HOOD INFORMATION - Job#2824941 HOOD CONFIG. MAX. HOOD HOOD TAG MODEL LENGTH COOKING TOTAL MUA CFM AC CFM END TO CONSTRUCTION ROW ND. TEMP. EXH. CFM WIDTH LENG. HEIGHT DIA. CFM VEL. S.P. END 5430 4" 14" 1625 1520 -0.632 430 SS 1 EH-1 13' 0.00" 3250 2762 696 LEFT ALONE Deq. ND-2-ACPSP-F 4" 14" 1625 1520 -0.632 Where Exposed 5430 450 430 SS EH-2 4" 10" -0.476" ALONE 2 6' 5.00" 962 962 1764 RIGHT 914 350 ND-2-ACPSP-F Deg. Where Exposed 4224 430 SS 700 3 EH-3 6' 0.00" 600 4" 12" 600 764 -0.0474 0 0 ALONE ALDNE Deg. VHB-G 100%

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

		FILTER(S)				LIGHT(S)					FIRE	ноор					
HODI NO.	TAG					EFFICIENCY @ 7	QTY.	TYPE G	WIRE			FIRE SYSTEM		ELECTRICAL	SWITCHES		HANGING
N□.	110	TYPE	QTY	HEIGHT	TLENGTH	MICRONS			GUARD	LOCATION	SIZE	TYPE	SIZE	MODEL #	QUANTITY	PIPING	WGHT
1	EH-1	Captrate Solo Filter	9	20*	16"	85% See Filter Spec.	4	Screw In 12W LED	ND							ND	946 LBS
2	EH-2	Captrate Solo Filter	4	20"	16"	85% See Filter Spec.	2	Screw In 12W LED	ND							NO	462 LBS
3	EH-3						0									NO	216 LBS

HOOD	OPTI	IONS
HOOD NO.	TAG	OPTION
	EH-1	FIELD WRAPPER 18.00' High Front, Left
		BACKSPLASH 80.00" High X 234.00" Long 430 SS Vertical
1		STRUCTURAL FRONT PANEL
		LEFT VERTICAL END PANEL 27' Top Width, 21' Bottom Width, 80' High Insulated 430 SS
		FIELD WRAPPER 18.00' High Front
		RIGHT SIDESPLASH 80.00" High X 54.00" Long 430 SS Vertical
2	EH-2	RIGHT END STANDOFF (FINISHED) 1' Wide 54' Long Insulated
-	LH-C	BACKSPLASH - INSIDE CORNER 80.00' High X 2.00' Leg Length 430 SS Vertical
		RIGHT QUARTER END PANEL 23' Top Width, 0' Bottom Width, 23' High 430 SS
		STRUCTURAL FRONT PANEL
3	EH-3	FIELD WRAPPER 24.00" High Front, Left, Right

PERFORATED SUPPLY PLENUM(S)

ноор					` '		RISER(S)							
NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	TYPE	WIDTH	LENG.	DIA.	CFM	S.P.			
				26*		MUA	12"	28*		690	0.180*			
						MUA	12"	28*		690	0.180*			
						MUA	12"	28*		690	0.180*			
						MUA	12"	28*		690	0.180"			
1	EH-1	Front	156*		6"	AC			8"	116	0.043"			
1	FH-1	Front	156			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"			
						MUA	8"	26*		457	0.135"			
2	EH-2	Front	78*	26*	6"	MUA	8"	26*		457	0.135"			
-	Ln-2	Front	/8		6"	AC	6"	16"		175	0.048"			
						AC	6"	16"		175	0.048"			

SPECIFICATION: CAPTRATE GREASE-STOP SOLD FILTER

THE CAPTRATE GREASE-STOP SOLO 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.

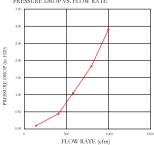
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05.

EFFICIENCY VS. PARTICLE DIAMETER







CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH: NFPA #96

NSF STANDARD #2 UL STANDARD #1046 INT. MECH. CODE (IMC) ULC-S649



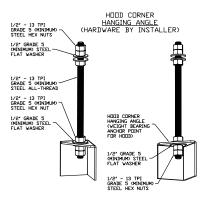


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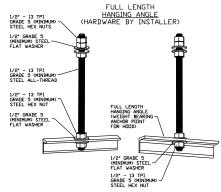


JOB Salvation Army - Portland											
LOCATION PORTLAND, ME, 04101											
	<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941									
	DWG # 1	DRAWN BY BFC-21									
	REV.	SCALE 3/8" = 1'-0"									



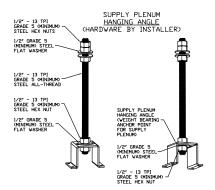
ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2' - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWIGH HANGING ANGLES AND CELING 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 DUBBLED 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 CELING ANCHOR PDINTS 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 ANCHER PDINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHDWN. 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.



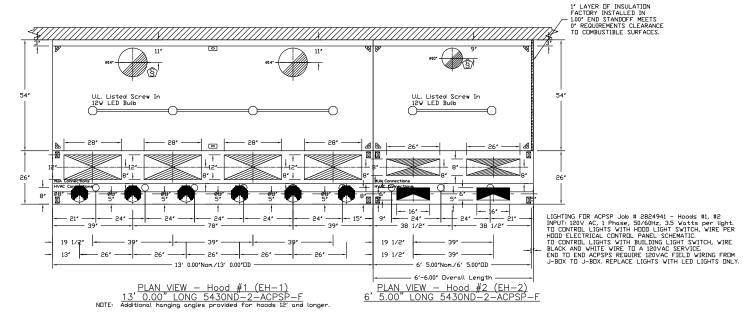






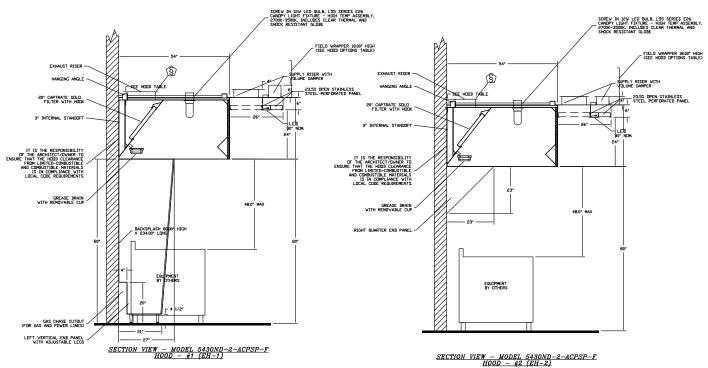


JOB Salvation Army - Portland											
	LOCATION PORTLAND, ME, 04101										
	<i>DATE</i> 5/4/2017	JOB #	2824941								
	DWG # 2	DRAWN BY BFC-21									
	REV.	SCALE	3/8" = 1'-0"								



ACPSP ships loose for field installation

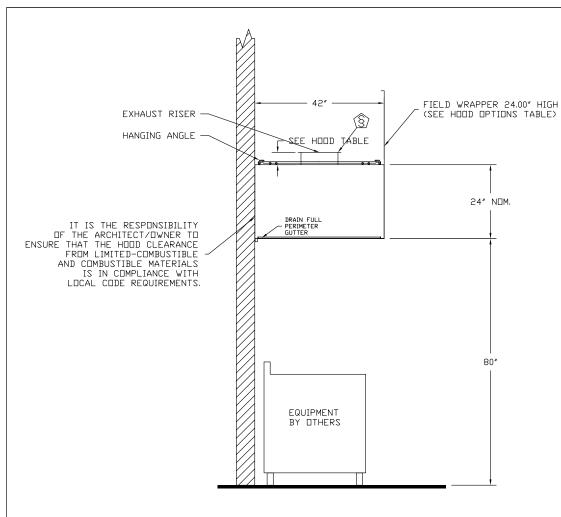
ACPSP ships loose for field installation



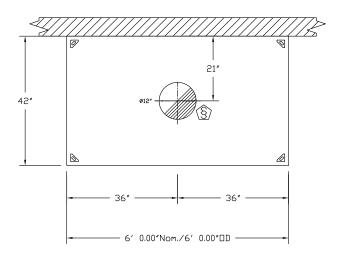




<i>JOB</i> Salvation Army - 1	Portland									
LOCATION PORTLAND, ME, 04101										
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941									
<i>DWG #</i> 3	DRAWN BY BFC-21									
REV.	$SCALE \ 1/4'' = 1'-0''$									



 $\frac{SECTION\ VIEW\ -\ MODEL\ 4224VHB-G}{HOOD\ -\ \#3\ (EH-3)}$



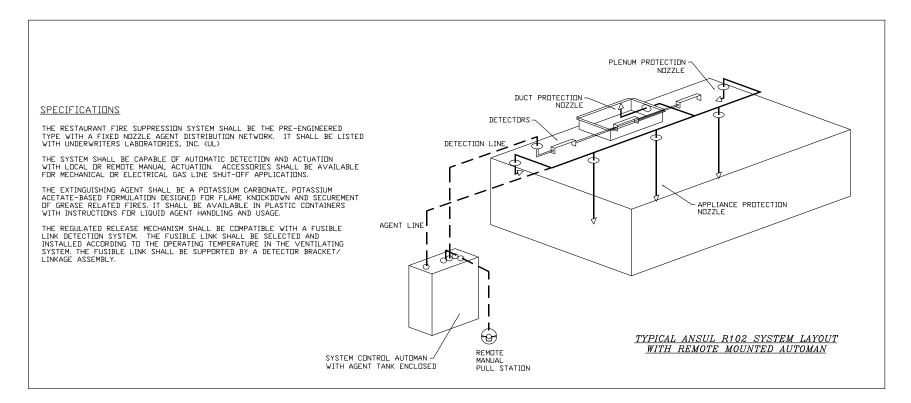
<u>PLAN VIEW - Hood #3 (EH-3)</u> 6' 0.00" LONG 4224VHB-G

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JOB Salvation Army - Portland											
	LOCATION PORTLAND, ME, 04101										
	<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941									
	DWG # 4	DRAWN BY BFC-21									
	REV.	SCALE 3/8" = 1'-0"									



ONE COMPLETE FIELD INSTALLED ANSUL R102 TO BE PROVIDED.

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JOB Salvation Army - Portland										
LOCATION PORTLAND, ME, 04101										
	<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941								
	<i>DWG #</i> 5	DRAWN BY BFC-21								
	REV.	SCALE 3/8" = 1'-0"								

EXHA	UST	FAN INFORMATION - Job	#28249	941								
FAN UNIT ND.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	ø	VOLT	FLA	WEIGHT (LBS.)	SONES
1	EF-1	DU180HFA	3250	1.500	1361	3.000	1.3540	3	208	9.5	221	21
2	EF-2	DU85HFA	962	1.000	1097	0.750	0.2620	3	208	2.6	134	10.6
3	EF-3	DU30HFA	600	0.500	1212	0.250	0.0920	1	115	3.8	109	8.4

MUA FAN INFORMATION - Job#2824941

AN VIT ID.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP.	RPM	H.P.	B.H.P.	ø	VOLT	FLA	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%)
4	MUA-1	A2-D.500-G15	G15-PB	A2-D.500	2000	3676	0.500	849	2.000	1.6880	3	208	6.1	885	14	92

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT ND.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	
4	MUA-1	306387	281876	71 deg F	7 in. w.c 14 in. w.c.	Natural	

EAN OPTIONS

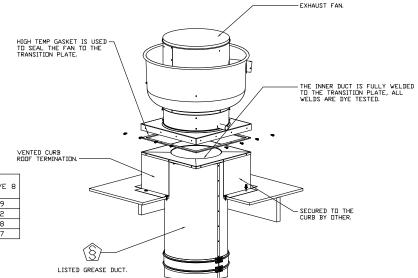
FAN	OPTIOI	${ m VS}$
FAN UNIT ND.	TAG	OPTION (Qty Descr.)
1	EF-1	1 - Grease Box 1 - Full Crating For Exhaust Fans 1 - 3 Year Extended Motor Warranty 1 - Fan Base Ceramic Seal - Ship Loose - For Grease Ducts
2	EF-2	Grease Box Full Crating For Exhaust Fans 3 Year Extended Motor Warranty Fan Base Ceranic Seal - Ship Loose - For Grease Ducts
1 - SCR-11 Bird Screen 1 - I 15-BDD Damper 1 - Fan Base Ceramic Seal - 1		
4	MUA-1	1 - AC Interlock Relay - 24VAC Coil 1 - Motorized Backdraft Damper for A2-D Housing 1 - Full Crating For Commercial Heater 1 - Low Fire Start 1 - Inlet Pressure Gauge, 0-35' 1 - Manifold Pressure Gauge, -5 to 15' wc 1 - Separate 120V Wiring Package (Required and used only for DCV or Prewire with VFD) - Three Phase Dnly 1 - Size 2 Direct Fired Heater Low CFM Profile Package. Used on Heaters under 2500 cfm. 1 - Freezestat (10) 1 - 3 Year Extended Motor Warranty 1 - Extra Set of Belts

FAN ACCESSORIES

	FAN UNIT	TAC	EXHAUST		SUPPLY					
	ND.	TAG	GREASE CUP	GRAVITY DAMPER		SIDE DISCHARGE		MOTORIZED DAMPER	WALL MOUNT	
Ī	1	EF-1	YES							
	Ν	EF-2	YES							
	3	EF-3		YES						
[4	MUA-1						YES		

CURB ASSEMBLIES

ND.	□N FAN	WEIGHT	ITEM	SIZE			
1	# 1	34 LBS	Curb	26.500"W x 26.500"L x 24.000"H 3.000:12.000 Pitch Vented Hinged			
2	# 2	41 LBS	Curb	23.000"W x 23.000"L x 24.000"H 3.000:12.000 Pitch Vented Hinged			
3	# 3	27 LBS	Curb	19.500°W x 19.500°L x 20.000°H 3.000:12.000 Pitch			
4	# 4	28 88	Curb	31.000"W x 79.000"L x 24.000"H 3.000:12.000 Pitch Along Width, Right Insulate	d		



FAN SOUND INFORMATION

FAN UNIT ND.	MOTOR	RPM	LWA	SONES	DBA	DISTANCE FT	OCTAVE 1	OCTAVE 2	OCTAVE 3	DCTAVE 4	OCTAVE 5	OCTAVE 6	OCTAVE 7	DCTAVE 8
1	Exhaust	1361	84.2	21	72.7	5	78.1	83.5	89.5	81.5	73.9	71.1	65.2	58.9
2	Exhaust	1097	72.5	10.6	61	5	72.2	75.8	74.1	68.1	65.3	64.9	61.2	54.2
3	Exhaust	1212	69.1	8.4	57.6	5	69	73.4	71.7	65.5	62.2	60.3	53.8	43.8
4	Supply	849	77.2	14	65.7	5	77.9	81.7	77.1	74	72.4	66.9	62.7	57.7

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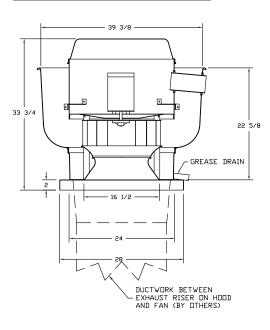






	Portland	
	<i>LOCATION</i> PORTLAND, M	E, 04101
	<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941
	<i>DWG #</i> 6	<i>DRAWN BY</i> BFC-21
	REV.	$SCALE \ 3/8'' = 1'-0''$

FAN #1 DU180HFA - EXHAUST FAN (EF-1)



FEATURES:

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

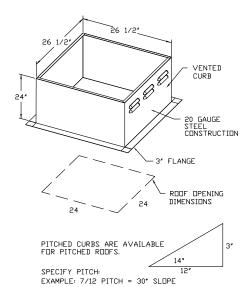
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY

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.

<u>OPTIONS</u>

GREASE BOX FULL CRATING FOR EXHAUST FANS 3 YEAR EXTENDED MOTOR WARRANTY FAN BASE CERAMIC SEAL - SHIP LODSE - FOR GREASE DUCTS



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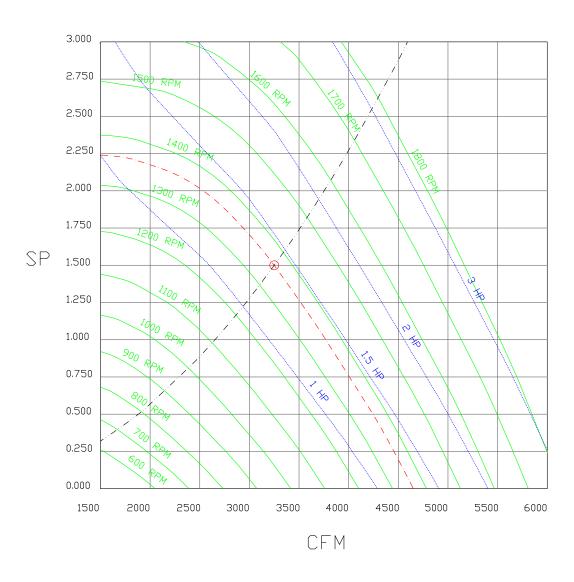






JOB Salvation Army -	Portland	
LOCATION PORTLAND, M	E, 04101	
<i>DATE</i> 5/4/2017	JOB #	2824941
DWG # 7	DRAWN I	<i>BY</i> BFC-21
REV.	SCALE 3	8/8" = 1'-0"

3250 CFM, 1.5 SP @ 1361 RPM and 1.354 BHP at 25 feet and 70 deg F ** Please note that these curves were adjusted for job specific temperature and altitude.



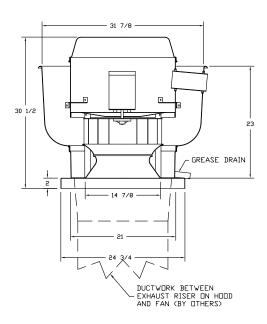
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	<i>LOCATION</i> PORTLAND, M	E, 04101				
	<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941				
	<i>DWG #</i> 8	DRAWN BY BFC-21				
	REV.	$SCALE \ 3/8'' = 1'-0''$				

FAN #2 DU85HFA - EXHAUST FAN (EF-2)



FEATURES:

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

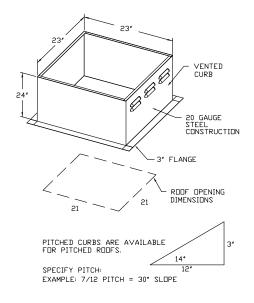
NORMAL TEMPERATURE TEST

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.

<u>OPTIONS</u>

GREASE BOX FULL CRATING FOR EXHAUST FANS 3 YEAR EXTENDED MOTOR WARRANTY FAN BASE CERAMIC SEAL - SHIP LOOSE - FOR GREASE DUCTS



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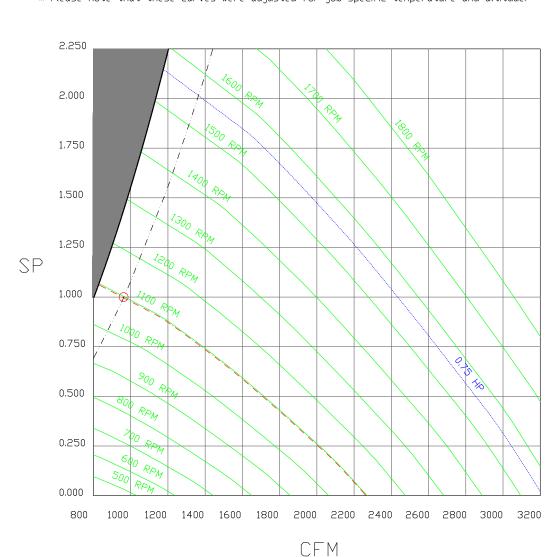






JOB Salvation Army - Portland						
LOCATION PORTLAND, ME, 04101						
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941					
DWG # 9	<i>DRAWN BY</i> BFC-21					
REV.	$SCALE \ 3/8'' = 1'-0''$					

962 CFM, 1 SP @ 1097 RPM and 0.262 BHP at 25 feet and 70 deg F * Please note that these curves were adjusted for job specific temperature and altitude.

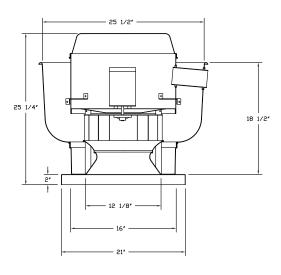






<i>JOB</i> Salvation Army -	Portland	
<i>LOCATION</i> PORTLAND, M	E, 04101	
<i>DATE</i> 5/4/2017	JOB # 2824941	
<i>DWG #</i> 10	DRAWN BY BFC-21	
REV.	$SCALE \ 3/8'' = 1'-0$	"

FAN #3 DU30HFA - EXHAUST FAN (EF-3)

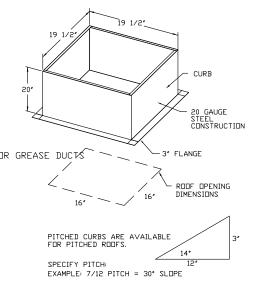


FEATURES:

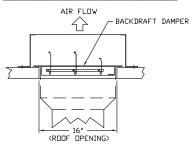
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS)
- ROOF MOUNTED FANS
- UL705
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)

<u>OPTIONS</u>

FULL CRATING FOR EXHAUST FANS SCR-11 BIRD SCREEN I 15-BDD DAMPER FAN BASE CERAMIC SEAL - SHIP LODSE - FOR GREASE DUCTS 3 YEAR EXTENDED MOTOR WARRANTY



BACKDRAFT DAMPER INSTALLATION



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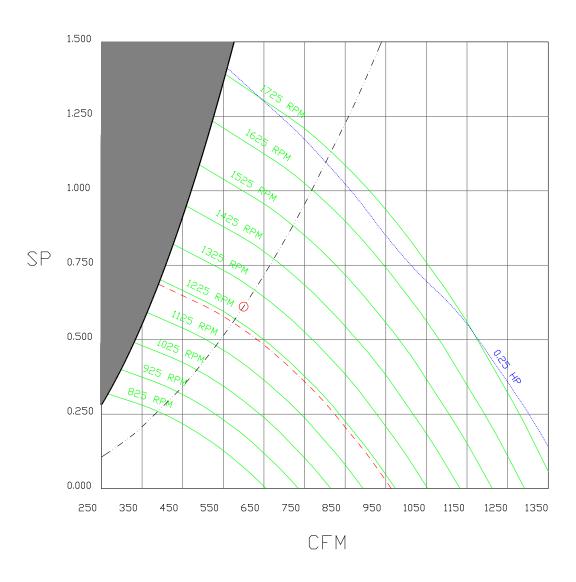






JOB Salvation Army - Portland		
LOCATION PORTLAND, M	E, 04101	
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941	
<i>DWG</i> # 11	<i>DRAWN BY</i> BFC-21	
REV.	$SCALE \ 3/8'' = 1'-0''$	

600 CFM, 0.611 SP @ 1212 RPM and 0.092 BHP at 25 feet and 70 deg F \ast Please note that these curves were adjusted for job specific temperature and altitude.

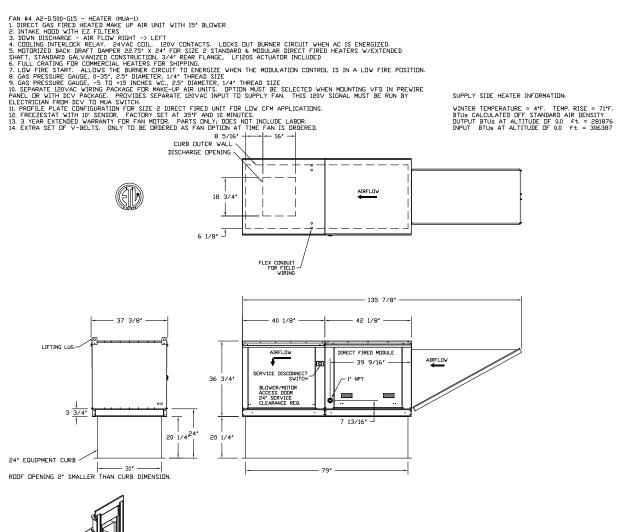


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JOB Salvation Army - Portland		
LOCATION PORTLAND, M	E, 04101	
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941	
<i>DWG #</i> 12	<i>DRAWN BY</i> BFC-21	
REV.	SCALE 3/8" = 1'-0"	





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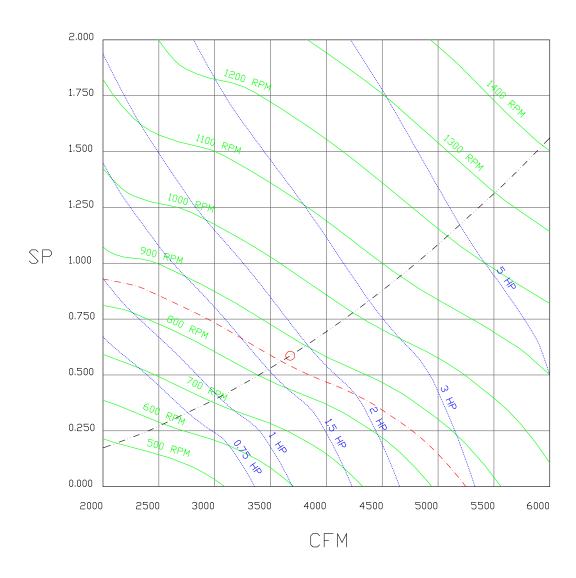




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<i>LOCATION</i> PORTLAND, M	E, 04101	
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941	
<i>DWG #</i> 13	DRAWN BY BFC-21	
RFV	SCALE 1/4'' = 1'-0''	

Date

3676 CFM, 0.586 SP @ 849 RPM and 1.688 BHP at 25 feet and 75 deg F \ast Please note that these curves were adjusted for job specific temperature and altitude.



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JOB Salvation Army - Portland		
LOCATION PORTLAND, M	E, 04101	
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941	
DWG # 14	<i>DRAWN BY</i> BFC-21	
REV.	SCALE 3/8" = 1'-0"	

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.

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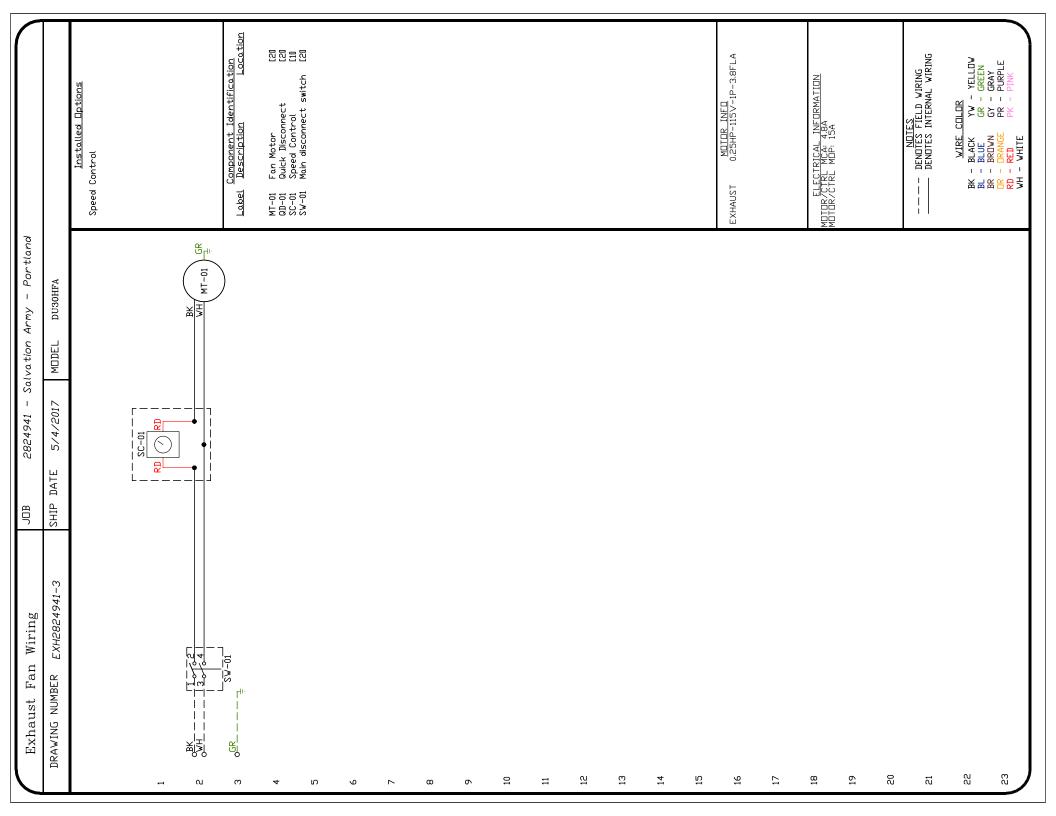


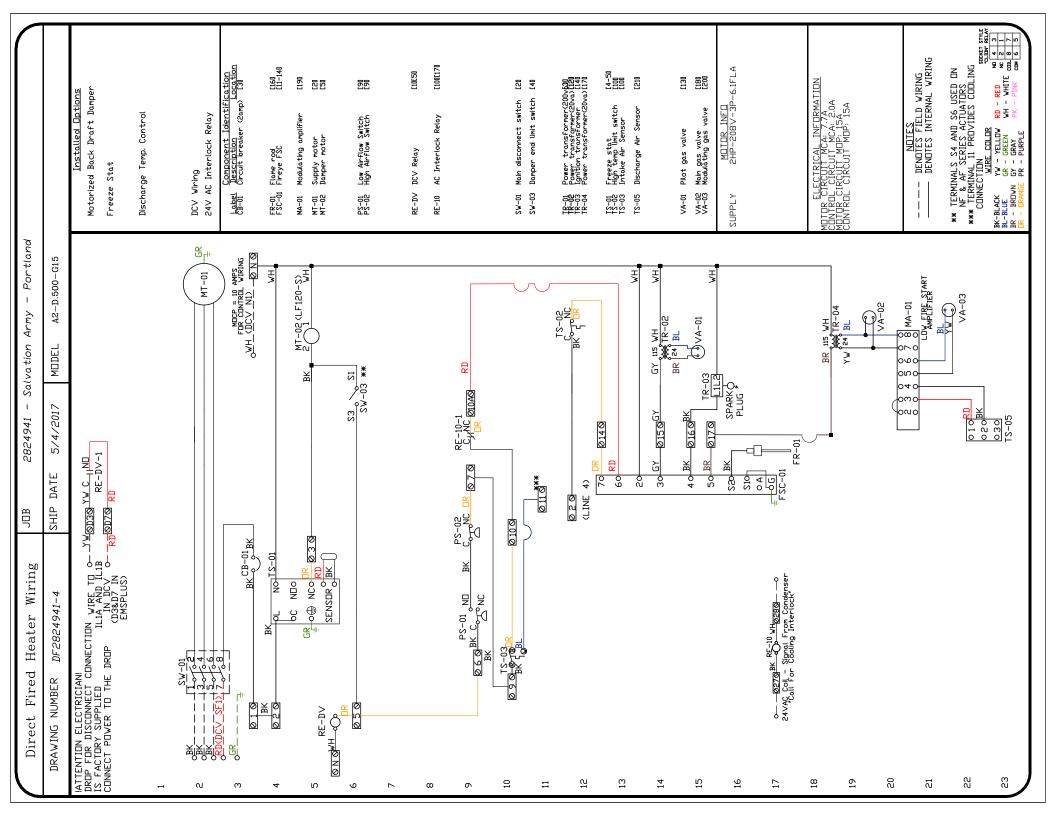


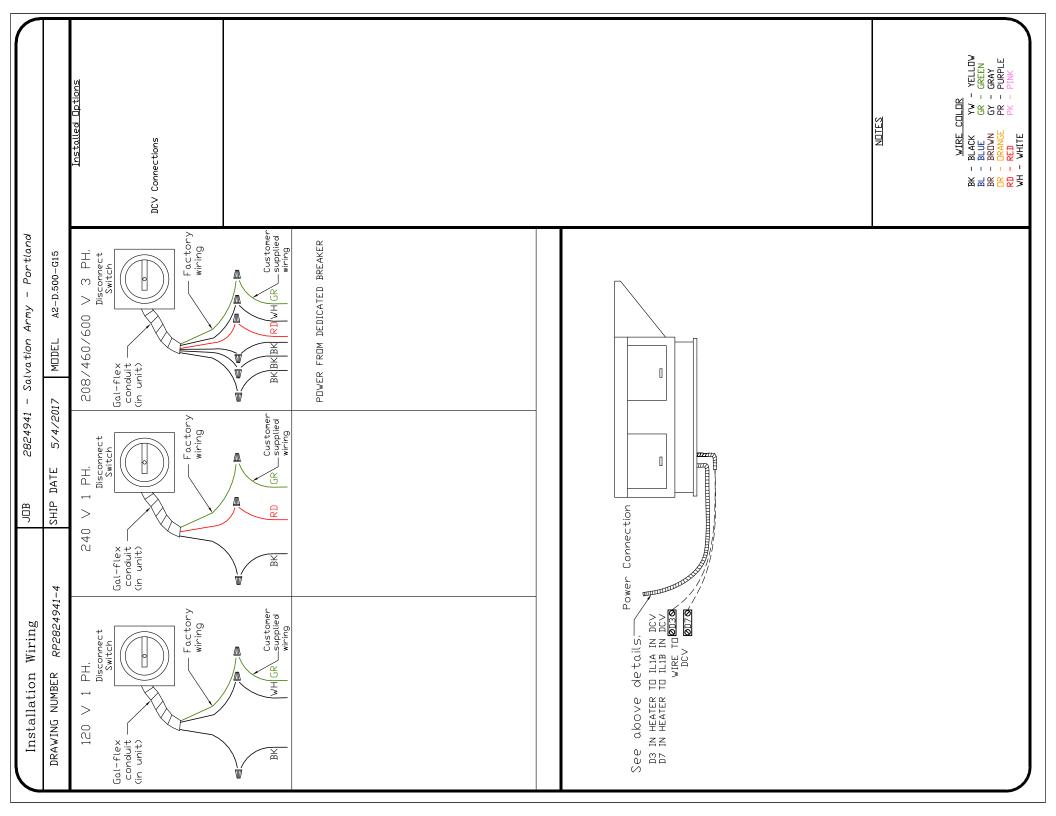
JOB Salvation Army -	Portland
<i>LOCATION</i> PORTLAND, M	E, 04101
<i>DATE</i> 5/4/2017	<i>JOB #</i> 2824941
<i>DWG #</i> 15	<i>DRAWN BY</i> BFC-21
REV.	$SCALE \ 3/8'' = 1'-0''$

Exhaust Fan Wiring	JOB 2824941 - Salvation Army - Portland	
DRAWING NUMBER EXH2824941-1	SHIP DATE 5/4/2017 MUDEL DUISOHFA	
		Installed Options
2 OBK 130 ob 1	BK MT-01 JGR	Component Identification Location
4		MT-01 Fan Motor [20
ט		SW-01 Main disconnect switch [20
9 7		
ω		
6		
10		
11		
12		
13		
15		
16		MOTOR INFO EXHAUST 3HP-208V-3P-9.5FLA
17		
18		ELECTRICAL INFORMATION MOTOR/CTRL MCA: 11:9A MOTOR/CTRL MOP: 20A
19		
20		
21		DENDIES TIELD WIKING DENDIES INTERNAL WIRING
22		WIRE COLOR BK - BLACK YW - YELLOW BL - BLUE GR - GREEN BR - BROWN GY - GRAY
23		OR - ORANGE PR - DURPLE RD - RED WH - WHITE

Exhaust Fan Wiring	J□B 2824941 - Salvation Army - Portland	
DRAWING NUMBER EXH2824941-2	SHIP DATE 5/4/2017 MODEL DUBSHFA	
		Installed Options
2 OBX	BK MT-01	Component Identificatio Description
4 N		MT-01 Fan Motor [20] SW-01 Main disconnect switch [20]
vo		
7		
ω σ		
10		
II		
12		
13		
15		
16		MOTOR INFO EXHAUST 0.75HP-208V-3P-2.6FLA
17		
91 0		ELECTRICAL INFORMATION MOTOR/CTRL MCA: 3.34 MOTOR/CTRL MOP: 15A
20		
21		NDTES DENDTES FIELD WIRING DENDTES INTERNAL WIRING
22		WIRE COLOR BK - BLACK YW - YELLOW BL - BLUE GR - GREEN
53		BK - BRUNN GY - GRAY GR - GRANGE PR - PURPLE RD - RED WH - WHITE







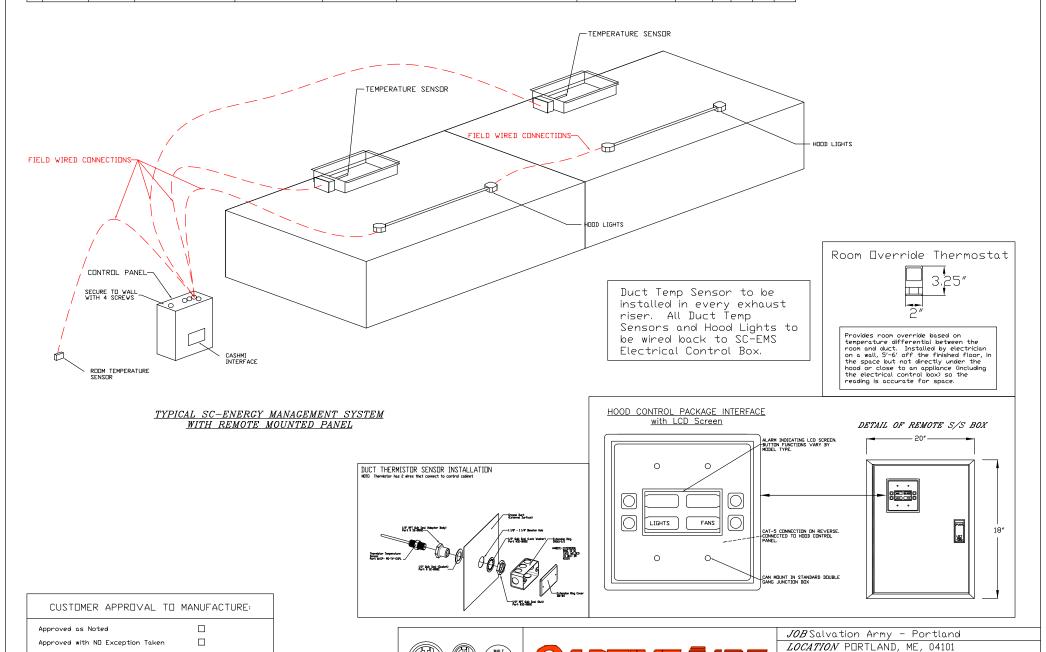
ELECTRICAL PACKAGES - Job#2824941 SWITCHES FANS CONTROLLED OPTION ND. TAG PACKAGE # LOCATION LOCATION QUANTITY FAN TAG ? H.P. VOLT FLA TYPE EF-1 Exhaust 3 3.000 208 9.5 1 Light 05 - SS Wall -Exhaust 3 0.750 208 2.6 1 EF-2 DCV-2111 Wall Mount In SS Box Smart Controls DCV Mount Box 1 Fan Supply 3 2.000 208 6.1 MUA-1

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DATE 5/4/2017

DWG # 21

REV.

JOB #

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2824941

Demand Control Ventilation Hood Control Panel Specifications:

- Controls shall be listed by ETL (UL 508A) and shall comply with demand ventilation system turndown requirements outlined in IECC 403.2.8 (2015).
- The control enclosure shall be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. The control enclosure may be constructed of stainless steel or painted steel.
- Temperature probe(s) located in the exhaust duct riser(s) shall be constructed of stainless steel.
- A digital controller shall be provided to activate the hood exhaust fans dynamically based on a fixed differential between the ambient and duct temperatures sensors. This function shall meet the requirements of IMC 507.2.1.1
- 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

Sequence of Operations:

The hood control panel is capable of operating in one or more of the following states at any given time:

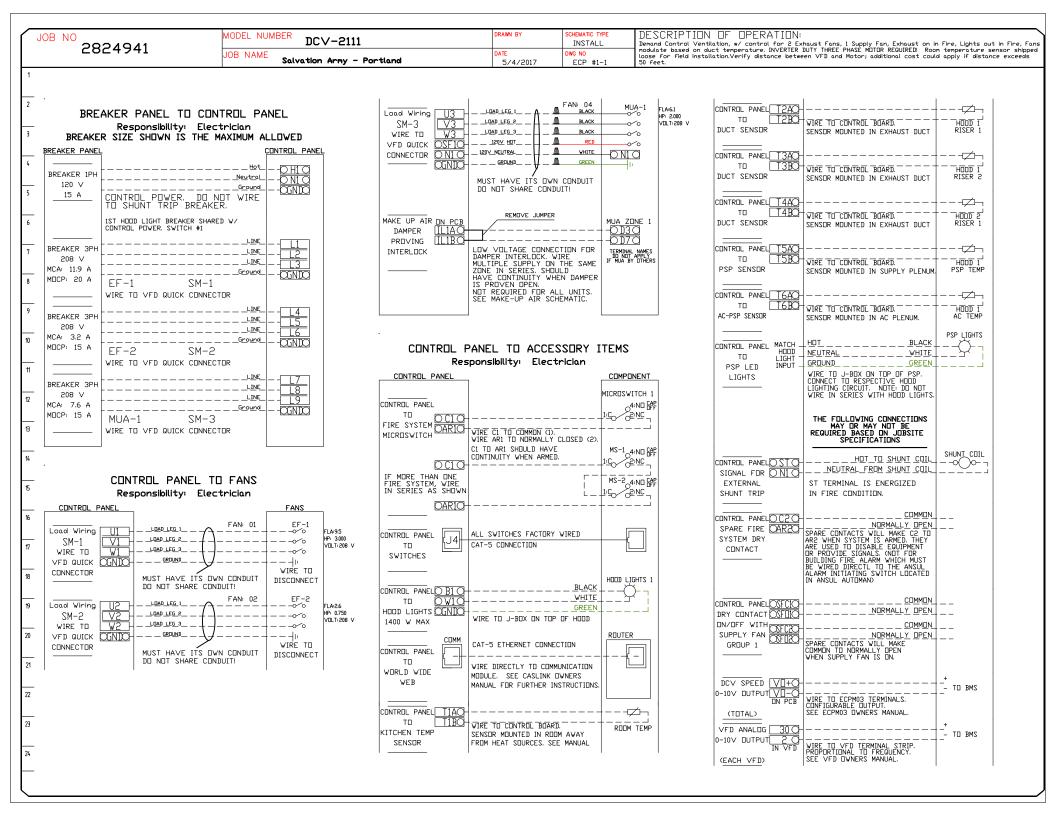
- Automatic: The system operates based on the differential between room temperature and the temperature at the hood cavity or exhaust duct collar. Fans activate at a configurable temperature differential threshold. Depending on the job configuration each fan zone can be configured as static or dynamic. 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.
- <u>Manual:</u> 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.
- <u>Other:</u> The system operates based on the input from an external source (DDC, BMS or hard-wired interlock)

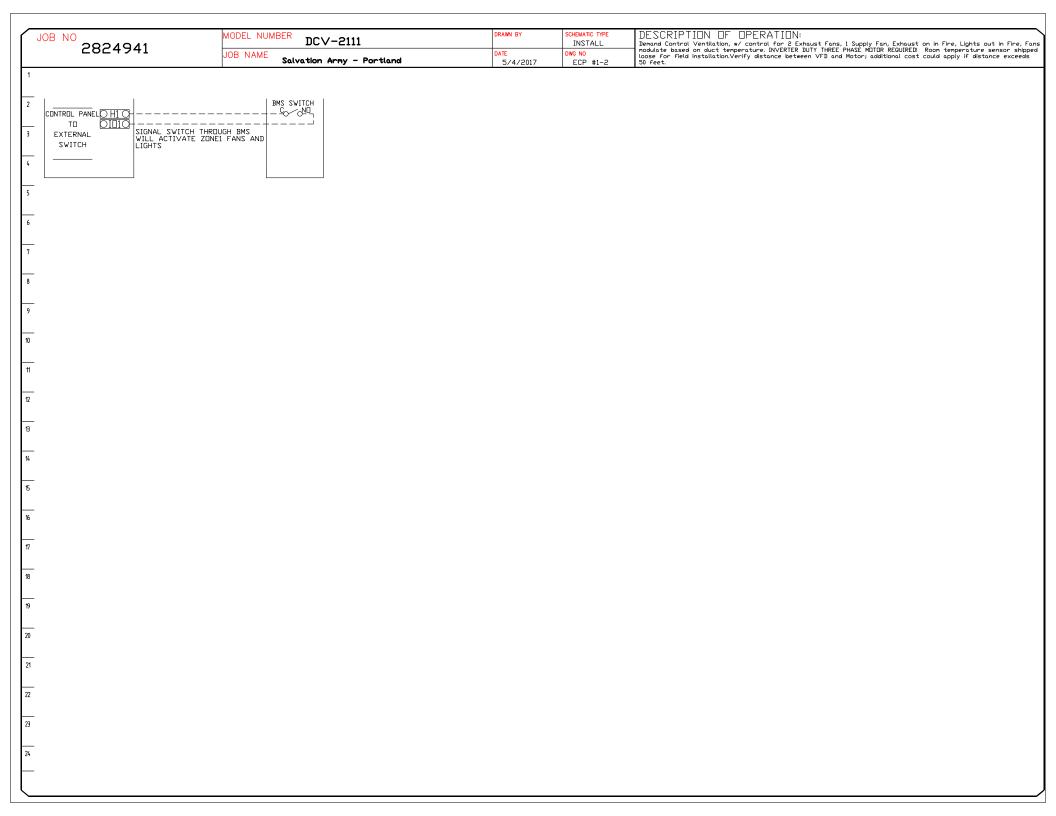
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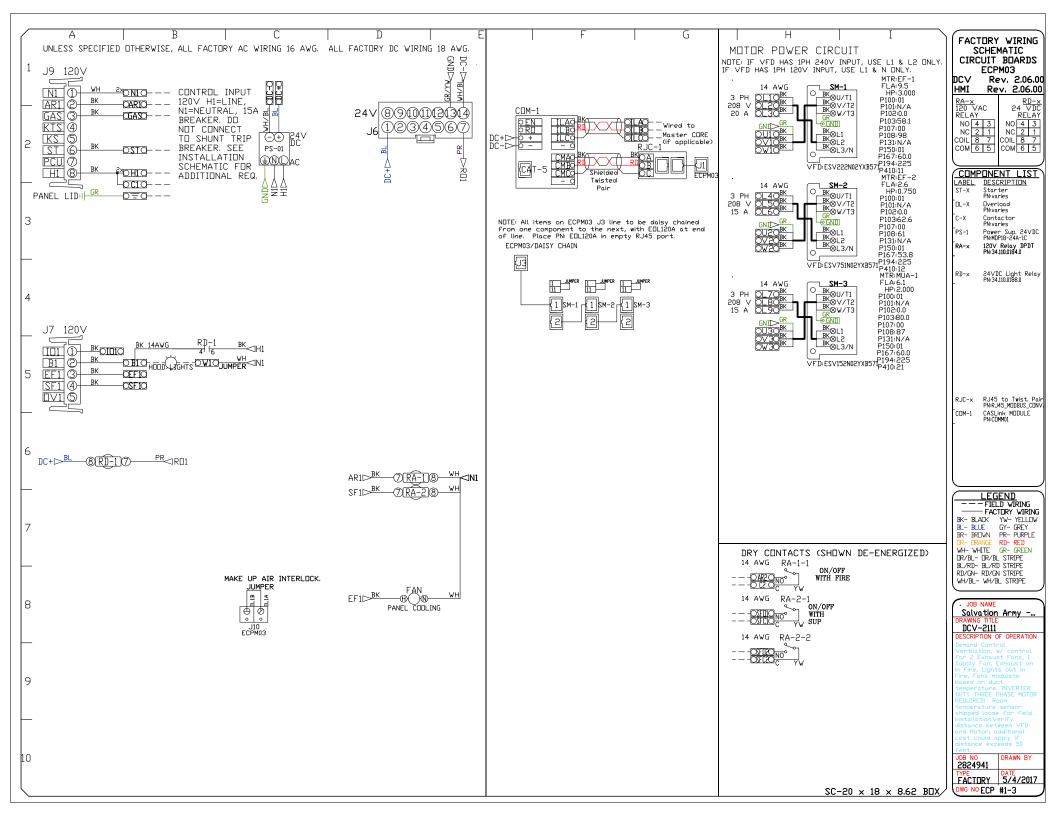


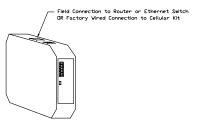


	<i>JOB</i> Salvation Army - 1	Portland	
LOCATION PORTLAND, ME, 04101			
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CASlink Monitor and Control

- Hood control panel to support communications to cloud-based Building
- Hood control panel to support communications to cloud-based building Management System.
 Hood Control Panel to allow cloud-based Building Management System to monitor real time panemeters outlined as MDNITOR in the points list.
 Hood Control Panel to allow cloud-based Building Management System to control panemeters outlined as CDNTROL in the points list.
 Hood control panel to allow menote changes to system setting such as:
 VFD Frequencies, ECM speeds, temperature set points, fan and wash schedules, etc.

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Ouct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
(Itchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
an Faults	MONITOR
an Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Tire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
ans Button(s)	MONITOR & CONTROL
lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

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<i>DWG #</i> 26	DRAWN BY BFC-21		
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