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Lee Urban - Director of Planning and Development
Jeanie Bourke - Inspection Division Services Director

Kitchen Exhaust System Checklist and code Provisions

Dear Applicant,

The following is a checklist to assist you in filing for a permit for a Kitchen Exhaust system. The applicable Mechanical Code provisions have also been attached. Please complete this and submit job specific construction documents that demonstrate compliance with the attached information.

Type of System:

Type I X Type II _____

Type I systems are systems that vent fryers, grills, broilers, ovens or woks.
Type II systems are systems that vent steamers and other non grease producing appliances.

Type of Materials:

Is the hood Stainless steel or other type of steel? Stainless steel If Other, what Type? _____

Is the duct work Stainless steel or other type of steel? Carbon St. If Other, what type? _____

Thickness of the steel for the hood 18 gage

Thickness of the duct for the hood 16 gage

Type of Hood and Duct Supports

Capture Aire Box style Hood - wall mounted and hung with Threaded Rod to ceiling joints

Type of seams and Joints Welded

Grease Gutters provided? yes

Hood Clearance reduction to Combustibles design /specs:

Duct Clearance reduction to Combustibles design /specs:

Vibration Isolation System:

Air Velocity within the duct system 2000 FPM

Grease accumulation prevention system:
yes -

Cleanouts None

Grease Duct enclosure

Exhaust Termination Roof _____ Wall X

Fire Suppression System yes

Exhaust fan mounting and clearance from the roof / wall or Combustibles:

Exhaust fan distance from property lines 15'

Exhaust fan distance from other vents or openings min. 10'

Exhaust fan distance from adjacent buildings

Exhaust fan height above adjoining grade min. 10'

Hood Specs

Style of Hood Capture Air Box Style

Type of Filter Baffle

Height of filter above nearest cooking surface min 48"

Capacity of hood CFM 2,900 CFM

Make up Air system description and capacity

20% Make up air (2250 CFM) Heated Make up
air ~~Direct~~ Direct Panel Fan with Front Perforated
Supply Plenum.

General Building Permit Application



If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>254 Commercial ST.</u>		
Total Square Footage of Proposed Structure/Area <u>2000</u>	Square Footage of Lot	Number of Stories <u>—</u>
Tax Assessor's Chart, Block & Lot Chart# Block# Lot#	Applicant *must be owner, Lessee or Buyer* Name <u>ROBERT PETZOLD</u> Address City, State & Zip	Telephone: <u>518-637-8784</u>
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name <u>Waterfront/Me Limited Partners</u> Address <u>14 MAINE ST</u> City, State & Zip <u>Brunswick, Me 04011</u>	Cost Of Work: \$ _____ C of O Fee: \$ <u>15,200.00</u> Total Fee: \$ _____
Current legal use (i.e. single family) _____ Number of Residential Units _____ If vacant, what was the previous use? <u>NOT KNOWN.</u> Proposed Specific use: <u>BAR</u> Is property part of a subdivision? <u>NO</u> If yes, please name _____ Project description:		
Contractor's name: <u>Lebel's Sheet Metal</u> Address: <u>221 LINCOLN ST.</u> City, State & Zip <u>LEWISTON, ME 04240</u> Telephone <u>207-782-2235</u> Who should we contact when the permit is ready: <u>PAUL ROY</u> Telephone <u>207-576-1863</u> Mailing address: _____		

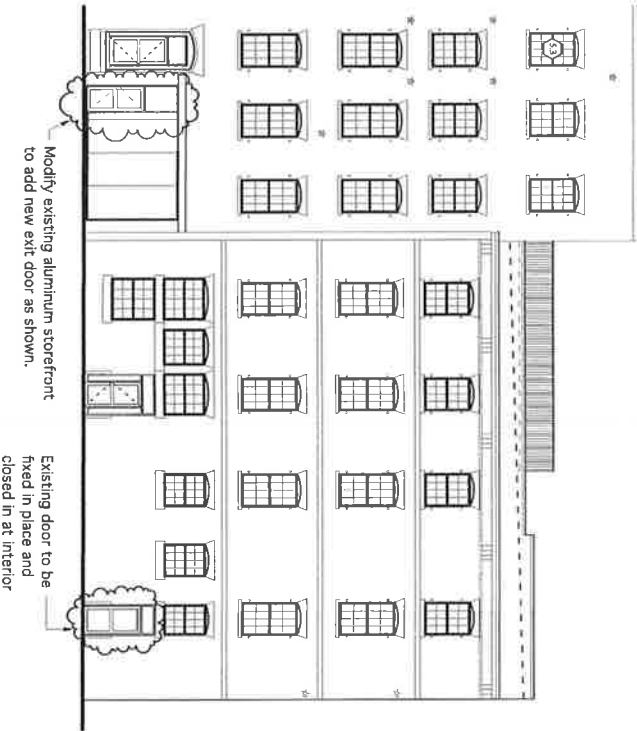
Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

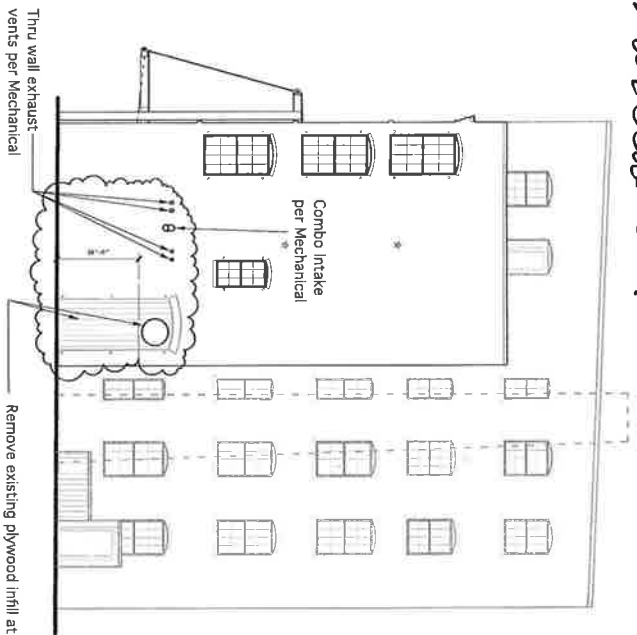
Signature: Paul Roy Date: 11-27-13.

This is not a permit; you may not commence ANY work until the permit is issued



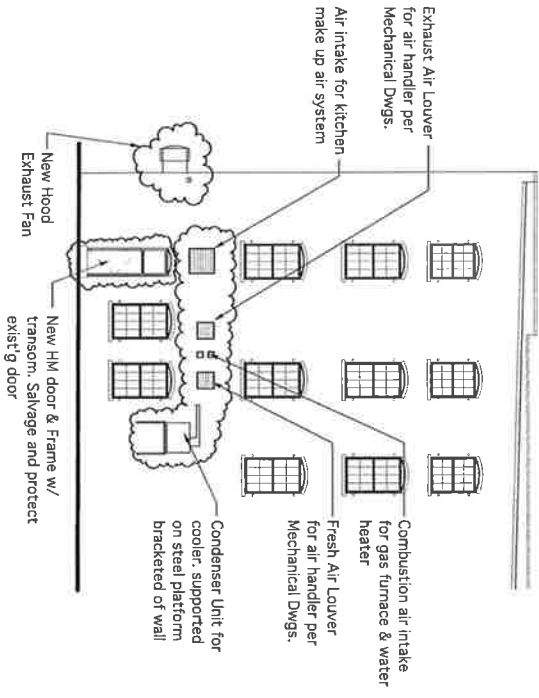
PARTIAL EAST ELEVATION

Scale: 3/32" = 1'-0"



NORTH ELEVATION

Scale: 3/32" = 1'-0"



PARTIAL WEST ELEVATION

Scale: 3/32" = 1'-0"



WISA
WINTON SCOTT
ARCHITECTS

5 Milk Street
Portland, Maine 04101
207.774.4811
www.wintonscott.com



Winton Scott

KING'S HEAD
Tenant Fit Up

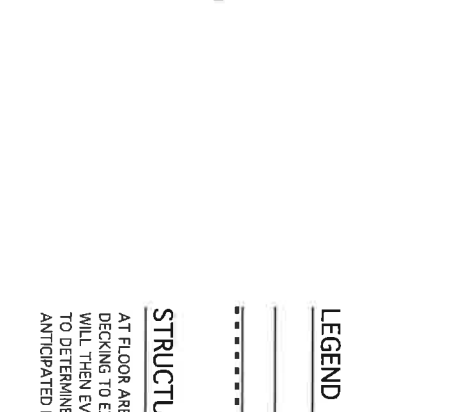
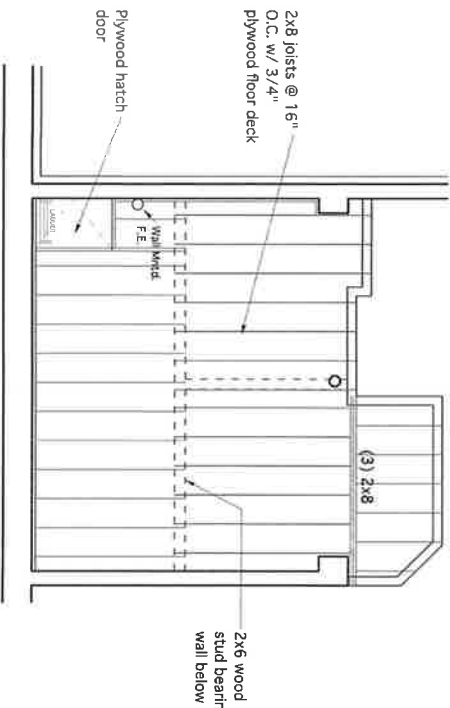
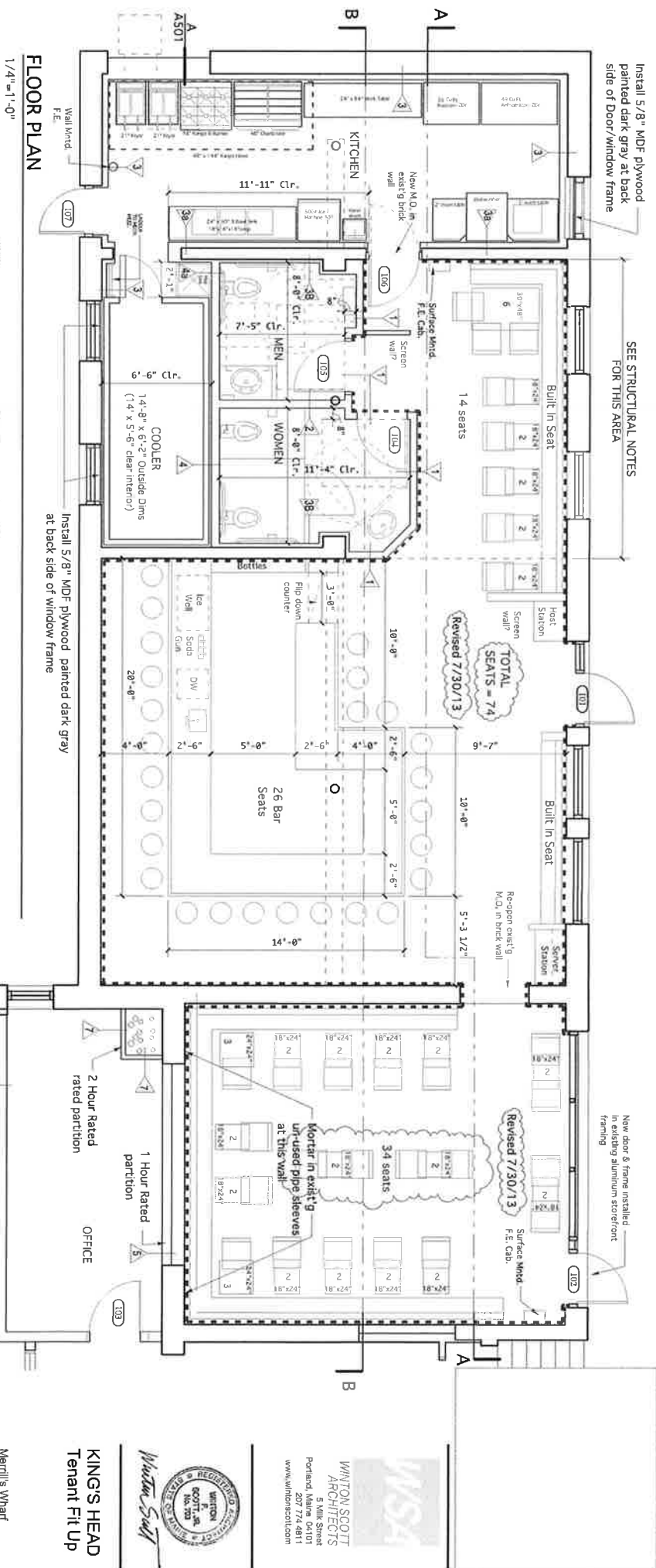
Merrill's Wharf
Portland, Maine

REVISIONS
5/9/13
6/8/13

PERMIT DOCUMENTS
JUNE 8, 2013

Exterior Elevations
Scale: As Noted

A 801



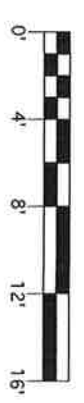
LEGEND

PARTITIONS SHOWN WITH DASHED LINE AT FACE TO RECEIVE 6" HIGH WOOD PANELING. CONFIRM DETAILS WITH TENANT

STRUCTURAL NOTES:

AT FLOOR AREA NOTED ABOVE, REMOVE ALL EXISTING LAYERS OF FLOOR DECKING TO EXPOSE EXISTING FRAMING. THE STRUCTURAL ENGINEER WILL THEN EVALUATE THE CONDITION AND CONFIGURATION OF FRAMING TO DETERMINE IF REPAIRS OR REINFORCEMENT IS NEEDED TO SUPPORT ANTICIPATED LOADS.

MECHANICAL MEZZ. PLAN
1/4" = 1'-0"



WINTON SCOTT ARCHITECTS
5 Milk Street
Portland, Maine 04101
www.winton-scott.com



KING'S HEAD
Tenant Fit Up

Merrill's Wharf
Portland, Maine

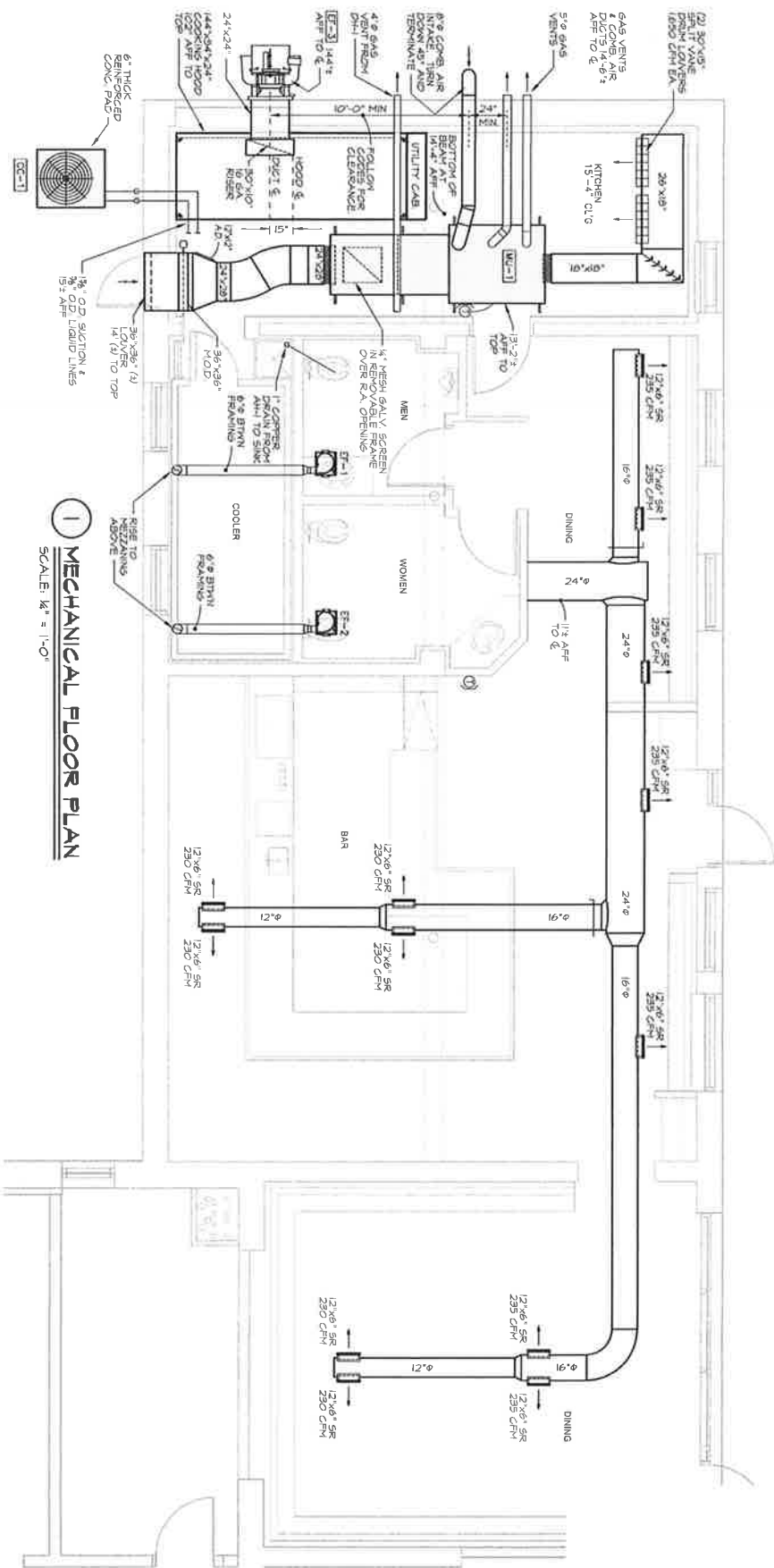
REVISIONS

5/9/13	
6/8/13	

PERMIT DOCUMENTS
JUNE 8, 2013

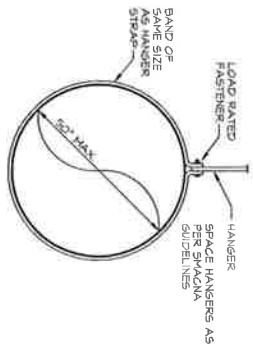
Layout Plan
Sheet A-101

A 101

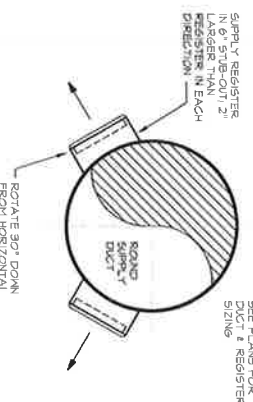


1 MECHANICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

2 ROUND DUCT SUPPORTS
NO SCALE



3 SUPPLY REGISTER
NO SCALE



- GENERAL NOTES**
- Mechanical Contractor shall coordinate work with all other trades.
 - All piping and ductwork shall be run concealed and on the warm side of building insulation unless shown otherwise. Exact locations to be adjusted as required to conform to field conditions.
 - All duct sizes indicated are outside (steel metal) dimensions.
 - All cutting and ducting by the General Contractor.
 - All square duct above over 12 inches in width to have turning vanes.
 - All rooftop dampers and duct smoke detectors shall have duct access doors as large as possible up to 12"x12".
 - All dimensions associated with existing conditions are approximate and are to be field verified.



MECHANICAL SYSTEMS ENGINEERS
ROYAL RIVER CENTER, UNIT #10
10 FOREST FALLS DRIVE
YARMOOUTH, MAINE 04096
FACEBOOK: MSES
207-845-1441
U.S.E. Proj. 1313
© copyright 2013

Scale: 1/4" = 1'-0"
M1

W&S
Winters Scott Architects
254 Commercial Street
Portland, Maine 04101
207.774.4811
www.winterscott.com

Architectural / Planning
Preservation Architecture
Interior Architecture

Professional Engineer
No. 10237
Maine
10/23/12

King's Head Pub
Merrill's What? Portland, Maine
July 01, 2013
Mechanical Floor Plans

Page 7 - Hood Specs 254 Commercial St.

HOOD INFORMATION - Job#1912251

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM RISERS(S)			TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG. END TO END	ROW
					QTY	WIDTH	LENG. DIA.				
1		5424 ND-2-PSP-F	12' 0.00"	600 Deg	4	10'	13'	2256	430 SS Where Exposed	ALDNE	ALDNE

HOOD INFORMATION

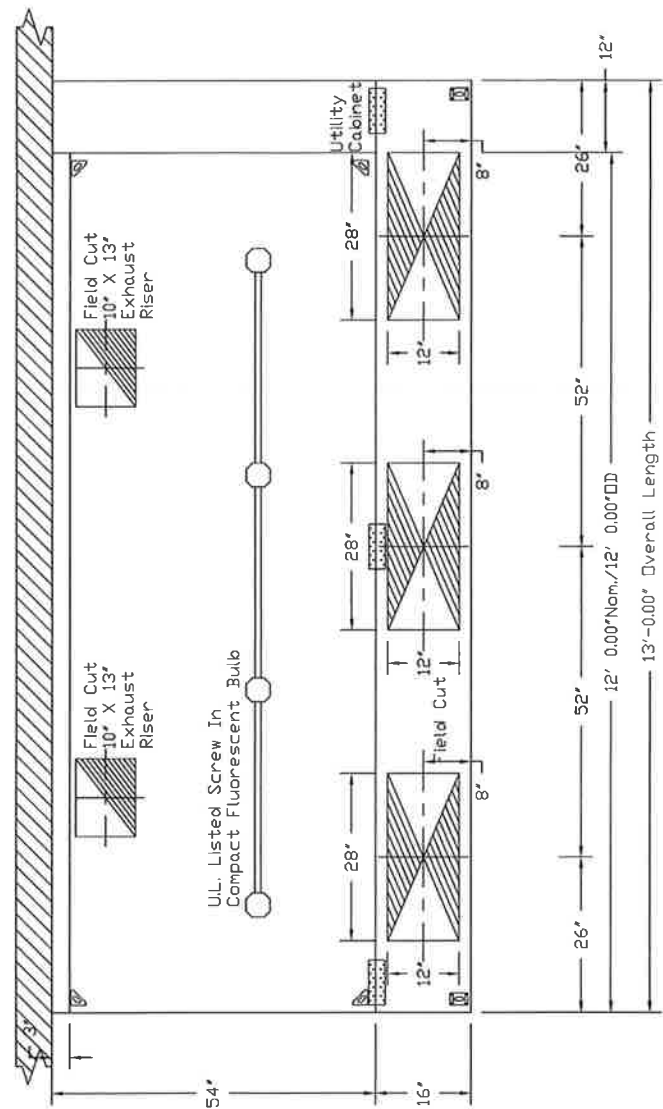
HOOD NO.	TAG	TYPE	FILTERS(S)			LIGHTS(S)			UTILITY CABINET(S)			FIRE SYSTEM PIPING	HOOD HANGING PIPING
			QTY	HEIGHT	LENGTH	QTY	TYPE	TYPE	LOCATION	TYPE	SIZE		
1		Captrate Solo Filter	4	20"	16"	4	Screw In Compact	ND	Right	SC-ENS1111	1 Light	ND	886 LBS

HOOD OPTIONS

HOOD NO.	TAG	OPTION
1		FIELD WRAPPER 18.00' High Front, Left, Right
		BACKSPASH 80.00' High X 156.00' Long 430 SS
		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

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	RISER(S)		
						TYPE	WIDTH	LENG. DIA.
1		Front	156'	16'	6'	MUA	12"	28"
						MUA	12"	28"
						MUA	12"	28"



PLAN VIEW - Hood #1

12' 0.00" LONG 5424ND-2-PSP-F
 NOTE: Additional hanging angles provided for hoods 12' and longer.

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

SIGNATURE _____ Date _____

Your Title _____



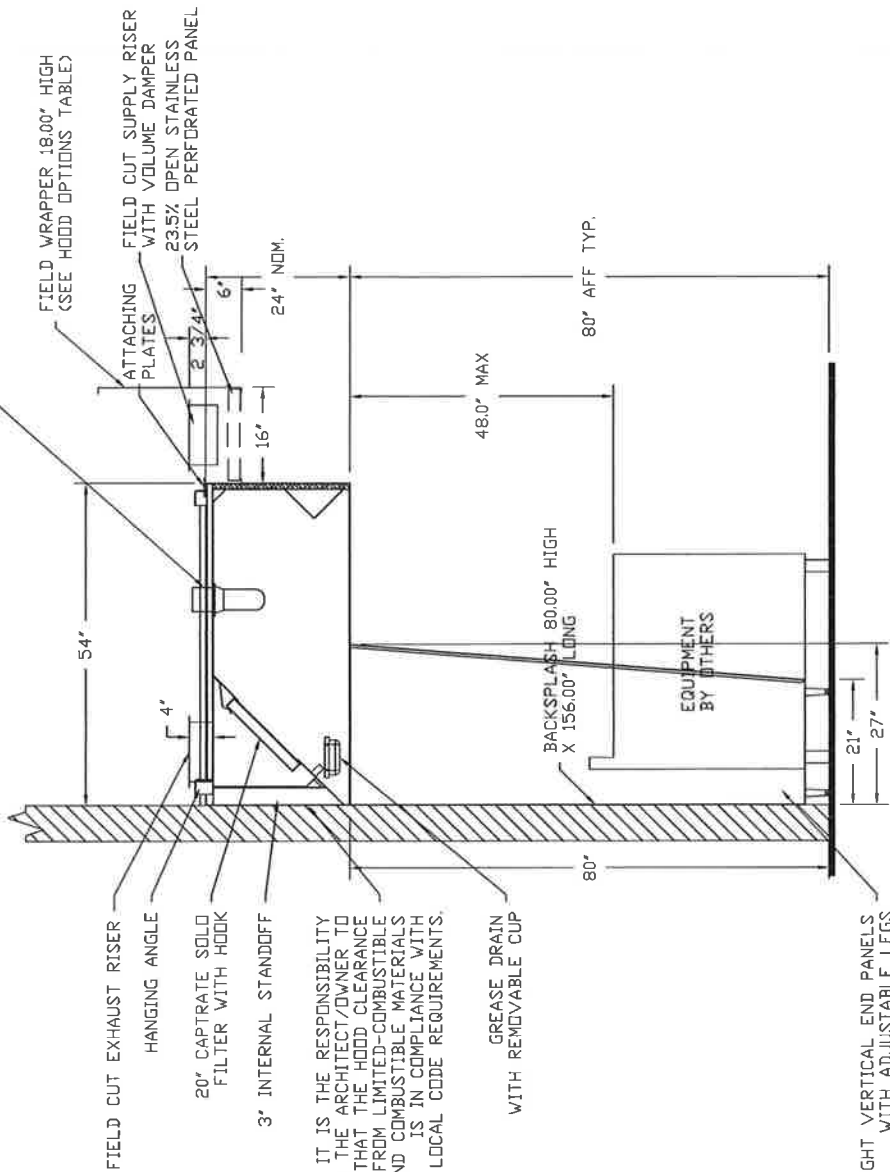


CAPTIVEAIRE

JOB Commercial St - Portland, ME (heated) r1
 LOCATION Lewiston, ME
 DATE 11/14/2013
 JOB # 1912251
 DWG # 1 DRAWN BY BFC-21
 REV. SCALE 3/8" = 1'-0"

Page 8 - Hood Spec - 254 Commercial St.

SCREW IN COMPACT FLUORESCENT BULB, INCANDESCENT LIGHT FIXTURE-HIGH TEMP ASSEMBLY, INCLUDES CLEAR THERMAL AND SHOCK RESISTANT GLOBE



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

LEFT AND RIGHT VERTICAL END PANELS WITH ADJUSTABLE LEGS

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

CUSTOMER APPROVAL TO MANUFACTURE:

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



CAPTIVEAIRE

JOB Commercial St - Portland, ME (heated) r1	
LOCATION	Lewiston, ME
DATE	11/14/2013
DWG #	2
REV.	3/8" = 1'-0"
JOB #	1912251
DRAWN BY	BFC-21

Page 9 - Exhaust Fan Detail - 254 Commercial St.

EXHAUST FAN INFORMATION - Job#1912251

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES
1		NCA1BHPFA	2850	1.250	1142	2.000	3	208	6.2	250	16.2

MUA FAN INFORMATION - Job#1912251

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	CFM	ESP.	RPM	H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES
2		A1-D-250-G10	G10	A1-D-250	2256	0.350	1100	1.500	3	208	4.7	774	19.4

GAS FIRED MAKE-UP AIR UNITS(S)

FAN UNIT NO.	TAG	ACTUAL AIR DENSITY?	INPUT BTUS	OUTPUT BTUS	TEMP. RISE	REQUIRED INPUT PRESSURE	GAS TYPE
2		YES	217405	200197	85 deg F	7 in. w.c. - 14 in. w.c.	Natural

FAN OPTIONS

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1		1 - Grease Box
		1 - Full Grating For Exhaust Fans
		1 - Fan Base Ceramic Seal - For Grease Ducts
		1 - Wallmount 27.5 sq. x 2'
2		1 - Motorized Backdraft Damper for A1-D Housing
		1 - AC Interlock Relay - 24VAC Coil
		1 - Low Fire Start
		1 - Inlet Pressure Gauge, 0-35'
		1 - Manifold Pressure Gauge, -5 to 15' wc
		1 - Full Grating For Commercial Heater
		1 - DJF 1 Indoor Hanging Option - Includes 2 HSA125 Hanging Spring Isolators per Unit-Strut
		1 - Separate 120V Wiring Package (Required and used only for EMS or Prewire with VFD) - Three Phase Only
		1 - Insulation Option for VBank Filter section

FAN ACCESSORIES

FAN UNIT NO.	TAG	EXHAUST	SUPPLY
1		GREASE GRAVITY WALL CUP DAMPER MOUNT DISCHARGE YES	GRAVITY MOTORIZED WALL DAMPER MOUNT YES
2			

CUSTOMER APPROVAL TO MANUFACTURE:

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Revise and Resubmit

SIGNATURE _____ Date _____

Your Title _____



CAPTIVE AIR

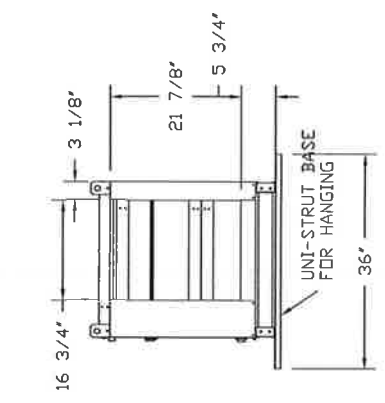
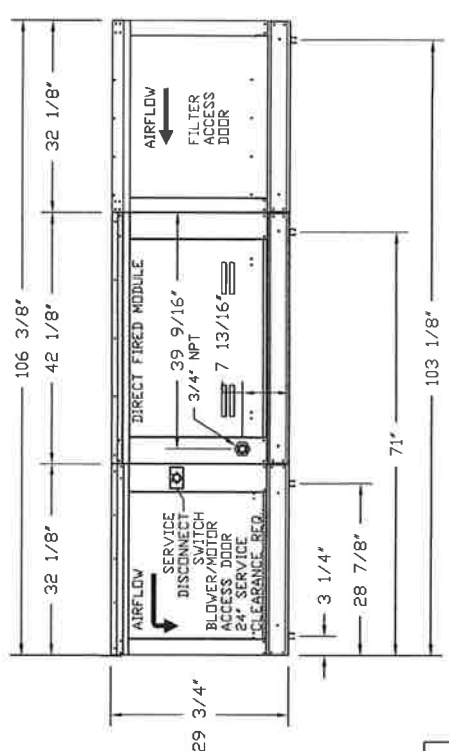
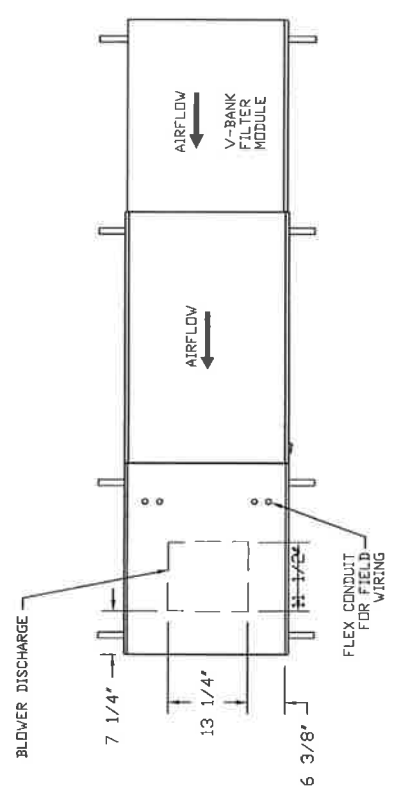
JOB Commercial St - Portland, ME (heated) r1
 LOCATION Lewiston, ME
 DATE 11/14/2013
 DWG # 3
 REV. SCALE 3/8" = 1'-0"

JOB # 1912251
 DRAWN BY BFC-21

Page 11 - Make up air fan - 254 Commercial St.

- FAN #2 A1-D250-G10 - HEATER
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 10" BLOWER
 2. V-BANK EZ FILTERS -- INDOOR
 3. DOWN DISCHARGE -- AIR FLOW RIGHT --> LEFT
 4. MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR DIRECT FIRED HEATERS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LF120S ACTUATOR INCLUDED
 5. COOLING INTERLOCK RELAY, 24VAC COIL, 120V CONTACTS, LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
 6. LOW FIRE START, ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
 7. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
 8. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE
 9. FULL CRATING FOR COMMERCIAL HEATERS FOR SHIPPING.
 10. INDOOR HANGING CRADLE FOR THE SIZE 1 DIRECT FIRED UNIT. 2 HSA125 HANGING ISOLATORS PER UNI-STRUT INCLUDED.
 11. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRED PANEL OR WITH EMS PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM EMS TO MUA SWITCH.
 12. 'INSULATION' FOR V-BANK INTAKE OPTION.

SUPPLY SIDE HEATER INFORMATION
 WINTER TEMPERATURE = 0°F. TEMP. RISE = 85°F.
 BTUS CALCULATED OFF ACTUAL AIR DENSITY
 OUTPUT BTUS AT ALTITUDE OF 0.0 ft. = 200197
 INPUT BTUS AT ALTITUDE OF 0.0 ft. = 217606



CUSTOMER APPROVAL TO MANUFACTURE

Approved as Noted

Approved with NO Exception Taken

Revised and Resubmit

SIGNATURE _____ Date _____

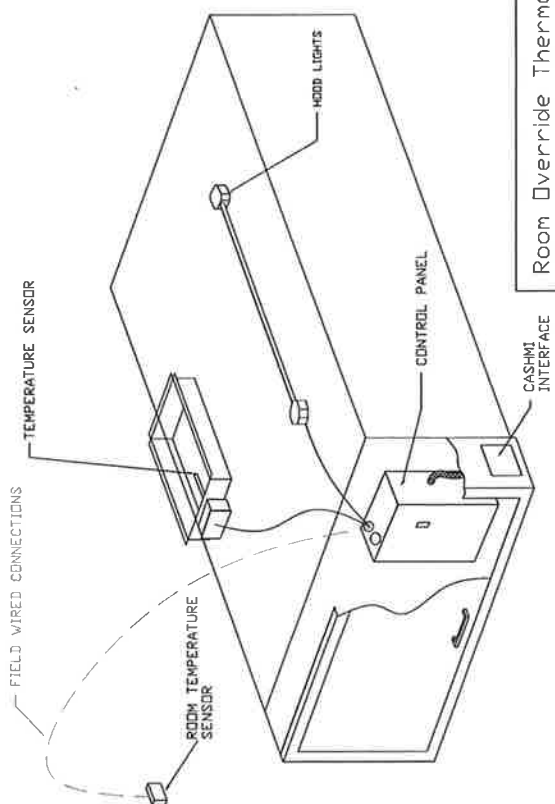
Your Title _____



JOB	Commercial St - Portland, ME (heated) r1
LOCATION	Lewiston, ME
DATE	11/14/2013
DWG #	5
REV.	
JOB #	1912251
DRAWN BY	BFC-21
SCALE	3/8" = 1'-0"

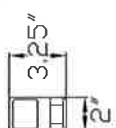
ELECTRICAL PACKAGES - Job#1912251

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	HP.	VOLT	FLA	
1		SC-EMS1111	Utility Cabinet Right	Utility Cabinet Right	1 Light	Smart Controls EMS.	Exhaust	3	2000	208	6.2
			Hood # 1	Hood # 1	1 Fan		Supply	3	1500	208	4.7



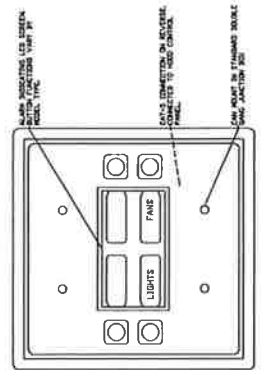
TYPICAL SC-ENERGY MANAGEMENT SYSTEM WITH HOOD MOUNTED PANEL

Room Override Thermostat

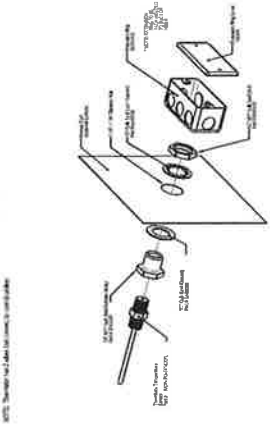


Provides room override based on temperature differential between the room and the kitchen. The thermostat is mounted on a wall 5'-6\"/>

HOOD CONTROL PACKAGE INTERFACE with LCD Screen



DUCT THERMISTOR SENSOR INSTALLATION



Duct Temp Sensor to be installed in every exhaust riser. All Duct Temp Sensors and Hood Lights to be wired back to SC-EMS Electrical Control Box.

EMS Specification Demand Ventilation System

The EMS Demand Ventilation System is designed to automatically reduce exhaust and supply air-flow quantities while ensuring hood performance is maintained. The EMS uses Variable Frequency Drives (VFD) and temperature sensors in the exhaust ducts to modulate the fans speed during cooking operation and maximize energy savings. The EMS LCD screen interface provides fan(s) control, system configuration, and diagnostic information.

- The EMS includes:
- A smart Controller
 - LCD Screen Interface
 - Duct Temperature Sensor(s)
 - Room Temperature Sensor
 - Variable Frequency Drive(s)
- Controls will be listed by ETL to UL standard 508A.
- The system includes a LCD screen interface for fan(s) and hood lights control, wash control (if applicable), gas valve reset, programmable schedule, Max Air Override function, Preparation Time mode, Cool Down mode, and diagnostics including VFD status. The LCD screen interface will be installed on the face of the utility cabinet or on the face of a wall mounted control enclosure.
- Control enclosure will be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet.
- The smart controller will constantly monitor the exhaust air temperature through the riser mounted temperature sensor and modulate the fan speeds accordingly.
- A room temperature sensor will also be provided for field installation in the kitchen space in order to start the fan(s) based on the temperature differential between the room and the exhaust air in the duct rather than fixed set-points.
- A Preparation Time Mode is available for morning operation; dedicated make-up air will be locked out only allowing a balanced kitchen pressure.
- A Cool Down Mode is designed for equipment cool-down period at the end of the daily cooking operations; similarly to Preparation Time mode, dedicated make-up air will be locked out only allowing the use of transfer air during this mode. Exhaust fan(s) will run at low CFM while maintaining a balanced kitchen pressure.
- Fan maximum/ minimum speeds will be adjustable for proper kitchen balance. Fan direction change is also available from the smart controller configuration menu without need for rewiring.
- Duct Temperature Sensor(s) will be mounted in the exhaust hood riser(s). Temperature probe will be constructed of Stainless Steel. System will be factory pre-set to modulate fan speed within a range of 45°F for 500°F and 700°F cooking applications and a range of 5°F for 400°F cooking applications. Setpoints are fully adjustable through the touch screen interface based on application needs.
- The Max Air Override will have an adjustable timeout value.
- The panels include color coded wiring with as-built wiring diagrams and spare terminals controlled by the fire system micro switch. The panels are factory pre-wired to shut supply fans down in a fire condition. Options to turn ON the exhaust fans or turn off the hood lights in a fire condition will be configurable through the smart controller, but only through a password protected menu to prevent any changes after a fire inspection has been performed.

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

SIGNATURE _____

Your Title _____ Date _____



JOB Commercial St - Portland, ME (heated) r1	
LOCATION	Lewiston, ME
DATE	11/14/2013
DWG #	6
JOB #	1912251
DRAWN BY	BF-C-21
REV.	SCALE 3/8" = 1'-0"

Page 13 - Electrical - 254 Commercial St

23
22
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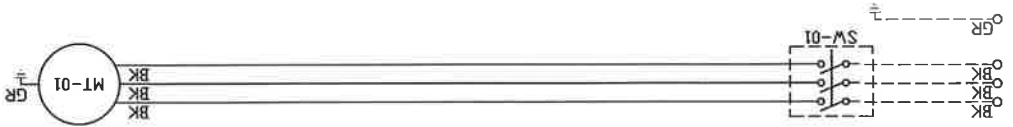
- WIRE COLORS
- BK - BLACK
 - BL - BLUE
 - GR - GREEN
 - GY - GRAY
 - BR - BROWN
 - OR - ORANGE
 - PR - PURPLE
 - RD - RED
 - PK - PINK
 - WH - WHITE
- NOTES
- DENOTES FIELD WIRING
 - _____ DENOTES INTERNAL WIRING

ELECTRICAL INFORMATION
MOTOR/CONTROL MCA: 7.8A
MOTOR/CONTROL MDP: 15A

MOTOR INFO
EXHAUST 2HP-208V-3P-6.2FLA

Component Identification
Label Description Location

MT-01 Fan Motor [20]
SW-01 Main disconnect switch [20]



Installed Options

JOB	1912251 - Commercial St - Portland, ME (heated) r1	SHIP DATE	11/14/2013	MODEL	NCAL0HPFA	DRAWING NUMBER	EXH1912251-1
Exhaust Fan Wiring							

Direct Fired Heater Wiring

JDB

1912251 - Commercial St - Portland, ME (heated) r1

DRAWING NUMBER DF1912251-2

SHIP DATE 11/14/2013

MODEL AI-D-250-G10

ATTENTION ELECTRICIAN
 DROP FOR DISCONNECT CONNECTION
 IS FACTORY SUPPLIED
 CONNECT POWER TO THE DROP

WIRE TYPED
 YW C-IND
 RE-EM-1
 RE-EM-1

Installed Options

Motorized Back Draft Damper

Discharge Temp. Control

EMS Wiring

24V AC Interlock Relay

Label Description Location
 CB-01 Circuit breaker (2amp) 138

FR-01 Flame rod FSC-01 Freeye FSC

MA-01 Modulating amplifier

MT-01 Supply motor

MT-02 Damper motor

PS-01 Low Airflow Switch

PS-02 High Airflow Switch

RE-10 AC Interlock Relay

RE-EM EMS Relay

SV-01 Main disconnect switch

SV-03 Damper end limit switch

TR-01 Power transformer(200v)

TR-02 Power transformer(20v)

TR-03 Ignition transformer(20v)

TR-04 Power transformer(20v)

TS-02 High temp limit switch

TS-03 Intake Air Sensor

TS-05 Discharge Air Sensor

VA-01 Pilot gas valve

VA-02 Main gas valve

MOTOR INFO

1.5HP-208V-3P-4.7FLA

SUPPLY

MOTOR CIRCUIT MCA: 2.0A

MOTOR CIRCUIT MDP: 15A

CONTROL CIRCUIT MDP: 15A

CONTROL CIRCUIT MCA: 1.5A

ELECTRICAL INFORMATION

NOTES

TERMINALS S4 AND S6 USED ON

NF & AF SERIES ACTUATORS

*** TERMINAL 11 PROVIDES COOLING

CONNECTION

WIRE COLOR

RD - RED

YV - YELLOW

GR - GREEN

BR - BLACK

DR - DRANGE

PR - PURPLE

PK - PINK

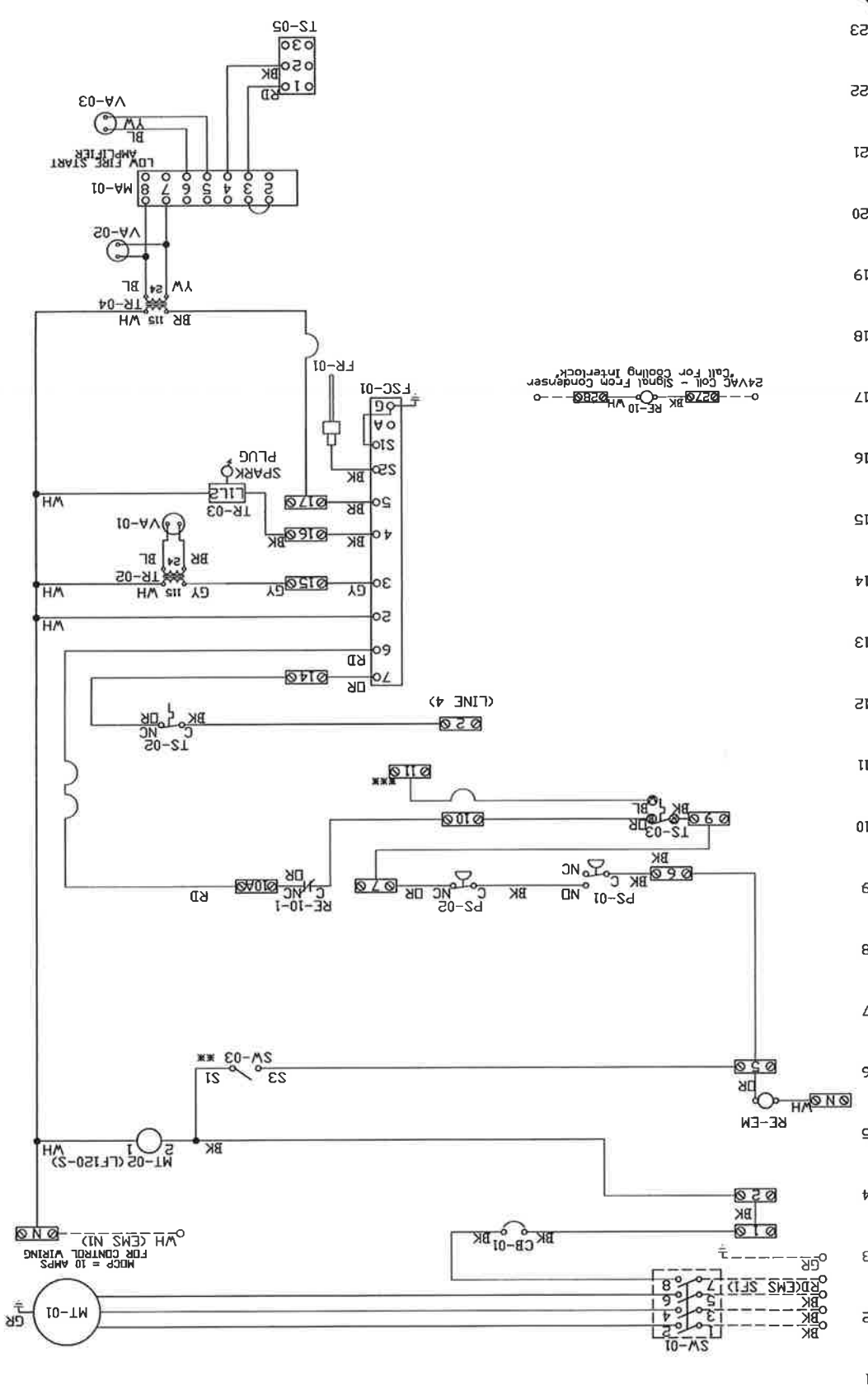
CM - GRAY

BR - BROWN

GR - GREEN

YV - YELLOW

RD - RED



NO	DESCRIPTION	LOCATION
1	Component Identification	
2	Label Description Location	
3	CB-01 Circuit breaker (2amp) 138	
4	FR-01 Flame rod FSC-01 Freeye FSC	
5	MA-01 Modulating amplifier	
6	MT-01 Supply motor	
7	MT-02 Damper motor	
8	PS-01 Low Airflow Switch	
9	PS-02 High Airflow Switch	
10	RE-10 AC Interlock Relay	
11	RE-EM EMS Relay	
12	SV-01 Main disconnect switch	
13	SV-03 Damper end limit switch	
14	TR-01 Power transformer(200v)	
15	TR-02 Power transformer(20v)	
16	TR-03 Ignition transformer(20v)	
17	TR-04 Power transformer(20v)	
18	TS-02 High temp limit switch	
19	TS-03 Intake Air Sensor	
20	TS-05 Discharge Air Sensor	
21	VA-01 Pilot gas valve	
22	VA-02 Main gas valve	

TERMINALS S4 AND S6 USED ON NF & AF SERIES ACTUATORS
 *** TERMINAL 11 PROVIDES COOLING CONNECTION
 WIRE COLOR
 RD - RED
 YV - YELLOW
 GR - GREEN
 BR - BLACK
 DR - DRANGE
 PR - PURPLE
 PK - PINK
 CM - GRAY
 BR - BROWN
 GR - GREEN
 YV - YELLOW
 RD - RED

NOTES
 DENOTES FIELD WIRING
 MOTOR CIRCUIT MCA: 2.0A
 MOTOR CIRCUIT MDP: 15A
 CONTROL CIRCUIT MDP: 15A

ELECTRICAL INFORMATION
 MOTOR CIRCUIT MCA: 2.0A
 MOTOR CIRCUIT MDP: 15A
 CONTROL CIRCUIT MDP: 15A

SUPPLY
 MOTOR INFO
 1.5HP-208V-3P-4.7FLA

NO	DESCRIPTION	LOCATION
1	Component Identification	
2	Label Description Location	
3	CB-01 Circuit breaker (2amp) 138	
4	FR-01 Flame rod FSC-01 Freeye FSC	
5	MA-01 Modulating amplifier	
6	MT-01 Supply motor	
7	MT-02 Damper motor	
8	PS-01 Low Airflow Switch	
9	PS-02 High Airflow Switch	
10	RE-10 AC Interlock Relay	
11	RE-EM EMS Relay	
12	SV-01 Main disconnect switch	
13	SV-03 Damper end limit switch	
14	TR-01 Power transformer(200v)	
15	TR-02 Power transformer(20v)	
16	TR-03 Ignition transformer(20v)	
17	TR-04 Power transformer(20v)	
18	TS-02 High temp limit switch	
19	TS-03 Intake Air Sensor	
20	TS-05 Discharge Air Sensor	
21	VA-01 Pilot gas valve	
22	VA-02 Main gas valve	

Installation Wiring

DOB

1912251 - Commercial St - Portland, ME (heated) r1

DRAWING NUMBER RP1912251-2

SHIP DATE 11/14/2013

MODEL A1-D-250-G10

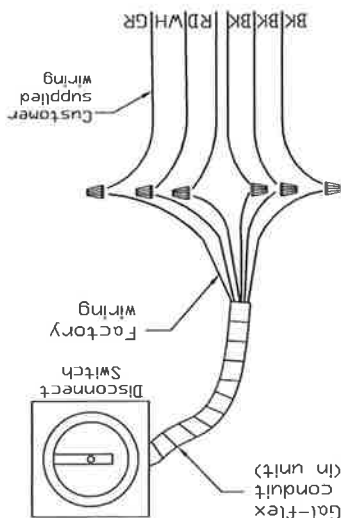
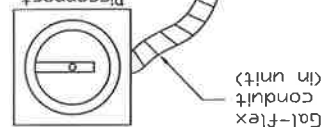
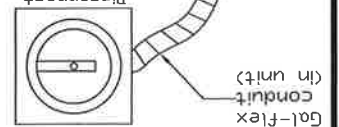
Installed Options

EMS Connections

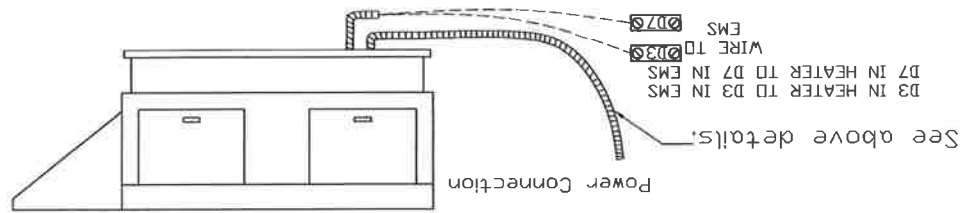
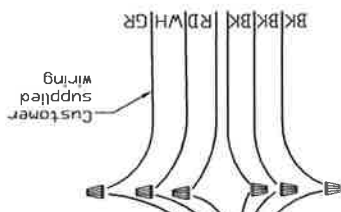
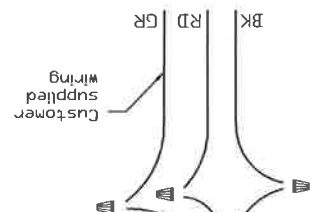
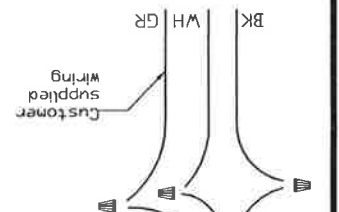
120 V 1 PH.

240 V 1 PH.

208/460/600 V 3 PH.



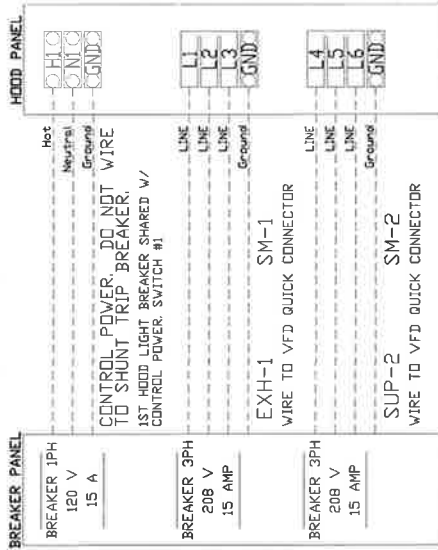
POWER FROM EMS (115V, 1 PHASE)
CONNECT RD TO RHT IN EMS
CONNECT WH TO N1 IN EMS



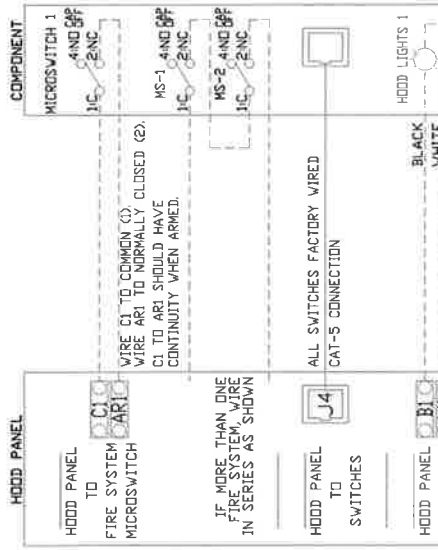
NOTES

- WIRE COLOR
- BK - BLACK
 - YV - YELLOW
 - BL - BLUE
 - GR - GREEN
 - GY - GRAY
 - BR - BROWN
 - DR - ORANGE
 - PR - PURPLE
 - RD - RED
 - PK - PINK
 - WH - WHITE

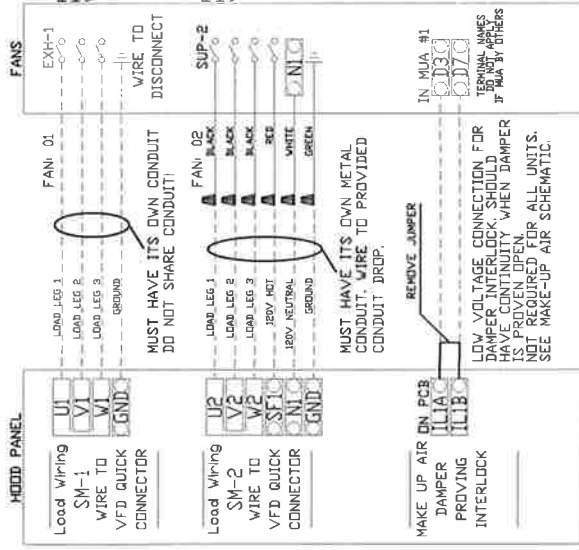
BREAKER PANEL TO HOOD CONTROL PANEL
Responsibility: Electrician



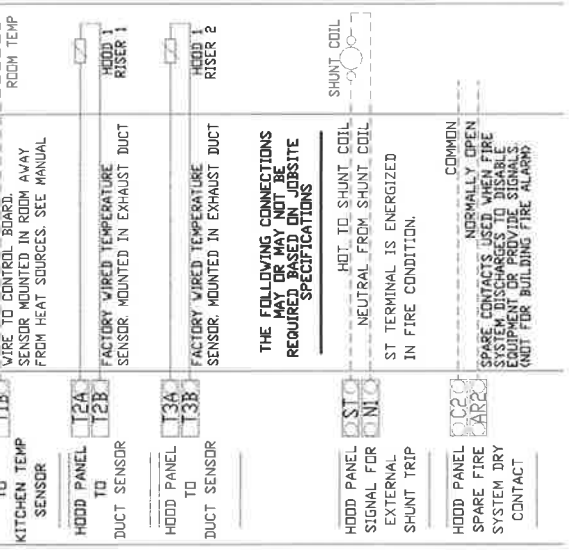
BREAKER PANEL TO HOOD CONTROL PANEL
Responsibility: Electrician



BREAKER PANEL TO HOOD CONTROL PANEL
Responsibility: Electrician



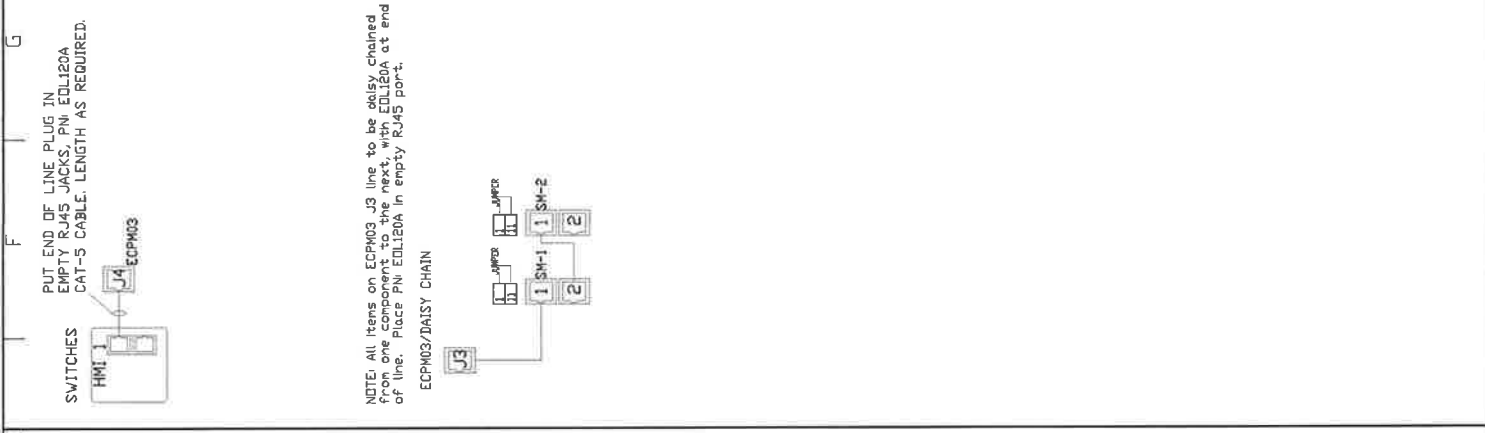
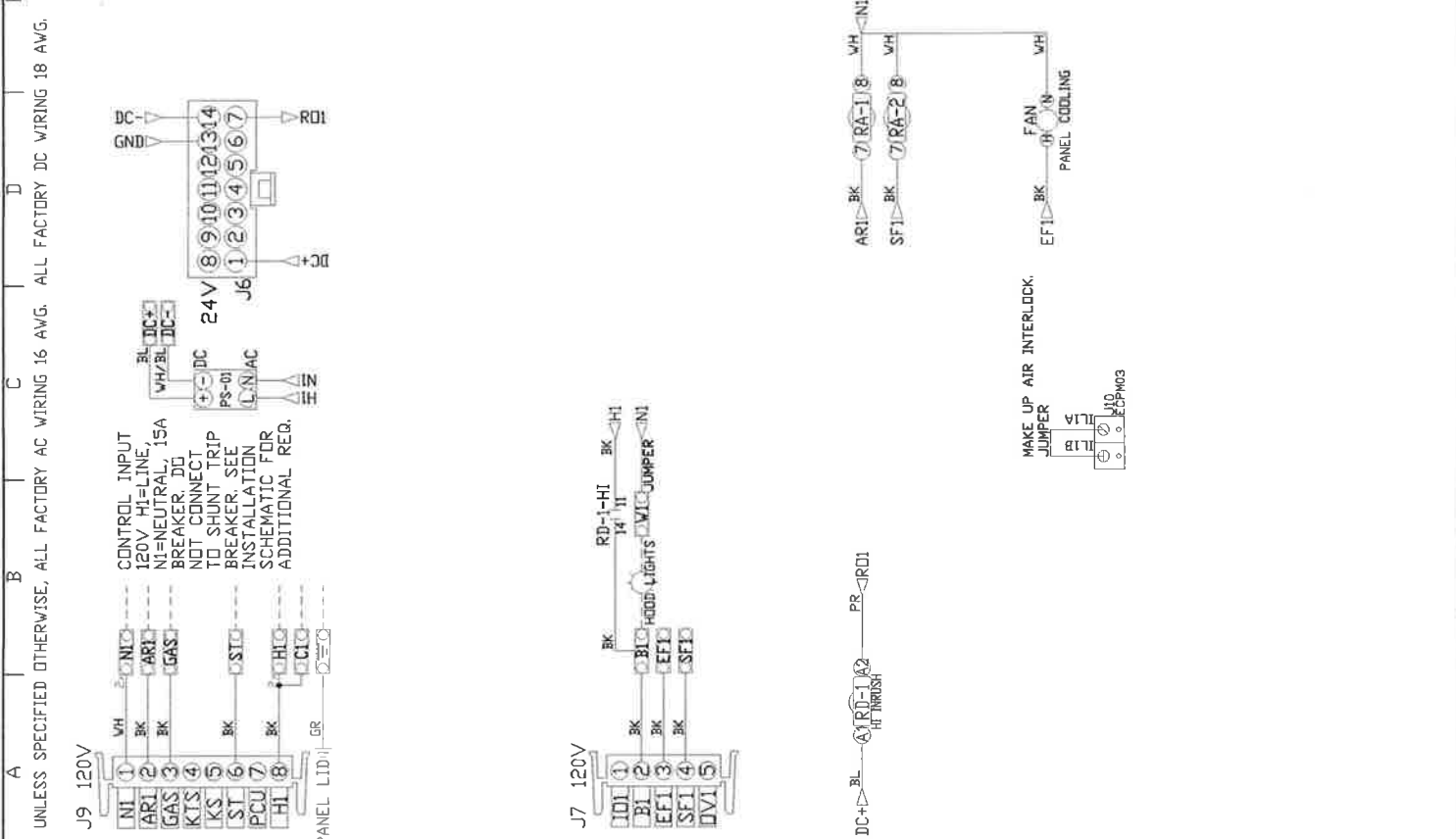
BREAKER PANEL TO HOOD CONTROL PANEL
Responsibility: Electrician



BREAKER PANEL TO HOOD CONTROL PANEL
Responsibility: Electrician



Page 16 - Wiring - 254 Commercial St



FACTORY WIRING SCHEMATIC CIRCUIT BOARDS ECPM03

HMI Rev. 1.11
Rev. 2.01

RA-X	24	RD-X
RELAY	AC	RELAY
NO	1	NO
NC	2	NC
COM	3	COM
COIL	4	COIL
COM	5	COM

COMPONENT LIST

LABEL	DESCRIPTION
3PH-X	3 Phase
PN-varies	PN varies
Overload	Overload
PN-varies	PN varies
Contact	Contact
PN-varies	PN varies
PN-15-24	24VDC
120V Relay	120V Relay
PN-34-1100840	PN-34-1100840
24VDC High Inrush	24VDC High Inrush
18VDC Transformer	18VDC Transformer
PN-67-CP-RD-134-EXP	PN-67-CP-RD-134-EXP

LEGEND

FIELD WIRING

FACTORY WIRING

BK- BLACK
Y- YELLOW
BL- BLUE
BR- BROWN
PP- PURPLE
LN- LIGHT BLUE
GR- GREEN
RD- RED
OP/B- OR/B STRIPE
B/R- BL/R STRIPE
RD/CK- RD/CK STRIPE
WH/BL- WH/BL STRIPE

Commercial St. -

JOB NAME
DRAWN BY
DATE
DATE
DATE

1912251
11/14/2013
ECPM03 ECP #1-2

DESCRIPTION OF OPERATION

Energy Management
System Supply Exhaust
Exhaust on in Fire,
Lights out in Fire, Fans
Exhaust on in Fire,
Exhaust on in Fire,
DUTY THREE PHASE MOTOR
REQUIRED. Room
Exhaust
Exhaust base for field
Installation.

SC-20 x 18 x 8.62 BOX