GENERAL NOTES:

1. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL SYSTEMS.
2. VERIFY ALL EQUIPMENT VOLTAGES WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
3. PROVIDE DISCONNECT SWITCHES FOR ALL HVAC EQUIPMENT INCLUDING WEATHERPROOF DISCONNECT AS REQUIRED.
4. PROVIDE PHASE LOSS PROTECTION FOR ALL POLY-PHASE MOTOR DEVICES.
5. THE FINAL LOCATION OF AIR DEVICES MUST BE COORDINATED WITH THE REFLECTED CEILING PLAN AND ALL OTHER MECHANICAL, ELECTRICAL, FIRE PROTECTION, ARCHITECTURAL, AND STRUCTURAL SYSTEMS.
6. PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTIONS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
7. ALL CEILING MOUNTED EQUIPMENT MUST BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH COMBINATION SPRING AND NEOPRENE-IN-SHEAR HANGERS AND ROD. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.
8. ALL ROOFTOP HVAC EQUIPMENT SHALL BE INSTALLED SUFFICIENTLY AWAY FROM EDGE OF ROOF SO AS TO ALLOW FOR THE INSTALLATION OF PROPER FLASHING TO ENSURE A WEATHER TIGHT SEAL IN ADDITION, ADEQUATE CLEARANCES SHALL BE PROVIDED FOR CLEANING AND MAINTENANCE REQUIREMENTS. THE FINAL LOCATION OF ALL ROOFTOP UNITS MUST ALSO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS. WHEN MINIMUM REQUIRED DISTANCE CAN NOT BE MAINTAINED, IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE AND INSTALL CODE COMPLIANT SAFETY RAILS.
9. SUPPLY AND RETURN GRILLES FOR WASHDOWN VENTILATION ARE STAINLESS STEEL WITH MOTORIZED DAMPERS AND A DRAIN. SEE THE DETAIL ON M-301.

HVAC KEY NOTES

Number	Text
1	UNIT HEATER LOCATED ABOVE CEILING TO SERVE INTERSTITIAL SPACE
2	PLACE UV LIGHT IN SUPPLY DUCT. SEE M-302 FOR UV LIGHT SPECIFICATIONS

Date	Description	#
05/06/22	ISSUED FOR CLIENT REVIEW	4
01/14/22	REVISION	2

Revisions

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DOB STAMP:

ISSUED FOR
- REVIEW
- PLANNING BOARD
- BUILDING DEPT
- BID
- CONSTRUCTION

SIGNATURE

BRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC GROUND FLOOR PLAN

scale: As indicated

release date: 05/06/22

drawing date: 09/24/2021

drawn by: ZW

approved by: KF

project no.: 2102

drawing no.: M-200.00

DOB BARCODE:

Total

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1 HVAC GROUND FLOOR PLAN
3/32" = 1'-0"

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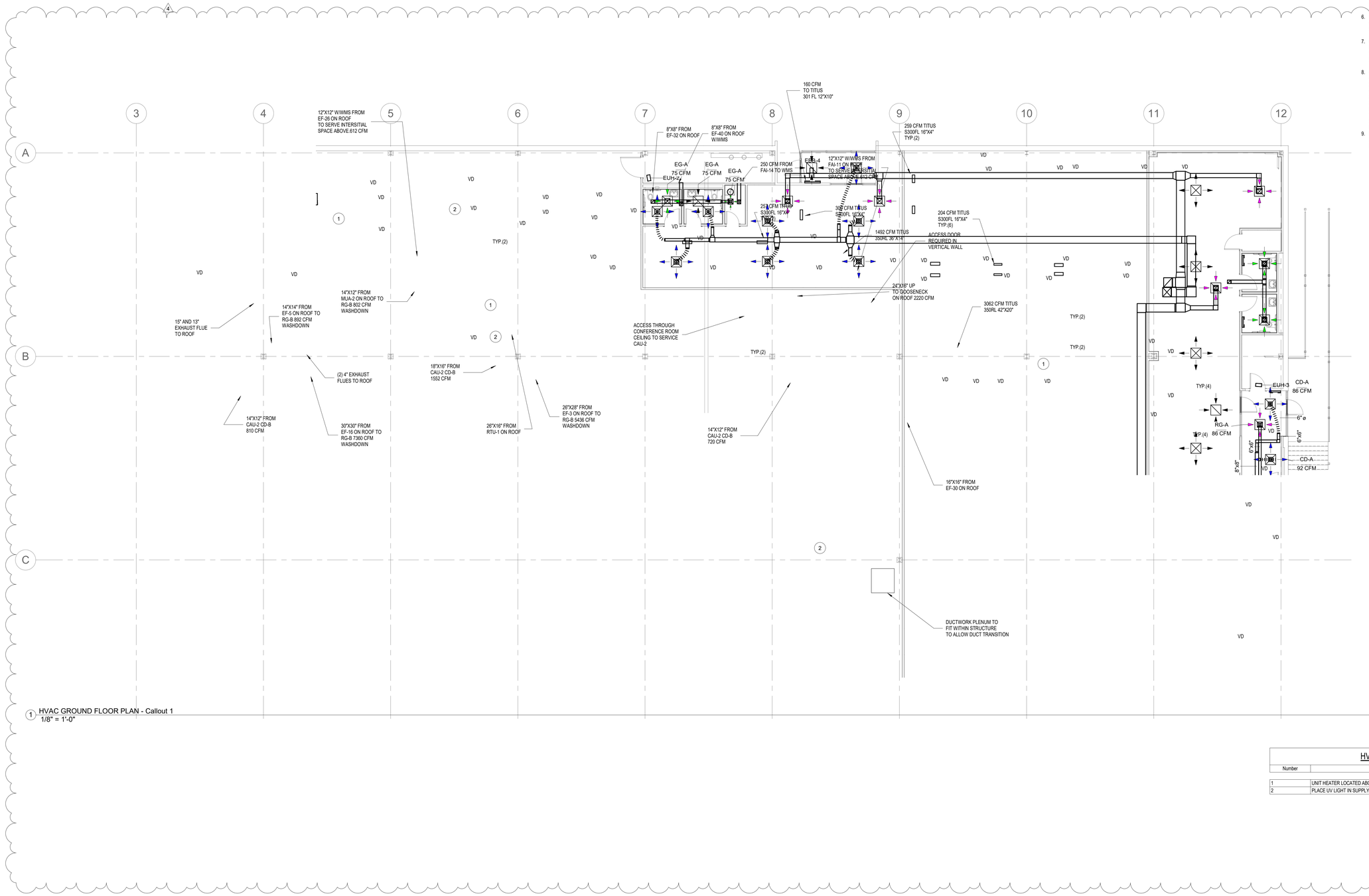

1 HVAC GROUND FLOOR PLAN - Callout 1
1/8" = 1'-0"

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HVAC KEY NOTES

Number	Text
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2	PLACE UV LIGHT IN SUPPLY DUCT. SEE M-302 FOR UV LIGHT SPECIFICATIONS

GENERAL CONDITIONS NOTE:

#	Description	Date
4	ISSUED FOR CLIENT REVIEW	05/06/22

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BRIAN D. TANNENHAUS
LICENSE #GE45801
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name:	HVAC OFFICES
scale:	As indicated
release date:	05/06/22
drawing date:	09/24/2021
drawn by:	ZW
approved by:	KF
project no.:	2102
drawing no.:	M-201.00
DOB BARCODE:	Total

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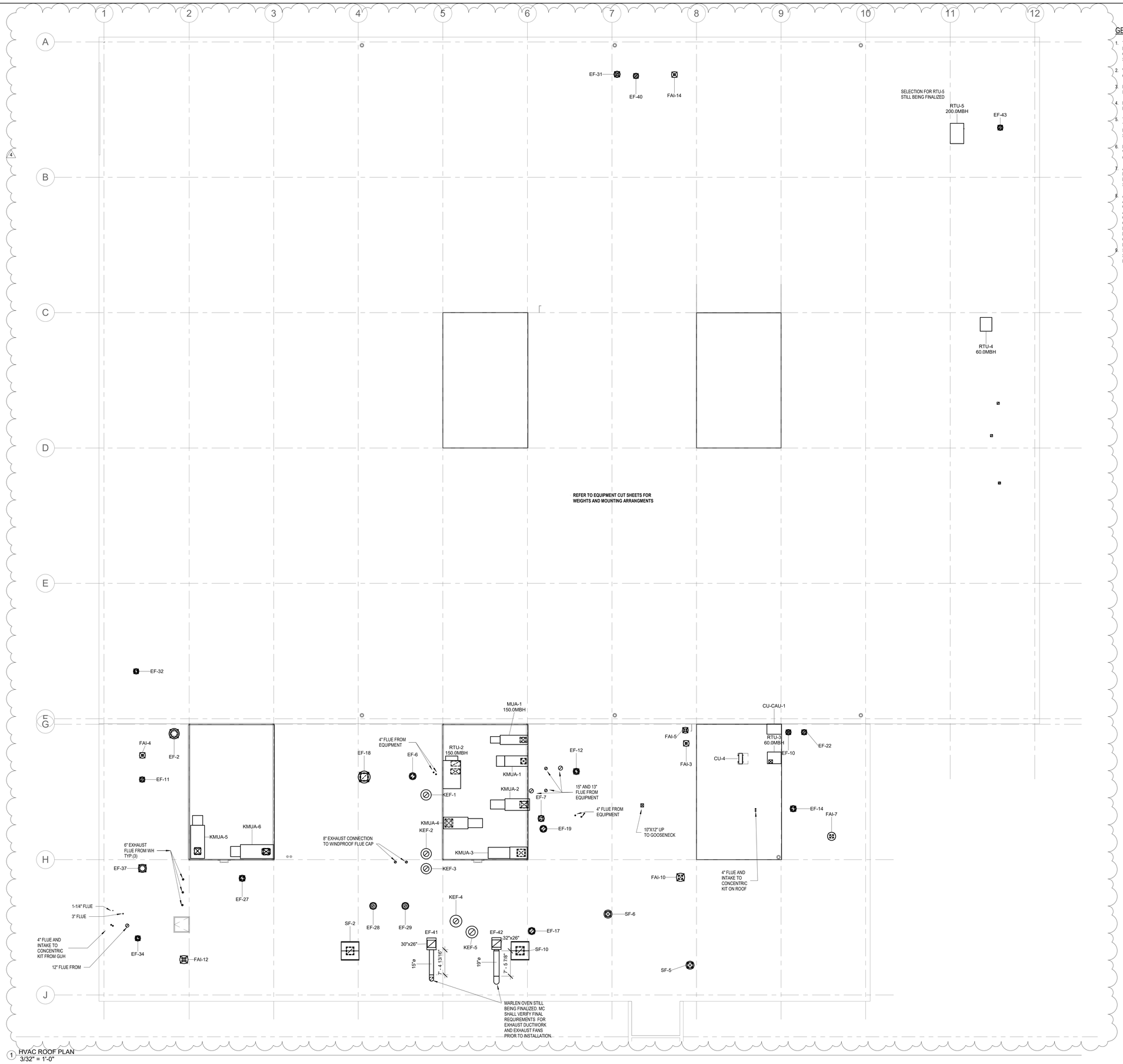

1 HVAC ROOF PLAN
3/32" = 1'-0"

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Date	Description	#
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BRIAN D. TANNENHAUS
LICENSE NO. 45801
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC ROOF PLAN
scale: As indicated
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-202.00
DOB BARCODE:
Total

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HVAC ROOFTOP UNIT SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	FAN SECTION: SUPPLY CFM	FAN SECTION: E.S.P (W.C)	FAN SECTION: OUTDOOR AIR CFM	FAN SECTION: SUPPLY FAN HP/QTY	HEATING SECTION: FUEL	HEATING SECTION: STAGES	HEATING SECTION: INPUT MBH	HEATING SECTION: OUTPUT MBH	HEATING SECTION: REQUIRED GAS PRESSURE ("WC)	COOLING DATA: TOTAL COOLING CAPACITY MBH	COOLING DATA: SENSIBLE COOLING CAPACITY MBH	COOLING DATA: ENTERING AIR TEMPERATURE DB	COOLING DATA: LEAVING AIR TEMPERATURE DB	COOLING DATA: COMPRESSOR QTY	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: MINIMUM CIRCUIT AMP	ELECTRICAL SECTION: MAXIMUM OVERCURRENT PROTECTION	ELECTRICAL SECTION: MAX FUSE	MISCELLANEOUS SECTION: WEIGHT	MISCELLANEOUS SECTION: REFRIGERANT USED	EFFICIENCY SEER/EER/HSPF/COP/AFUE%	MISCELLANEOUS SECTION: NOTES
RTU-2	HOT KITCHEN	TRANE	YHC120F4RLA**H000C1A000A00	4000 CFM	1	499 CFM	2.75/1	NAT GAS	2	150.0	120.0	4.5"-14"	114.0	94.0	80.00 °F	58.00 °F	1	208	3	48.0	60.0		1608.0 lb	R410A	14.7/12.4	1-10,12-21
RTU-3	101,103,104,105,110,125	TRANE	4YCC4024A1060A	800 CFM	.4	70 CFM	3/1	NAT GAS	1	60.0	48.6	4.5"-14"	23.0				1	208	1	19.1		30.0	432.0 lb	R410A	14/11.3	1-10,12-21
RTU-4	166,190,191,192,193,194,195	TRANE	4YCC4024A1060A	800 CFM	.4	98 CFM	3/1	NAT GAS	1	60.0	48.6	4.5"-14"	23.0				1	208	1	19.1		30.0	432.0 lb	R410A	14/11.3	1-6,8-21
RTU-5	126,128,129, 131,137,138,161,162,164, 170,	TRANE	YHC092F4RHA**H0D0C1B000000000000000000 00	3000 CFM	1	750 CFM	2.75/1	NAT GAS	2	200.0	160.0	4.5"-14"	92.0	69.0	80.00 °F	67.00 °F	1	0	1	0.0	0.0		0.0 lb			

1. SELECTION IS BASED ON PACKAGED ROOFTOP UNIT WITH DX COOLING
2. 30% FILTERS
3. WEATHERPROOF DISCONNECT SWITCH
4. ULTRA HIGH EFFICIENCY BLOWER MOTOR
5. HIGH CAPACITY DX COIL
6. 1" DEFLECTION SPRINGS FOR SUPPLY AIR BLOWER ASSEMBLY
7. MOUNT ON DUNNAGE
8. ALUMINIZED STEEL GAS HEAT EXCHANGER
9. PROVIDE A SMOKE DUCT DETECTOR FAN FOR SHUTDOWN. COORDINATE WITH THE FIRE ALARM CONTRACTOR.
10. COLD START UP KIT
11. PROVIDE A CURB AND POSITIVELY ATTACH THE UNIT TO THE STRUCTURE BELOW. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER. THE CURB AND UNIT SHALL WITHSTAND THE WIND LOAD AS SHOWN IN THE CODE REVIEW SECTION ON THE HVAC COVERSHEET
12. MOTOR/BLOWER VIBRATION ISOLATION
13. AIR FLOW PROVING SWITCH
14. TIMED-FREEZE PROTECTION
15. STEP-DOWN TRANSFORMER
16. RAINHOOD W/ INSECT SCREEN
17. DOWNWARD DISCHARGE
18. UV LIGHTS IN SUPPLY DUCT
19. DISCHARGE SENSOR TIED TO DDC SYSTEM
20. DUAL ENTHALPY ECONOMIZER
21. PROVIDE CONDENSATE PIPING WITH TRAP TO DISCHARGE ONTO SPLASH BACK

HVAC INDOOR AIR HANDLER UNIT SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	SUPPLY CFM'S	OUTDOOR AIR CFM	FAN SECTION: E.S.P (W.C)	FAN SECTION: SUPPLY FAN HP/QTY	TOTAL COOLING CAPACITY(MBH)	HEATING SECTION: FUEL	HEATING SECTION: STAGES	HEATING SECTION: OUTPUT MBH	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: FLA	ELECTRICAL SECTION: MAXIMUM OVERCURRENT PROTECTION	ELECTRICAL SECTION: MINIMUM CIRCUIT AMP	ELECTRICAL SECTION: MAX FUSE	MISCELLANEOUS SECTION: WEIGHT	MISCELLANEOUS SECTION: REFRIGERANT USED	EFFICIENCY SEER/EER/HSPF/COP/AFUE%	MISCELLANEOUS SECTION: NOTES
AHU-4	IT ROOM	TRANE	TPKA0A0241KA70A	775	0 CFM			24.0	ELEC	N/A	0.0	208	1					46.0 lb	R410A	21.4/12.2	1-5

1. TO BE SUPPLIED WITH STANDARD 2" THROWAWAY FILTERS
2. SUPPLY WITH CONDENSATE PUMP, LITTLE GIANT VCMA-15 OR EQUAL PIPED TO NEAREST AVAILABLE DRAIN
3. SUPPLY WITH 7-DAY PROGRAMMABLE THERMOSTAT
4. POWERED BY CONDENSING UNIT
5. PROVIDE LOW AMBIENT WIND BAFFLE WB-PA5

HVAC MAKE-UP AIR UNIT SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	FAN SECTION: SUPPLY CFM	FAN SECTION: SUPPLY FAN BHP/QTY	HEATING SECTION: FUEL	HEATING SECTION: INPUT MBH	HEATING SECTION: OUTPUT MBH	HEATING SECTION: REQUIRED GAS PRESSURE ("WC)	TOTAL COOLING CAPACITY MBH	LEAVING AIR TEMPERATURE	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: FLA	ELECTRICAL SECTION: MINIMUM CIRCUIT AMP	ELECTRICAL SECTION: MAXIMUM OVERCURRENT PROTECTION	ELECTRICAL SECTION: AFC RATING	MISC. SECTION: WEIGHT	MISC. SECTION: NOTES
KMUA-1	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS																
KMUA-2	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS																
KMUA-3	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS																
KMUA-4	SPACE BALANCE	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS																
KMUA-5	MARLEN OVEN	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS																
KMUA-6	MARLEN OVEN	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS																
MUA-1	WASHROOM #1, RAW WASHROOM	TRANE	GRCA15PFGF0	1360 CFM	.63/1	NAT GAS	150.0	120.0	7"-14"			208	3		6.5	15.0		679.0 lb	1-2,7-13

1. WEATHERPROOF DISCONNECT SWITCH
2. ULTRA HIGH EFFICIENCY INVERTER DUTY RATED BLOWER MOTOR
3. 1" DEFLECTION SPRINGS FOR SUPPLY AIR BLOWER ASSEMBLY
4. 14" FULL PERIMETER CURB
5. PROVIDE A CURB AND POSITIVELY ATTACH THE UNIT TO THE STRUCTURE BELOW. THE CURB AND UNIT SHALL WITHSTAND THE WIND LOAD AS SHOWN IN THE CODE REVIEW SECTION ON THE HVAC COVERSHEET.
6. PROVIDE A SMOKE DUCT DETECTOR FOR FAN SHUTDOWN. COORDINATE WITH THE FIRE ALARM CONTRACTOR.
7. MOTOR/BLOWER VIBRATION ISOLATION
8. UV LIGHTS IN SUPPLY DUCT
9. AIR FLOW PROVING SWITCH
10. STEP-DOWN TRANSFORMER
11. RAIN HOOD W/ INSECT SCREEN
12. DOWNWARD DISCHARGE
13. ALUMINIZED STEEL GAS HEAT EXCHANGER

HVAC GAS FIRED UNIT HEATER SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	AIR FLOW	INPUT MBH	OUTPUT MBH	REQUIRED GAS PRESSURE ("WC)	HP	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: FLA	ELECTRICAL SECTION: MAXIMUM OVERCURRENT PROTECTION	CONTROL	EFFICIENCY	MISC. SECTION: WEIGHT	VENT TYPE	MISC. SECTION: NOTES
GUH-1	KITCHEN DRY STORAGE	**REZNOR**	**UDZ-30**	456 CFM	30.0	24.6	**7-11" WC**	0.06	**115**	**1**	**1.9**	**15.0**	**THERMOSTAT**	82	**58.0 lb**	CONCENTRIC	**1-6**
GUH-2	MECHANICAL ROOM	**REZNOR**	**UDZ-30**	456 CFM	30.0	24.6	**7-11" WC**	0.06	**115**	**1**	**1.9**	**15.0**	**THERMOSTAT**	82	**58.0 lb**	CONCENTRIC	**1-6**
GUH-3	DRY STORAGE	**REZNOR**	**UDZ-30**	456 CFM	30.0	24.6	**7-11" WC**	0.06	**115**	**1**	**1.9**	**15.0**	**THERMOSTAT**	82	**58.0 lb**	CONCENTRIC	**1-6**
GUH-5	BOX/PACKAGE STORAGE	**REZNOR**	**UDZ-45**	629 CFM	45.0	37.4	**7-11" WC**	0.06	**115**	**1**	**2.4**	**15.0**	**THERMOSTAT**	82	**63.0 lb**	CONCENTRIC	**1-6**

1. ELECTRONIC IGNITION AND ENCLOSED MOTOR
2. 4-POINT SUSPENSION KIT
3. SINGLE STAGE COMBINATION GAS VALVE AND SEPARATED COMBUSTION
4. PROVIDE WITH CC-2 VERTICAL -OR- CC6 HORIZONTAL CONCENTRIC COMBUSTION AIR INTAKE FLUE VENT KIT
5. PROVIDE WITH DIFFERENTIAL AIR PRESSURE SWITCH TO VERIFY COMBUSTION AIR FLOW, POLISHED ALUMINUM REFLECTORS
6. PROVIDE WITH STEP-DOWN TRANSFORMER FOR 24V CONTROLS
7. FURNISH AND INSTALL CONDENSATE PIPING AND ACID NEUTRALIZER TO NEAREST AVAILABLE DRAIN OR STANDPIPE
8. ATTACH AXIOM NEUTRALIZATION CAPSULE NC-1
9. SUPPLY WITH CONDENSATE PUMP, LITTLE GIANT VCMA-15 OR EQUAL PIPED TO NEAREST DRAIN OR STANDPIPE

HVAC EXHAUST FAN SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	AIR FLOW	E.S.P (W.C)	RPM	DRIVE	HP	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: AMPS	ELECTRICAL SECTION: CONTROL	MISCELLANEOUS SECTION: WEIGHT	MISCELLANEOUS SECTION: NOTES
EF-2	WASHDOWN ASSEMBLY SCALING	GREENHECK	CUE-200-B	6159 CFM	.1	707	DIRECT	2.00	208	3		WASHDOWN SWITCH, INTERLOCK W/ SF-2	236.0 lb	1-6
EF-6	WASHROOM #1 EXHAUST	GREENHECK	CUE-120-A	975 CFM	.1	301	DIRECT	1.00	208	3	1.1	PRESSURE SENSOR, INTERLOCK W/MUA-1	100.0 lb	1-6
EF-7	RAW WASHROOM EXHAUST	GREENHECK	CUE-090-G	385 CFM	.2	1300	DIRECT	0.04	115	1		PRESSURE SENSOR, INTERLOCK W/MUA-1	66.0 lb	1-6
EF-10	CHEMICAL STORAGE 1 EXHAUST	GREENHECK	CUE-060-G	104 CFM	.1	1300	DIRECT	0.01	115	1		TIMECLOCK	55.0 lb	1-6
EF-11	CHEMICAL STORAGE 2 EXHAUST	GREENHECK	CUE-060-VG	185 CFM	.1	1725	DIRECT	0.07	115	1	1.3	TIMECLOCK	56.0 lb	1-6
EF-12	VENTILATION CLEAN STORAGE	GREENHECK	CUE-080-VG	500 CFM	.1	1725	DIRECT	0.10	115	1	1.4	TSTAT, INTERLOCK W/ FAI-5	70.0 lb	1-6
EF-14	VENTILATION KITCHEN DRY STORAGE	GREENHECK	CUE-090-D	770 CFM	.1	1550	DIRECT	0.07	115	1		TSTAT, INTERLOCK W/ FAI-7	66.0 lb	1-6
EF-17	WASHDOWN CHICKEN PREP	GREENHECK	CUE-200-VG	2304 CFM	.1	432	DIRECT	1.00	208	3	3.6	WASHDOWN SWITCH, INTERLOCK W/ SF-5	112.0 lb	1-6
EF-18	WASHDOWN HOT KITCHEN	GREENHECK	CUE-240-VG	7377 CFM	.1	837	DIRECT	2.00	208	3		WASHDOWN SWITCH, INTERLOCK W/ SF-10	252.0 lb	1-6
EF-19	WASHDOWN KITCHEN PREP	GREENHECK	CUE-200-VG	1586 CFM	.1	368	DIRECT	1.00	208	3	3.6	WASHDOWN SWITCH, INTERLOCK W/ SF-6	100.0 lb	1-6
EF-22	BATHROOMS 103,104,105	GREENHECK	CUE-060-VG	200 CFM	.1	1725	DIRECT	0.07	115	1	1.3	TIMECLOCK	56.0 lb	1-5
EF-27	INTERSTITIAL BOTTOM ZONE	GREENHECK	CUE-095-VG	1054 CFM	.1	1725	DIRECT	0.17	115	1	2.2	TSTAT, INTERLOCK W/ FAI-10	72.0 lb	1-6
EF-28	DOUBLE RACK OVEN	GREENHECK	CUE-100-A	1000 CFM	.1	1725	DIRECT	0.25	115	1	5.8	INTERLOCK W/ OVEN	89.0 lb	1-6
EF-29	DOUBLE RACK OVEN	GREENHECK	CUE-100-A	1000 CFM	.1	1725	DIRECT	0.25	115	1	5.8	INTERLOCK W/ OVEN	89.0 lb	1-6
EF-31	BATHROOMS 185,184,183	GREENHECK	CUE-070-G	225 CFM	.1	1300	DIRECT	0.02	115	1		TIMECLOCK	56.0 lb	1-5
EF-32	GARBAGE EXHAUST	GREENHECK	CUE-070-D	300 CFM	.1	1550	DIRECT	0.03	115	1	0.0	TIMECLOCK	56.0 lb	1-5
EF-34	ELEC ROOM A	GREENHECK	CUE-070-VG	400 CFM	.1	1725	DIRECT	0.06	115	1		TIMECLOCK	33.0 lb	1-5
EF-37	AIR COMPRESSOR	GREENHECK	CUE-200-VG	4800 CFM	.1	888	DIRECT	1.00	208	3	3.6	INTERLOCK W/ AC AND TSTAT	145.0 lb	1-5
EF-40	SPRINKLER ROOM	GREENHECK	CUE-070-G	250 CFM	.1	1300	DIRECT	0.03	115	1		TSTAT, INTERLOCK W/ FAI-14	33.0 lb	1-5
EF-41	HOT KITCHEN	MARLEN	MARLEN PART# 402153800-SS	3800 CFM	1.5	2428	DIRECT	2.15	460	3	0.0	INTERLOCK WITH MARLEN OVEN	322.0 lb	1-4
EF-42	HOT KITCHEN	MARLEN	MARLEN PART# 402153800-SS	6700 CFM	1	1965	DIRECT	3.59	460	3	0.0	INTERLOCK WITH MARLEN OVEN	464.0 lb	1-4
EF-43	BATTERY CHARGER 2	GREENHECK	CUE-060-D	150 CFM	.1	1550	DIRECT	0.03	115	1	1.3	TIMECLOCK	33.0 lb	1-5
KEF-1	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS									INTERLOCK WITH GRILL		
KEF-2	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS									INTERLOCK WITH GRILL		
KEF-3	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS									INTERLOCK WITH GRILL		
KEF-4	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS											
KEF-5	HOODS	CAPTIVE AIRE	SEE CAPTIVE AIRE DETAILS											

1. WEATHERPROOF DISCONNECT SWITCH
2. ROOF CURB
3. BACKDRAFT DAMPER
4. PROVIDE VFD FOR CONTROL
5. PROVIDE A CURB AND POSITIVELY ATTACH THE UNIT TO THE STRUCTURE BELOW. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER. THE CURB AND UNIT SHALL WITHSTAND THE WIND LOAD AS SHOWN IN THE CODE REVIEW SECTION ON THE HVAC COVERSHEET.
6. PROVIDE WITH MOTORIZED DAMPER WITH ACTUATOR AND END SWITCH. INTERLOCK ASSOCIATED EXHAUST FAN WITH END SWITCH TO START FAN ONCE DAMPER IS PROVED TO BE FULLY OPEN VIA ENDSWITCH, HVAC TO PROVIDE FUSED CONTROL XFMR IN HOFFMAN BOX FOR MOTORIZED DAMPER TO BE INSTALLED BY EC.
7. EF-41 AND 42 TO BE CONVERTED TO 208V

HVAC DIFFUSER SCHEDULE

TAG	SERVICE	DESCRIPTION	DIFFUSER SIZE	MANUFACTURER	NOTES
CD-A	SUPPLY	ALUMINUM SQUARE PLAQUE DIFFUSER, FIXED DISCHARGE, OPPOSED BLADE DAMPER	24" X 24"	TITUS OMNI-AA	1-6
CD-C	SUPPLY	ALUMINUM SQUARE PLAQUE DIFFUSER, FIXED DISCHARGE, OPPOSED BLADE DAMPER	12"X12"	TITUS OMNI-AA	1-6
EG-A	EXHAUST	PERFORATED FACE DIFFUSER, 3/16" HOLES, OPPOSED BLADE DAMPER	SEE DWG	TITUS PAR-AA	1-6
LO-1	BOILER ROOM			RUSKIN	1-2
LO-2	BOILER ROOM			RUSKIN	1-2
LO-3	AIR COMPRESSOR ROOM			RUSKIN	1-2
LO-4	AIR COMPRESSOR ROOM			RUSKIN	1-2
RG-A	RETURN	ALUMINUM SQUARE PLAQUE DIFFUSER, FIXED DISCHARGE, OPPOSED BLADE DAMPER	24" X 24"	TITUS PAR-AA	1-6
RG-C	RETURN	ALUMINUM SQUARE PLAQUE DIFFUSER, FIXED DISCHARGE, OPPOSED BLADE DAMPER	12"X12"	TITUS PAR-AA	1-6

NOTES:
1. COORDINATE DIFFUSER MOUNTING TYPE WITH CEILING, DUCT OR WALL TYPE
2. COORDINATE DIFFUSER FINISH WITH OWNER OR OWNER'S REPRESENTATIVE
3. ORIENT DIFFUSER TO DIRECT AIRFLOW AT WINDOW OR WALL AND AVOID DISCHARGING DIRECTLY ON OCCUPANTS.
4. MAXIMUM NOISE CRITERION RATING <20
5. MOUNTING FRAME TYPE SHALL BE COORDINATED WITH CEILING CONSTRUCTION TYPE
6. NECK DIAMETER SHALL BE AS SCHEDULED IN TABLE 1

TABLE 1 -ROUND NECK SIZE SCHEDULE
1 TO 150 CFM - 6" DIAMETER
151 TO 275 CFM - 8" DIAMETER
276 TO 380 CFM - 10" DIAMETER
381 TO 500 CFM - 12" DIAMETER
501 TO 700 CFM - 14" DIAMETER
701 TO 900 CFM - 16" DIAMETER

CD-B AND RG-B ARE SHOWN ON M-301 DETAIL SHEET.

HVAC ELECTRIC HEATER SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	ELECTRICAL SECTION: KW	ELECTRICAL SECTION: OUTPUT MBH	ELECTRICAL SECTION: AMPS	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: CONTROL	NOTES
EBB-1	BATHROOM	Q-MARK	2512W	0.4	0.1	3.3	120	1	TSTAT	1
EBB-2	BATHROOM	Q-MARK	2512W	0.4	0.1	3.3	120	1	TSTAT	1
EBB-3	BATHROOM	Q-MARK	2512W	0.4	0.1	3.3	120	1	TSTAT	1
EBB-4	OFFICE ENTRANCE	Q-MARK	2513W	0.75	2.4	6.3	120	1	TSTAT	1
EBB-5	BATHROOM	Q-MARK	2512W	0.4	0.1	3.3	120	1	TSTAT	1
EBB-6	BATHROOM	Q-MARK	2512W	0.4	0.1	3.3	120	1	TSTAT	1
EBB-7	BATHROOM	Q-MARK	2512W	0.4	0.1	3.3	120	1	TSTAT	1
EUH-1	ELECTRICAL ROOM	Q-MARK	MUH05-81	5	17.0	24.0	208	1	TSTAT	1
EUH-2	SPRINKLER ROOM	Q-MARK	MUH03-81	3	10.2	14.5	208	1	TSTAT	1
EUH-3	UTILITY ROOM	Q-MARK	MUH03-81	3	10.2	14.5	208	1	TSTAT	1
EUH-5	CHEMICAL STORAGE	Q-MARK	MUH03-81	3	10.2	14.5	208	1	TSTAT	1
EUH-6	CHEMICAL STORAGE	Q-MARK	MUH03-81	3	10.2	14.5	208	1	TSTAT	1
EUH-13	INTERSTITIAL SPACE	Q-MARK	MUH07-8	7.5	25.6	24.0	208	1	TSTAT	1
EUH-19	INTERSTITIAL SPACE	Q-MARK	MUH07-8	7.5	25.6	24.0	208	1	TSTAT	1
EUH-20	INTERSTITIAL SPACE	Q-MARK	MUH07-8	7.5	25.6	24.0	208	1	TSTAT	1
EUH-21	INTERSTITIAL SPACE	Q-MARK	MUH07-8	7.5	25.6	24.0	208	1	TSTAT	1
EUH-22	INTERSTITIAL SPACE	Q-MARK	MUH07-8	7.5	25.6	24.0	208	1	TSTAT	1
EUH-26	CLEAN STORAGE	Q-MARK	MUH05-81	5	17.0	24.0	208	1	TSTAT	1

1. INTEGRAL TSTAT
2. REMOTE WALL TSTAT

Variable Air Volume Single Duct Terminal Units

Schedule

Unit Tags	Quantity	Unit model	Primary inlet	Airflow: Design cooling airflow cfm	Min cooling airflow cfm	Valve heating airflow cfm	Electric Heating: Coil heating capacity MBh	Electric heater kilowatt	Electric heater voltage	Electric heater stage	Notes
VAV-1	1	VCEF (Electric Heating)	5" (127mm)	253	105	105	3.41	1	120/1	1	1, 2, 3, 4, 5
VAV-2	1	VCEF (Electric Heating)	5" (127mm)	235	105	105	3.41	1	120/1	1	1, 2, 3, 4, 5
VAV-3	1	VCEF (Electric Heating)	8" (203mm)	693	208	208	8.54	2.5	120/1	1	1, 2, 3, 4, 5
VAV-4	1	VCEF (Electric Heating)	16" (406mm)	3062	951	951	44.4	13	480/3	1	1, 2, 3, 4, 5
VAV-5	1	VCEF (Electric Heating)	10" (254mm)	1223	367	367	15.37	4.5	480/3	1	1, 2, 3, 4, 5
VAV-6	1	VCEF (Electric Heating)	10" (254mm)	1313	394	394	15.37	4.5	480/3	1	1, 2, 3, 4, 5
VAV-7	1	VCEF (Electric Heating)	10" (254mm)	1270	381	381	15.37	4.5	480/3	1	1, 2, 3, 4, 5

NOTES:
1 Units to be Trane model, size, and configuration as indicated in schedule and on drawings
2 Provide factory-mounted and pre-programmed, pressure-independent, BACnet DDC controller with airflow measurement and wireless communication receiver
3 Provide with wireless zone temperature sensor
4 Provide with factory-wired discharge air temperature sensor
5 Provide unit-mounted control power transformer, disconnect, and power fuse

HVAC CAU SCHEDULE

HEATCRAFT WORLDWIDE REFRIGERATION
Stone Mountain Operations
Phone: 800-537-7775
E Mail: HRPAHAE@heatcraftrpd.com

QUOTE #
BB071421MDA

DATE: 7/14/2021

to: **GARY LA FATA**
from: DANIEL ALMEIDA
subject: Air Handler Quote
ABCO - Lorenzo Foods Teterboro NJ

We are pleased to quote you on the items described below.

TAG	CAU-1	CAU-2
UNIT SIZE	**HCL03FC**	**HCS14FC**
TOTAL CFM	**1440**	**6660**
ESP	0.75	1.00
TSP	1.56	1.88
MOTOR 460/3/60	1 HP ODP	5 HP ODP
FLA/MCA/MOPD	1.6 / 2.0 / 15	6.2 / 7.8 / 15
DRIVE	120% ADJUSTABLE	120% ADJUSTABLE
ISOLATION	INTERNAL SPRING	INTERNAL SPRING
COOLING COIL	6 ROW / 10 FPI ONE CIRCUIT WITH ASC	6 ROW / 10 FPI ONE CIRCUIT WITH ASC
CIRCUITS	(HOT GAS TEE)	(HOT GAS TEE)
CAPACITY	**50.97 MBH**	**245.57 MBH**
ENTERING AIR TEMP	55.67° / 59.8% RH	55.67° / 59.8% RH
SST / REF	30° / 448A	30° / 448A
REF. PRESSURE DROP	1.63 PSI	1.81 PSI
LEAVING AIR TEMP	32.27° / 96.88% RH	31.57° /96.88% RH
VALVE	FACTORY MOUNTED TXV	FACTORY MOUNTED TXV
CONSTRUCTION	DOUBLE WALL / INSULATED	DOUBLE WALL / INSULATED
ELECTRIC HEATER	SCR ELECTRIC	SCR ELECTRIC
CAPACITY / CFM	3.5 KW - 480CFM	15 KW - 2220CFM
VOLTAGE	460V - 3Φ - 60 Hz	460V - 3Φ - 60 Hz
FLA	4.39	18.83
ENTERING AIR	14°	14°
LEAVING AIR	36.9°	35.2°
FILTER SECTION	FLAT	FLAT
PRE-FILTERS	2" - 35% EFFICIENT	2" - 35% EFFICIENT
ECONOMIZER	WITH DAMPERS (ALL CONTROLS & ACTUATORS BY OTHERS)	WITH DAMPERS (ALL CONTROLS & ACTUATORS BY OTHERS)
UNIT SPLIT SHIP	COIL AND BLOWER SECTION SHIPPED SEPARATE	COIL AND BLOWER SECTION SHIPPED SEPARATE

ALL CONTROLS BY OTHERS; Motor VFD Compatible - VFD & CONTROLLER BY OTHERS
No valves are included; unless called out in unit description or added as an option.

ESTIMATED UNIT WEIGHT LBS **702** **1,750**

CONTRACTOR TO PROVIDE CAU-1,2 VFD AND INDICATED MOTORIZED DAMPERS. INTERGRATE INTO BMS SYSTEM.

DOUBLE WALL CONSTRUCTION - Insulation is 2" - 1-1/2 lb. Density and is sandwiched between the unit and the outer skin for the blower, coil sections. Filter section and economizer are single wall and not insulated. Standard drain pan is double wall construction wih insulation sandwiched between pan and bottom panel. All panels and drain pan are 16 gauge galvanized steel.

All units size 20 and greater, VCS18FC, and any size unit with an accessory section other than a flat filter section, will ship in multiple sections, due to shipping restrictions and best practices to ensure unit quality. Sections are shipped with required gasketing and hardware.

Published Lead time* , subject to change upon receipt of an order. All orders must have unit details and specifications complete at the time of purchase order.

Above units are for indoor application. When applying units in outdoor applications, gasketed & silicone sealed panels should be use. This design is not meant to guarantee that the unit will be completely weather tight. Heatcraft assumes no responsibility for unit modified for outdoor use. Leakage associated problems are the contractors responsibility.

NOTE:
1. AHU SECTION REQUIRES SEPARATE FEEDERS TO MOTOR AND ELECTRIC HEAT COMPONENTS
2. RESPECTIVE CU- AND CAU- 1 AND REQUIRE SEPARATE FEEDERS
3. CONTROL WIRING BETWEEN RESPECTIVE CAU AND CU-CAU COMPONENTS IS REQUIRED

HVAC SUPPLY FAN SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	AIR FLOW	E.S.P (W.C)	RPM	DRIVE	ELECTRICAL SECTION: HP	ELECTRICAL SECTION: VOLTAGE	ELECTRICAL SECTION: PHASE	ELECTRICAL SECTION: AMPS	CONTROL	MISCELLANEOUS SECTION: WEIGHT	MISCELLANEOUS SECTION: NOTES
SF-2	WASHDOWN ASSEMBLY SCALING	GREENHECK	RS2-36-621-VG	6159 CFM	.1	576	DIRECT	**0.75**	**208**	**3**		**WASHDOWN SWITCH**	382.0 lb	1-3
SF-5	WASHDOWN CHICKEN PREP	GREENHECK	AS-14-440-A5	2304 CFM	.1	1750	DIRECT	**0.5**	**115**	**1**		**WASHDOWN SWITCH**	97.0 lb	1-3
SF-6	WASHDOWN KITCHEN PREP	GREENHECK	AS-14-428-A4	1586 CFM	.1	1750	DIRECT	**0.25**	**115**	**1**		**WASHDOWN SWITCH**	91.0 lb	1-3
SF-10	WASHDOWN HOT KITCHEN	GREENHECK	RS2-30-619-VG	7377 CFM	.1	479	DIRECT	**1**	**208**	**3**		**WASHDOWN SWITCH**	360.0 lb	1-3

1. WEATHER PROOF DISCONNECT AND ROOF CURB
2. PROVIDE VFD FOR CONTROL
3. PROVIDE WITH MOTORIZED DAMPER WITH ACTUATOR AND ENDSWITCH. INTERLOCK WITH ASSOCIATED SUPPLY FAN WITH END SWITCH TO START ONCEDAMPER IS PROVEN TO BE FULLY OPEN.

Date	Description	#
05/06/22	ISSUED FOR CLIENT REVIEW	4

Revisions

CYBUL CYBUL WILHELM ARCHITECTS AIA
1064 River Rd.
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Tinton Falls, NJ 07724
BD engineering

lorenzo food group

Lorenzo Foods Teterboro

25 CENTRAL AVE
TETERBORO, NJ, 07608

DOB STAMP:

ISSUED FOR
REVIEW
PLANNING BOARD
BUILDING DEPT
BID
CONSTRUCTION

SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC SCHEDULES
scale: 12" = 1'-0"
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-300.00
DOB BARCODE:
Total

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HVAC LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	DIMENSIONS	FREE AIR VELOCITY	FREE AREA	NOTES
LO-1	RUSKIN	EF211	BOILER ROOM	48" BY 54"	420 FPM	1050 SF	1-2
LO-2	RUSKIN	EF211	BOILER ROOM	48" BY 54"	420 FPM	1050 SF	1-2
LO-3	RUSKIN	EF211	AIR COMPRESSOR ROOM	48" BY 54"	420 FPM	1050 SF	1-2
LO-4	RUSKIN	EF211	AIR COMPRESSOR ROOM	48" BY 54"	420 FPM	1050 SF	1-2

1. MOTORIZED DAMPER
2. PROVIDE END SWITCHES
3. PROVIDE BELIMO AF120-S-US 120-VOLT DAMPER ACTUATOR, KH-AF CRANKARM AND ZG-108 MOUNTING BRACKET.

4

HVAC FAI SCHEDULE

Mark	SERVICE	MANUFACTURER	MODEL	AIR FLOW	THROAT VELOCITY(FT/MIN)	WEIGHT	CONTROL	NOTES
FAI-3	CHEMICAL STORAGE 1 INTAKE	GREENHECK	GRSI-8	104 CFM	281	12.0 lb	TSTAT, INTERLOCK W/ EF-10	1-3,6
FAI-4	CHEMICAL STORAGE 2 INTAKE	GREENHECK	GRSI-8	185 CFM	500	12.0 lb	TSTAT, INTERLOCK W/ EF-11	1-3,6
FAI-5	VENTILATION CLEAN STORAGE	GREENHECK	GRSI-10	500 CFM	877	13.0 lb	TSTAT, INTERLOCK W/ EF-12	1-3,6
FAI-7	VENTILATION KITCHEN DRY STORAGE	GREENHECK	GRSI-12	770 CFM	939	15.0 lb	TSTAT, INTERLOCK W/ EF-14	1-3,6
FAI-10	INTERSTITIAL BOTTOM ZONE	GREENHECK	GRSI-16	1054 CFM	727	21.0 lb	TSTAT, INTERLOCK W/ EF-27	1-3,6
FAI-12	ELEC ROOM A	GREENHECK	GRSI-16	400 CFM	276	21.0 lb	TSTAT, INTERLOCK W/ EF-34	1-3,6
FAI-14	SPRINKLER ROOM	GREENHECK	GRSI-8	250 CFM	676	7.0 lb	TIMECLOCK	1-3,6

1. INSECT SCREENS
2. PROVIDE BELIMO AF120-S-US 120-VOLT DAMPER ACTUATOR, KH-AF CRANKARM AND ZG-108 MOUNTING BRACKET. INTERLOCK ASSOCIATED EXHAUST FAN WITH END-SWITCH TO START EXHAUST FAN ONCE DAMPER IS PROVED TO BE FULLY OPEN VIA END-SWITCH
3. PROVIDE REQUIRED SLEEVE TO ACCOMMODATE MOTORIZED DAMPER INSTALLATION
4. PROVIDE SAFE-AIR-DOWCO MODEL-600 PARALLEL BLADE DAMPER AT EACH LOUVER SIZED TO FIT EACH LOUVER'S CONFIGURATION.
5. PROVIDE WITH GREENHECK MP-210 MOTORIZED DAMPER. INTERLOCK ASSOCIATED EXHAUST FAN WITH END-SWITCH TO START FAN ONCE DAMPER IS PROVED TO BE FULLY OPEN VIA END-SWITCH
6. PROVIDE A CURB AND POSITIVELY ATTACH THE UNIT TO THE STRUCTURE BELOW. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER. THE CURB AND UNIT SHALL WITHSTAND THE WIND LOAD AS SHOWN IN THE CODE REVIEW SECTION ON THE HVAC COVERSHEET.

HVAC AIR CURTAIN HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	ELECTRICAL SECTION							NOTES
				KW	CFM	AMPS	VOLTAGE	PHASE	CONTROL	AFC RATING	
AC-2	MARS	LPV272-1A-OB	HOT KITCHEN		1800.0	2.6	115	1	DOOR SWITCH		1,2

1. DISCONNECT SWITCH
2. DOORSWITCH

HVAC AIR COOLED CONDENSING UNIT SCHEDULE

TAG	SERVICE	MANUFACTURER	MODEL	TOTAL COOLING CAPACITY MBH	TOTAL HEATING CAPACITY MBH	ELECTRICAL SECTION				MISCELLANEOUS SECTION		EFFICIENCY SEER/EER/HSPF/COP/AFUE%	MISCELLANEOUS SECTION
						VOLTAGE	PHASE	MINIMUM CIRCUIT AMP	MAXIMUM OVERCURRENT PROTECTION	WEIGHT	REFRIGERANT USED		NOTES
CU-4	IT ROOM	TRANE	TRUYA0241HA70	24.0	0.0	208	1	20.0	25.0	151.0 lb	R410A	21.4/12.2	1-4
CU-CAU-1	CAU-1	BOHN	2D03R59KE	54.0	0.0	460	3	15.0	20.0	751.0 lb	R448A		1-5

1. PROVIDE LOW AMBIENT KIT, THERMAL EXPANSION VALVE AND ACCUMULATOR WITH ALL UNITS
2. PROVIDE WITH ANTI-SHORT CYCLE TIMER, DISCONNECT SWITCH AND RUBBER ISOLATORS
3.POSITIVELY ATTACH THE UNIT TO THE STRUCTURE BELOW. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER. THE MEANS OF POSITIVE ATTACHMENT SHALL WITHSTAND THE WIND LOAD AS SHOWN IN THE CODE REVIEW SECTION ON THE HVAC COVERSHEET.
4. PROVIDE EQUIPMENT RAILS LONG ENOUGH TO SPAN THE REQUIRED # OF EXISTING ROOF JOISTS AS DETERMINED BY THE ARCHITECT AND STRUCTURAL ENGINEER.
5. CONTACT GARY LA FATA @ 732-994-4700/917-417-0678 FOR BOHN QUOTE R1736462 FOR QUESTIONS AND SPECIFIC SUBMITAL

GENERAL CONDITIONS NOTE:

05/06/22 ISSUED FOR CLIENT REVIEW 4
Date Description #
Revisions

CYBUL CYBUL WILHELM ARCHITECTS
1064 River Rd.
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DOB STAMP:

ISSUED FOR:
REVIEW
PLANNING BOARD
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BID
CONSTRUCTION

SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC SCHEDULES
scale: 12" = 1'-0"
release date: 05/06/22
drawing date: 01/19/22
drawn by: Author
approved by: Approver
project no.: 2102
drawing no.: M-301.00
DOB BARCODE: Total

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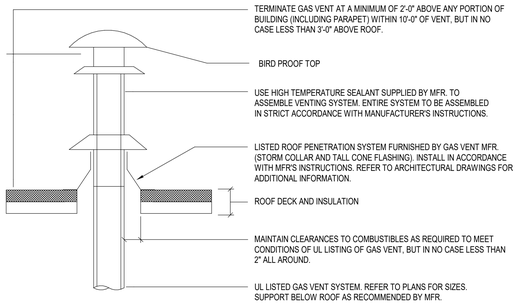


GAS FLUE DETAIL

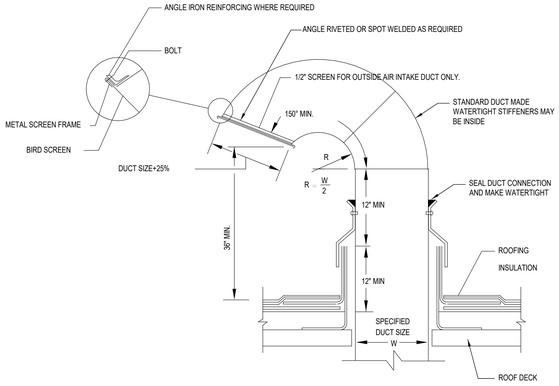
SCALE: NONE

(ANSI) VENT SYSTEM CATEGORIES

NON-CONDENSING			
NEGATIVE PRESSURE	Category I Vent Type: B-Vent Double Wall	Category III Vent Type: Forced Draft: UL P-Stack Double Wall Direct Vent: AL29-4C Double Wall	POSITIVE PRESSURE
	Category II Vent Type: AL-294C Double Wall	Category IV Vent Type: AL-294C Double Wall	
CONDENSING			

NOTES:

1. THIS VENT SYSTEM CATEGORY MATRIX IS PROVIDED TO INDICATE THE VENT MATERIAL TYPE THAT WILL BE REQUIRED BASED UPON THE APPLIANCE VENTING REQUIREMENTS.
2. VENTING MATERIAL SHALL MATCH THE APPLIANCE TYPE AND BE PER THE MANUFACTURERS REQUIREMENTS.
3. THE VENT TYPE SHOWN IS THE TYPE REQUIRED UNLESS OTHERWISE NOTED ON THE PLANS. ALTERNATES WILL BE REVIEWED IF THE MANUFACTURER OF THE APPLIANCE APPROVES A DIFFERENT VENTING MATERIAL. THIS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER DURING THE BIDDING PROCESS. FAILURE TO PROVIDE THIS DURING THE BIDDING PROCESS WILL RESULT IN THE DENIAL OF ANY ADDITIONAL CHARGES.

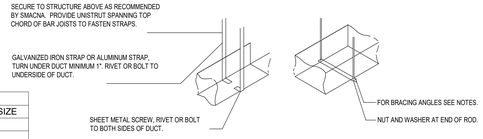


GOOSENECK DETAIL

SCALE: NONE

RECTANGULAR DUCT HANGER SCHEDULE (MINIMUM SIZES)

HALF DUCT PERIMETER RANGE	PAIR AT 10' SPACING		PAIR AT 8' SPACING		PAIR AT 5' SPACING		PAIR AT 4' SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
P/2 < 30"	1"x 22 GA.	10 GA. (0.135")	1"x 22 GA.	10 GA. (0.135")	1"x 22 GA.	12 GA. (0.106")	1"x 22 GA.	12 GA. (0.106")
P/2 < 72"	1"x 18 GA.	3/8"	1"x 20 GA.	3/8"	1"x 22 GA.	1/4"	1"x 22 GA.	1/4"
P/2 < 96"	1"x 16 GA.	3/8"	1"x 18 GA.	3/8"	1"x 20 GA.	3/8"	1"x 22 GA.	1/4"
P/2 < 120"	1-1/2"x 16 GA.	1/2"	1"x 16 GA.	3/8"	1"x 18 GA.	3/8"	1"x 20 GA.	1/4"
P/2 < 168"	1-1/2"x 16 GA.	1/2"	1"x 16 GA.	1/2"	1"x 16 GA.	3/8"	1"x 18 GA.	3/8"
P/2 < 192"		1/2"	1-1/2"x 16 GA.	1/2"	1"x 16 GA.	3/8"	1"x 16 GA.	3/8"



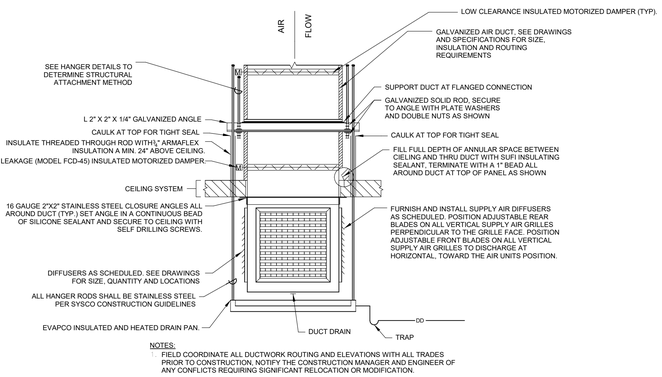
DUCT HANGER DETAILS

SCALE: NONE

MINIMUM CONDENSATE PIPE SIZES	
TONS OF COOLING	MIN DRAIN SIZE
0-20	1"
21-40	1-1/4"
41-60	1-1/2"
61-100	2"
100-250	3"
250 AND LARGER	4"

HVAC UNIT CONDENSATE PIPING SIZING CHART

SCALE: NONE

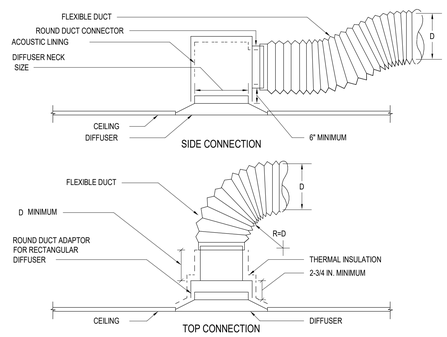


NOTES:

1. FIELD COORDINATE ALL DUCTWORK ROUTING AND ELEVATIONS WITH ALL TRADES PRIOR TO CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS REQUIRING SIGNIFICANT RELOCATION OR MODIFICATION.

CRITICAL AIR/WASHDOWN EXHAUST/MAKE-UP AIR PLENUM DETAIL: CD-B AND RG-B

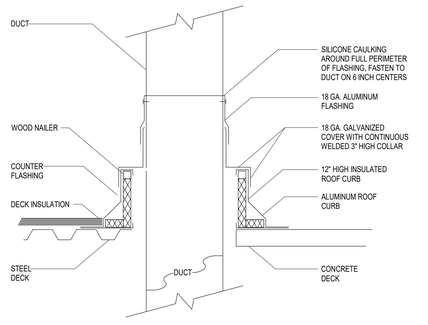
SCALE: NONE



NOTE: MAXIMUM FLEXIBLE DUCT LENGTH IS 5'-0". PROVIDE HARD DUCT AS REQUIRED TO NOT EXCEED THIS MAXIMUM FLEX DUCT LENGTH

DIFFUSER CONNECTION DETAIL

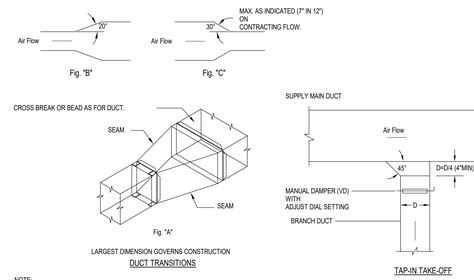
SCALE: NONE



NOTES:
1. COORDINATE CURB STEP HEIGHT WITH ROOF DECK INSULATION THICKNESS

DUCT PENETRATION THROUGH ROOF DETAIL

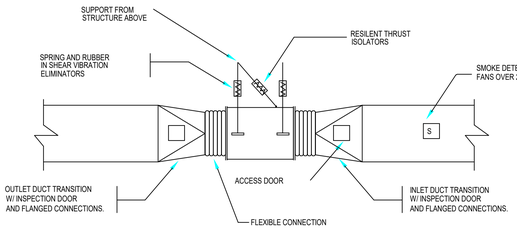
SCALE: NONE



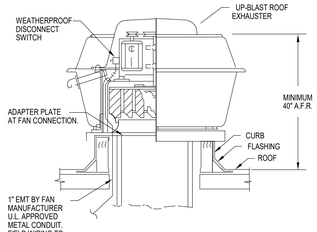
NOTE:
1. DUCT TRANSITIONS TYPICAL AFTER EACH TAKE-OFF(S) WHERE CHANGE IN DUCT SIZE IS INDICATED.

DUCT TRANSITION DETAILS

SCALE: NONE

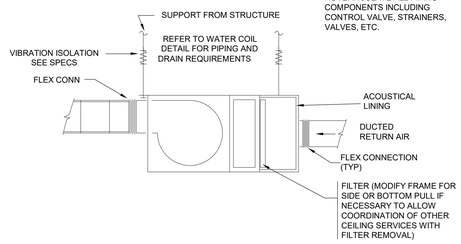


VANE-AXIAL FAN INSTALLATION DETAIL



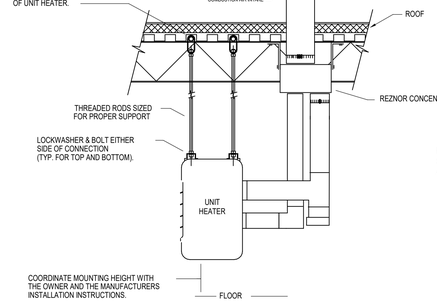
UPBLAST FAN DETAIL

SCALE: NONE



FAN POWERED VAV DETAIL

SCALE: NONE

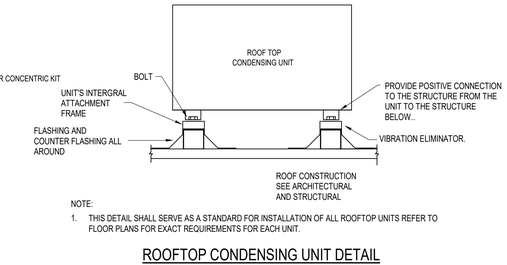


* ALL GAS PIPING BY PLUMBING CONTRACTOR

NOTE: THIS DETAIL IS PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MAUNFACTURER'S INSTALLATION MANUAL FOR DETAILED INSTALLATION INFORMATION AND GUIDELINES.

REZNOR UDAS UNIT HEATER DETAIL

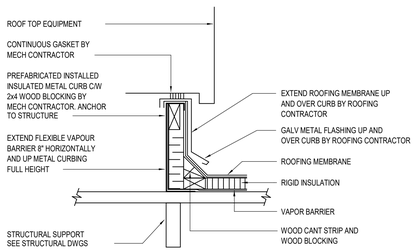
SCALE: NONE



NOTE:
1. THIS DETAIL SHALL SERVE AS A STANDARD FOR INSTALLATION OF ALL ROOFTOP UNITS REFER TO FLOOR PLANS FOR EXACT REQUIREMENTS FOR EACH UNIT.

ROOFTOP CONDENSING UNIT DETAIL

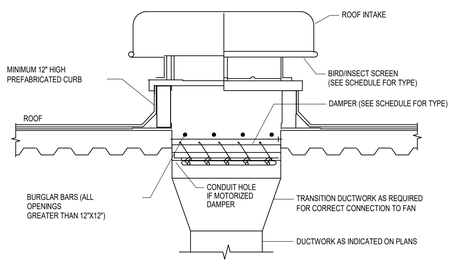
SCALE: NONE



NOTE:
THE UNIT SHALL NOT BE CONNECTED TO CURB WITHOUT ALSO ADDING ADDITIONAL BRACING FROM THE UNIT TO THE STRUCTURE TO PROVIDE A POSITIVE CONNECTION TO THE STRUCTURE BELOW. REFER TO THE STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.

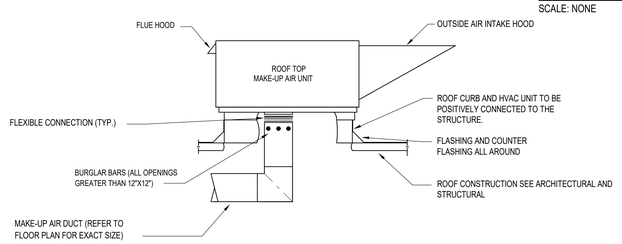
ROOFTOP EQUIPMENT CURB DETAIL

SCALE: NONE



ROOFTOP INTAKE DETAIL

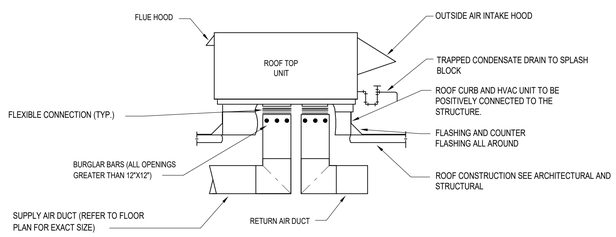
SCALE: NONE



NOTES:
1. THIS DETAIL IS DIAGRAMMATIC AND SERVES TO SHOW THE INTENT FOR A STANDARD INSTALLATION OF ALL ROOFTOP MAKE-UP AIR UNITS. PROVIDE AN APPROPRIATE CURB PER THE SIZE OF THE HVAC UNIT.
2. ALL ROOF PENETRATIONS ARE BASED ON MANUFACTURERS EQUIPMENT SUPPLY AIR TO RETURN AIR OPENING SIZE UNLESS NOTED OTHERWISE. EXTEND FULL SIZE DUCT DOWN TO ABOVE CEILING AND TRANSITION AS SHOWN ON PLANS

ROOFTOP MAKE-UP AIR UNIT DETAIL

SCALE: NONE



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ROOFTOP HVAC UNIT DETAIL

SCALE: NONE

GENERAL CONDITIONS NOTE:

THIS DRAWING AND THE DESIGN DESCRIBED HEREIN, INCLUDING THE ARRANGEMENTS AND CONCEPTS SHOWN ON THIS DRAWING, **ARE** RESERVE THE RIGHT TO HAVE THIS WORK REPRODUCED, FABRICATED, CONSTRUCTED OR MANUFACTURED. THIS DRAWING IS PLACED ON LOAN SOLELY FOR YOUR INSPECTION. ACTUAL FABRICATION, CONSTRUCTION OR MANUFACTURING, IS SPECIFICALLY **PROHIBITED** UNLESS AND/OR UNTIL ALL CONTRACTUAL AGREEMENTS HAVE BEEN EXECUTED AND ALL FEES HAVE BEEN PROPERLY PAID BY THE COMPANY OR INDIVIDUAL (CONTRACTOR) WHO HAS BEEN RETAINED TO PERFORM THE WORK DESCRIBED HEREIN, AND THIS DRAWING HAS BEEN ACKNOWLEDGED "FOR CONSTRUCTION". THE CONTRACTOR ASSUMES ALL RESPONSIBILITIES FOR VERIFYING THAT THE CONSTRUCTION DOCUMENTS ARE COMPLETE AND ACCURATE AS SHOWN ON THIS DRAWING AND ACCOMPANYING SPECIFICATIONS. IF THERE IS ANY DISCREPANCY BETWEEN WHAT IS DESCRIBED IN THESE DOCUMENTS AND THE ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL INFORM THE ENGINEER PRIOR TO SIGNING THE CONTRACT. IT IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE CONSTRUCTION COMPLIES WITH MUNICIPAL AND STATE RULES AND REGULATIONS. FAILURE OF THE CONTRACTOR TO EXERCISE THE AFOREMENTIONED PROCEDURES WILL RESULT IN THE CONTRACTOR CORRECTING AND/OR MODIFYING THE AREAS OR ITEMS IN CONFLICT AT HIS OWN EXPENSE. **NO EXCEPTIONS!!**

Revisions	Date	Description	#

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BD ENGINEERING, LLC.
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lorenzo food group
Lorenzo Foods Teterboro
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TETERBORO, NJ, 07608

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BID
CONSTRUCTION

SIGN & SEAL

BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC DETAILS
scale:
release date:
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-302.00
DOB BARCODE:
Total

5/6/2022 5:07:18 PM

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HOOD INFORMATION — 2102\210956

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG END TO END	HOOD CONFIG ROW
1		7224 VHB-G-PSP-F-ND	CAPTIVEAIRE	10' 6"	700 DEG	II	N/A	150	1575			4"	16"	1575	1128	-0.134"	1260	430 SS 100%	LEFT	ALONE
2		7224 VHB-G-PSP-F-ND	CAPTIVEAIRE	10' 6"	700 DEG	II	N/A	150	1575			4"	16"	1575	1128	-0.134"	1260	430 SS 100%	RIGHT	ALONE
3		6624 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	450 DEG	I	MEDIUM	200	1600			4"	14"	1600	1497	-0.734"	1300	430 SS WHERE EXPOSED	LEFT	BACK
4		6624 ND-2-PSP-F	CAPTIVEAIRE	9' 0"	450 DEG	I	MEDIUM	175	1575			4"	14"	1575	1473	-0.680"	1300	430 SS WHERE EXPOSED	RIGHT	BACK
5		7224 ND-2-PSP-F	CAPTIVEAIRE	9' 0"	450 DEG	I	MEDIUM	175	1575			4"	14"	1575	1473	-0.680"	1300	430 SS WHERE EXPOSED	LEFT	FRONT
6		7224 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	450 DEG	I	MEDIUM	200	1600			4"	14"	1600	1497	-0.734"	1300	430 SS WHERE EXPOSED	RIGHT	FRONT
7		7224 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	450 DEG	I	MEDIUM	200	1600			4"	16"	1600	1146	-0.416"	1280	430 SS WHERE EXPOSED	LEFT	BACK
8		7224 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	450 DEG	I	MEDIUM	200	1600			4"	16"	1600	1146	-0.416"	1408	430 SS WHERE EXPOSED	RIGHT	BACK
9		6024 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	600 DEG	I	HEAVY	250	2000			4"	18"	2000	1132	-0.530"	1580	430 SS WHERE EXPOSED	LEFT	FRONT
10		6024 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	600 DEG	I	HEAVY	250	2000			4"	18"	2000	1132	-0.530"	1580	430 SS WHERE EXPOSED	RIGHT	FRONT
11	Test Kitchen	5424 ND-2	CAPTIVEAIRE	7' 0"	600 DEG	I	HEAVY	215	1505			4"	14"	1505	1408	-0.722"	0	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL SWITCHES MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1							5	RECESSED ROUND	NO							NO	462 LBS
2							5	RECESSED ROUND	NO							NO	462 LBS
3		CAPTRATE SOLO FILTER	5	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	LEFT	12"x66"x24"	TANK FS	4.0/4.0			YES	769 LBS
4		CAPTRATE SOLO FILTER	6	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO							YES	465 LBS
5		CAPTRATE SOLO FILTER	6	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO							YES	482 LBS
6		CAPTRATE SOLO FILTER	5	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	RIGHT	12"x72"x24"	TANK FS	4.0/4.0	DCV-2111	1 LIGHT 1 FAN	YES	836 LBS
7		CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO							YES	484 LBS
8		CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO	RIGHT	12"x72"x24"	TANK FS	4.0/4.0	DCV-2111	1 LIGHT 1 FAN	YES	827 LBS
9		CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO	LEFT	12"x60"x24"	TANK FS	4.0/4.0/4.0			YES	840 LBS
10		CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO							YES	453 LBS
11	Test Kitchen	CAPTRATE SOLO FILTER	5	16"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO	LEFT	12"x54"x24"	TANK FS	4.0	SC-210110MA	1 LIGHT 1 FAN	YES	598 LBS

PERFORATED SUPPLY PLENUM(S)

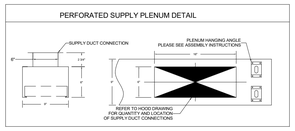
HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S) WIDTH	LENG	DIA	CFM	SP
1		Front	126"	9"	6"	MUA	6"	16"		420	0.249"
						MUA	6"	16"		420	0.249"
2		Front	126"	9"	6"	MUA	6"	16"		420	0.249"
						MUA	6"	16"		420	0.249"
3		Front	108"	9"	6"	MUA	6"	16"		432	0.262"
						MUA	6"	16"		432	0.262"
4		Front	109"	9"	6"	MUA	6"	16"		432	0.262"
						MUA	6"	16"		432	0.262"
5		Front	109"	9"	6"	MUA	6"	16"		432	0.262"
						MUA	6"	16"		432	0.262"
6		Front	108"	9"	6"	MUA	6"	16"		432	0.262"
						MUA	6"	16"		432	0.262"
7		Front	96"	9"	6"	MUA	6"	28"		636	0.310"
8		Front	108"	9"	6"	MUA	6"	28"		640	0.269"
						MUA	6"	28"		640	0.269"
9		Front	108"	9"	6"	MUA	6"	28"		600	0.278"
						MUA	6"	28"		600	0.278"
10		Front	96"	9"	6"	MUA	6"	16"		400	0.227"
						MUA	6"	28"		600	0.278"
						MUA	6"	28"		600	0.278"
						MUA	6"	16"		400	0.227"

HOOD N.S

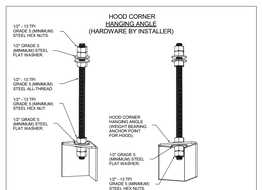
HOOD NO	TAG	OPTION
3		RISER SENSOR INSTALL 6IN PLEN.
		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
4		RIGHT END STANDOFF (FINISHED) 1" WIDE 66" LONG INSULATED.
		RISER SENSOR INSTALL 6IN PLEN.
5		LEFT END STANDOFF (FINISHED) 1" WIDE 72" LONG INSULATED.
		RISER SENSOR INSTALL 6IN PLEN.
6		RISER SENSOR INSTALL 6IN PLEN.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS
7		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS
8		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS
9		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
10		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS
11	Test Kitchen.	RIGHT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		DI-PSP 12" 306CFM [QTY. 3]

FOR QUESTIONS, CALL THE
North New Jersey Mechanical
REGION 138
PHONE: (201) 308-6647
EMAIL: reg138@captiveaire.com

PERFORATED SUPPLY PLENUM DETAIL



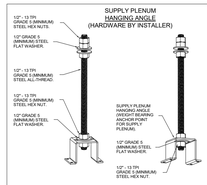
HOOD CORNER HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

SUPPLY PLENUM HANGING ANGLE (HARDWARE BY INSTALLER)



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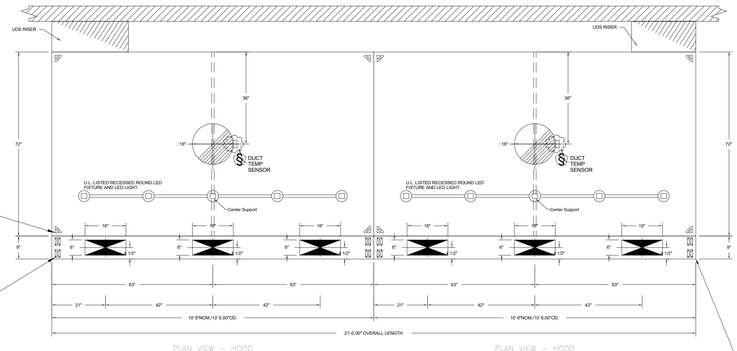
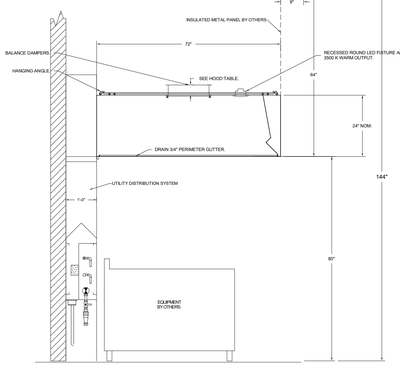


PLAN VIEW — HOOD 10' 6" LONG
7224VHB-G-PSP-F-ND

PLAN VIEW — HOOD 10' 6" LONG
7224VHB-G-PSP-F-ND

HOOD SUPPLY PLENUM TO BE LOCATED AT 12FT CEILING HEIGHT. SEE SECTION DETAIL



SECTION VIEW — MODEL 7224VHB-G-PSP-F-ND HOOD — 12

THESE ARE OLD CAPTIVE AIRE SELECTIONS. WAITING FOR NEW CAPTIVE AIRE DETAILS WITH 208V

THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

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CAPTIVE AIRE
North New Jersey
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, Summit, NJ, PHONE: (201) 308-8647 FAX: (919) 516-8752 EMAIL: reg138@captiveaire.com

Lorenzo Foods
TETERBORO, NJ, 07608

12/7/2021

4967555

ZDK

1/2" = 1'-0"

MASTER DRAWING

1

05/06/22 ISSUED FOR CLIENT REVIEW 4
Date Description #
Revisions

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CONSTRUCTION

STATE OF NEW JERSEY
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC CAPTIVE AIRE DETAILS
scale: As indicated
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-500.00
DOB BARCODE:
Total

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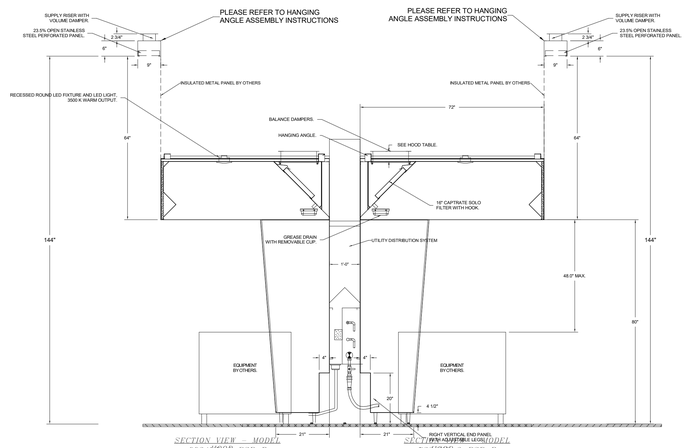
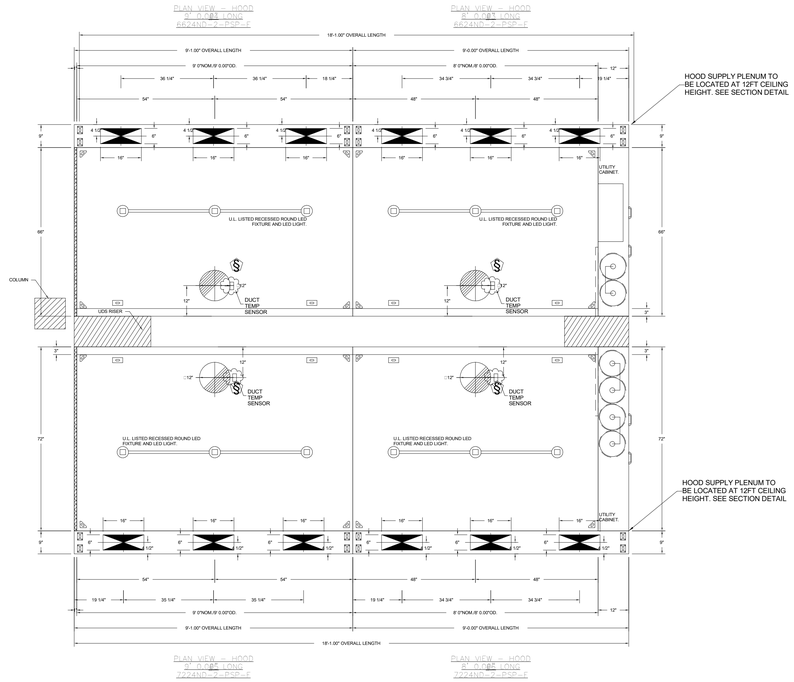
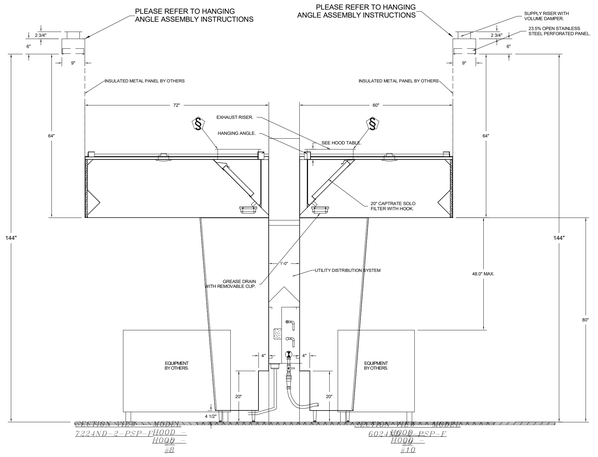


SECTION VIEW - MODEL 6624HOOD_PSP_F HOOD #4

SECTION VIEW - MODEL 7224HOOD_2-PSP_F HOOD #6





SECTION VIEW - MODEL 7224HOOD_2-PSP_F HOOD #8

SECTION VIEW - MODEL 6024HOOD_PSP_F HOOD #10

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Revisions

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Lorenzo Foods
TETERBORO, NJ, 07608

12/7/2021

4967555

ZDK

1/2" = 1'-0"

MASTER DRAWING

2

lorenzo food group

Lorenzo Foods Teterboro

25 CENTRAL AVE
TETERBORO, NJ, 07608

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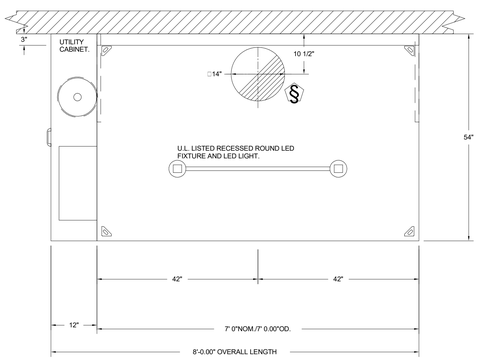
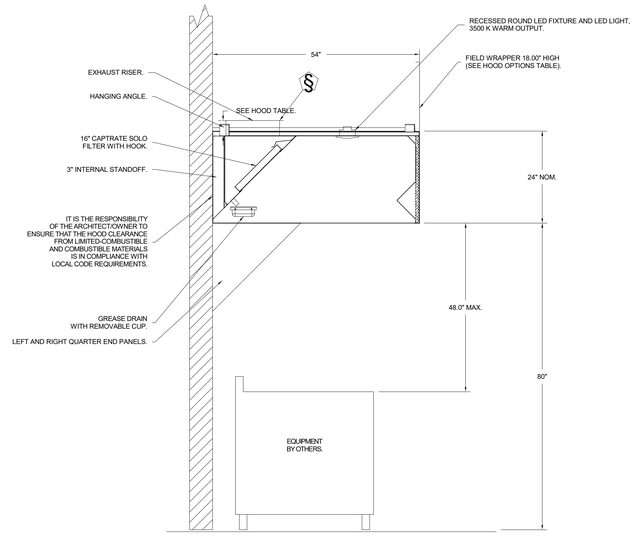
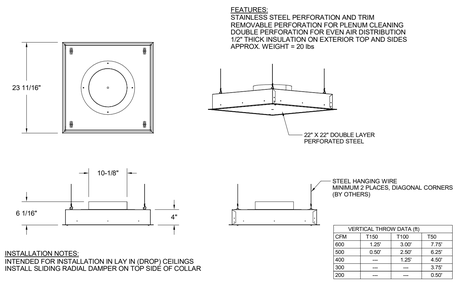


PLAN VIEW – HOOD #11 (Test Kitchen)
7' 0.00" LONG
5424ND-2



SECTION VIEW – MODEL HOOD 12 IND 4 (Test Kitchen)

QTY 3-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER (DI-PSP)



INSTALLATION NOTES:
INTENDED FOR INSTALLATION IN LAY IN (DROP) CEILINGS
INSTALL SLIDING RADIAL DAMPER ON TOP SIDE OF COLLAR

VERTICAL THROW DATA (ft)				
CFM	T150	T100	T100	T50
600	1.25'	3.00'	7.75'	
500	0.50'	2.50'	6.25'	
400	---	1.25'	4.50'	
300	---	---	3.75'	
200	---	---	0.50'	

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Lorenzo Foods
TETERBORO, NJ, 07608

10/1/2021

4967555

ZDK

3/4" = 1'-0"

MASTER DRAWING

3

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JOB NO.	MODEL NUMBER	ISSUED BY	ISSUE FOR	DESCRIPTION OF OPERATION:
4967555	DCV-2111		INSTALL	Fire System #2 TANK Fire Suppression – 4.0A-S Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.
	JOB NAME Lorenzo Foods	7/6/2021	ECP #2-3	

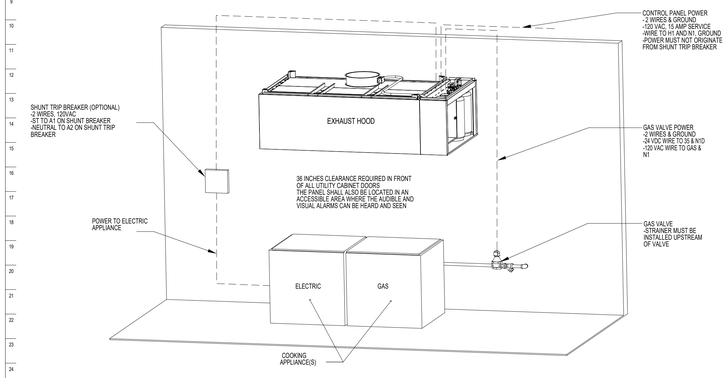
TANK PROTECTION ELECTRICAL DETAIL

02/10/2021 Rev. 2

FS-2: MASTER

ELECTRICIAN:
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	35 & N1D (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 1.0 AMPS	IF 24 VDC - 2 WIRES & GROUND, N1D TO RED, 35 TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO.	MODEL NUMBER	ISSUED BY	ISSUE FOR	DESCRIPTION OF OPERATION:
4967555	DCV-2111		INSTALL	Fire System #2 TANK Fire Suppression – 4.0A-S Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.
	JOB NAME Lorenzo Foods	7/6/2021	ECP #2-4	

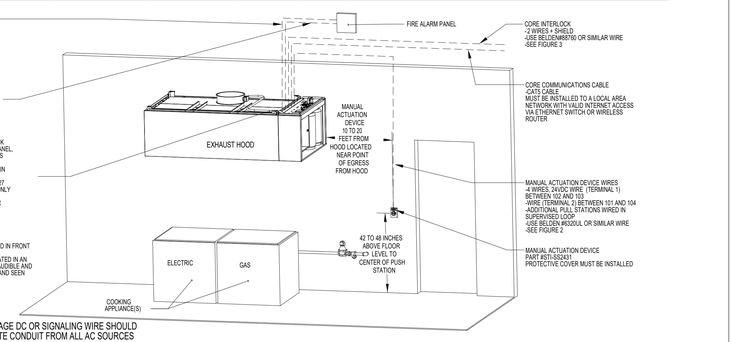
TANK PROTECTION LOW-VOLTAGE DETAIL

02/10/2021 Rev. 2

FS-2: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104 JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED 8" SURFACE MOUNTED. USE COVER EXTENSION ST-A503-8
REMOTE FIRESTAT SENSOR(S)	21 AND 24 22 AND 23	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 22 AND 23 WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24 HIGH TEMP (842°F) #CW04427 (WHT) & #CW04427B (BLK)WIRE OR SIMILAR ONLY IF RAN OVER TOP OF HOOD. OTHERWISE BELDEN #6320UL OR SIMILAR PLENUM RATED WIRE. SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	ILA, ILB, ILC	ILA, ILB, ILC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) ILA, TO CORE SYSTEM (2) ILA, CORE SYSTEM (1) ILB, TO CORE SYSTEM (2) ILB. CORE SYSTEM (1) ILC, TO CORE SYSTEM (2) ILC. USE BELDEN# 88760 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TOK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION

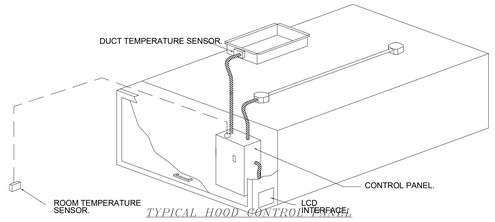


ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.2.8 (2015).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  - A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  - B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  - C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  - D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  - E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  - F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  - G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.

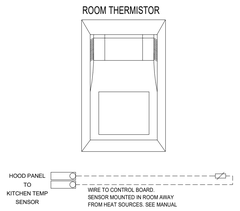


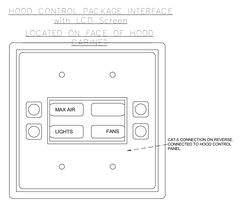
TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.2.8.
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.





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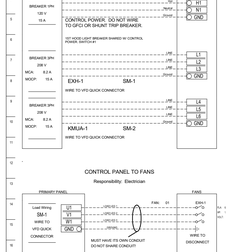
ELECTRICAL PACKAGE – JOB#5058821

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		DCV-1111	WALL MOUNT IN SS BOX	01 - FACE MOUNT LEFT SIDE OF HOOD	1 LIGHT	SMART CONTROLS DCV	KEF-1	EXHAUST	3	1.500	208	6.6
				HOOD # 1	1 FAN		KMUA-1	SUPPLY	3	1.500	208	6.6

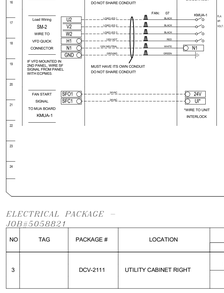
JOB NO: 5058821 | MODEL NUMBER: DCV-1111 | JOB NAME: Lorenzo Foods | DATE: 10/1/2021 | INSTALL: ECP #1-1

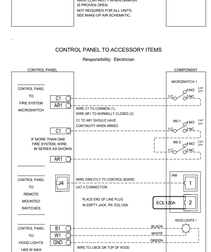
DESCRIPTION OF OPERATION:
Demand Control Ventilation as used in the Captivaire Inc. Ecopod Fan, Ecohood and or Fire, Lights out in Fire, Fans modulate based on duct temperature. WARNING: Ecopod Canopy ventilation as used in the Captivaire Inc. Ecopod Fan, Ecohood and or Fire, Lights out in Fire. Room temperature sensor shipped loose for field installation. Factory ON/OFF Thermostatically Controlled. Room temperature sensor shipped loose for field installation. Additional cost could apply if distance exceeds 50 feet.

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

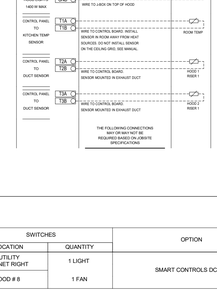


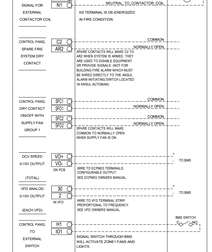
CONTROL PANEL TO FANS
Responsibility: Electrician





CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician



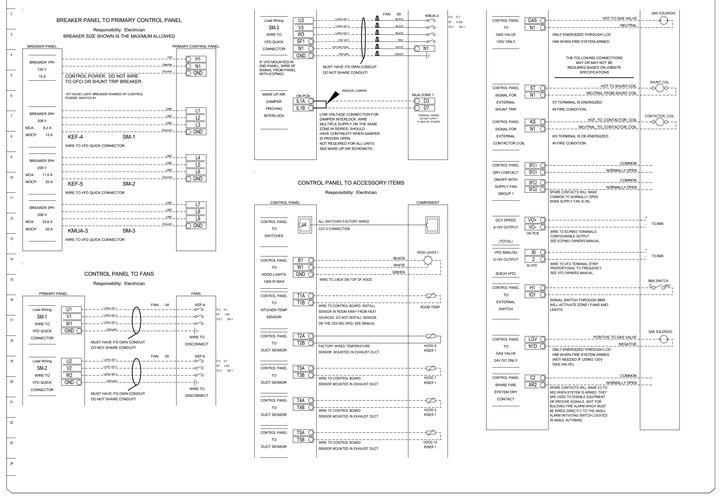


ELECTRICAL PACKAGE – JOB#5058821

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
3		DCV-2111	UTILITY CABINET RIGHT	04 - UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS DCV	KEF-4	EXHAUST	3	1.500	208	6.6
				HOOD # 8	1 FAN		KEF-5	EXHAUST	3	3.000	208	9.5
							KMUA-3	SUPPLY	3	10.00	208	27.0

JOB NO: 5210956 | MODEL NUMBER: DCV-2111 | JOB NAME: Lorenzo Foods #1 | DATE: 12/7/2021 | INSTALL: ECP #3-1

DESCRIPTION OF OPERATION:
Demand Control Ventilation as used in the Captivaire Inc. Ecopod Fan, Ecohood and or Fire, Lights out in Fire, Fans modulate based on duct temperature. WARNING: Ecopod Canopy ventilation as used in the Captivaire Inc. Ecopod Fan, Ecohood and or Fire, Lights out in Fire. Room temperature sensor shipped loose for field installation. Additional cost could apply if distance exceeds 50 feet.

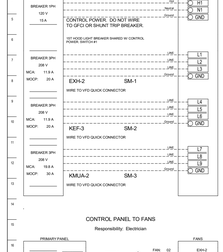


ELECTRICAL PACKAGE – JOB#5058821

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
2		DCV-2111	UTILITY CABINET RIGHT	04 - UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS DCV	KEF-2	EXHAUST	3	3.000	208	9.5
				HOOD # 6	1 FAN		KEF-3	EXHAUST	3	3.000	208	9.5
							KMUA-2	SUPPLY	3	5.000	208	15.8

JOB NO: 5058821 | MODEL NUMBER: DCV-2111 | JOB NAME: Lorenzo Foods | DATE: 10/1/2021 | INSTALL: ECP #2-1

DESCRIPTION OF OPERATION:
Demand Control Ventilation as used in the Captivaire Inc. Ecopod Fan, Ecohood and or Fire, Lights out in Fire, Fans modulate based on duct temperature. WARNING: Ecopod Canopy ventilation as used in the Captivaire Inc. Ecopod Fan, Ecohood and or Fire, Lights out in Fire. Room temperature sensor shipped loose for field installation. Additional cost could apply if distance exceeds 50 feet.

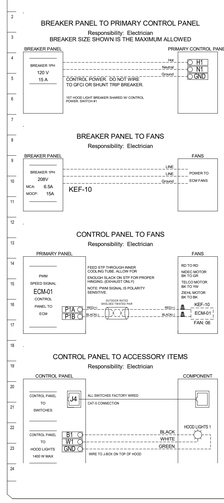


ELECTRICAL PACKAGE – JOB#5058821

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
4		SC-210110MA	UTILITY CABINET LEFT	03 - UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-10	EXHAUST	1	0.750	208	5.2
		SC-210110MA		HOOD # 11	1 FAN							

JOB NO: 5058821 | MODEL NUMBER: SC-210110MA | JOB NAME: Lorenzo Foods | DATE: 10/1/2021 | INSTALL: ECP #4-1

DESCRIPTION OF OPERATION:
CEC 7 Phase w/ control for 1 Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan. Factory On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation.



THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

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CAPTIVAIRE
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. Summit, N.J. PHONE: (201) 308-6847 FAX: (919) 516-8752 EMAIL: reg138@captivaire.com

Date	Description	#
05/06/22	ISSUED FOR CLIENT REVIEW	4

Revisions

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Lorenzo Foods Teterboro

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Lorenzo Foods
TETERBORO, NJ, 07608

DOB STAMP:

12/7/2021

4967555

ZDK

1/2" = 1'-0"

MASTER DRAWING

ISSUED FOR
REVIEW
PLANNING BOARD
BUILDING DEPT
BID
CONSTRUCTION

SEAL

BRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name:	HVAC CAPTIVE AIRE DETAILS
scale:	As indicated
release date:	05/06/22
drawing date:	09/24/2021
drawn by:	ZW
approved by:	KF
project no.:	2102
drawing no.:	M-504.00
DOB BARCODE:	Total

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EXHAUST FAN INFORMATION –

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF-1	1	DU180HFA	CAPTIVEAIRE	3150	0.750	1130	ODP,PREMIUM	1.500	1.0310	3	208	6.6	727 FPM	169	15.5
2	KEF-2	1	DU180HFA	CAPTIVEAIRE	3175	1.500	1336	ODP,PREMIUM	3.000	1.7120	3	208	9.5	733 FPM	183	19.9
3	KEF-3	1	DU180HFA	CAPTIVEAIRE	3175	1.500	1336	ODP,PREMIUM	3.000	1.7120	3	208	9.5	733 FPM	183	19.9
4	KEF-4	1	DU180HFA	CAPTIVEAIRE	3200	1.000	1210	ODP,PREMIUM	1.500	1.2740	3	208	6.6	739 FPM	176	18.2
5	KEF-5	1	DU180HFA	CAPTIVEAIRE	4000	1.000	1386	ODP,PREMIUM	3.000	1.8960	3	208	9.5	924 FPM	183	23
6	KEF-10	1	DU85HFA	CAPTIVEAIRE	1505	1.000	1275	TEAO-ECM	0.750	0.3760	1	208	5.2	476 FPM	88	11.2

MUA FAN INFORMATION –

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
7	KMUA-1	1	A2-D.250-20D	20MF-2-MOD	A2-D.250	2000	2520	0.500	1109	ODP,PREMIUM	1.500	0.7660	3	208	6.6	8.3A	15A	677	9.1
8	KMUA-2	1	A3-D.500-24D	24MF-3-MOD	A3-D.500	3500	5200	0.500	1261	ODP,PREMIUM	5.000	3.9720	3	208	15.8	19.8A	35A	913	12
9	KMUA-3	1	A3-D.500-24D	24MF-3-MOD	A3-D.500	3500	5760	0.750	1427	ODP,PREMIUM	10.000	5.7010	3	208	27.0	33.8A	60A	934	14.5
10	KMUA-4	1	A3-D.500-24D	24MF-3-MOD	A3-D.500	3500	6600	0.500	1541	ODP,PREMIUM	10.000	7.3480	3	208	27.0	35A	60A	966	16.5
11	KMUA-5	1	A2-IBT-300-20D	20MF-2-MOD	A2-IBT-300	1200	3500	0.500	1342	ODP,PREMIUM	2.000	1.5670	3	208	8.9	12.8A	20A	1200	12.1
12	KMUA-6	1	A2-IBT-300-20D	20MF-2-MOD	A2-IBT-300	1200	3500	0.500	1342	ODP,PREMIUM	2.000	1.5670	3	208	8.9	12.8A	20A	1200	12.1

GAS FIRED MAKE–UP AIR

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
7	KMUA-1	175528	161486	60°F	1 LB. - 5 LB.	NATURAL	92
8	KMUA-2	362202	333226	60°F	1 LB. - 5 LB.	NATURAL	92
9	KMUA-3	401209	369112	60°F	1 LB. - 5 LB.	NATURAL	92
10	KMUA-4	459717	422940	60°F	1 LB. - 5 LB.	NATURAL	92
11	KMUA-5	300000	240000	63°F	1 LB. - 5 LB.	NATURAL	80
12	KMUA-6	300000	240000	63°F	1 LB. - 5 LB.	NATURAL	80

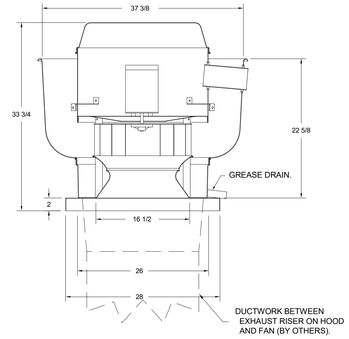
FAN WARRANTY

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	2 YEAR PARTS WARRANTY.
2	KEF-2	1	GREASE BOX.
		1	2 YEAR PARTS WARRANTY.
3	KEF-3	1	GREASE BOX.
		1	2 YEAR PARTS WARRANTY.
4	KEF-4	1	GREASE BOX.
		1	2 YEAR PARTS WARRANTY.
5	KEF-5	1	GREASE BOX.
		1	2 YEAR PARTS WARRANTY.
6	KEF-10	1	GREASE BOX.
		1	2 YEAR PARTS WARRANTY.
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMO3 PREWIRE (TELCO MOTOR). CCW ROTATION.
7	KMUA-1	1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC.
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING - MEETS AMCA CLASS 1A RATING.
		1	CURB DUCT HANGER.
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY.
		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE - USED ON HEATERS UNDER 2500 CFM.
		1	1", 10 PSI HIGH GAS PRESSURE REGULATOR.
		1	LOW FIRE START.
		1	2 YEAR PARTS WARRANTY.
8	KMUA-2	1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC.
		1	MOTORIZED BACKDRAFT DAMPER FOR A4-D HOUSING - MEETS AMCA CLASS 1A RATING.
		1	CURB DUCT HANGER.
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY.
		1	1", 10 PSI HIGH GAS PRESSURE REGULATOR.
		1	LOW FIRE START.
		1	2 YEAR PARTS WARRANTY.
9	KMUA-3	1	INLET PRESSURE GAUGE, 0-15#.
		1	LOW FIRE START.
		1	2 YEAR PARTS WARRANTY.
10	KMUA-4	1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC.
		1	MOTORIZED BACKDRAFT DAMPER FOR A3-D HOUSING - MEETS AMCA CLASS 1A RATING.
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS.
		1	CURB DUCT HANGER.
		1	1", 10 PSI HIGH GAS PRESSURE REGULATOR.
		1	LOW FIRE START.
		1	VAV PACKAGE W/ MANUAL CONTROL (VFD INCLUDED).
11 / 12	KMUA-5 KMUA-6	1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-I HOUSING - MEETS AMCA CLASS 1A RATING.
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS.
		1	SINGLE POINT ELECTRICAL CONNECTION SINGLE MODULE - IF A NON-DCV PREWIRE IS USED ON THE IBT HEATER, THE #26, #47, "NS", "NA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
		1	EXHAUST CONTACTOR AFTER AIRFLOW SWITCH - FIELD WIRED.
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI.
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED).
		1	LOAD REACTOR MOUNTED IN FAN.
		1	VFD FACTORY MOUNTED AND WIRED IN IBT COMMERCIAL CONTROL VESTIBULE.
		1	2 YEAR ENTIRE UNIT PARTS WARRANTY, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY

CURB ASSEMBLIES

NO	FOR FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	41 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
2	# 2	KEF-2	41 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
3	# 3	KEF-2	41 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
4	# 4	KEF-4	41 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
5	# 5	KEF-5	41 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
6	# 6	KEF-10	36 LBS	CURB	23.000"W X 23.000"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
13	# 13	DOAS-1	85 LBS	CURB	41.000"W X 71.000"L X 20.000"H ALONG WIDTH, RIGHT INSULATED.

FAN #1 DU180HFA - EXHAUST FAN (KEF-1)
FAN #2 DU180HFA - EXHAUST FAN (KEF-2)
FAN #3 DU180HFA - EXHAUST FAN (KEF-3)



FEATURES:

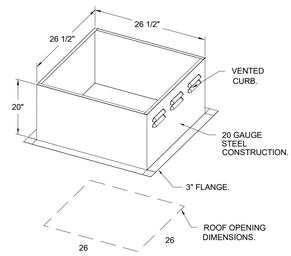
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

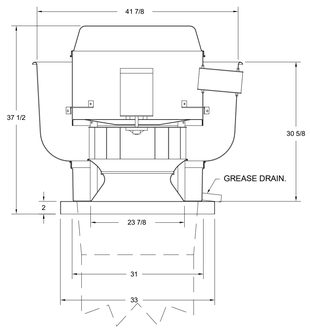
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

GREASE BOX.
2 YEAR PARTS WARRANTY.



FAN #4 (KEF-4) - DU240HFA EXHAUST FAN
FAN #5 (KEF-5) - DU240HFA EXHAUST FAN



FEATURES:

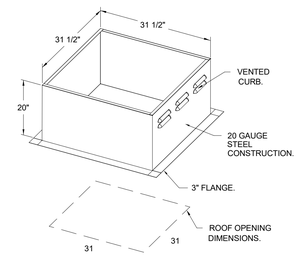
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

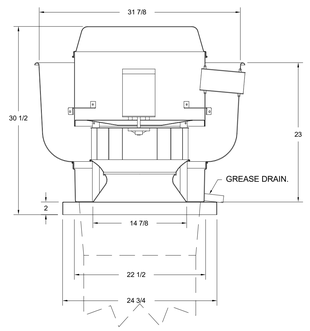
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

GREASE BOX.
2 YEAR PARTS WARRANTY.



FAN #6 DU85HFA - EXHAUST FAN (KEF-10)



FEATURES:

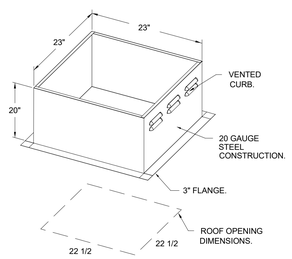
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

GREASE BOX.
ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMO3 PREWIRE (TELCO MOTOR), CCW ROTATION.
2 YEAR PARTS WARRANTY.



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CAPTIVE AIRE
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#	Revisions	Date
4	ISSUED FOR CLIENT REVIEW	05/06/22

CYBUL CYBUL WILHELM ARCHITECTS
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Edgewater, NJ 07020

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ALLIED ENGINEERING
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BD ENGINEERING, LLC.
30 Park Road, Suite 4
Tinton Falls, NJ 07724

lorenzo food group

Lorenzo Foods Teterboro
25 CENTRAL AVE
TETERBORO, NJ, 07608

DOB STAMP:

Lorenzo Foods
TETERBORO, NJ, 07608

12/7/2021

4967555

ZDK

3/4" = 1'-0"

MASTER DRAWING

6

ISSUED FOR
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PLANNING BOARD
BUILDING DEPT
BID
CONSTRUCTION

STATE OF NEW JERSEY
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC CAPTIVE AIRE DETAILS
scale: As indicated
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-505.00
DOB BARCODE:
Total

5/6/2022 5:07:33 PM

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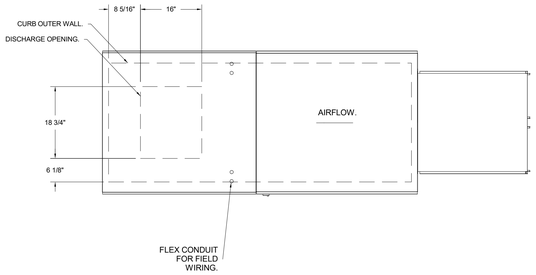
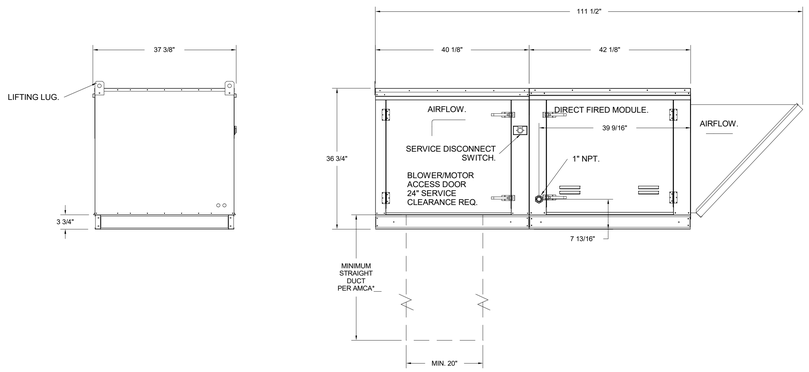
4

FAN #6 A2-D.250-20D - MAKEUP AIR UNIT WITH HEATER (KMUA-1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" MIXED FLOW DIRECT DRIVE
2. HEATEXCOD WITH EZ FILTERS-LOW CFM.
3. [illegible]
4. [illegible]
5. [illegible]
6. CONTROLS MONITORING FOR MUA UNITS. USES +/- 15 PRESSURE TRANSDUCER, RIVET NUTS, 1/4" AIRFLOW TUBING AND PUSH TO
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. 2 YEAR PARTS WARRANTY.
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".

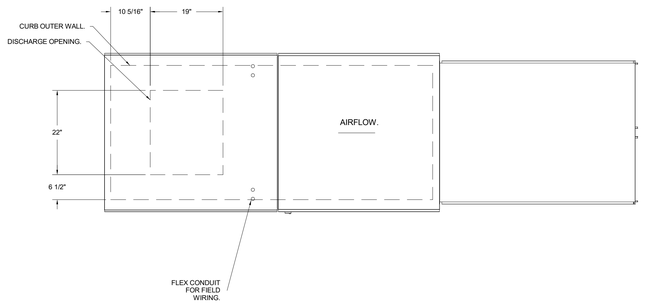


SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 15°F.
TEMP. RISE = 60°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT
BTUs AT ALTITUDE OF 0.0 FT. = 161533.
INPUT BTUs AT ALTITUDE OF
0.0 FT. = 175579.
OUTPUT BTUs AT ALTITUDE OF 8 FT. = 161486.
INPUT BTUs AT ALTITUDE OF 8 FT. = 175529.

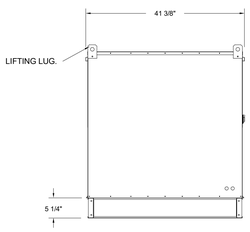


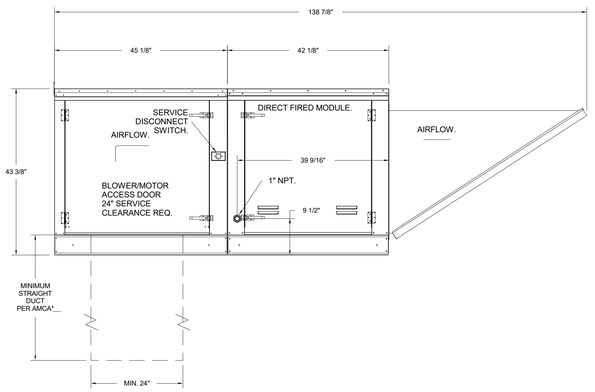
FAN #7 A3-D.500-24D - MAKEUP AIR UNIT WITH HEATER (KMUA-2)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 24" MIXED FLOW DIRECT DRIVE FAN
2. HEATEXCOD WITH EZ FILTERS.
3. [illegible]
4. [illegible]
5. [illegible]
6. CONTROLS MONITORING FOR MUA UNITS. USES +/- 15 PRESSURE TRANSDUCER, RIVET NUTS, 1/4" AIRFLOW TUBING AND PUSH TO
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. 2 YEAR PARTS
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 24" x 24".



SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 15°F.
TEMP. RISE = 60°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT
BTUs AT ALTITUDE OF 0.0 FT. = 333322.
INPUT BTUs AT ALTITUDE OF
0.0 FT. = 362307.
OUTPUT BTUs AT ALTITUDE OF 8 FT. = 333226.
INPUT BTUs AT ALTITUDE OF 8 FT. = 362202.





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IMPORTANT SPECIAL UDS PARTS/NOTES	
☆	BOTH STEAM LINE INSULATION THICKNESS TBD.
☆	STEAM SUPPLY SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)
☆	COND. RETURN SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)

UDS CONSTRUCTION TO BE
16 GA., TYPE 304 STAINLESS STEEL

UTILITY DISTRIBUTION SYSTEM MODEL UDI IS LISTED UNDER ETL FILE NUMBER 3054803 CONFORMS TO UL STD 891 CERTIFIED TO CAN/CSA C22.2 No. 31-M89

PRIOR TO SCHEDULING UDS FOR PRODUCTION PLEASE PROVIDE APPROVED SUBMITTAL CUTSHEETS ON FINAL KITCHEN EQUIPMENT ASSOCIATED WITH THE UDS (NEW & USED) SO THAT CONNECTION SIZES, TYPES AND LOCATIONS CAN BE VERIFIED

ANY CHANGES TO SUBMITTAL DRAWING MAY AFFECT PRICE AND PRODUCTION TIME PLEASE FORWARD CHANGES ASAP

----NOTE----
NEC REQUIRES 36" OF FIELD CLEARANCE IN FRONT OF CIRCUIT BREAKERS FOR ACCESS

SYMBOL SCHEDULE

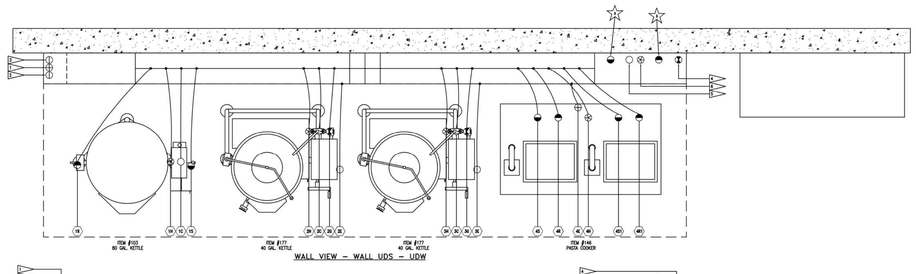
- COLD WATER
- HOT WATER
- FILTERED WATER
- NATURAL GAS
- PROPANE
- 120 VAC 1 PHASE
- 208 VAC 1 PHASE
- 208 VAC 3 PHASE
- 480 VAC 3 PHASE
- STEAM SUPPLY
- STEAM CONDENSATE RETURN

STANDARD FLAG NOTES

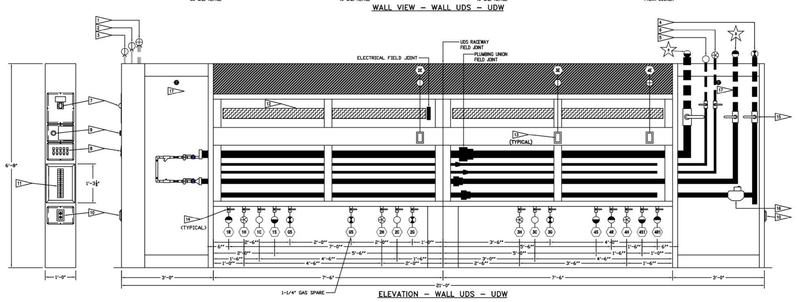
1. ELECTRICAL SERVICE FROM ABOVE, SEE SCHEDULE FOR DETAILS. PROVIDED BY ELECTRICAL CONTRACTOR.
2. 120V/1PH/15A DEDICATED ELECTRICAL CIRCUIT INTO UDS TERMINALS "HL, NL" FOR FUEL/SHUNT CONTROL. (PROVIDED BY ELECTRICAL CONTRACTOR) SEE SCHEMATIC BELOW.
3. 3-WIRE ELECTRICAL CIRCUIT FROM HOOD CONTROL PACKAGE TERMINALS "GAS, ST & KTD" TO UDS TERMINALS "GAS, ST & KTD" THIS CIRCUIT WILL BE SHUT DOWN IN A FIRE CONDITION. (PROVIDED BY ELECTRICAL CONTRACTOR). SEE SCHEMATIC BELOW
4. GAS SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE AND STYLE (PROVIDED BY PLUMBING CONTRACTOR)
5. COLD WATER SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)
6. HOT WATER SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)
7. SERVICE MAIN BREAKER W/SHUNT TRIP AND RESET HANDLE, SEE SCHEDULE FOR DETAILS.
8. STATUS INDICATOR LIGHTS.
9. EMERGENCY KILL SWITCH.
10. DCO RECEPTACLE W/ BREAKER & WEATHERPROOF COVER.
11. ELECTRICAL LOAD CENTER WITH INDIVIDUAL CIRCUIT BREAKERS.
12. ELECTRICAL WIRING TO APPLIANCES.
13. ELECTRICAL CONNECTION W/WEATHERPROOF COVER AS SPECIFIED ON THE EQUIPMENT SCHEDULE, SEE THIS SHEET.
14. PLUMBING CONNECTION AS SPECIFIED ON THE EQUIPMENT SCHEDULE, SEE THIS SHEET.
15. MANUAL SHUT OFF VALVE.
16. 120V ELECTRICAL GAS VALVE.
17. REMOVABLE ACCESS DOORS.

UTILITY DISTRIBUTION SYSTEM EQUIPMENT SCHEDULE

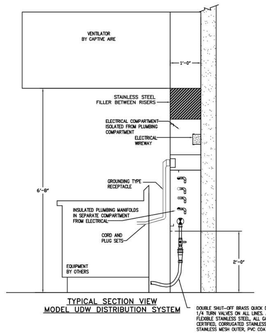
EQUIPMENT				ELECTRICAL				CIRCUIT BREAKER		RECEPTACLE	GAS	WATER		STEAM			CONNECTION		NOTES
CONN.#	ITEM	DESCRIPTION	MANUFACTURER	MODEL #	KW.	AMPS	HP	VOLT	PH	AMPS	POLES	PART #	SIZE	MBH	HOT	COLD	SUPPLY	COLD RETURN	LBS/HR	TYPE	LENGTH	
1S	103	80 GAL KETTLE	GROEN	DL-80	-	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	QUICK DISCONNECT	5'	-
1R	103	80 GAL KETTLE	GROEN	DL-80	-	-	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	QUICK DISCONNECT	5'	-
1C	103	80 GAL KETTLE	GROEN	DL-80	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	QUICK DISCONNECT	5'	-
1H	103	80 GAL KETTLE	GROEN	DL-80	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	QUICK DISCONNECT	5'	-
2E	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	1.2	10.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
2G	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	-	-	-	-	-	-	-	-	-	3/4"	140	-	-	-	-	QUICK DISCONNECT	5'	-
2C	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	QUICK DISCONNECT	5'	-
2H	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	QUICK DISCONNECT	5'	-
3E	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	1.2	10.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
3G	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	-	-	-	-	-	-	-	-	3/4"	140	-	-	-	-	-	QUICK DISCONNECT	5'	-
3C	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	QUICK DISCONNECT	5'	-
3H	177	40 GAL KETTLE	CLEVELAND	KGL-40-T	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	QUICK DISCONNECT	5'	-
4E	146	PASTA COOKER	NILMA	DOUGH-O-MAT C40/2	1.5	4.2	-	208	3	15	3	L15-20R	-	-	-	-	-	-	-	CORD & PLUG	6'	GFI BREAKER
4S	146	PASTA COOKER	NILMA	DOUGH-O-MAT C40/2	-	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	QUICK DISCONNECT	5'	-
4S1	146	PASTA COOKER	NILMA	DOUGH-O-MAT C40/2	-	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	QUICK DISCONNECT	5'	-
4R	146	PASTA COOKER	NILMA	DOUGH-O-MAT C40/2	-	-	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	QUICK DISCONNECT	5'	-
4R1	146	PASTA COOKER	NILMA	DOUGH-O-MAT C40/2	-	-	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	QUICK DISCONNECT	5'	-
4H	146	PASTA COOKER	NILMA	DOUGH-O-MAT C40/2	-	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	QUICK DISCONNECT	5'	-
01	-	DUPLEX OUTLET	-	-	-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
02	-	DUPLEX OUTLET	-	-	-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
TOTAL CONNECTED LOAD:				3.9	KW.	10.9	AMP	0.0	KW.	0.0	AMP	280	MBH	H.W.			STEAM SUPPLY			LEGEND:		
FUTURE AVAILABLE LOAD CAPACITY:				10.5	KW.	29.1	AMP	0.0	KW.	0.0	AMP	270	MBH	1"			3"			NEMA L5-20 FOR HOOD LIGHTS 5R = STRAIGHT BLADE PLUGS L15-20R = LOCKING P5-15PR & 5-20PR PLUGS DCO = DUAL CONVIENIENCE OUTLET DISCO = DISCONNECT & WHIP.		
SYSTEM CAPACITY:				14.4	KW.	40.0	AMP	0.0	KW.	0.0	AMP	550	MBH	C.W.			COND. RETURN					
SERVICE SIZE:				120/208 V/ 3 PH/ 50 AMP						V/ PH/ AMP				1-1/2" IPS SINGLE			1"					



WALL VIEW – WALL UDS – UDW

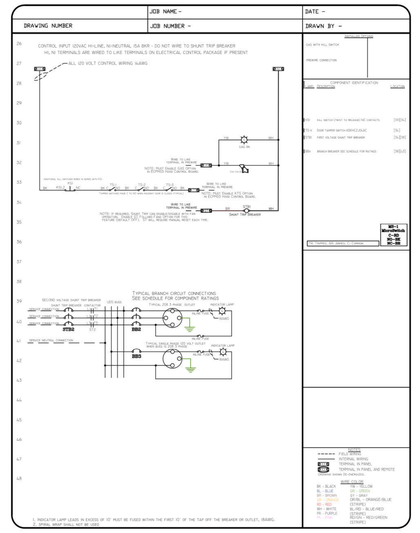


ELEVATION – WALL UDS – UDW



TYPICAL SECTION VIEW
MODEL UDW DISTRIBUTION SYSTEM

1. DOUBLE SHUT-OFF BRASS QUICK DISCONNECT HOSES WITH 1/4 TURN VALVES ON ALL LINES. ALL WATER HOSES ARE FLEXIBLE STAINLESS STEEL. ALL GAS HOSES ARE AGA CERTIFIED, CORRUGATED STAINLESS BRAID JACKET, STAINLESS MESH OUTER, PVC COATED.



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REVISIONS

	DESCRIPTION	DATE:
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Lorenzo Foods
TETERBORO, NJ, 07608

DATE: 7/6/2021

DWG.#: 4967555

DRAWN BY: ZDK

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 1

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scale: 12" = 1'-0"

release date: 05/06/22

drawing date: 09/24/2021

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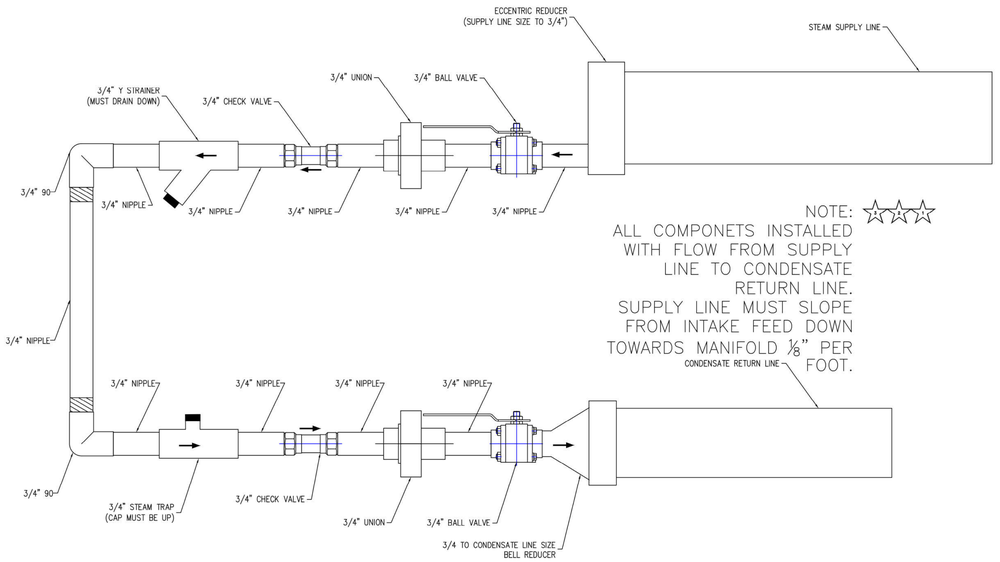

NOTE: ☆☆☆
ALL COMPONETS INSTALLED WITH FLOW FROM SUPPLY LINE TO CONDENSATE RETURN LINE. SUPPLY LINE MUST SLOPE FROM INTAKE FEED DOWN TOWARDS MANIFOLD ⅛" PER FOOT.

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DRAWN BY: ZDK

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 2

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project no.: 2102
drawing no.: M-508.00
DOB BARCODE:
Total

5/6/2022 5:07:53 PM

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IMPORTANT SPECIAL UDS PARTS/NOTES

☆	TWO (2) OPTIPURE QTII+CR WATER FILTERS WITH WINDOW.

UDS CONSTRUCTION TO BE 16 GA., TYPE 304 STAINLESS STEEL

UTILITY DISTRIBUTION SYSTEM MODEL UDI IS LISTED UNDER ETL FILE NUMBER 3054803 CONFORMS TO UL STD 891 CERTIFIED TO CAN/CSA C22.2 No. 31-M89

PRIOR TO SCHEDULING UDS FOR PRODUCTION PLEASE PROVIDE APPROVED SUBMITTAL CUTSHEETS ON FINAL KITCHEN EQUIPMENT ASSOCIATED WITH THE UDS (NEW & USED) SO THAT CONNECTION SIZES, TYPES AND LOCATIONS CAN BE VERIFIED

ANY CHANGES TO SUBMITTAL DRAWING MAY AFFECT PRICE AND PRODUCTION TIME PLEASE FORWARD CHANGES ASAP

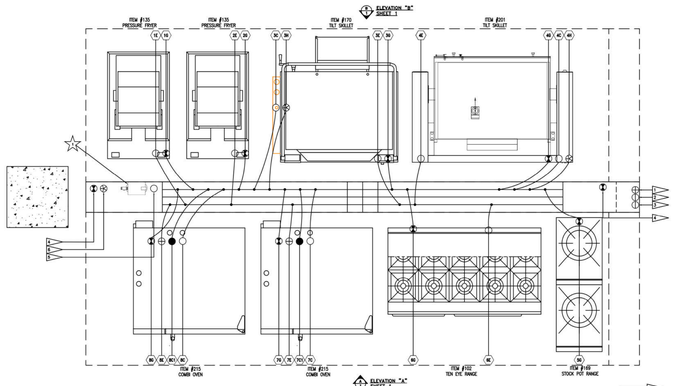
----NOTE----
NEC REQUIRES 36" OF FIELD CLEARANCE IN FRONT OF CIRCUIT BREAKERS FOR ACCESS

SYMBOL SCHEDULE

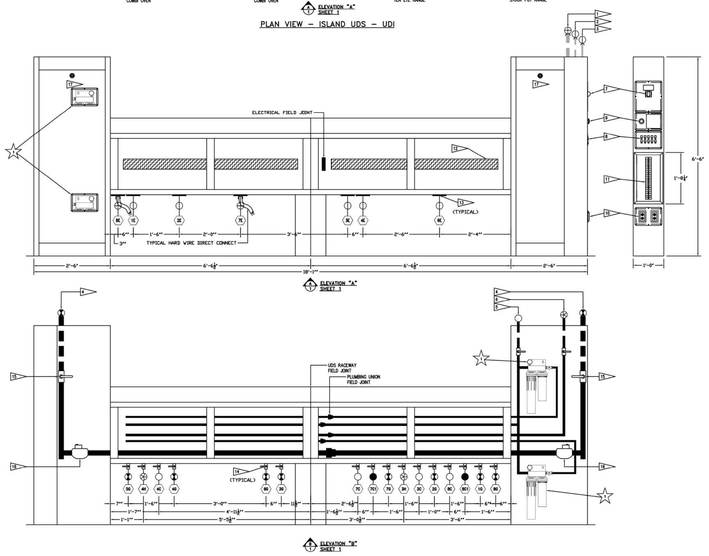
- COLD WATER
- HOT WATER
- FILTERED WATER
- NATURAL GAS
- PROPANE
- 120 VAC 1 PHASE
- 208 VAC 1 PHASE
- 208 VAC 3 PHASE
- 480 VAC 3 PHASE
- STEAM SUPPLY
- STEAM CONDENSATE RETURN

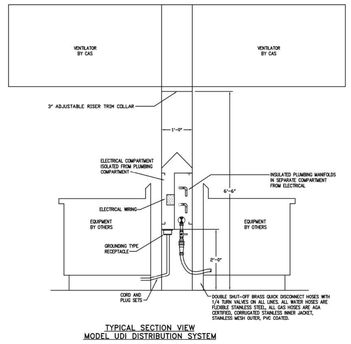
STANDARD FLAG NOTES

1. ELECTRICAL SERVICE FROM ABOVE, SEE SCHEDULE FOR DETAILS. PROVIDED BY ELECTRICAL CONTRACTOR.
2. 120V/1PH/15A DEDICATED ELECTRICAL CIRCUIT INTO UDS TERMINALS "NL, NX" FOR FUEL/SHUNT CONTROL. PROVIDED BY ELECTRICAL CONTRACTOR. SEE SCHEMATIC BELOW.
3. 3-WIRE ELECTRICAL CIRCUIT FROM HOOD CONTROL PACKAGE TERMINALS "SAS, ST & KTS" TO UDS LIKE TERMINALS "SAS, ST & KTS" FOR UDS SHUT DOWN IN A FIRE CONDITION. PROVIDED BY ELECTRICAL CONTRACTOR. SEE SCHEMATIC BELOW.
4. GAS SERVICE FROM ABOVE. SEE SCHEDULE FOR SERVICE SIZE AND STYLE (PROVIDED BY PLUMBING CONTRACTOR)
5. COLD WATER SERVICE FROM ABOVE. SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)
6. HOT WATER SERVICE FROM ABOVE. SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)
7. SERVICE MAIN BREAKER W/SHUNT TRIP AND RESET HANDLE, SEE SCHEDULE FOR DETAILS.
8. STATUS INDICATOR LIGHTS.
9. EMERGENCY KILL SWITCH.
10. DCI RECEPTACLE W/ BREAKER & WEATHERPROOF COVER.
11. ELECTRICAL LOAD CENTER WITH INDIVIDUAL CIRCUIT BREAKERS.
12. ELECTRICAL WIRING TO APPLIANCES.
13. ELECTRICAL CONNECTION W/WEATHERPROOF COVER AS SPECIFIED ON THE EQUIPMENT SCHEDULE, SEE THIS SHEET.
14. PLUMBING CONNECTION AS SPECIFIED ON THE EQUIPMENT SCHEDULE, SEE THIS SHEET.
15. MANUAL SHUT OFF VALVE.
16. 120V ELECTRICAL GAS VALVE.
17. REMOVABLE ACCESS DOORS.



PLAN VIEW – ISLAND UDS – UDI



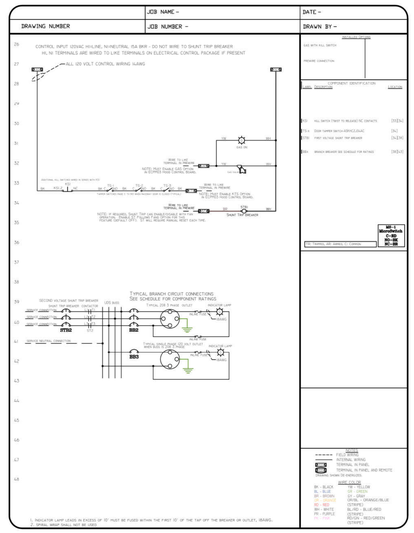


TYPICAL SECTION VIEW
MODEL UDI DISTRIBUTION SYSTEM

UTILITY DISTRIBUTION SYSTEM EQUIPMENT SCHEDULE

EQUIPMENT					ELECTRICAL				CIRCUIT BREAKER		RECEPTACLE	GAS	WATER			STEAM		CONNECTION		NOTES
CONN.#	ITEM	DESCRIPTION	MANUFACTURER	MODEL #	KW.	AMPS	HP	VOLT	PH	AMPS	POLES	PART #	SIZE	MBH	HOT	COLD	SUPPLY	COND. RETURN	LBS/HR	TYPE	LENGTH	
1E	135	PRESSURE FRYER	HENNY PENNY	PFG-691	1.2	10.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
1G	135	PRESSURE FRYER	HENNY PENNY	PFG-691	-	-	-	-	-	-	-	-	3/4"	100	-	-	-	-	-	QUICK DISCONNECT	5'	-
2E	135	PRESSURE FRYER	HENNY PENNY	PFG-691	1.2	10.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
2G	135	PRESSURE FRYER	HENNY PENNY	PFG-691	-	-	-	-	-	-	-	-	3/4"	100	-	-	-	-	-	QUICK DISCONNECT	5'	-
3E	170	TILT SKILLET	VULCAN	VG40	1.1	9.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
3G	170	TILT SKILLET	VULCAN	VG40	-	-	-	-	-	-	-	-	3/4"	120	-	-	-	-	-	QUICK DISCONNECT	5'	-
3C	170	TILT SKILLET	VULCAN	VG40	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	QUICK DISCONNECT	5'	-
3H	170	TILT SKILLET	VULCAN	VG40	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	QUICK DISCONNECT	5'	-
4E	201	TILT SKILLET	ELECTROLUX	SE7028	1.2	10.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
4G	201	TILT SKILLET	ELECTROLUX	SE7028	-	-	-	-	-	-	-	-	3/4"	100	-	-	-	-	-	QUICK DISCONNECT	5'	-
4C	201	TILT SKILLET	ELECTROLUX	SE7028	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	QUICK DISCONNECT	5'	-
4H	201	TILT SKILLET	ELECTROLUX	SE7028	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	QUICK DISCONNECT	5'	-
5G	169	STOCK POT RANGE	WOLF	WSP82F	-	-	-	-	-	-	-	-	3/4"	220	-	-	-	-	-	QUICK DISCONNECT	5'	-
6E	102	TEN EYE RANGE	VULCAN	6055-10B	0.5	4.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
6G	102	TEN EYE RANGE	VULCAN	6055-10B	-	-	-	-	-	-	-	-	1"	358	-	-	-	-	-	QUICK DISCONNECT	5'	-
7E	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	2.0	9.6	-	208	3	15	3	-	-	-	-	-	-	-	-	DIRECT	8'	CONDUIT & WIRE
7G	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	-	-	-	-	-	-	-	-	3/4"	266	-	-	-	-	-	QUICK DISCONNECT	5'	-
7C	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	-
7C1	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	FILTERED
8E	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	2.0	9.6	-	208	3	15	3	-	-	-	-	-	-	-	-	DIRECT	8'	CONDUIT & WIRE
8G	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	-	-	-	-	-	-	-	-	3/4"	266	-	-	-	-	-	QUICK DISCONNECT	5'	-
8C	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	-
8C1	215	COMBI OVEN	ALTO-SHAAM	CTP20-20G	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	FILTERED
D1	-	DUPLEX OUTLET			-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
D2	-	DUPLEX OUTLET			-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
TOTAL CONNECTED LOAD:					9.2	KW.	25.4	AMP	0.0	KW.	0.0	AMP	1530	MBH	H.W.		STEAM SUPPLY					
FUTURE AVAILABLE LOAD CAPACITY:					19.7	KW.	54.6	AMP	0.0	KW.	0.0	AMP	1370	MBH	1"		-					
SYSTEM CAPACITY:					28.8	KW.	80.0	AMP	0.0	KW.	0.0	AMP	2900	MBH	C.W.		COND. RETURN					
SERVICE SIZE:					120/208 W/ 3 PH/ 100 AMP				V/ PH/ AMP				2" IPS LOOPED		1"		-					

VISIONS
MBH = MBH-1000BTU
SK = STRAIGHT BLADE PLUGS
L = L-SHAPED BLADE PLUGS
PS = PIN & SLEEVE PLUGS
(S) = SHUTOFF VALVE & STRAINER
DIRECT = CONDUIT & WIRE



THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

REVISIONS

	DESCRIPTION	DATE:
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Lorenzo Foods
TETERBORO, NJ, 07608

DATE: 7/6/2021
DWG.#: 4967555
DRAWN BY: ZDK
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 3

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05/06/22 ISSUED FOR CLIENT REVIEW 4
Date Description #
Revisions

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Lorenzo Foods Teterboro
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DOB STAMP:

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REVIEW
PLANNING BOARD
BUILDING DEPT
BID
CONSTRUCTION

SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC CAPTIVE AIRE DETAILS
scale: 12" = 1'-0"
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-509.00
DOB BARCODE:
Total

5/6/2022 5:08:03 PM

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4

IMPORTANT SPECIAL UDS PARTS/NOTES

UDS CONSTRUCTION TO BE 16 GA., TYPE 304 STAINLESS STEEL

UTILITY DISTRIBUTION SYSTEM MODEL UDI IS LISTED UNDER ETL FILE NUMBER 3054803 CONFORMS TO UL STD 891 CERTIFIED TO CAN/CSA C22.2 No. 31-M89

PRIOR TO SCHEDULING UDS FOR PRODUCTION PLEASE PROVIDE APPROVED SUBMITTAL CUTSHEETS ON FINAL KITCHEN EQUIPMENT ASSOCIATED WITH THE UDS (NEW & USED) SO THAT CONNECTION SIZES, TYPES AND LOCATIONS CAN BE VERIFIED

ANY CHANGES TO SUBMITTAL DRAWING MAY AFFECT PRICE AND PRODUCTION TIME PLEASE FORWARD CHANGES ASAP

----NOTE----
NEC REQUIRES 36" OF FIELD CLEARANCE IN FRONT OF CIRCUIT BREAKERS FOR ACCESS

SYMBOL SCHEDULE

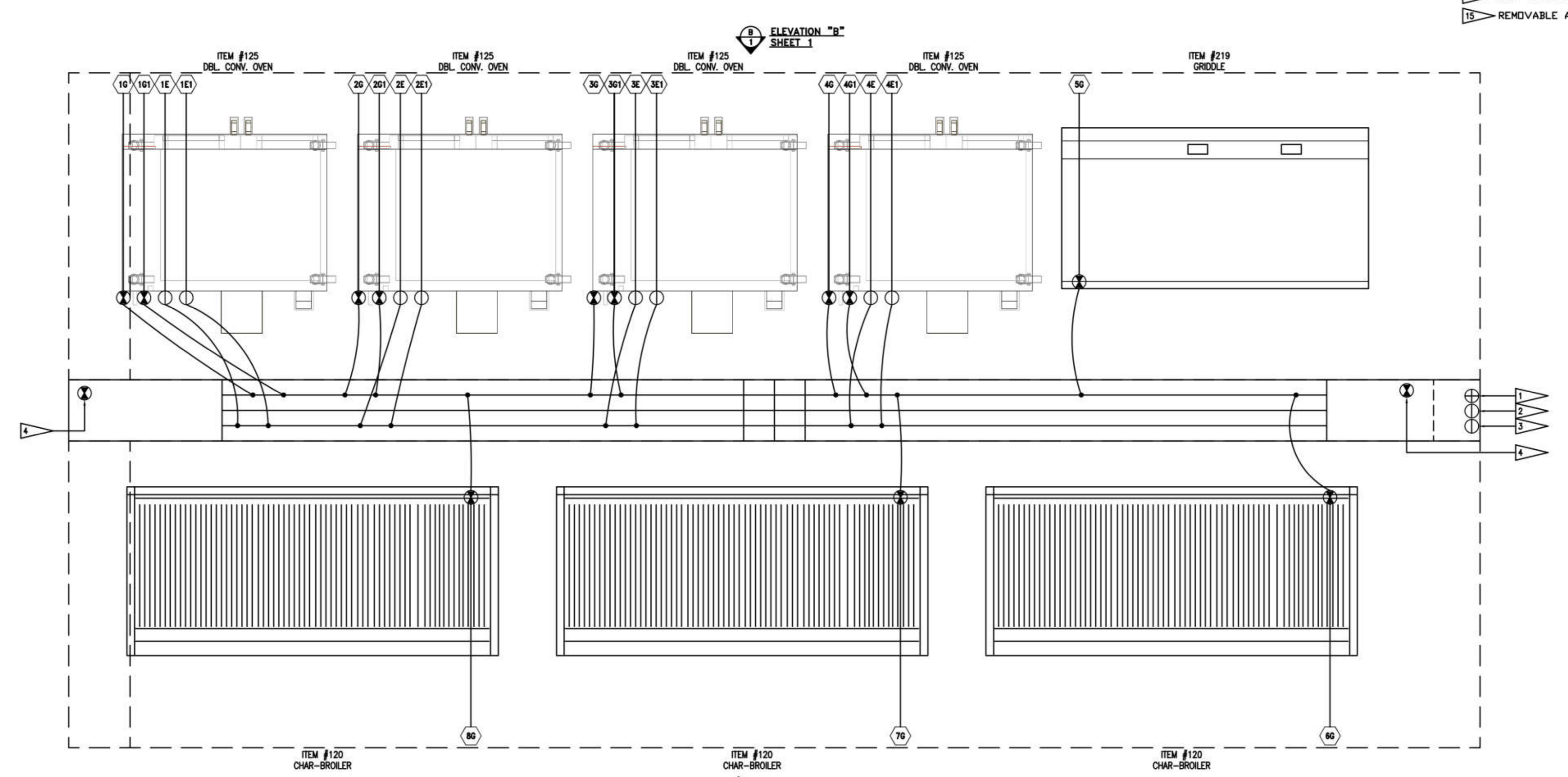
- COLD WATER
- HOT WATER
- FILTERED WATER
- NATURAL GAS
- PROPANE
- 120 VAC 1 PHASE
- 208 VAC 1 PHASE
- 208 VAC 3 PHASE
- 480 VAC 3 PHASE
- STEAM SUPPLY
- STEAM CONDENSATE RETURN

STANDARD FLAG NOTES

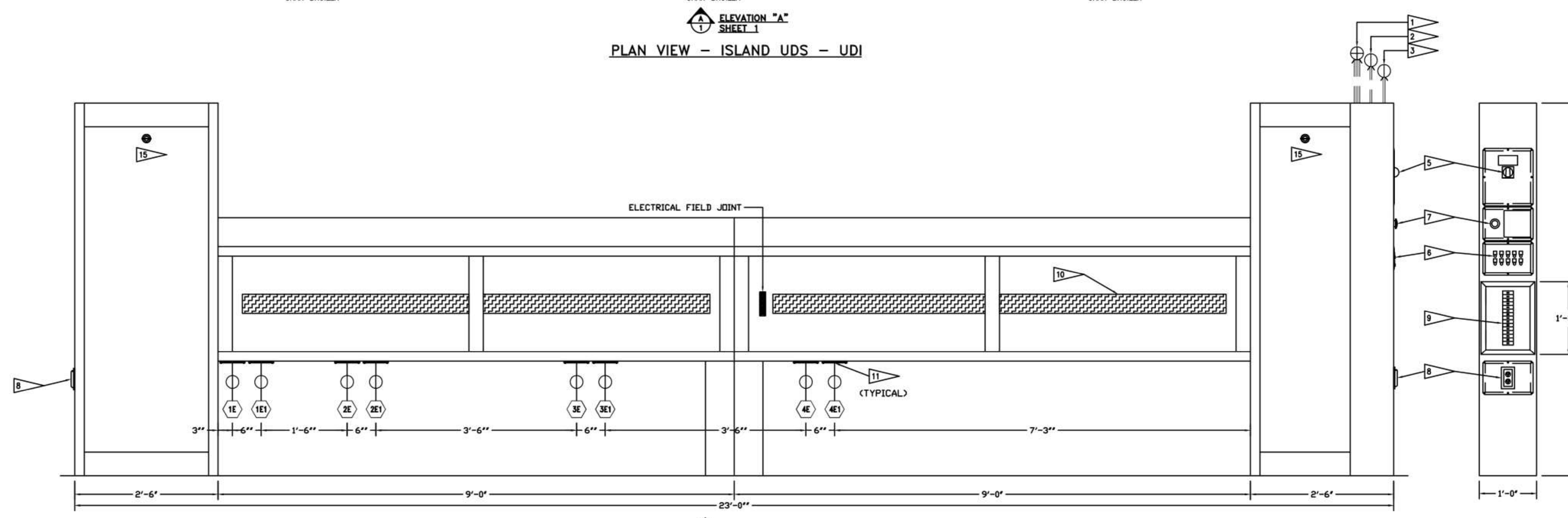
1. ELECTRICAL SERVICE FROM ABOVE, SEE SCHEDULE FOR DETAILS. PROVIDED BY ELECTICAL CONTRACTOR.
2. 120V/1PH/15A DEDICATED ELECTRICAL CIRCUIT INTO UDS TERMINALS 'H1, N1' FOR FUEL/SHUNT CONTROL. (PROVIDED BY ELECTRICAL CONTRACTOR) SEE SCHEMATIC BELOW.
3. 3-WIRE ELECTRICAL CIRCUIT FROM HOOD CONTROL PACKAGE TERMINALS 'GAS, ST & KTS' TO UDS LIKE TERMINALS 'GAS, ST & KTS' FOR UDS SHUT DOWN IN A FIRE CONDITION. (PROVIDED BY ELECTRICAL CONTRACTOR). SEE SCHEMATIC BELOW.
4. GAS SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE AND STYLE (PROVIDED BY PLUMBING CONTRACTOR)
5. SERVICE MAIN BREAKER W/SHUNT TRIP AND RESET HANDLE, SEE SCHEDULE FOR DETAILS.
6. STATUS INDICATOR LIGHTS.
7. EMERGENCY KILL SWITCH.
8. DCO RECEPTACLE W/ BREAKER & WEATHERPROOF COVER.
9. ELECTRICAL LOAD CENTER WITH INDIVIDUAL CIRCUIT BREAKERS.
10. ELECTRICAL WIRING TO APPLIANCES.
11. ELECTRICAL CONNECTION W/WEATHERPROOF COVER AS SPECIFIED ON THE EQUIPMENT SCHEDULE, SEE THIS SHEET.
12. PLUMBING CONNECTION AS SPECIFIED ON THE EQUIPMENT SCHEDULE, SEE THIS SHEET.
13. MANUAL SHUT OFF VALVE.
14. 120V ELECTRICAL GAS VALVE.
15. REMOVABLE ACCESS DOORS.

UTILITY DISTRIBUTION SYSTEM EQUIPMENT SCHEDULE

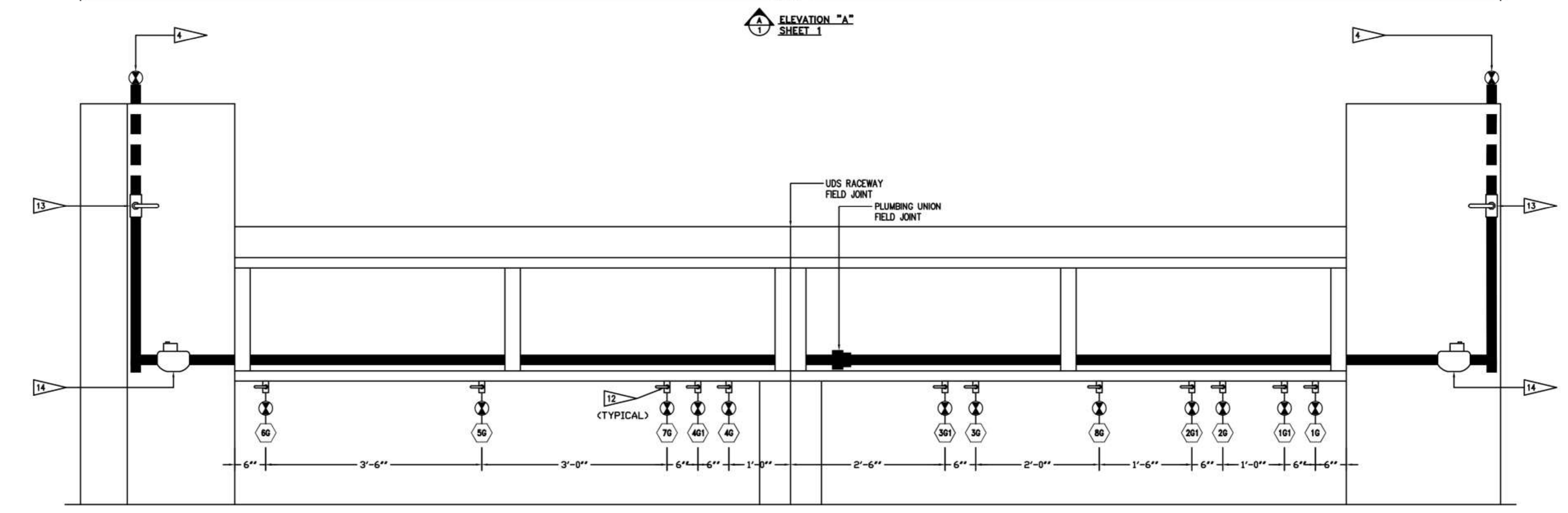
EQUIPMENT					ELECTRICAL					CIRCUIT BREAKER		RECEPTACLE	GAS		WATER		STEAM			CONNECTION		NOTES
CONN.#	ITEM	DESCRIPTION	MANUFACTURER	MODEL #	KW.	AMPS	HP	VOLT	PH	AMPS	POLES	PART #	SIZE	MBH	HOT	COLD	SUPPLY	COND. RETURN	LBS/HR	TYPE	LENGTH	
1E	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
1E1	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
1G	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
1G1	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
2E	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
2E1	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
2G	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
2G1	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
3E	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
3E1	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
3G	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
3G1	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
4E	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
4E1	125	DBL. CONV. OVEN	VULCAN	VC55GD	0.9	7.7	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED	-	GFI BREAKER
4G	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
4G1	125	DBL. CONV. OVEN	VULCAN	VC55GD	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
5G	219	GRIDDLE	VULCAN	MSA60	-	-	-	-	-	-	-	-	3/4"	135	-	-	-	-	-	QUICK DISCONNECT	5'	-
6G	120	CHAR-BROILER	WOLF	ACB72	-	-	-	-	-	-	-	-	3/4"	221	-	-	-	-	-	QUICK DISCONNECT	5'	-
7G	120	CHAR-BROILER	WOLF	ACB72	-	-	-	-	-	-	-	-	3/4"	221	-	-	-	-	-	QUICK DISCONNECT	5'	-
8G	120	CHAR-BROILER	WOLF	ACB72	-	-	-	-	-	-	-	-	3/4"	221	-	-	-	-	-	QUICK DISCONNECT	5'	-
D1	-	DUPLEX OUTLET	-	-	-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
D2	-	DUPLEX OUTLET	-	-	-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
TOTAL CONNECTED LOAD:				7.4	KW.	20.5	AMP	0.0	KW.	0.0	AMP	1198	MBH		H.W.		STEAM SUPPLY			LEGEND MBH = BTU PER HOUR (1000S) SB = STRAIGHT BLADE PLUGS TL = TWIST LOCK PLUGS PS = PIN & SLEEVE PLUGS DCO = DUAL CONVENIENCE OUTLET DIRECT = CONDUIT & WIRE		
FUTURE AVAILABLE LOAD CAPACITY:				21.4	KW.	59.5	AMP	0.0	KW.	0.0	AMP	1152	MBH		-		-					
SYSTEM CAPACITY:				28.8	KW.	80.0	AMP	0.0	KW.	0.0	AMP	2350	MBH		C.W.		COND. RETURN					
SERVICE SIZE:				120/208 V/ 3 PH/ 100 AMP				V/ PH/ AMP				2" IPS LOOPED			-		-					



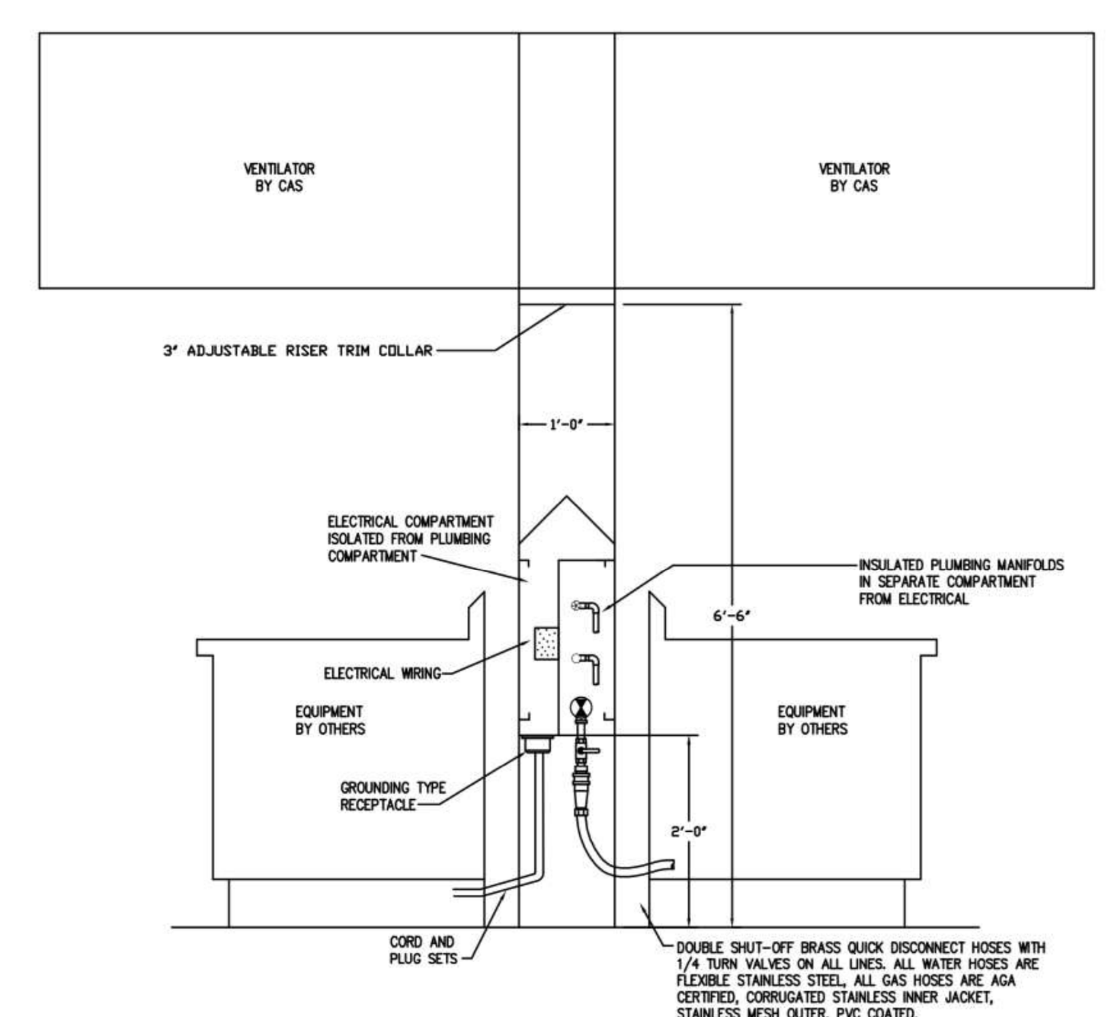
PLAN VIEW - ISLAND UDS - UDI



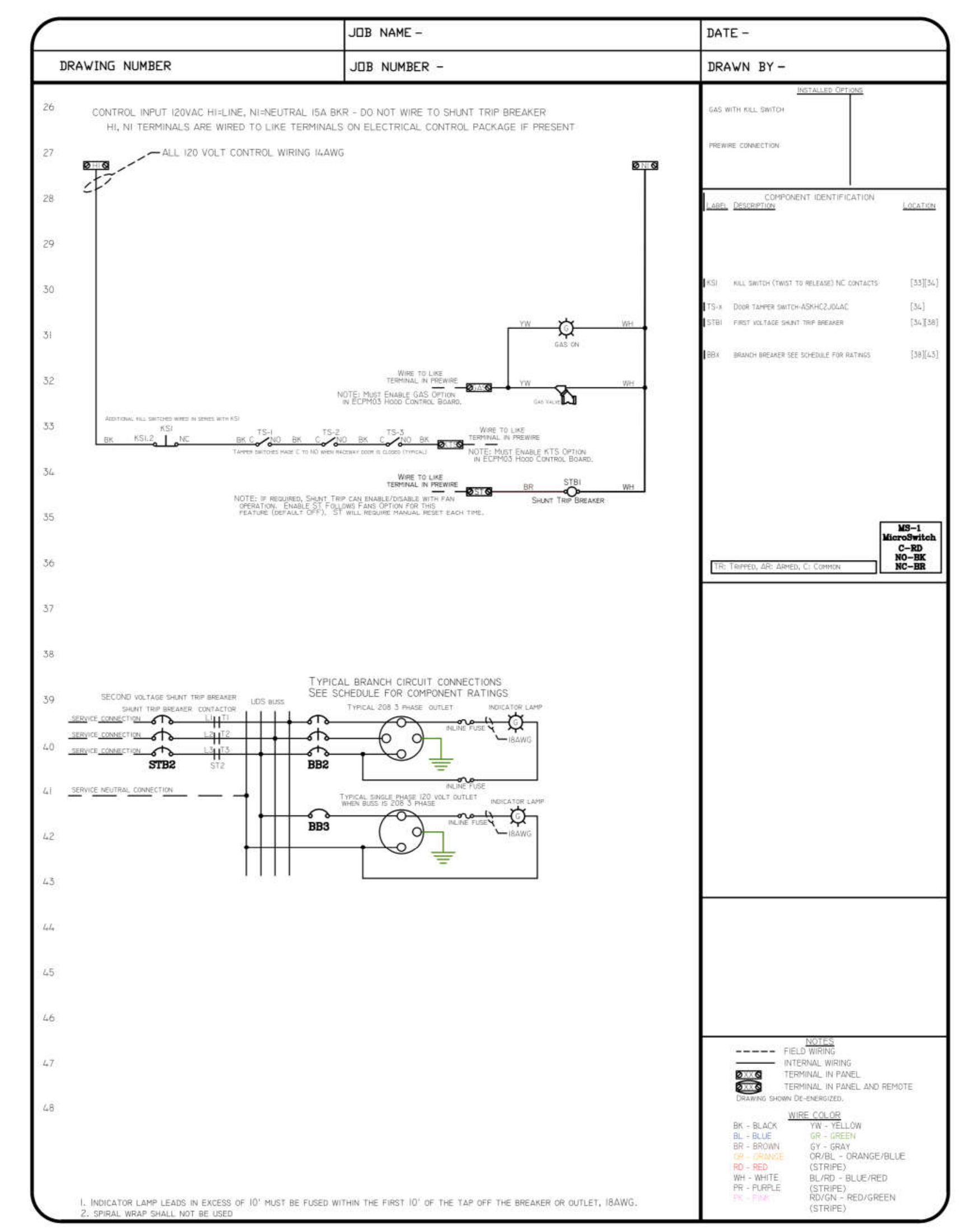
ELEVATION "A" SHEET 1



ELEVATION "B" SHEET 1



TYPICAL SECTION VIEW
MODEL UDI DISTRIBUTION SYSTEM



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REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
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CAPTIVEAIRE www.captiveaire.com

North New Jersey Mechanical
, Summit, NJ, PHONE: (201) 308-6647 FAX: (919) 516-8752 EMAIL: reg138@captiveaire.com

Lorenzo Foods
TETERBORO, NJ, 07608

DATE: 7/6/2021

DWG.#: 4967555

DRAWN BY: ZDK

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 4

GENERAL CONDITIONS NOTE:

Date	Description	#
05/06/22	ISSUED FOR CLIENT REVIEW	4

Revisions

CYBUL CYBUL WILHELM ARCHITECTS AIA
1064 River Rd.
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30 Park Road, Suite 4
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lorenzo food group

Lorenzo Foods Teterboro

25 CENTRAL AVE
TETERBORO, NJ, 07608

DOB STAMP:

ISSUED FOR
- REVIEW ■
- PLANNING BOARD □
- BUILDING DEPT □
- BID □
- CONSTRUCTION □

SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC CAPTIVE AIRE DETAILS

scale: 12" = 1'-0"

release date: 05/06/22

drawing date: 09/24/2021

drawn by: ZW

approved by: KF

project no.: 2102

drawing no.: M-510.00

DOB BARCODE:

Total

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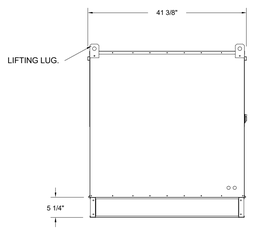
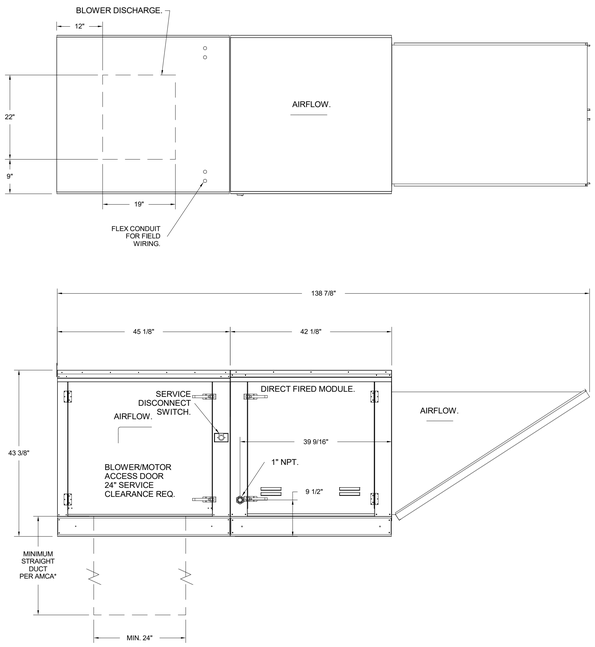
FAN #9 A3-D.500-24D - HEATER (KMUA-3)
1. DIRECT FIRED MAKE UP AIR UNIT WITH 24" MIXED FLOW DIRECT DRIVE FAN AND 12" BURNER.
2. [illegible] 2.5" DIAMETER, 1/4" THREAD SIZE.
3. [illegible] SIZE.
4. [illegible] CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE. NFBUP-S ACTUATOR INCLUDED.
5. [illegible] MONITORING FOR MUA UNITS, USES +/- 15 PRESSURE TRANSDUCER, RIVET NUTS, 1/4" AIRFLOW TUBING AND PUSH TO CONNECT [illegible] ONLY AVAILABLE WHEN CURB ASSEMBLY IS ORDERED.
6. [illegible] TRANS.
7. [illegible] INCLUDED.
8. [illegible] ORIFICE.
9. [illegible] DOOR ASSEMBLY
14. 2 YEAR PARTS WARRANTY.

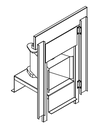
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 24" x 24".

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 15°F.
TEMP. RISE = 60°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT
BTUs AT ALTITUDE OF 0.0 FT. = 358962.
INPUT BTUs AT ALTITUDE OF
0.0 FT. = 390176.
OUTPUT BTUs AT ALTITUDE OF 8 FT. = 358868.
INPUT BTUs AT ALTITUDE OF 8 FT. = 390064.







DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO.: US6629523B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ENSURE COMPLIANCE WITH ASHRAE 62.1 REQUIREMENTS FOR PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO) AND 0.1PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

APPLICATION:
SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL DF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

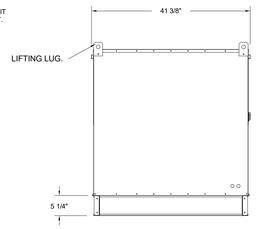
CERTIFICATIONS:
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNITS ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

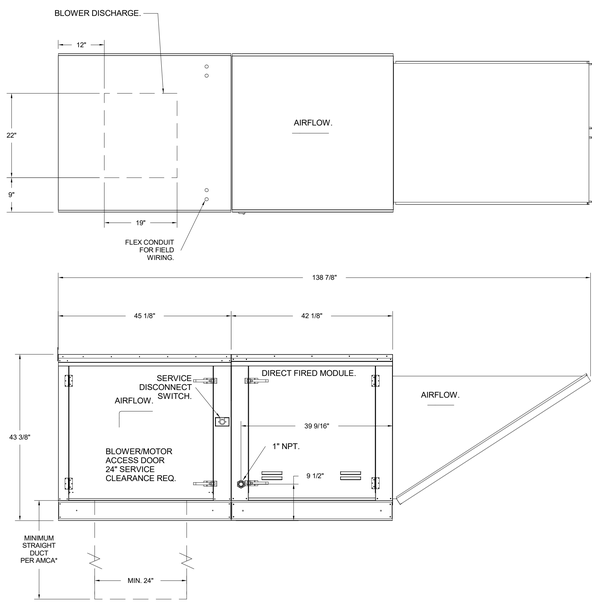
GENERAL CONSTRUCTION:
-PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
-PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
-PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
-DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
-SPRING HINGES SHALL BE MADE FROM PLATED STEEL.

FAN #9 A3-D.500-24D - HEATER (KMUA-4)
1. DIRECT FIRED MAKE UP AIR UNIT WITH 24" MIXED FLOW DIRECT DRIVE FAN AND 12" BURNER.
2. [illegible] 2.5" DIAMETER, 1/4" THREAD SIZE.
3. [illegible] CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE. NFBUP-S ACTUATOR INCLUDED.
4. [illegible] MONITORING FOR MUA UNITS, USES +/- 15 PRESSURE TRANSDUCER, RIVET NUTS, 1/4" AIRFLOW TUBING AND PUSH TO CONNECT [illegible] ONLY AVAILABLE WHEN CURB ASSEMBLY IS ORDERED.
5. [illegible] TRANS.
6. [illegible] INCLUDED.
7. [illegible] ORIFICE.
8. [illegible] DOOR ASSEMBLY
14. 2 YEAR PARTS WARRANTY.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 24" x 24".
SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 15°F.
TEMP. RISE = 60°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT
BTUs AT ALTITUDE OF 0.0 FT. = 423063.
INPUT BTUs AT ALTITUDE OF
0.0 FT. = 459851.
OUTPUT BTUs AT ALTITUDE OF 8 FT. = 422940.
INPUT BTUs AT ALTITUDE OF 8 FT. = 459718.





THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

GENERAL CONDITIONS NOTE:

CAPTIVE AIRE
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Revisions		
Date	Description	#
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3/4" = 1'-0"
MASTER DRAWING

lorenzo food group

Lorenzo Foods Teterboro

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SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC CAPTIVE AIRE DETAILS
scale: As indicated
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-511.00
DOB BARCODE: Total

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FAN #11 (KMUA-5) - A2-IBT-300-20D HEATER
FAN #12 (KMUA-6) - A2-IBT-300-20D HEATER

1. INDIRECT BENT TUBE GAS FIRED HEATER WITH 20" MIXED FLOW DIRECT DRIVE FAN, 1 FURNACE, ELECTRONIC FULL MODULATION, CONSTANT 80% EFFICIENCY, AND 6:1 MAX TURNDOWN FOR NG, (5:1 MAX TURNDOWN FOR LP). STAINLESS STEEL BURNER AND HEAT EXCHANGER.
2. INTAKE HOOD WITH EZ FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
4. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
5. GAS PRESSURE GAUGE, 0 TO +10 INCHES WC., 2.5" DIAMETER, 1/8" THREAD SIZE, REAR THREAD.
6. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED.
7. COMMERCIAL SMOKE DETECTOR INTERLOCK. (DETECTOR BY OTHERS).
8. SINGLE POINT ELECTRICAL CONNECTION FOR ALL IBT HEATERS WITH 1 MODULE. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE IS USED ON THE IBT HEATER, THE #28, #47, "MA", OR "EZ" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
9. FIELD WIRED EXHAUST CONTACTOR AFTER AIRFLOW SWITCH. RATED 23 AMPS. STARTS UP TO (2) SINGLE PHASE MOTORS. 2HP MAX, 115V, 3HP MAX, 240V. STARTS ONE THREE PHASE MOTOR. 5HP MAX, 208V, 7.5HP 230V, 15HP MAX, 460V, 15HP MAX, 575V OR (4) DRY INTERLOCKS. OVERLOAD NOT INCLUDED.
10. CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
11. VAV (VARIABLE-AIR-VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS. MANUAL SPEED CONTROL VARIABLE FREQUENCY DRIVE INCLUDED.
12. MOUNT LOAD REACTOR IN FAN.
13. VFD FACTORY MOUNTED AND WIRED IN UNIT CONTROL VESTIBULE.
14. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).
15. 2 YEAR ENTIRE UNIT PARTS WARRANTY, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY.
IBT - US PATENT 877119 B2.

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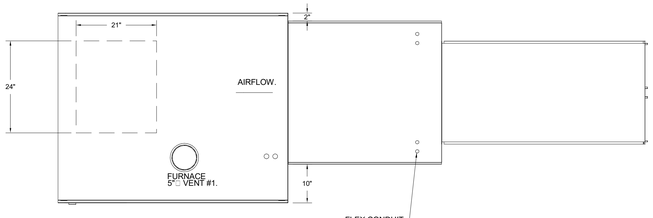
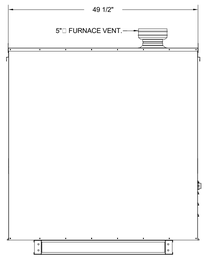
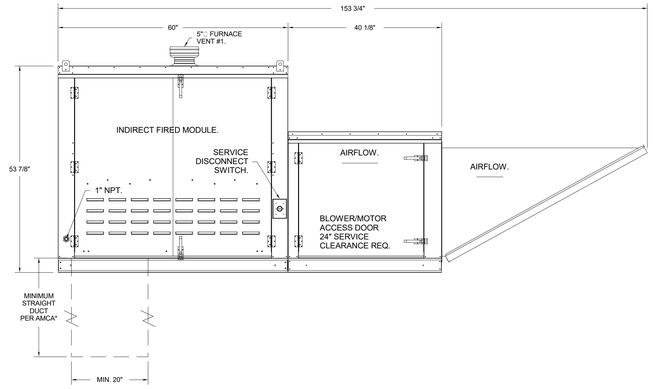
SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".



SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 15°F.
TEMP. RISE = 63°F.
BTUs CALCULATED OFF STANDARD AIR DENSITY
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 240000
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 300000





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4	ISSUED FOR CLIENT REVIEW	05/06/22

Revisions

CAPTIVE AIRE
North New Jersey
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, Summit, NJ. PHONE: (201) 308-6647 FAX: (919) 516-9752 EMAIL: rejg138@captiveaire.com

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12/72021

4967555

ZDK

3/4" = 1'-0"

MASTER DRAWING

9

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BRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER
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DOAS/RTU FAN SCHEDULE - JOB#5058821

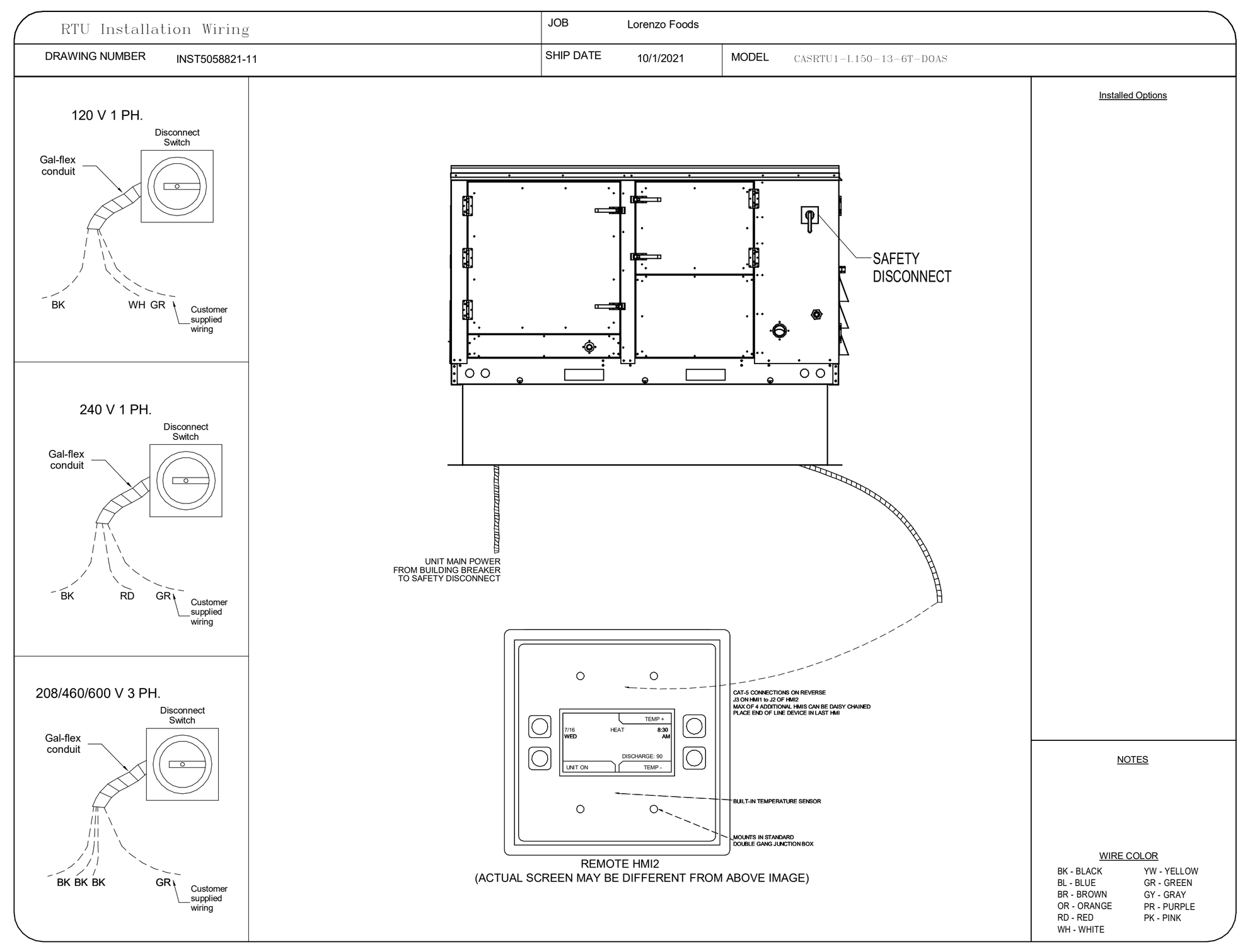
FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	ESP	HP	BHP	PHASE	VOLT	MCA	MOCP	WEIGHT (LBS)
11	DOAS-1	1	CASRTU1-I.150-13-6T-DOAS	CAPTIVEAIRE	13P-1	0	1500	1500	0.500	1.500	0.9280	3	208	33.9A	35A	1293

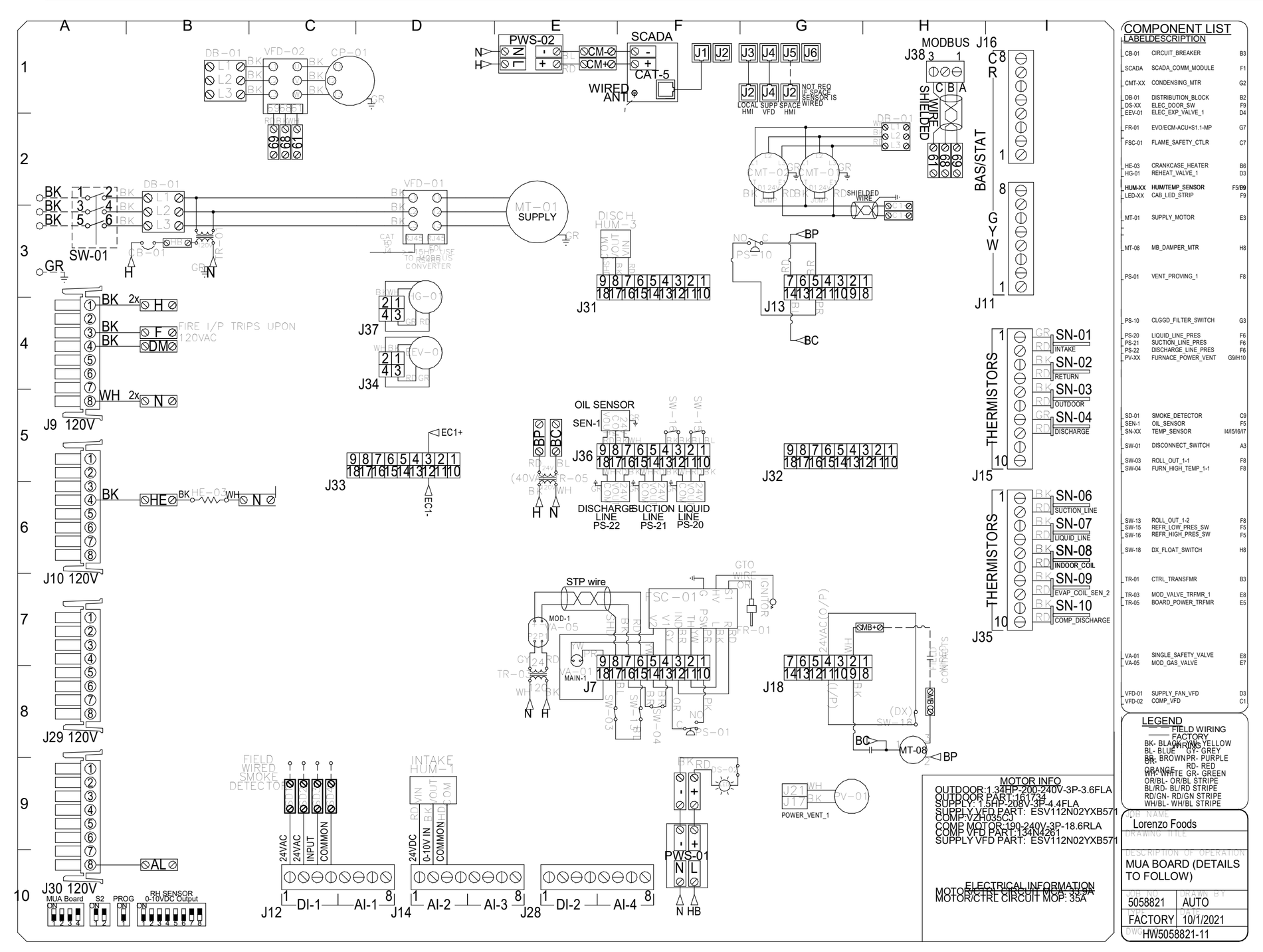
DOAS/RTU COOLING SCHEDULE

FAN UNIT NO	TAG	COMPRESSOR			OUTDOOR FAN				INDOOR COIL		OUTSIDE AIR DB TEMP	OUTSIDE AIR WB TEMP	MIXED AIR DB TEMP	MIXED AIR WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	LEAVING DP TEMP	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	REHEAT LEAVING DB TEMP	REHEAT LEAVING WB TEMP	DESIRED REHEAT CAPACITY	MAX REHEAT CAPACITY	REHEAT LEAVING RELATIVE HUMIDITY	MOISTURE REMOVAL RATE	IEER
		TONNAGE	VOLTAGE	PHASE	MOTOR VOLTAGE	MOTOR □	MOTOR FREQUENCY	MOTOR QTY	ROWS	FACE AREA																	
11	DOAS-1	6	190-240	3	200-240	3	60	2	4	6.2 SQFT	90.0°F	74.0°F	90.0°F	74.0°F	59.7°F	56.9°F	55.1°F	84.0 MBH	48.0 MBH	36.0 MBH	70.0°F	64.2°F	17.2 MBH	56 MBH	73	32.7 LBS/HR	19.5

DOAS/RTU HEATING SCHEDULE

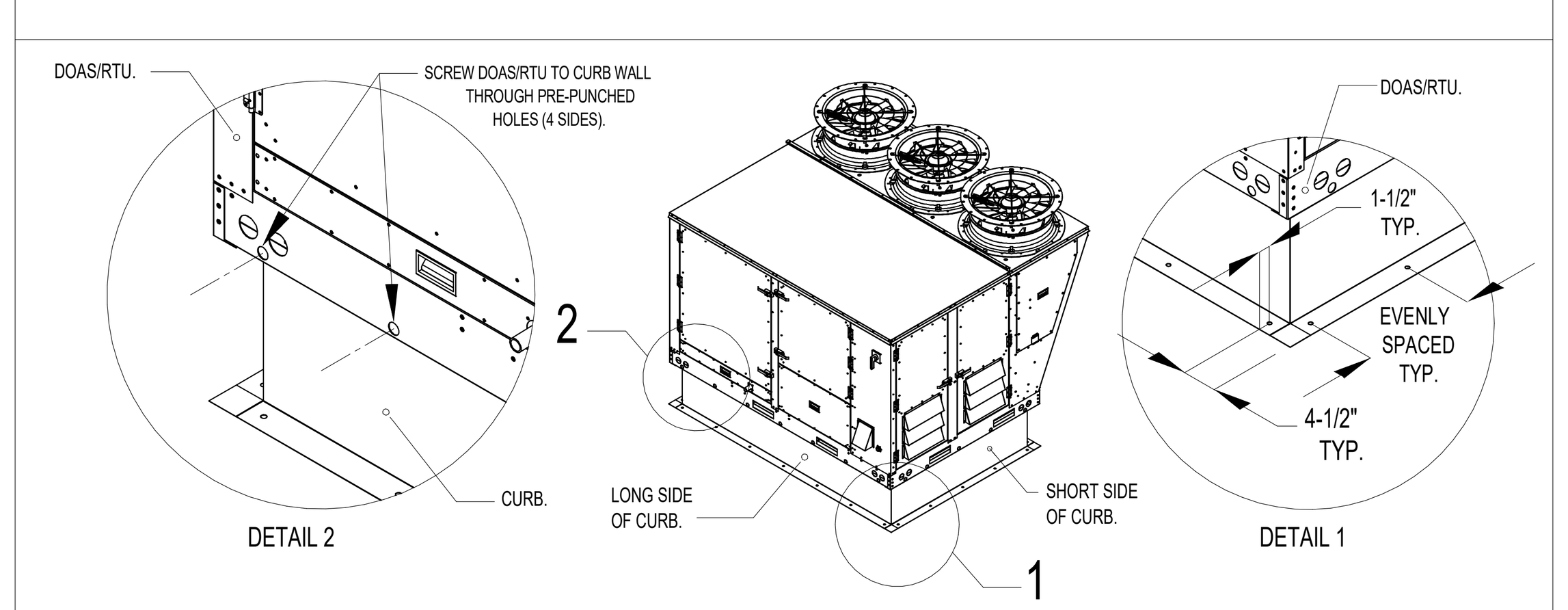
FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
11	DOAS-1	150000	120000	66°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	80





TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

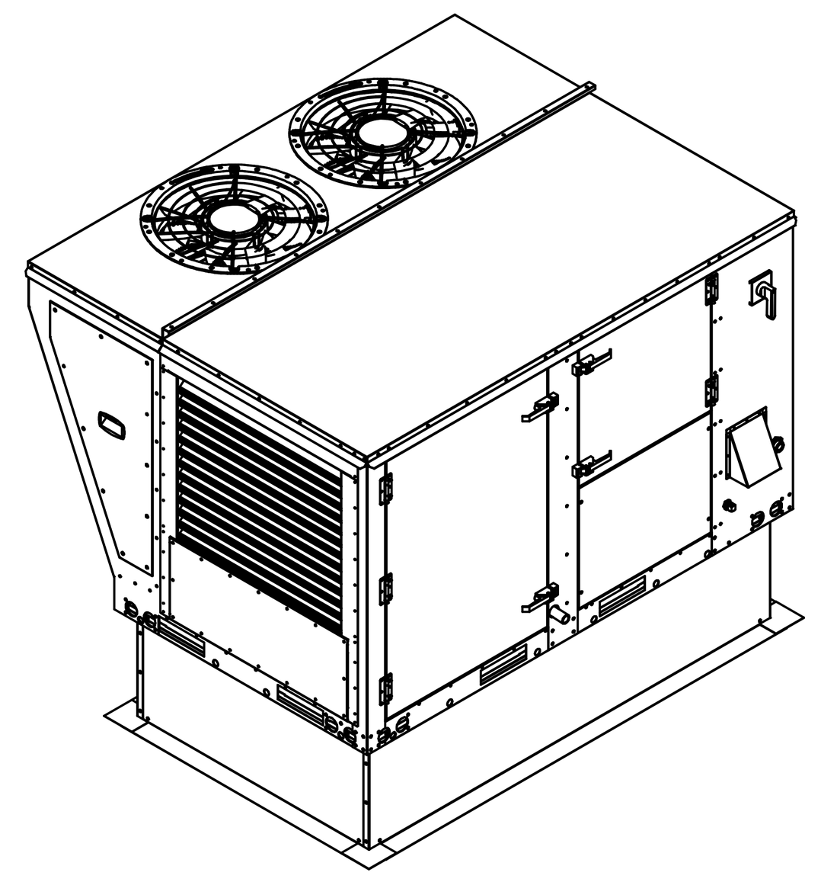
1. SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW. USING 3/8" X 2" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS, SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.
2. SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.

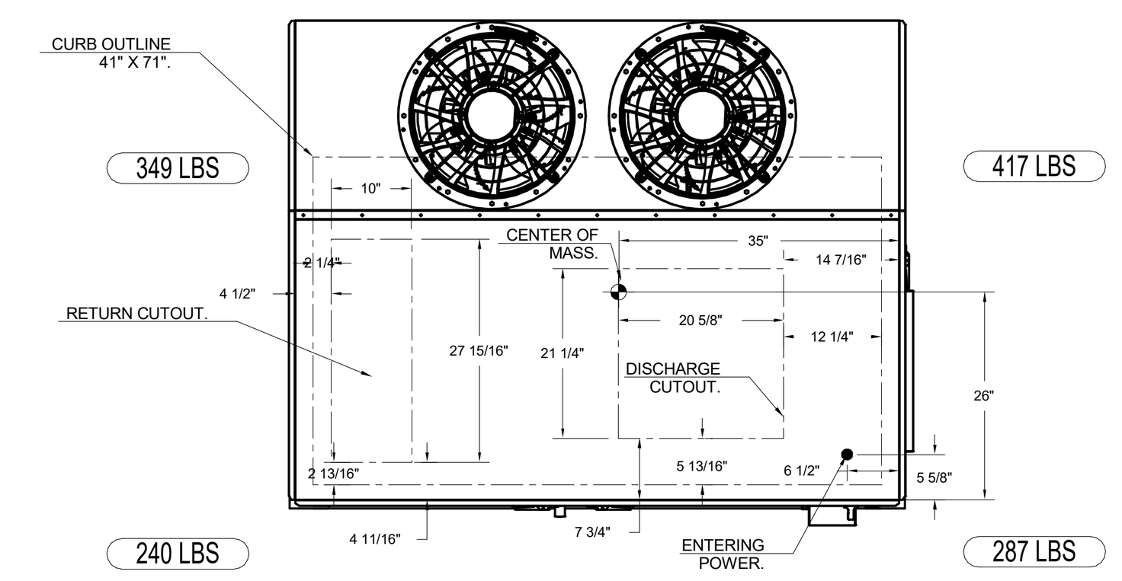


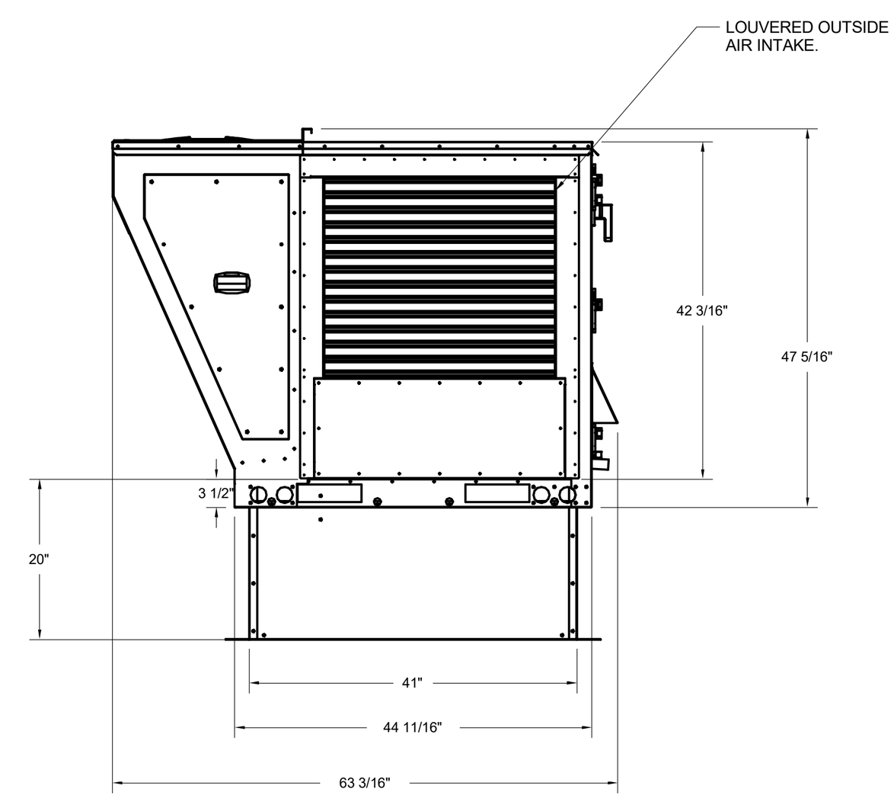
FAN #11 CASRTU1-I.150-13-6T-DOAS - HEATER (DOAS-1)

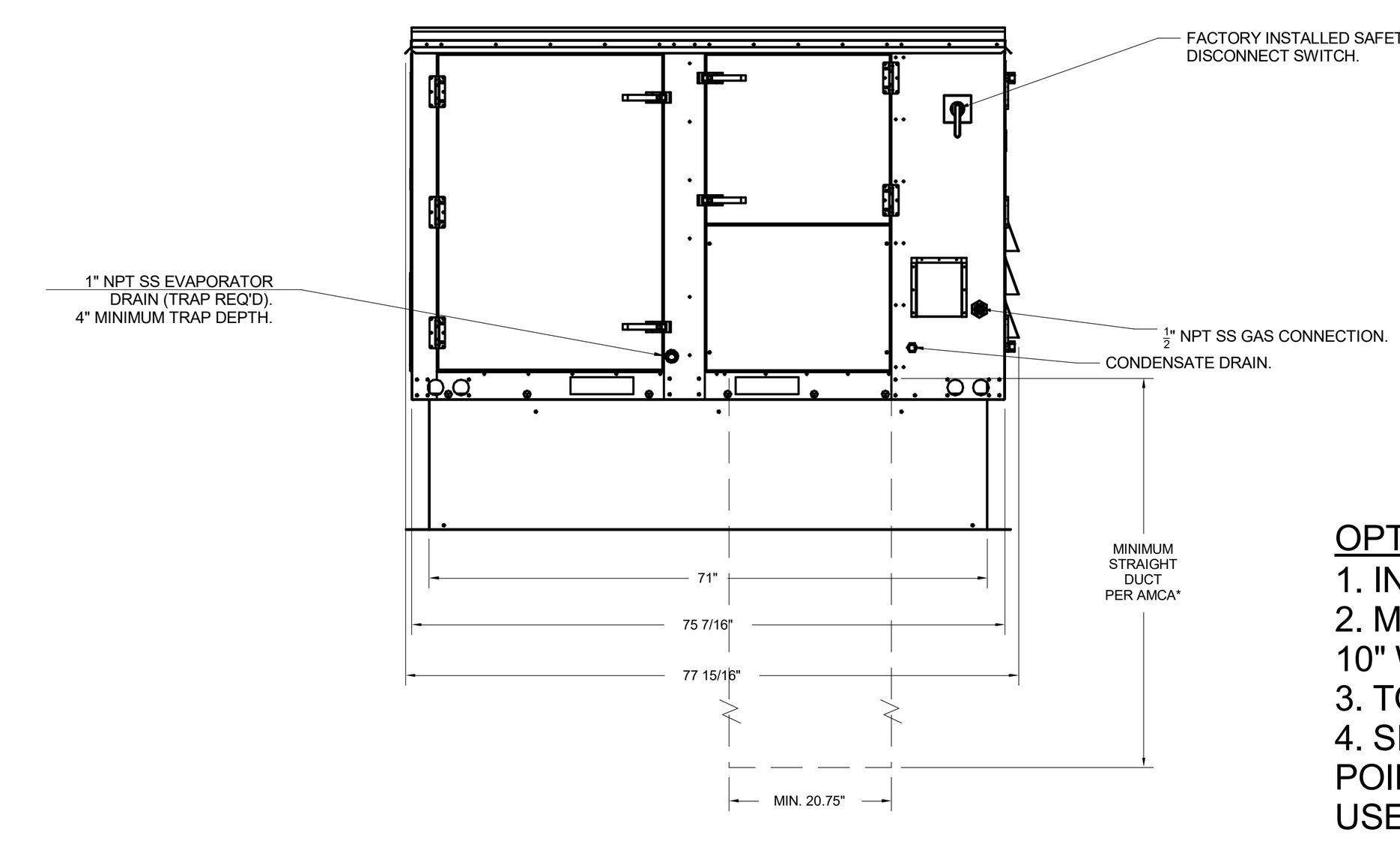
NOTES:

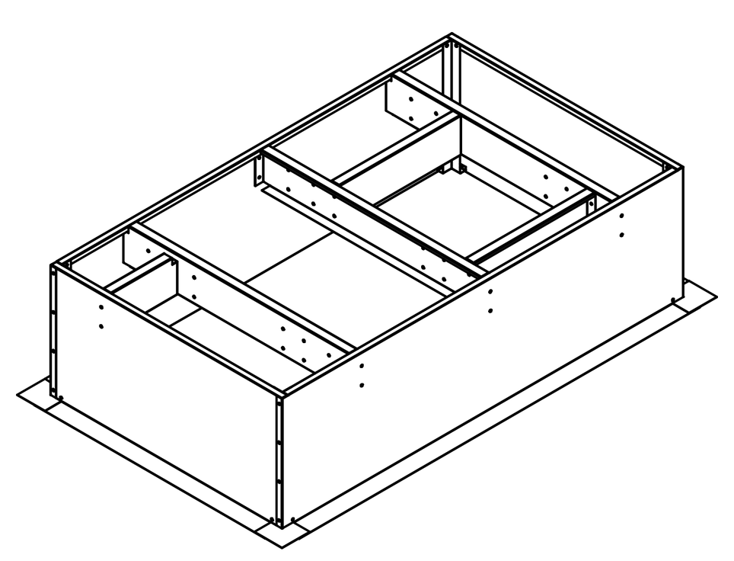
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.

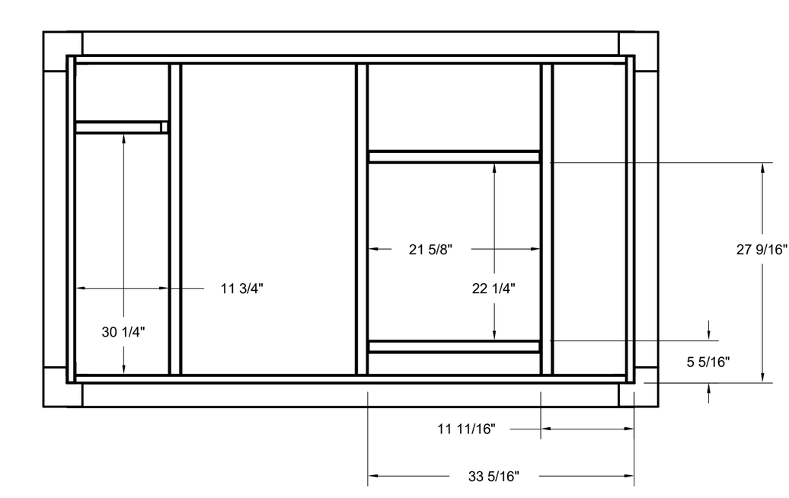












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SUGGESTED STRAIGHT DUCT SIZE IS 20.75" x 21.5".

OPTIONS

1. INLET PRESSURE GAUGE, 0-35".
2. MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
3. TOTAL CFM MONITORING FOR DOAS.
4. SINGLE POINT ELECTRICAL CONNECTION FOR RTU. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
5. CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
6. 2" MERV 13 FILTERS FOR SIZE 1 RTU. QTY. 4.
7. 2" MERV 8 FILTERS SIZE 1 RTU. QTY 4.
8. OVERHEAT STAT.
9. VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
10. RTU SIZE 1 DOWN DISCHARGE.
11. COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
12. CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
13. 6 TON MODULATING COOLING OPTION, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS.
14. 6 TON MODULATING REHEAT OPTION. SPACE DEWPOINT CONTROL.
15. RTU SIZE 1 DOWN RETURN.
16. FREEZESTAT.
17. VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED).
18. RTU FIELD WIRED INTAKE/RETURN DAMPER SWITCH CONTROL.
19. SIZE 1 RTU CURB DUCT HANGER.
20. 5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS).

THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

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Lorenzo Foods
TETERBORO, NJ, 07608

10/1/2021
4967555
ZDK
1/2" = 1'-0"
MASTER DRAWING
10

Date	Description	#
05/06/22	ISSUED FOR CLIENT REVIEW	4

Revisions

CYBUL CYBUL WILHELM ARCHITECTS AIA
1064 River Rd.
Edgewater, NJ 07020

KOESTNER ASSOCIATES
P.O.BOX 514
Hackensack, NJ 07602

ALLIED ENGINEERING
730 River Road
New Milford, NJ 07646

BD ENGINEERING, LLC.
30 Park Road, Suite 4
Tinton Falls, NJ 07724

Lorenzo Foods Teterboro

25 CENTRAL AVE
TETERBORO, NJ, 07608

DOB STAMP:

ISSUED FOR
REVIEW
PLANNING BOARD
BUILDING DEPT
BID
CONSTRUCTION

SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name: HVAC CAPTIVE AIRE DETAILS
scale: As indicated
release date: 05/06/22
drawing date: 09/24/2021
drawn by: ZW
approved by: KF
project no.: 2102
drawing no.: M-513.00
DOB BARCODE:
Total

5/6/2022 5:08:44 PM

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4

DUCTWORK #1 PARTS - JOB#4967555										
TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1617LT	1575				-0.003	9.24	1128.01	1	SINGLE WALL DUCT 16" DIAMETER, 17" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P2	DW1690ASY	1575				-0.057	13.00	1128.01	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P3	DW1623LT	1575				-0.004	12.32	1128.01	1	SINGLE WALL DUCT 16" DIAMETER, 23" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P4	DW1620ADPEC	1575				-0.013	12.00	1128.01	1	SINGLE WALL DUCT ADAPTER, 16" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P5	DW20TEASY	3150		1		-0.262	26.16	1443.85	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P6	DW1620ADPEC	1575				-0.013	12.00	1128.01	1	SINGLE WALL DUCT ADAPTER, 16" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P7	DW1617LT	1575				-0.003	9.24	1128.01	1	SINGLE WALL DUCT 16" DIAMETER, 17" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P8	DW16SUBRASY						3.18		1	DUCT SUPPORT BRACKET KIT, 16" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P9	DW16SUBRASY						3.18		1	DUCT SUPPORT BRACKET KIT, 16" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P10	DW1690ASY	1575				-0.057	13.00	1128.01	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P11	DW1617LT	1575				-0.003	9.24	1128.01	1	SINGLE WALL DUCT 16" DIAMETER, 17" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P12	DW2047LT	3150				-0.0077	31.08	1443.85	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P13	DW2029LT	3150				-0.0047	19.42	1443.85	1	SINGLE WALL DUCT 20" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P14 ASSEMBLED W/P15	DW2030AJDKIT	3150				-0.0026	25.05	1443.85	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 29.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P15 ASSEMBLED W/P14	DW2620TPDBEX	3150					9.00	1443.85	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 20" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA16HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
SYSTEM AT P15						-0.487	0.00			
	3M-2000PLUS						0.80		4	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW16CLASY						1.18		8	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 16" DUCT, ASSEMBLY.
	DW20CLASY						1.41		5	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 20" DUCT, ASSEMBLY.
TOTAL WEIGHT							226.80			

SINGLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.

- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.

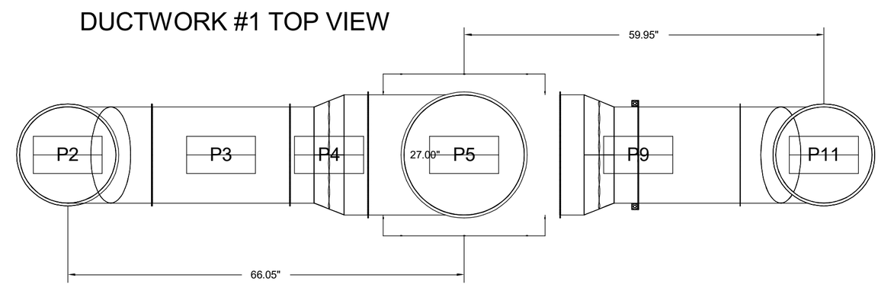
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.

- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

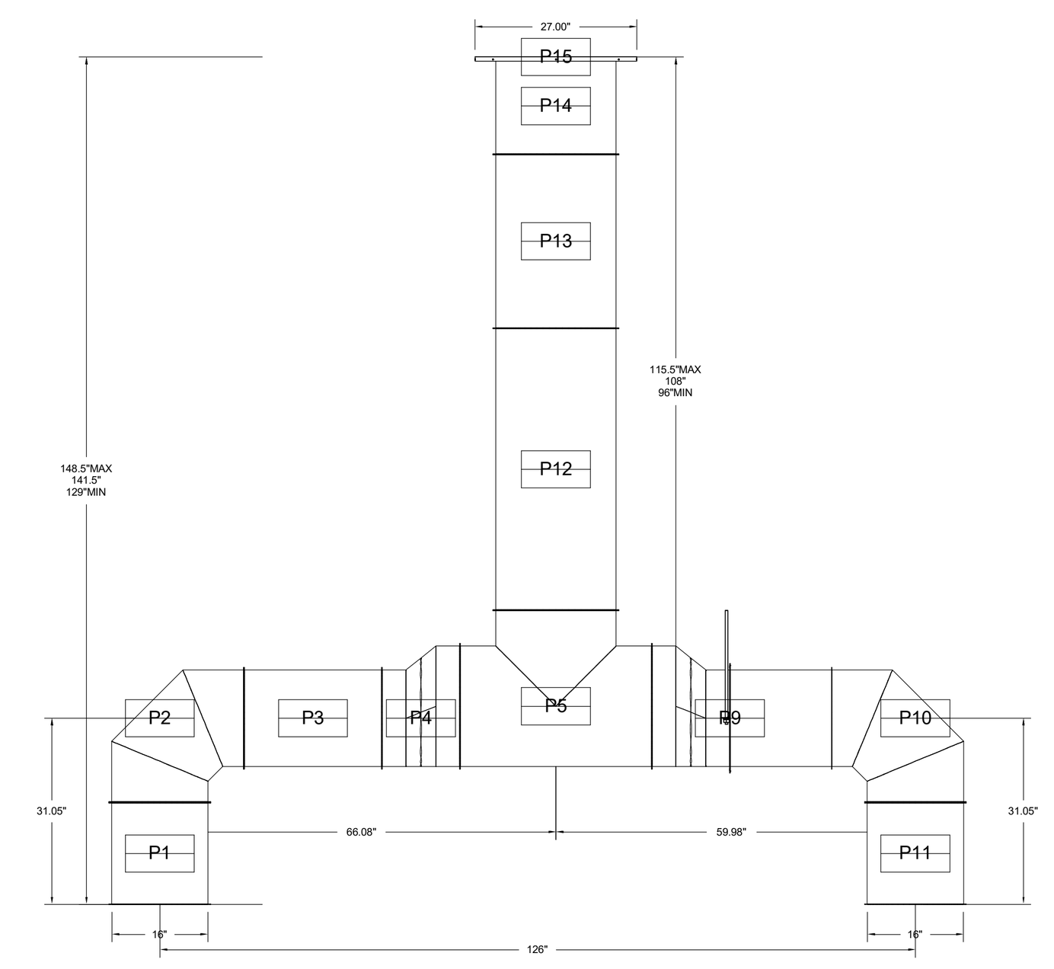
DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
5"	10'	10'	24'
6"	10'	10'	24'
7"	10'	10'	24'
8"	10'	10'	24'
10"	10'	10'	24'
12"	10'	10'	24'
14"	10'	10'	24'
16"	10'	10'	24'
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'
24"	10'	10'	24'
26"	10'	10'	24'
28"	10'	10'	24'
30"	10'	10'	24'
32"	10'	10'	24'
34"	10'	10'	24'
36"	10'	10'	24'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

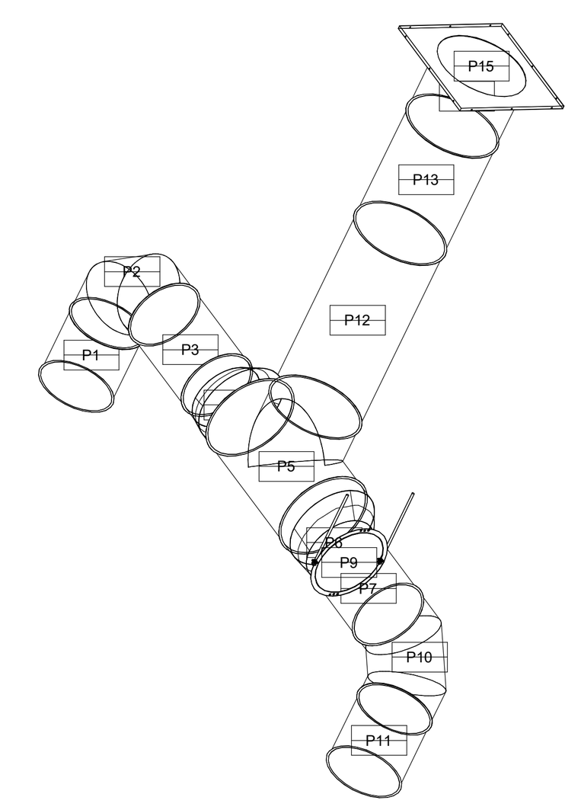
DUCTWORK #1 TOP VIEW



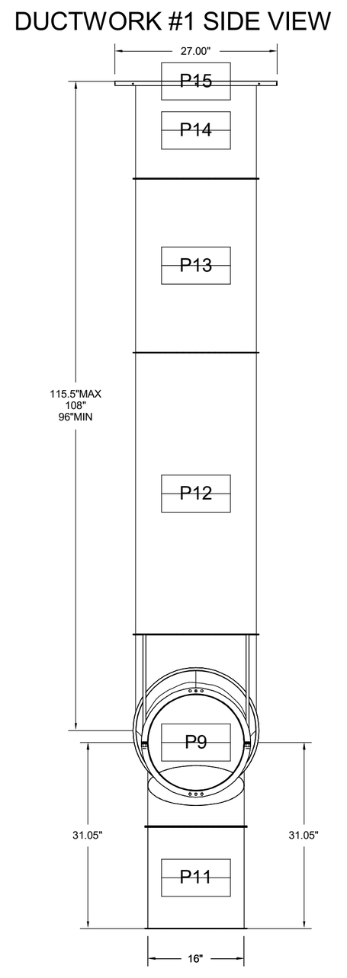
DUCTWORK #1 FRONT VIEW



DUCTWORK #1 SE VIEW



DUCTWORK #1 SIDE VIEW



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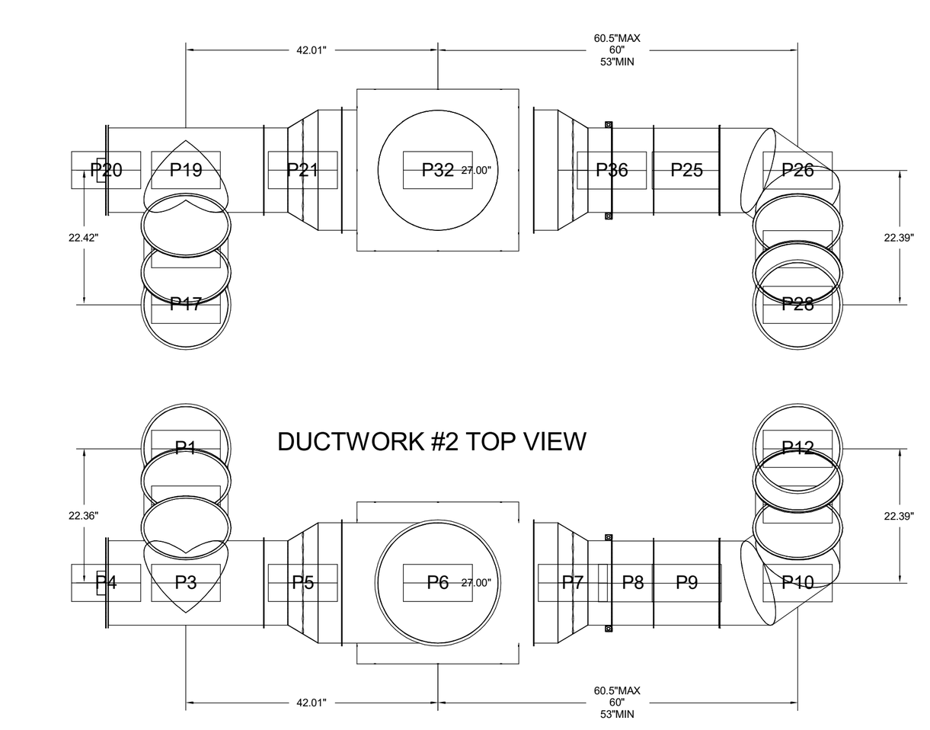
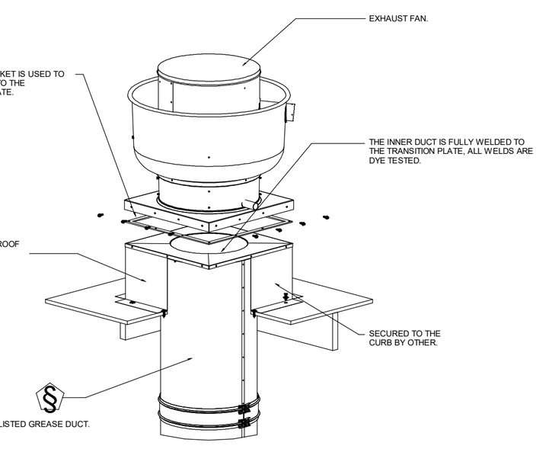
ZDK
3/4" = 1'-0"
MASTER DRAWING
11

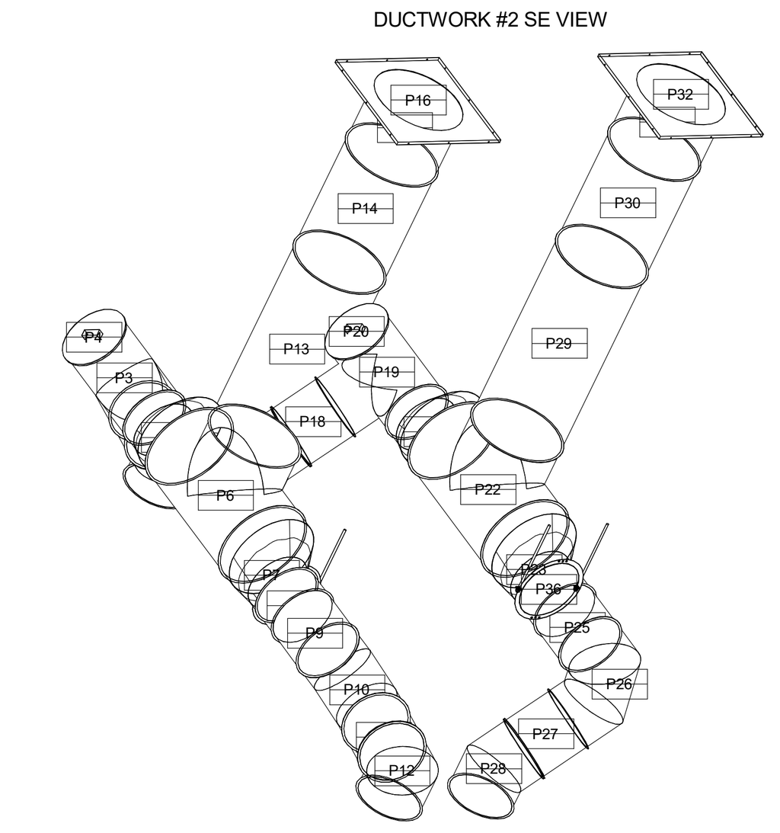
DUCTWORK #2 PARTS - JOB#4967555										
TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1445ASY	1575				-0.035	7.22	1473.32	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 14" DUCT, ASSEMBLY.
P2	DW1411LT	1575				-0.004	5.46	1473.32	1	SINGLE WALL DUCT 14" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P3 ASSEMBLED W/P4	DW14TEASY	1575		1		-0.1235	15.95	1473.32	1	SINGLE WALL DUCT TEE, 14" DUCT, ASSEMBLY.
P4 ASSEMBLED W/P3 O=S	DW1415ADKIT						3.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 14" DUCT USE 15" DOOR. STAINLESS STEEL.
P5	DW1420ADPEC	1575				-0.075	8.99	1473.32	1	SINGLE WALL DUCT ADAPTER, 14" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P6	DW20TEASY	3175		1		-0.2337	26.16	1455.31	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P7	DW1420ADPEC	1600				-0.077	8.99	1496.71	1	SINGLE WALL DUCT ADAPTER, 14" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P8	DW1407LT	1600				-0.0023	3.63	1496.71	1	SINGLE WALL DUCT 14" DIAMETER, 7" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P9	DW1418AJDKIT	1600				-0.0037	11.56	1496.71	1	SINGLE WALL DUCT ADJUSTABLE, 14" DIAMETER, 17.5" LONG, FLANGE AT ONE END WITH A 14" ADJUSTABLE COLLAR - STAINLESS STEEL.
P10	DW1490ASY	1600				-0.1278	10.62	1496.71	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 14" DUCT, ASSEMBLY.
P11	DW1411LT	1600				-0.004	5.46	1496.71	1	SINGLE WALL DUCT 14" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P12	DW1445ASY	1600				-0.0368	7.22	1496.71	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 14" DUCT, ASSEMBLY.
P13	DW2047LT	3175				-0.0078	31.08	1455.31	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P14	DW2029LT	3175				-0.0048	19.42	1455.31	1	SINGLE WALL DUCT 20" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P15 ASSEMBLED W/P16	DW2024AJDKIT	3175				-0.0024	20.76	1455.31	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P16 ASSEMBLED W/P15	DW2620TPDBEX	3175					9.00	1455.31	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 20" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA16HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
SYSTEM AT P16						-1.2343	0.00			
P17	DW1445ASY	1575				-0.035	7.22	1473.32	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 14" DUCT, ASSEMBLY.
P18	DW1411LT	1575				-0.004	5.46	1473.32	1	SINGLE WALL DUCT 14" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P19 ASSEMBLED W/P20	DW14TEASY	1575		1		-0.1235	15.95	1473.32	1	SINGLE WALL DUCT TEE, 14" DUCT, ASSEMBLY.
P20 ASSEMBLED W/P19 O=S	DW1415ADKIT						3.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 14" DUCT USE 15" DOOR. STAINLESS STEEL.
P21	DW1420ADPEC	1575				-0.075	8.99	1473.32	1	SINGLE WALL DUCT ADAPTER, 14" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P22	DW20TEASY	3175		1		-0.2337	26.16	1455.31	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P23	DW1420ADPEC	1600				-0.077	8.99	1496.71	1	SINGLE WALL DUCT ADAPTER, 14" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P24	DW1407LT	1600				-0.0023	3.63	1496.71	1	SINGLE WALL DUCT 14" DIAMETER, 7" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P25	DW1418AJDKIT	1600				-0.0037	11.56	1496.71	1	SINGLE WALL DUCT ADJUSTABLE, 14" DIAMETER, 17.5" LONG, FLANGE AT ONE END WITH A 14" ADJUSTABLE COLLAR - STAINLESS STEEL.
P26	DW1490ASY	1600				-0.1278	10.62	1496.71	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 14" DUCT, ASSEMBLY.
P27	DW1411LT	1600				-0.004	5.46	1496.71	1	SINGLE WALL DUCT 14" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P28	DW1445ASY	1600				-0.0368	7.22	1496.71	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 14" DUCT, ASSEMBLY.
P29	DW2047LT	3175				-0.0078	31.08	1455.31	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P30	DW2029LT	3175				-0.0048	19.42	1455.31	1	SINGLE WALL DUCT 20" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P31 ASSEMBLED W/P32	DW2024AJDKIT	3175				-0.0024	20.76	1455.31	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P32 ASSEMBLED W/P31	DW2620TPDBEX	3175					9.00	1455.31	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 20" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA16HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
SYSTEM AT P32						-1.2343	0.00			
P33	DW14SUBRASY						2.96		1	DUCT SUPPORT BRACKET KIT, 14" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P34	DW14SUBRASY						2.96		1	DUCT SUPPORT BRACKET KIT, 14" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P35	DW14SUBRASY						2.96		1	DUCT SUPPORT BRACKET KIT, 14" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P36	DW14SUBRASY						2.96		1	DUCT SUPPORT BRACKET KIT, 14" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
	3M-2000PLUS						0.80		9	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW14CLASY						1.06		22	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 14" DUCT, ASSEMBLY.
	DW20CLASY						1.41		10	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 20" DUCT, ASSEMBLY.
TOTAL WEIGHT							446.94			

DUCTWORK #2 TOP VIEW

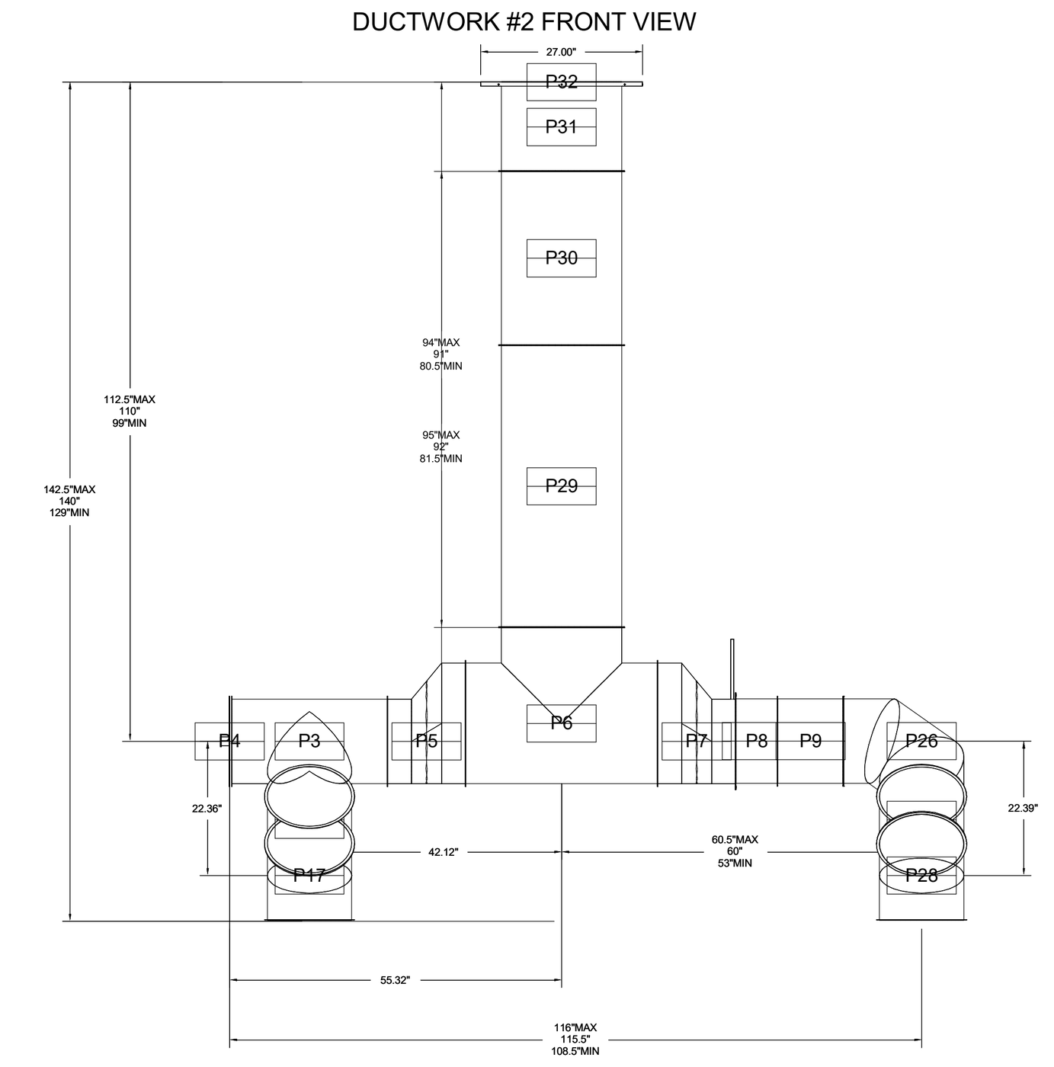




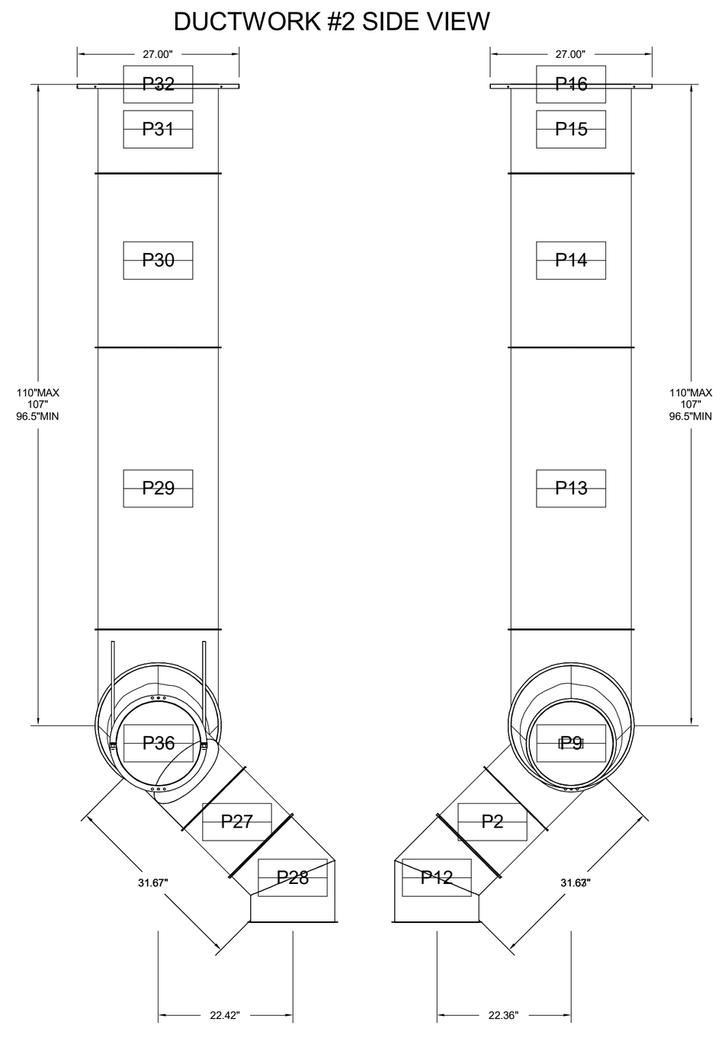
DUCTWORK #2 SE VIEW



DUCTWORK #2 FRONT VIEW



DUCTWORK #2 SIDE VIEW



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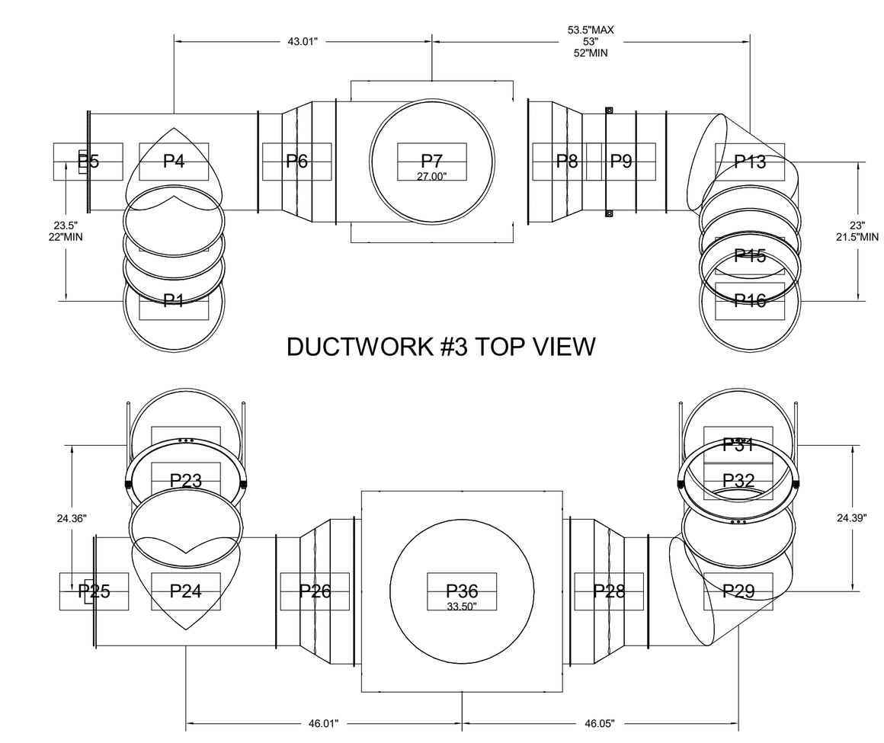
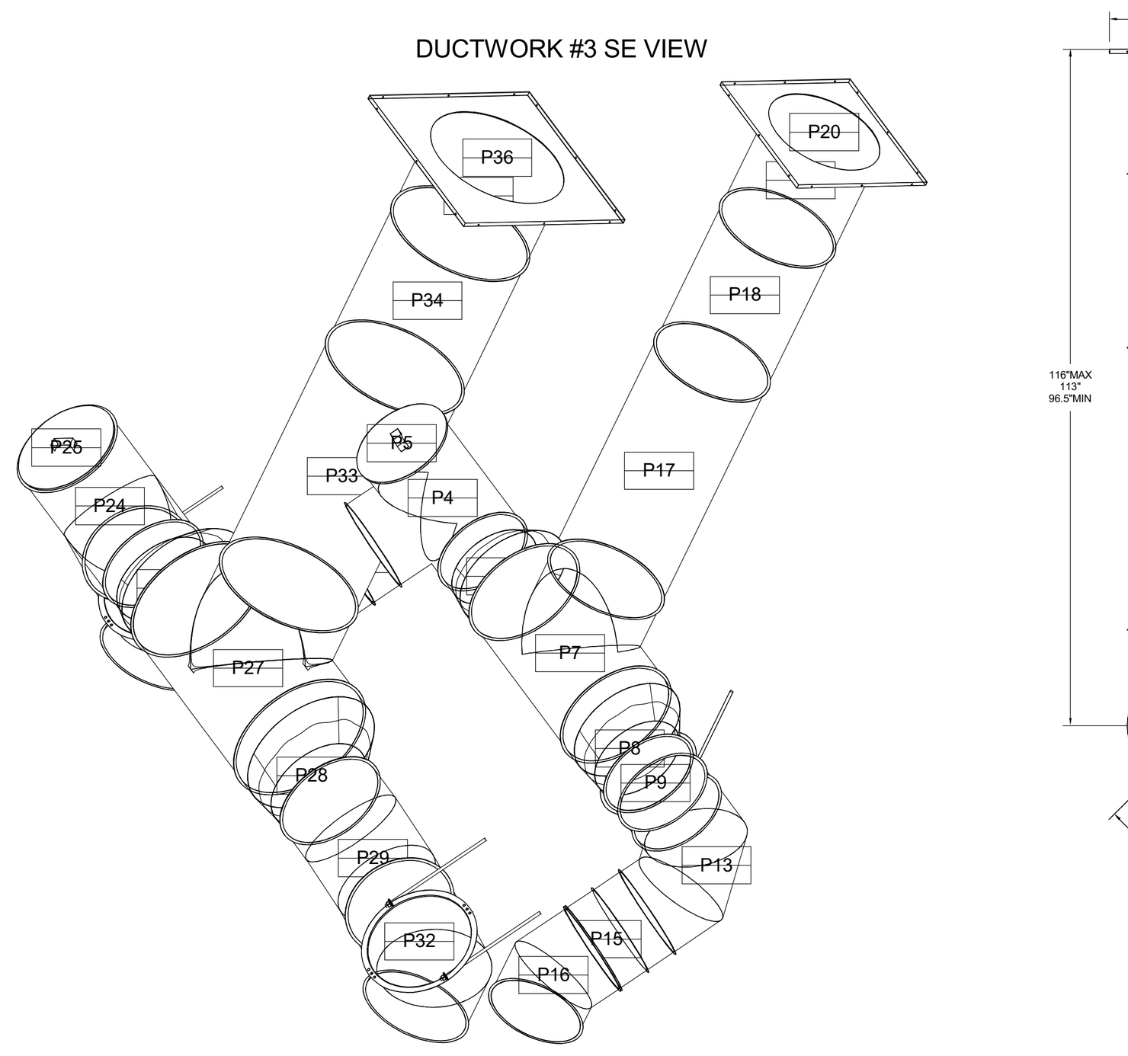
3/4" = 1'-0"
MASTER DRAWING
12

DUCTWORK #3 PARTS - JOB#5210956										
TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1645ASY	1600				-0.021	7.22	1145.92	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P2	DW16055LT	1600				-0.001	2.94	1145.92	1	SINGLE WALL DUCT 16" DIAMETER, 5.5" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P3	DW1612AJDKIT	1600				-0.001	9.76	1145.92	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 11.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL.
P4 ASSEMBLED W/P5	DW16TEASY	1600		1		-0.0773	19.23	1145.92	1	SINGLE WALL DUCT TEE, 16" DUCT, ASSEMBLY.
P5 ASSEMBLED W/P4 O=S	DW1617ADKIT						4.59		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 16" DUCT USE 17" DOOR. STAINLESS STEEL.
P6	DW1620ADPEC	1600				-0.013	12.00	1145.92	1	SINGLE WALL DUCT ADAPTER, 16" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P7	DW20TEASY	3200		1		-0.3233	26.16	1466.77	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P8	DW1620ADPEC	1600				-0.013	12.00	1145.92	1	SINGLE WALL DUCT ADAPTER, 16" DUCT DIA TO 20" DUCT DIA, ECCENTRIC ASSEMBLY.
P9	DW1605LT	1600				-0.001	2.67	1145.92	1	SINGLE WALL DUCT 16" DIAMETER, 5" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P10	DW1612AJDKIT	1600				-0.001	9.76	1145.92	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 11.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL.
P11	DW16SUBRASY						3.18		1	DUCT SUPPORT BRACKET KIT, 16" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P12	DW16SUBRASY						3.18		1	DUCT SUPPORT BRACKET KIT, 16" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P13	DW1690ASY	1600				-0.0773	13.00	1145.92	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P14	DW16055LT	1600				-0.001	2.94	1145.92	1	SINGLE WALL DUCT 16" DIAMETER, 5.5" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P15	DW1612AJDKIT	1600				-0.001	9.76	1145.92	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 11.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL.
P16	DW1645ASY	1600				-0.021	7.22	1145.92	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P17	DW2047LT	3200				-0.0078	31.08	1466.77	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P18	DW2029LT	3200				-0.0048	19.42	1466.77	1	SINGLE WALL DUCT 20" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P19 ASSEMBLED W/P20	DW2030AJDKIT	3200				-0.0034	25.05	1466.77	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 29.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P20 ASSEMBLED W/P19	DW2620TPDBEX	3200					9.00	1466.77	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 20" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA16HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
SYSTEM AT P20						-0.8681	0.00			
P21	DW1845ASY	2000				-0.021	10.24	1131.77	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 18" DUCT, ASSEMBLY.
P22	DW1811LT	2000				-0.001	6.99	1131.77	1	SINGLE WALL DUCT 18" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P23	DW18SUBRASY						3.38		1	DUCT SUPPORT BRACKET KIT, 18" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P24 ASSEMBLED W/P25	DW18TEASY	2000		1		-0.079	22.75	1131.77	1	SINGLE WALL DUCT TEE, 18" DUCT, ASSEMBLY.
P25 ASSEMBLED W/P24 O=S	DW1819ADKIT						5.55		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 18" DUCT USE 19" DOOR. STAINLESS STEEL.
P26	DW1824ADPEC	2000				-0.025	13.20	1131.77	1	SINGLE WALL DUCT ADAPTER, 18" DUCT DIA TO 24" DUCT DIA, ECCENTRIC ASSEMBLY.
P27	DW24TEASY	4000		1		-0.2505	34.81	1273.24	1	SINGLE WALL DUCT TEE, 24" DUCT, ASSEMBLY.
P28	DW1824ADPEC	2000				-0.025	13.20	1131.77	1	SINGLE WALL DUCT ADAPTER, 18" DUCT DIA TO 24" DUCT DIA, ECCENTRIC ASSEMBLY.
P29	DW1890ASY	2000				-0.079	15.59	1131.77	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 18" DUCT, ASSEMBLY.
P30	DW1811LT	2000				-0.001	6.99	1131.77	1	SINGLE WALL DUCT 18" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P31	DW1845ASY	2000				-0.021	10.24	1131.77	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 18" DUCT, ASSEMBLY.
P32	DW18SUBRASY						3.38		1	DUCT SUPPORT BRACKET KIT, 18" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P33	DW2447LT	4000				-0.0051	37.26	1273.24	1	SINGLE WALL DUCT 24" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P34	DW2429LT	4000				-0.0031	23.29	1273.24	1	SINGLE WALL DUCT 24" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P35 ASSEMBLED W/P36	DW2430AJDKIT	4000				-0.0018	30.06	1273.24	1	SINGLE WALL DUCT ADJUSTABLE, 24" DIAMETER, 29.5" LONG, FLANGE AT ONE END WITH A 24" ADJUSTABLE COLLAR - STAINLESS STEEL.
P36 ASSEMBLED W/P35	DW3324TPDBEX	4000					23.00	1273.24	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 33 1/2" CURB TO 24" DUCT, 16 GA ALUMINIZED. NON-STANDARD PART. FOR USE WITH EXHAUST FANS.
SYSTEM AT P36						-0.916	0.00			
	3M-2000PLUS						0.80		11	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW16CLASY						1.18		13	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 16" DUCT, ASSEMBLY.
	DW18CLASY						1.30		9	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 18" DUCT, ASSEMBLY.
	DW20CLASY						1.41		5	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 20" DUCT, ASSEMBLY.
	DW24CLASY						1.65		5	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 24" DUCT, ASSEMBLY.
TOTAL WEIGHT							541.23			

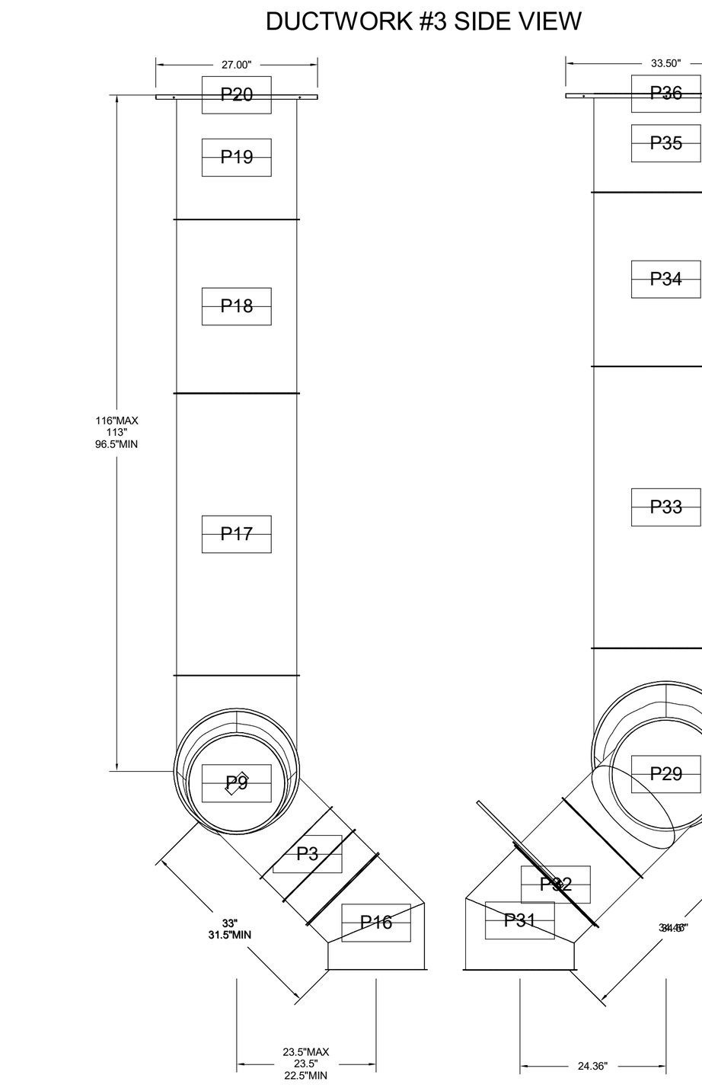
DUCTWORK #3 TOP VIEW



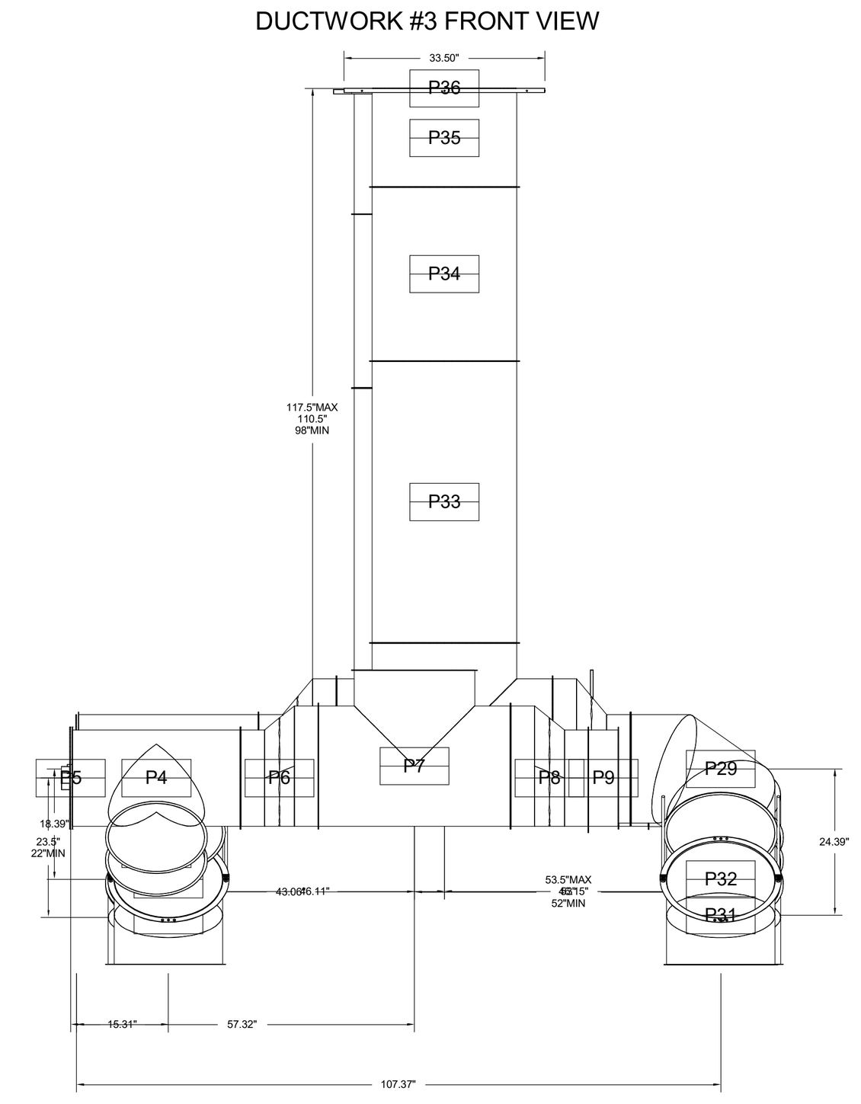
DUCTWORK #3 SE VIEW



DUCTWORK #3 SIDE VIEW



DUCTWORK #3 FRONT VIEW



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4967555
ZDK
3/4" = 1'-0"
MASTER DRAWING
13

DUCTWORK #4 PARTS - JOB#4967555 DOUBLE WALL										
TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1445DWASY-2R-S	1505				-0.0333	19.87	1407.84	1	DOUBLE WALL DUCT - 14" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL.
P2	DW1427DWAJD-2R-S	1505				-0.005	52.12	1407.84	1	DOUBLE WALL ADJUSTABLE DUCT - 14" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 24.5" / ADJUSTMENT = 13.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P3	DW1822SADKIT						7.25		1	DUCT - HORIZONTAL SADDLE SUPPORT KIT, USED WITH 18" OD - INCLUDES UNI-STRUT CUT TO LENGTH, DW1822SAD, & HARDWARE BAG 4.
P4	DW1445DWASY-2R-S	1505				-0.0475	19.87	1407.84	1	DOUBLE WALL DUCT - 14" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL.
P5	DW1427DWAJD-2R-S	1505				-0.005	52.12	1407.84	1	DOUBLE WALL ADJUSTABLE DUCT - 14" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 24.5" / ADJUSTMENT = 13.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P6 ASSEMBLED W/P7	DW1435DWLTTP-2R-S	1505				-0.01	48.06	1407.84	1	DOUBLE WALL DUCT - 14" INNER DUCT, 35" LONG - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL - USED WITH TRANSITION PLATE.
P7 ASSEMBLED W/P6	DW2314TPDBEX	1505					8.00	1407.84	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 23" CURB TO 14" DUCT, 16 GA ALUMINIZED. USED ON NCA14FA & NCA14HPFA. TRANSITION PLATE OD IS 23.5" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
SYSTEM AT P7						-0.8228	0.00			
	3M-2000PLUS						0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
TOTAL WEIGHT							208.89			

DOUBLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.

- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL

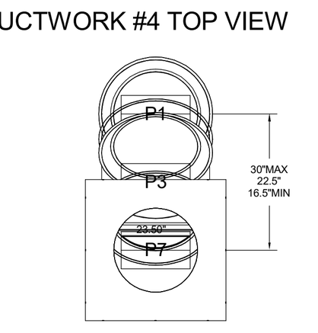
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.

- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

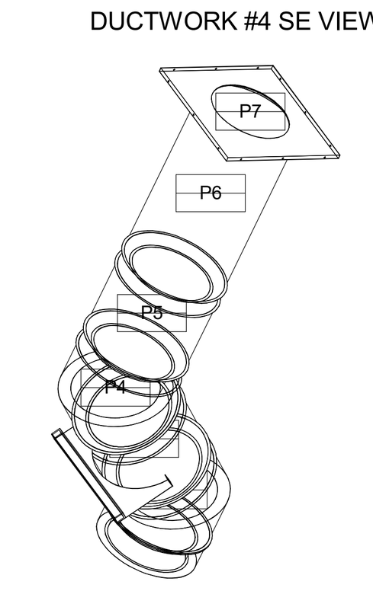
HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5"-16")	20'	24'	24'
2R (18")	18'	24'	24'
3R & 3Z (5"-24")	10'	24'	24'
3Z (26" -36")	10'	20'	20'

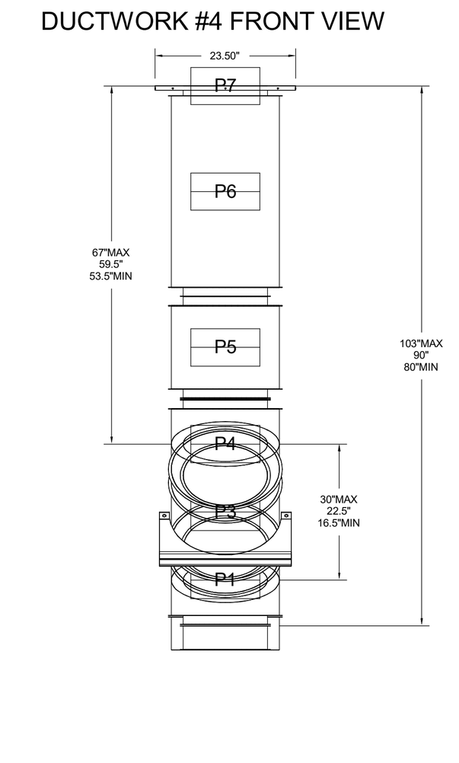
DUCTWORK #4 TOP VIEW



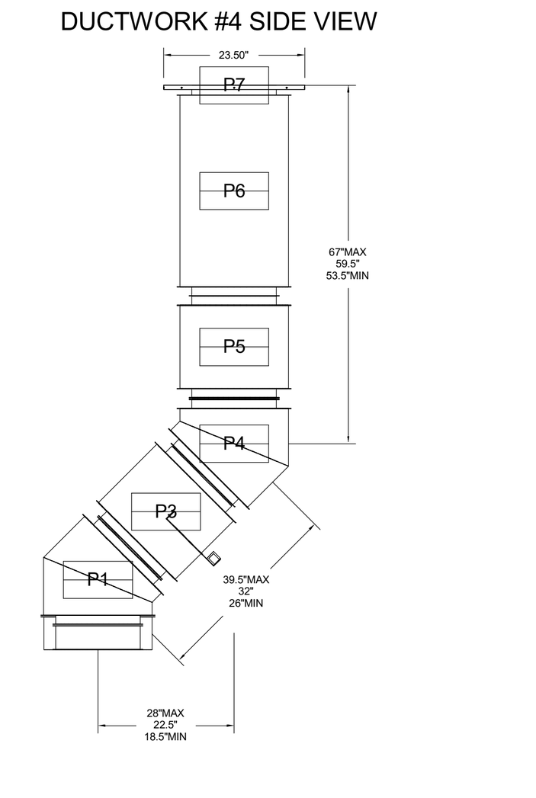
DUCTWORK #4 SE VIEW



DUCTWORK #4 FRONT VIEW



DUCTWORK #4 SIDE VIEW



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THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

Date	Description	#
05/06/22	ISSUED FOR CLIENT REVIEW	4

Revisions

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DOB STAMP:

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REVIEW
PLANNING BOARD
BUILDING DEPT
BID
CONSTRUCTION

SIGN & SEAL
BRIAN D. TANNENHAUS
NJ PROFESSIONAL ENGINEER
NO. GE 45801
DATE: 02/24/2022

drawing name:
HVAC CAPTIVE AIRE DETAILS

scale: As indicated
release date: 05/06/22
drawing date: 09/24/2021
drawn by: Author
approved by: Approver
project no.: 2102
drawing no.: M-514.00

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Total

5/6/2022 5:08:52 PM

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