

FOR QUESTIONS, CALL THE  
Highwoods Group  
REGION 40  
PHONE: (919) 875-0420  
EMAIL: reg40@captivaire.com

**PATENT NUMBERS**

AC-PSP (UNITED STATES) - US PATENT 7963830 B2.  
AC-PSP WALL (CANADA) - CA PATENT 2820509.  
AC-PSP ISLAND (CANADA) - CA PATENT 2520330.

**HOOD INFORMATION - JOB#5803325**

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)					MUA CFM	AC CFM	HOOD CONSTRUCTION	HOOD CONFIG		
										WIDTH	LENG	HEIGHT	DIA	CFM				VEL	SP	END TO END
1		5424 ND-2-ACPSP-F	CAPTIVEAIRE	14' 3"	600 DEG	I	HEAVY	225	3200	10'	15'	4'	1600	1536	-0.854'	1950	798	430 SS WHERE EXPOSED	ALONE	ALONE

**HOOD INFORMATION**

HOOD NO	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT		
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	SIZE			ELECTRICAL MODEL #	SWITCHES QUANTITY
1		CAPTRATE SOLID FILTER	10	16"	16"	85% SEE FILTER SPEC	10	L55 SERIES E26	NO	RIGHT	12"x54"x24"	TANK FS	4.0/4.0	SC-311110MA	1 LIGHT 1 FAN	YES	1261 LBS

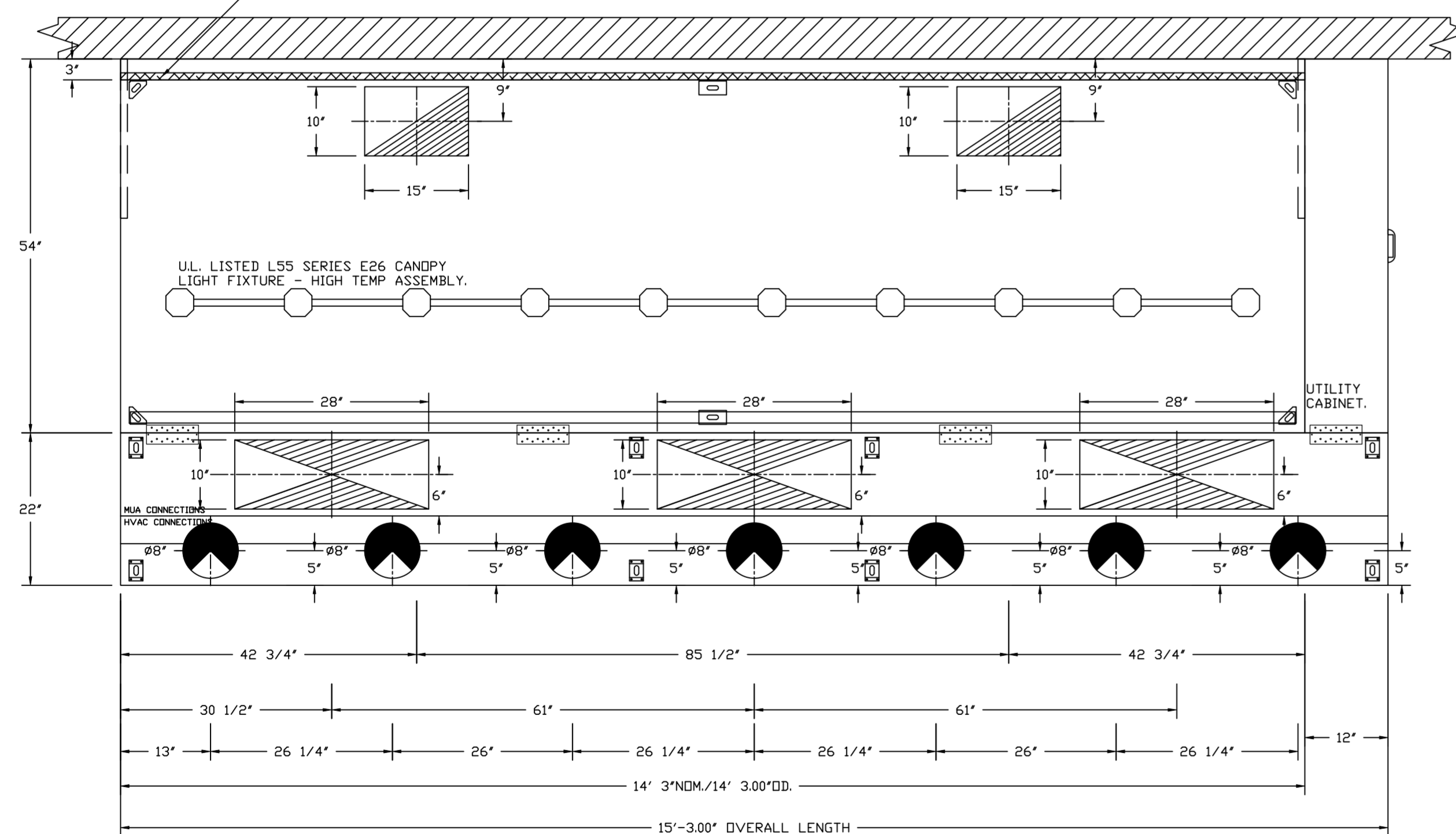
**HOOD OPTIONS**

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 10.00' HIGH FRONT, LEFT, RIGHT. 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. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 6IN PLEN. FULL DIMENSION HANGING BRACKET - FRONT.

**PERFORATED SUPPLY PLENUM(S)**

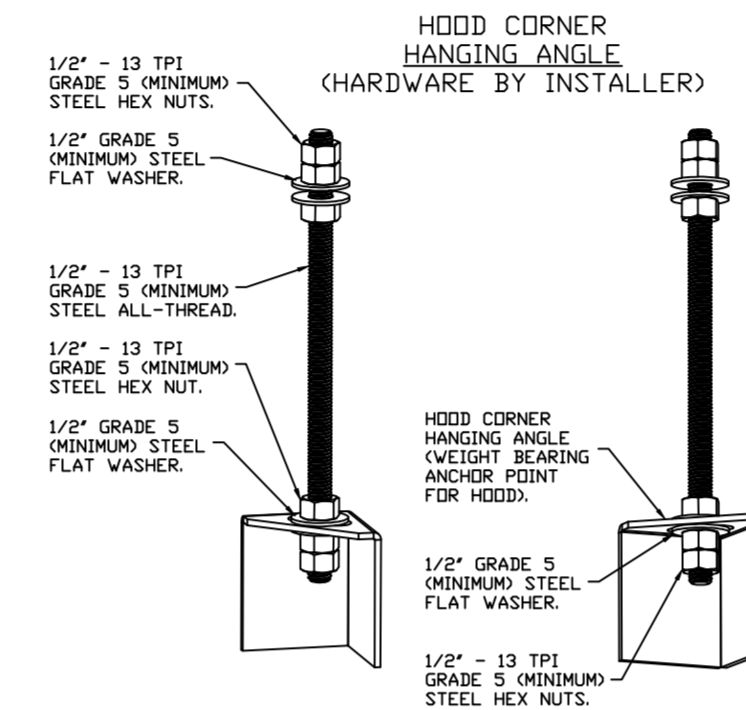
HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
1		Front	183'	22'	6'	MUA	10"	28"		649	0.166'
						MUA	10"	28"		649	0.166'
						MUA	10"	28"		649	0.166'
						AC		8"	114	0.041'	
						AC		8"	114	0.041'	
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						AC		8"	114	0.041'	
						AC		8"	114	0.041'	
						AC		8"	114	0.041'	
						AC		8"	114	0.041'	

1" LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDOFF. MEETS 0 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACES.



PLAN VIEW - HOOD #1  
14' 3.00" LONG 5424ND-2-ACPSP-F  
NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION



**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.

**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.

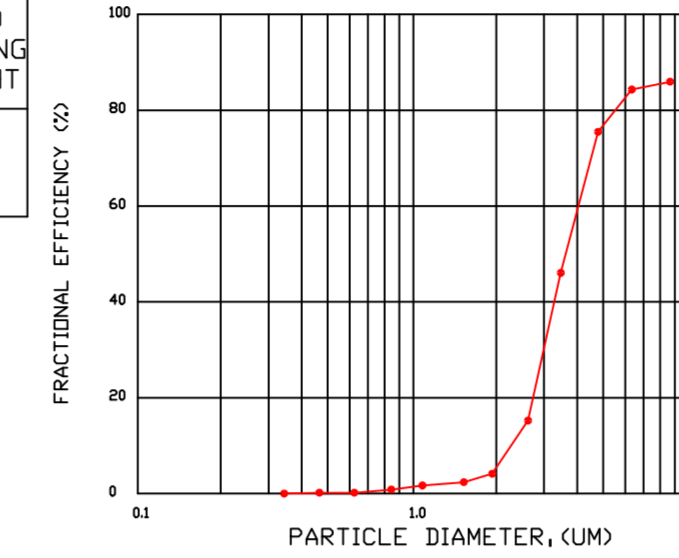
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

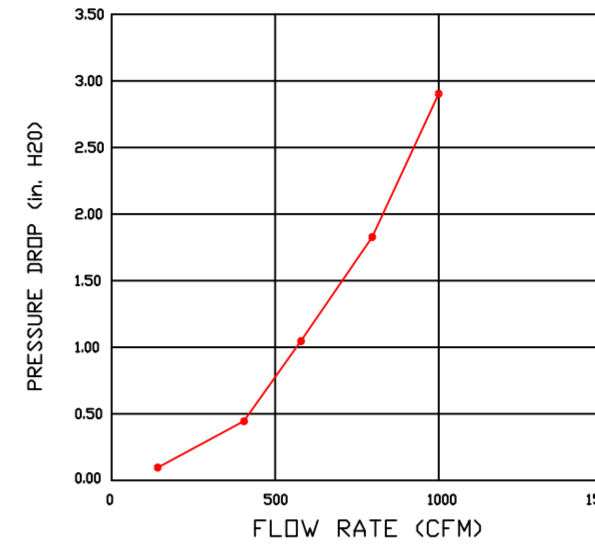
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

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.

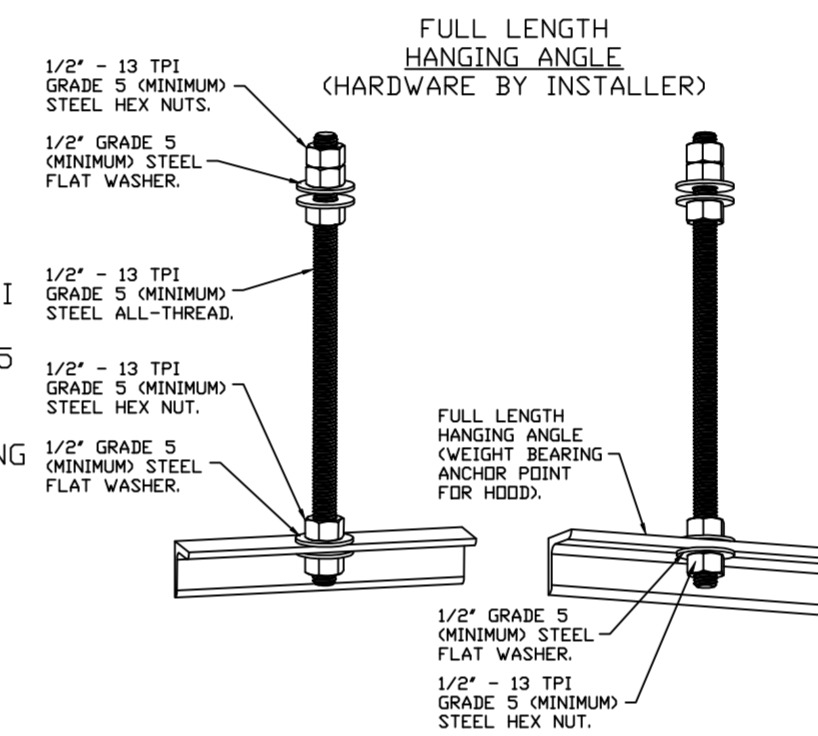
**EFFICIENCY VS. PARTICLE DIAMETER**



**PRESSURE DROP VS. FLOW RATE**

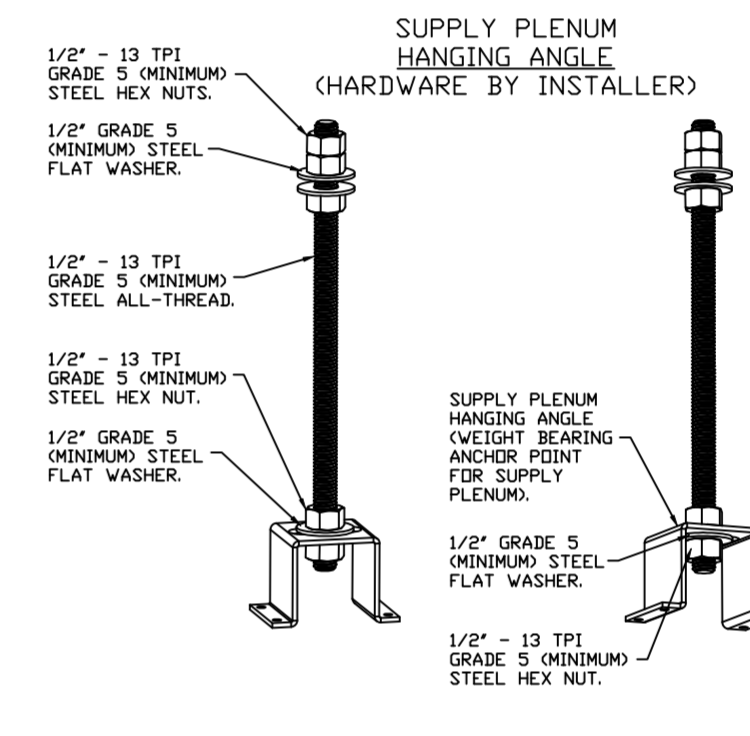


CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:  
NFPA #96.  
NSF STANDARD #2.  
UL STANDARD #1046.  
INT. MECH. CODE (IMC).  
ULC-S649.



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**REVISIONS**

DESCRIPTION	DATE

**CAPTIVEAIRE**

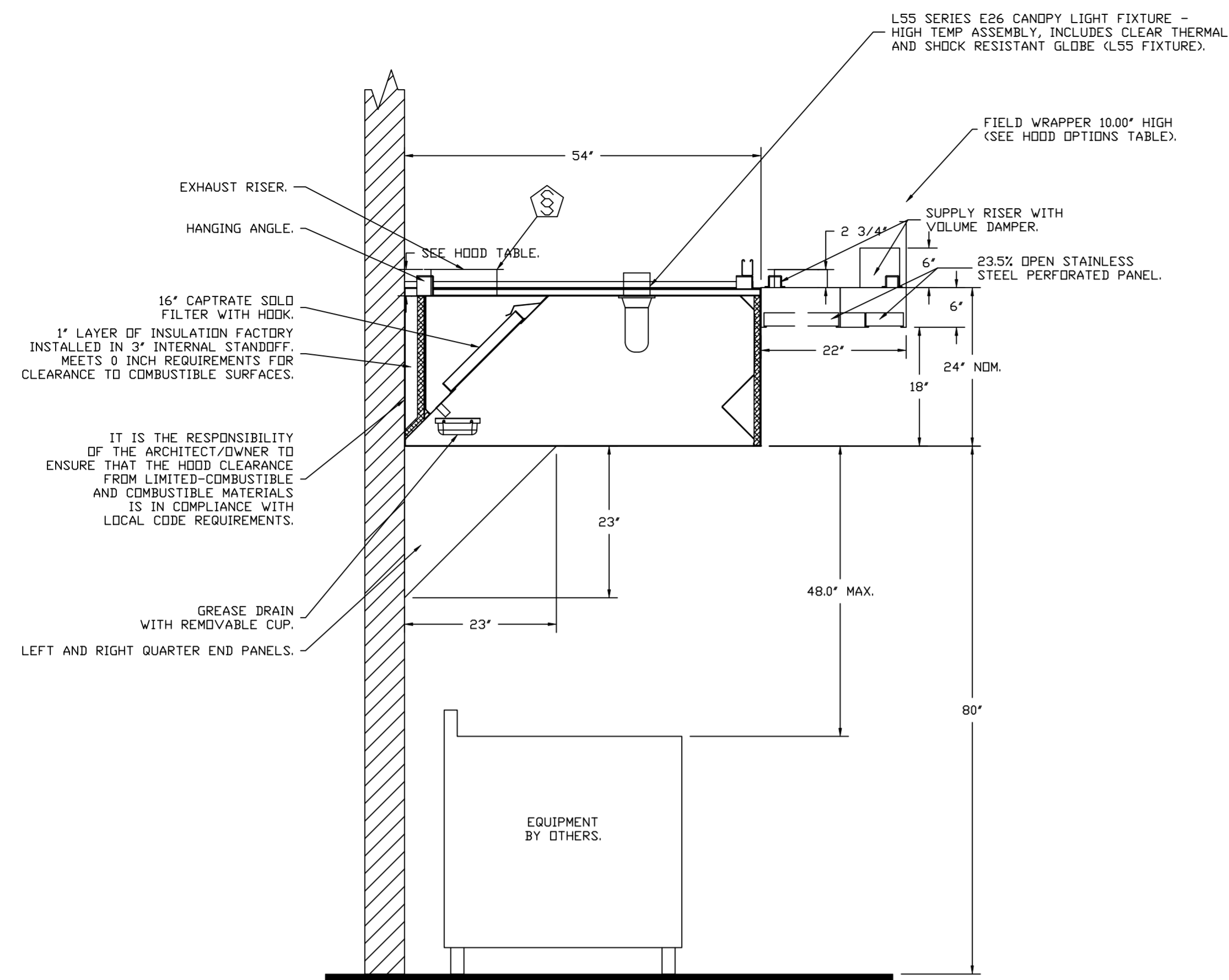
Highwoods Group  
www.captiveaire.com

4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 875-0420 FAX: (919) 875-0577 EMAIL: reg40@captivaire.com

CHIPOTLE BROKEN ARROW SOUTH #4675  
BROKEN ARROW, OK, 74011

DATE: 1/11/2023  
DWG.#: 5803325  
DRAWN BY: JMB-40  
SCALE: 3/4" = 1'-0"  
MASTER DRAWING

SHEET NO. 1



SECTION VIEW - MODEL 5424ND-2-ACPSP-F  
HOOD - #1

FIRE SYSTEM INFORMATION - JOB#5803325

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	36	FIRE CABINET RIGHT	RIGHT, HOOD 1

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	1.500	CAPTIVEAIRE SYSTEMS

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SHEET NO.  
2

**EXHAUST FAN INFORMATION – JOB#5803325**

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	EF-1	1	DU240HFA	CAPTIVEAIRE	3200	1.500	862	DDP,PREMIUM	3.000	1.6960	3	208	10.2	727 FPM	305	14.5
2	EF-2	1	DR12HFA	CAPTIVEAIRE	150	0.600	1293	TEAD-ECM	0.250	0.0940	1	115	2.9		50	6.2

**MUA FAN INFORMATION – JOB#5803325**

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MDCP	WEIGHT (LBS)	SDNES
3	MAU-1	1	A1-D.250-15D	15MF-1-MDD	A1-D.250	1000	1950	0.500	2046	DDP,PREMIUM	2.000	1.3400	3	208	6.1	8.8A	15A	510	20.3

**GAS FIRED MAKE-UP AIR UNIT(S)**

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
3	MAU-1	123704	113808	56°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

**FAN OPTIONS**

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1	1	GREASE BOX
		1	REMOVE HINGE KIT LABEL FROM THE FAN BASE
		1	2 YEAR PARTS WARRANTY
2	EF-2	1	I 12-BDD DAMPER
		1	ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
3	MAU-1	1	MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING - MEETS AMCA CLASS 1A RATING
		1	LOW FIRE START
		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	SIZE 1 TEMPERED COMMERCIAL DOWN DISCHARGE FOR DIRECT DRIVE AHUS
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
1	2 YEAR PARTS WARRANTY		

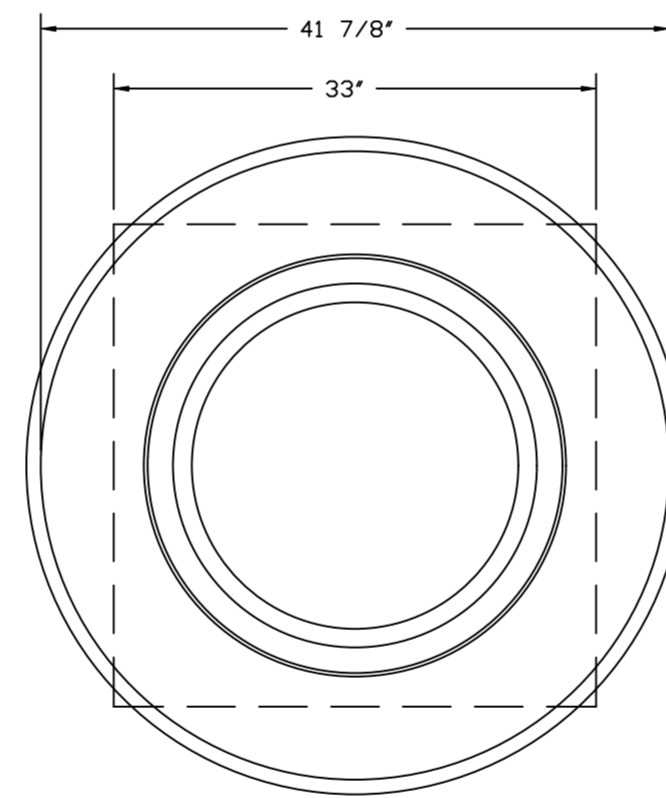
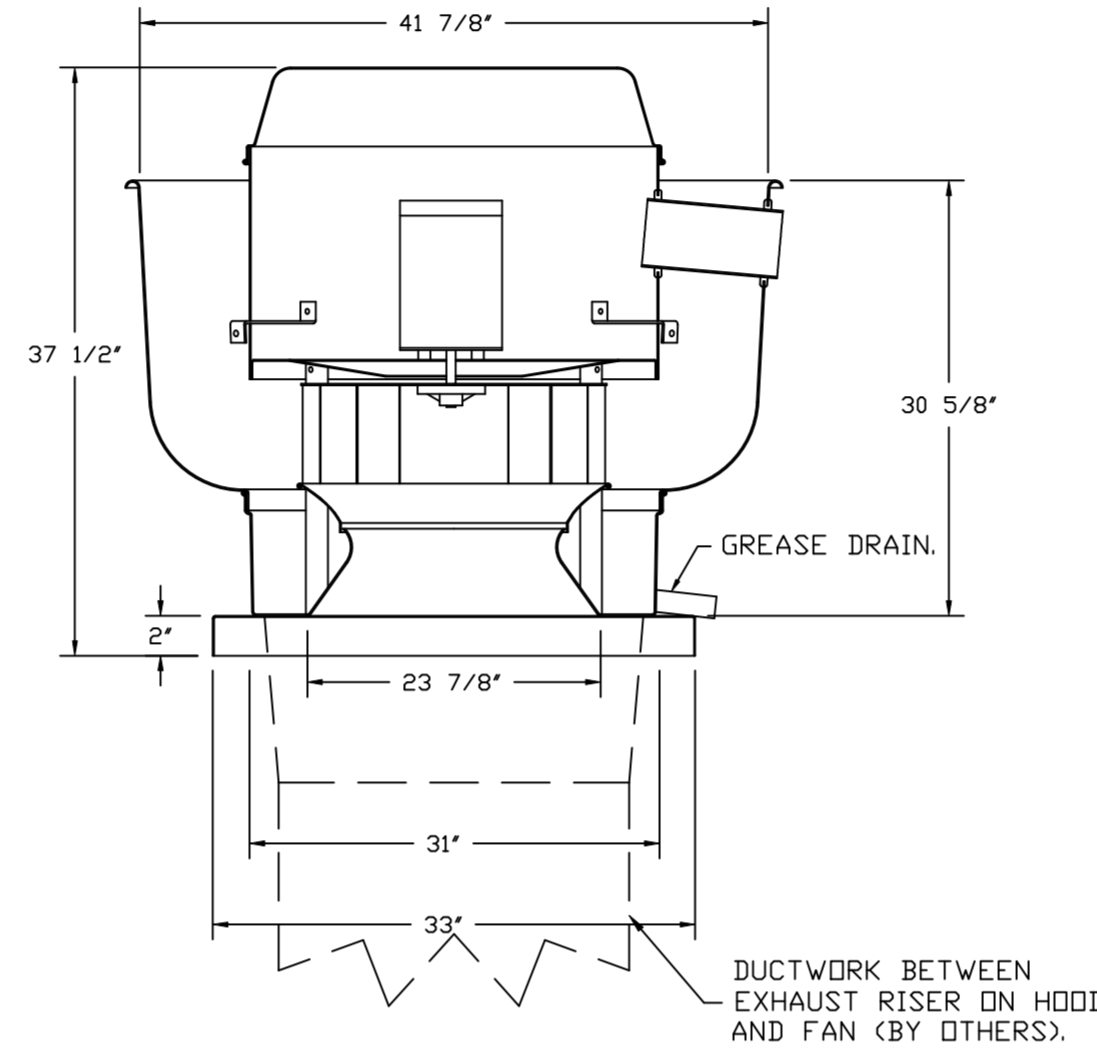
**FAN ACCESSORIES**

FAN UNIT NO	TAG	EXHAUST				SUPPLY		
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	EF-1	YES						
2	EF-2		YES					
3	MAU-1						YES	

**CURB ASSEMBLIES**

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1	43 LBS	CURB	31.500"W X 31.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED.
2	# 2	EF-2	31 LBS	CURB	17.500"W X 17.500"L X 26.000"H ALONG LENGTH, RIGHT.
3	# 3	MAU-1	65 LBS	CURB	21.000"W X 71.000"L X 20.000"H ALONG WIDTH, RIGHT INSULATED.

FAN #1 DU240HFA – EXHAUST FAN (EF-1)



TOP VIEW

**FEATURES:**

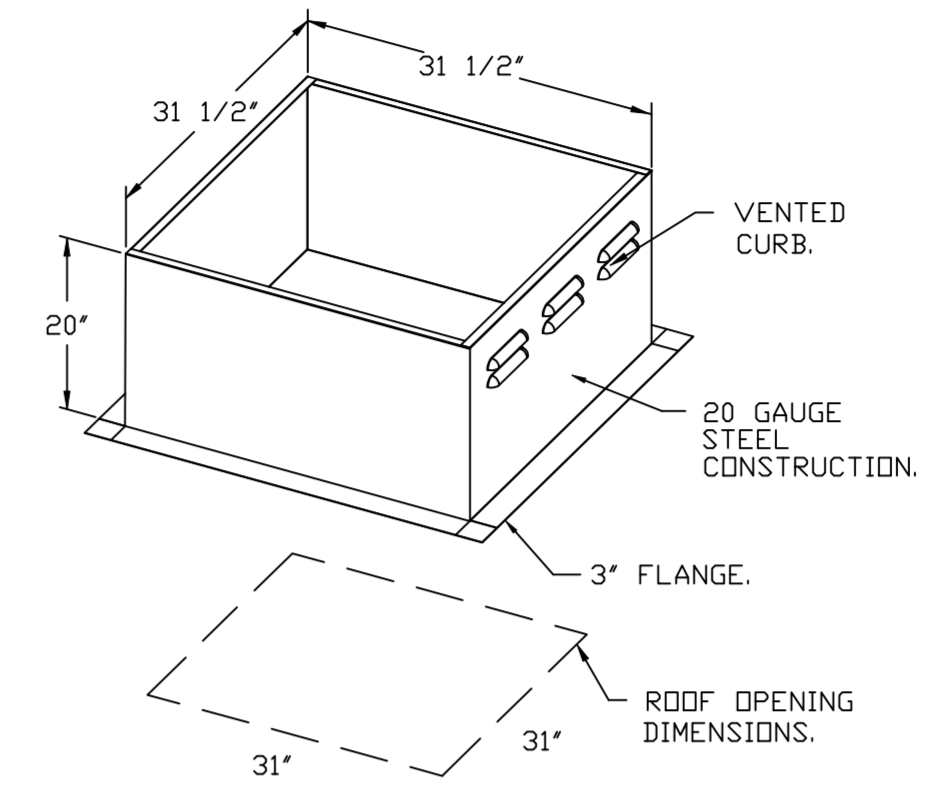
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT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

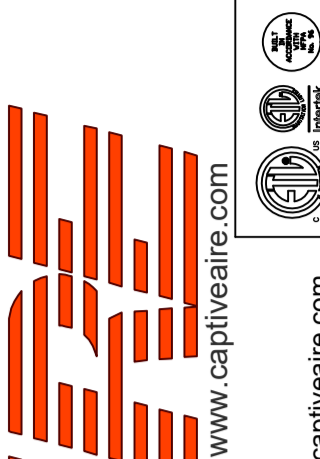
**OPTIONS**

- GREASE BOX.
- REMOVE HINGE KIT LABEL FROM THE FAN BASE.
- 2 YEAR PARTS WARRANTY.



**REVISIONS**

DESCRIPTION	DATE:



CHIPOTLE BROKEN ARROW SOUTH #4675  
BROKEN ARROW, OK, 74011

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DWG.#: 5803325

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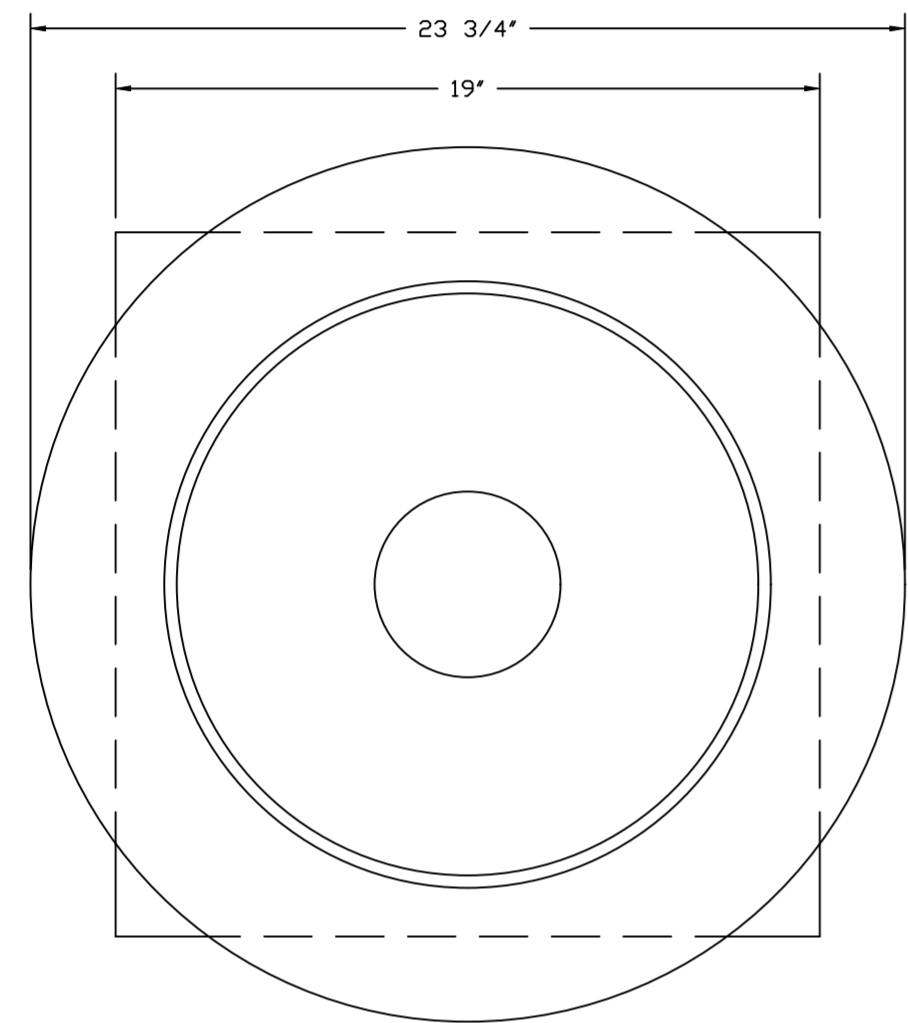
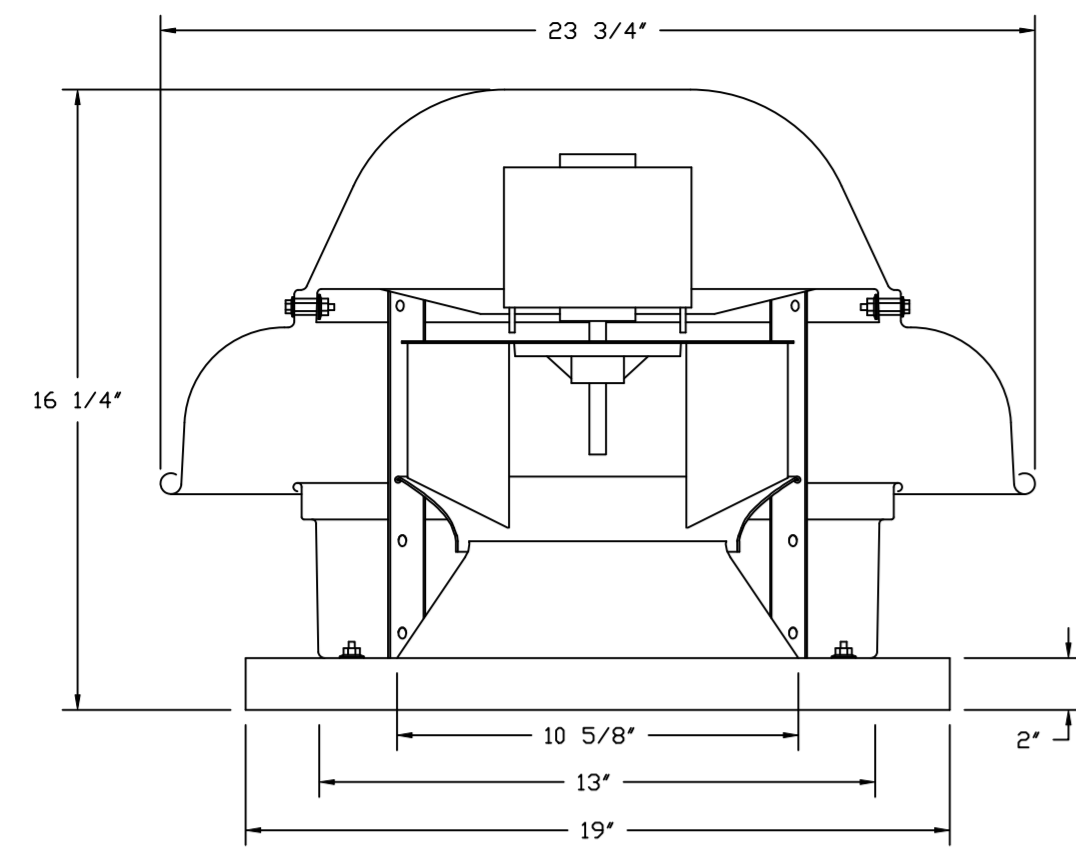
SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 3

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FAN #2\_DR12HFA - EXHAUST FAN (CF-22)



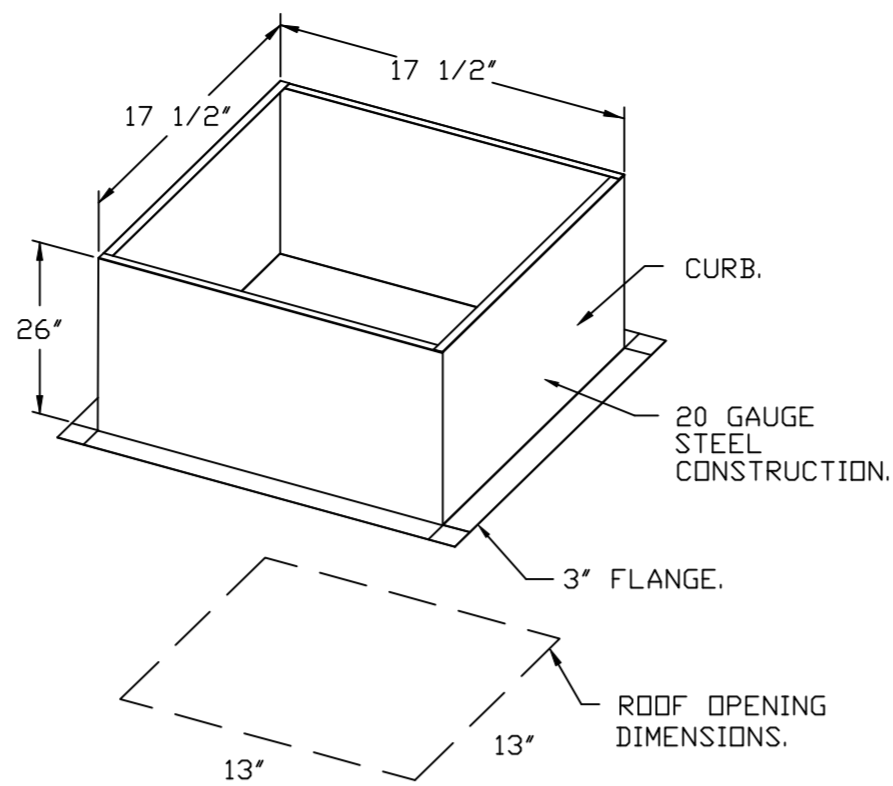
TOP VIEW

**FEATURES:**

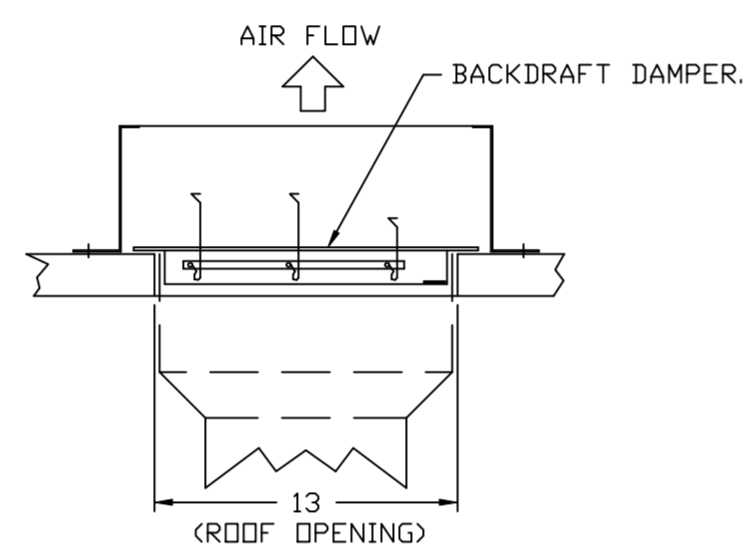
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- SAFETY DISCONNECT.
- STANDARD BIRD SCREEN.
- SPEED CONTROL.

**OPTIONS**

- I 12-BDD DAMPER.
- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL.
- RTC - (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.



**BACKDRAFT DAMPER INSTALLATION**



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<b>DRAWN BY:</b> JMB-40
<b>SCALE:</b> 3/4" = 1'-0"
<b>MASTER DRAWING</b>

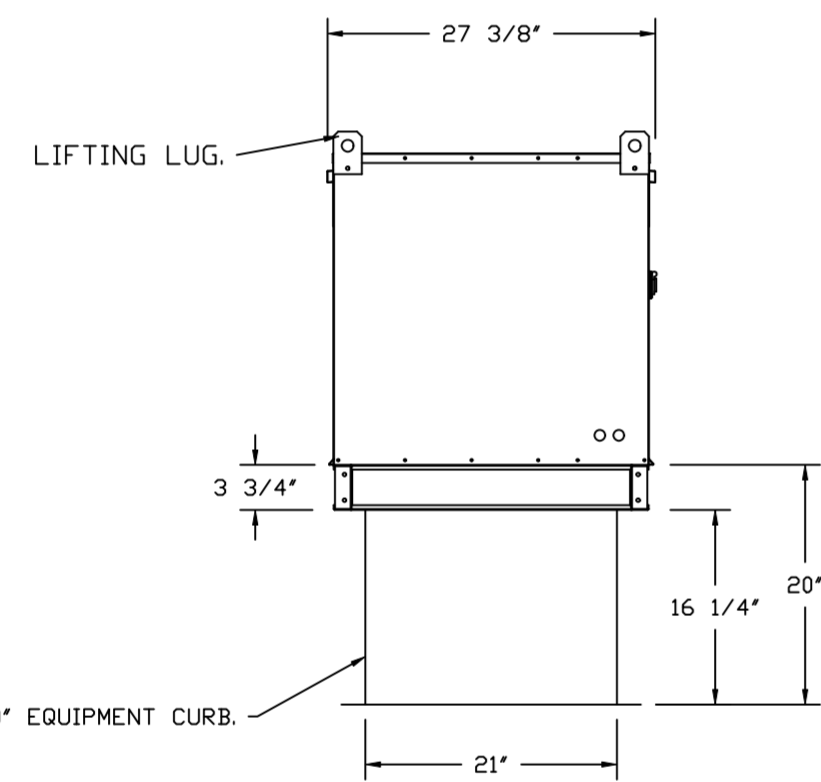
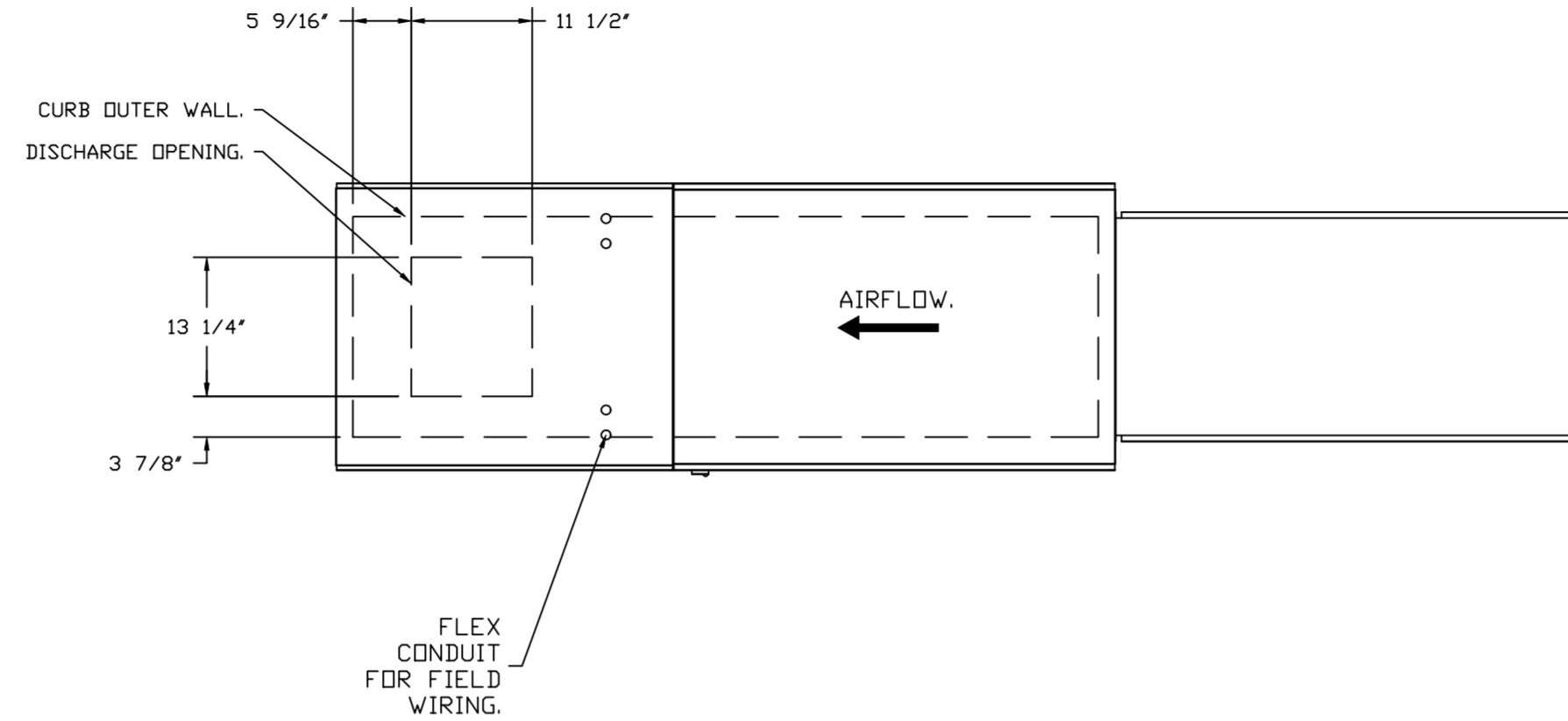
**SHEET NO.**  
4

- FAN #3 AI-D250-15D - HEATER (MAU-1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 15' MIXED FLOW DIRECT DRIVE FAN.
  2. INTAKE HOOD WITH EZ FILTERS.
  3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
  4. MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, TFBIDS ACTUATOR INCLUDED.
  5. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
  6. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
  7. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE.
  8. DOWN DISCHARGE CONSTRUCTION FOR SIZE 1 DIRECT DRIVE AHUS.
  9. UNIT MOUNTED VFD FOR USE WITH ECPM03.
  10. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).
  11. 2 YEAR PARTS WARRANTY

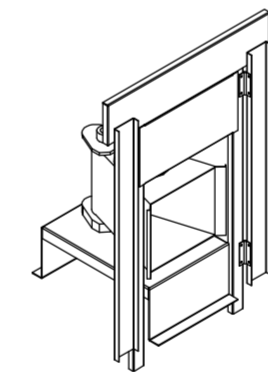
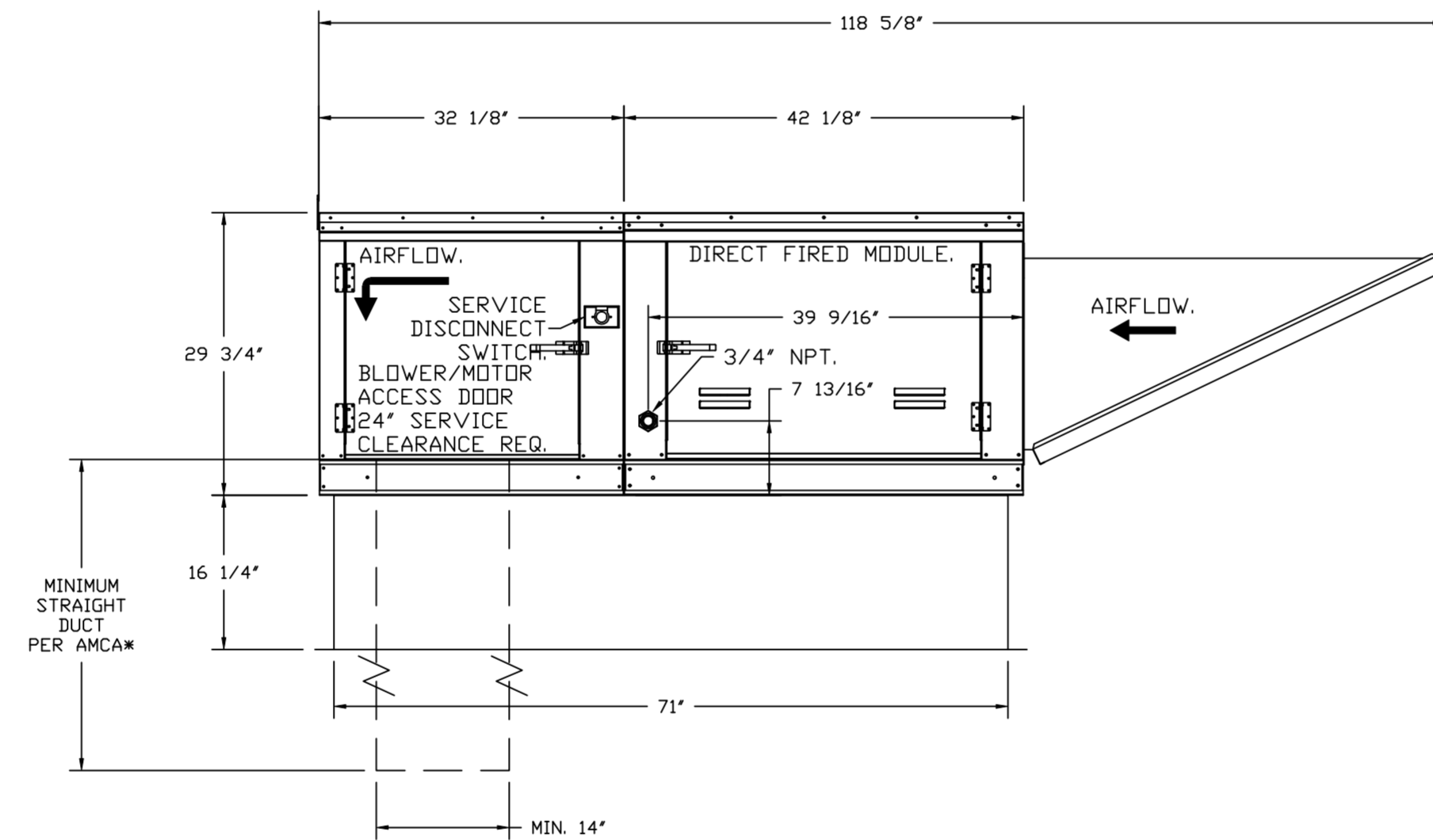
NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE 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 14" X 14".

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 19°F. TEMP. RISE = 56°F.  
 BTUs CALCULATED OFF ACTUAL AIR DENSITY.  
 OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 116663.  
 INPUT BTUs AT ALTITUDE OF 684 FT. = 126807.  
 OUTPUT BTUs AT ALTITUDE OF 684 FT. = 113808.  
 INPUT BTUs AT ALTITUDE OF 684 FT. = 123704.



ROOF OPENING 2" SMALLER THAN CURB DIMENSION.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

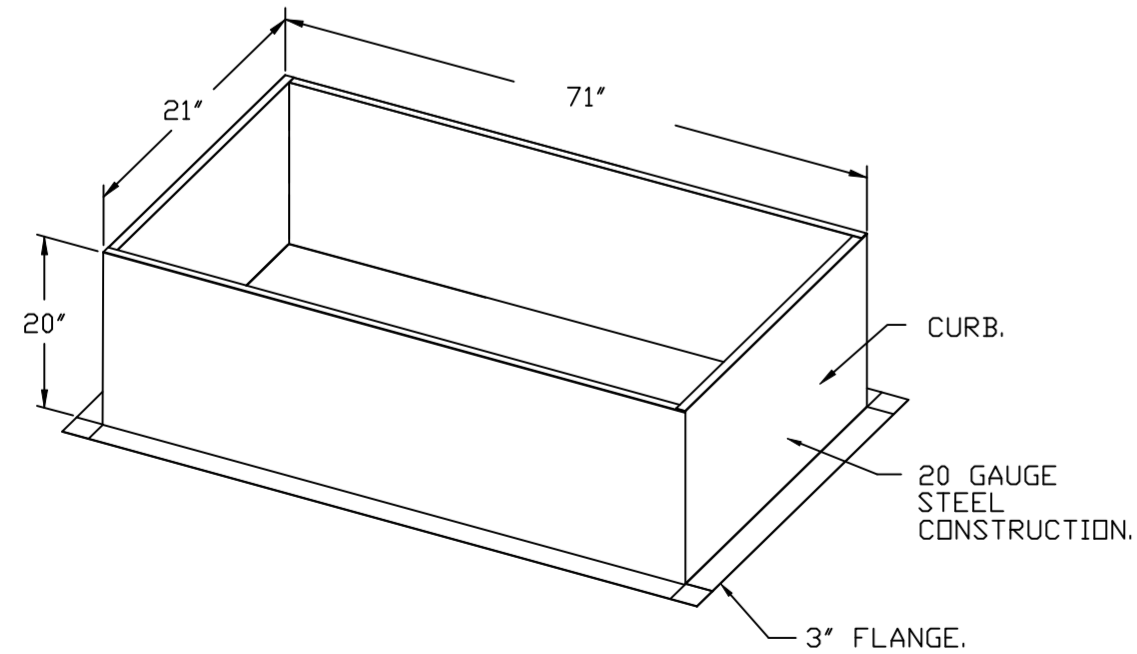
DIRECT FIRED PROFILE PLATE SPECIFICATIONS:

**DESCRIPTION:**  
 DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO. US6699282B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 8PPM OF CARBON MONOXIDE (CO), AND 0.5PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWERS 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.

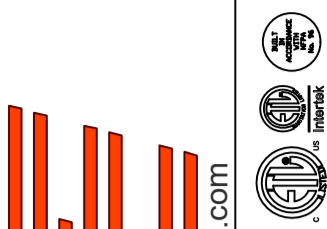
**CERTIFICATIONS:**  
 ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

**GENERAL CONSTRUCTION:**  
 -PROFILE PLATES SHALL BE FORMED FROM 690 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.



REVISIONS

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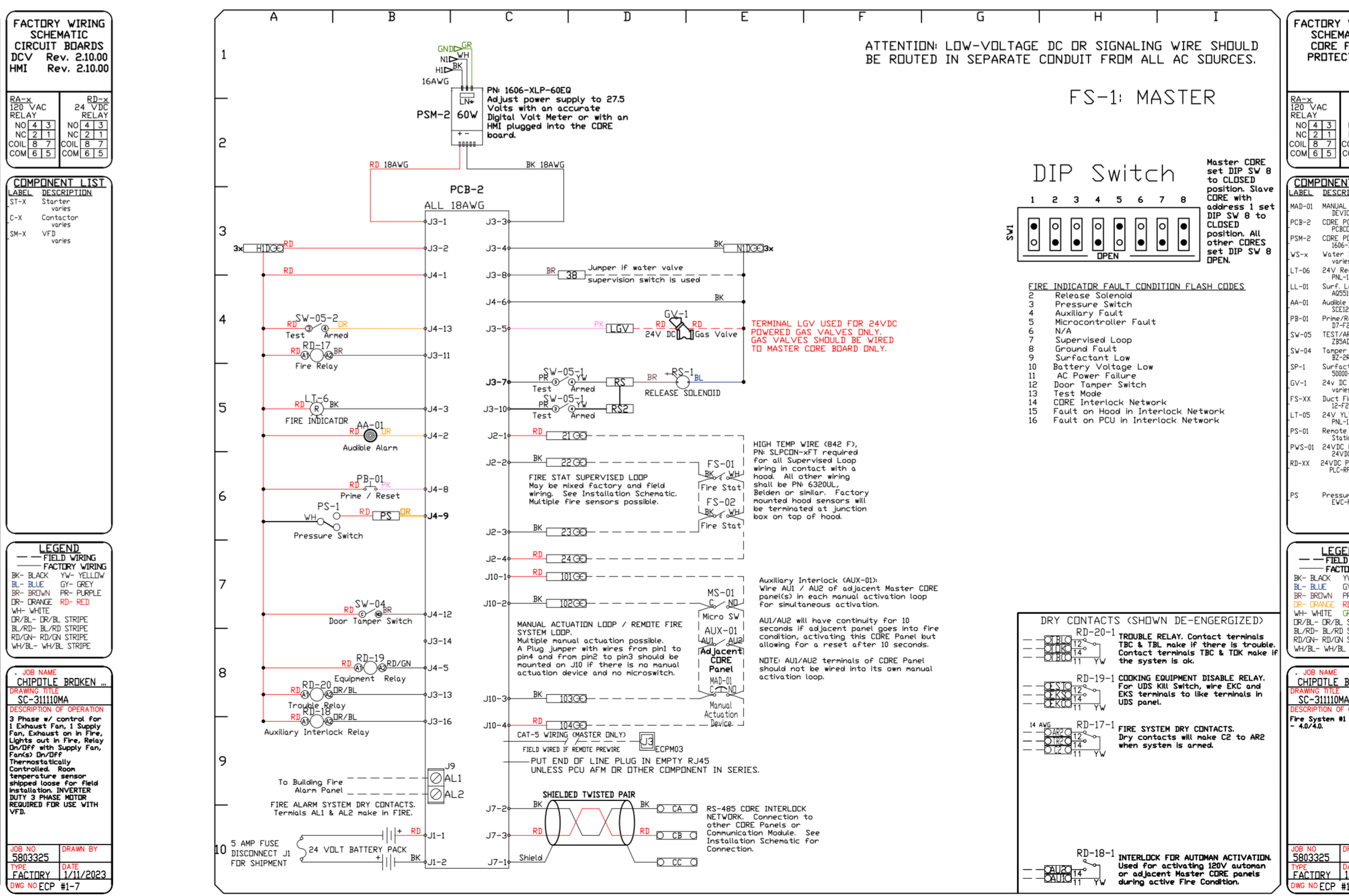
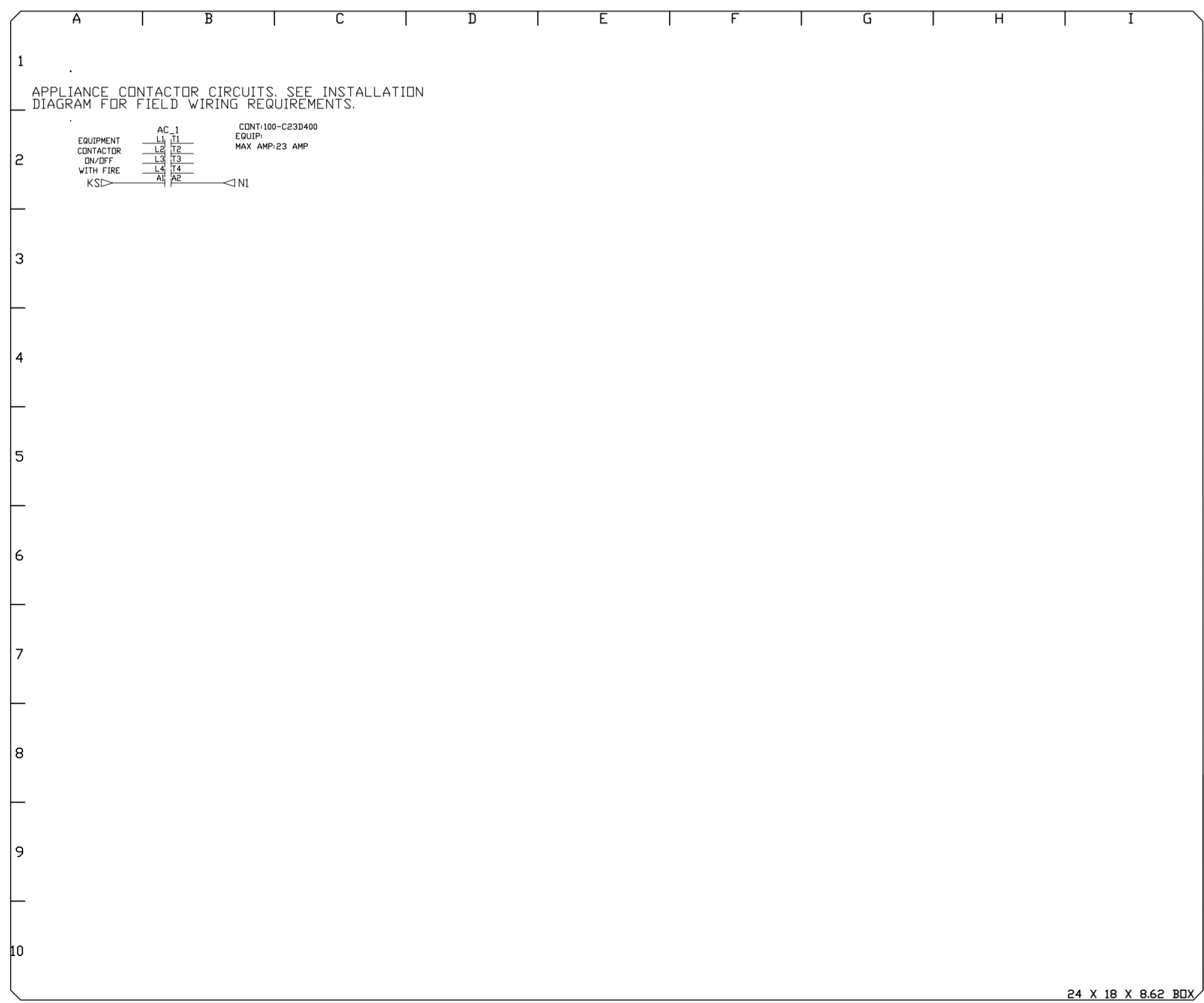
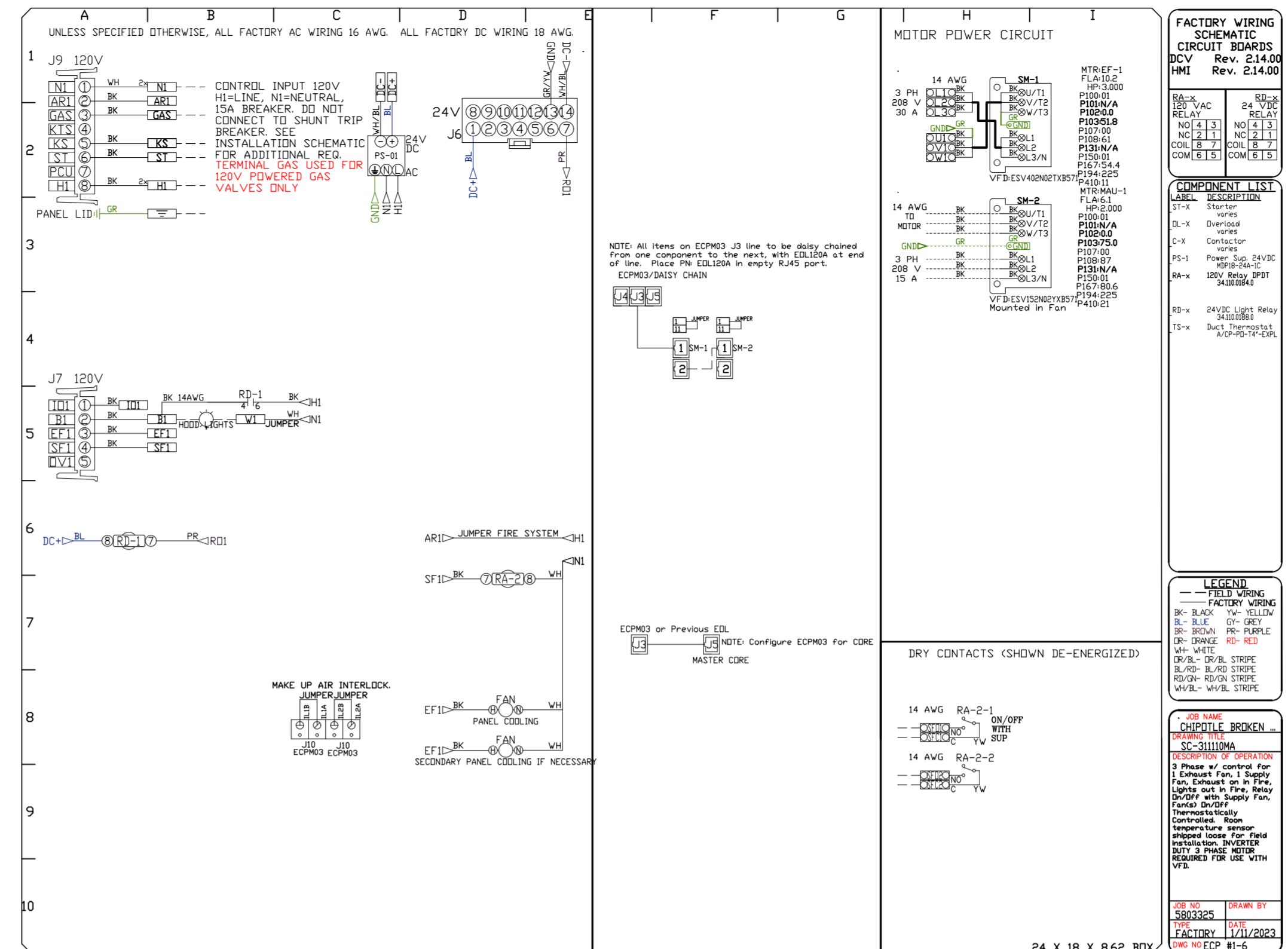
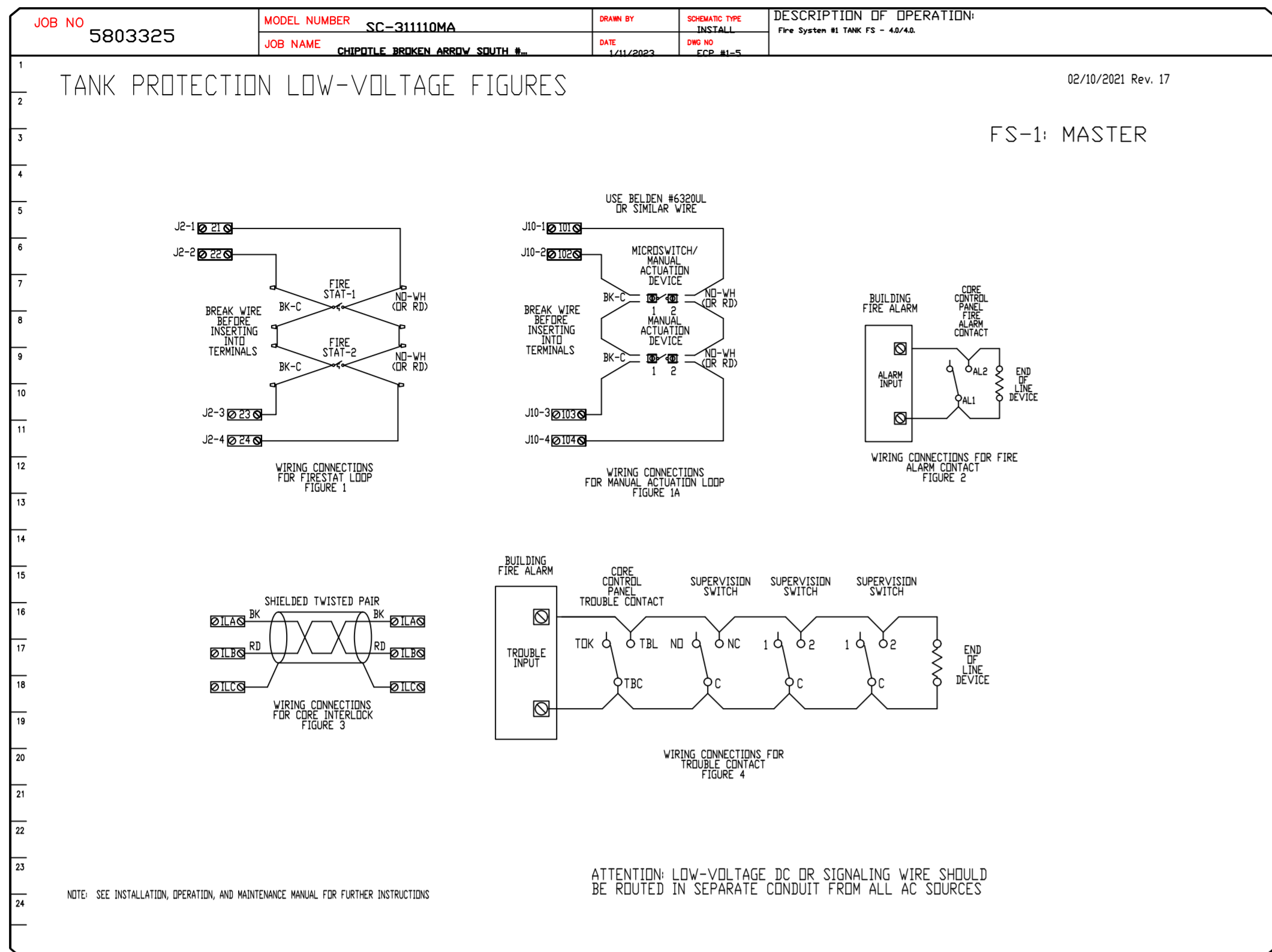
MASTER DRAWING

SHEET NO.  
5

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**REVISIONS**

DESCRIPTION	DATE

**DATE:** 1/11/2023

**DWG.#:** 5803325

**DRAWN BY:** JMB-40

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

**MASTER DRAWING**

**SHEET NO.** 8

**CHIPOTLE BROKEN ARROW SOUTH #4675**

**BROKEN ARROW, OK, 74011**

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