MOUNTED CONVENIENCE RECEPTACLE.

VIROGUARD SCHEDULE

TAG	DESCRIPTION	DUCT CONNECTION SIZE	BASIS FOR DESIGN MANUFACTURER	FAN	SERVICE	FURNISHED BY	INSTALLED BY
VG-1	VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM	16" X 16"	ENVIROMATIC	CAPTIVE-AIRE DU180HFA	KITCHEN HOOD EXHAUST FAN	TDC	GC

COM*check* Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	CMGX - Bridgeton, NJ
Location:	Bridgeton, New Jersey
Climate Zone:	4a
Project Type:	Alteration

Construction Site:
16 CENTERON RD.
BRIDGETON, New Jersey 08302

Owner/Agent:

Designer/Contractor:
BOWMAN CONSULTING GROUP LTD.
323 3RD AVE STE #100
LONGMONT, Colorado 80503
303-678-1108

Mechanical Systems List

Quantity System Type & Description

1 RTU-1
Heating: 1 each - Central Furnace, Gas, Capacity = 103 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 80% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 91 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 11.20 EER, Required Efficiency = 11.00 EER
Proposed Part Load Efficiency = 15.00 IEER, Required Part Load Efficiency = 12.70 IEER
Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 1 Supply, Single-Zone VAV, 3000 CFM, 3.0 motor nameplate hp, 1.00 fan energy index , fan exception: Fan array <= 5 total HP or <= 4.1 kW

SYSTEM VERIFICATION REQUIRED.

1 RTU-2
Heating: 1 each - Central Furnace, Gas, Capacity = 148 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 80% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 105 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 11.20 EER, Required Efficiency = 11.00 EER
Proposed Part Load Efficiency = 15.00 IEER, Required Part Load Efficiency = 12.70 IEER
Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 1 Supply, Single-Zone VAV, 3000 CFM, 3.0 motor nameplate hp, 1.00 fan energy index , fan exception: Fan array <= 5 total HP or <= 4.1 kW

SYSTEM VERIFICATION REQUIRED.

1 DWH-1
Gas Instantaneous Water Heater, Capacity: 1 gallons, Input Rating: 199 kBtu/h w/ Circulation Pump
No minimum efficiency requirement applies

SWH COMPLIANCE REQUIRED.

1 DWH-2
Gas Instantaneous Water Heater, Capacity: 1 gallons, Input Rating: 199 kBtu/h w/ Circulation Pump
No minimum efficiency requirement applies

SWH COMPLIANCE REQUIRED.

Consultant:
Bowman
PCD ENGINEERING, INC. A BOWMAN COMPANY
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