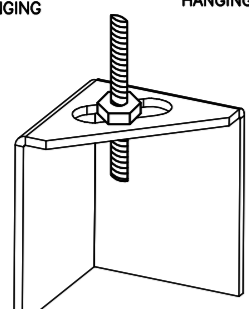


ND-2 HANGING ANGLE DETAIL

1/2" DIA. ALL THREAD ROD CONNECTED TO ROOF JOIST THROUGH ANOTHER HANGING ANGLE



*ROD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR HANGING ANGLE IS PRE-FINISHED AT FACTORY

HANGING ANGLE LOCATIONS

HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24" H)	DIM FROM FRONT (30" H)
CANOPY ND2	4.166"	2.246"	2.246"
ND2-PSP-F	4.166"	2.246"	2.246"
BACKSHELF BD-2	4.166"	2.246"	-
VHB/VHB-G	36"x36"	42"x42"	48"x48"
FRONT/BACK DIMS BY SIZE	2.246"	2.246"	2.246"

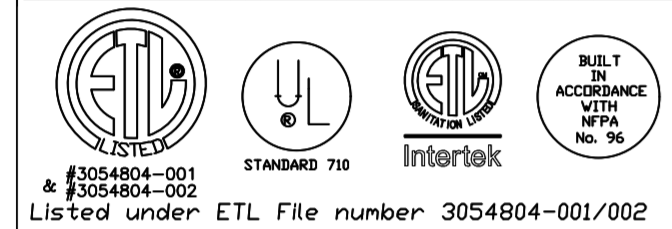
CALCULATIONS UTILIZED

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)
 SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED
 TOTAL DUCT AREA=144 X CFM
 DUCT LENGTH= TOTAL DUCT AREA / DUCT DEPTH

*CAPTIVE-AIRE DUCT CONNECTION SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 300-400 FPM

BUILDING CODES

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:



CLEARANCE TO COMBUSTIBLES

CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

GENERAL NOTES

INSTALLATION

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
4. ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTORS' PLANS.
5. COOKING EQUIPMENT TO SHUT OFF IN EVENT OF FIRE.
6. EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
7. ALL LIGHTS FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS.
8. LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
10. INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

BALANCE

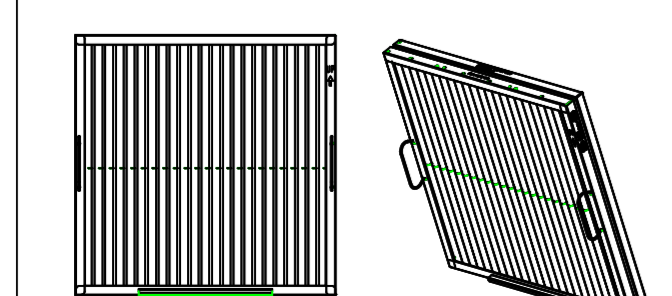
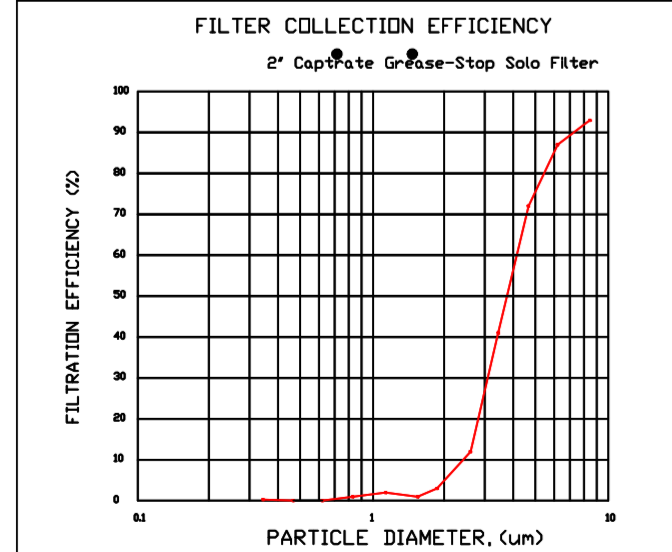
11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DRINK AREA.
13. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

ADDITIONAL

14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
15. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

FILTER DETAIL

FILTER COLLECTION EFFICIENCY



CaptiveAire Captrate Solo Filter
 ETL Listed Grease Extracting Filter
 Made From 430 Stainless Steel

HOOD INFORMATION - JOB#4591884

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM					HOOD CONSTRUCTION	HOOD CONFIG END TO END	HOOD CONFIG ROW	
										WIDTH	LENG	HEIGHT	DIA	CFM				VEL
1	GRIDDLE HD	5424 ND-2	CAPTIVEAIRE	8' 6"	450 DEG	I	MEDIUM	200	1700		4'	14'	1700	1590	-0.828"	430 SS WHERE EXPOSED	ALONE	FRONT
2	FRY HD	5424 ND-2	CAPTIVEAIRE	5' 0"	450 DEG	I	MEDIUM	155	775		4'	10'	775	1421	-0.436"	430 SS WHERE EXPOSED	ALONE	ALONE
3	DISH HD	4224 VHB-G	CAPTIVEAIRE	3' 6"	700 DEG	II	N/A	150	525		4'	10'	525	963	-0.069"	304 SS 100%	ALONE	ALONE

PATENT NUMBERS
 EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2580435 C.

HOOD INFORMATION

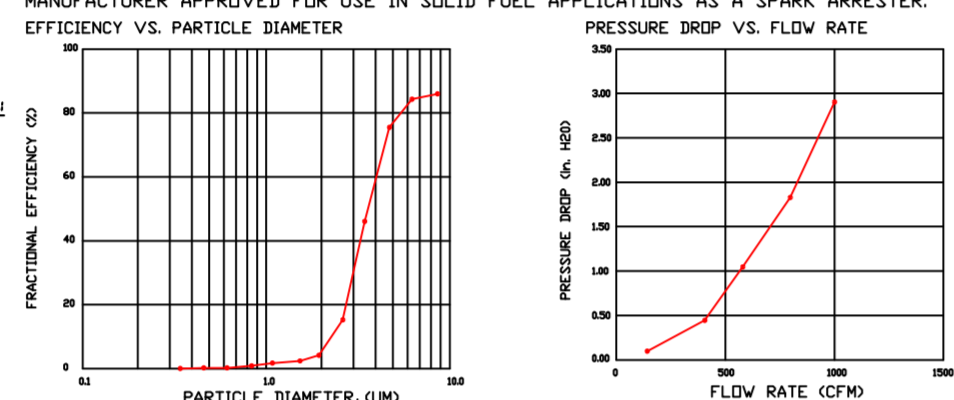
HOOD NO	TAG	TYPE	FILTER(S)		EFFICIENCY @ 7 MICRONS	QTY	LIGHT(S)		WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S)		ELECTRICAL	SWITCHES	FIRE SYSTEM	HOOD WEIGHT
			QTY	HEIGHT			LENGTH	TYPE				SIZE					
1	GRIDDLE HD	CAPTRATE SOLID FILTER	6	16"	16"	85% SEE FILTER SPEC	3	RECESSED	NO	LEFT	12"x54"x24"			DCV-2011	1 LIGHT 1 FAN	NO	595 LBS
2	FRY HD	CAPTRATE SOLID FILTER	3	16"	16"	85% SEE FILTER SPEC	2	RECESSED	NO							NO	342 LBS
3	DISH HD						0									NO	163 LBS

HOOD OPTIONS

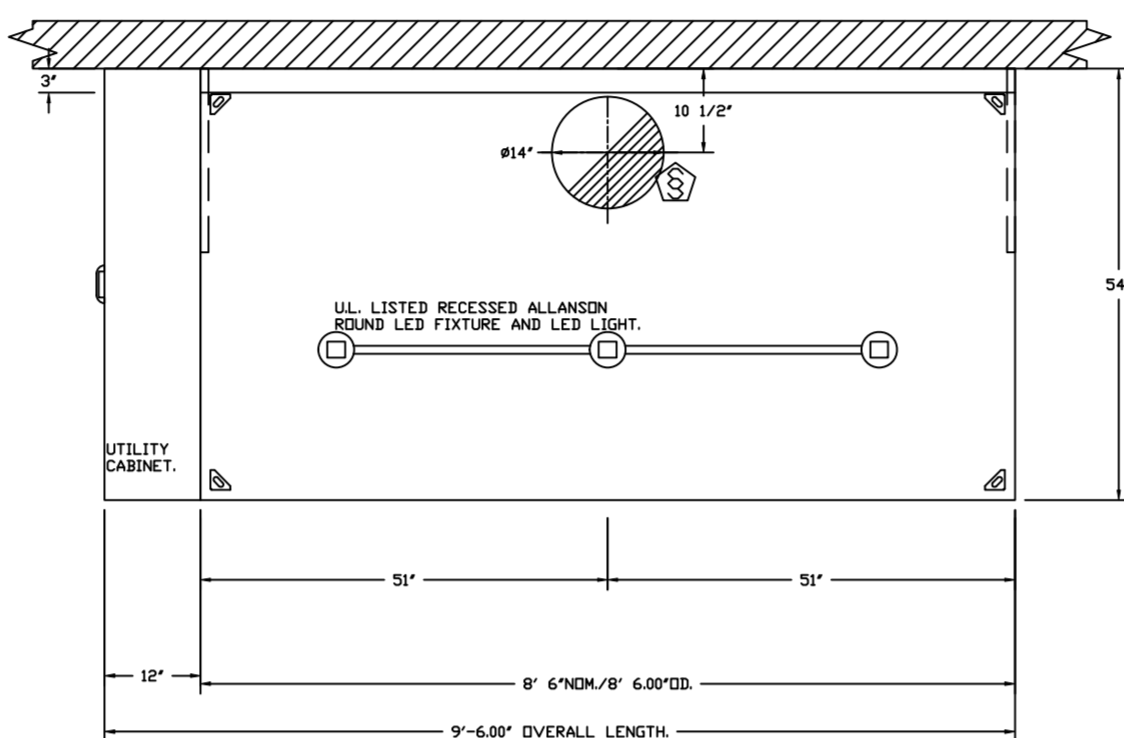
HOOD NO	TAG	OPTION
1	GRIDDLE HD	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT. LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. RIGHT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. RISER SENSOR INSTALL 3IN DBL.
2	FRY HD	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT. LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. RISER SENSOR INSTALL 3IN DBL. RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
3	DISH HD	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLID FILTER

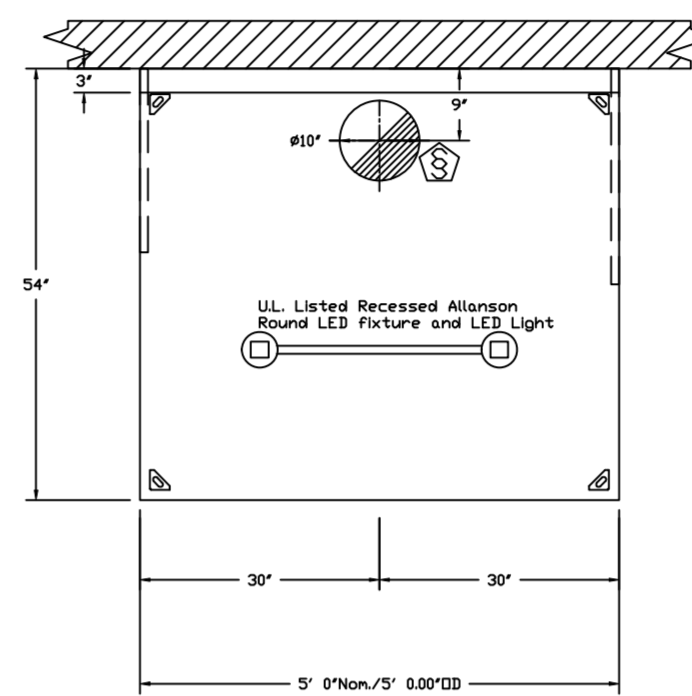
THE CAPTRATE GREASE-STOP SOLID FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-Baffle DESIGN IN CONJUNCTION WITH A SLOTTED REAR Baffle DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.
 FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).
 UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.
 GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 10 INCHES OF WATER GAUGE.
 THE CAPTRATE GREASE-STOP SOLID WAS TESTED TO ASTM STANDARD ASTM F2519-05 MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.
 EFFICIENCY VS. PARTICLE DIAMETER



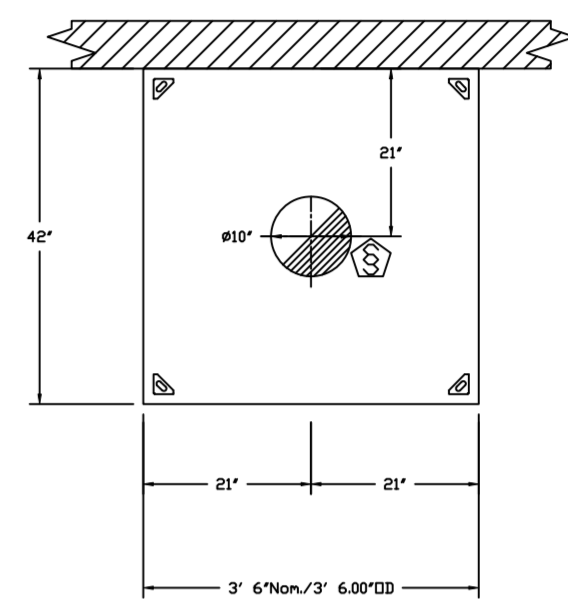
CAPTIVE-AIRE FILTERS ARE BUILT IN COMPLIANCE WITH:
 NFPA #96,
 NSF STANDARD #2,
 UL STANDARD #1046,
 INT. MECH. CODE (IMC),
 ULC-56-05.



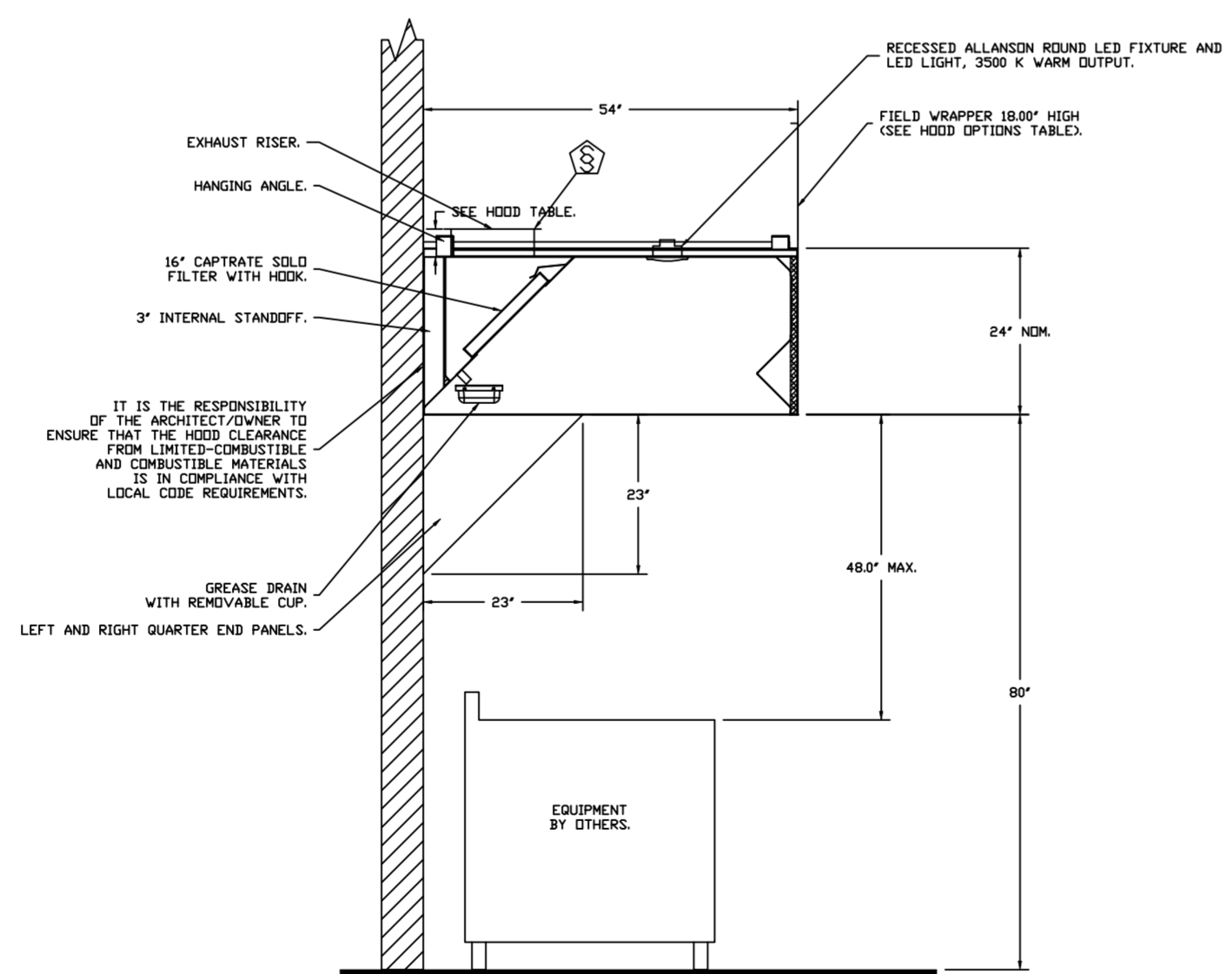
PLAN VIEW - HOOD #1 (GRIDDLE HD)
 8' 6.00" LONG 5424ND-2



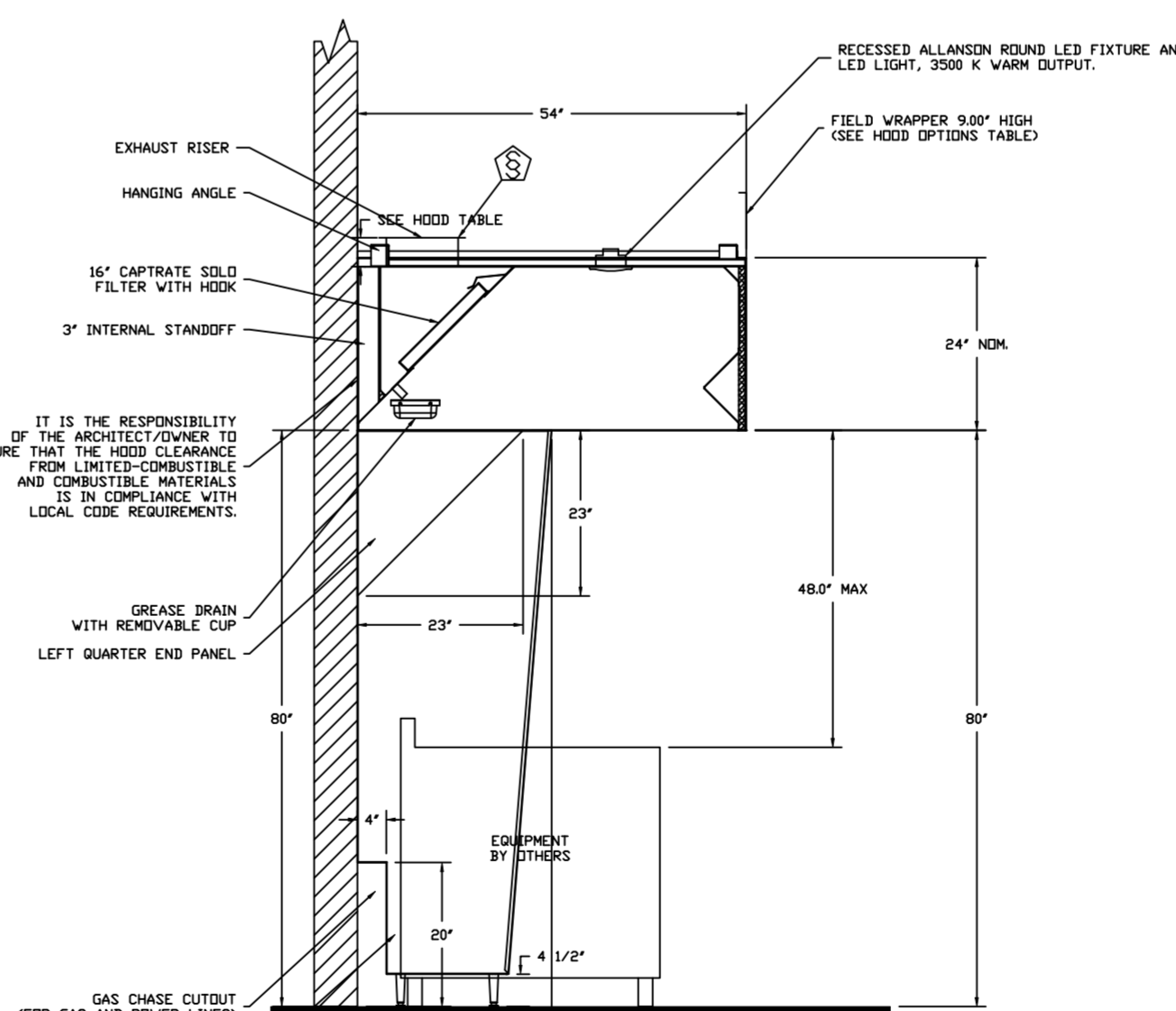
PLAN VIEW - HOOD #2 (ITEM 33B)
 5' 0.00" LONG 5424ND-2



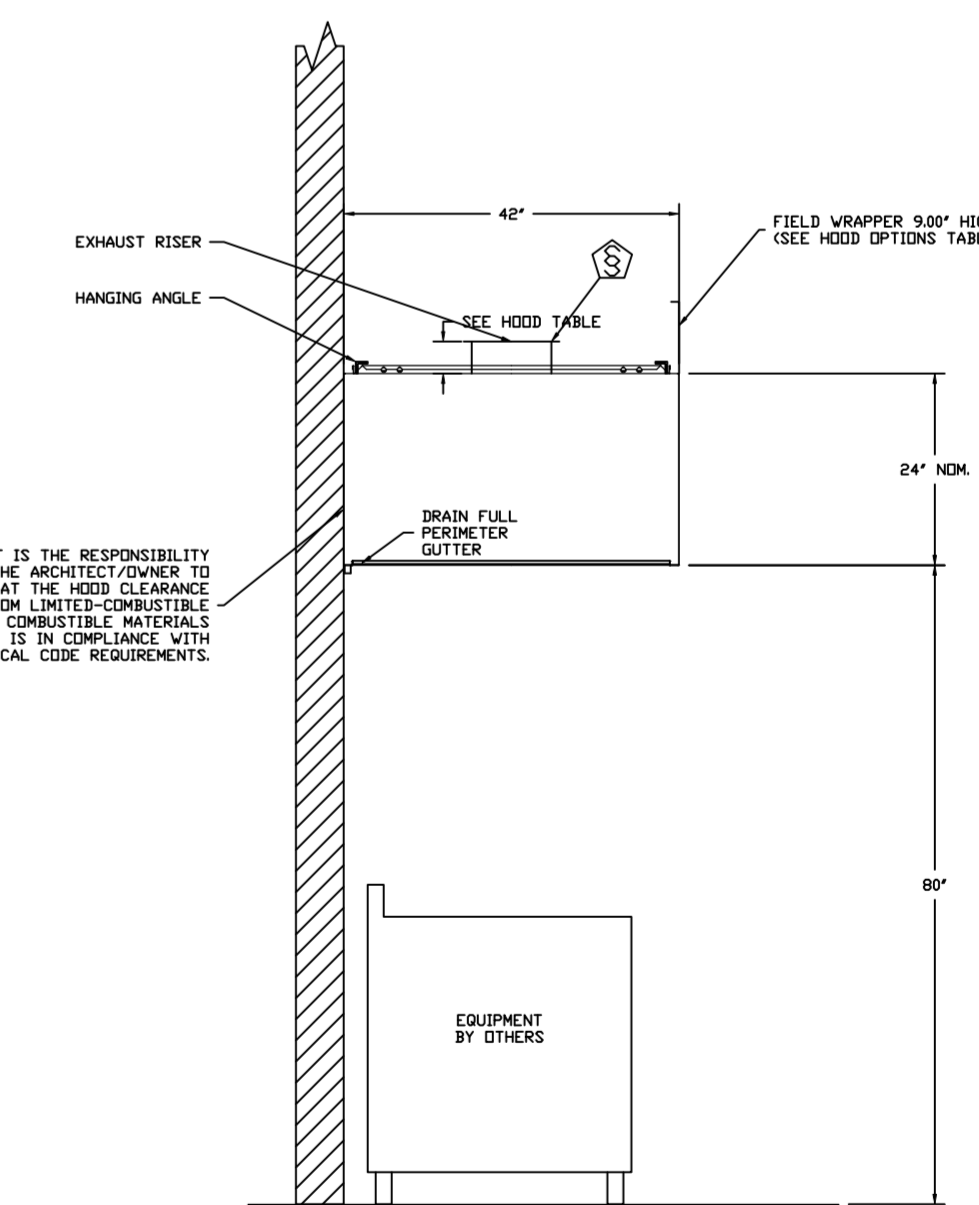
PLAN VIEW - HOOD #3 (DISH HD)
 3' 6.00" LONG 4224VHB-G



SECTION VIEW - MODEL 5424ND-2
 HOOD - #1 (GRIDDLE HD)



SECTION VIEW - MODEL 5424ND-2
 HOOD - #2 (ITEM 33B)



SECTION VIEW - MODEL 4224VHB-G
 HOOD - #3 (DISH HD)

FOR QUESTIONS, CALL THE:
 KANSAS CITY REGIONAL OFFICE
 1126 SWIFT STREET, KANSAS CITY, MO 64116
 PHONE: (816) 221-8575
 FAX: (816) 221-8311

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted
 Approved with NO Exception Taken
 Revise and Resubmit
 SIGNATURE _____
 Your Title _____ Date _____

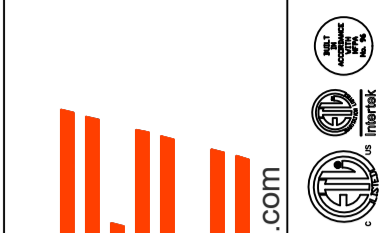
*** NOTE ***
 ALL WALLS AND STRUCTURES THAT COME WITHIN 18" OF HOOD MUST BE METAL STUDS AND SHEETROCK. WOOD STUDS OR ANY OTHER COMBUSTIBLE MATERIAL WITHIN 18" OF HOOD NO ALLOWED.

*** NOTE ***
 HOOD MANUFACTURER RECOMMENDS NO RETURNS OR 4-WAY DIFFUSERS WITHIN 10 FEET OF HOOD IN ALL DIRECTION.

*** NOTE ***
 MAKEUP AIR SHALL BE DELIVERED INTO SPACE IN MANNER THAT WILL NOT DISRUPT HOODS ABILITY TO CAPTURE AND CONTAIN.

REVISIONS

DESCRIPTION	DATE:



www.captiveaire.com
 HBT Foodservice



104 W 8th St Suite 204, Kansas City, MO. 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg9@captvair.com

Freddy's - Loganville, GA
 LOGANVILLE, GA, 30052

DATE: 12/15/2020

DWG.#:
 4591884

DRAWN BY:
 michael.co

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

MASTER DRAWING

SHEET NO.
 1

EXHAUST FAN INFORMATION - JOB#4591884

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	EF-1 (GRIDDLE)	1	DUBSHFA	CAPTIVEAIRE	1700	1.200	1381	TEAD-ECM	0.750	0.5120	1	208	5.2	538 FPM	121	16.2
2	EF-2 (FRYER)	1	DUBSHFA	CAPTIVEAIRE	775	1.250	1532	TEAD-ECM	0.500	0.3950	1	115	6.3	295 FPM	101	16.6
3	DISH EF	1	DUBSHFA	CAPTIVEAIRE	525	0.800	1487	TEAD-ECM	0.333	0.1990	1	115	4.3	260 FPM	67	14.5

DDAS/RTU FAN SCHEDULE - JOB#4591884

FAN UNIT NO	TAG	QTY	DDAS/RTU MODEL #	MANUFACTURER	BLDWR	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	ESP	HP	BHP	Ø	VOLT	MCA	MDCP	WEIGHT (LBS)
4	DDAS-1	1	CASRTU3-1400-15-20T-DDAS	CAPTIVEAIRE	15P-3	0	2800	2800	0.500	2.000	1.4990	3	208	76.4A	80A	2940

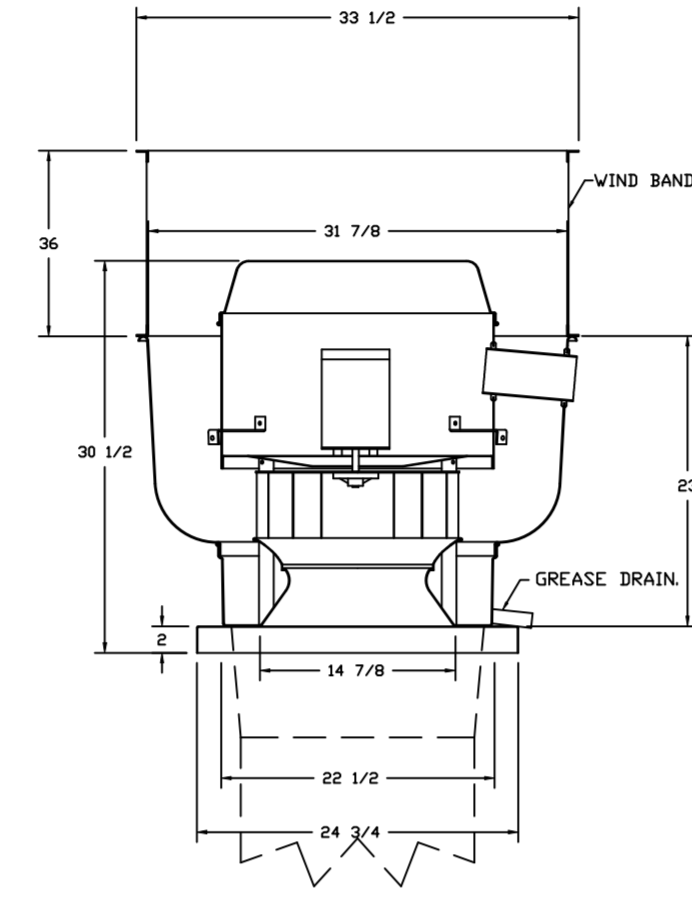
DDAS/RTU COOLING SCHEDULE

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	DESIGNED REHEAT CAPACITY	MAX REHEAT CAPACITY	REHEAT RELATIVE HUMIDITY	MOISTURE REMOVAL RATE	IEER							
4	DDAS-1	20	190-240	3	200-240	3	60	3	7	11.9	SDFT	82.4°F	76.9°F	82.4°F	76.9°F	49.8°F	46.7°F	44.0°F	264.0 MBH	95.6 MBH	168.4 MBH	70.0°F	55.3°F	62.1 MBH	129.6 MBH	39	151.8 LBS/HR	18.2

DDAS/RTU HEATING SCHEDULE

FAN UNIT NO	TAG	INPUT BTUS	OUTPUT BTUS	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS INFLUX	GAS TYPE	BURNER EFFICIENCY(%)
4	DDAS-1	319988	255990	80°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	80	

FAN #1 DUBSHFA - EXHAUST FAN (EF-1 (GRIDDLE))



FEATURES:

- DIRECT DRIVE CONSTRUCTION AND BELTS/PULLEYS.
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND UL50-5645
- 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.

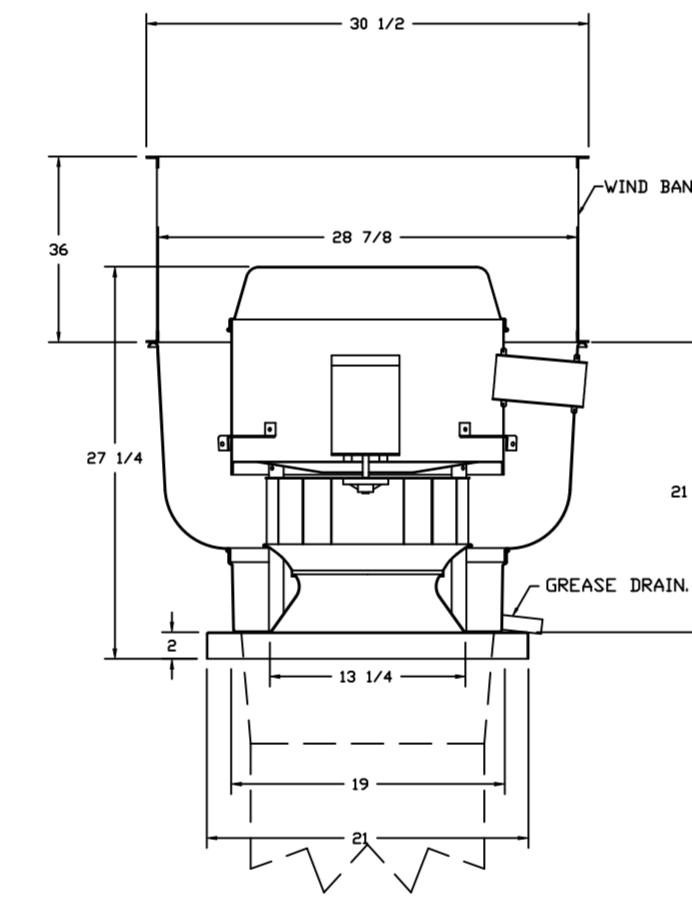
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY RETROGRADING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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.
- UPBLAST FAN WHEEL ACCESS PORT.
- 36" TALL STRAIGHT WIND BAND EXTENSION IS (SHIPS LODGE).
- GUY LINE EYE BOLTS - USED FOR 3 GUY LINE TIE OFF POINTS.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECM3 PREWIRE (TELCD MOTOR), CCW ROTATION.

FAN #2 DUBSHFA - EXHAUST FAN (EF-2 (FRYER))



FEATURES:

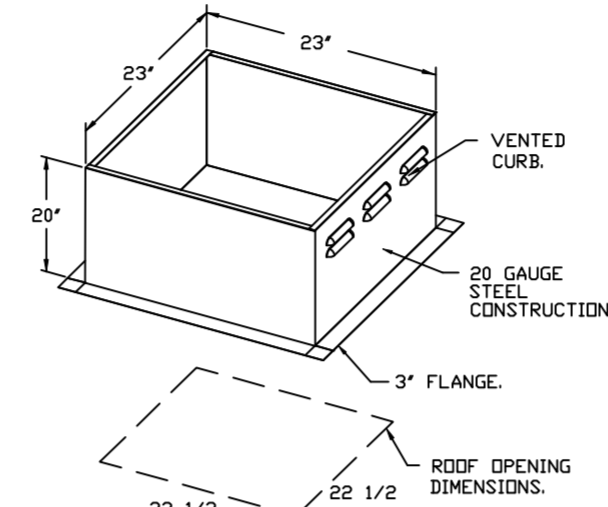
- DIRECT DRIVE CONSTRUCTION AND BELTS/PULLEYS.
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND UL50-5645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT 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 RETROGRADING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

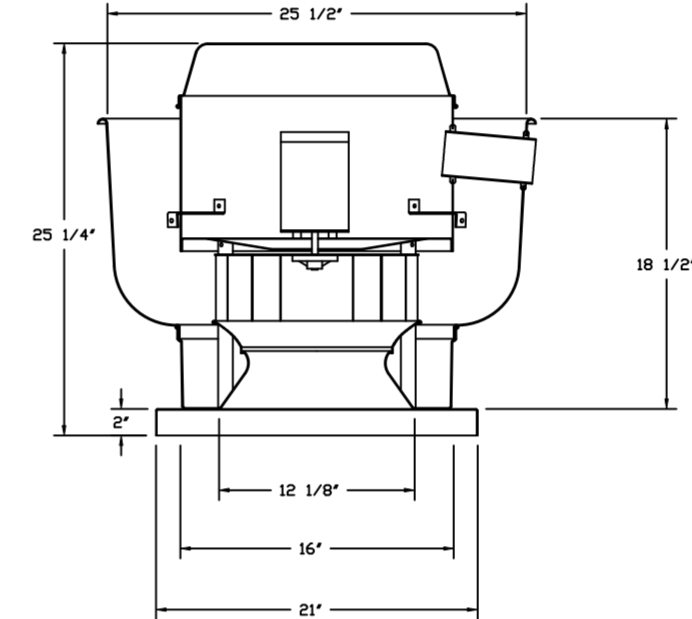
ABNORMAL FLARE-UP TEST
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OPTIONS:

- GREASE BOX.
- UPBLAST FAN WHEEL ACCESS PORT.
- 36" TALL STRAIGHT WIND BAND EXTENSION IS (SHIPS LODGE).
- GUY LINE EYE BOLTS - USED FOR 3 GUY LINE TIE OFF POINTS.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECM3 PREWIRE (TELCD MOTOR), CCW ROTATION.



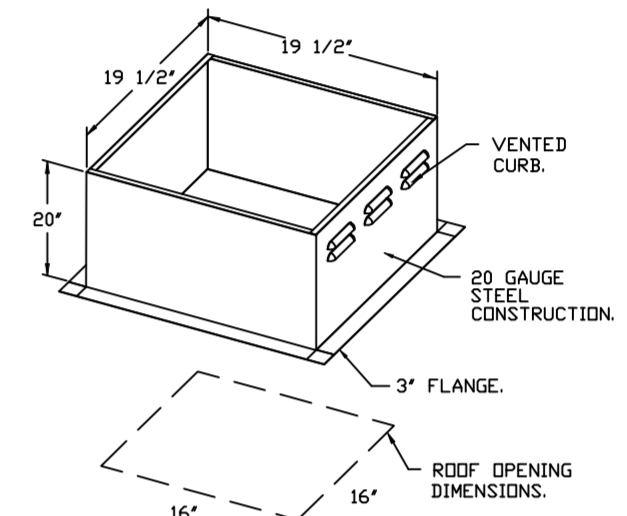
FAN #3 DUBSHFA - EXHAUST FAN (DISH EF)



FEATURES:

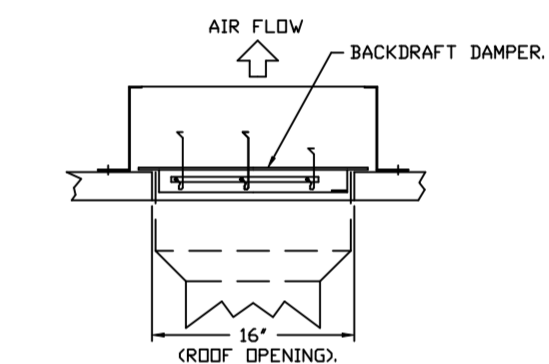
- DIRECT DRIVE CONSTRUCTION AND BELTS/PULLEYS.
- ROOF MOUNTED FANS.
- UL705.
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- NEMA 3R SAFETY DISCONNECT SWITCH.

OPTIONS:
ECM WIRING PACKAGE - EXHAUST - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -MSC- (TELCD). CCW ROTATION. SICK-II BIRD SCREEN. 1-15-BSD DAMPER.



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.
SPECIFY PITCH. EXAMPLE: 7/12 PITCH = 30° SLOPE.

BACKDRAFT DAMPER INSTALLATION



FAN OPTIONS

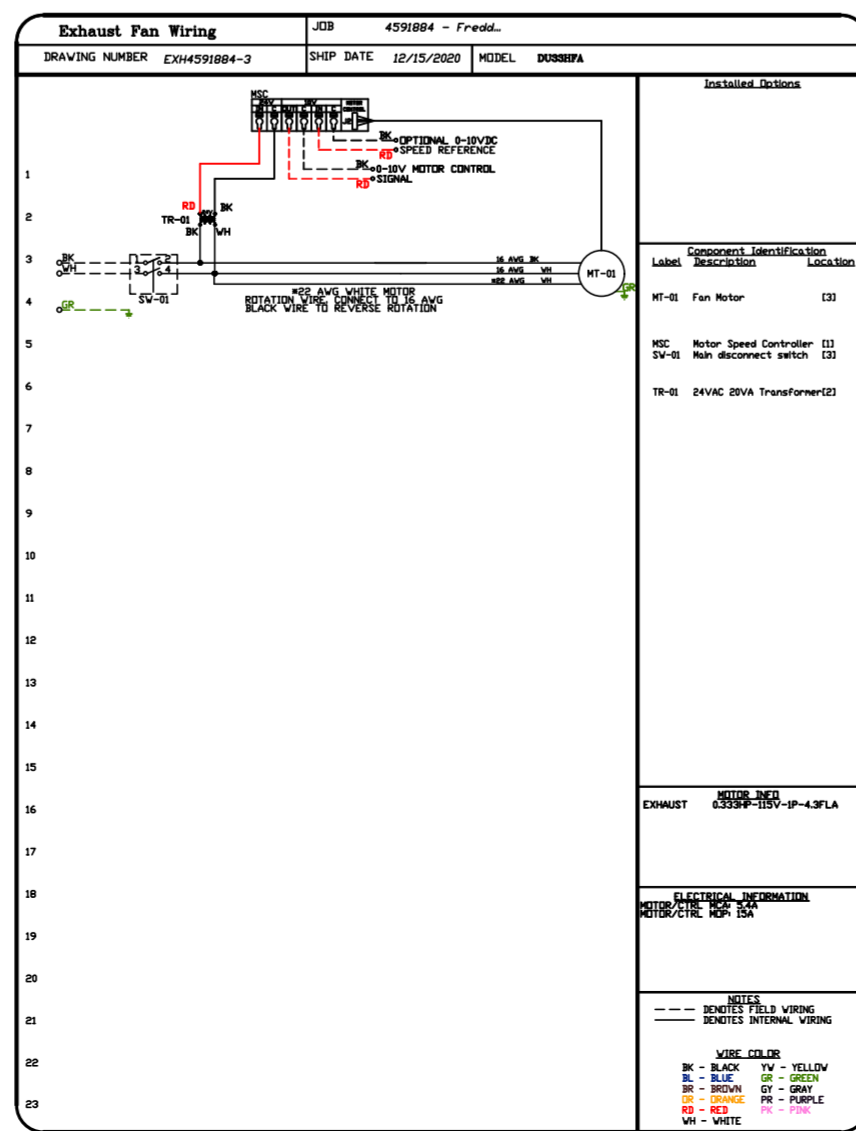
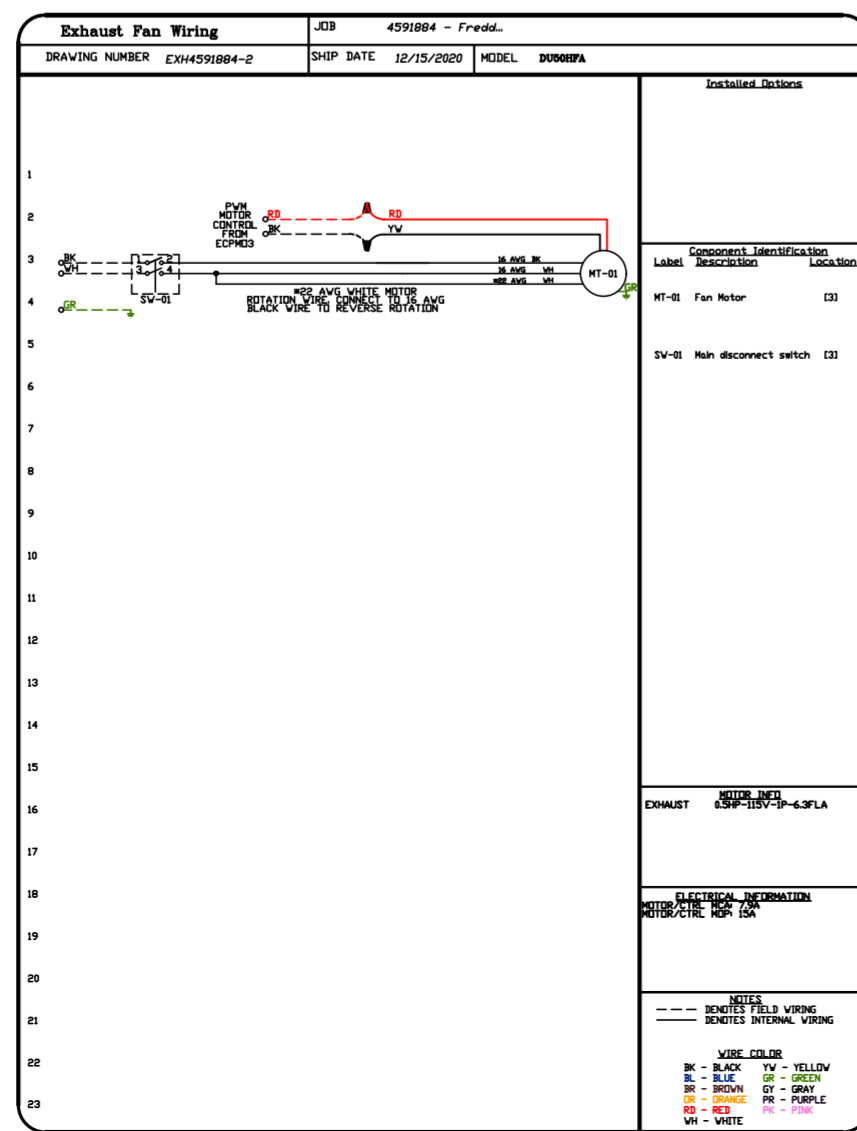
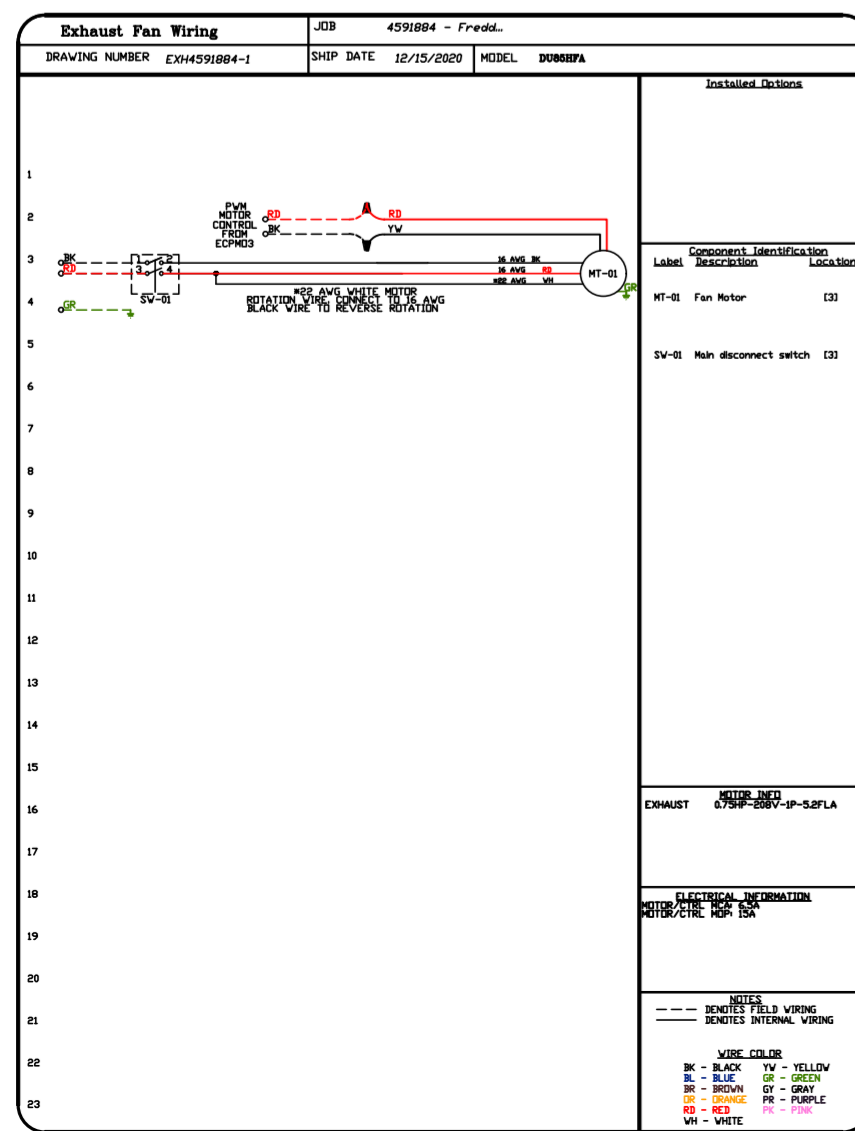
FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1 (GRIDDLE)	1	GREASE BOX.
		1	UPBLAST FAN WHEEL ACCESS PORT.
		1	36" TALL STRAIGHT WIND BAND EXTENSION IS (SHIPS LODGE).
2	EF-2 (FRYER)	1	GREASE BOX.
		1	UPBLAST FAN WHEEL ACCESS PORT.
		1	36" TALL STRAIGHT WIND BAND EXTENSION IS (SHIPS LODGE).
3	DISH EF	1	GREASE BOX.
		1	UPBLAST FAN WHEEL ACCESS PORT.
		1	36" TALL STRAIGHT WIND BAND EXTENSION IS (SHIPS LODGE).
4	DDAS-1	1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #88, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
		1	RTU SIZE 3 DOWN DISCHARGE.
		1	2" MERV 13 FILTERS FOR SIZE 3 RTU. QTY 4.
		1	2" MERV 8 FILTERS FOR SIZE 3 RTU. QTY 4.
		1	OVERHEAT STAT.
		1	VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
		1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" W.C. 1 FURNACE.
		1	OCCUPIED SCHEDULING.
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
		1	SIZE 3 RTU CURB DUCT HANGER.
		1	CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
		1	20 TON MODULATING COOLING OPTION. 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS.
		1	20 TON MODULATING REHEAT OPTION. DISCHARGE DEWPOINT CONTROL.
1	RTU SCHEDULED DA PERCENTAGE INTAKE/RETURN DAMPER CONTROL.		
1	RTU SIZE 3 MAIL GUARD.		
1	VAV PACKAGE W/ 0-10VDC INPUT CONTRL. (S71 VFD INCLUDED).		

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	EF-1 (GRIDDLE)	YES						
2	EF-2 (FRYER)	YES						
3	DISH EF	YES						

CURB ASSEMBLIES

NO	DN FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1 (GRIDDLE)	36 LBS	CURB	23.000"W X 23.000"L X 20.000"H VENTED HINGED.
2	# 2	EF-2 (FRYER)	31 LBS	CURB	19.500"W X 19.500"L X 20.000"H VENTED HINGED.
3	# 3	DISH EF	27 LBS	CURB	19.500"W X 19.500"L X 20.000"H VENTED.
4	# 4	DDAS-1	74 LBS	CURB	59.500"W X 91.000"L X 14.000"H INSULATED.



REVISIONS

DESCRIPTION	DATE

CAPTIVEAIRE

www.captiveaire.com

HBT Foodservice

104 W 8th St Suite 204, Kansas City, MO. 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg9@captivair.com

Freddy's - Loganville, GA

LOGANVILLE, GA, 30052

DATE: 12/15/2020

DWG.#: 4591884

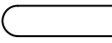
DRAWN BY: michael.co

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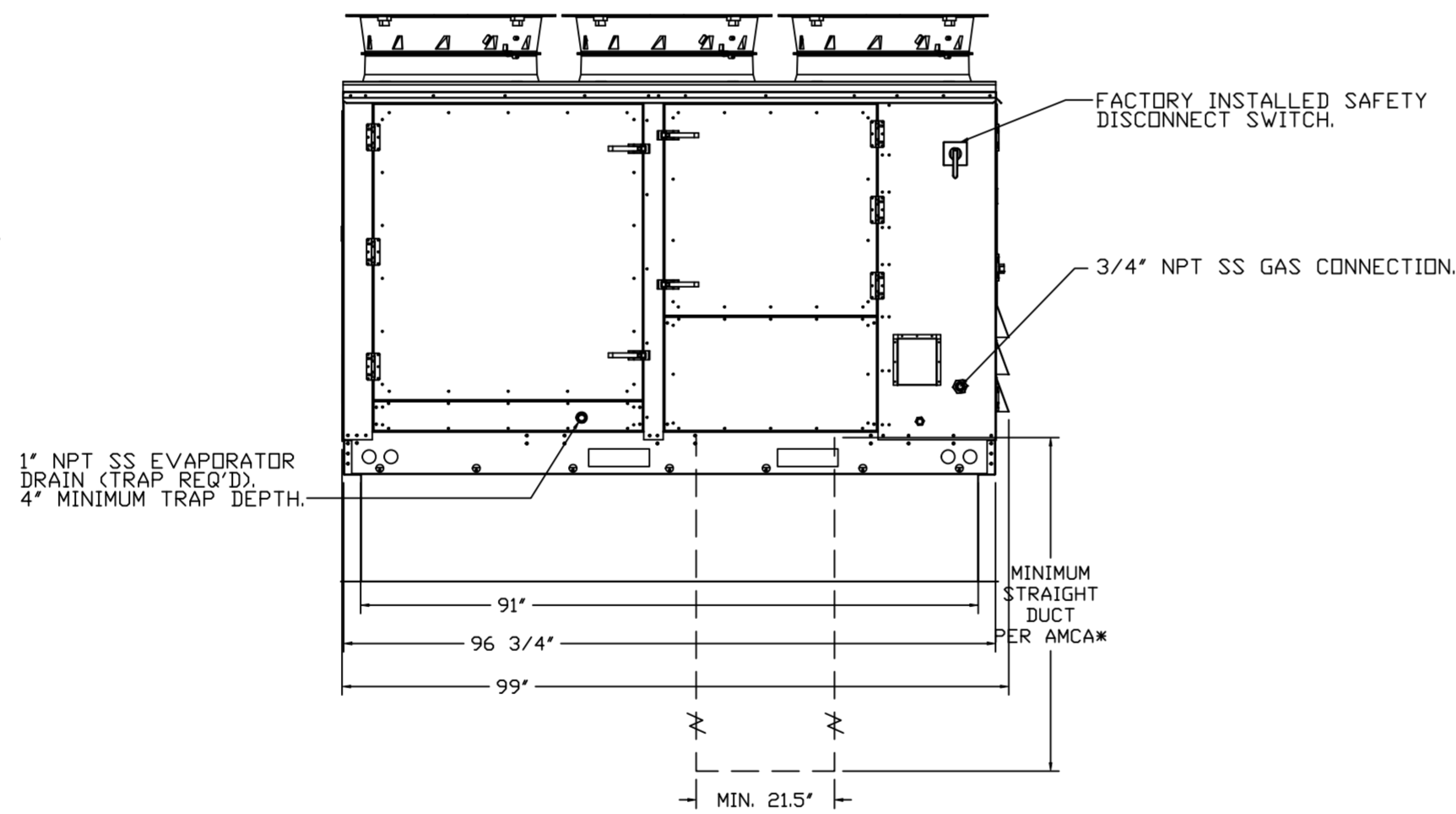
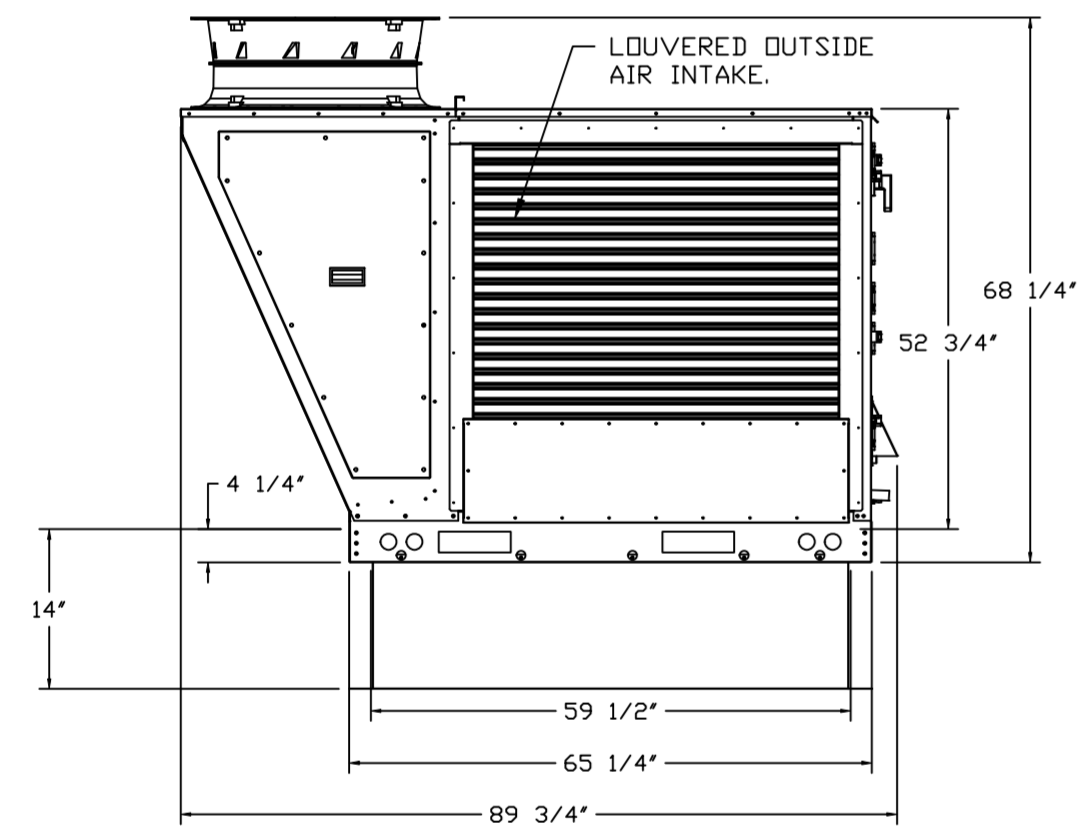
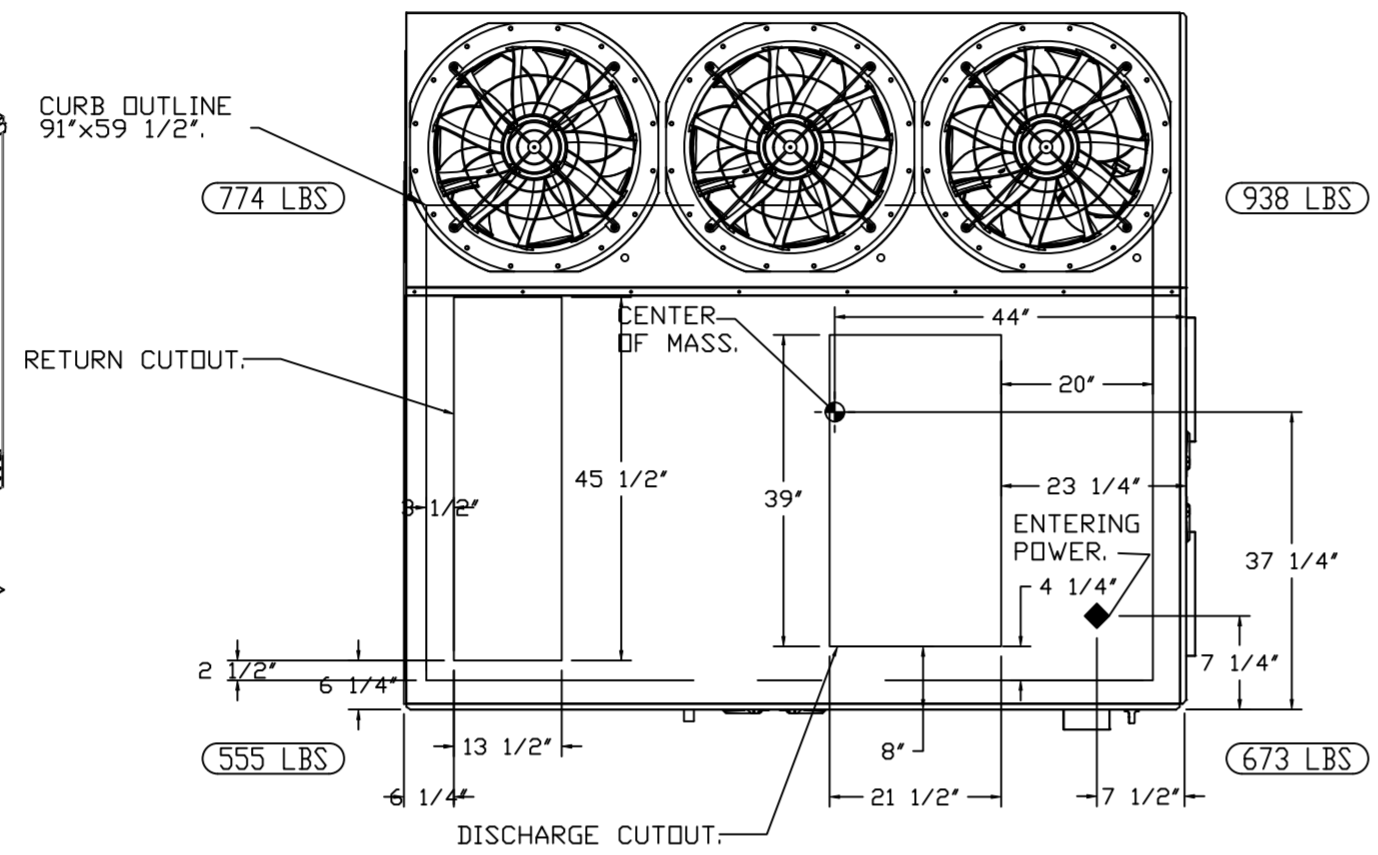
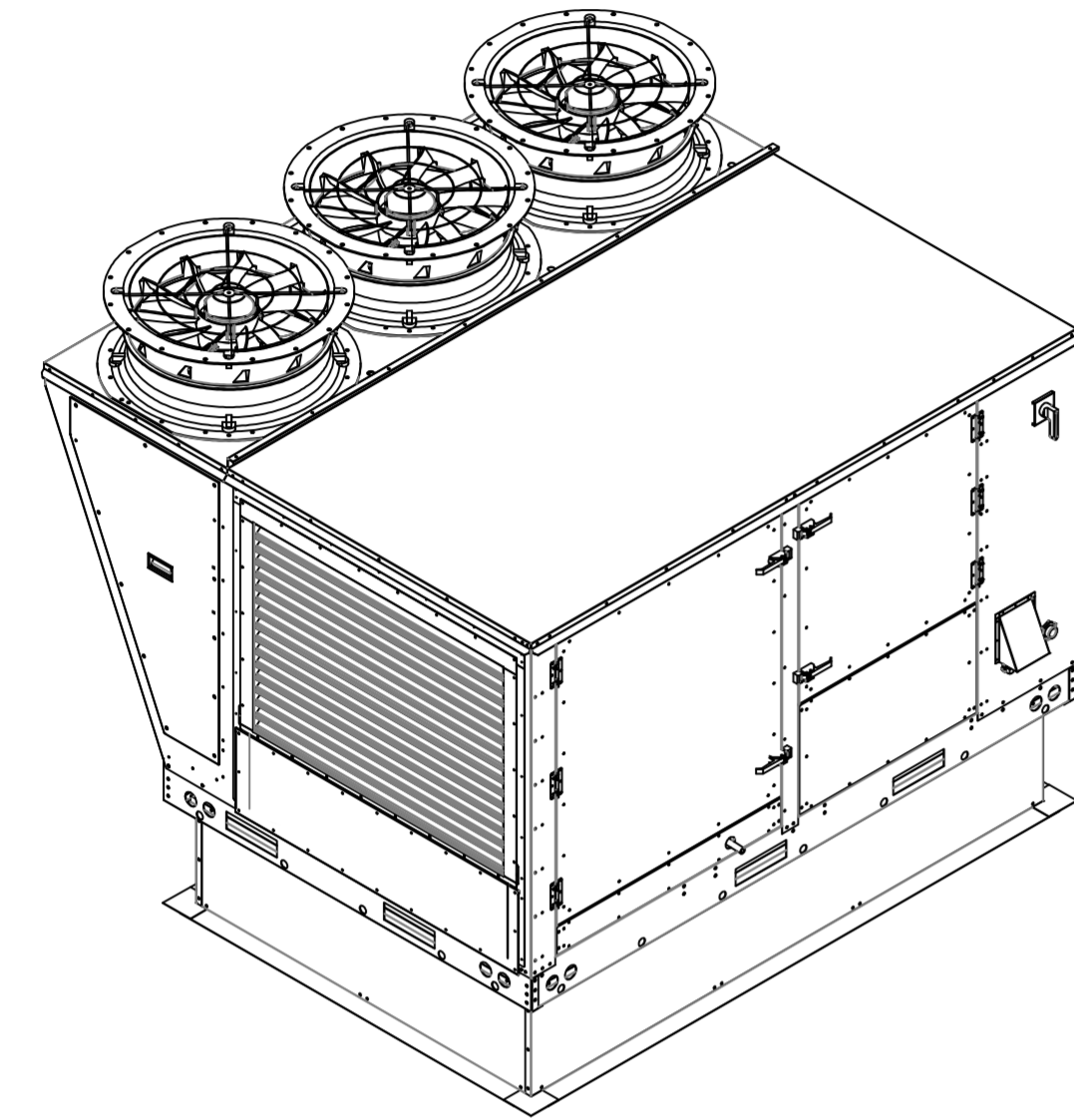
MASTER DRAWING

SHEET NO. 2

NOTES:

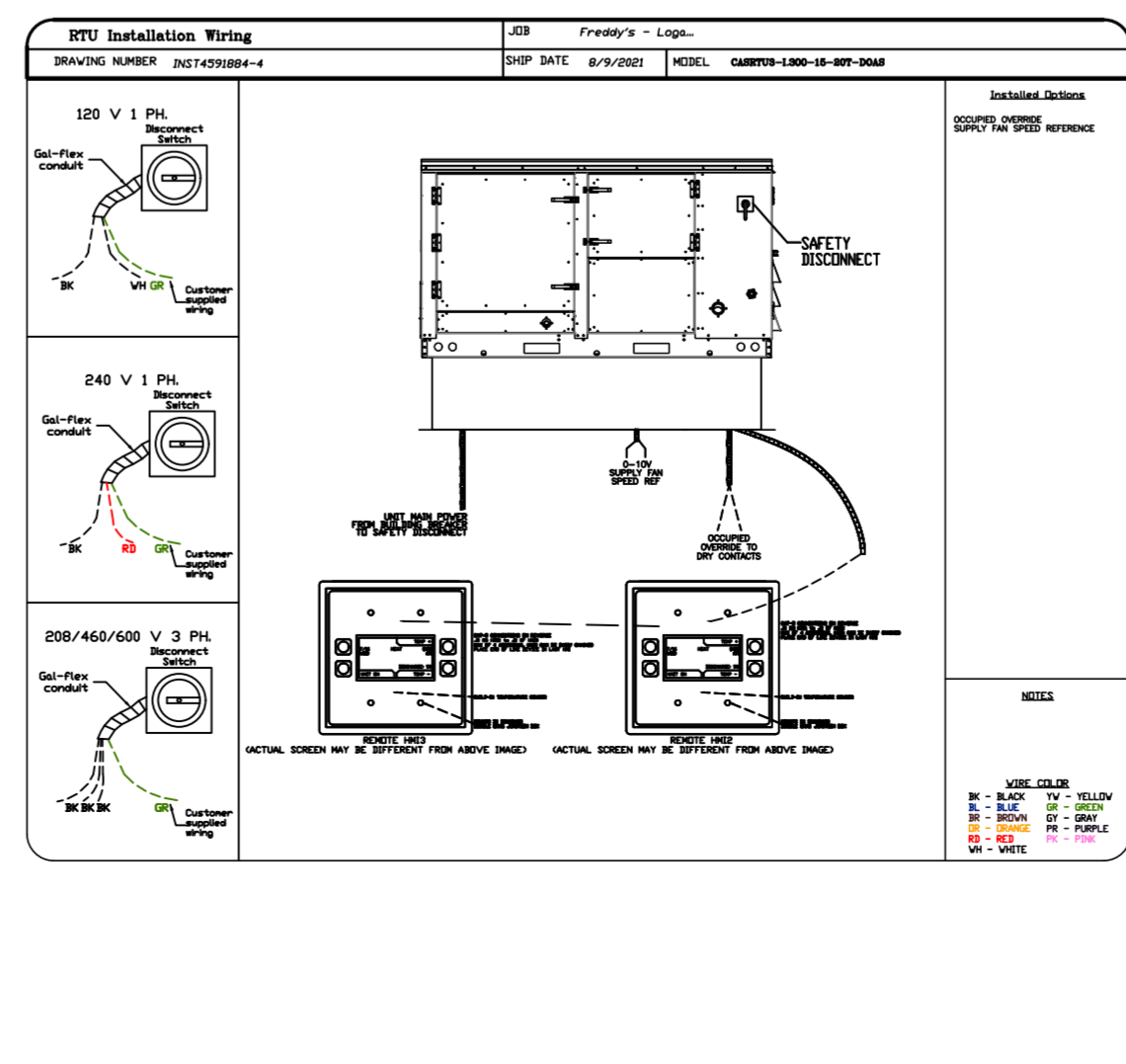
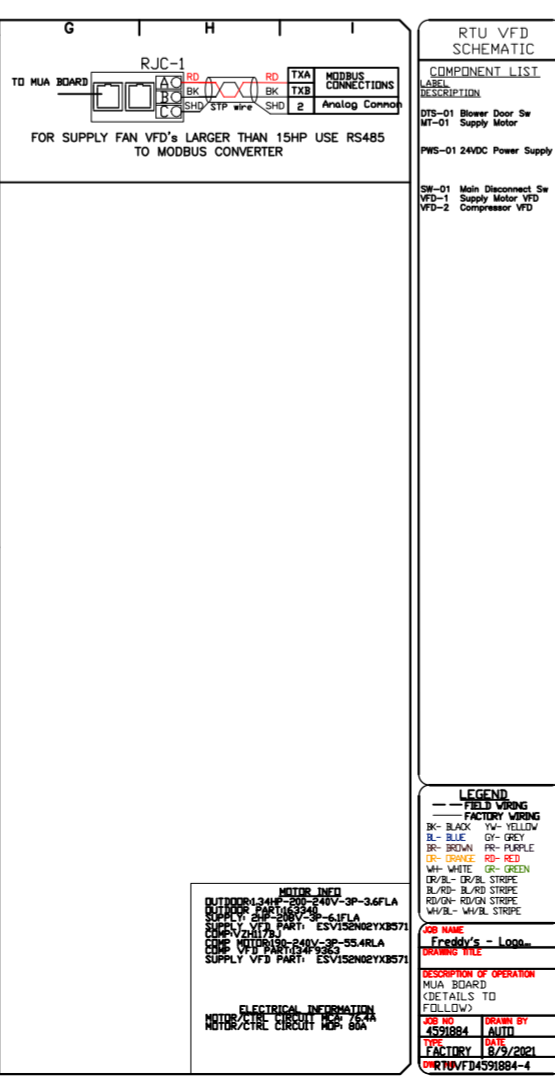
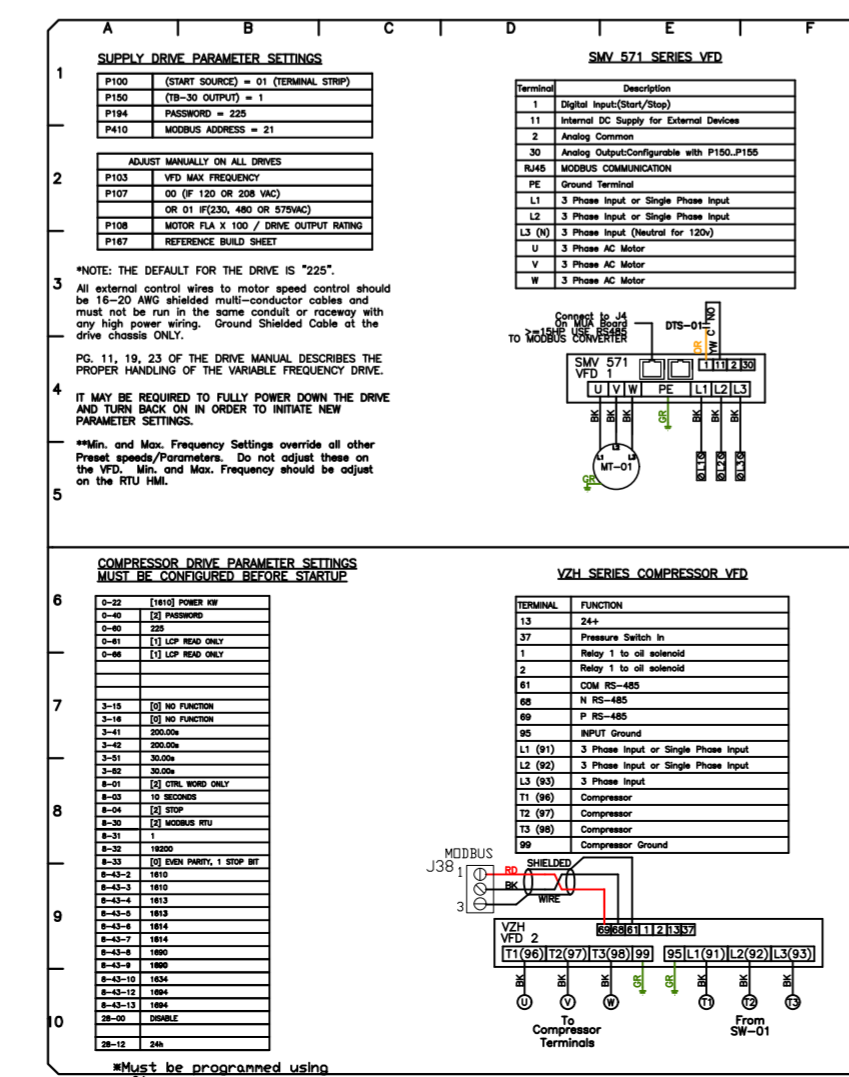
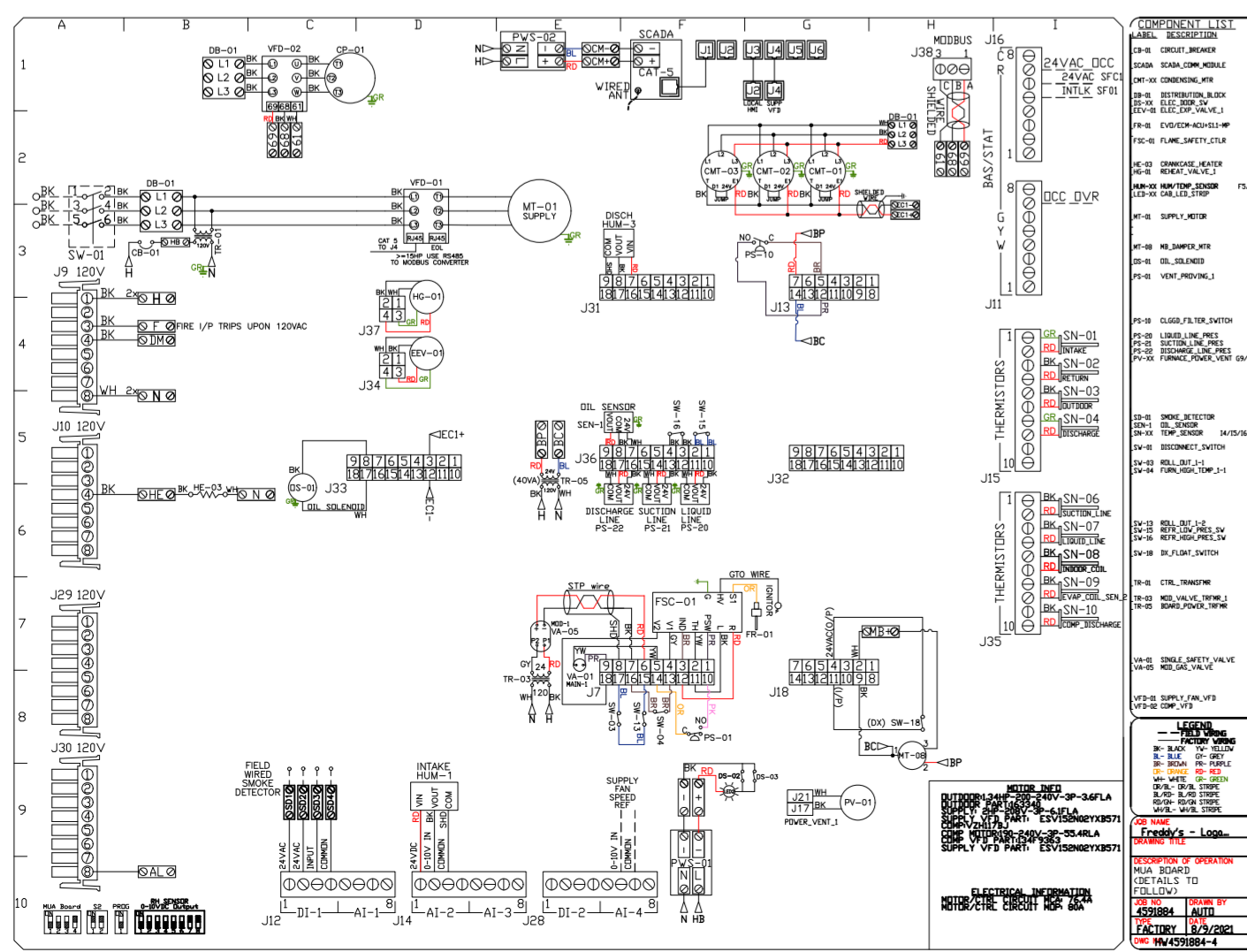
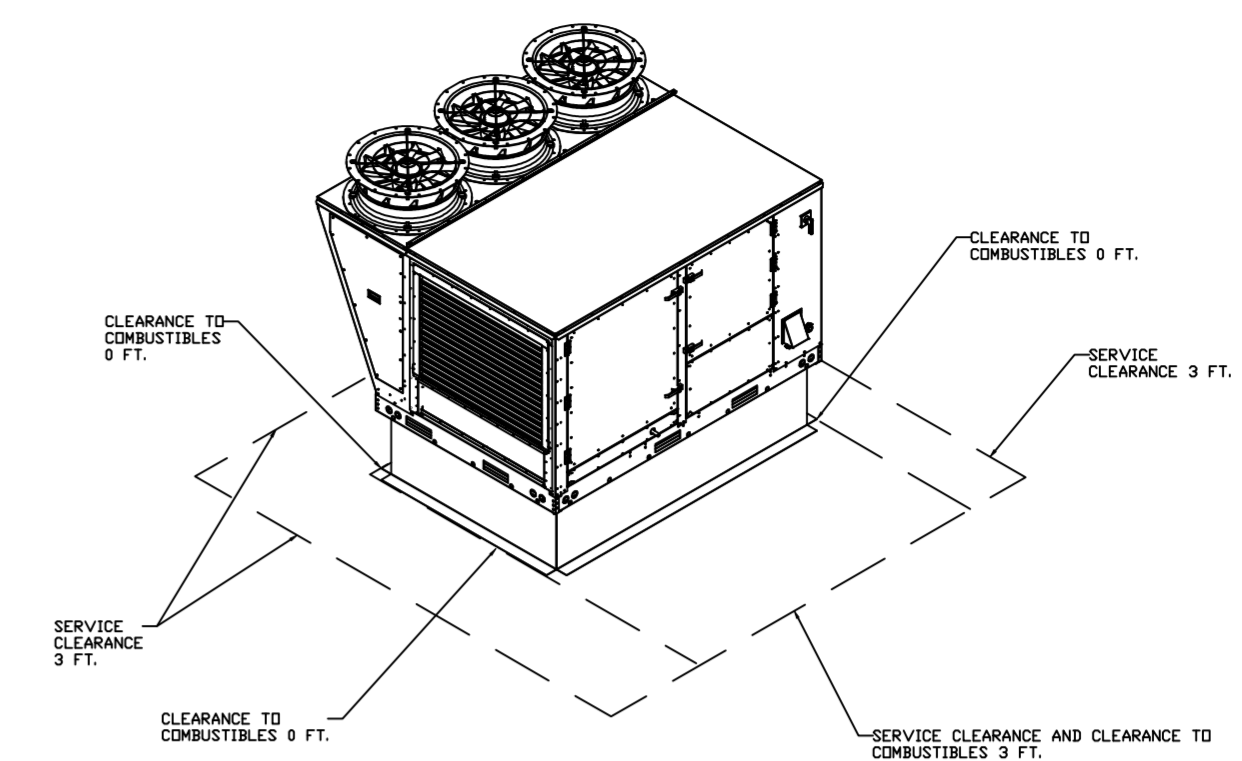
- DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
-  DENOTES CORNER WEIGHT.
- ROOF OPENING MUST BE 2' SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.

*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 21.5" x 39".



OPTIONS

- 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.
- CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
- RTU SIZE 3 DOWN DISCHARGE.
- 2" MERV 13 FILTERS FOR SIZE 3 RTU. QTY 4.
- 2" MERV 8 FILTERS FOR SIZE 3 RTU. QTY 4.
- OVERHEAT STAT.
- VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
- INLET PRESSURE GAUGE, 0-35".
- MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
- OCCUPIED SCHEDULING.
- COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
- SIZE 3 RTU CURB DUCT HANGER.
- CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
- 20 TON MODULATING COOLING OPTION, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS).
- 20 TON MODULATING REHEAT OPTION. DISCHARGE DEWPOINT CONTROL.
- RTU SCHEDULED OA PERCENTAGE INTAKE/RETURN DAMPER CONTROL.
- RTU SIZE 3 HAIL GUARD.
- RTU SIZE 3 DOWN RETURN.
- VAV PACKAGE W/ 0-10VDC INPUT CONTROL (571 VFD INCLUDED).



REVISIONS

DESCRIPTION	DATE

CAPTIVE

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104 W 8th St Suite 204, Kansas City, MO, 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg9@captivair.com

Freddy's - Loganville, GA

LOGANVILLE, GA, 30052

DATE: 12/15/2020

DWG.#: 4591884

DRAWN BY: michael.co

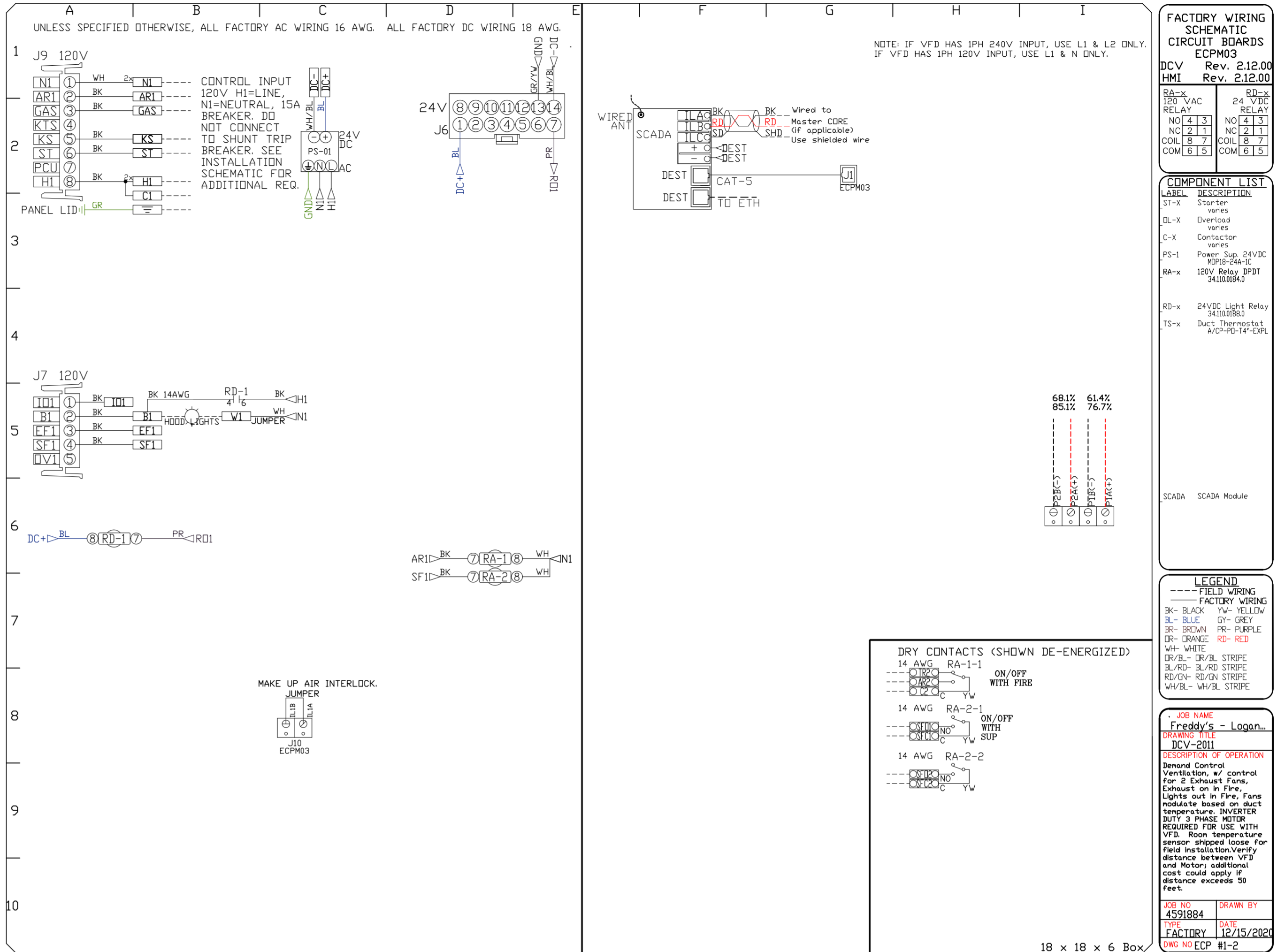
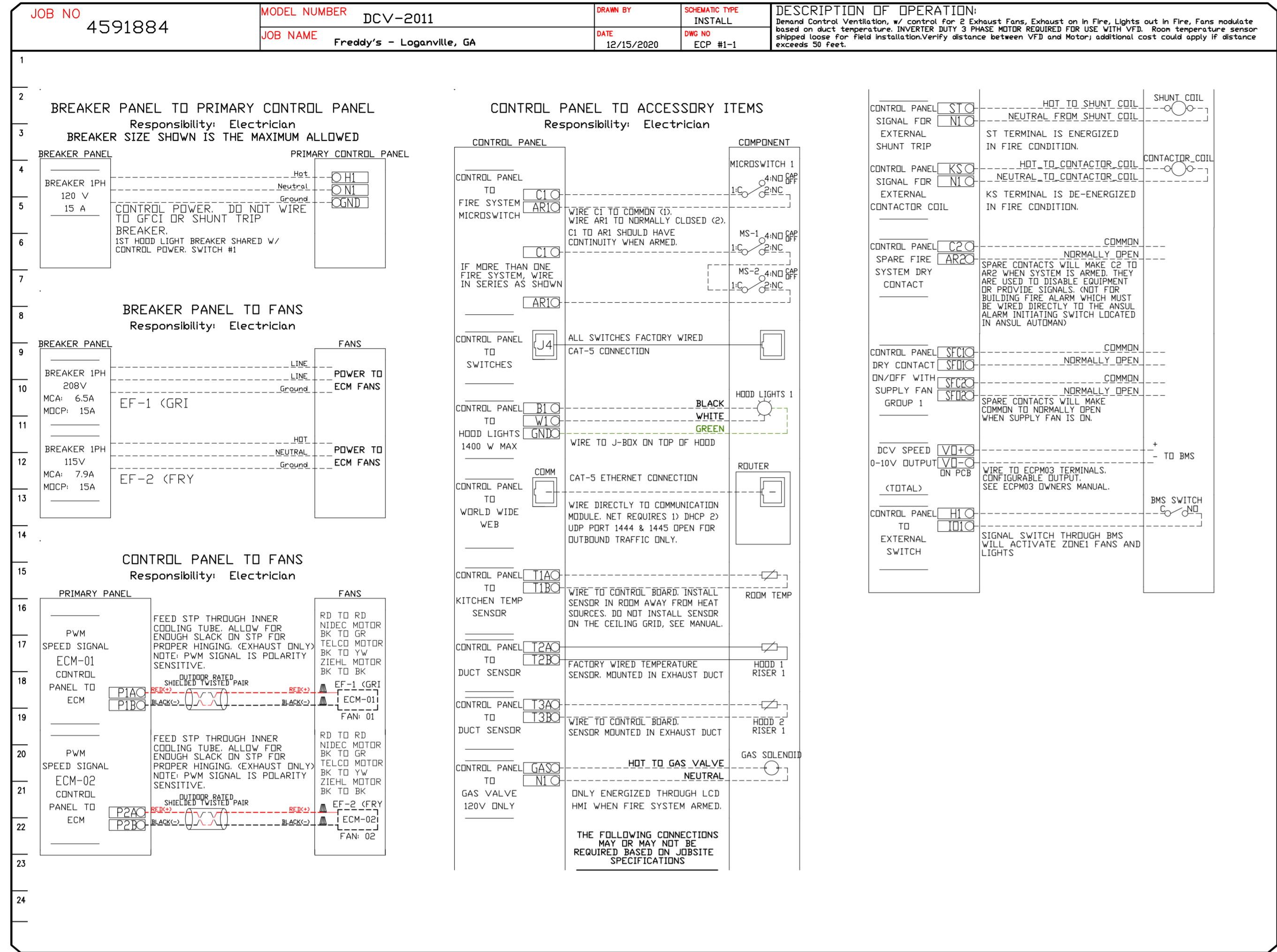
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MASTER DRAWING

SHEET NO. 3

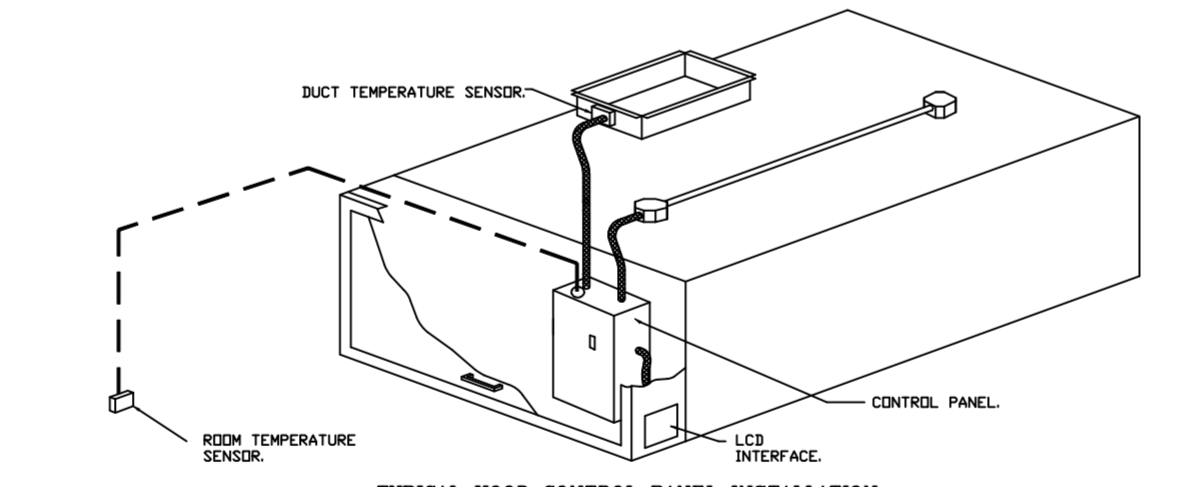
ELECTRICAL PACKAGE - JOB#4591884

NO	TAG	PACKAGE #	LOCATION	SWITCHES	QUANTITY	OPTION	FANS CONTROLLED
1	DCV-1	DCV-2011	UTILITY CABINET LEFT CABINET LEFT HOOD # 1	1 LIGHT 1 FAN		SMART CONTROLS DCV	EF-1 (GRIBBLE) EXHAUST 1 (R750) 208 52 EF-2 (FRYER) EXHAUST 1 (R500) 115 63



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 403.2.9 (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 PROBES(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 FANS, ACTIVATE THE EXHAUST FANS, 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 SAVING INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDs.



- 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:** A 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 RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR MECHANICAL/SUPPLY TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

REVISIONS

DESCRIPTION	DATE:

FACTORY WIRING SCHEMATIC CIRCUIT BOARDS ECPM03
DCV Rev. 2.12.00
HMI Rev. 2.12.00

COMPONENT LIST:
ST-X Starter wires
DL-X Duct Load wires
C-X Contactor wires
PS-1 Power Sup. 24VDC 1000-04-15
8A-X 180V Relay 3PDT 34000004
RD-X 24VDC Light Relay 34000008
IS-X Duct Temperature A/O-P-PS-TF-EXPL

LEGEND:
--- FIELD WIRING
--- FACTORY WIRING
BK- BLACK W- YELLOW
BL- BLUE GY- GREY
BR- BROWN PR- PURPLE
BR- BROWN RD- RED
WH- WHITE
DR/L- DR/L STRIPE
BL/RD- BL/RD STRIPE
RD/WH- RD/WH STRIPE
WV/L- WV/L STRIPE

DRY CONTACTS (SHOWN DE-ENERGIZED):
14 AWG RA-1-1 ON/OFF WITH FIRE
14 AWG RA-2-1 ON/OFF WITH SUP
14 AWG RA-2-2 ON/OFF WITH SUP

JOB NAME: Freddy's - Loganville, GA
DESCRIPTION OF OPERATION:
Demand Control Ventilation, w/ control for 2 Exhaust Fans, Exhaust on in Fire, Lights out in Fire, Fans modulate based on duct temperature. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD. Room temperature sensor shipped loose for field installation. Verify distance between VFD and Motor; additional cost could apply if distance exceeds 50 feet.

JOB NO 4591884 **DATE** 12/15/2020
FACTORY **DRAWN BY** **DWG NO** ECP #1-2

DATE: 12/15/2020

DWG.#: 4591884

DRAWN BY: michael.co

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

MASTER DRAWING

SHEET NO. 4

Freddy's - Loganville, GA
LOGANVILLE, GA, 30052

HBT Foodservice
www.captiveair.com
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104 W 8th St Suite 204, Kansas City, MO, 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg9@capthaire.com

DuctWork #1 Parts - Job#4375190 GRIDDLE

Tag	Part #	CFM	SP	Weight	Velocity	QTY	Description
P1	DW1490ASY	1600	-0.112	10.62	1496.71	1	Single Wall Duct 90 Degree Elbow, 14" Duct, Assembly.
P2	DW1435LT	1600	-0.0115	16.34	1496.71	1	Single Wall Duct 14" diameter, 35" long, Flange at both ends. Stainless Steel.
P3	DW1448AJDKIT	1600	-0.0095	26.62	1496.71	1	Single Wall Duct Adjustable, 14" diameter, 47.5" long, Flange at one end With a 14" Adjustable Collar - Stainless Steel.
P4	DW1490ASY	1600	-0.0896	10.62	1496.71	1	Single Wall Duct 90 Degree Elbow, 14" Duct, Assembly.
P5	DW1435LT	1600	-0.0115	16.34	1496.71	1	Single Wall Duct 14" diameter, 35" long, Flange at both ends. Stainless Steel.
P6	DW1448AJDKIT	1600	-0.0105	26.62	1496.71	1	Single Wall Duct Adjustable, 14" diameter, 47.5" long, Flange at one end With a 14" Adjustable Collar - Stainless Steel.
Assembled w/P7 System at P6	DW1914TP	1600	0	5.82	1496.71	1	Duct to Curb Transition, 19-1/2" Curb to 14" Duct, 16 GA Aluminized. Used on BDUI1 & 13, DU30, 33 & 50.
Assembled w/P6 System at P7	3M-2000PLUS			0.80		2	Duct - 3M Fire Barrier 2000 Plus Silicone - Used as sealant to Seal Duct Joints.
	735602000			52.00		5	Duct - Duct Insulation For zero clearance to combustibles - 300" x 24" x 1-1/2" Roll. Unifrax FireWrap Elite I.S.
	BANDING.5			5.00		2	Duct - Fire Barrier Wrap Stainless Steel Banding .5" Width - 200 FT Per Roll.
	DW14CLASY			1.06		6	Duct "V" Clamp With new design 14 Ga Brackets, 14" Duct, Assembly.
	SEAL.50-50			0.50		2	Duct - Fire Barrier Wrap Stainless Steel Banding Seal .5" Width. Quantity of 50.
	TAPEALUM			0.25		2	Duct - Fire Barrier Wrap Aluminum Foil Tape - 3" x 150' Roll.
Total Weight				392.44			

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"

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

DuctWork #2 Parts - Job#4375190 FRYER

Tag	Part #	CFM	SP	Weight	Velocity	QTY	Description
P1	DW1045ASY	775	-0.0333	4.62	1420.94	1	Single Wall Duct 45 Degree Elbow, 10" Duct, Assembly.
P2	DW1007LT	775	-0.003	2.60	1420.94	1	Single Wall Duct 10" diameter, 7" long, Flange at both ends. Stainless Steel.
P3	DW1018AJDKIT	775	-0.004	7.95	1420.94	1	Single Wall Duct Adjustable, 10" diameter, 17.5" long, Flange at one end With a 10" Adjustable Collar - Stainless Steel.
P4	DW10SUBRASY			2.54		1	Duct Support Bracket Kit, 10" Duct, Used For Hanging Duct. 12 GA Steel, Clear Zinc Coating. - 2 Rings, 4 Brackets, & Hardware Bag 2.
P5	DW1045ASY	775	-0.0475	4.62	1420.94	1	Single Wall Duct 45 Degree Elbow, 10" Duct, Assembly.
P6	DW1035LT	775	-0.015	11.78	1420.94	1	Single Wall Duct 10" diameter, 35" long, Flange at both ends. Stainless Steel.
P7	DW1018AJDKIT	775	-0.01	18.63	1420.94	1	Single Wall Duct Adjustable, 10" diameter, 47.5" long, Flange at one end With a 10" Adjustable Collar - Stainless Steel.
Assembled w/P8 System at P8	DW1910TP	775	0	6.62	1420.94	1	Duct to Curb Transition, 19-1/2" Curb to 10" Duct, 16 GA Aluminized Steel. Misc. non-standard transition plate.
Assembled w/P7 System at P8	DW10VESUB			19.56		1	Duct Vertical Support Kit, 10" Duct, 18" Clearance To Combustibles. Parts are Zinc Coated. Hardware Kit #3 Used On DWXXVESU & DWXXVESUB.
	3M-2000PLUS			0.80		1	Duct - 3M Fire Barrier 2000 Plus Silicone - Used as sealant to Seal Duct Joints.
	735602000			52.00		3	Duct - Duct Insulation For zero clearance to combustibles - 300" x 24" x 1-1/2" Roll. Unifrax FireWrap Elite I.S.
	BANDING.5			5.00		1	Duct - Fire Barrier Wrap Stainless Steel Banding .5" Width - 200 FT Per Roll.
	DW10CLASY			0.82		6	Duct "V" Clamp With new design 14 Ga Brackets, 10" Duct, Assembly.
	SEAL.50-50			0.50		1	Duct - Fire Barrier Wrap Stainless Steel Banding Seal .5" Width. Quantity of 50.
	TAPEALUM			0.25		1	Duct - Fire Barrier Wrap Aluminum Foil Tape - 3" x 150' Roll.
Total Weight				246.39			

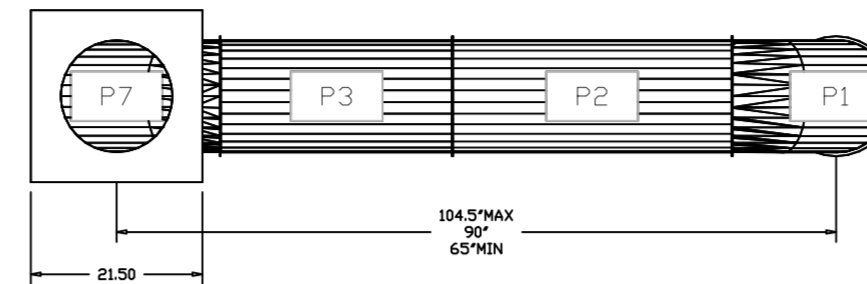
SINGLE WALL FACTORY BUILT DUCTWORK

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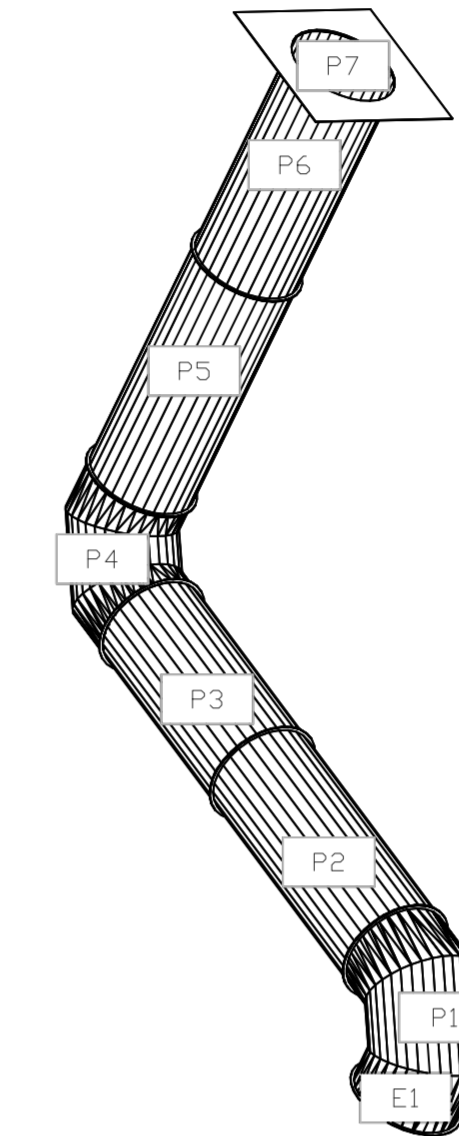
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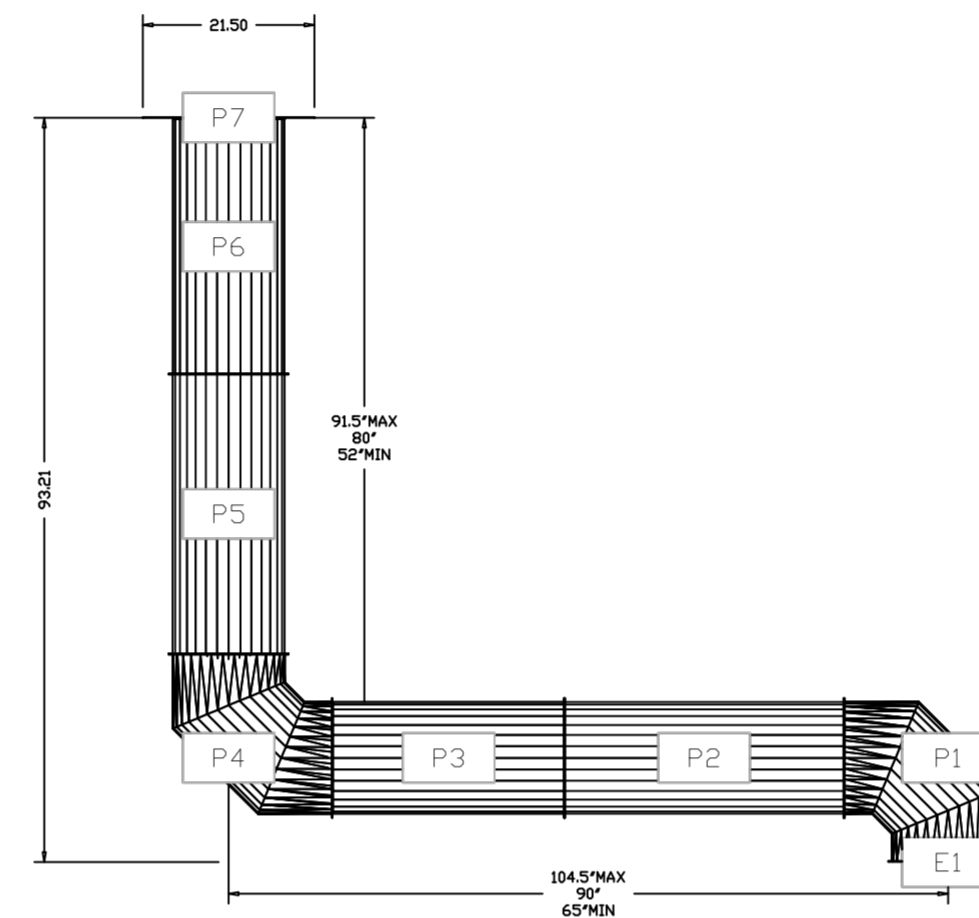
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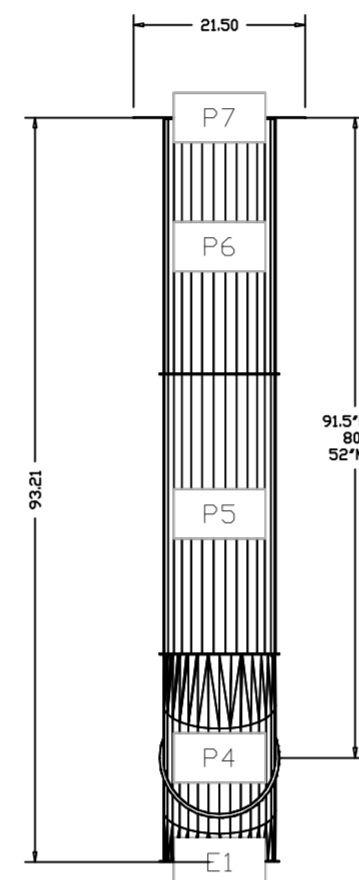
DuctWork #1 SE View GRIDDLE



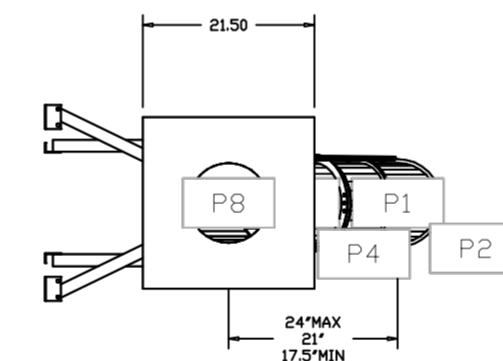
DuctWork #1 Front View GRIDDLE



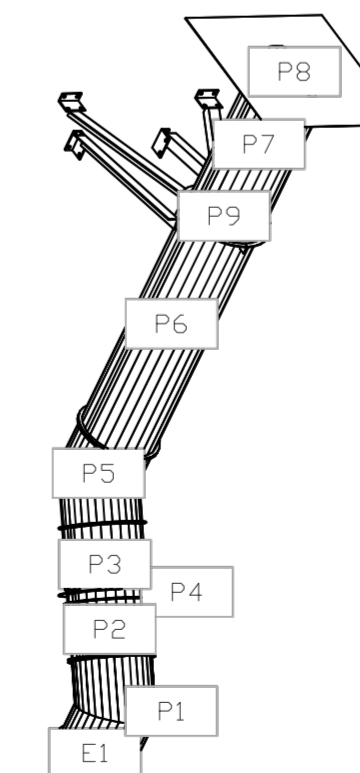
DuctWork #1 Side View GRIDDLE



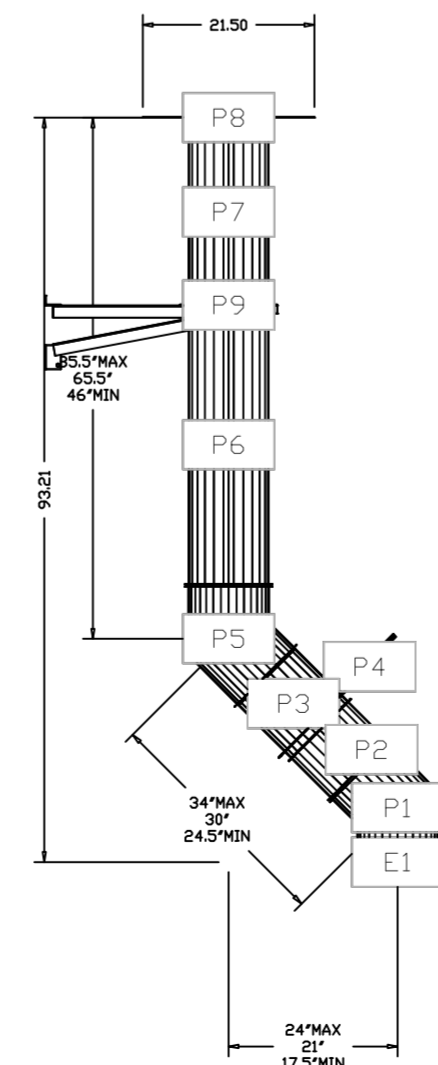
DuctWork #2 Top View FRYER



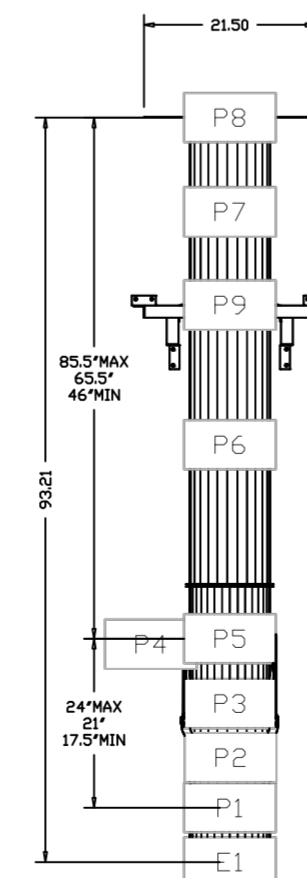
DuctWork #2 SE View FRYER



DuctWork #2 Front View FRYER



DuctWork #2 Side View FRYER



REVISIONS

DESCRIPTION	DATE

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Freddy's - Loganville, GA
LOGANVILLE, GA, 30052

DATE: 12/15/2020
DWG.# 4591884
DRAWN BY: michael.co
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 5