

FOR QUESTIONS, CALL THE  
 Seattle Office  
 REGION 85  
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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#4932052**

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH. CFM	EXHAUST PLENUM					TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG			
										WIDTH	LENG	HEIGHT	DIA	CFM			VEL	SP	END TO END	ROW
01		5424 (ND-2-PSP-F)	CAPTIVEAIRE	12' 0"	600 DEG	01	HEAVY	275	3300			4'	18"	3300	1867	-1151'	2970	430 SS (WHERE EXPOSED)	ALONE	ALONE

**HOOD INFORMATION**

HOOD NO	TAG	TYPE	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT	
			QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	TYPE	SIZE	ELECTRICAL MODEL #			SWITCHES QUANTITY
01		CAPRATE SOLID FILTER	9	20"	16"	85% SEE FILTER SPEC	4	L55 SERIES E26	NO	RIGHT	12"x54"x24"	TANK FS	4.0/4.0	DCV-1111	1 LIGHT 1 FAN	YES	1062 LBS

**HOOD OPTIONS**

HOOD NO	TAG	OPTION
01		LEFT END STANDOFF (FINISHED) 1' WIDE 54' LONG INSULATED. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 3IN DBL. SENSOR-CV. RIGHT WIDE VERTICAL END PANEL 42" TOP WIDTH, 36" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. LEFT WALL AS END PANEL.

**PERFORATED SUPPLY PLENUM(S)**

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
01		Front	157"	20"	6"	MUA	12"	28"	742	0.207"	
						MUA	12"	28"	742	0.207"	
						MUA	12"	28"	742	0.207"	
						MUA	12"	28"	742	0.207"	

**GREASE DUCT & CHIMNEY SPECIFICATIONS:**  
 PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.  
 PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.  
 IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

**HVAC DISTRIBUTION NOTE**

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

**VERIFY CEILING HEIGHT**

\_\_\_' - \_\_\_"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

**CUSTOMER APPROVAL TO MANUFACTURE:**

APPROVED AS NOTED

APPROVED WITH NO EXCEPTION TAKEN

REVISE AND RESUBMIT

SIGNATURE \_\_\_\_\_

YOUR TITLE \_\_\_\_\_ DATE \_\_\_\_\_

**SPECIFICATION: CAPRATE<sup>®</sup> GREASE-STOP<sup>®</sup> SOLID FILTER**

THE CAPRATE 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.

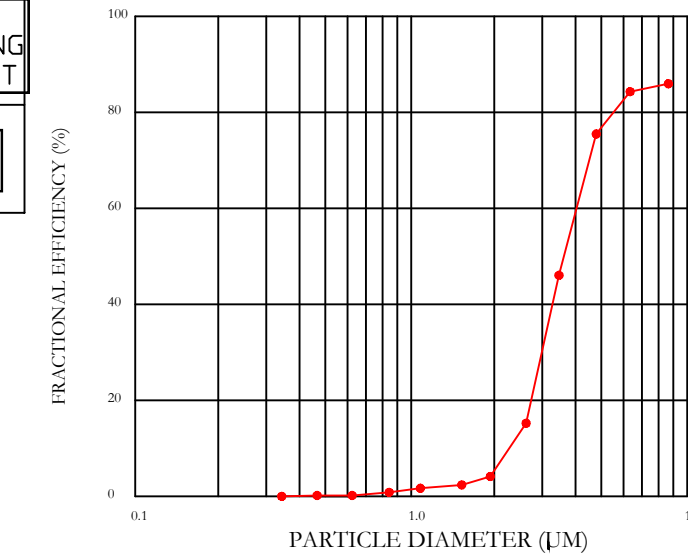
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

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

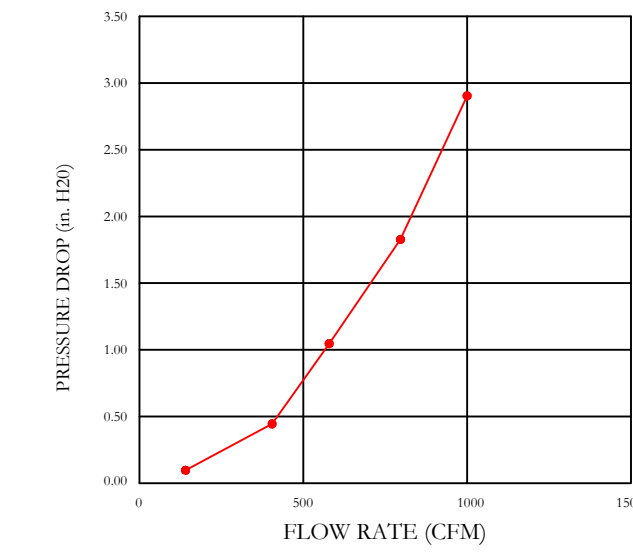
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPRATE GREASE-STOP SOLID WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

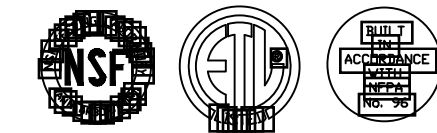
EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



CAPRATE FILTERS ARE BUILT IN COMPLIANCE WITH:  
 NFPA #96  
 NSF STANDARD #2  
 UL STANDARD #1045  
 INT. MECH. CODE (IMC)  
 ULC-S649



**REVISIONS**

DESCRIPTION	DATE

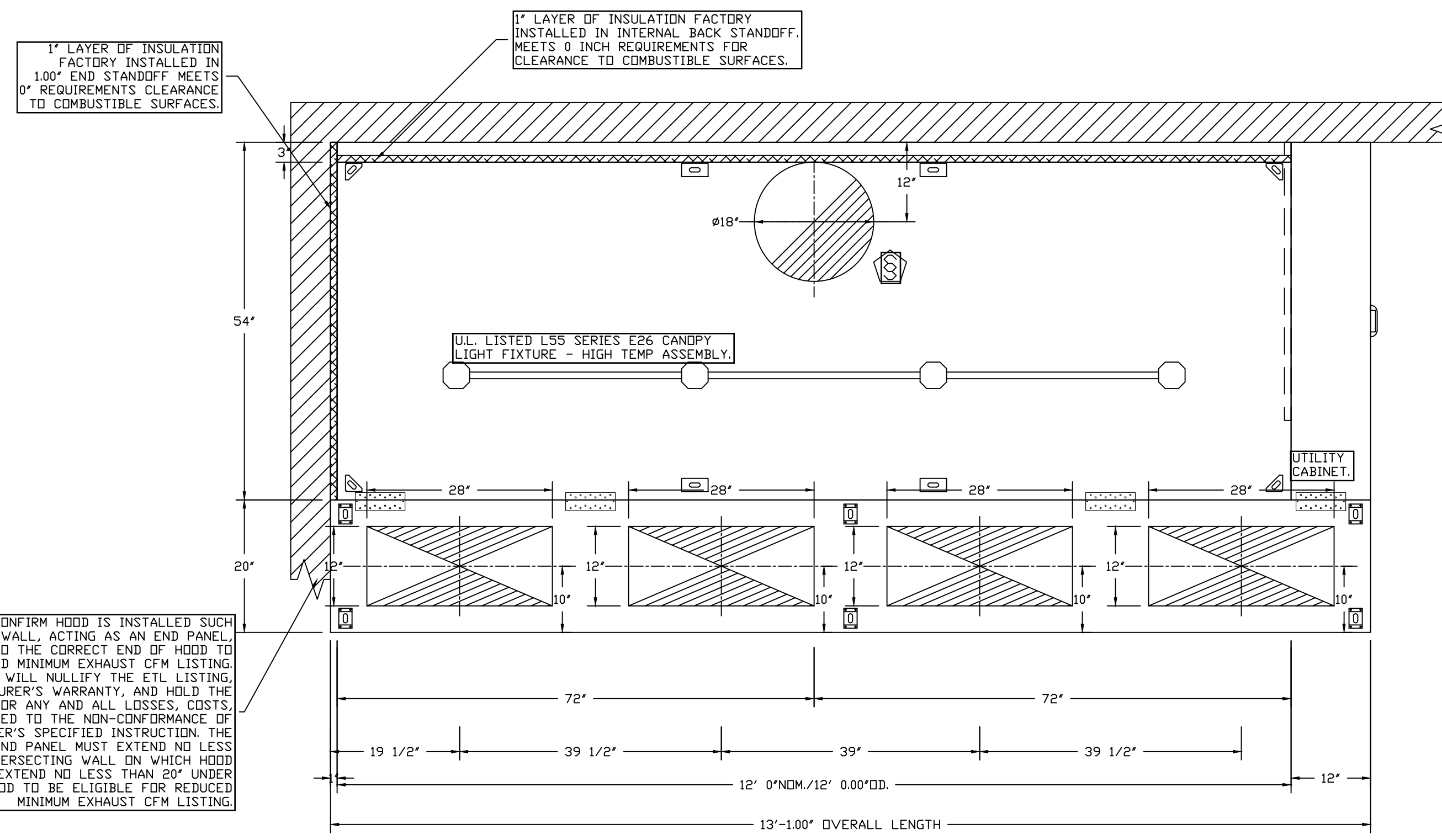


TANDORI GRILL  
 4425 S Meridian  
 Puyallup, WA, 98373

DATE: 1/27/2022  
 DWG.#: 4932052  
 DRAWN BY:  
 SCALE: 3/4" = 1'-0"  
 MASTER DRAWING

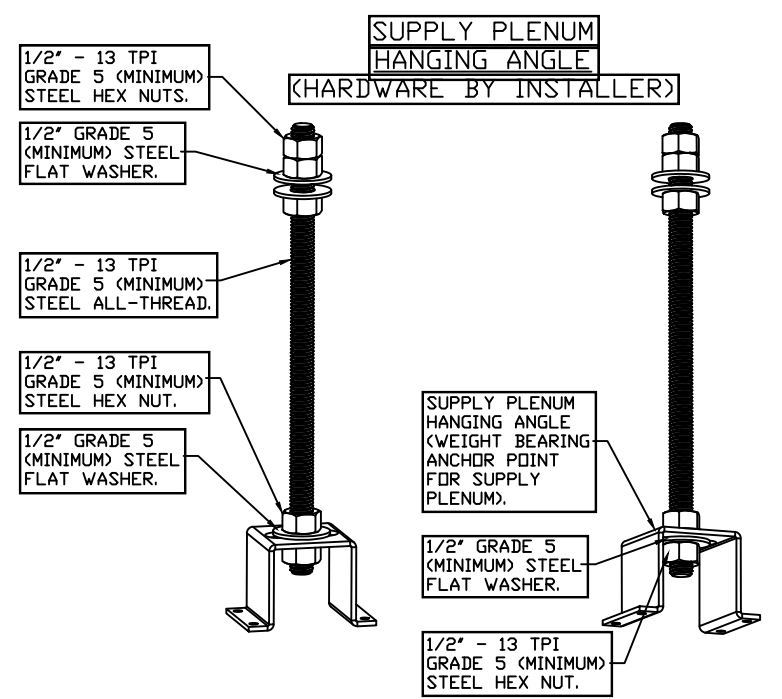
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 1309 Pacific Ave. Everett, WA 98201 PHONE: (425) 212-5998 FAX: (425) 212-5998 EMAIL: reg85@captiveaire.com

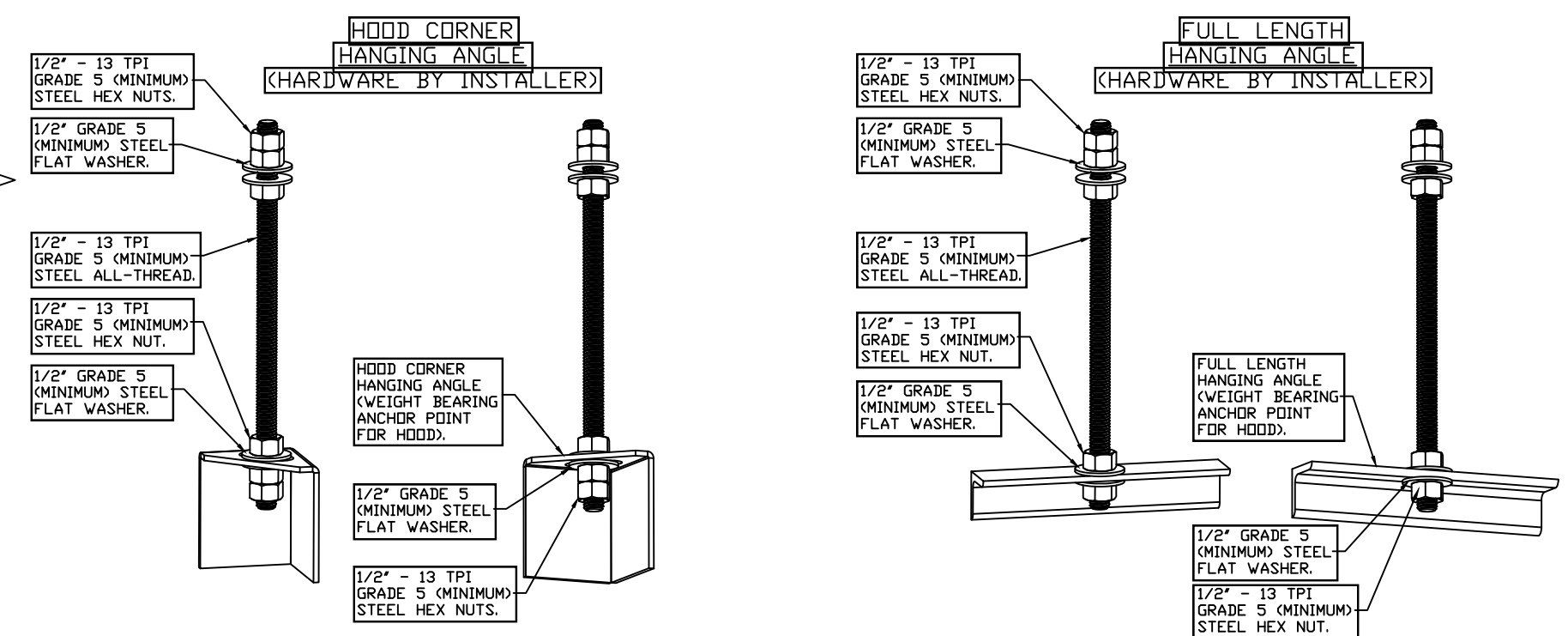


PLAN VIEW - HOOD #1  
12' 0.00" LONG 5424ND-2-PSP-F  
NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12" AND LONGER

INSTALLER MUST CONFIRM HOOD IS INSTALLED SUCH THAT THE SPECIFIED WALL, ACTING AS AN END PANEL, IS MATED TIGHT TO THE CORRECT END OF HOOD TO ACHIEVE A REDUCED MINIMUM EXHAUST CFM LISTING. NON-COMPLIANCE WILL NULLIFY THE ETL LISTING, VOID THE MANUFACTURER'S WARRANTY, AND HOLD THE CONTRACTOR LIABLE FOR ANY AND ALL LOSSES, COSTS, AND EXPENSES RELATED TO THE NON-COMFORMANCE OF THE MANUFACTURER'S SPECIFIED INSTRUCTION. THE WALL, ACTING AS AN END PANEL MUST EXTEND NO LESS THAN 20" FROM THE INTERSECTING WALL ON WHICH HOOD IS MOUNTED AND MUST EXTEND NO LESS THAN 20" UNDER BOTTOM OF HOOD TO BE ELIGIBLE FOR REDUCED MINIMUM EXHAUST CFM LISTING.

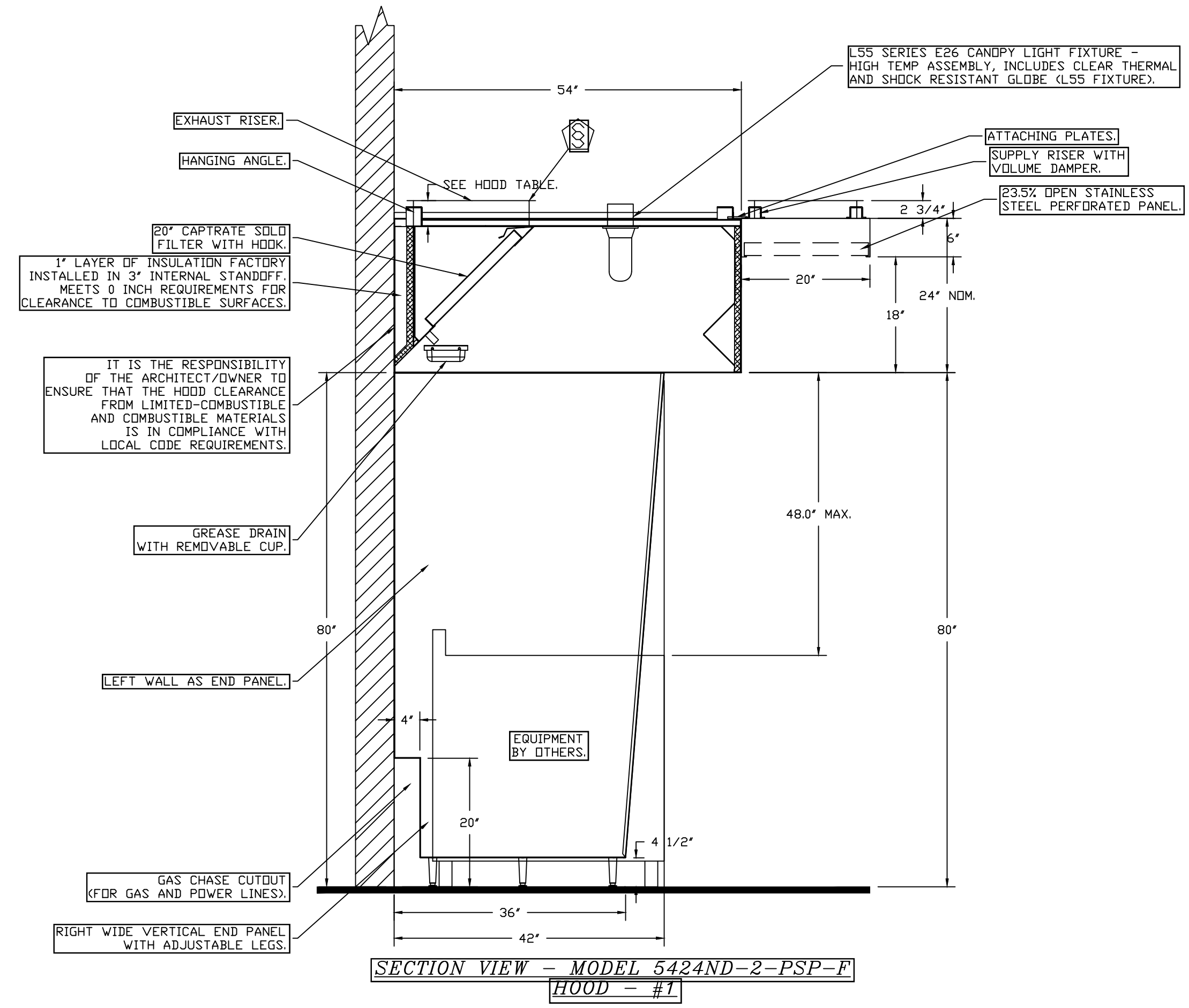


**ASSEMBLY INSTRUCTIONS**  
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE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



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

IT IS THE RESPONSIBILITY OF THE ARCHITECT/OWNER TO ENSURE THAT THE HOOD CLEARANCE FROM LIMITED-COMBUSTIBLE AND COMBUSTIBLE MATERIALS IS IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS.

REVISIONS	
DESCRIPTION	DATE

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CAPTIVE AIR

TANDOORI GRILL  
4425 S Meridian  
Puyallup, WA, 98373

DATE: 1/27/2022  
DWG.#: 4932052  
DRAWN BY:  
SCALE: 3/4" = 1'-0"  
MASTER DRAWING

SHEET NO. 2

SECTION 23 38 13 13

**SPECIFICATIONS**  
TAG: Commercial Kitchen Ventilation Hoods, Listed Commercial Kitchen Hoods

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. The ND2 series is a Type I, wall canopy hood for use over 600°F cooking surface temperatures. The aerodynamic design includes a mechanical baffle and performance enhancing lip for exceptional capture and containment.

B. The hood shall have the size, shape, and performance specified on drawings.

**1.2 SUBMITTALS**

A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the project's requirements and meet Federal, State, and Local codes and regulations.

B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

C. The manufacturer shall supply complete computer generated submittal drawings, including hood section view(s) and hood plan view(s). These drawings must be available to the engineer, architect, and owner for their use in construction, operation, and maintenance.

**1.3 QUALITY ASSURANCE**

A. This hood is ETL-listed to standard UL710, ULC710, and ULC-S646 when installed in accordance with these installation instructions and National Fire Protection Association Standard "NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."

B. Built-in compliance with NSF/ANSI Standard 2.

C. The hood shall be ETL Listed as:

1. "Exhaust Hood Without Exhaust Damper."
2. ETL Sanitation Listed and built in accordance with NFPA 96.
3. The ETL label shall list temperature rating(s) and minimum CFM/ft rating(s).

**1.4 WARRANTY**

A. All units shall be provided with the following standard warranty:

1. This equipment is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 2-years from date of shipment.

B. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 2-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

C. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

**PART 2 - PRODUCTS**

**2.1 GENERAL**

A. Construction shall be dependent on the structural application to minimize distortion and other defects. All seams, joints, and penetrations of the hood enclosure to the lower outermost perimeter, which directs and captures grease-laden vapor and exhaust gases, shall have a liquid-tight continuous external weld in accordance with NFPA 96.

B. Duct sizes, CFM, and static pressure requirements shall be as shown on drawings. Static pressure requirements shall be precise and accurate; air velocity and volume information shall be accurate within 1-ft increments along the length of the ventilator.

**2.2 CONSTRUCTION**

A. Construction shall be type 430 stainless steel.

B. Double wall insulated front to eliminate condensation and increase rigidity on wide sizes. The insulation shall have a flexural modulus of 475 EI, meet UL 181 requirements and be in accordance with NFPA 90A and 90B.

C. Hood shall be equipped with a minimum of four connections for hanger rods. Hood lengths greater than 12' will have added hangers.

D. Exhaust duct collar to be 4" high with flange.

E. The grease drain system shall be an enclosed integral part of the hood back and have slopes with an exposed, removable 1/2 grease cup to facilitate cleaning.

F. An integral baffle to direct grease laden vapors toward the exhaust filter bank.

G. Hood shall be furnished with UL classified filters, supplied in size and quantity as required by ventilator.

H. All seams shall be welded and have stainless steel on exposed surfaces.

**2.3 LIGHTING**

A. L55 Series canopy light fixture, includes clear thermal and shock resistant globe.

**2.4 FILTERS**

A. Stainless Steel Captrate Solo filter with hook, ETL Listed. Particulate capture efficiency: 85% efficient at 9 microns, 76% efficient at 5 microns.

**2.5 OPTIONS**

A. Fire Suppression System: UL 300 fire suppression system.

B. Optional perforated supply plenum shall provide make-up air discharged below the cooking equipment.

1. Perforated diffuser plates shall be included in the design to provide even air distribution.
2. Unexposed surfaces shall be constructed of aluminized steel. Plenum shall be insulated to prevent condensation.
3. Perforated Supply Plenum (PSP)

C. Hood Mounted Utility Cabinet - Cabinet can store listed fire suppression system, listed components, pre-wired electrical controls.

**2.6 ACCESSORIES**

A. End Panel(s) maximize hood performance and eliminate the effects of cross drafts in the kitchen. Units constructed of stainless steel and sized according to hood width and cooking equipment. Exposed edges hemmed for safety and rigidity. Selected panels:

1. Wall as End Panel
2. Wide Vertical End Panel

B. Standoff(s) selected:

1. Left End Standoff

C. Miscellaneous option(s) selected:

1. Insulation for Back of Hood - Backside of hood is fully insulated.
2. Riser Sensor Install - Sensor set-up for 3" thick double wall duct.
3. Sensor-Capture Volume - Duct stat installed in the capture volume of the hood.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

A. Examine areas and conditions under which the system is installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

**3.2 INSTALLATION**

A. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.

REVISIONS	
DESCRIPTION	DATE

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TANDOORI GRILL

4425 S Meridian

Puyallup, WA, 98373

<b>DATE:</b> 1/27/2022
<b>DWG.#:</b> 4932052
<b>DRAWN BY:</b>
<b>SCALE:</b> 3/4" = 1'-0"
<b>MASTER DRAWING</b>
<b>SHEET NO.</b> 3

**FIRE SYSTEM INFORMATION - JOB#4932052**

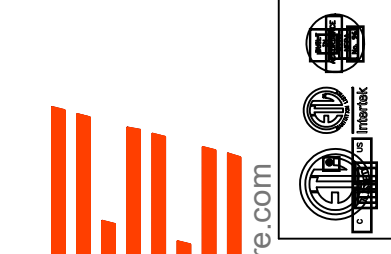
FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	37	FIRE CABINET RIGHT	RIGHT, HOOD 1

**FIRE SYSTEM PARTS LIST KEY**

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - 12-F28021-32144-01-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO. CLOSE ON TEMP RISE AT 360°F.	1	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300033-001 DIN CONNECTOR, CANFIELD PART #5J560-201-EU0A, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	10	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	7	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION, 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - B1145 3/8" BLACK IRON 90 ELL.	3	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	6	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 - 16 - 3070-3/8H-10-SS NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE)- 4 FLOW POINTS.	8	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	8	0
	26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	8	0	
	34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT, RED COLOR.	1	0	

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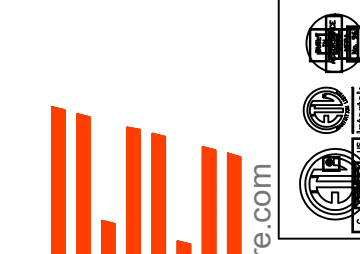
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SHEET NO. 5

INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE. TWO SITE VISITS ONLY (ONE VISIT TO SET RUAL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST). ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES. ONE MECHANICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2" PERMIT, AND SYSTEM TEST.  
 EXCLUDES: UNIDN LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHERS), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

**NOTES**

- FIELD PIPE DROPS AS SHOWN
- SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY GAS
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVEING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLIANCE EXISTING PRE-PIPE DROPS ARE SHIPPED (LEASE)
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE (SIZE, NOT THE OVERALL APPLIANCE SIZE).

**SECTION 21 23 00**  
 WET- CHEMICAL FIRE-EXTINGUISHING SYSTEMS  
 TAG: TANK Fire Suppression

**PART 1- GENERAL**

1.1 SUMMARY  
 A. TANK Fire Suppression is a pre-engineered, stored-pressure wet chemical solution extinguishing system.

1.2 SUBMITTALS  
 A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the requirements of the project and meet Federal, State, and Local codes.  
 B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

1.3 QUALITY ASSURANCE  
 A. TANK Fire Suppression System shall be UL & ULC listed in accordance with UL300, UL1254, ULCDR-C1254.6.  
 B. Microprocessor-based control board shall be ETL Listed to UL Standard 864 and CAN/ULC-S527-11.  
 C. TANK Fire Suppression System intended for installation and for use in accordance with the National Fire Protection Association Standards:  
 1. Wet Chemical Extinguishing Systems, NFPA 17A  
 2. National Electrical Code, NFPA 70  
 3. National Fire Alarm & Signaling Code, NFPA 72  
 D. New York City and FDNY approved under CDA# 5870.  
 E. California State Fire Marshal (CFSM), Listing No. 7085-21990502.

1.4 WARRANTY  
 A. All units shall be provided with the following standard warranties:  
 1. TANK Fire Suppression System is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 60-months from date of shipment.  
 B. Warranty does not cover consumable products such as batteries and nitrogen.  
 C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 60-month warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.  
 D. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

**PART 2- PRODUCTS**  
 2.1 GENERAL  
 A. A pre-engineered, fixed pipe, automatic wet chemical agent fire suppression system for protection of all hazard areas associated with cooking operations, including exhaust hoods, plenums, ductwork, and cooking appliances.

2.2 COMPONENTS  
 A. Exhaust hood fire system components to be factory installed.  
 B. Cylinder and Valve Assembly  
 1. The cylinders shall have a tin-nickel alloy plated brass valve with pressure gauge.  
 2. Wet chemical agent shall be contained in one or more stored pressure DOT/TC rated steel cylinder and valve assemblies.  
 3. Each cylinder is factory-filled with liquid fire suppressant and pressurized to 200 PSIG at 70°F.  
 C. Distribution Nozzles  
 1. Nozzles shall be located to protect the exhaust ducts, plenums, and all cooking appliances requiring protection.  
 2. All nozzles shall be equipped with a metal blow off cap. The cap prevents contamination from entering the pipe network and is designed to pop-off upon system discharge, allowing agent to flow to the protected hazard area.  
 3. All nozzles shall incorporate a stamped part number to easily identify nozzle type.  
 D. Distribution System  
 1. The distribution system shall consist of Copper, Schedule 40 black iron, chrome-plated or stainless-steel pipe and fittings. All exposed piping and fittings must be chrome-plated or stainless

**NOTES**

- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY GAS
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVEING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLIANCE EXISTING PRE-PIPE DROPS ARE SHIPPED (LEASE)
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE (SIZE, NOT THE OVERALL APPLIANCE SIZE).
- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

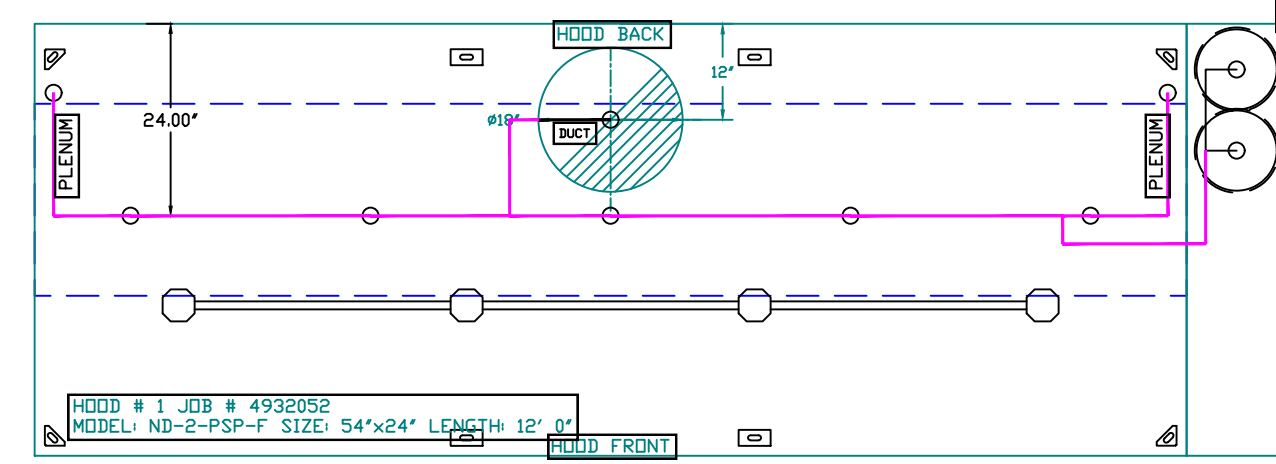
JOB #: 4932052  
 JOB NAME: TANDOORI GRILL

SYSTEM SIZE: TANK-SP-2 TOTAL FP REQUIRED: 37  
 HOOD # 1 12" HOOD LUNG x 54" WIDE x 24" HIGH  
 RISER # 1 SIZE: 18" DIA  
 HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

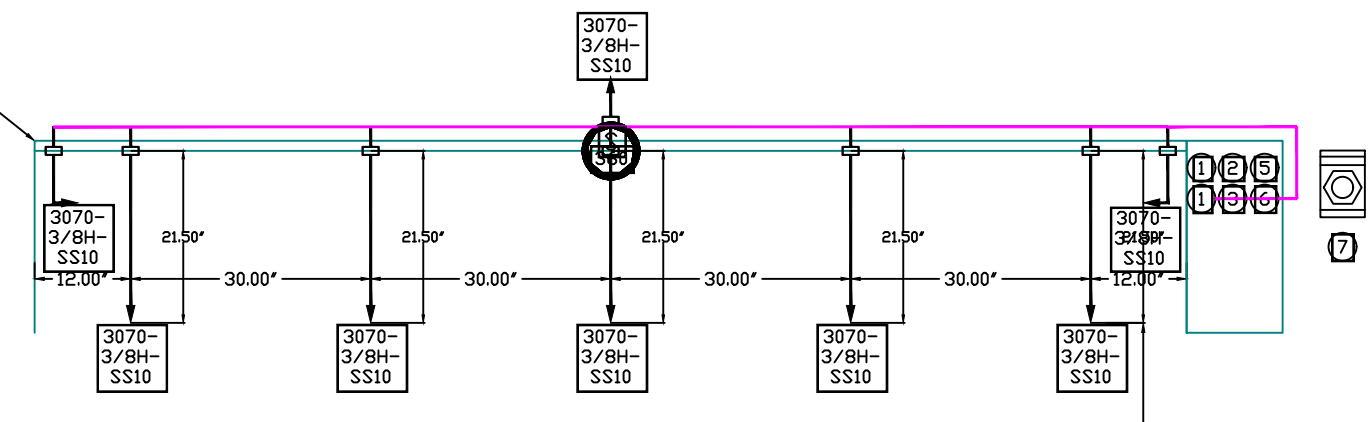
- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESIT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.  
 - MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

**LEGEND - FIRE CABINET TANK SYSTEM**

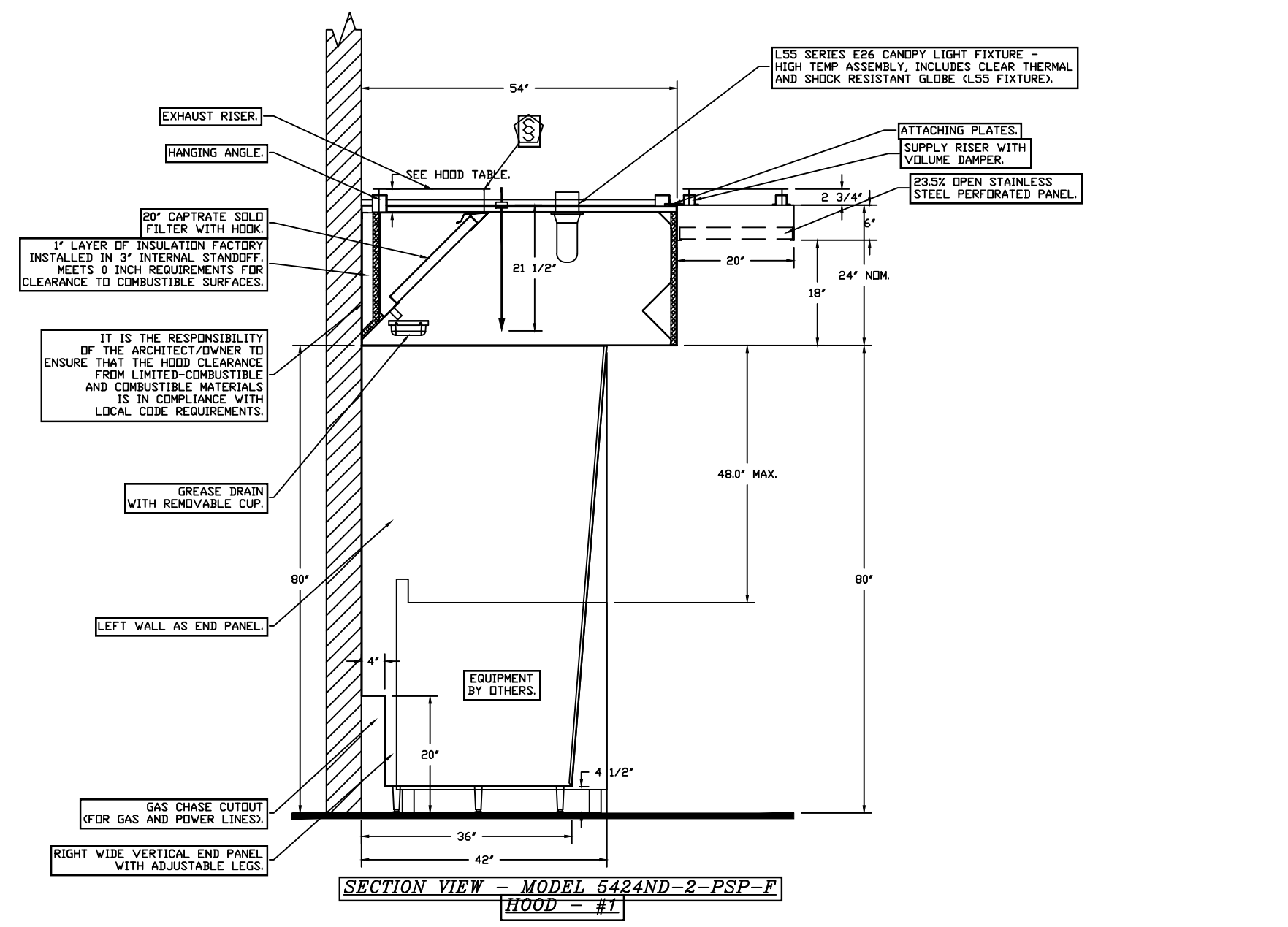
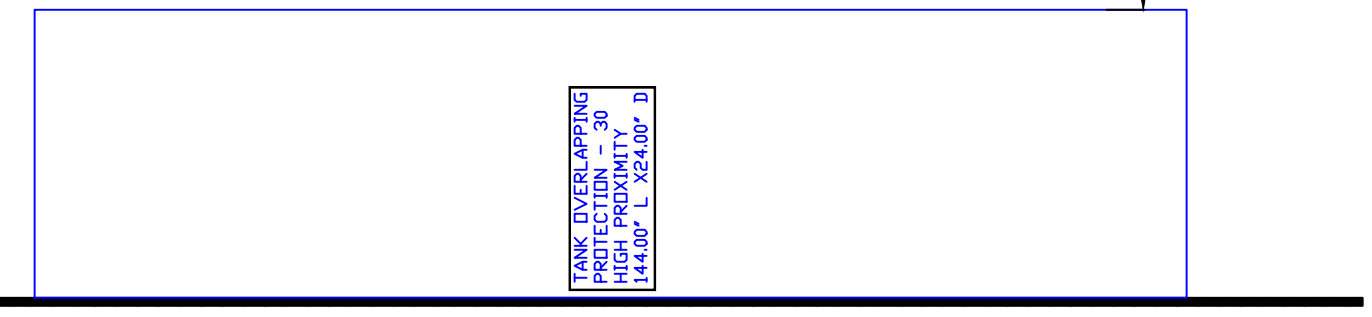
- 1 4 GALLON TANK
- 2 PRIMARY ACTUATOR RELEASE
- 3 SECONDARY ACTUATOR RELEASE
- 4 PRESSURE SUPERVISION SWITCH
- 5 PRIMARY HOSE ASSEMBLY
- 6 SECONDARY HOSE ASSEMBLY
- 7 REMOTE MANUAL ACTUATION DEVICE



SYSTEM REQUIRES A MINIMUM OF 7 FT OF EQUIVALENT PIPE LENGTH BETWEEN TANK AND NEAREST APPLIANCE NOZZLE FOR MOST APPLIANCES. EACH 90 DEGREE ELBOW ADDS 1.5 FT OF EQUIVALENT LENGTH. SEE MANUAL FOR DETAILS.



NOZZLE HEIGHT 35-50" FROM COOKING SURFACE.



SECTION VIEW - MODEL 542AND-2-PSP-F HOOD - #1

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**EXHAUST FAN INFORMATION - JOB#4932052**

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		1	CASRE20DD	CAPTIVEAIRE	3300	1.300	1271	ODP, PREMIUM	3.000	1.8060	3	208	9.5	1533 FPM	381	22

**MUA FAN INFORMATION - JOB#4932052**

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
2		1	A2-D.250-20D	20MF-2-MDD	A2-D.250	2000	2970	0.500	1220	ODP, PREMIUM	1.500	1.0220	3	208	6.6	9.5A	15A	683	10.5

**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(%)
2		169474	155916	50°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN #1 CASRE20DD - EXHAUST FAN

**FAN OPTIONS**

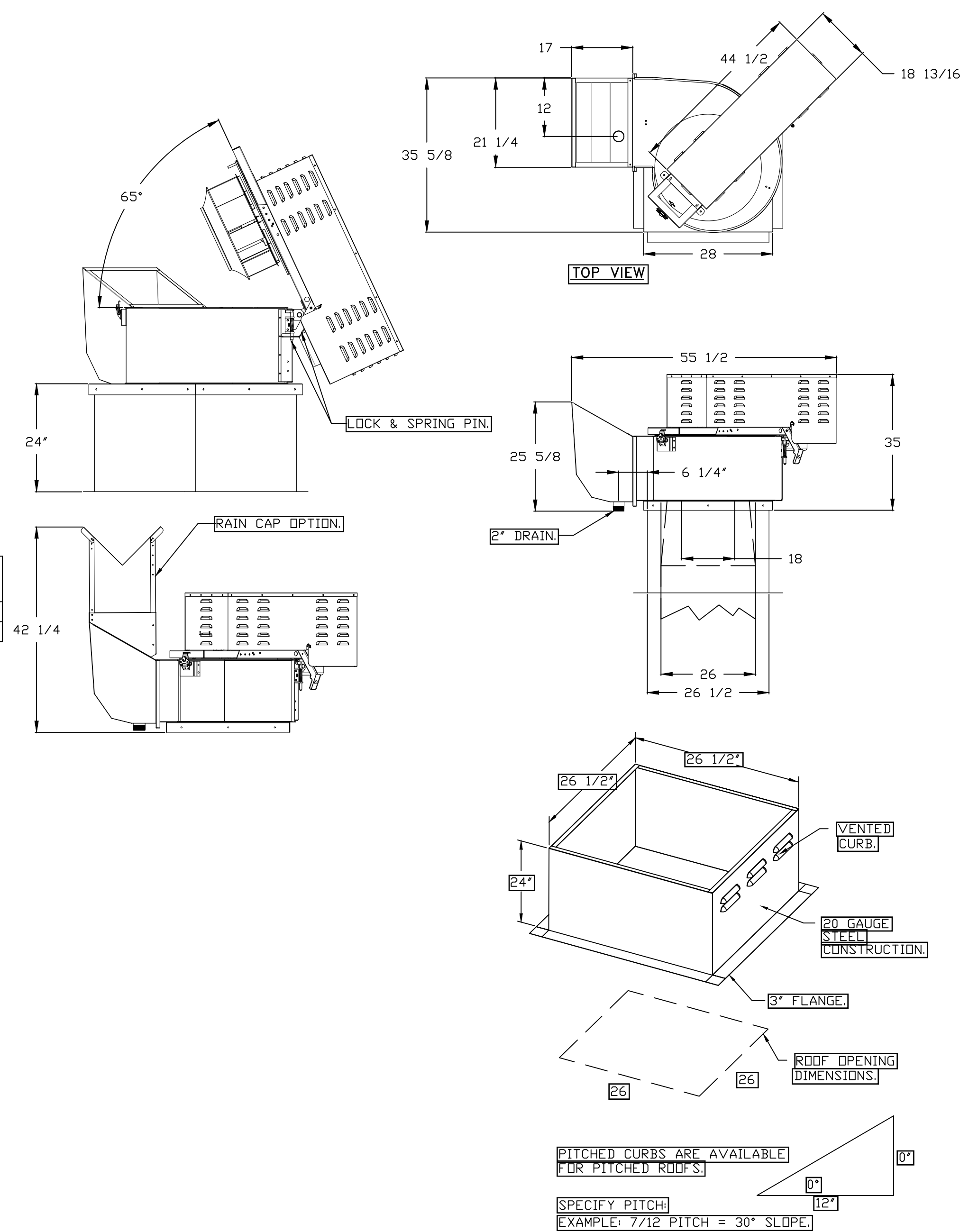
FAN UNIT NO	TAG	QTY	DESCRIPTION
1		1	UTILITY SET GREASE CUP
		1	RE20 - RAIN CAP ASSEMBLY - INCLUDES HARDWARE AND GASKET
2		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
		1	VFD MOUNTING BRACKET FOR CASRE20DD
		1	2 YEAR PARTS WARRANTY
		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING - MEETS AMCA CLASS 1A RATING
2		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE - USED ON HEATERS UNDER 2500 CFM
		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		YES						
2						YES		

**CURB ASSEMBLIES**

NO	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	30 LBS	CURB	26.500"W X 26.500"L X 24.000"H ALONG LENGTH, RIGHT VENTED.
2	# 2	80 LBS	CURB	31.000"W X 79.000"L X 20.000"H ALONG WIDTH, RIGHT INSULATED.



**FEATURES:**

- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL762 AND ULC-S645.
- HIGH HEAT OPERATION DIRECT DRIVE 300°F (149°C).
- HEAT SLINGER.
- GREASE CLASSIFICATION TESTING.
- TILT OUT WHEEL.
- LOCKING PIN FOR POWER PACK.
- MOTOR WEATHER COVER.
- INTERLOCKED DISCONNECT SWITCH.
- NEMA 4X SAFETY DISCONNECT SWITCH.

**NORMAL TEMPERATURE TEST DIRECT DRIVE 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 BELT & DIRECT DRIVE 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:**

- UTILITY SET GREASE CUP.
- RE20 - RAIN CAP ASSEMBLY - INCLUDES HARDWARE AND GASKET.
- UNIT MOUNTED VFD FOR USE WITH ECPM03.
- VFD MOUNTING BRACKET FOR CASRE20DD.
- 2 YEAR PARTS WARRANTY.

**REVISIONS**

DESCRIPTION	DATE

**CAPTIVEAIRE**

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Seattle Office

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TANDOORI GRILL

4425 S Meridian

Puyallup, WA, 98373

DATE: 1/27/2022

DWG.#: 4932052

DRAWN BY:

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

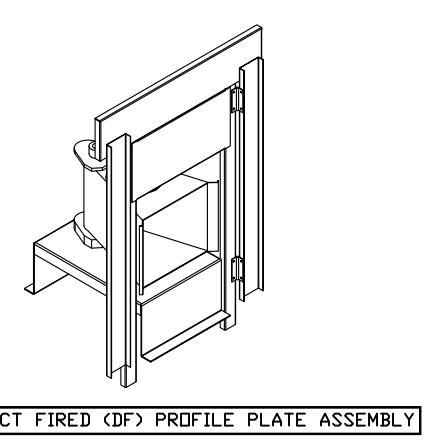
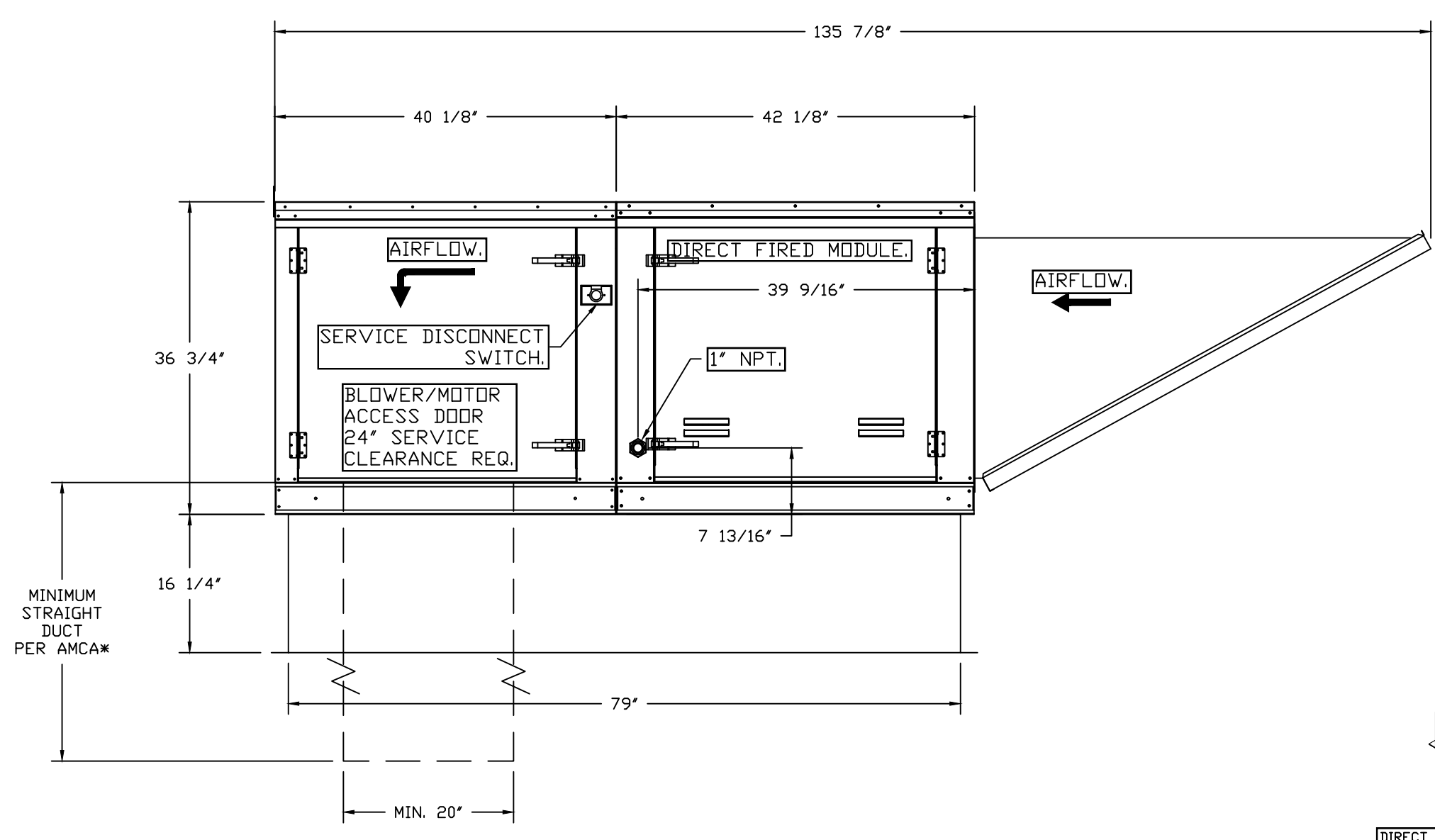
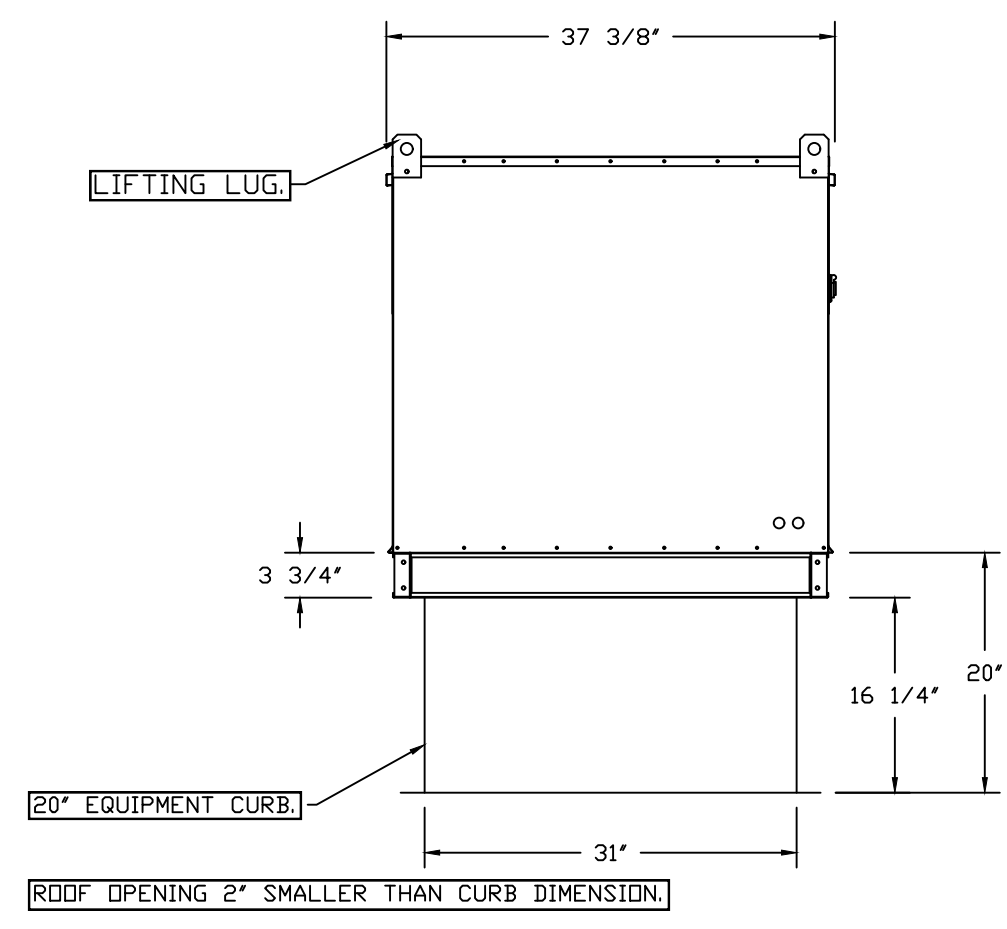
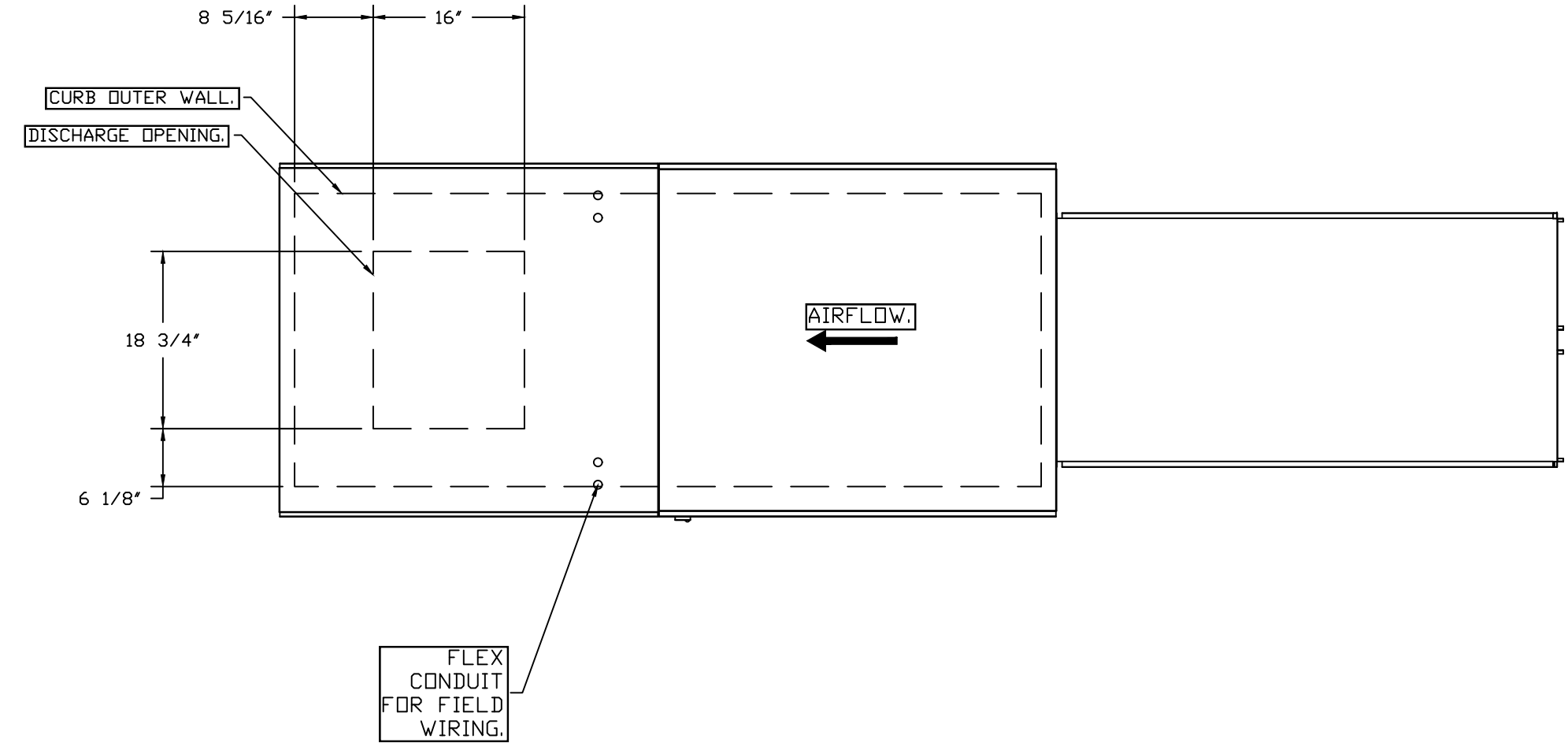
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SHEET NO. 6

FAN #2 A2-D250-20D - HEATER  
 1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN.  
 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, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE.  
 6. MODTRIZED 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. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.  
 8. UNIT MOUNTED VFD FOR USE WITH ECPM03.  
 9. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).  
 10. 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 = 25°F. TEMP. RISE = 50°F.  
 BTUs CALCULATED OFF ACTUAL AIR DENSITY.  
 OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 158648.  
 INPUT BTUs AT ALTITUDE OF 0.0 FT. = 172444.  
 OUTPUT BTUs AT ALTITUDE OF 480 FT. = 155916.  
 INPUT BTUs AT ALTITUDE OF 480 FT. = 169474.



**DIRECT FIRED PROFILE PLATE SPECIFICATIONS:**  
**DESCRIPTION:**  
 DIRECT FIRED BURNERS SHALL HAVE PATENTED OUR PATENT NO. US4669823RD. SELF-ADJUSTING PROFILE PLATES TO MAINTAIN PROPER AIR VELOCITY AND PASSAGE. THE BURNER PROFILE PLATES SHALL ALLOW BURNER TO ADJUST FLAME POSITIONING BY TILTING BURNER PLATES TO A POSITION OF 90 DEGREES FROM VERTICAL AND RANGE OF 180 DEGREE. BURNER PLATES SHALL BE CONSTRUCTED WITH 8 GAUGE METAL INDEPENDENT OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.  
**APPLICATION:**  
 SPRING-HINGED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF PRESSURE SYSTEM WITHOUT THE NEED FOR ANY BURNER OR BURNERS TO BE MANUALLY ADJUSTED. WITH THIS FEATURE, ALL OF OURS ARE DESIGNED FOR TEMPO CONTROL VENTILATION ONLY APPLICATIONS.  
**CERTIFICATIONS:**  
 ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED NFPA 96/ANSI Z97.1 AND CSA 3.7 (NON-RECIRCULATING HEATERS) AND MUST 20210 (RECIRCULATING HEATERS).  
**GENERAL CONSTRUCTION:**  
 PROFILE PLATES SHALL BE FORMED FROM COOL GALVANIZED STEEL.  
 PROFILE PLATES SHALL HAVE 1/2\"/>

**REVISIONS**

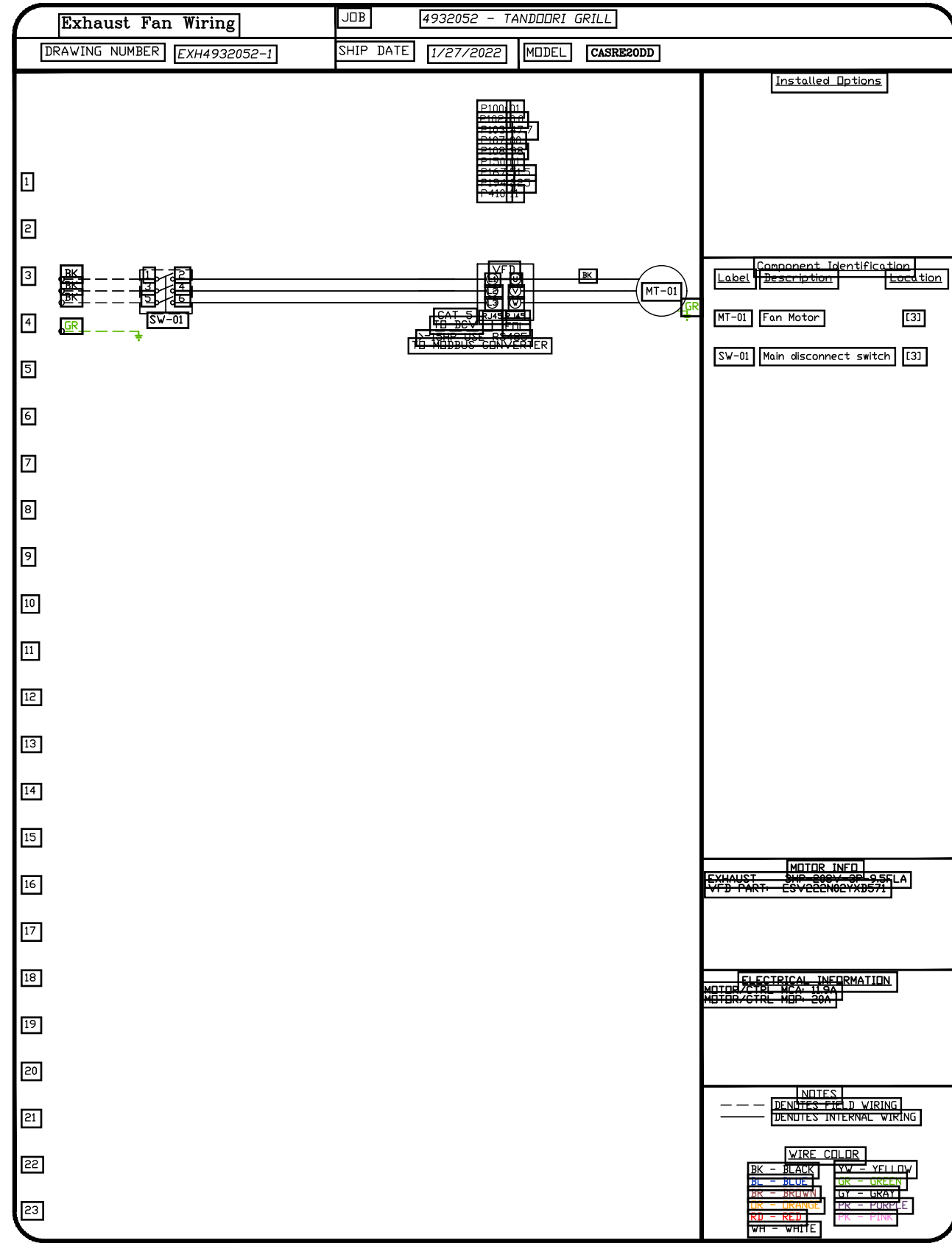
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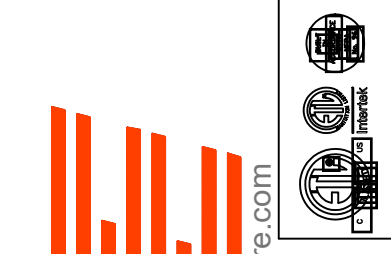
TANDOORI GRILL  
 4425 S Meridian  
 Puyallup, WA, 98373

DATE: 1/27/2022  
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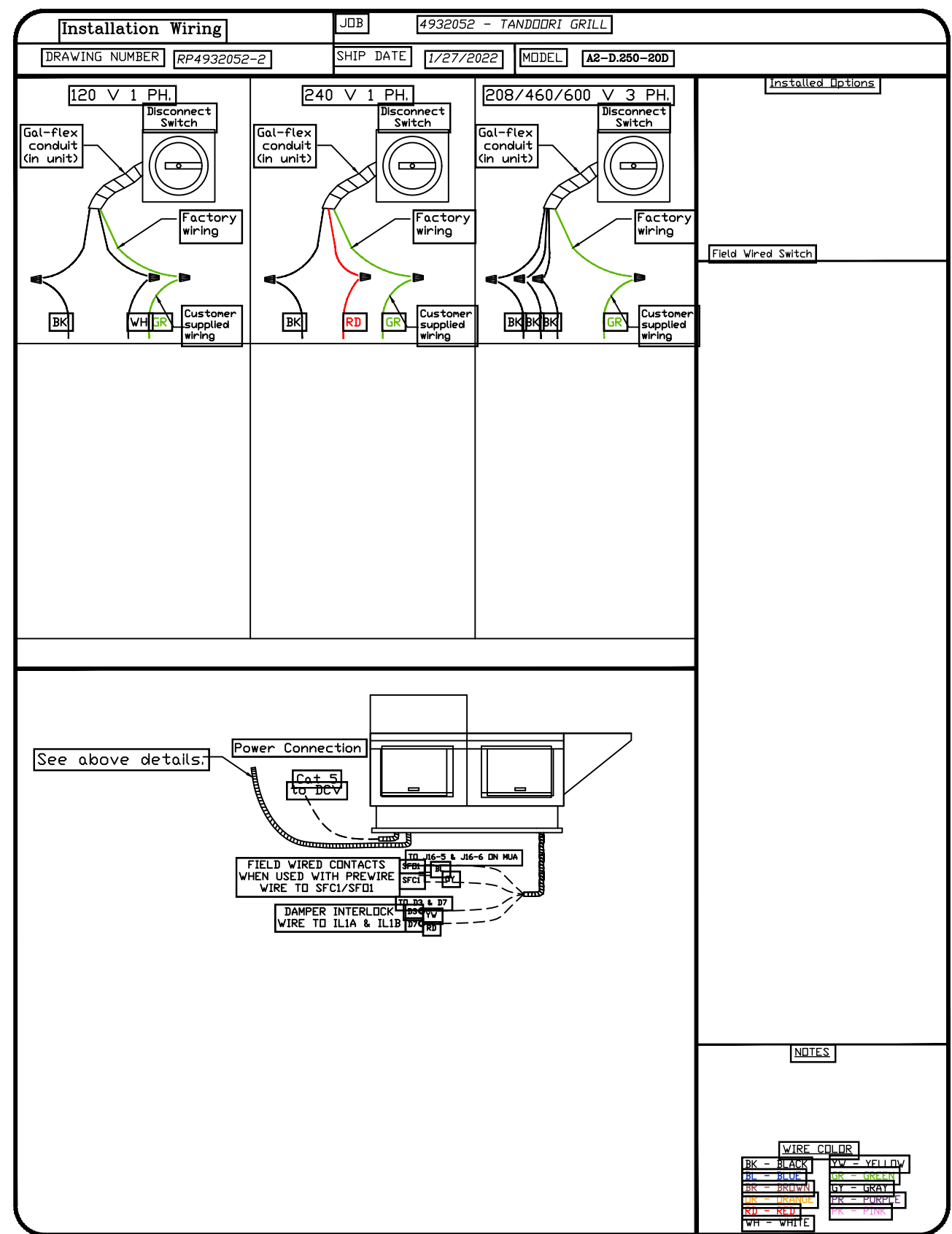
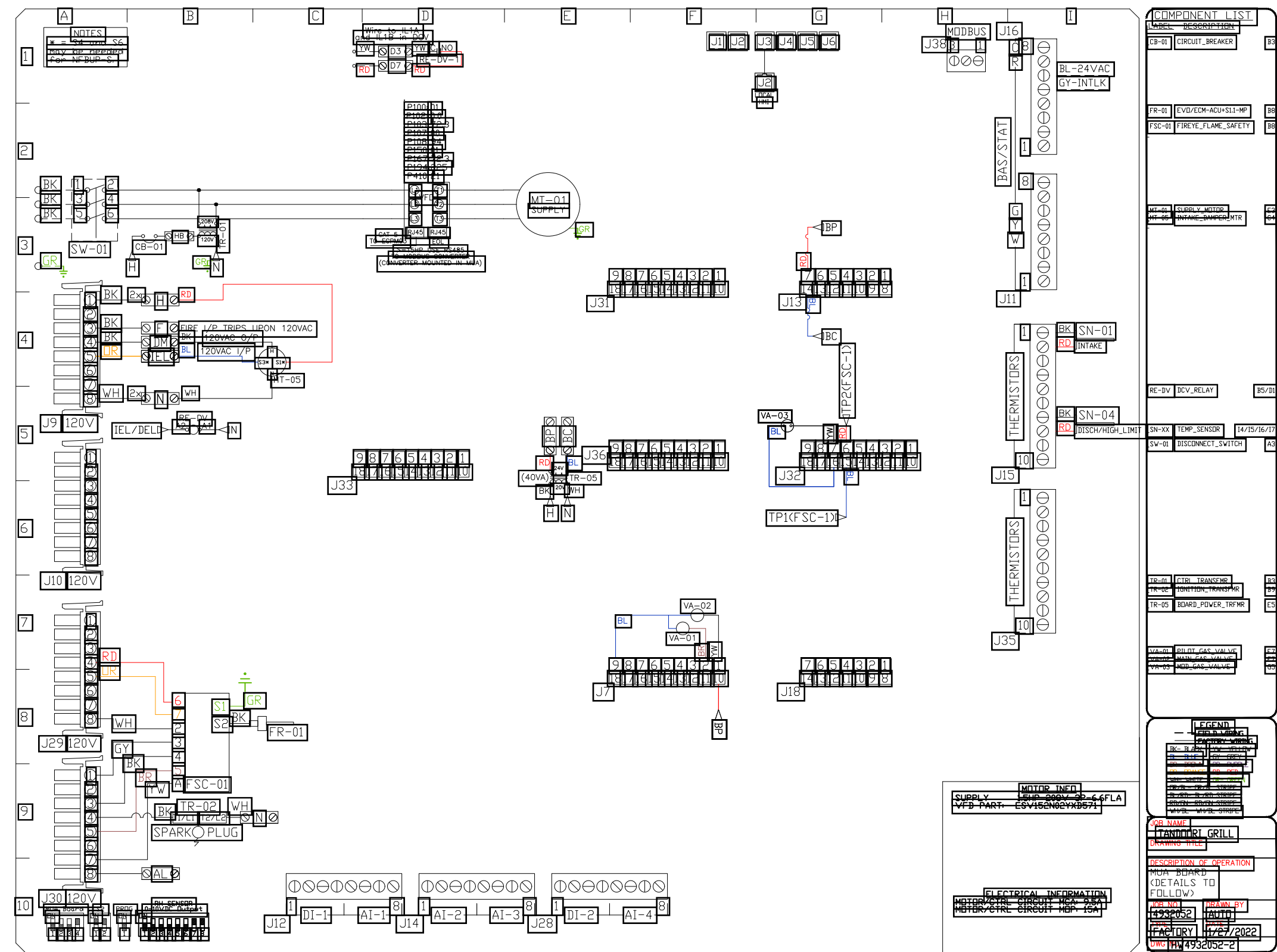
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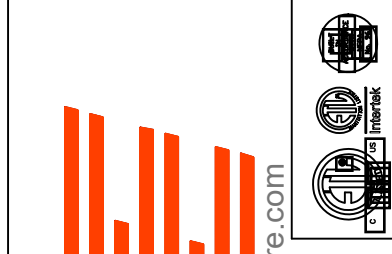
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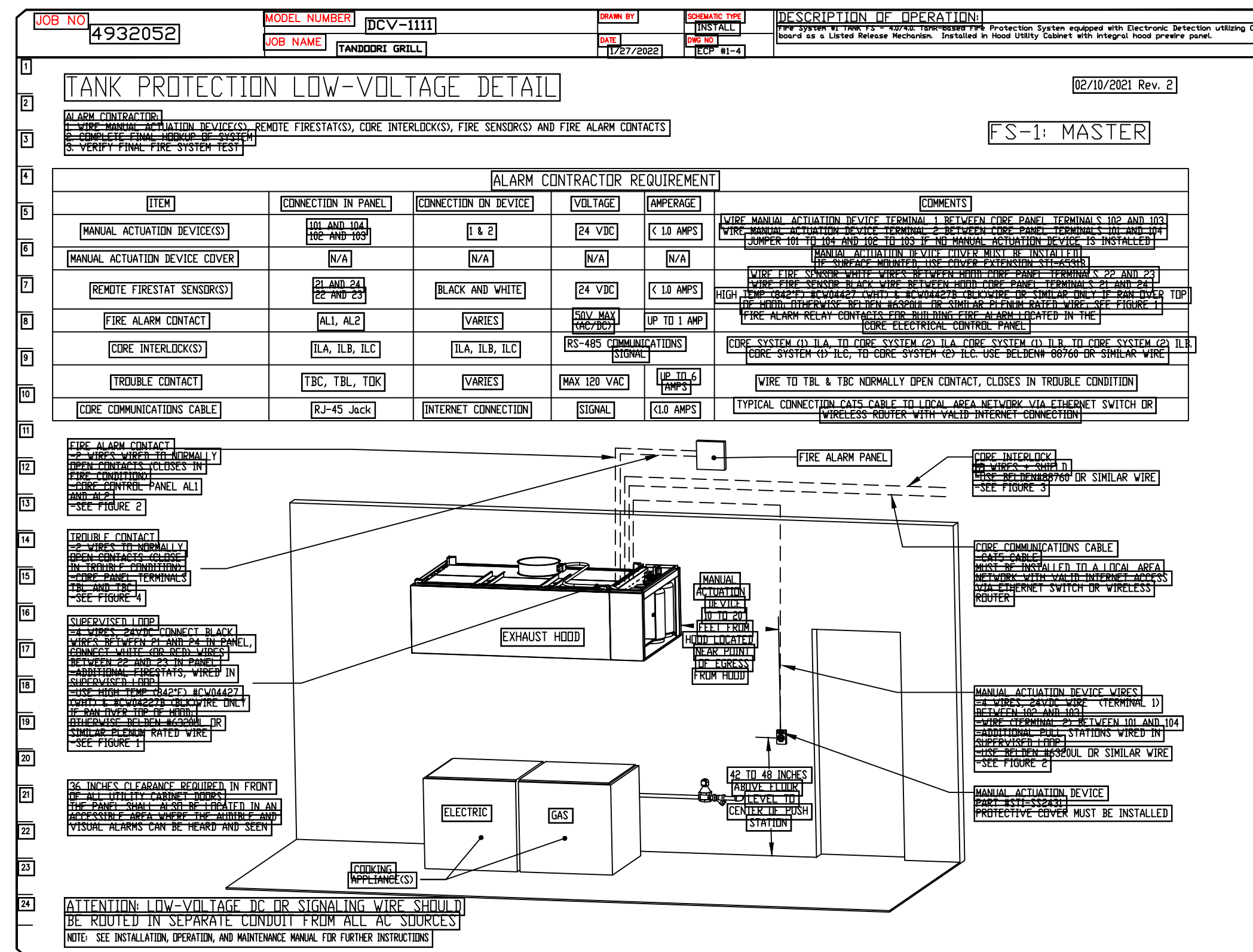
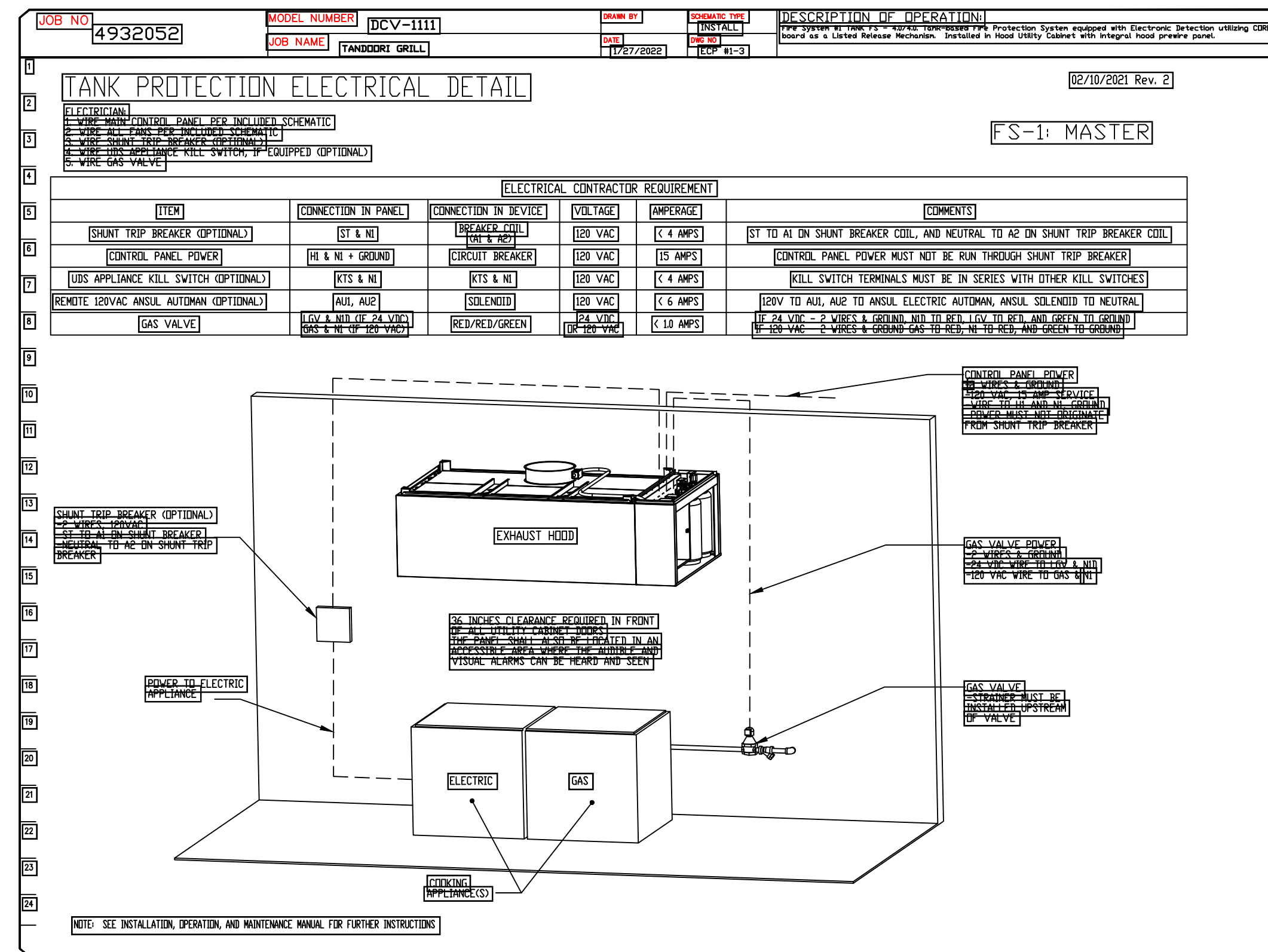
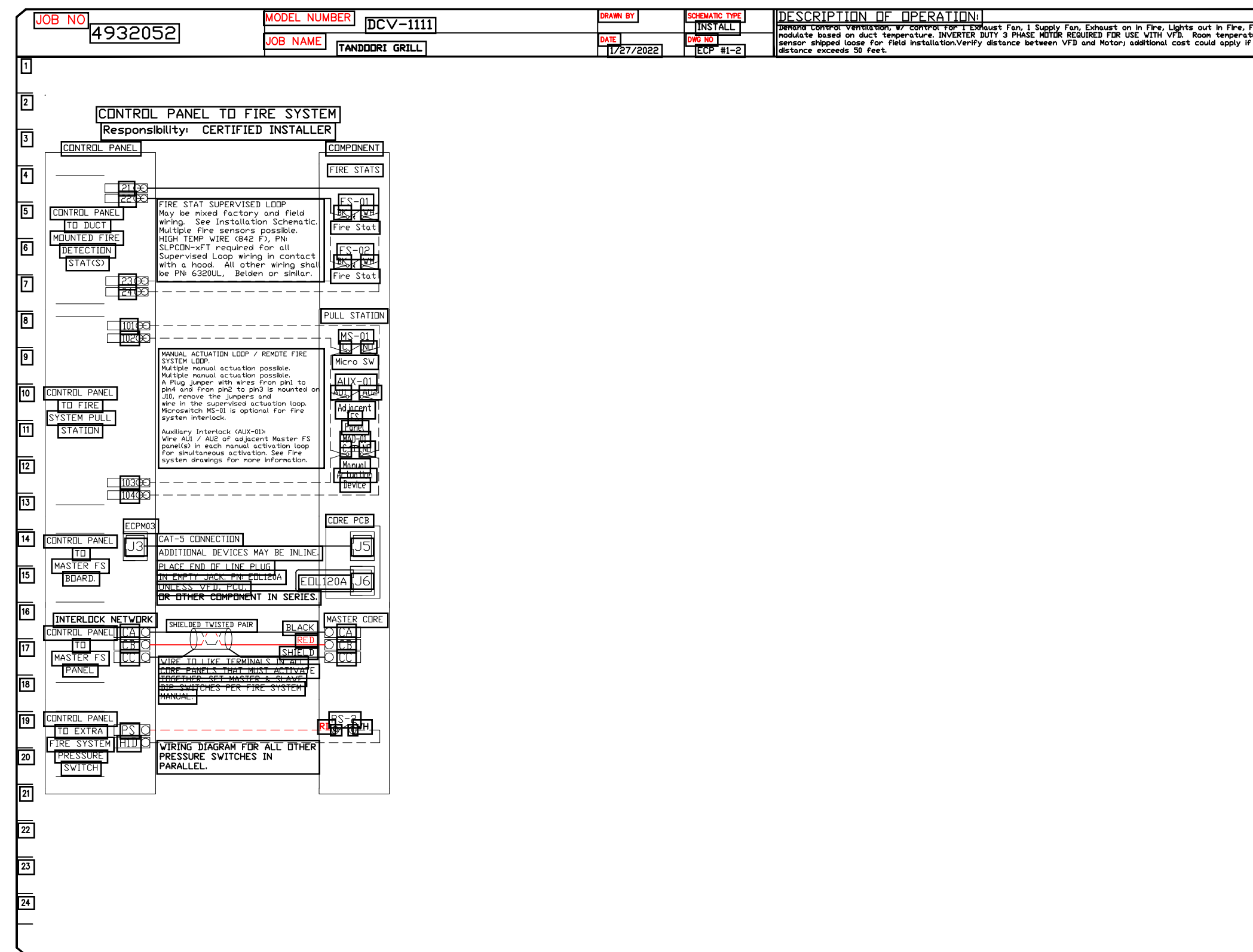
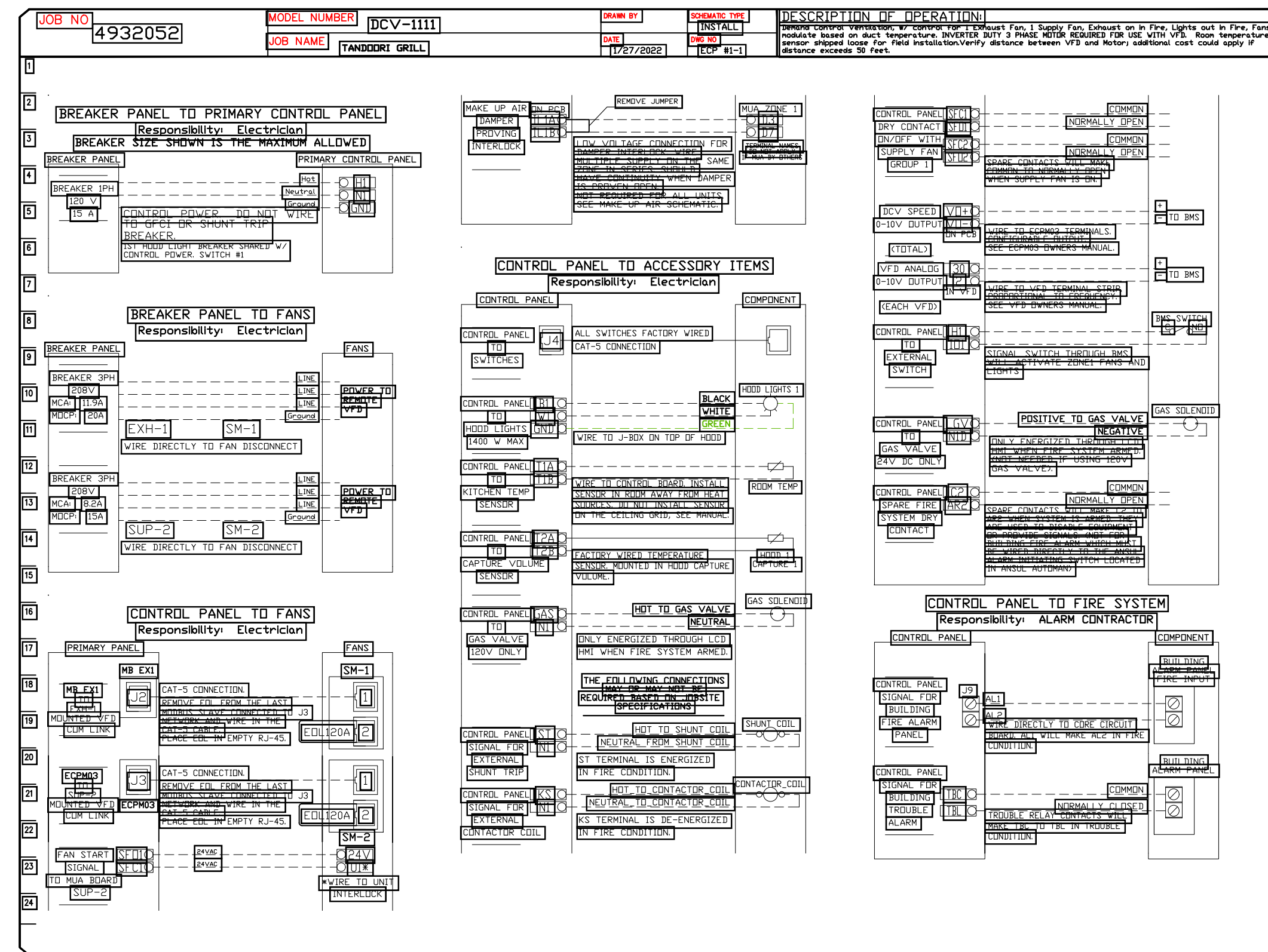
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**ELECTRICAL PACKAGE - JOB#4932052**

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	Φ	HP	VOLT	FLA
1		DCV-1111	UTILITY CABINET RIGHT	04 - UTILITY CABINET RIGHT HOOD # 1	1 LIGHT	SMART CONTROLS DCV	EXHAUST	3	3.000	208	9.3
					1 FAN		SUPPLY	3	1.500	208	6.4



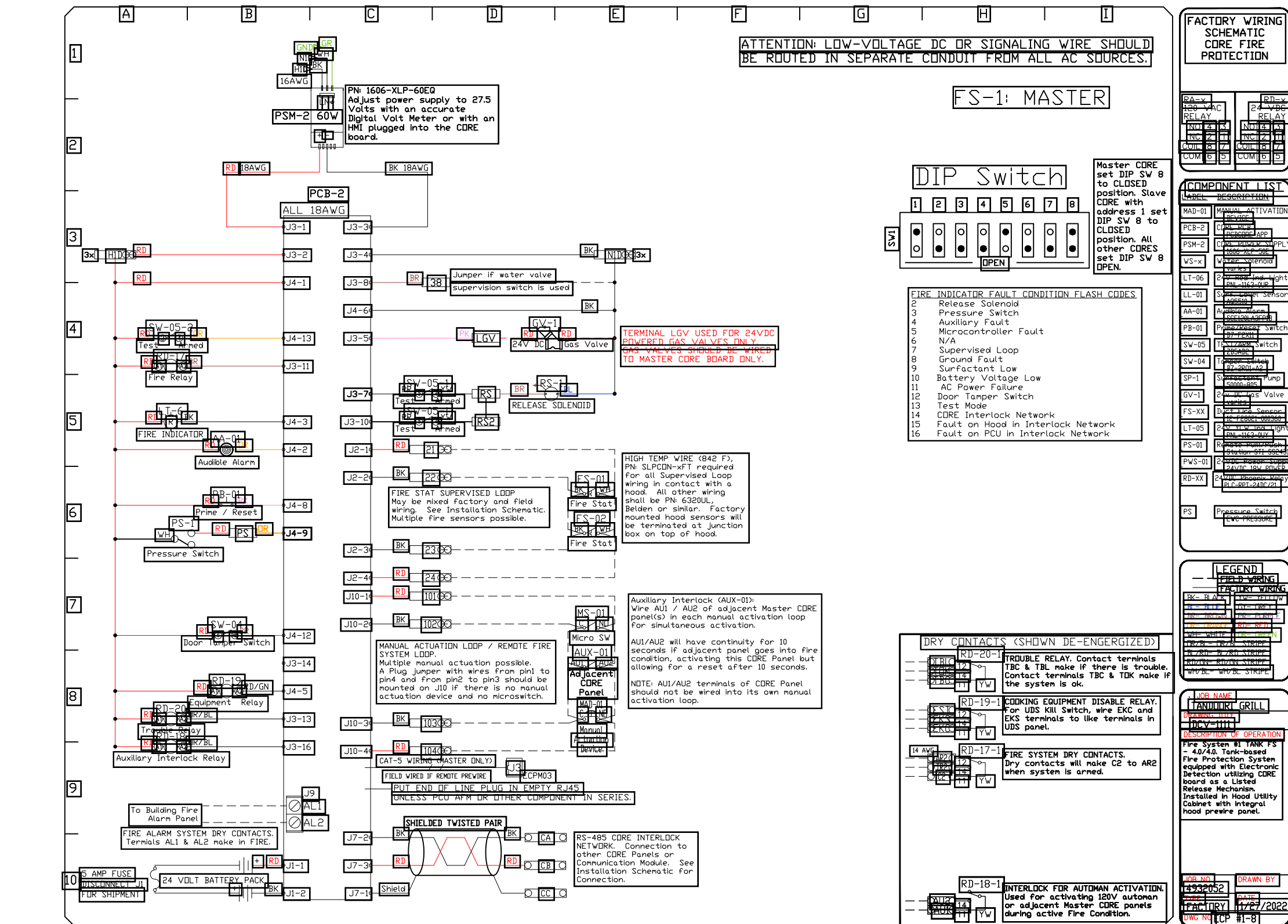
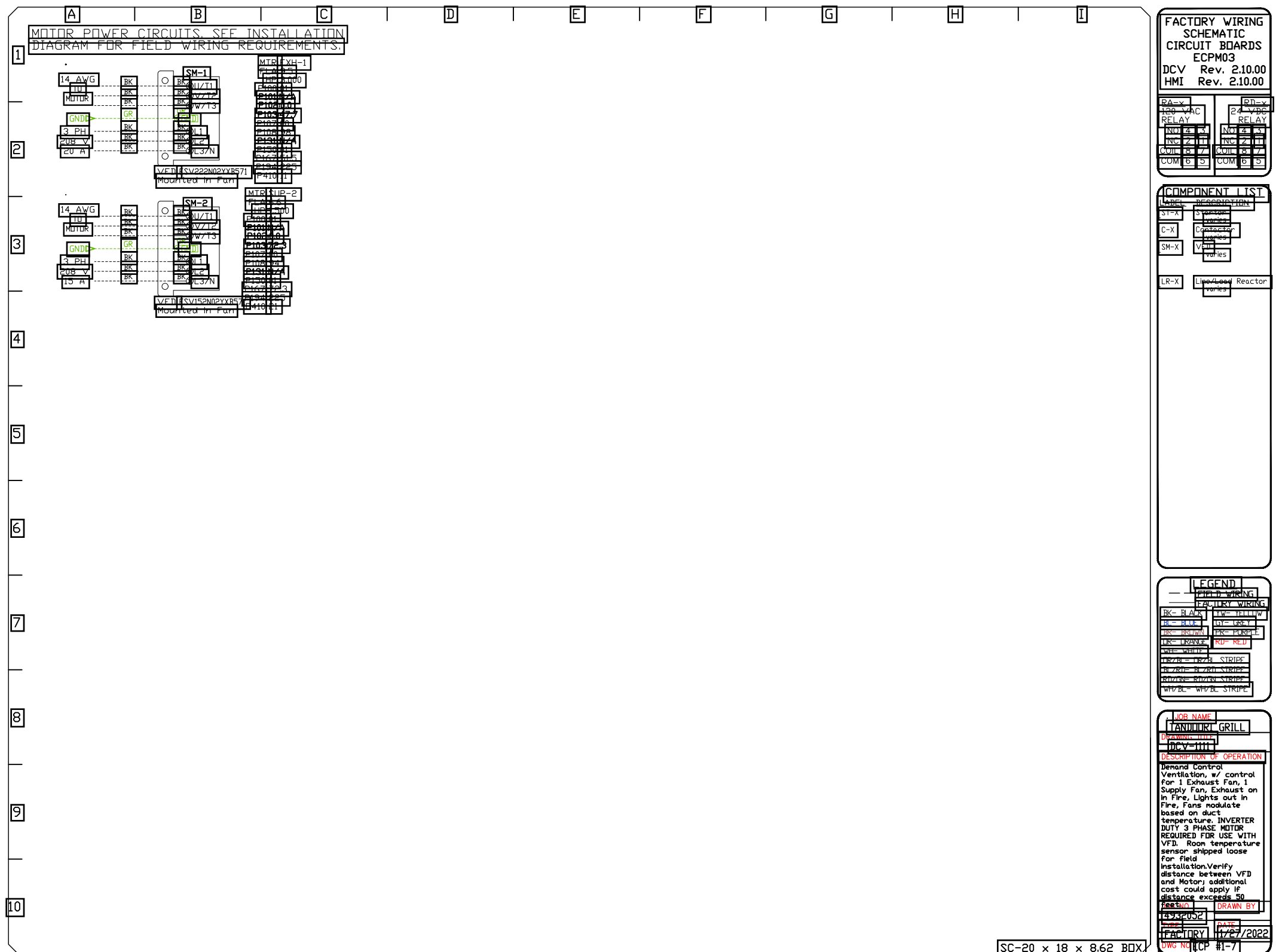
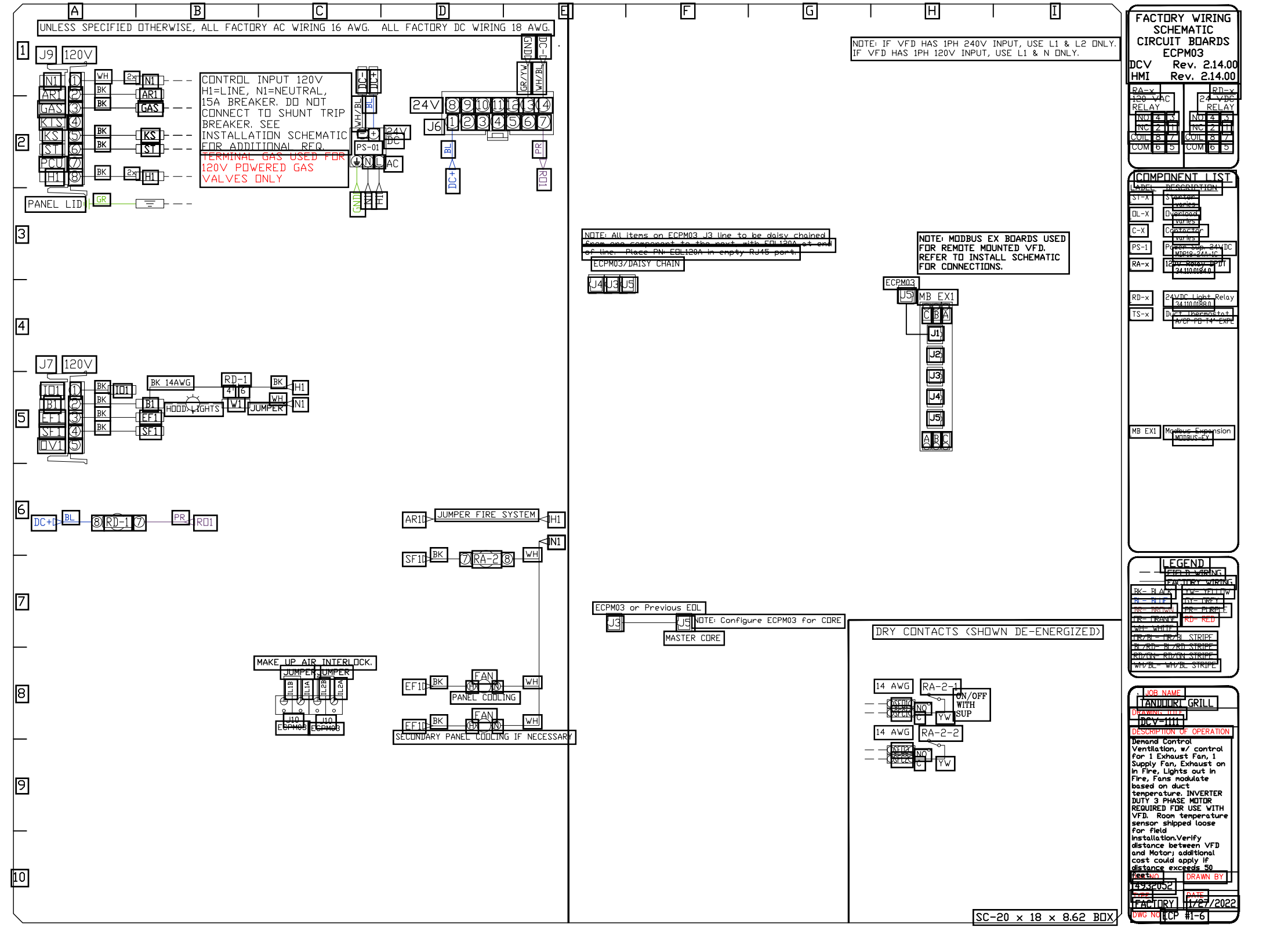
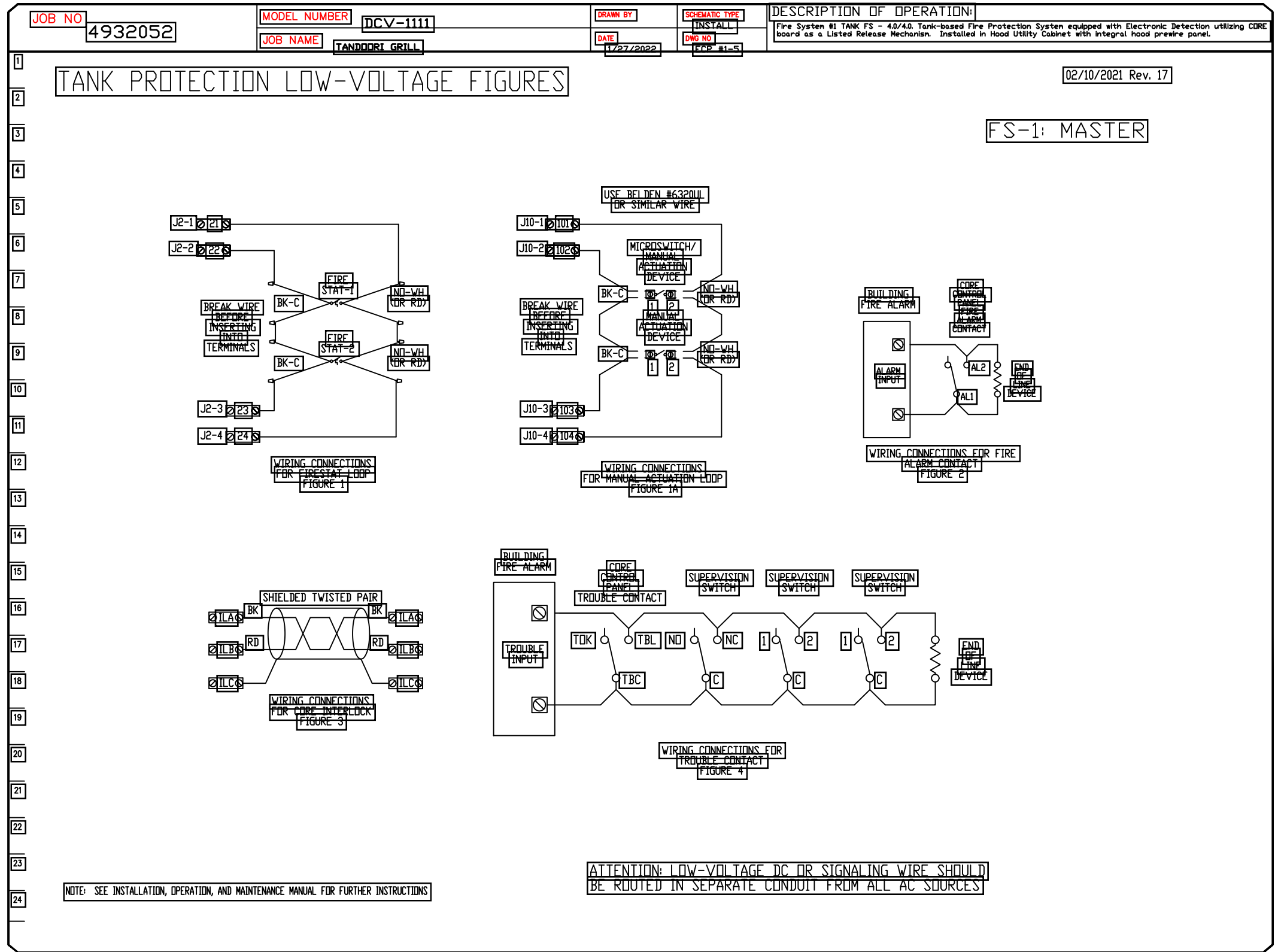
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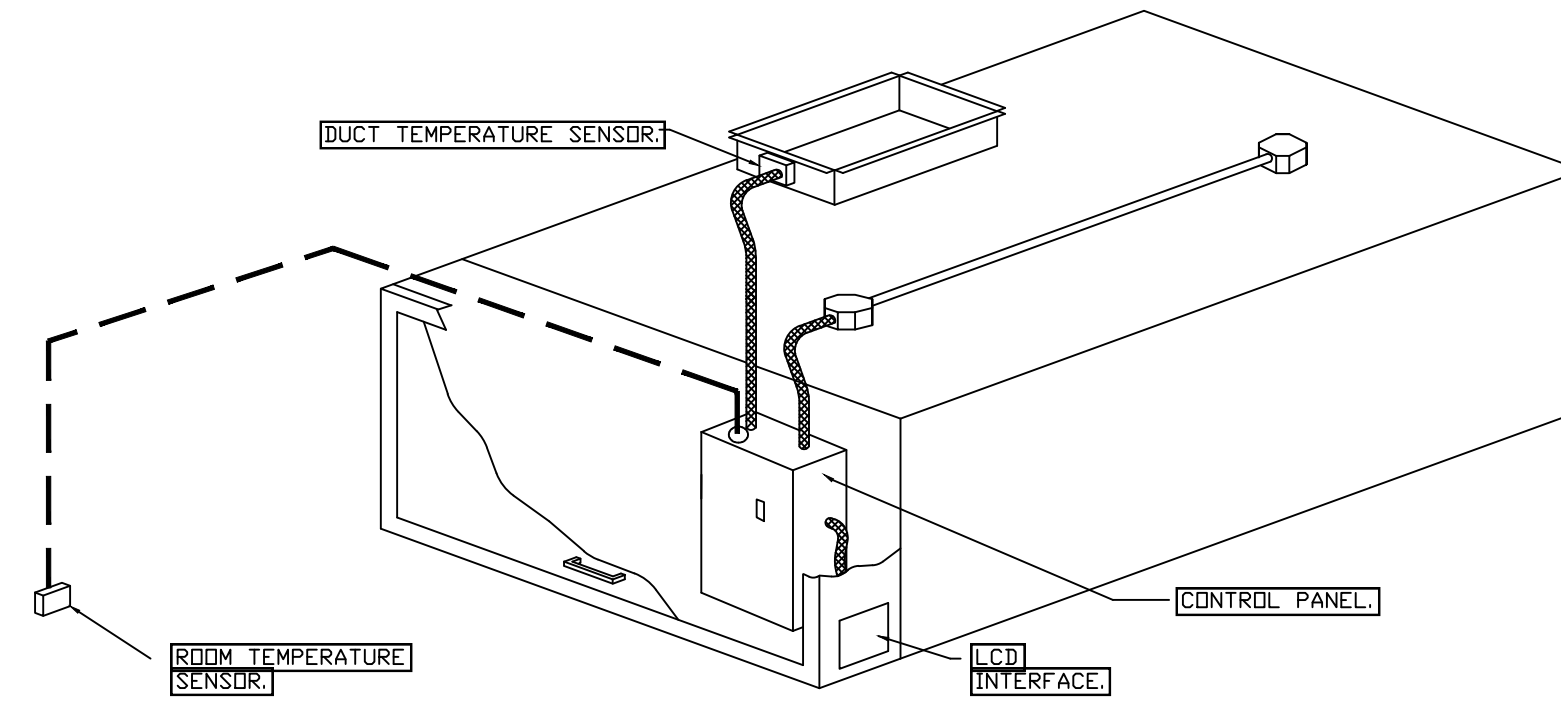
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**DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:**

- 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. 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.



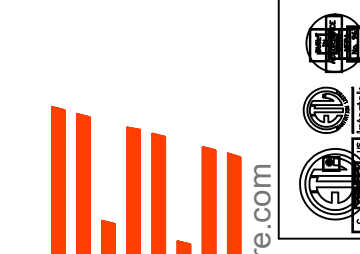
**TYPICAL HOOD CONTROL PANEL INSTALLATION**

**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:** 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 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.

**REVISIONS**

DESCRIPTION	DATE



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TANDOORI GRILL  
 4425 S Meridian  
 Puyallup, WA, 98373

**DATE:** 1/27/2022  
**DWG.#:** 4932052  
**DRAWN BY:**  
**SCALE:** 3/4" = 1'-0"  
**MASTER DRAWING**

**SHEET NO.**  
 12

DUCTWORK #1 PARTS - JOB#4932052 DOUBLE WALL

TAG	PART #	CFM	GPM	ZONE	COVERED BY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1830DWASY-2R-S	3300				-0.0455	21.84	1867.42	1	DOUBLE WALL DUCT - 18" INNER 30 DUCT - 2 LAYERS REDUCED CLEARANCE - 22" STAINLESS STEEL OUTER SHELL.
P2	DW1830DWASY-2R-S	3300				-0.0302	21.84	1867.42	1	DOUBLE WALL DUCT - 18" INNER 30 DUCT - 2 LAYERS REDUCED CLEARANCE - 22" STAINLESS STEEL OUTER SHELL.
P3	DW1835DWLT-2R-S	3300				-0.0108	57.50	1867.42	1	DOUBLE WALL DUCT - 18" INNER DUCT, 35' LONG - 2 LAYERS REDUCED CLEARANCE - 22" STAINLESS STEEL OUTER SHELL.
P4	DW1847DWAJD-2R-S	3300				-0.0142	107.98	1867.42	1	DOUBLE WALL ADJUSTABLE DUCT - 18" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 22" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11' / MAX LENGTH = 48.5' / ADJUSTMENT = 30.5' / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P5	ASSEMBLED W/P6	DW184550DWLTP-2R-S	3300			-0.014	75.96	1867.42	1	DOUBLE WALL DUCT - 18" INNER DUCT, 45.5' LONG - 2 LAYERS REDUCED CLEARANCE - 22" STAINLESS STEEL OUTER SHELL - USED WITH TRANSITION PLATE.
P6	ASSEMBLED W/P5 SYSTEM AT P6	DW2618TP	3300				10.58	1867.42	1	DUCT TO CURB TRANSITION, 26-1/2' CURB TO 18" DUCT, 16 GA ALUMINIZED. USED ON BDU18 & 20.
		3M-2000PLUS					0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
		DW18DWCLASY-2R-S					8.70		2	DUCT - 18" DUCT - 22" DOUBLE "V" CLAMP - 2R INSULATION & SINGLE "V" CLAMP INCLUDED - REDUCED CLEARANCE.
TOTAL WEIGHT							314.70			

DOUBLE WALL FACTORY BUILT DUCTWORK

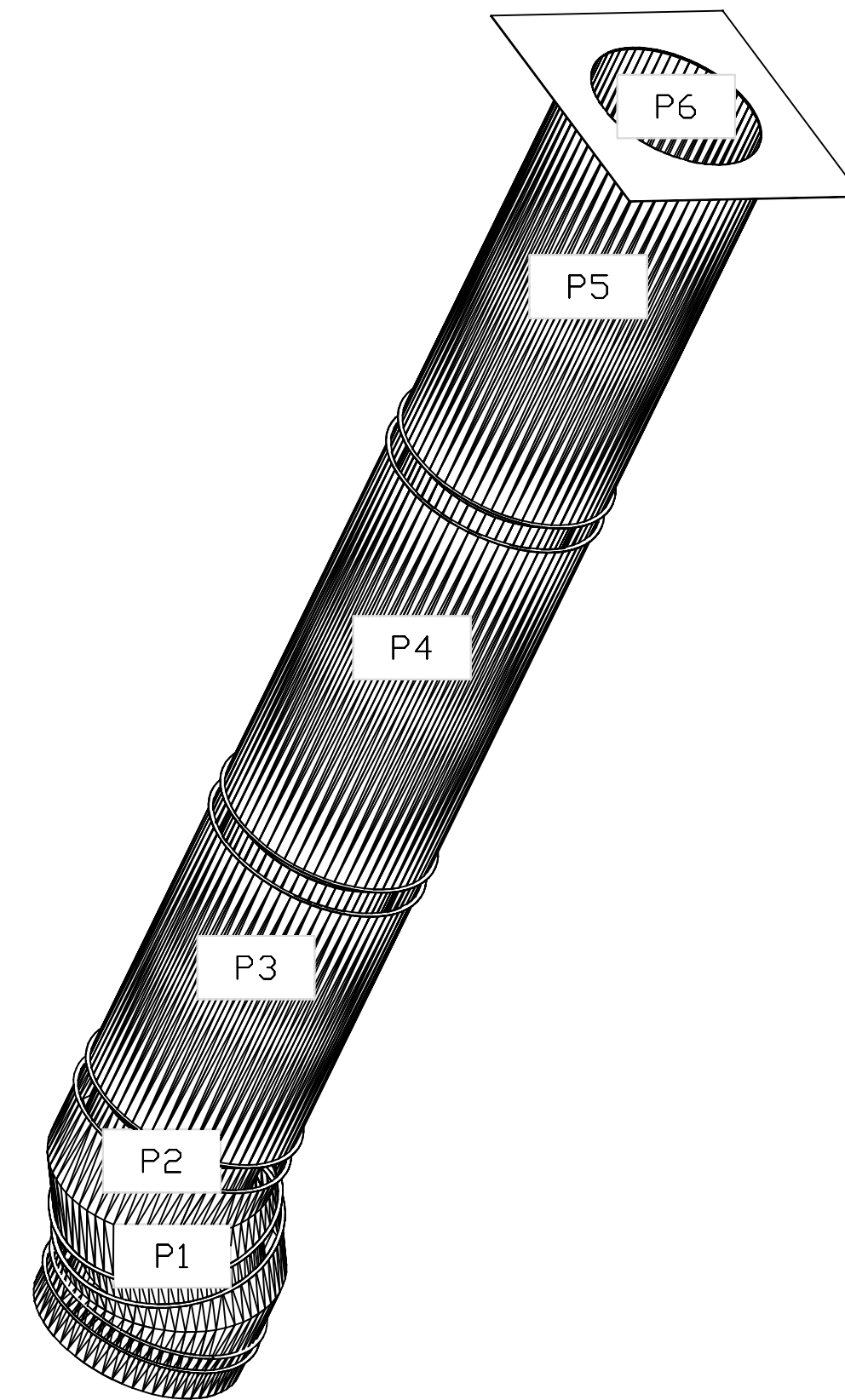
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- 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'

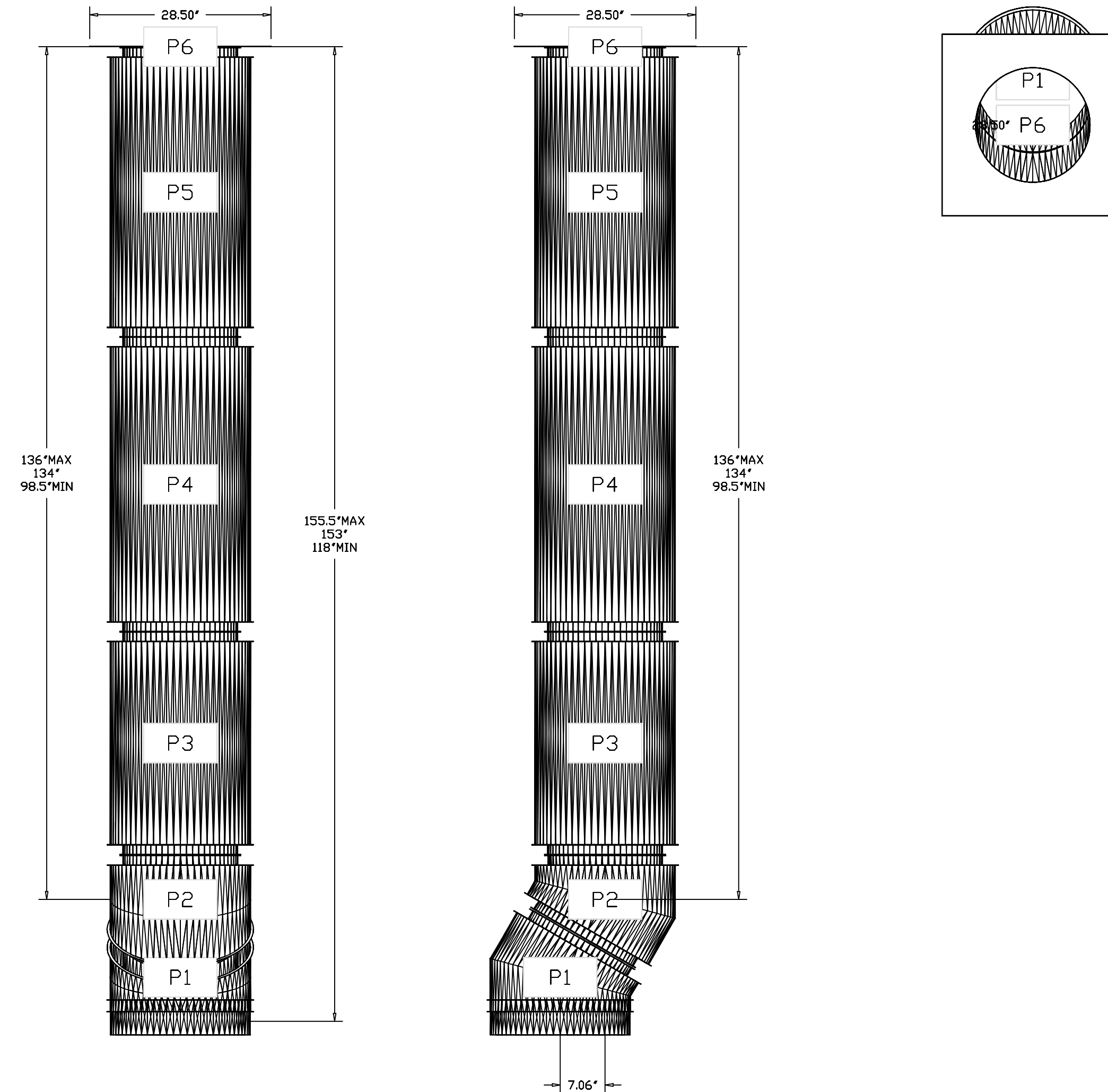
VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5'-16')	20'	24'	24'
2R (18')	18'	24'	24'
3R & 3Z (5'-24')	10'	24'	24'
3Z (26' -36')	10'	20'	20'

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

DUCTWORK #1 SE VIEW



DUCTWORK #1 FRONT VIEW DUCTWORK #1 SIDE VIEW DUCTWORK #1 TOP VIEW



REVISIONS	
DESCRIPTION	DATE

Seattle Office  
 1309 Pacific Ave, Everett, WA, 98201 PHONE: (425) 212-5686 FAX: (425) 212-5688 EMAIL: leg@captveaire.com  
 www.captveaire.com

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SYSTEM DESIGN VERIFICATION (SDV)

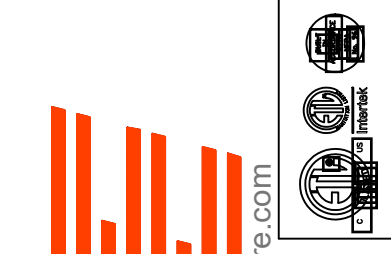
IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

REVISIONS

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1309 Pacific Ave, Everett, WA, 98201 PHONE: (425) 712-5986 FAX: (425) 212-5988 EMAIL: [reg85@captiveair.com](mailto:reg85@captiveair.com)