

CLIENT:



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PROJECT INFORMATION:

STORE NO.: 5879
 "ALEXANDRIA MN - BROADWAY"
 SEC OF BROADWAY & 44TH AVE W
 ALEXANDRIA, MN 56308

SEAL:

I hereby certify that this plan, specification, or
 report was prepared by me or under my direct
 supervision and that I am a duly Licensed
 Professional Engineer under the laws of the
 State of Minnesota.

Theodore S. Birkholz
 Digitally signed by Theodore Birkholz
 Date: 2025.07.21 13:32:41-05'00'

Signature
 Theodore S. Birkholz, P.E.
 Typed or Printed Name
 63471 07/22/2025
 License # Date

PROJECT NO. 0425794-009
 DRAWN BY TSB
 CHECKED BY TAB

ISSUE RECORD:
 04.24.2025 PERMIT SET
 05.21.2025 BID SET
 07.22.2025 CONSTRUCTION SET

REVISIONS:

TITLE:
 HVAC PLAN

SHEET NUMBER:

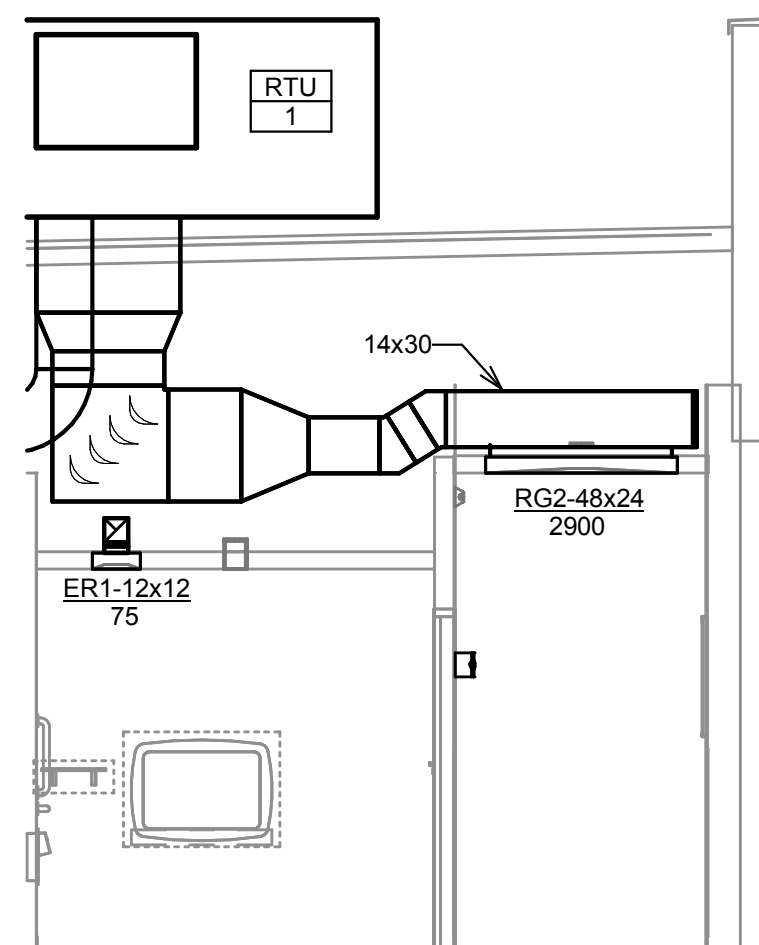
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KEY NOTES:

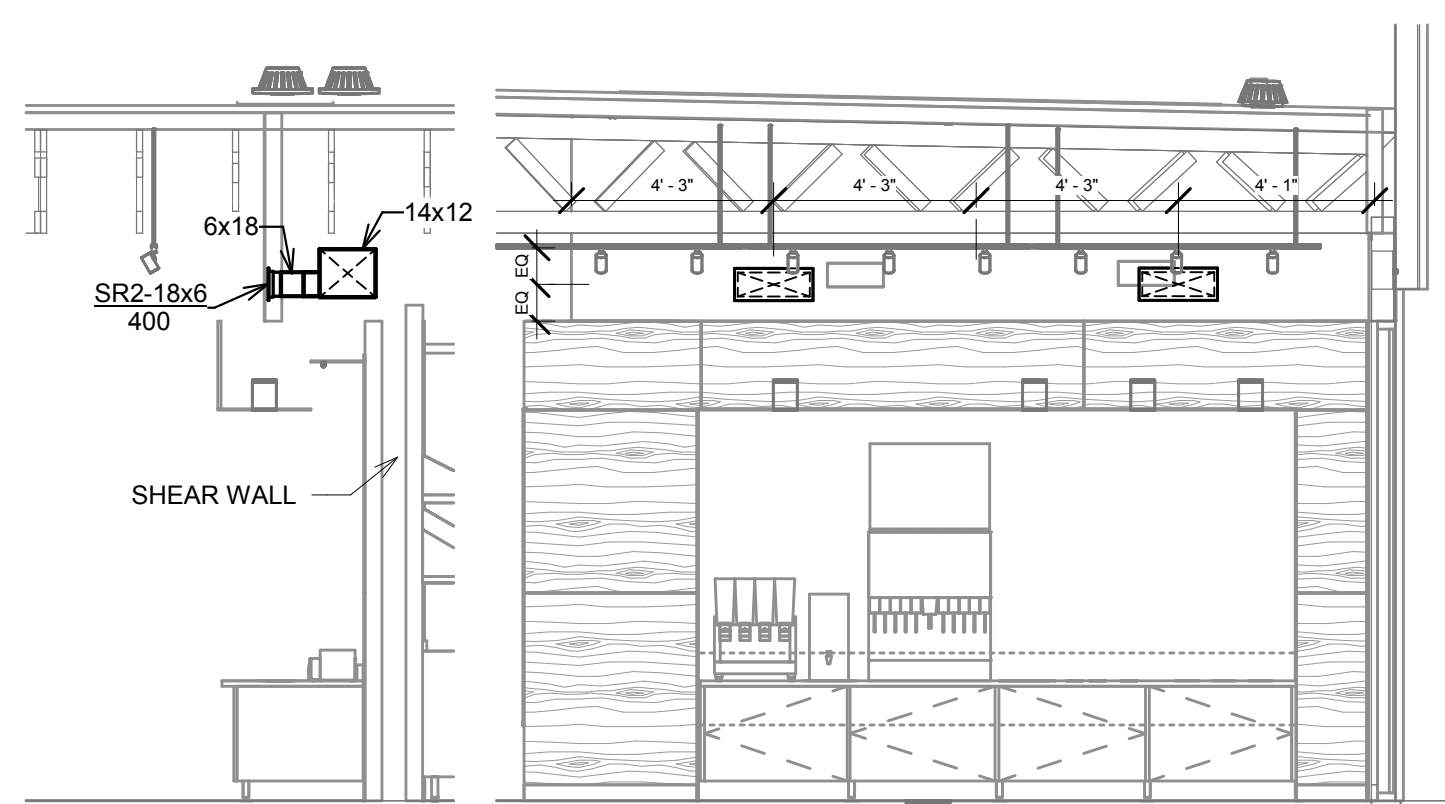
- 1 SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING MOUNTED EQUIPMENT LOCATION. TYPICAL.
- 2 PAINT DUCTWORK VISIBLE THROUGH DINING ROOM SUPPLY REGISTERS BLACK. TYPICAL.
- 3 PENETRATIONS THROUGH SHEAR WALL SHALL BE LIMITED TO 10" DIAMETER (OR A GROUP OF PENETRATIONS ALL CONTAINED WITHIN 10" DIAMETER). IF LARGER PENETRATIONS OR GROUPS OF PENETRATIONS ARE REQUIRED COORDINATE WITH STRUCTURAL ENGINEER FOR APPROPRIATE BRACING. SEE STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATION.
- 4 36/12 DUCT UP FOR TRANSITION TO RTU-1 RETURN CONNECTION IN ROOF CURB. RTU-1 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-1 OPERATION.
- 5 36/12 DUCT UP FOR TRANSITION TO RTU-2 RETURN CONNECTION IN ROOF CURB. RTU-2 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-2 OPERATION.
- 6 28/14 DUCT UP FROM BUILDING SUPPLY THROUGH ROOF. TRANSITION TO RTU-1 SUPPLY CONNECTION IN ROOF CURB.
- 7 28/14 DUCT UP FROM BUILDING SUPPLY THROUGH ROOF. TRANSITION TO RTU-2 SUPPLY CONNECTION IN ROOF CURB.
- 8 14/14 DUCT UP THROUGH ROOF. TRANSITION TO MAU-1 SUPPLY CONNECTION IN ROOF CURB.
- 9 18/16 DUCT UP FROM HOOD THROUGH ROOF TO EF-1 COMPLIANT WITH NFPA 96. PROVIDE RADIUS ELBOWS WITH AN INSIDE RADIUS OF 0.5W AT ELBOWS IN GREASE DUCT.
- 10 8/6 DUCT UP THROUGH ROOF TO EF-2.
- 11 28/6 DUCT DOWN TO MAKEUP AIR PSP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL FOR 3.
- 12 8" DIA. DUCT DOWN TO AC PSP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL FOR 3.
- 13 INSTALL SINGLE-GANG VERTICAL J-BOX FOR GRIDPOINT THERMOSTATS FURNISHED BY TEMS FOR RTU-1 AND RTU-2 AT THIS LOCATION OFFICE WALL, AT 48" AFF. COORDINATE WITH ELECTRICAL SWITCHING IN THIS AREA. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 14 INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-1 AT THIS LOCATION 60" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 15 INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-2 AT THIS LOCATION 66" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 16 INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-1 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 17 INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-2 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 18 INSTALL REMOTE TEMPERATURE SENSOR FOR HOOD HD-1 AT THIS LOCATION 66" AFF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE (2) #18 G. THERMISTOR CABLE FROM TEMPERATURE SENSOR TO HOOD CONTROL PANEL.

KEY NOTES: CONT.

- 19 INSTALL KITCHEN HOOD, HD-1, SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL HOOD ACCORDING TO THE REQUIREMENTS OF ITS LISTING, IN COMPLIANCE WITH NFPA 96, THE BUILDING CODE, AND AUTHORITIES HAVING JURISDICTION. HOOD SHALL HAVE AN INTEGRAL DUCT COLLAR. TEMPERATURE SENSOR TO AUTOMATICALLY ENERGIZE THE EXHAUST AND MAKEUP AIR FANS IF COOKING TEMPERATURES ARE DETECTED. EXHAUST DUCT SYSTEM TO BE WELDED OR FACTORY-MANUFACTURED WATER AND AIR TIGHT. INSTALL CLEANOUTS PER CODE AND AS SHOWN. INSTALL HOOD PER DETAILS 2, 4, AND 9/M700. CHIPOTLE WILL PROVIDE AN INDEPENDENT TESTING AGENCY FOR TESTING THE INTEGRITY OF THE GREASE DUCT SYSTEM.
- 20 INSTALL REMOTE CONDENSING UNIT FOR WALK-IN COOLER ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3' OF THE CONDENSING UNIT. CUT 2-1/2" HOLE IN WALK-IN COOLER ROOF FOR REFRIGERANT LINE SET AND SEAL PER THE COOLER MANUFACTURER'S INSTALLATION INSTRUCTIONS AFTER LINE SET IS INSTALLED.
- 21 INSTALL REMOTE CONDENSER FOR ICE MACHINE ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3' OF THE REMOTE CONDENSER. IF REFRIGERANT PIPING TO ICE MAKER IS EXPOSED TO PUBLIC VIEW CONCEAL WITHIN A STAINLESS STEEL SHROUD AS SHOWN IN THE ARCHITECTURAL DRAWINGS.
- 22 INSTALL ROOFTOP EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- 23 INSTALL EXHAUST FAN EF-1 PER DETAIL 5/M700 AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL GREASE VIROGUARD SYSTEM FURNISHED BY CHIPOTLE ON EXHAUST FAN, EF-1.
- 24 PROVIDE SUPPLY DIFFUSER CONNECTION TO SUPPLY SYSTEM PER DETAIL 1/M700. TYPICAL.
- 25 PROVIDE AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET. WIRE A UNIT BACK TO EACH SMOKE DETECTOR. MOUNT UNIT 60" AFF. TYPICAL.
- 26 INSTALL REME HALO AIR PURIFIER FURNISHED BY TUV IN RTU PER DETAIL 6/M700. SEE ELECTRICAL DRAWINGS FOR POWER CONNECTION INFORMATION. INSTALL UV WARNING STICKERS ON FACE OF ENCLOSURE PER DETAIL AND ON ANY RTU ACCESS DOOR(S) THROUGH WHICH THE REME HALO WOULD BE VISIBLE IF OPENED.
- 27 MAINTAIN 10" CLEARANCE BETWEEN WATER HEATER FLUE TERMINATION AND OUTSIDE AIR INTAKES. MAINTAIN 10" CLEARANCE BETWEEN WATER HEATER COMBUSTION AIR INTAKE AND EXHAUST FAN EF-1 DISCHARGE. SEE PLUMBING DRAWINGS FOR MORE INFORMATION ON WATER HEATER FLUE AND COMBUSTION AIR TERMINATIONS.
- 28 ADJUST SUPPLY REGISTERS SO THAT SUPPLY AIR HITS WALL ON OPPOSITE SIDE OF ROOM AT APPROXIMATELY 7' AFF WITH NO DRAFTS FELT IN THE DINING ROOM. TYPICAL OF ALL SR REGISTERS.
- 29 CEILING UNIT HEATER. INSTALL PER MANUFACTURER INSTRUCTIONS.

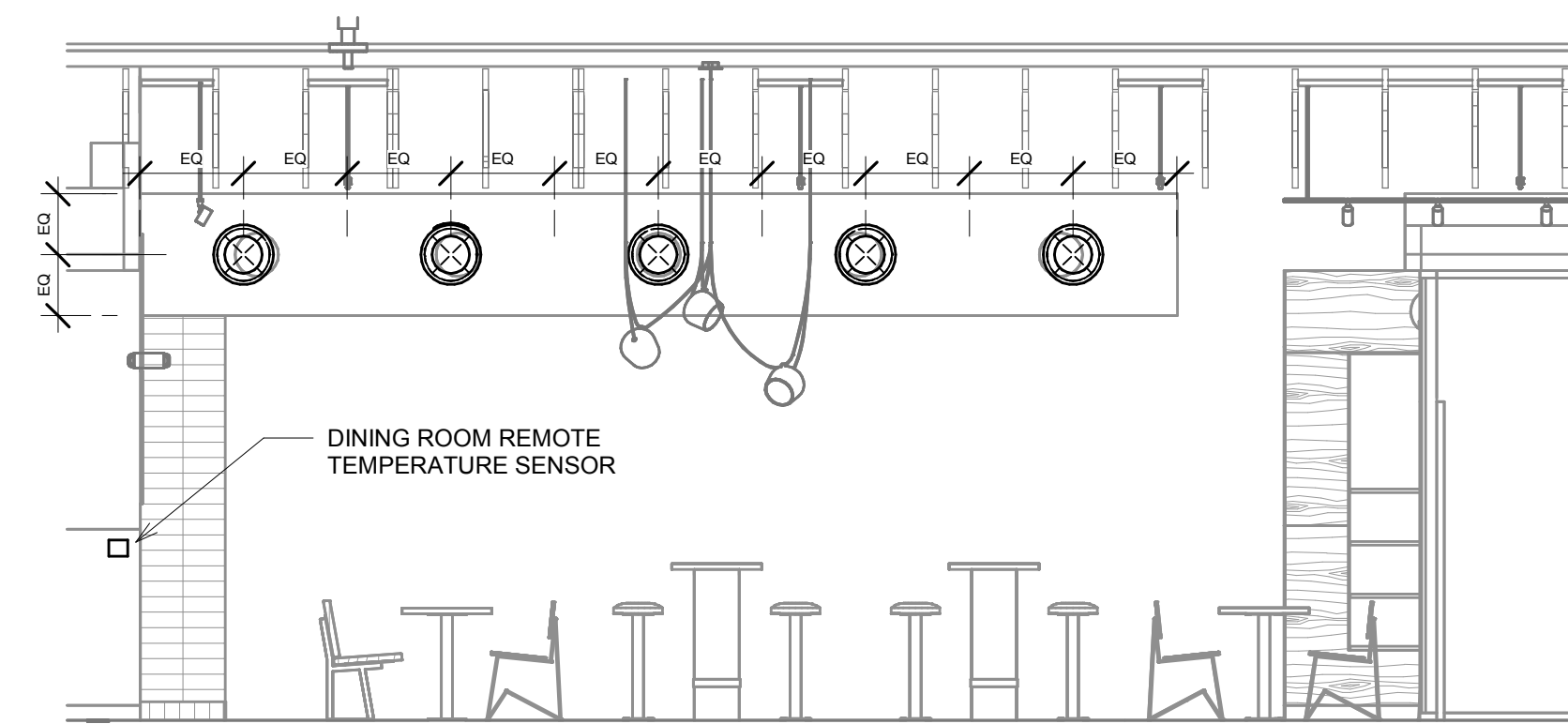


6 HVAC DINING ROOM RETURN SECTION
 1/4" = 1'-0"

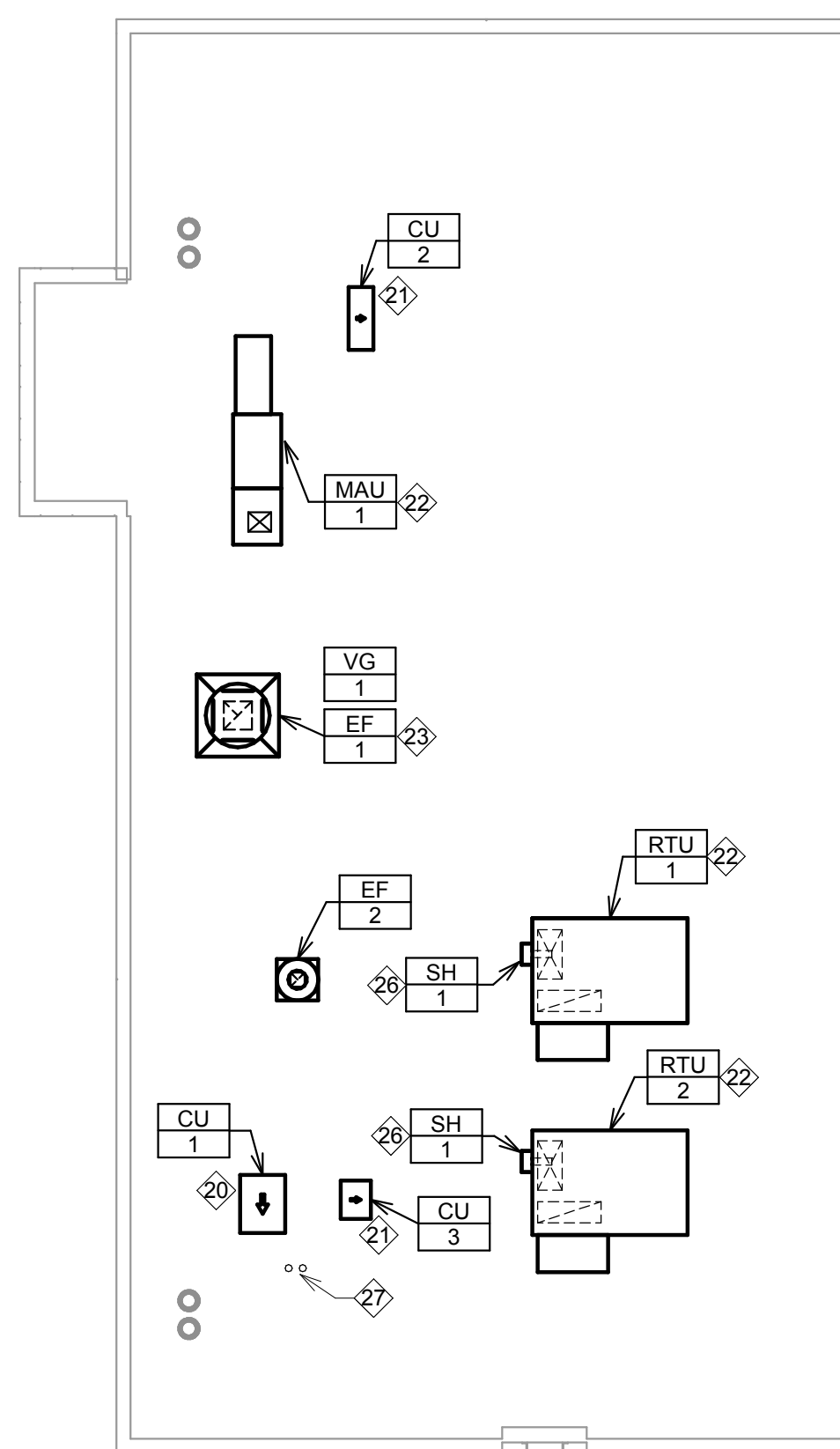


5 HVAC DINING ROOM SECTION
 1/4" = 1'-0"

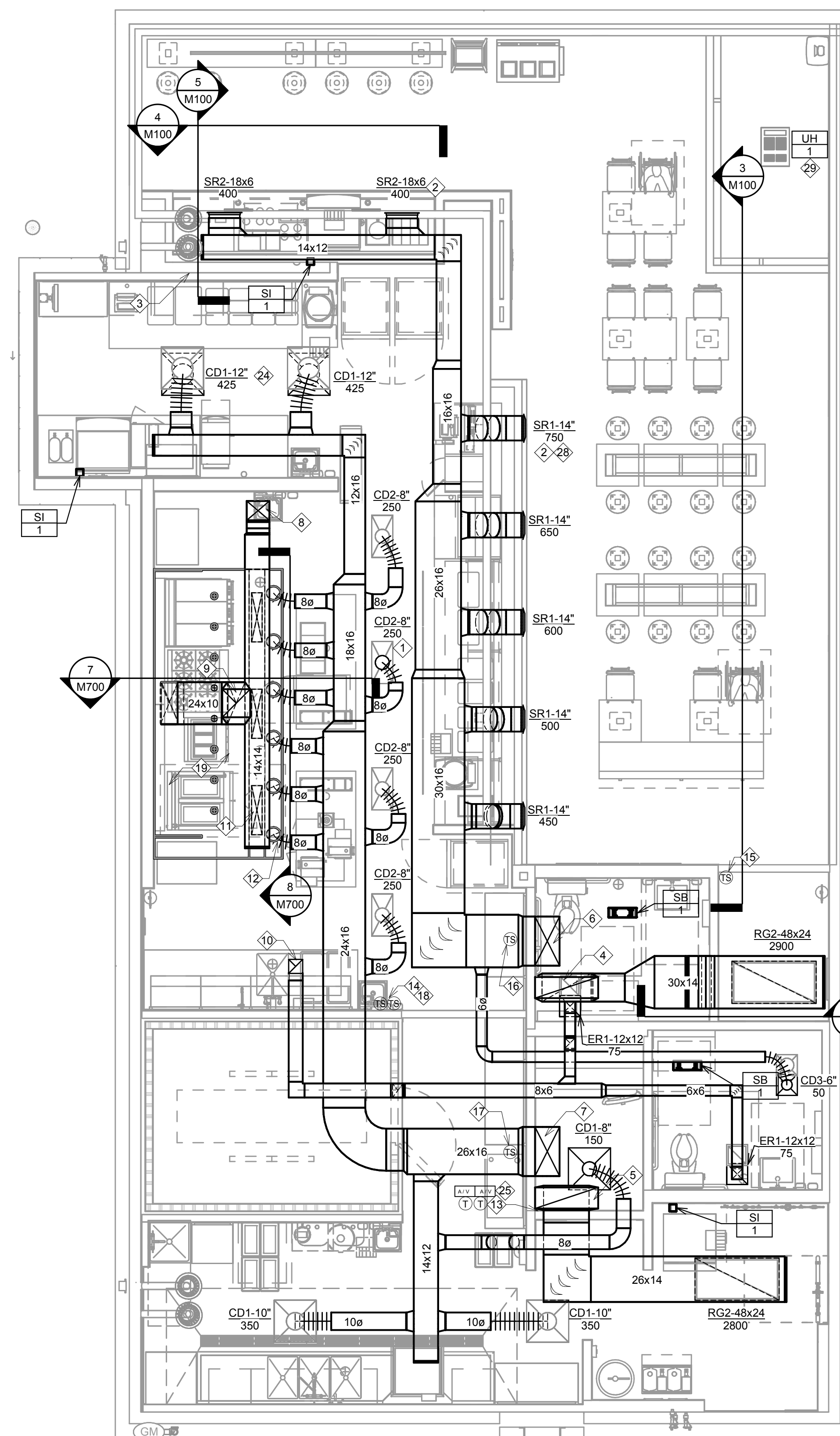
4 HVAC DINING ROOM SECTION
 1/4" = 1'-0"



3 HVAC DINING ROOM SECTION
 1/4" = 1'-0"



2 HVAC ROOF PLAN
 1/8" = 1'-0"



1 HVAC FLOOR PLAN
 1/4" = 1'-0"

OUTDOOR AIR CALCULATION BASED ON 2020 MINNESOTA MECHANICAL CODE

SPACE NAME	SPACE AREA Az (FT2)	OCCUPANCY CLASSIFICATION	ZONE POPULATION Pz(1)	O.A. RATE Rp (CFM/PERSON)	OCCUPANT O.A. Rp x Pz (CFM)	AREA O.A. RATE Ra (CFM/FT2)	AREA O.A. Ra x Az (CFM)	BREATHING ZONE O.A. Vbz=RpPz + RaAz (CFM)	ZONE DISTRIBUTION EFFECTIVENESS (Ez)	ZONE O.A. Voz=Vbz/Ez (CFM)	
DINING + ENTRY	810	FOOD AND BEVERAGE: DINING ROOMS	44	7.5	330	0.18	145.8	475.8	0.8	594.8	
PASSAGE	37	PUBLIC SPACES: CORRIDORS	0	0	0	0.06	2.2	2.2	0.8	2.8	
KITCHEN + SCULLERY OFFICE	882	FOOD AND BEVERAGE: KITCHENS (COOKING)	6	5	45	0.12	105.8	150.8	0.8	188.5	
	42	OFFICES: OFFICE SPACES	1	5	5	0.06	2.5	7.5	0.8	9.4	
FOOTNOTES: (1) - ZONE POPULATION BASED ON NET OCCUPIABLE FLOOR AREA, OR NUMBER OF FIXED SEATS IN RESTAURANT DINING AREAS										TOTAL O.A. REQUIRED	795.5
										TOTAL O.A. PROVIDED	1500

EXHAUST AIR CALCULATION BASED ON 2020 MINNESOTA MECHANICAL CODE

SPACE NAME	SPACE AREA (FT2) OR PER WC/URINAL	OCCUPANCY CLASSIFICATION	EXHAUST AIRFLOW RATE (CFM/FT2) OR PER WC/URINAL	REQUIRED EXHAUST (CFM)	PROVIDED EXHAUST (CFM)
KITCHEN	534	FOOD AND BEVERAGE: KITCHENS (COOKING)	0.7	373.8	2550
TOILETS	2	PUBLIC SPACES: TOILET ROOMS (INTERMITTENT EXHAUST)	70	140	150
TOTALS				513.8	2700

CONTROL FUNCTIONS

- A. THE MAIN COOKING EXHAUST FAN AND MAKE-UP AIR UNIT SHALL BE INTERLOCKED TO OPERATE TOGETHER. THIS CONTROL CIRCUIT IS ACTIVATED BY A SWITCH AND INCLUDES A FIRE PROTECTION OVERRIDE.
- B. THE TEMPERATURE IN EACH ZONE IS CONTROLLED BY SPACE TEMPERATURE SENSORS CONNECTED TO THE THERMOSTATS LOCATED IN THE OFFICE. ALL ZONES SHALL OPERATE WITH CONTINUOUS FAN OPERATION DURING OCCUPIED TIMES AND INTERMITTENTLY AS NEEDED TO MAINTAIN SET POINTS DURING UNOCCUPIED TIMES. OUTSIDE AIR DAMPERS SHALL BE OPEN CONTINUOUSLY WHEN EITHER IN OCCUPIED MODE OR WHEN THE HOOD SYSTEM IS ON AND SHALL BE CLOSED DURING UNOCCUPIED PERIODS.
- C. THE THERMOSTATS SHALL DETERMINE OCCUPIED/UNOCCUPIED STATUS BASED ON THE SCHEDULE IN THE ENERGY MANAGEMENT SYSTEM.

AIR BALANCE SCHEDULE

TAG	SUPPLY FLOW (CFM)	RETURN FLOW (CFM)	EXHAUST FLOW (CFM)	SUBTOTAL (CFM)
EF-1	0	0	2550	-2550
EF-2	0	0	150	-150
MALU-1	1300	0	0	1300
RTU-1	3800	2900	0	900
RTU-2	3400	2800	0	600
NET PRESSURIZATION (CFM)				100

SANITIZING EQUIPMENT SCHEDULE

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

FAN SCHEDULE

TAG	DESCRIPTION	AIRFLOW	ESP (IN W.C.)	WEIGHT (LBS)	ELECTRICAL MOTOR POWER (HP)	V / P / H	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		MECHANICAL NOTES
							MANUFACTURER	MODEL NUMBER			
EF 1	EXHAUST FAN - HOOD	2550 CFM	1.20 IN-WG	400LB	2.0 HP	208/3/60	HS	GC	CAPTIVE-AIRE	DU180HFA	DIRECT DRIVE UL762 UPBLAST EXHAUST FAN FURNISHED WITH WEATHERPROOF DISCONNECT AND VENTED ROOF CURB
EF 2	DOWNBLAST RESTROOM EXHAUST FAN	150 CFM	0.60 IN-WG	100LB	0.18 HP	120/1/60	HS	GC	CAPTIVE-AIRE	DR12HFA	DIRECT DRIVE DOWNBLAST RESTROOM EXHAUST FAN FURNISHED WITH INTEGRAL DISCONNECT, SPEED CONTROL, BACKDRAFT DAMPER, AND CURB

VIROGUARD SCHEDULE

TAG	DESCRIPTION	DUCT CONNECTION SIZE	FAN	FURNISHED BY	INSTALLED BY	MANUFACTURER
VG 1	VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM	16"x16"	CAPTIVE-AIRE DU-180HFA	TDC	GC	ENVIROMATIC

CONDENSING UNIT SCHEDULE

TAG	DESCRIPTION	NUMBER OF COMPRESSORS	CIRCUITS	MCA	FLA	V/P/H	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		MECHANICAL NOTES
							MANUFACTURER	MODEL NUMBER			
CU 1	CONDENSING UNIT - WALK-IN COOLER	1	1	15	9	208/3/60	WCS	GC	HARFORD	KPCL99M30P-3E	FURNISHED WITH WALK-IN COOLER
CU 2	REMOTE CONDENSER - LOW CAPACITY ICE MAKER	1	1			120/1/60	KES	GC	HOSHIZAKI	URC-9F	FURNISHED WITH ICE MAKER
CU 3	REMOTE CONDENSER - SODA MACHINE ICE MAKER	1	1			120/1/60	KES	GC	HOSHIZAKI	URC-5F	FURNISHED WITH ICE MAKER

MAKE UP AIR UNIT SCHEDULE

TAG	DESCRIPTION	AIRFLOW (CFM)	E.S.P. IN W.G.	GAS INPUT (MBH)	GAS OUTPUT (MBH)	EAT DB (F)	WEIGHT (LBS)	FAN HP	V/P/H	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		MECHANICAL NOTES
										MANUFACTURER	MODEL NUMBER			
MAU 1	DIRECT-FIRED MAKEUP AIR UNIT	1300	0.50 IN-WG	225	220	21	850	1	208/3/60	HS	GC	CAPTIVE-AIRE	A1-D 250-15D	12.5:1 MAX TURNDOWN, FURNISHED WITH DISCONNECT, ROOF CURB, SCREEN INTAKE, AND WASHABLE ALUMINUM FILTERS

KITCHEN EXHAUST HOOD SCHEDULE

TAG	DESCRIPTION	MAX COOKING TEMP.	AIRFLOW	EXHAUST PLENUM				PERFORATED SUPPLY PLENUMS				NO. OF LIGHT FIXTURES	WEIGHT (LBS)	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		MECHANICAL NOTES			
				E.S.P. (IN W.G.)	NO.	WIDTH	LENGTH	MAU PLENUM DUCT COLLARS	AC PLENUM DUCT COLLARS	MANUFACTURER	MODEL NUMBER										
HD 1	TYPE I CANOPY HOOD WITH PEERFORATED MAU AND AC SUPPLY PLENUMS	600°F	2550 CFM	0.97 IN-WG	1	10"	2'-0"	12'-9"	4'-3"	13'-9"	1'-7"	1300	3	6"	2'-4"	700	6	8"	CAPTIVE-AIRE	5424 ND-2-ACPS-PF	MATL: 18 GA. TYPE 430 SS. FURNISHED WITH VERTICAL END PANELS, 24V GAS VALVE, VAPORPROOF INCANDESCENT LIGHT FIXTURES, 16" TALL HE SS FILTERS, INTEGRAL UTILITY CABINET, KITCHEN EXHAUST SUPPRESSION SYSTEM, DUCT COLLAR TEMPERATURE SENSOR, PREWIRE PACKAGE, SPARE FIRE SYSTEM DRY CONTACT, AND 4-POLE 20A CONTACTOR.

ROOFTOP UNIT SCHEDULE

EQUIPMENT TAG	DESCRIPTION	NOMINAL TONS	EER (EER)	AIRFLOW				NET COOLING CAPACITY				HEATING CAPACITY			REFRIGERANT TYPE AND CHARGE	WEIGHT (LBS)	ELECTRICAL			FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		MECHANICAL NOTES	
				TOTAL CFM	OA CFM	ESP (IN W.C.)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EAT DB (F)	EAT WB (F)	AMBIENT TEMPERATURE (F)	NUMBER OF COMPRESSORS & CIRCUITS	GAS INPUT (MBH)	GAS OUTPUT (MBH)			EAT (F)	MOCP	MCA			ELEC	MANUFACTURER		MODEL NUMBER
RTU 1	ROOF TOP UNIT - DINING	10	11.0 (15.0)	3800	900	0.8	119.9	85.8	77.6	65.2	95	2 & 1	200/250	164/205	47.9	R454B & 21.8LB	1235	70	58	208/3/60	HES	GC	CARRIER	48FEFN123M5	FURNISHED WITH HOT GAS REHEAT FOR DEHUMIDIFICATION, COMP. ENTHALPHY ECON., BAROMETRIC RELIEF, RET. SMOKE DETECTOR W/ REMOTE KEYED ANNUNCIATOR/RESET, M.O.D., MERV-8 FILTERS, CURB, HAIL GUARD, TOOLLESS HINGED ACCESS PANELS, DISCONNECT, & UNIT-MOUNTED CONVENIENCE RECEPTACLE
RTU 2	ROOF TOP UNIT - KITCHEN	8.5	11.2 (15.0)	3400	600	0.8	97.1	68.0	76.5	65.2	95	2 & 1	180/224	146/181	53.6	R454B & 17.9LB	1235	50	40	208/3/60	HES	GC	CARRIER	48FEFN09B3M5	FURNISHED WITH HOT GAS REHEAT FOR DEHUMIDIFICATION, COMP. ENTHALPHY ECON., BAROMETRIC RELIEF, RET. SMOKE DETECTOR W/ REMOTE KEYED ANNUNCIATOR/RESET, M.O.D., MERV-8 FILTERS, CURB, HAIL GUARD, TOOLLESS HINGED ACCESS PANELS, DISCONNECT, & UNIT-MOUNTED CONVENIENCE RECEPTACLE

UNIT HEATER SCHEDULE

EQUIPMENT TAG	APPLICATION	MOUNTING	CAPACITY (KW)	ELECTRICAL DATA	FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
UH 1	CEILING-MOUNTED UNIT HEATER	CEILING	3.0	208/1/60	GC	GC	INDEECO	931U04000V	PROVIDE WITH CONTROLS REQUIRED TO MEET MN ENERGY CODE.

AIR TERMINAL SCHEDULE

TAG	DESCRIPTION	FACE SIZE	MATERIAL	FINISH	MOUNTING	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		MECHANICAL NOTES
								MANUFACTURER	MODEL	
CD1	PERFORATED CEILING DIFFUSER	24" X 24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE L	PROVIDE WITH INTEGRAL OBD
CD2	PERFORATED CEILING DIFFUSER	24" X 12"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE L	PROVIDE WITH INTEGRAL OBD, REMOVE 4-WAY DEFLECTORS
CD3	PERFORATED CEILING DIFFUSER	12" X 12"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE S	PROVIDE WITH INTEGRAL OBD
ER1	PERFORATED CEILING EXHAUST	12" X 12"	ALUMINUM	WHITE	SURFACE MOUNT	GC	GC	NAILOR	4330R TYPE S	PROVIDE WITH INTEGRAL OBD
RG1	PERFORATED CEILING RETURN	48" X 24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4330R TYPE L	-
RG2	PERFORATED CEILING RETURN	48" X 24"	ALUMINUM	WHITE	SURFACE MOUNT	GC	GC	NAILOR	4330R TYPE S	-
SR1	ADJUSTABLE TURBO NOZZLE	SEE NECK SIZE	ALUMINUM	WHITE	WALL	GC	GC	AIR CONCEPTS	ANR-14	PROVIDE WITH CONCEALED MOUNTING AND FACE-ACCESSIBLE OBD
SR2	DOUBLE DEFLECTION SUPPLY REGISTER	SEE NECK SIZE	ALUMINUM	WHITE	WALL	GC	GC	NAILOR	51DH	PROVIDE WITH INTEGRAL OBD



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Dunham Project No: 0425794-009

CLIENT:



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PROJECT INFORMATION:

STORE NO.: 5879
"ALEXANDRIA MN - BROADWAY"
SEC OF BROADWAY & 44TH AVE W
ALEXANDRIA, MN 56308

SEAL:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Theodore S. Birkholz
Digitally signed by Theodore Birkholz
Date: 2025.07.21 13:32:41-05'00'

Signature
Theodore S. Birkholz, P.E.
Typed or Printed Name
63471 07/22/2025
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REVISIONS:

TITLE:
HVAC SCHEDULES

SHEET NUMBER:

M600

FOR QUESTIONS, CALL THE
Highwoods Group
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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#7515473

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	12' 9"	600 DEG	I	HEAVY	200	2550	10'	24'	4'	2550	1530	-0.966"	1300	696	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
1		CAPTRATE SOLID FILTER	9	16"	16"	85% SEE FILTER SPEC	8	L55 SERIES E26	NO	LEFT	12"x54"x24"	TANK FS	4.0/4.0	SC-311110MA	1 LIGHT 1 FAN	YES	1213 LBS

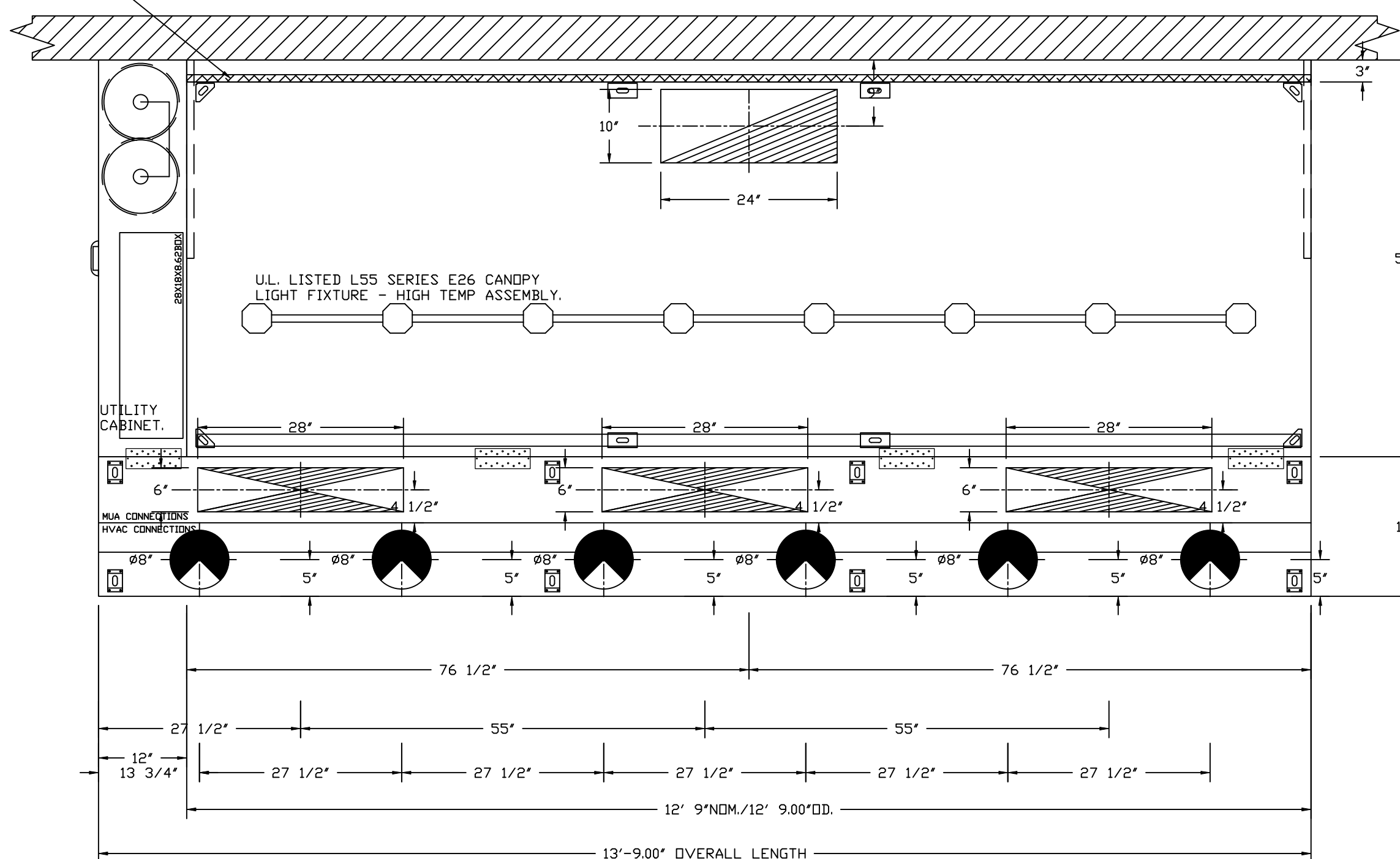
HOOD OPTIONS

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 10.00" HIGH FRONT, LEFT, RIGHT. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 6IN PLEN. RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. FULL DIMENSION HANGING BRACKET - FRONT.

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	RISER(S)				
						TYPE	WIDTH	LENG	DIA	CFM
1		Front	165"	19"	6"	MUA	6"	28"	432	0.127"
						MUA	6"	28"	432	0.127"
						MUA	6"	28"	432	0.127"
						AC	8"	116	0.043"	
						AC	8"	116	0.043"	
						AC	8"	116	0.043"	
						AC	8"	116	0.043"	
						AC	8"	116	0.043"	
						AC	8"	116	0.043"	

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



PLAN VIEW - HOOD #1

12' 9.00" LONG 5424ND-2-ACPSP-F

NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	*CLEARANCE
1	TOP	18"
	FRONT	0"
	BACK	0"
	LEFT	0"
	RIGHT	18"

- *0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLID FILTER

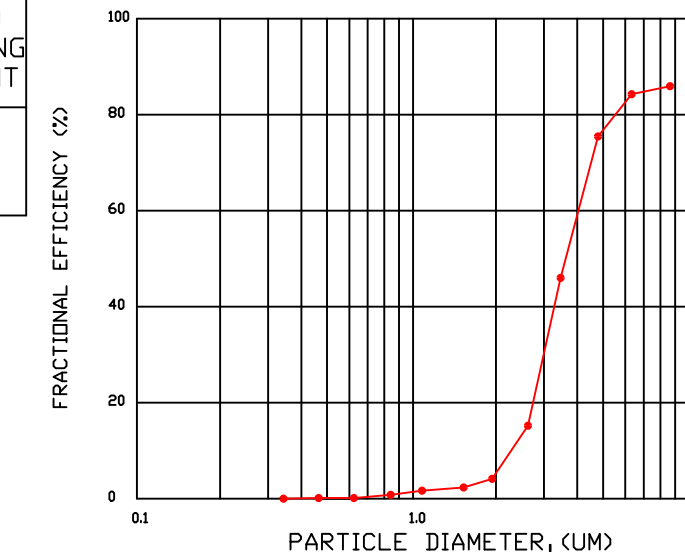
THE CAPTRATE GREASE-STOP SOLID FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

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

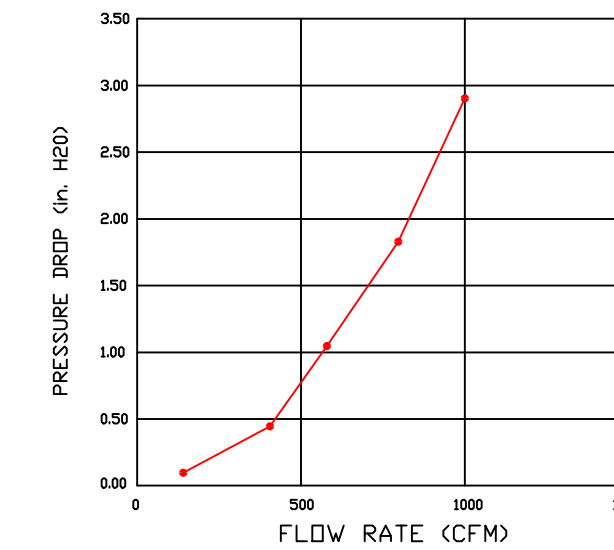
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

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.

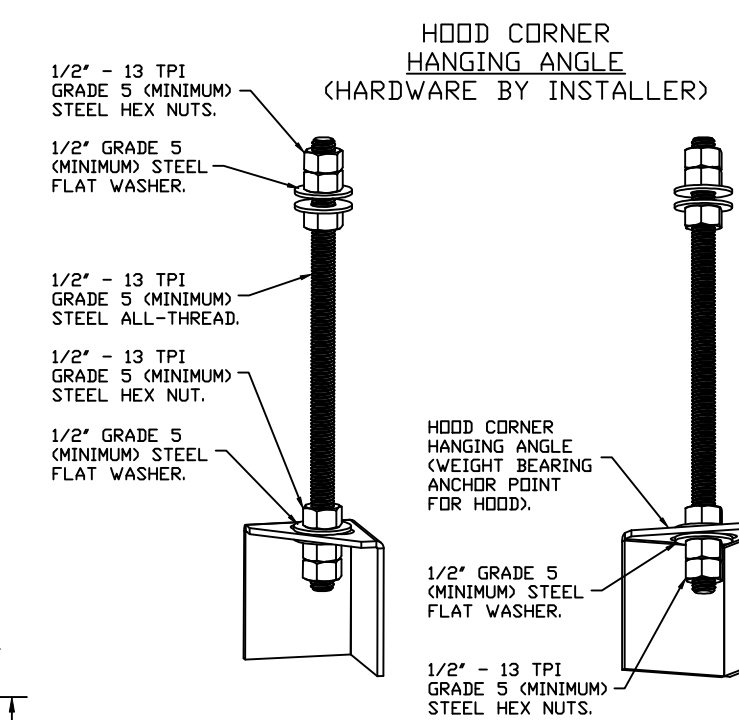
EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE

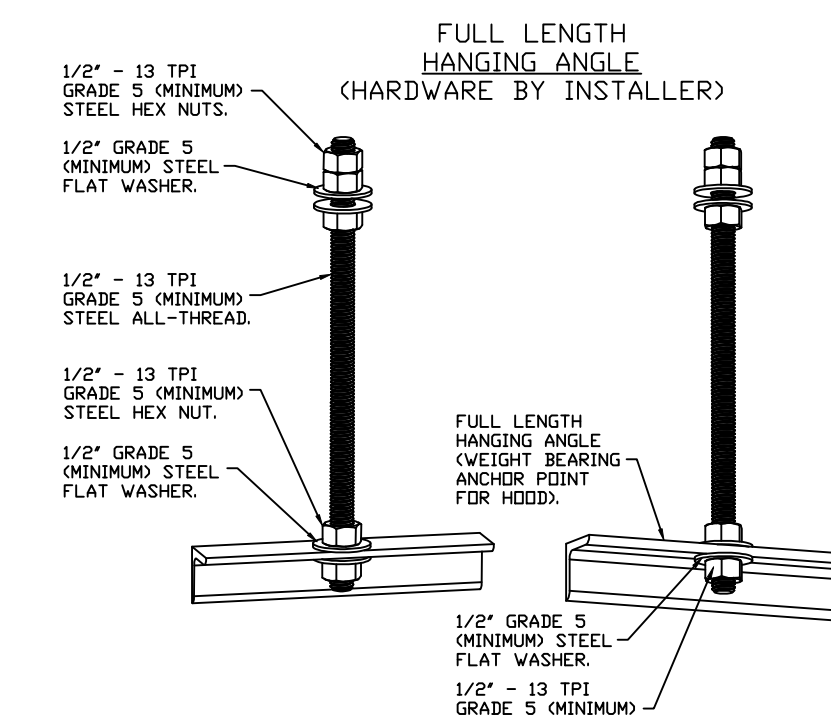


CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.



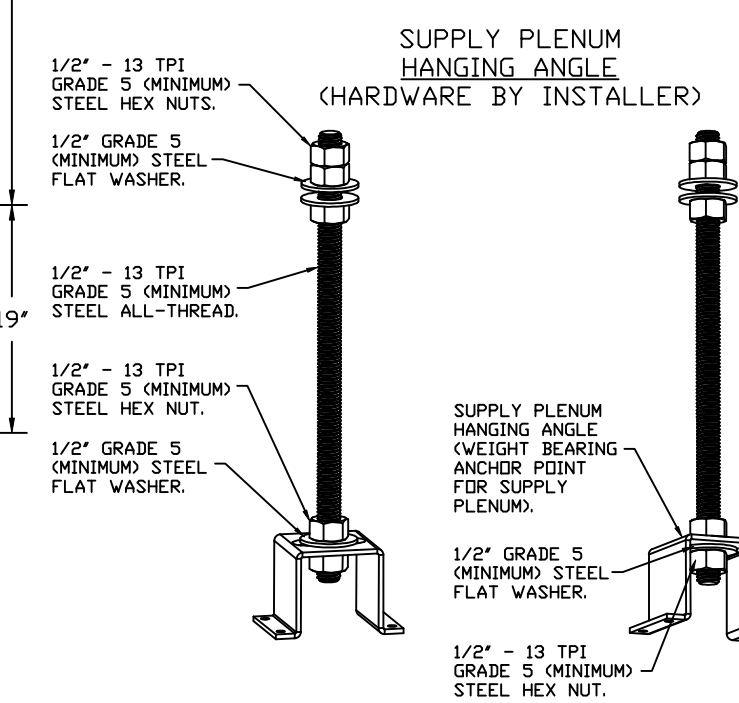
ASSEMBLY INSTRUCTIONS

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.



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 FULL LENGTH HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



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.

NO EXCEPTIONS TAKEN
 NOTE MARKINGS
 REVISE AND RESUBMIT
 REJECTED
 SEE ATTACHED COMMENTS

DUNHAM
SUBMITTAL REVIEW

BY Kevinp
DATE 5/9/2025

ENGINEERS REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. MARKINGS OR COMMENTS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND COORDINATION OF ALL DIMENSIONS AND QUANTITIES, VERIFICATION OF COMPATIBILITY BETWEEN THIS EQUIPMENT AND INTERRELATED EQUIPMENT AND SYSTEMS AND VERIFICATION OF DIMENSIONS ON APPROVED AS EQUAL EQUIPMENT TO ENSURE ALL EQUIPMENT WILL FIT INTO THE ALLOCATED SPACE.

REVISIONS

DESCRIPTION	DATE

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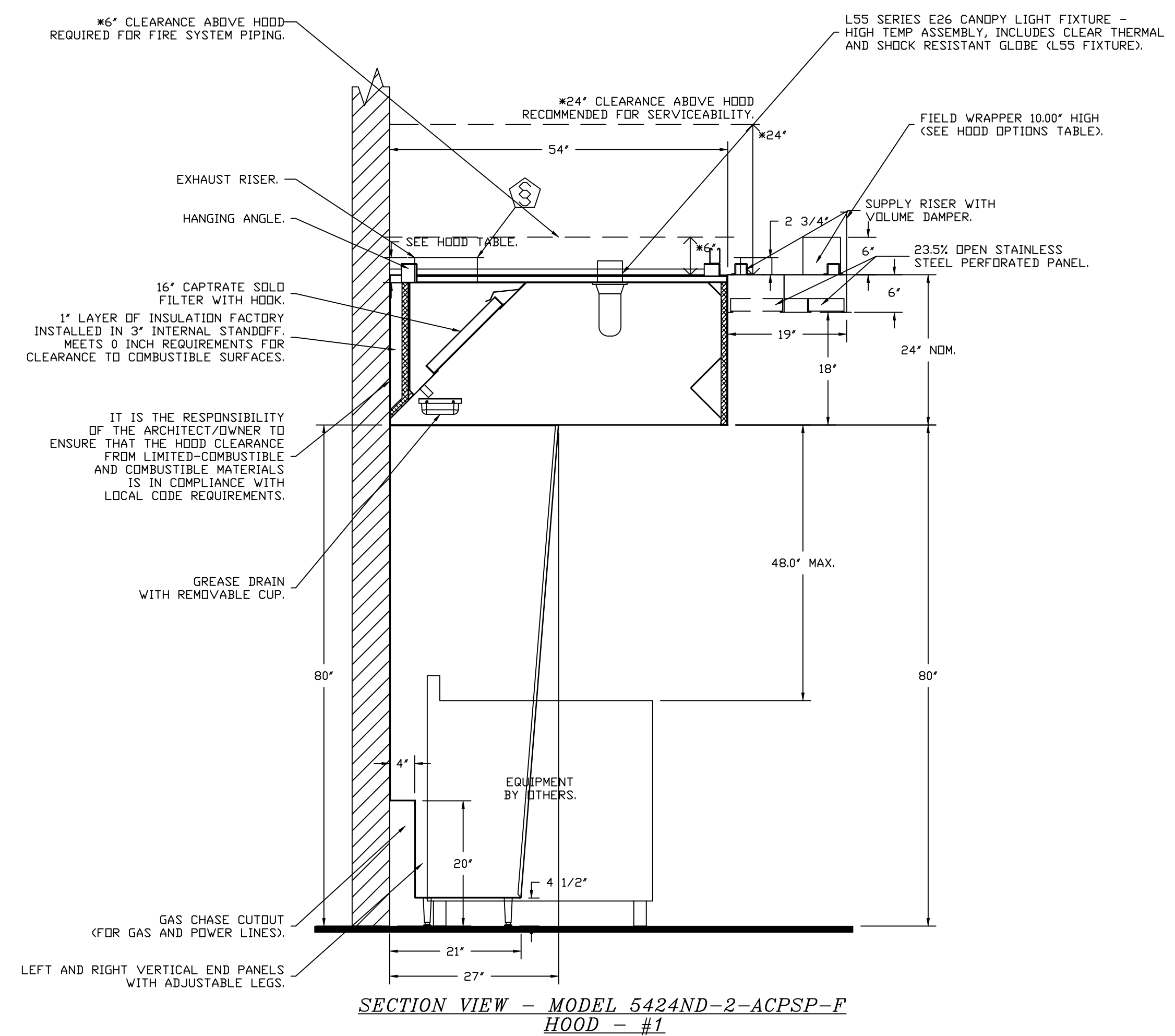
Highwoods Group
www.captiveaire.com

4641 Paragon Park Rd., Raleigh, NC 27616 PHONE: (919) 875 - 0420 FAX: 9198750577 EMAIL: reg40@captiveaire.com

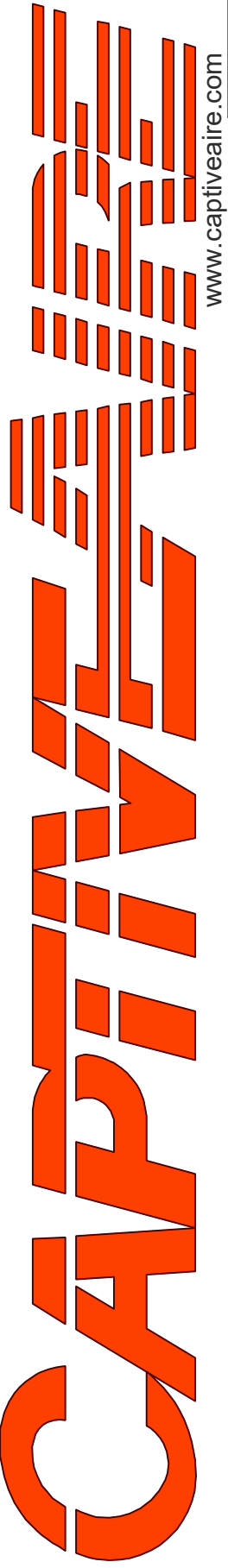
CHIPOTLE ALEXANDRIA MN - BROADWAY #5879
Alexandria, MN, 56308

DATE: 5/7/2025
DWG.#: 7515473
DRAWN BY: JMB-40
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
1



REVISIONS	
DESCRIPTION	DATE



Highwoods Group

4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 875 - 0420 FAX: 9198750577 EMAIL: reg40@captiveware.com

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MASTER DRAWING

SHEET NO.
 2

FIRE SYSTEM INFORMATION - JOB#7515473

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	32	FIRE CABINET LEFT	LEFT, HOOD 1

GAS VALVE(S)

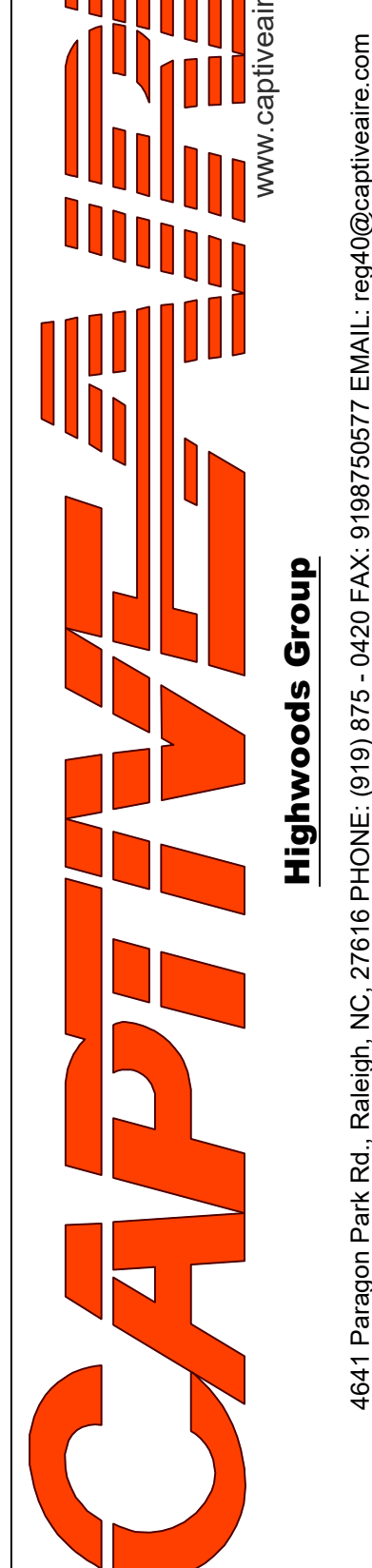
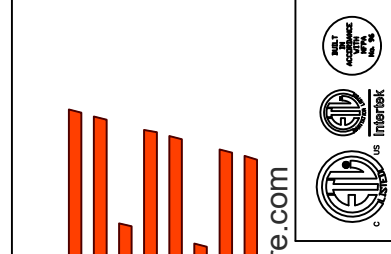
FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	1.500	CAPTIVEAIR SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-DT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. ND, CLOSE ON TEMP RISE AT 360°F. (A0034310).	1	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	1	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	2	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.	7	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 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	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 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	8	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	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

REVISIONS

DESCRIPTION	DATE:



CHIPOTLE ALEXANDRIA MN - BROADWAY #5879
Alexandria, MN, 56308

DATE: 5/7/2025

DWG.#:
7515473

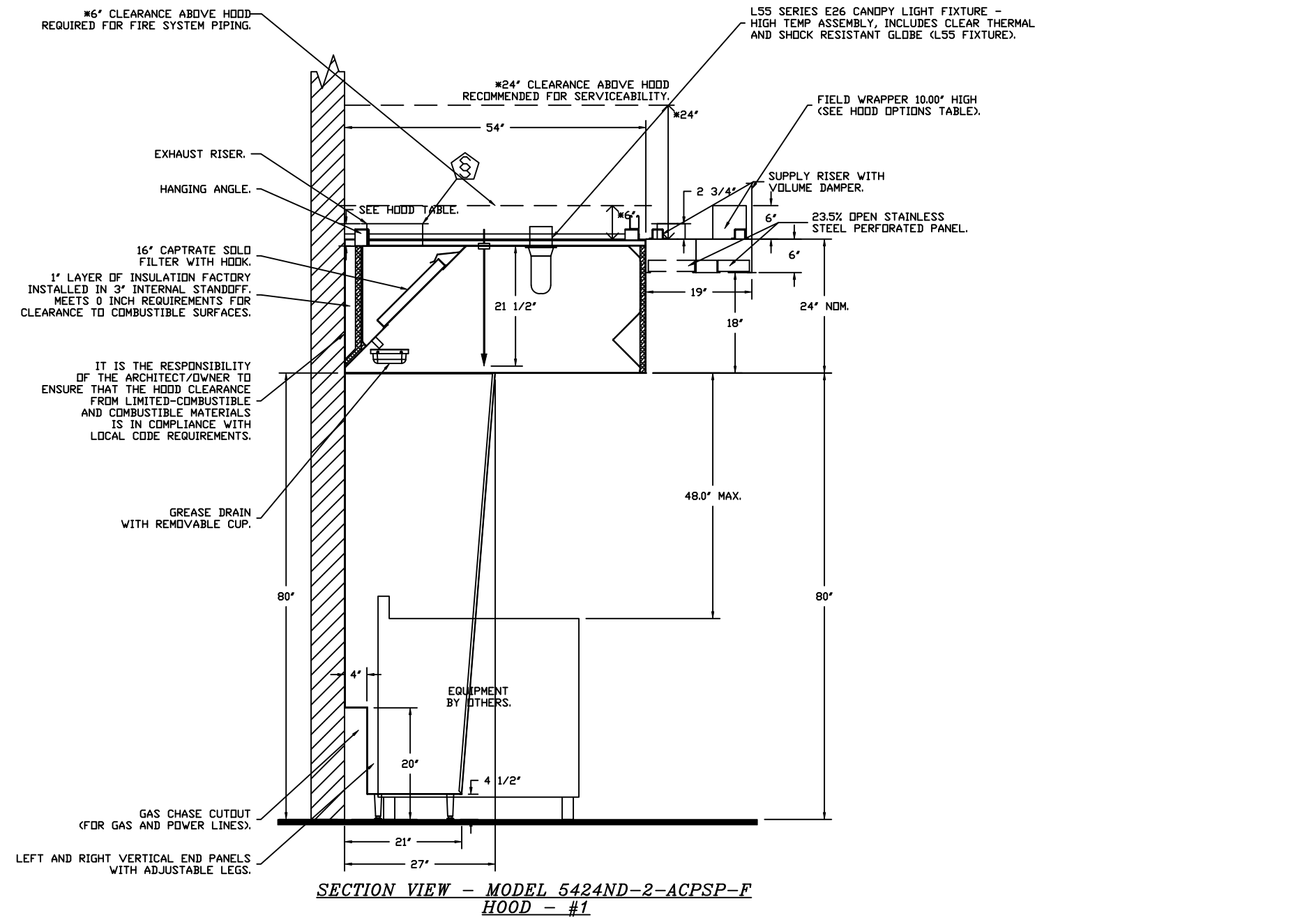
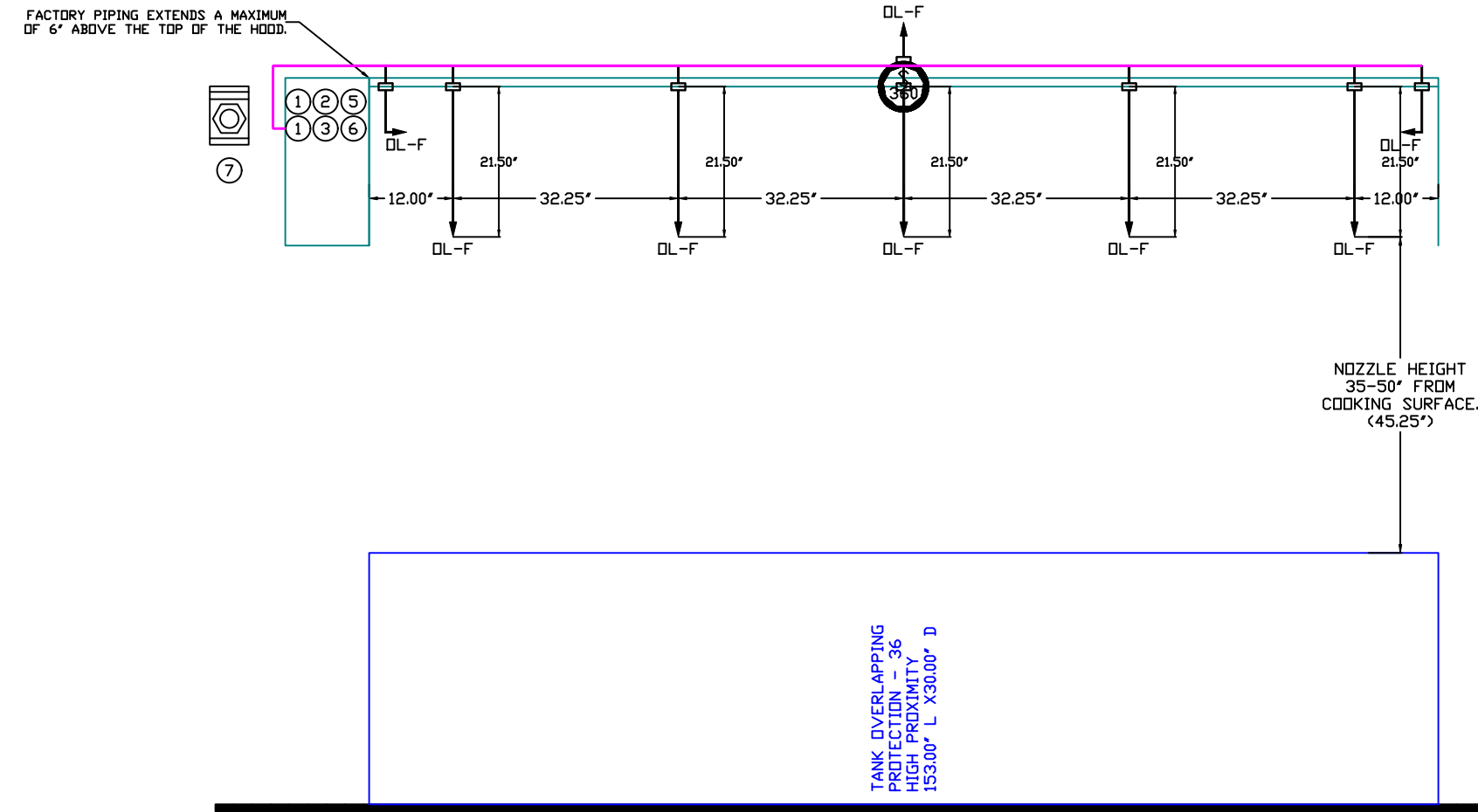
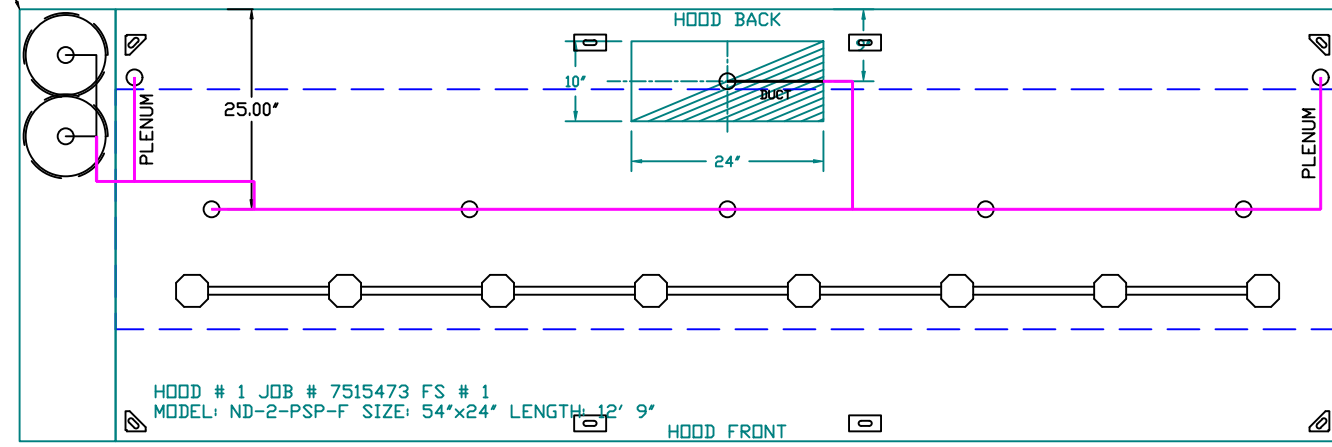
DRAWN BY: JMB-40

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

MASTER DRAWING

SHEET NO.
3

- 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.

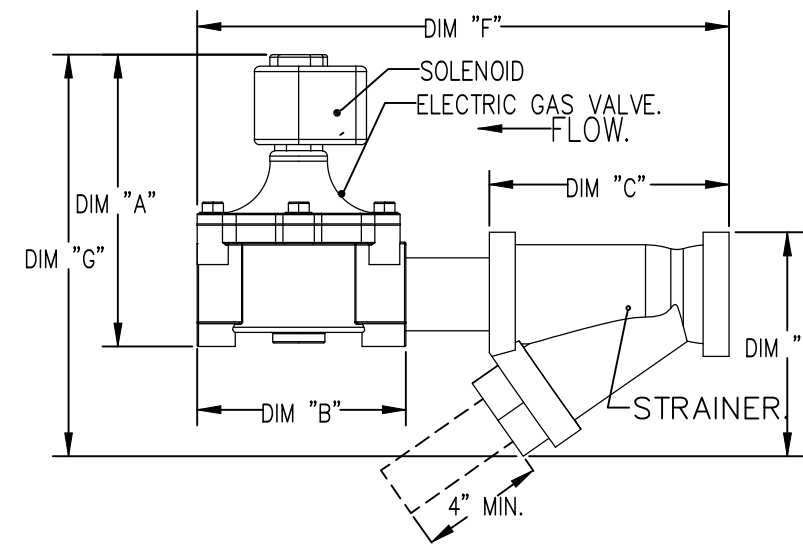


GAS VALVES AND STRAINERS															
GAS VALVE SIZING				GAS VALVE DIMENSIONS				INSTALLATION		PART NUMBERS					
TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	PIPE ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
ELECTRICAL	1-1/2"	24 VDC	0 PSIG (0 IN.W.C.)	5 PSIG (1.38 IN.W.C.)	2,400,000 BTU/HR	1,561,219 BTU/HR	7-5/8"	6-3/8"	5-3/4"	6-3/8"	14-1/8"	12-5/16"	8214276-24VDC	4417967	(SEE SPEC)-1/2-24

ELECTRIC GAS VALVES ONLY (SOLIDOD ORIENTATION)
3/4"-2" 120VAC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION AT OR ABOVE HORIZONTAL. 2 1/2"-3" 120VAC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.
24VDC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS. A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER. CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING, SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP:
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP^{0.85}
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY:
NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)^{0.85}



NOTES

- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- 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 PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

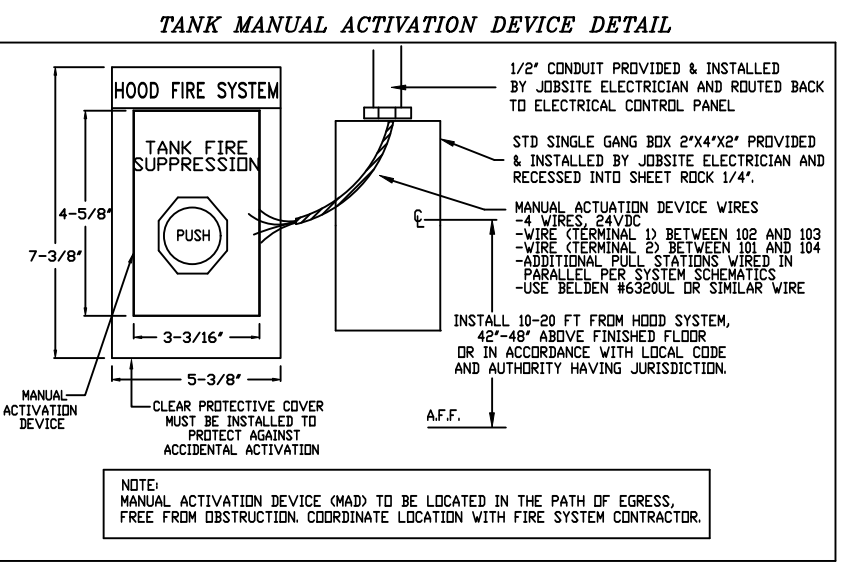
- DL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS
- JOB #: 7515473.
- JOB NAME: CHIPOTLE ALEXANDRIA MN - BROADWAY #5879.
- SYSTEM SIZE: TANK-SP-2 DESIGN FP: 32. MAXIMUM FP: 40.
- HOOD # 1 12' 9.00' LONG X 54' WIDE X 24" HIGH.
- RISER # 1 SIZE: 10" X 24".
- HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT 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.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND - FIRE CABINET TANK SYSTEM

- 4 GALLON TANK.
- PRIMARY ACTUATOR RELEASE.
- SECONDARY ACTUATOR RELEASE.
- PRESSURE SUPERVISION SWITCH.
- PRIMARY HOSE ASSEMBLY.
- SECONDARY HOSE ASSEMBLY.
- REMOTE MANUAL ACTUATION DEVICE.



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 PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST). ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES. ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2" PERMIT, AND SYSTEM TEST.

EXCLUDES: UNION 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-PIPPING DUE TO EQUIPMENT LAYOUT CHANGES.

REVISIONS

DESCRIPTION	DATE:

CAPTIVE

Highwoods Group

www.captiveaire.com

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4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 975 - 0420 FAX: 9198750577 EMAIL: reg40@captiveaire.com

CHIPOTLE ALEXANDRIA MN - BROADWAY #5879

Alexandria, MN, 56308

DATE: 5/7/2025

DWG.#: 7515473

DRAWN BY: JMB-40

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

MASTER DRAWING

SHEET NO. 4

EXHAUST FAN INFORMATION – JOB#7515473

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	DUI80HFA	CAPTIVEAIRE	2550	1.450	1241	TEFC,PREMIUM	2.000	1.2780	3	208	7.3	589 FPM	200	17.3
2	EF-2	1	DR12HFA	CAPTIVEAIRE	150	0.600	1316	TEAD-ECM	0.250	0.0960	1	115	2.9		50	6.4

MUA FAN INFORMATION – JOB#7515473

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCF	WEIGHT (LBS)	SDNES
3	MAU-1	1	A1-D.250-15D	15MF-1-MDD	A1-D.250	1000	1300	0.500	1546	DDP,PREMIUM	1.000	0.5680	3	208	3.1	3.9A	15A	513	12.1

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	150867	138798	100°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN #1 DUI80HFA – EXHAUST FAN (EF-1)

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1	1	GREASE BOX
		1	REMOVE HINGE KIT LABEL FROM THE FAN BASE
2	EF-2	1	UPBLAST FAN WHEEL ACCESS PORT
		1	2 YEAR PARTS WARRANTY
3	MAU-1	1	1 12-BDD DAMPER
		1	ECM WIRING PACKAGE – MANUAL DR 0-10VDC REFERENCE SPEED CONTROL –RTC- (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
		1	SIZE 1 TEMPERED COMMERCIAL DOWN DISCHARGE FOR DIRECT DRIVE AHUS
		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING – MEETS AMCA CLASS 1A RATING
		1	CONTROL PANEL ENCLOSURE HEATER 100W – RECOMMENDED FOR WINTER DESIGN TEMPERATURES LESS THAN 0°F
		1	FREEZESTAT
3	MAU-1	1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) – THREE PHASE ONLY
		1	2 YEAR PARTS WARRANTY
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

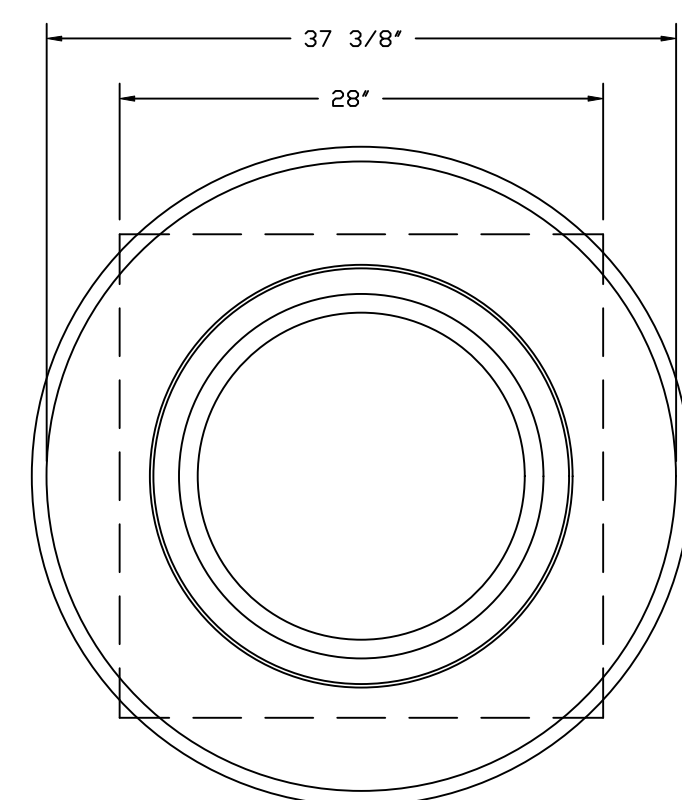
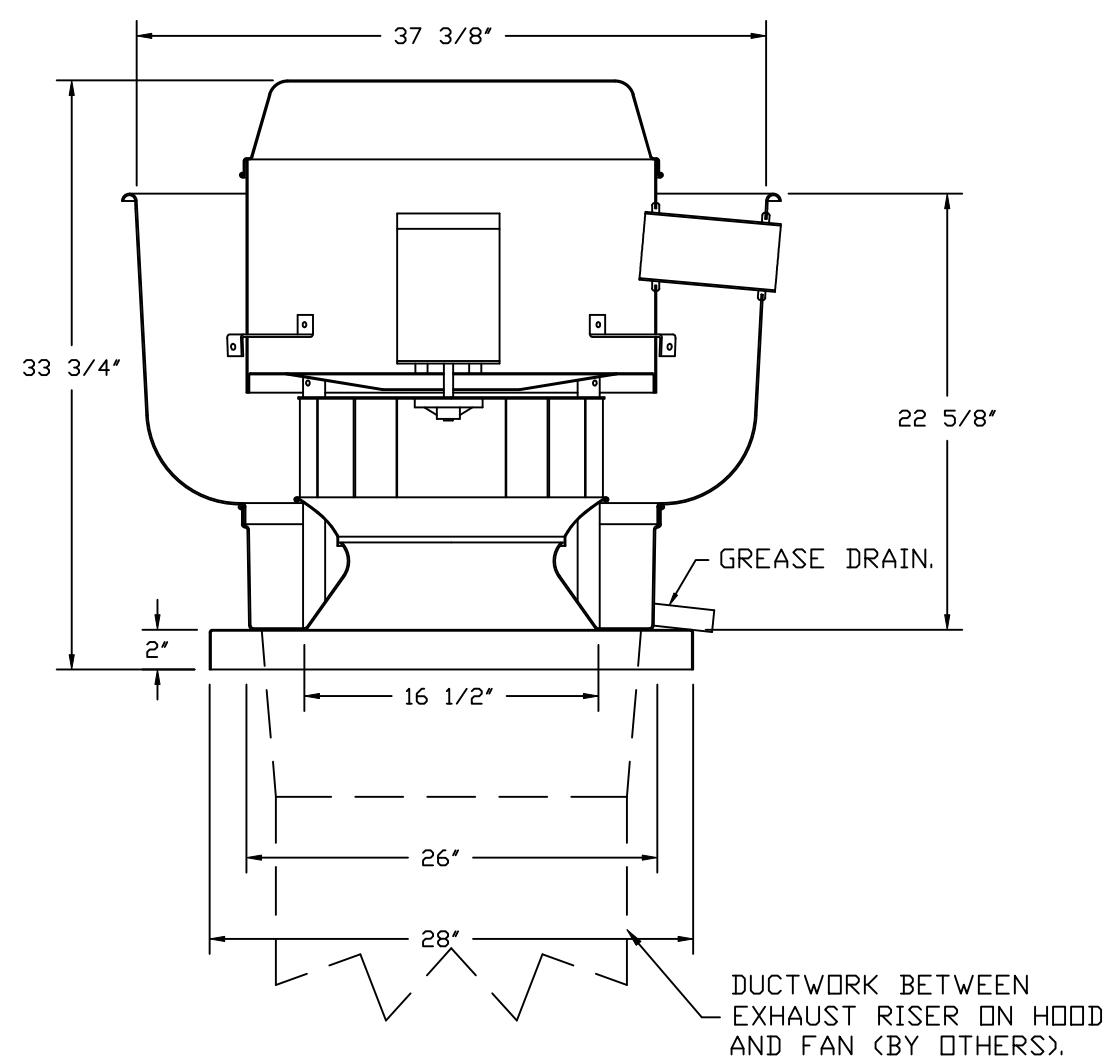
FAN ACCESSORIES

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	39 LBS	CURB	26.500"W X 26.500"L X 20.000"H VENTED.
2	# 2	EF-2	31 LBS	CURB	17.500"W X 17.500"L X 26.000"H.
3	# 3	MAU-1	65 LBS	CURB	21.000"W X 71.000"L X 20.000"H INSULATED.

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #3	HMI #1 – UNIT	IN UNIT	NOT AVERAGED	55



TOP VIEW

FEATURES:

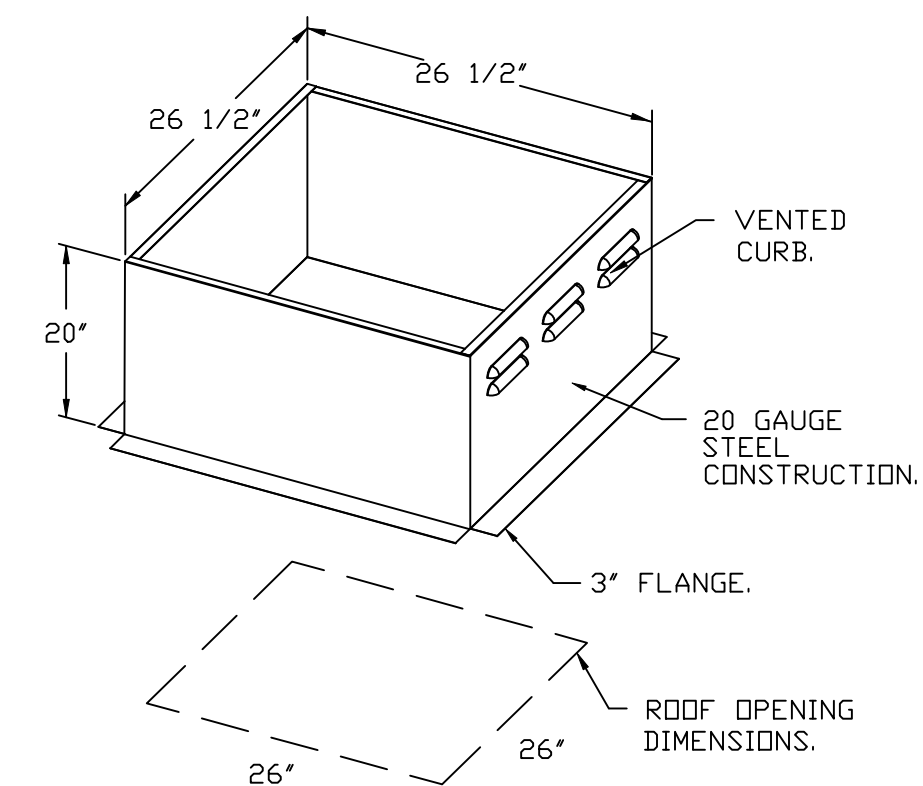
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT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



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CHIPOTLE ALEXANDRIA MN - BROADWAY #5879

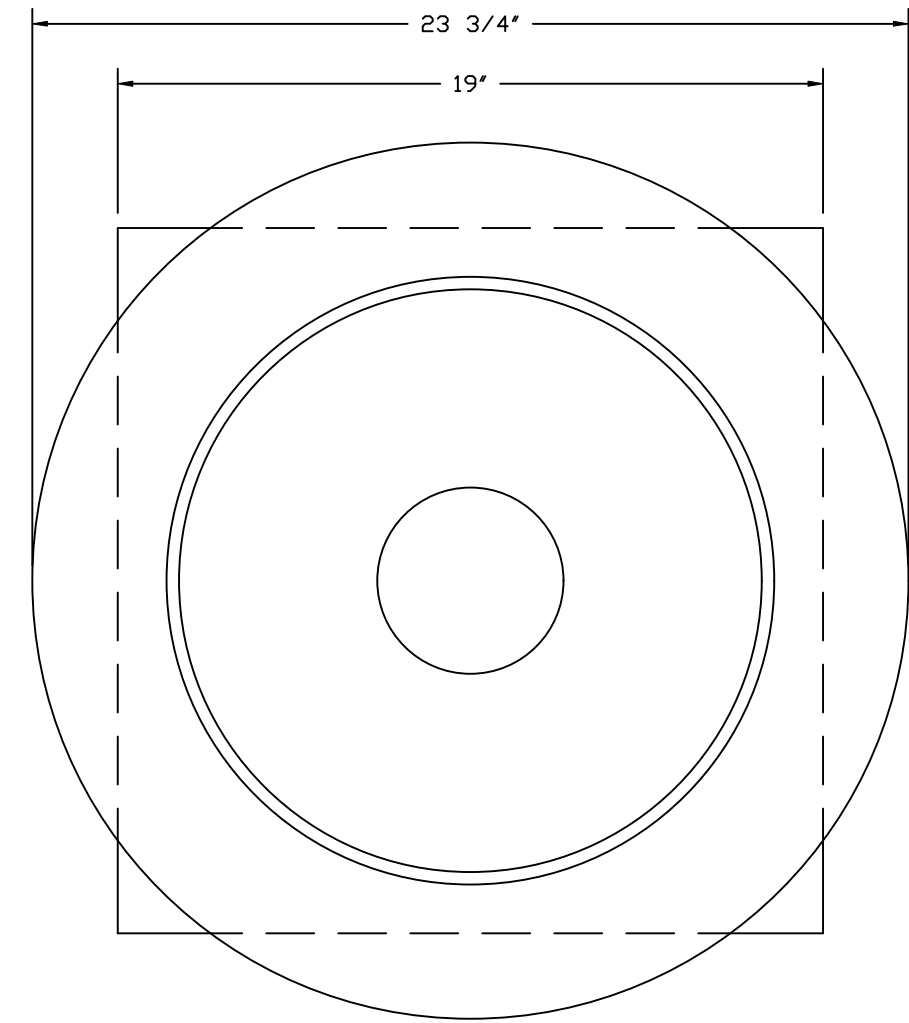
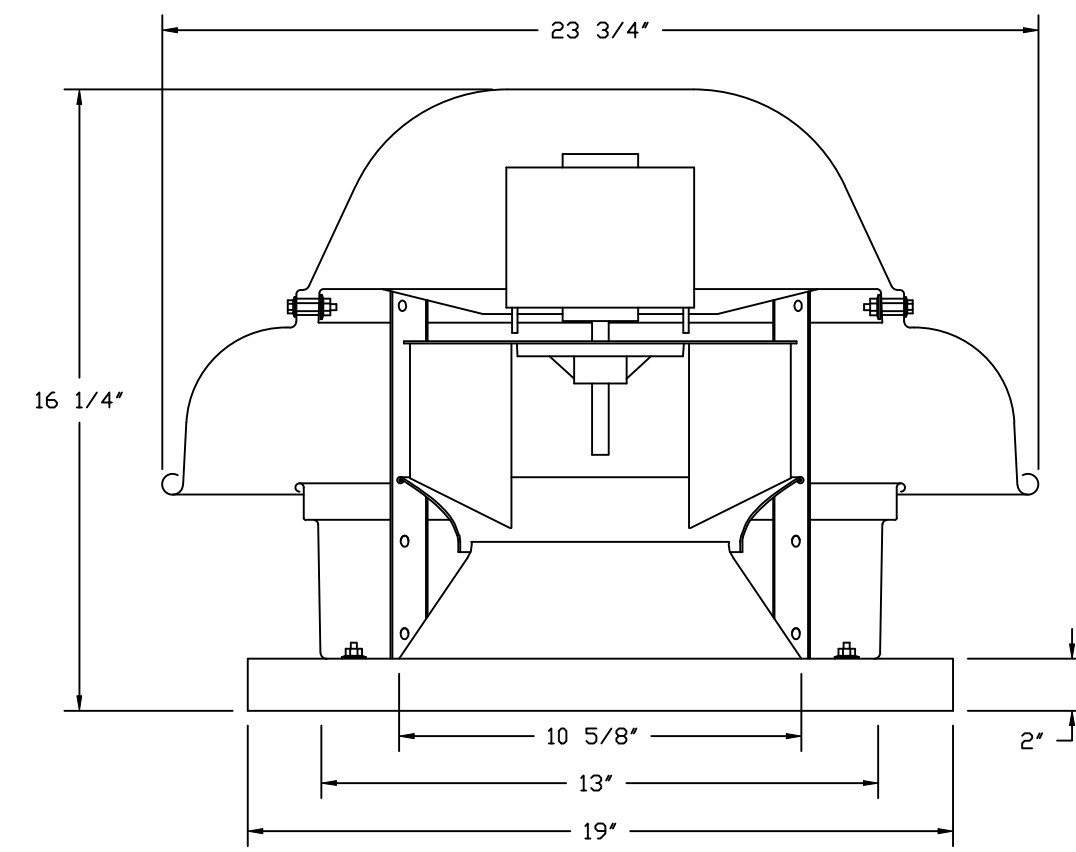
Alexandria, MN, 56308

DATE: 5/7/2025
DWG.#: 7515473
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SCALE: 3/4" = 1'-0"
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SHEET NO.

5

FAN #2_DR12HFA - EXHAUST FAN (EF-2)



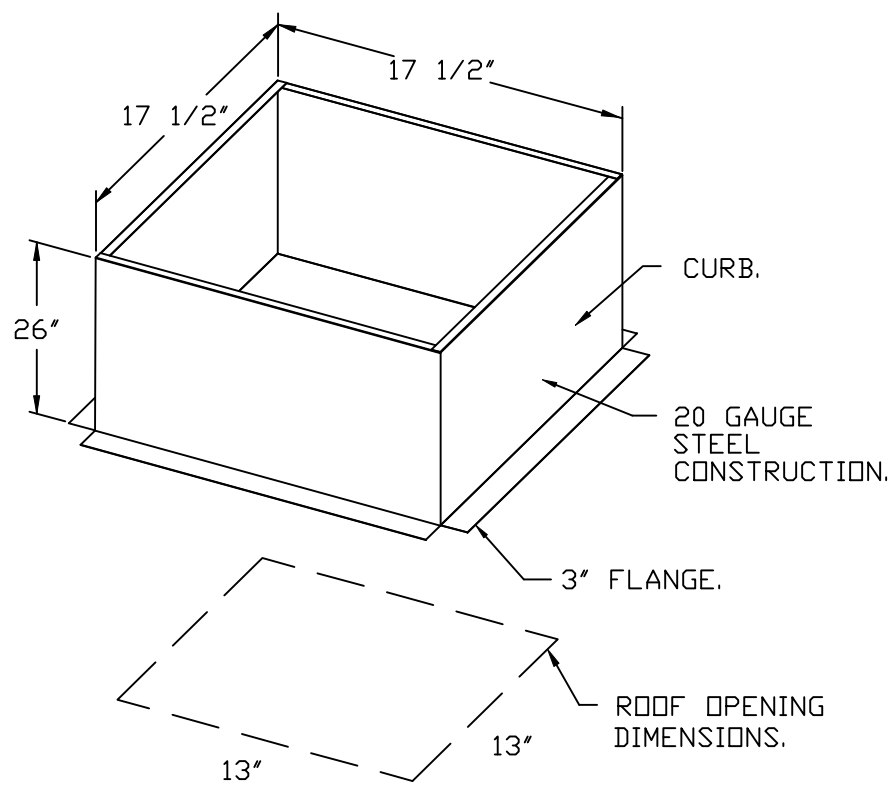
TOP VIEW

FEATURES:

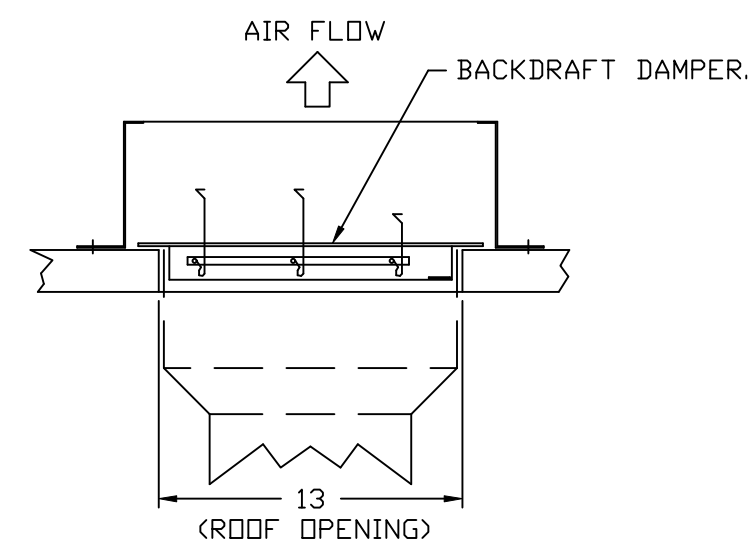
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- SAFETY DISCONNECT.
- STANDARD BIRD SCREEN.
- SPEED CONTROL.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

OPTIONS:

- 1 12-BDD DAMPER.
- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL.
- RTC - (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.

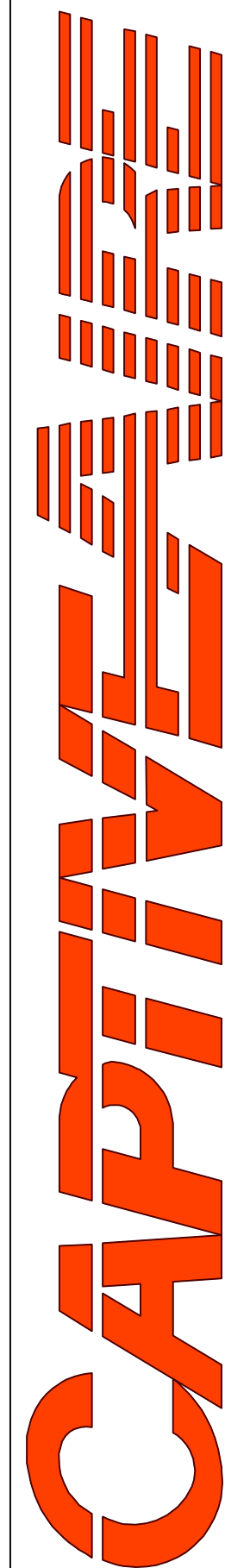
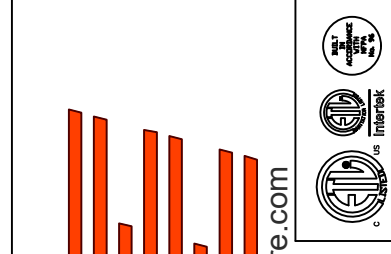


BACKDRAFT DAMPER INSTALLATION



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Alexandria, MN, 56308

DATE: 5/7/2025

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7515473

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

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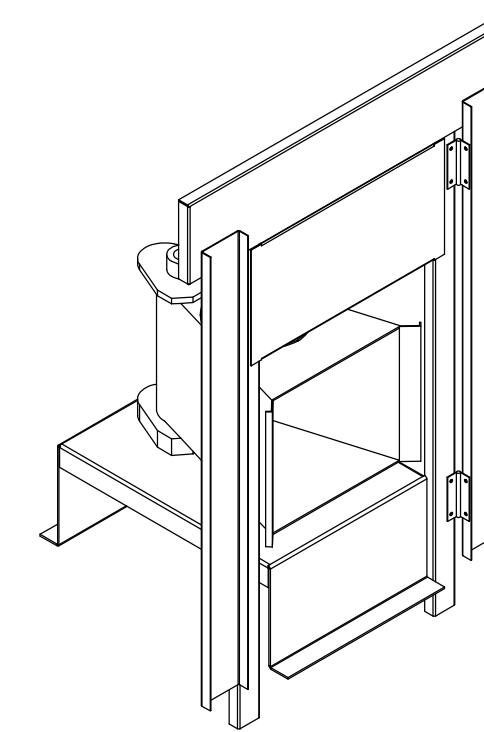
SHEET NO.

- FAN #3 AI-D250-1SD - 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. DOWN DISCHARGE CONSTRUCTION FOR SIZE 1 DIRECT DRIVE AHUS.
 5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
 6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
 7. SHIP LOOSE GAS STRAINER TO BE INSTALLED UPSTREAM OF UNIT CONNECTION, 3/4" CONNECTION.
 8. MOTORIZED BACK DRAFT DAMPER 16" X 16" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LDW LEAKAGE, TFB20S ACTUATOR INCLUDED.
 9. CONTROL PANEL ENCLOSURE HEATER, INCLUDES 100W, 120V HEATER. RECOMMENDED FOR WINTER DESIGN TEMPERATURE LESS THAN 0°F. OPERATES ON PCB CONTROLS IN IBT SINGLE MODULES OR RTU.
 10. FREEZE STAT.
 11. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
 12. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).
 13. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.
 14. 2 YEAR PARTS WARRANTY.

NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 14" x 14".

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = -30°F. TEMP. RISE = 100°F.
 BTUs CALCULATED OFF ACTUAL AIR DENSITY.
 OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 140195.
 INPUT BTUs AT ALTITUDE OF 0.0 FT. = 152386.
 OUTPUT BTUs AT ALTITUDE OF 277 FT. = 138798.
 INPUT BTUs AT ALTITUDE OF 277 FT. = 150867.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:

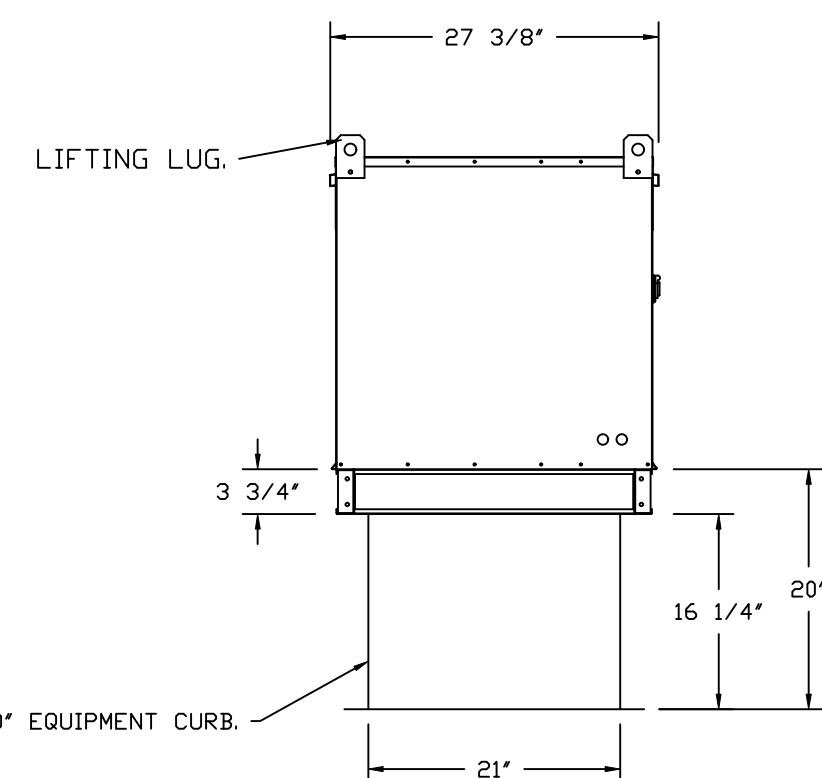
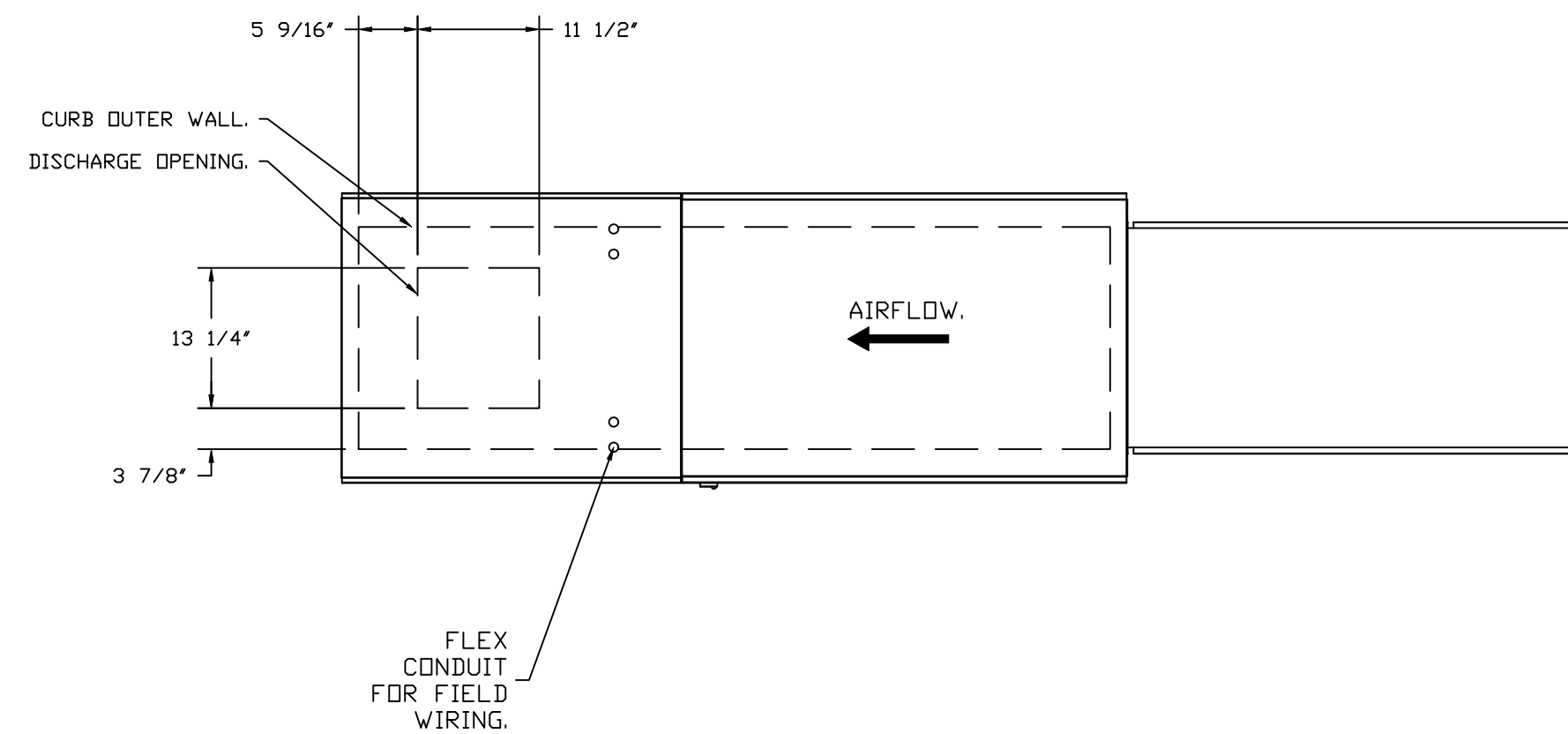
DESCRIPTION:
 DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO. US6629523B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 0.5PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

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

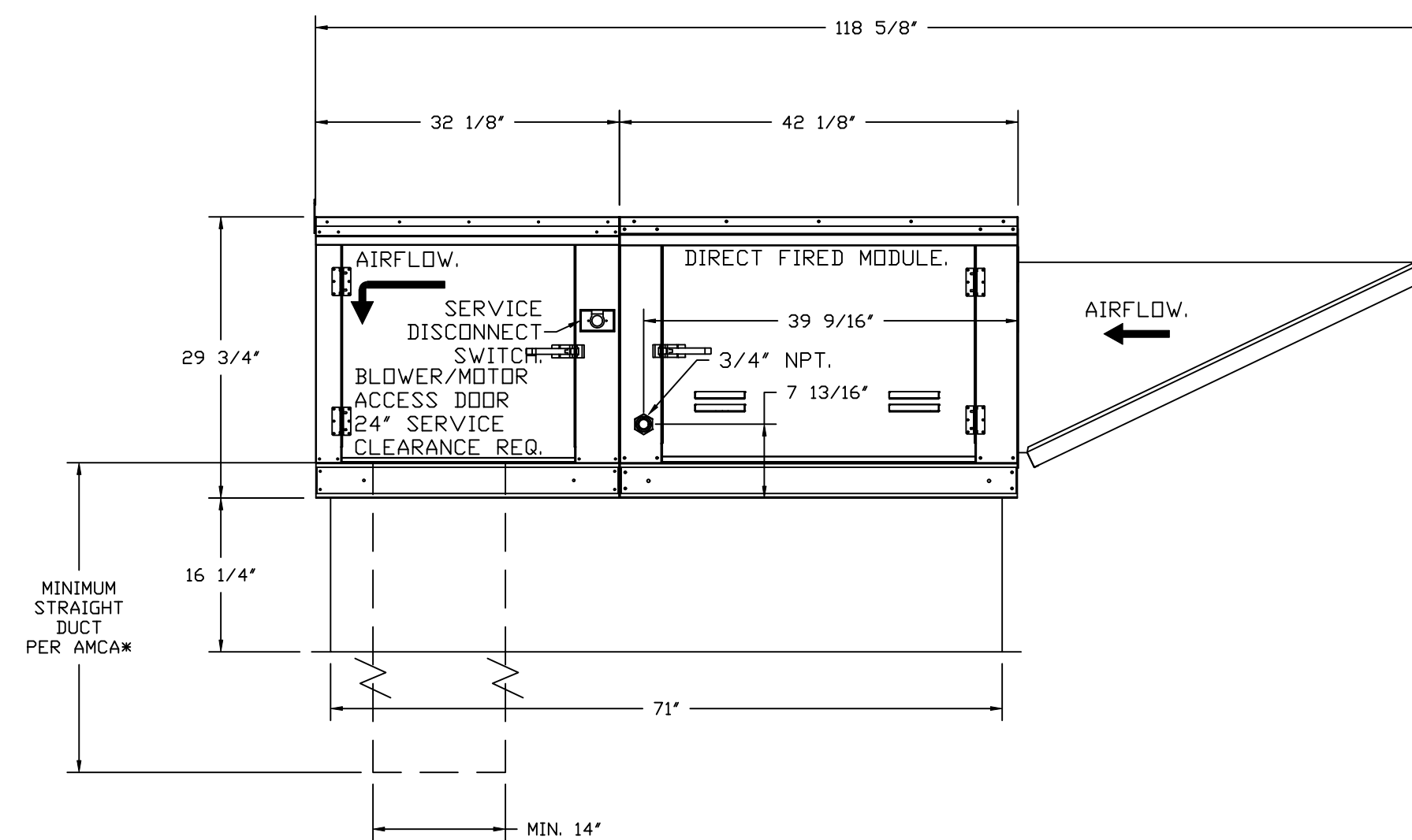
CERTIFICATIONS:
 ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

GENERAL CONSTRUCTION:

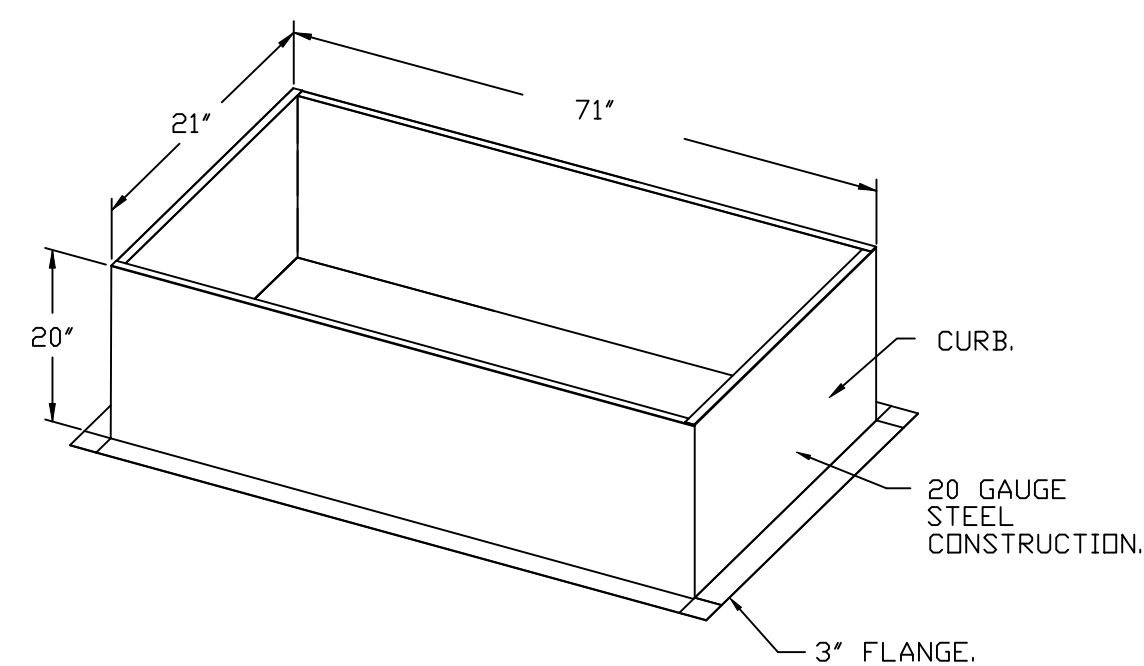
- PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
- PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
- PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
- DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
- SPRING HINGES SHALL BE MADE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



ROOF OPENING 2" SMALLER THAN CURB DIMENSION.

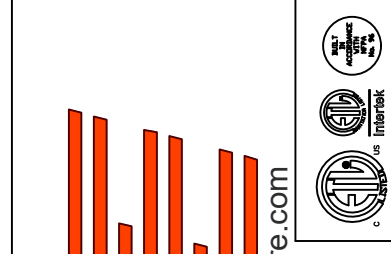


OPTIONS:
 - FULL BOTTOM CORNERS.

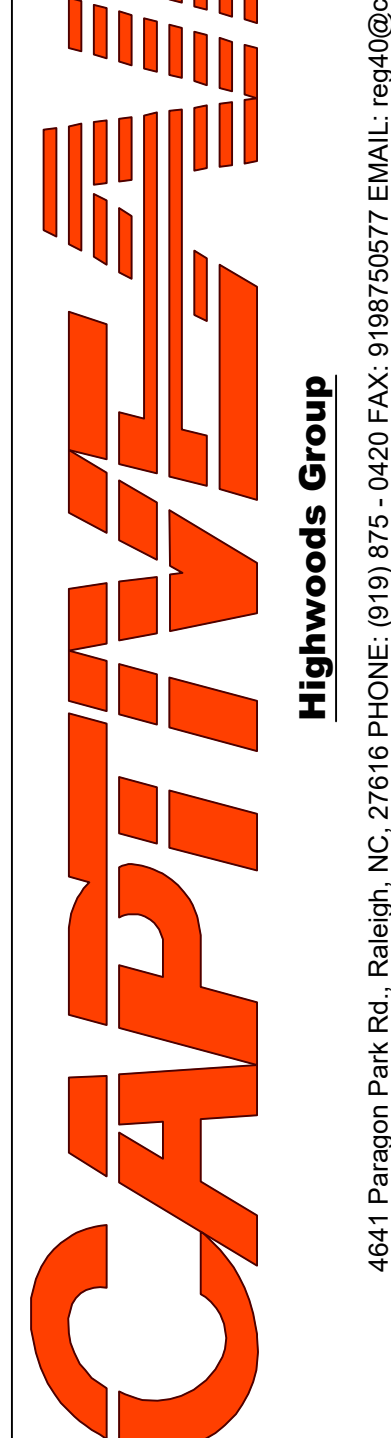


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 Alexandria, MN, 56308

DATE: 5/7/2025

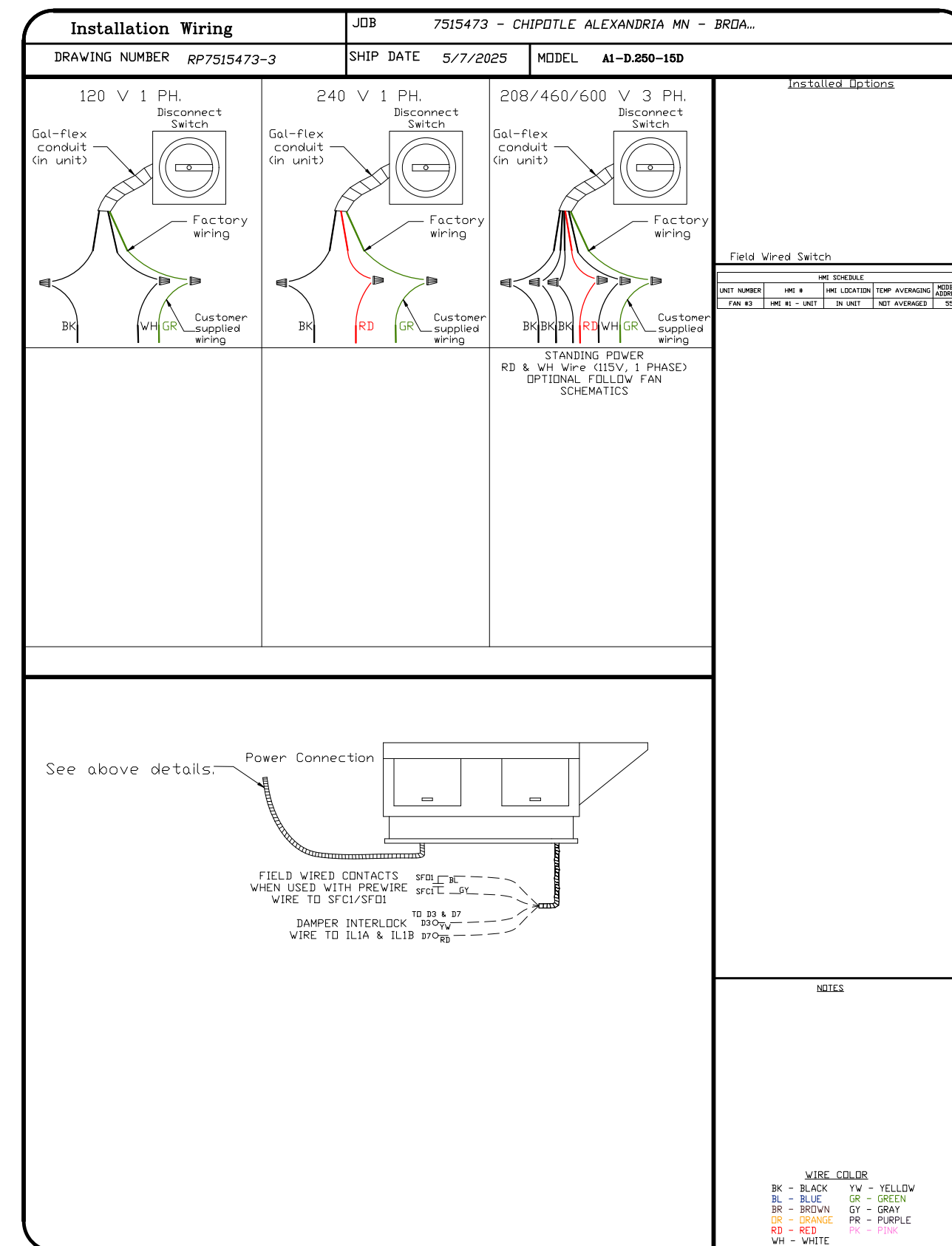
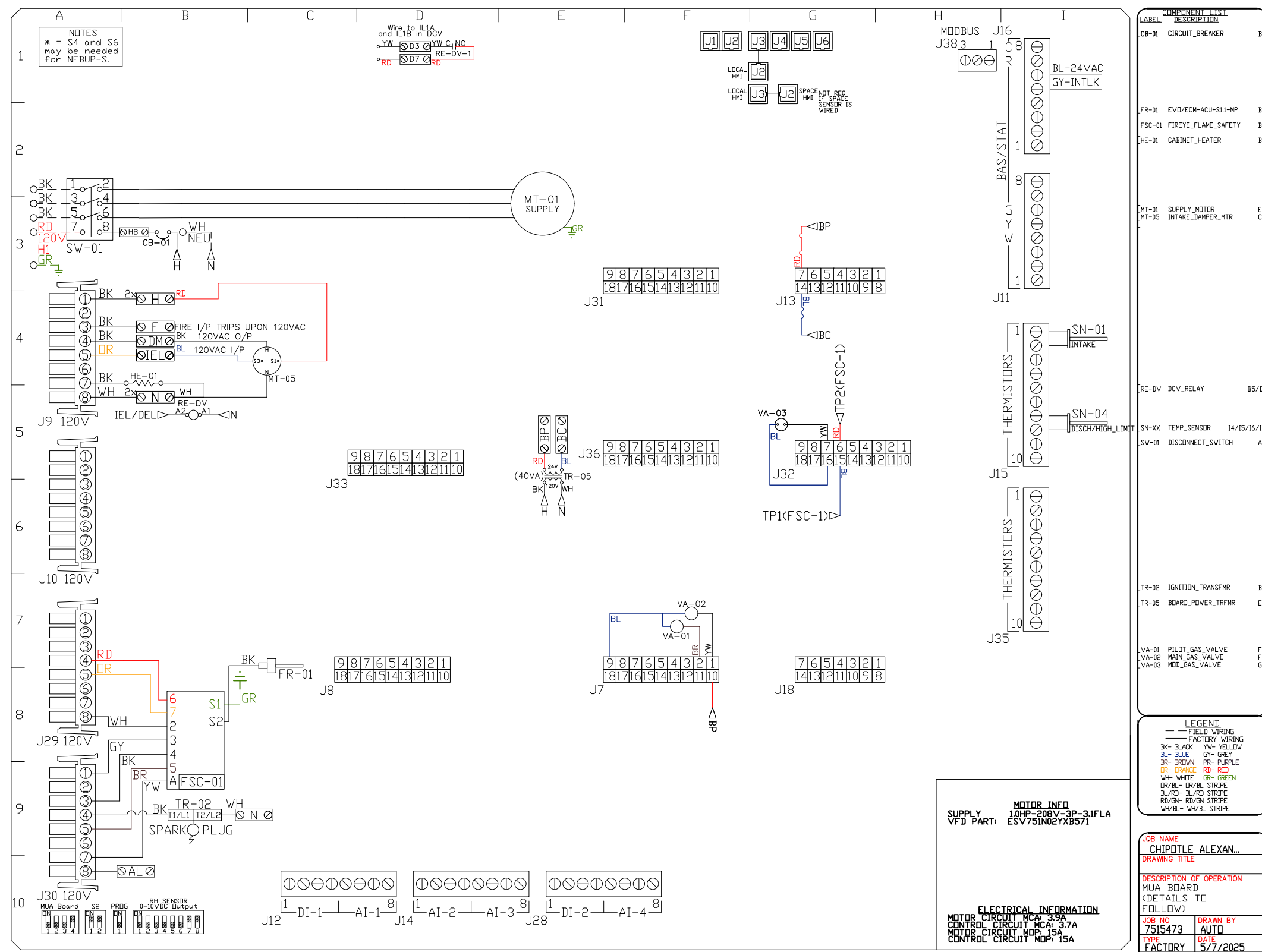
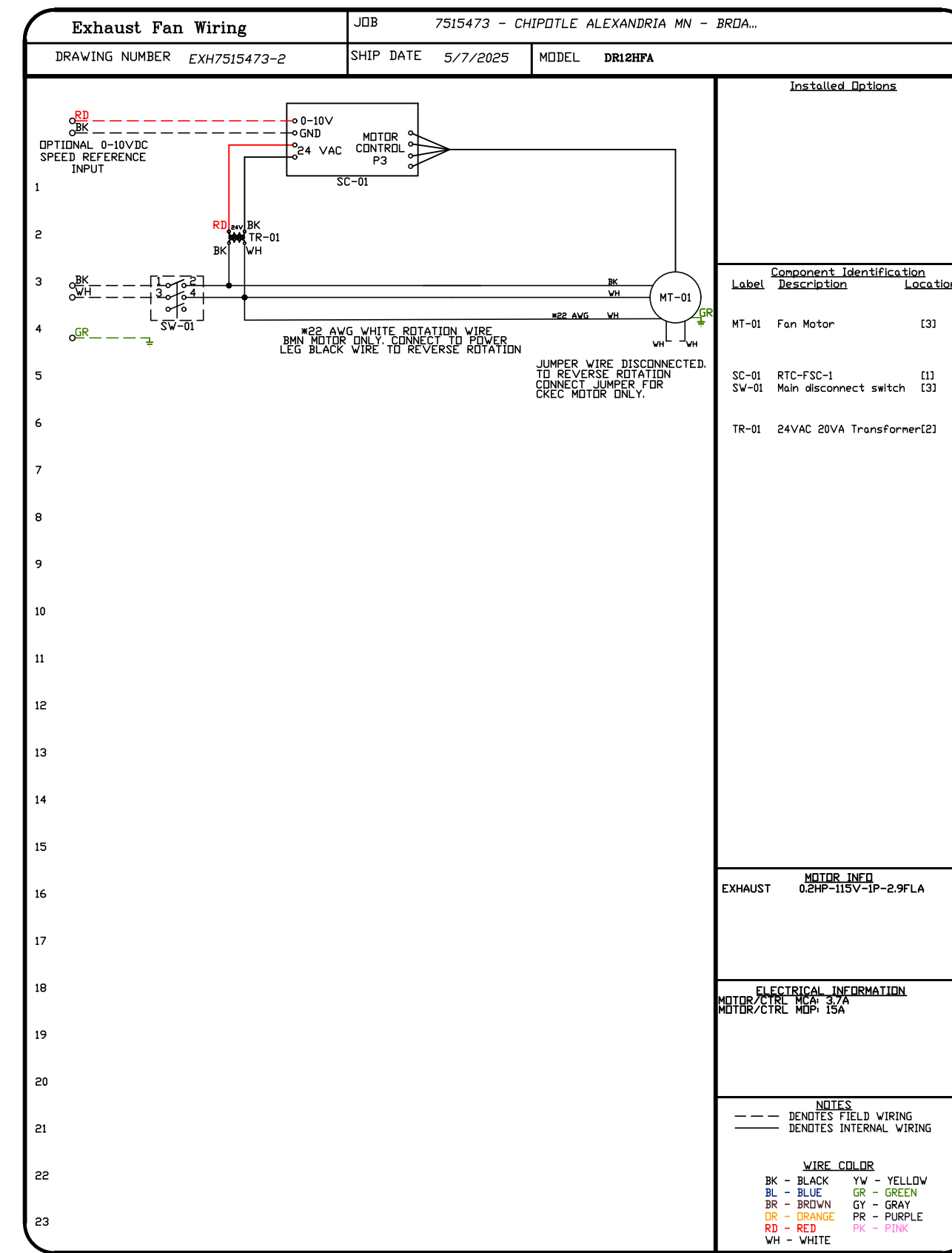
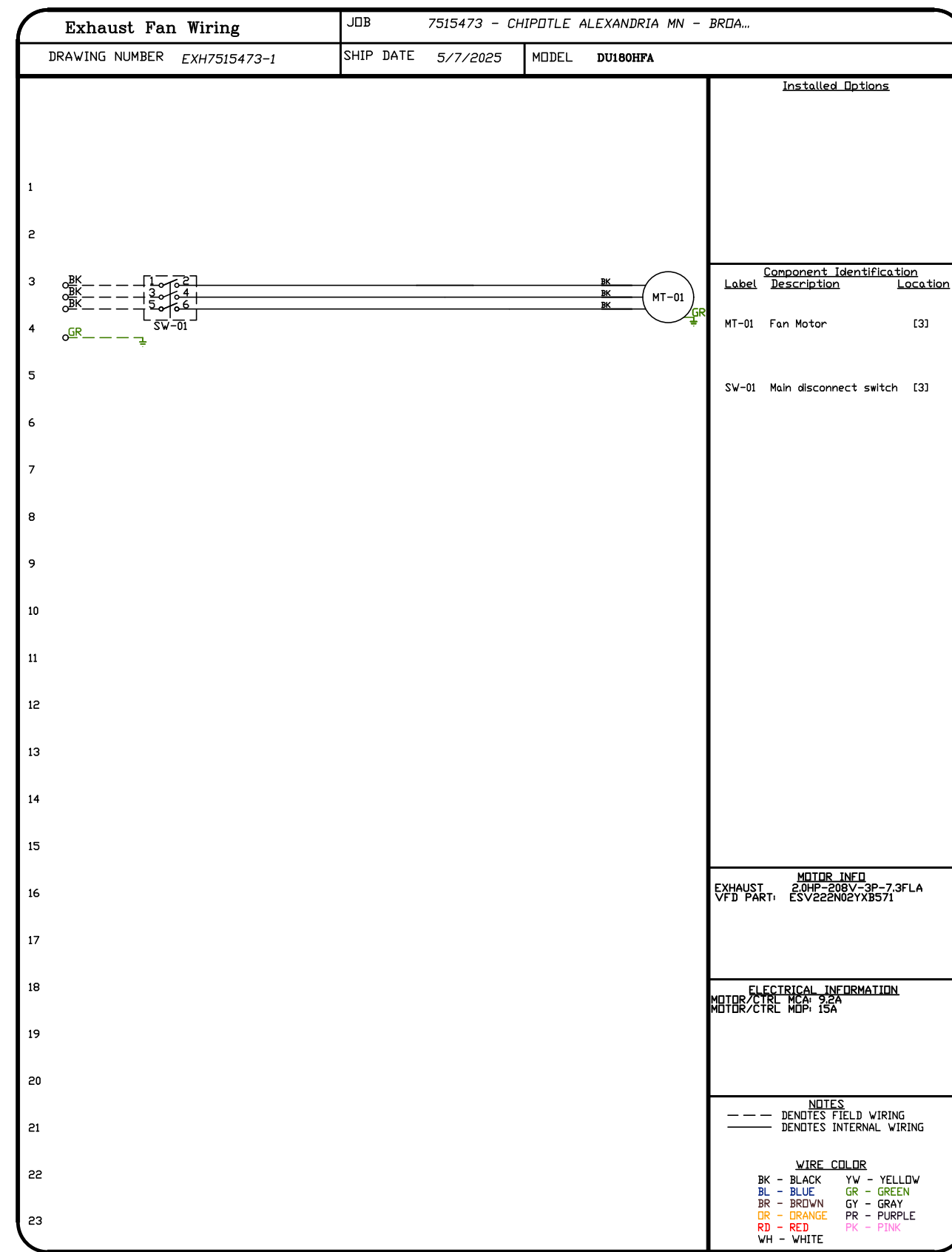
DWG.#:
 7515473

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 3/4" = 1'-0"

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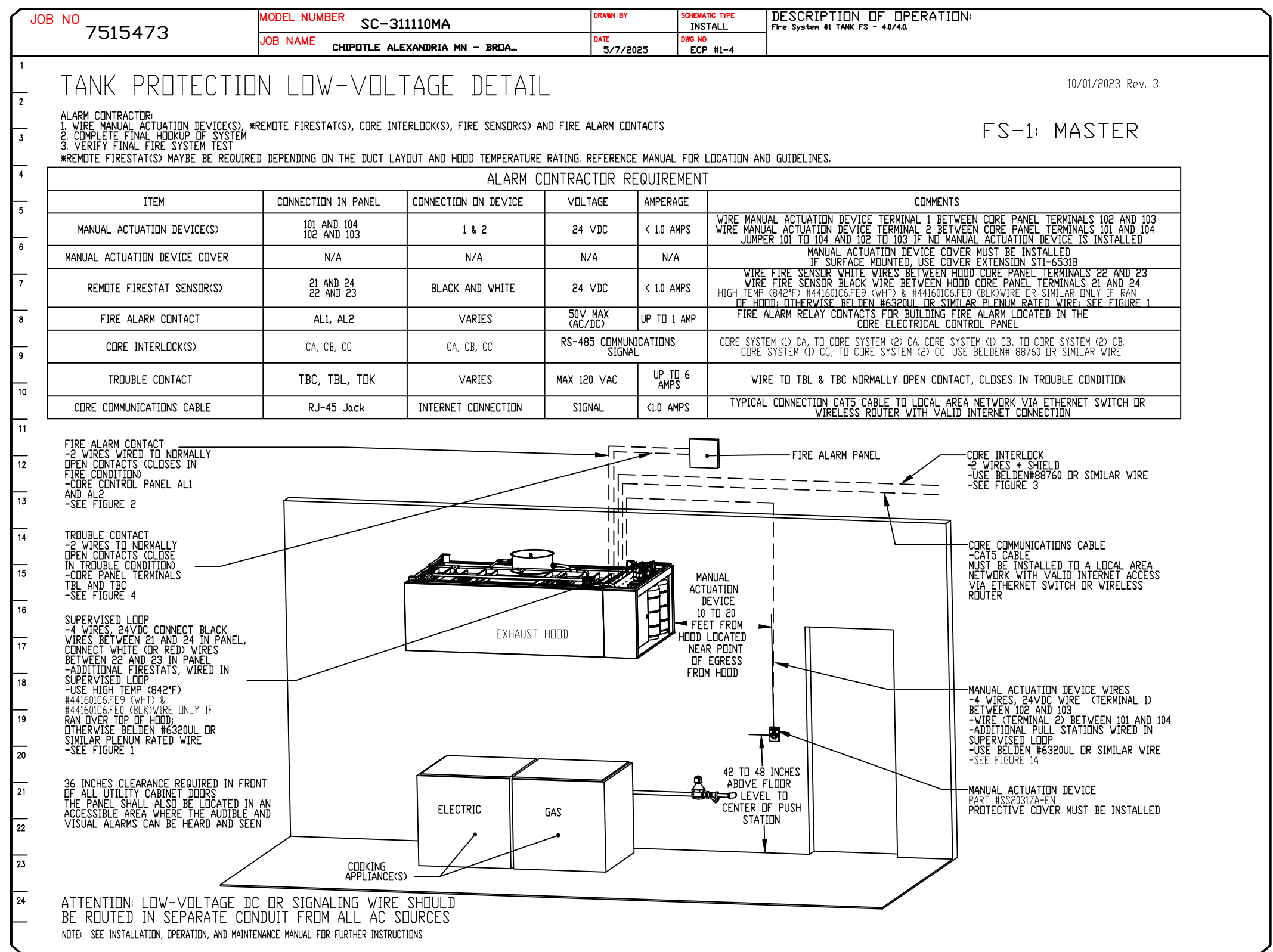
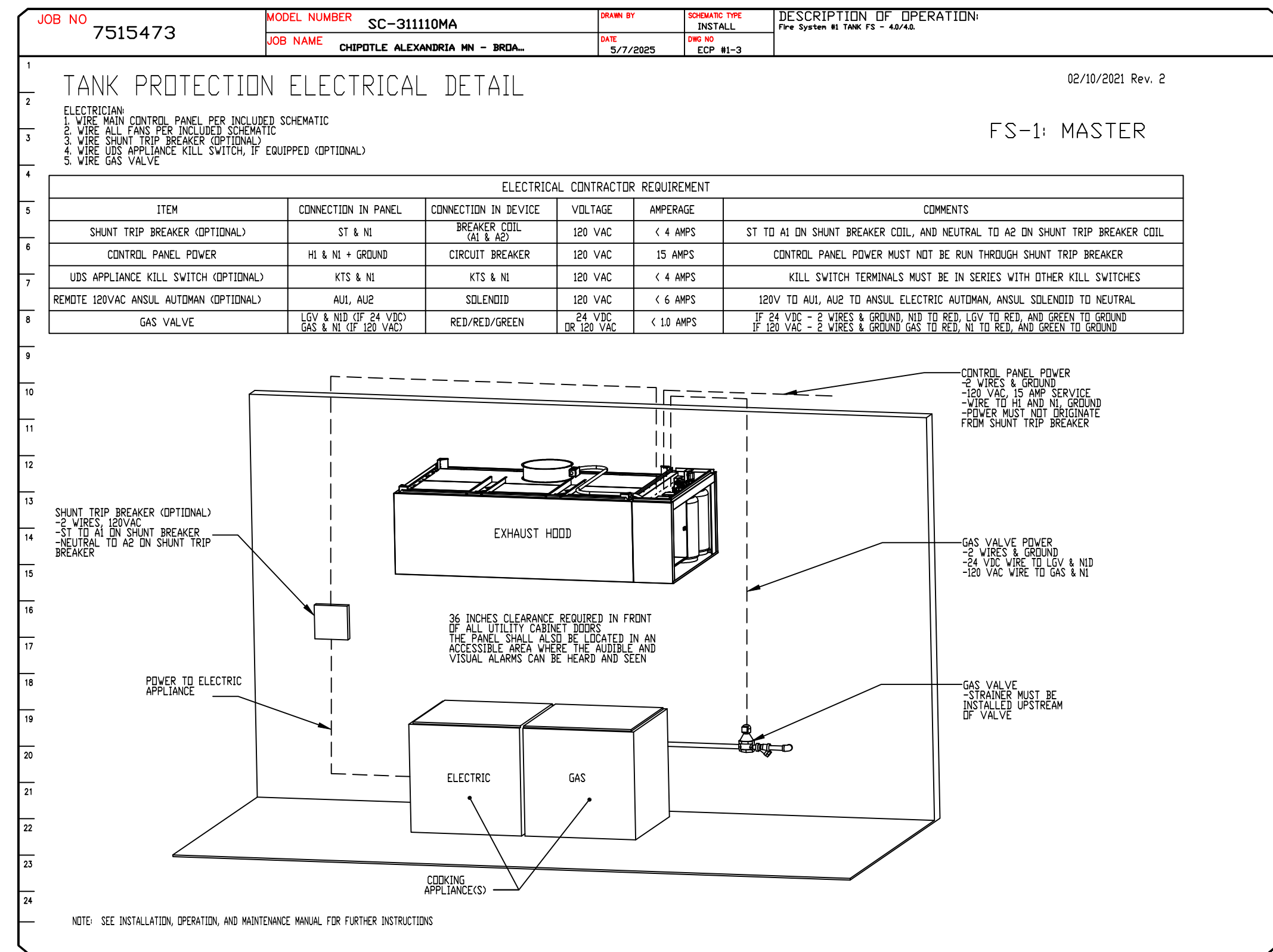
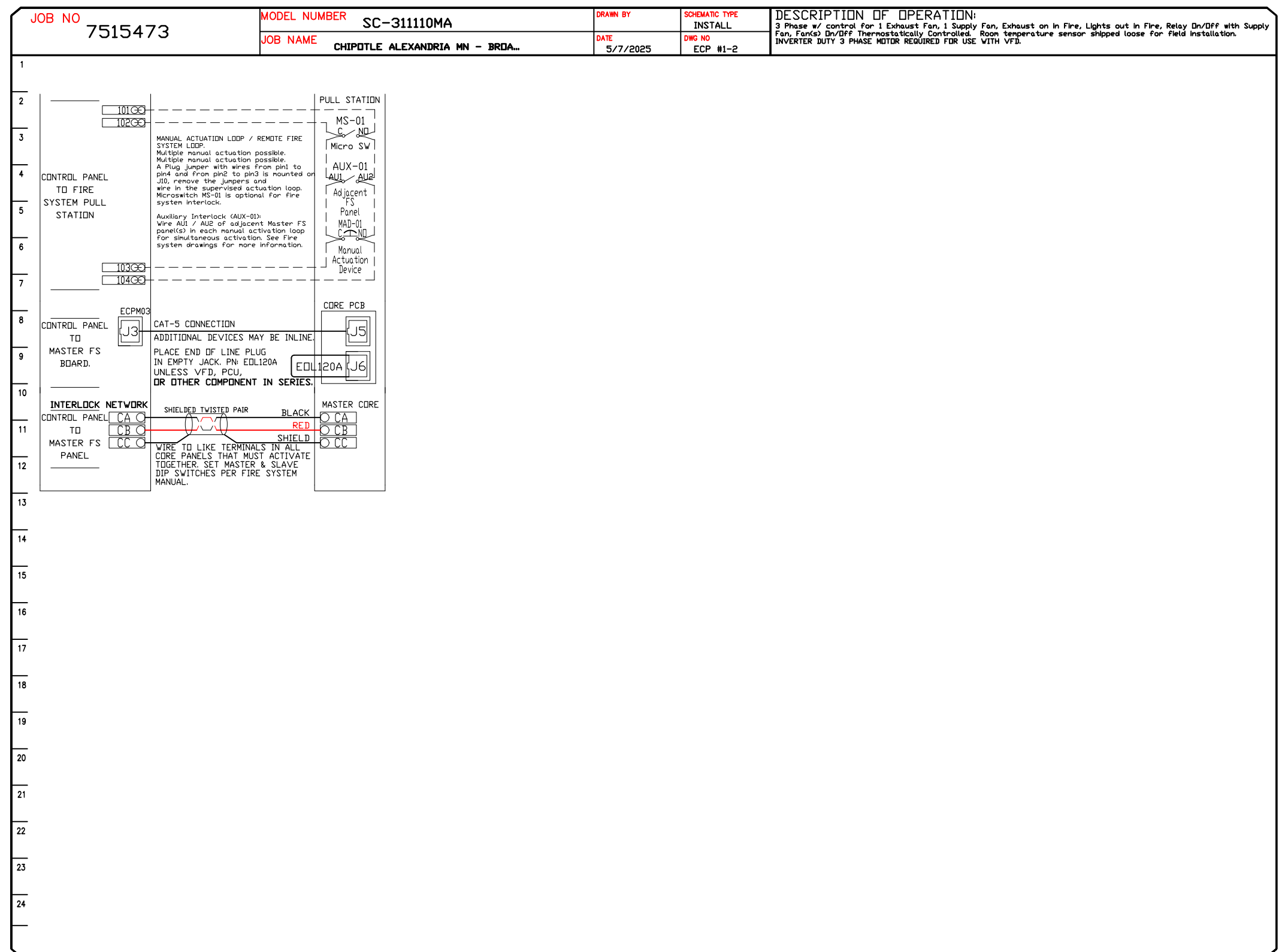
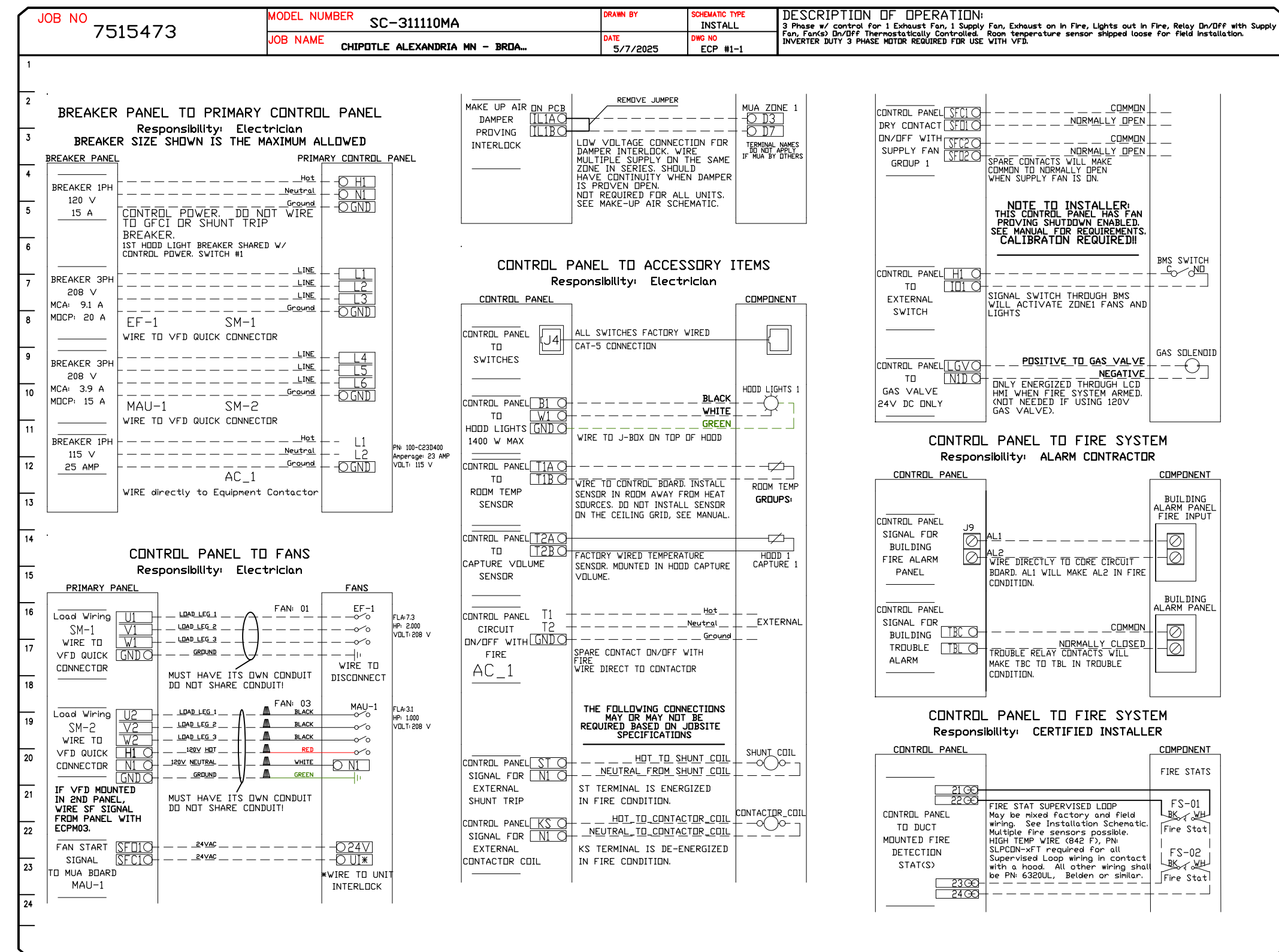
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 DWG.#: 7515473
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 SCALE: 3/4" = 1'-0"
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ELECTRICAL PACKAGE - JOB#7515473

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	#	HP	VOLT	FLA
1		SC-311110MA	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	EF-1	EXHAUST	3	2.000	208	7.3
				HOOD # 1	1 FAN		MAU-1	SUPPLY	3	1.000	208	3.1



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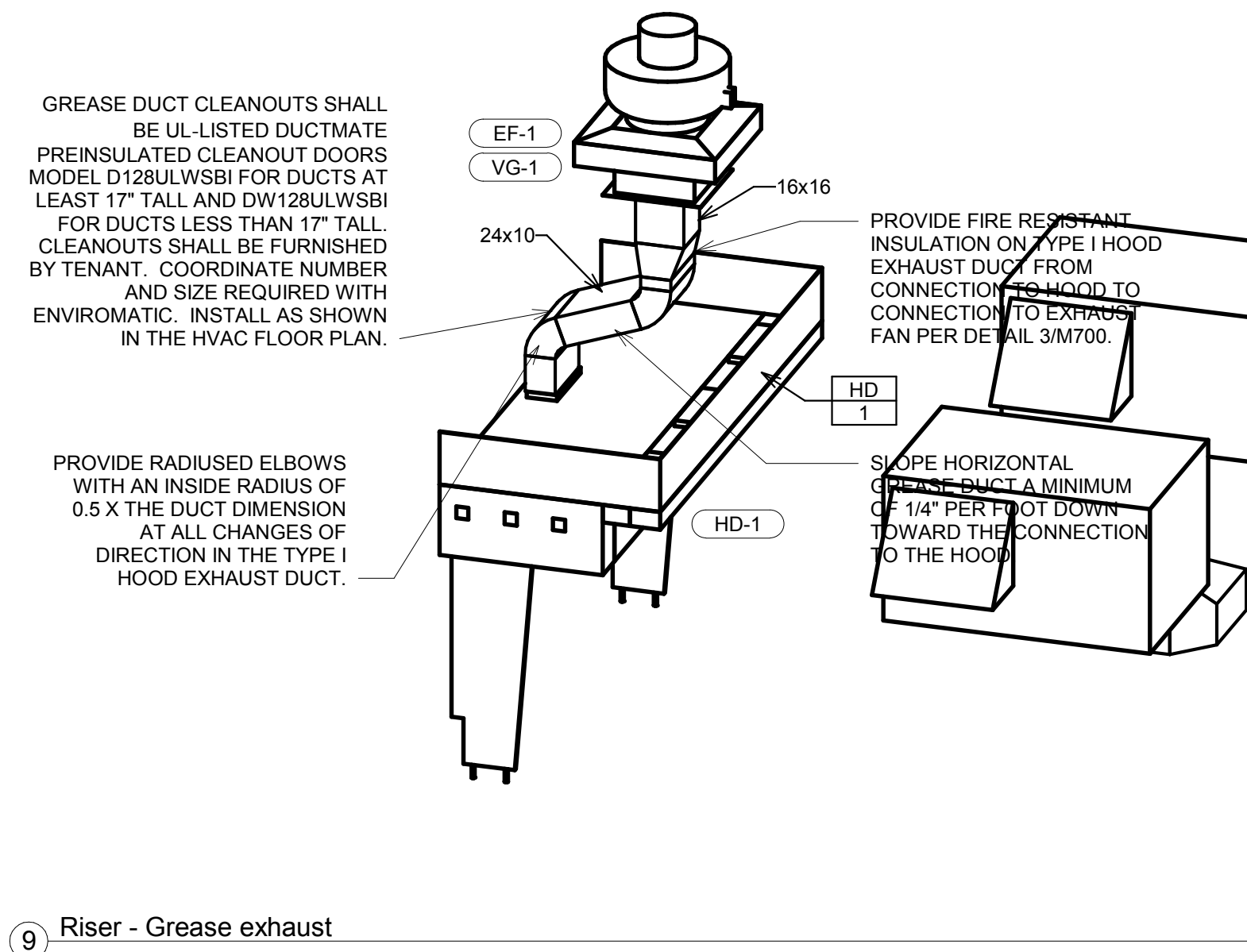
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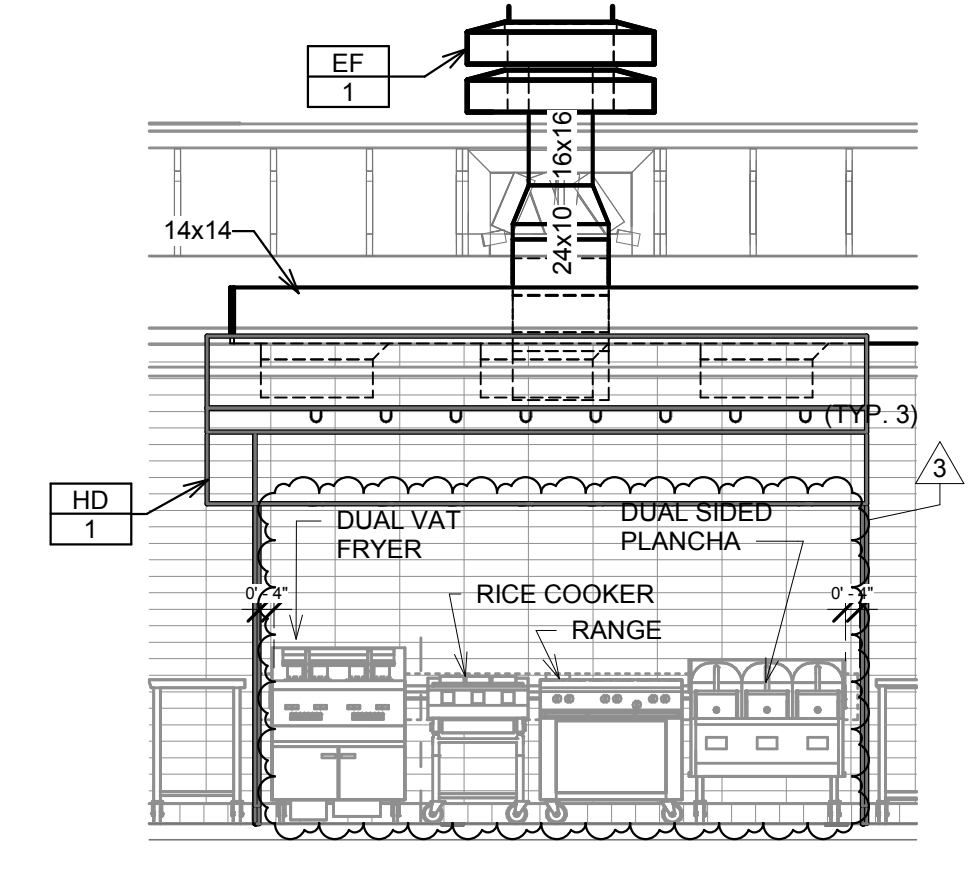
CHIPOTLE ALEXANDRIA MN - BROADWAY #5879
 Alexandria, MN, 56308

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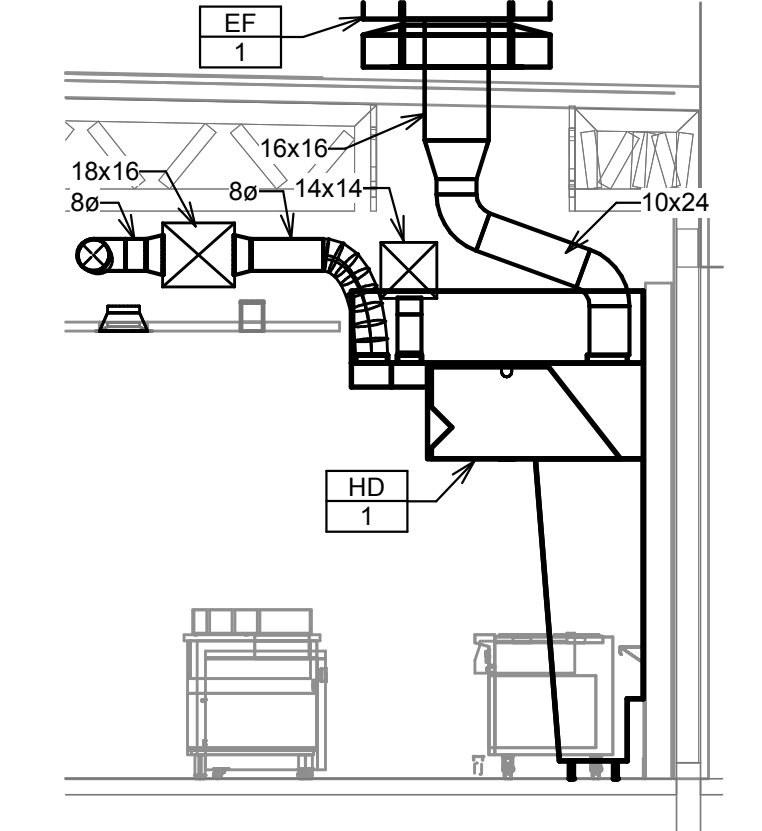
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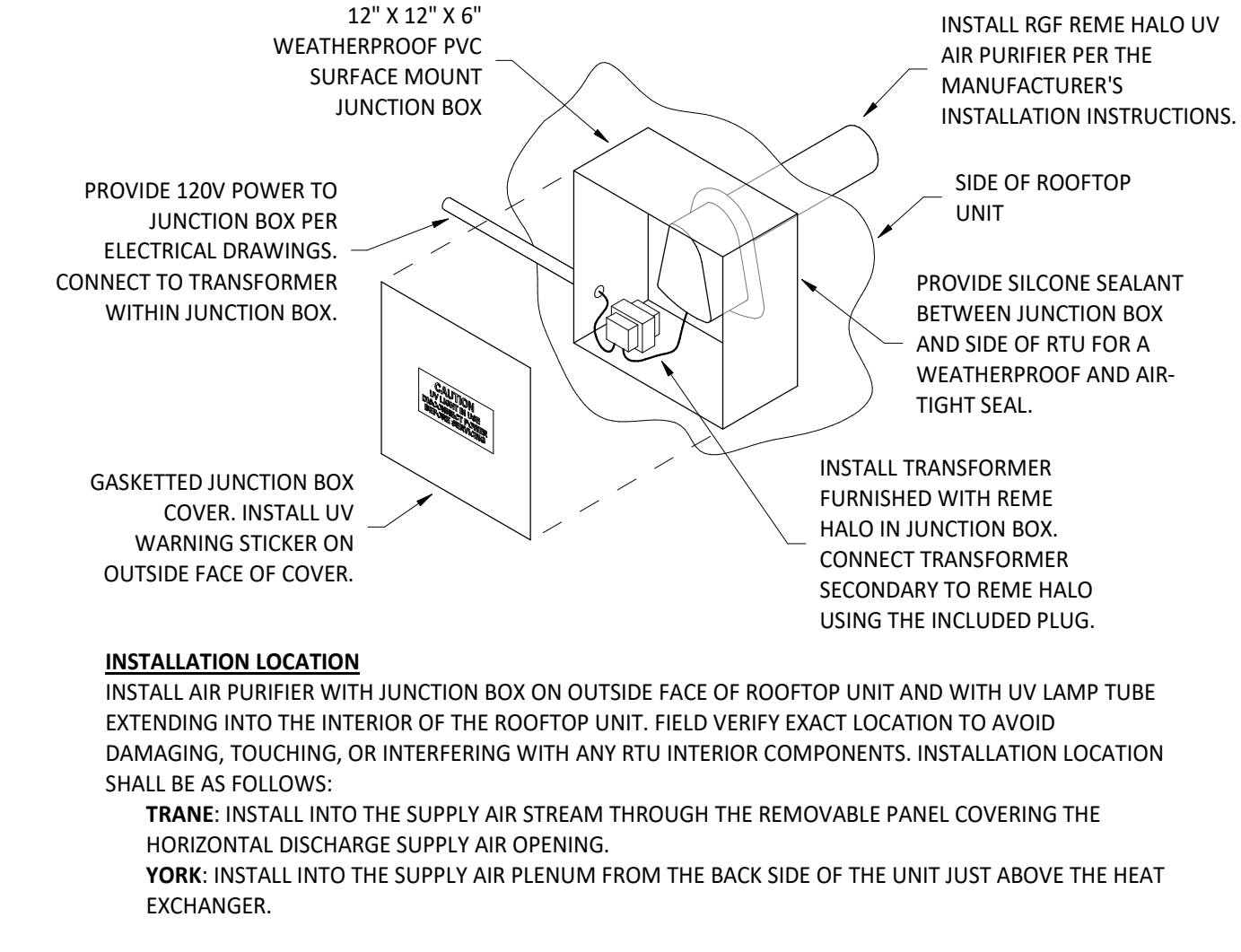
9 Riser - Grease exhaust



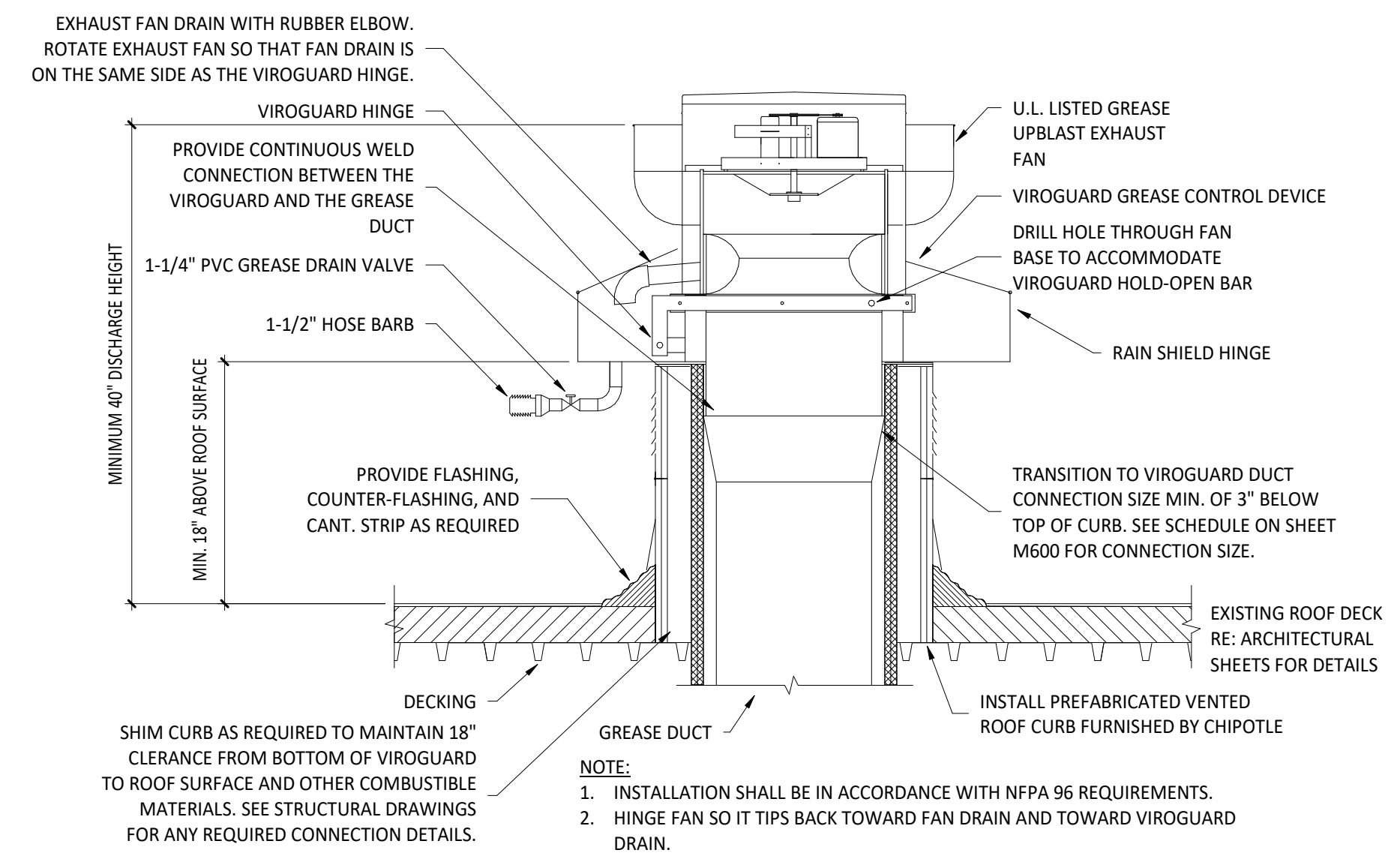
8 HOOD ELEVATION
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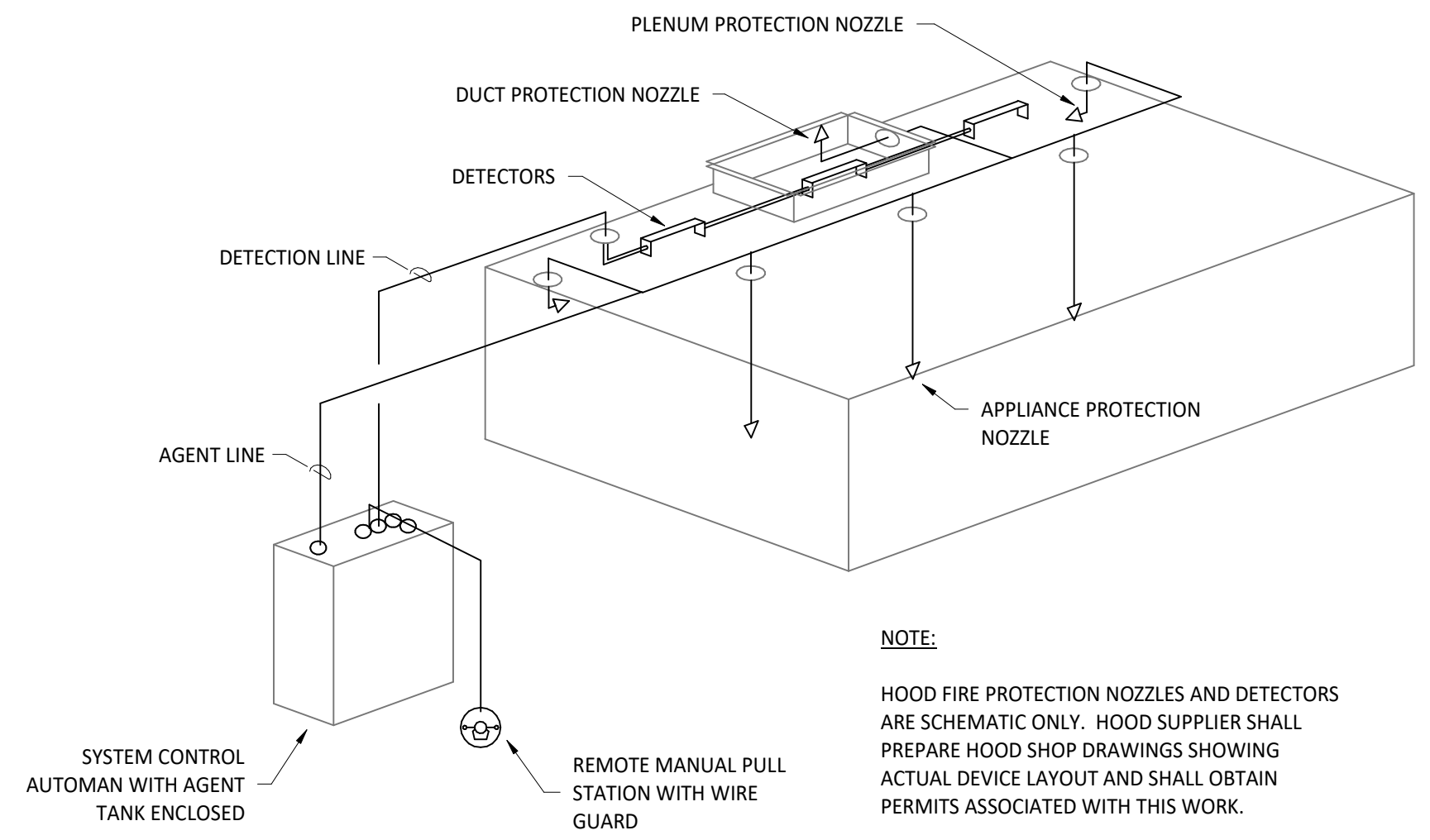
7 DUCT SECTION AT HOOD
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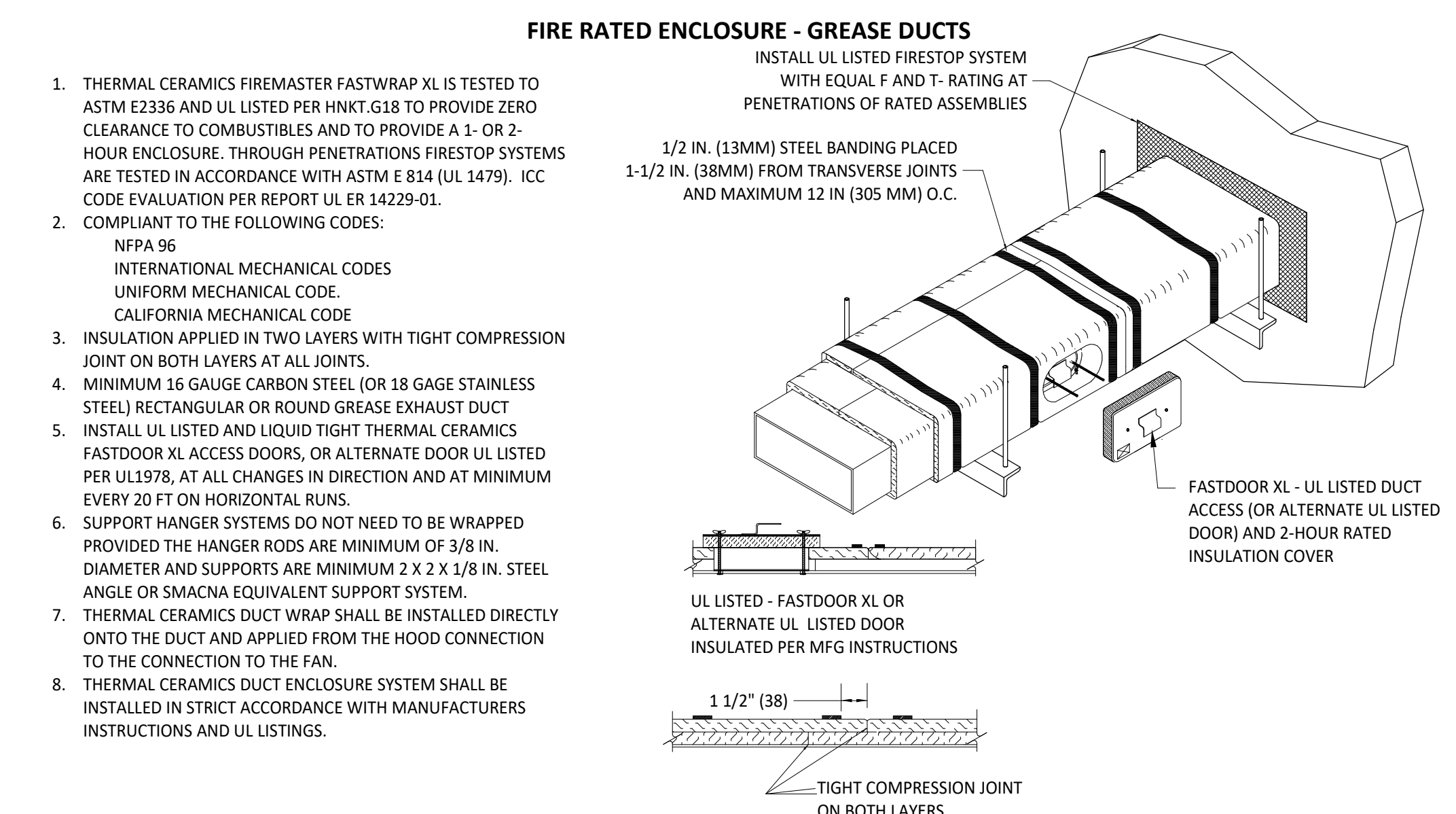
6 UV AIR PURIFIER INSTALLATION
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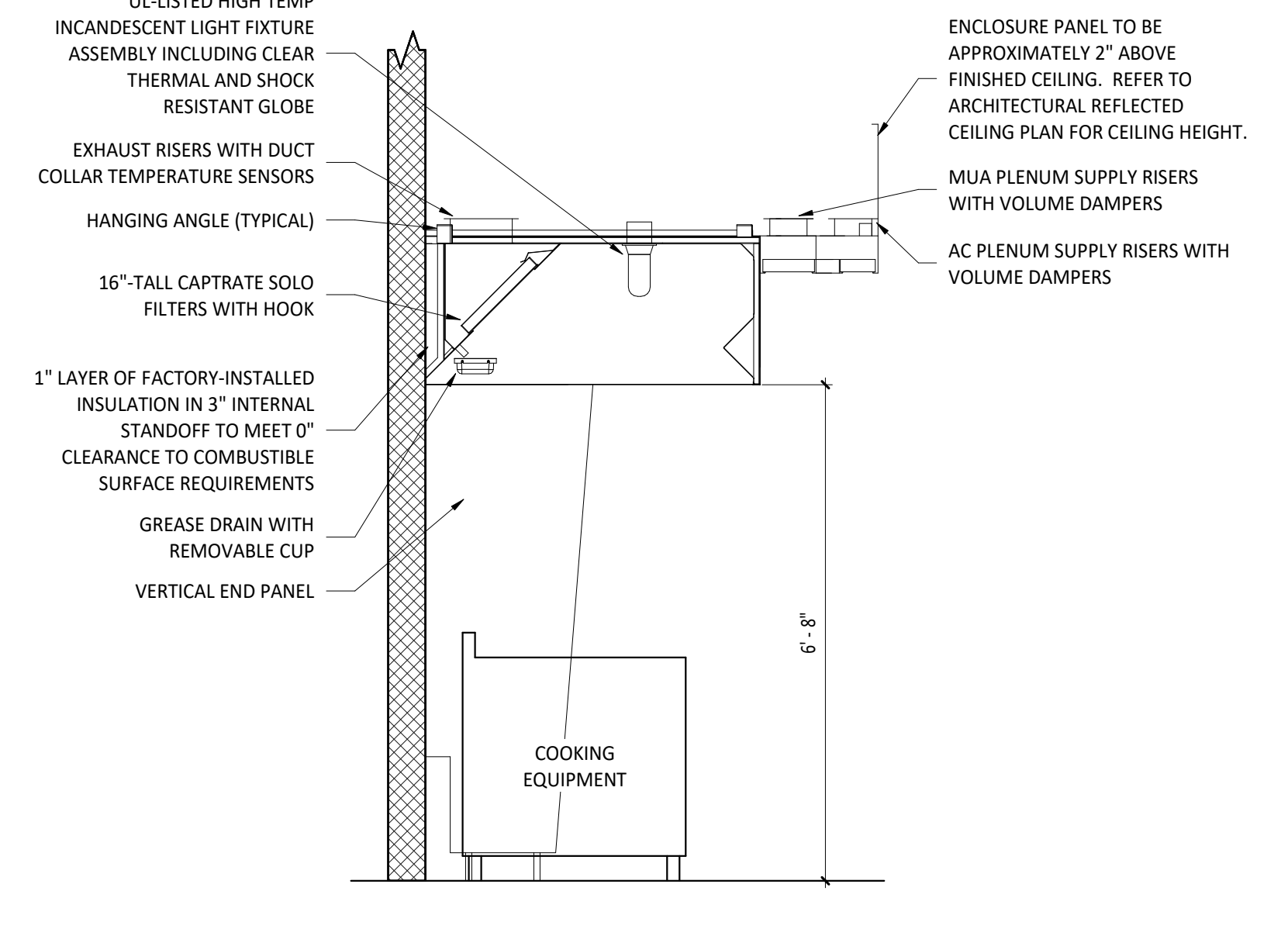
5 GREASE EXHAUST FAN
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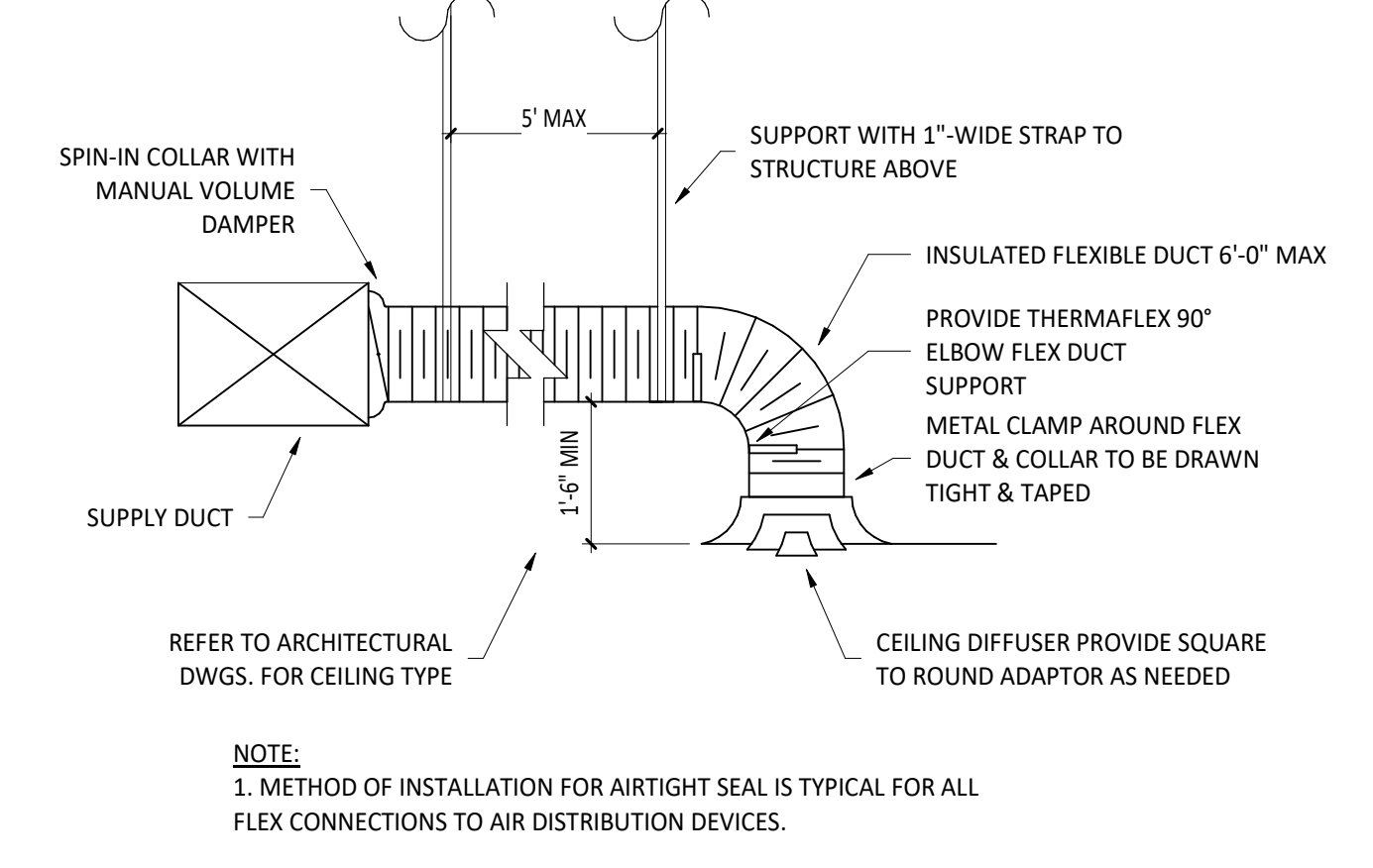
4 FIRE SUPPRESSION SYSTEM SCHEMATIC
NO SCALE



3 FIREMASTER DUCT WRAP - UL HNKT-G18
NO SCALE



2 HOOD SECTION VIEW
NO SCALE



1 DIFFUSER CONNECTION
NO SCALE



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PROJECT INFORMATION:

STORE NO.: 5879
"ALEXANDRIA MN - BROADWAY"
SEC OF BROADWAY & 44TH AVE W
ALEXANDRIA, MN 56308

SEAL:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Theodore S. Birkholz
Digitally signed by Theodore S. Birkholz
Date: 2025.07.21 13:32:42-05'00'

Signature
Theodore S. Birkholz, P.E.
Typed or Printed Name

63471 07/22/2025
License # Date

PROJECT NO. 0425794-009
DRAWN BY TSB
CHECKED BY TAB

ISSUE RECORD:

04.24.2025	PERMIT SET
05.21.2025	BID SET
07.22.2025	CONSTRUCTION SET

REVISIONS:

3 07.22.2025 DB-02 UPDATES

TITLE:
HVAC DETAILS

SHEET NUMBER:
M700