



# Portland Fire Department

Fire Prevention ♦ 380 Congress Street ♦ Portland, Maine 04101

(t) 207.874.8400 (f) 207.874-8410 ♦ [www.portlandfire.com](http://www.portlandfire.com)

## Kitchen Exhaust System Guideline and Code Provisions

Dear Applicant,

The following are guidelines to assist you in filing for a permit to install a kitchen exhaust system. This checklist should be provided to the licensed engineer responsible for the design of the system. This checklist must be complete and submitted with all required supporting documentation and the permit application for permit approval. The applicable code for this installation is NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, 2008 edition.

### Designer Information

Name: LeBel's sheet metal

Phone Number: 207 576 5613

E-mail address: sachi@exploremaine.com

### Required Plans

Key Plan (illustrating location of work within the building)

Plot plan showing duct systems and terminations, adjacent buildings, property lines, combustible construction, electrical equipment or lines, and closest point of any air intakes, doors, or windows within the distances specified in Section 7.8 of NFPA 96.

Interior and exterior elevations showing duct systems and terminations, clearances to adjacent buildings, property lines, combustible construction, electrical equipment, and closest point of all air intakes, doors, or windows within the distances specified in Section 7.8 of NFPA 96; and equipment, clearance reduction methods, rated enclosures, and cleanouts.

Type of cooking device to be used (i.e: open grill, solid fuel fried, or fryer)

### Required Documents

Equipment operation and installation manuals

**Type of System:**

Type 1:   X              Type 2:       

Type 1 systems are used for cooking equipment used in processes producing smoke or grease-laden vapors.

Type 2 systems are used to vent steam.

**Hood specs**

What type of material is the hood constructed of?   430 Stainless  

Thickness of hood material:   16 gauge  

Style of hood:   concession style low proximity backshelf  

Type of filter:   ss baffled grease  

Height of filter above nearest cooking surface:   26"  

Capacity of hood (CFM):   800 cfm  

Makeup air system description and capacity:   screened window in airstream trailer  

\_\_\_\_\_

**Exhaust Duct Specs**

What type of material is the duct constructed of?   16 gauge steel  

Thickness of duct material:   16  

Air velocity within the duct system: \_\_\_\_\_

**Plan Details Required**

- Hood and duct supports
- Seams and joints
- Grease gutters
- Clearance reduction methods: hood and duct
- Vibration isolation system
- Grease accumulation prevention system
- Cleanouts
- Grease duct enclosure
- Exhaust termination

**\*\*A separate fire suppression system permit is required for Type 1 hoods\*\***

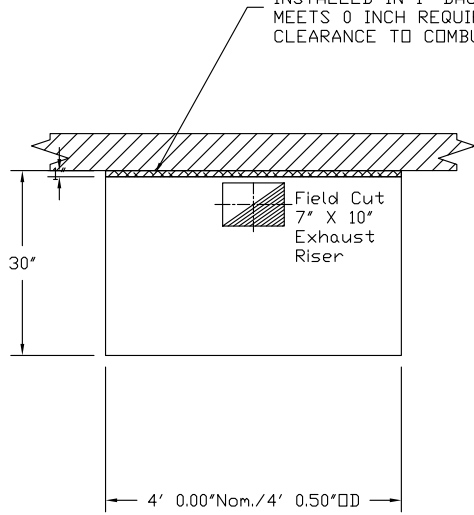
**HOOD INFORMATION - Job#2907054**

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM RISER(S)						HOOD CONSTRUCTION	HOOD CONFIG.		
					TOTAL EXH. CFM	WIDTH	LENG.	HEIGHT	DIA.	CFM		S.P.	END TO END	ROW
1		3012 BLL	4' 0.00'	400 Deg.	800	7'	10'	4'		800	-0.359'	430 SS Where Exposed	ALONE	ALONE

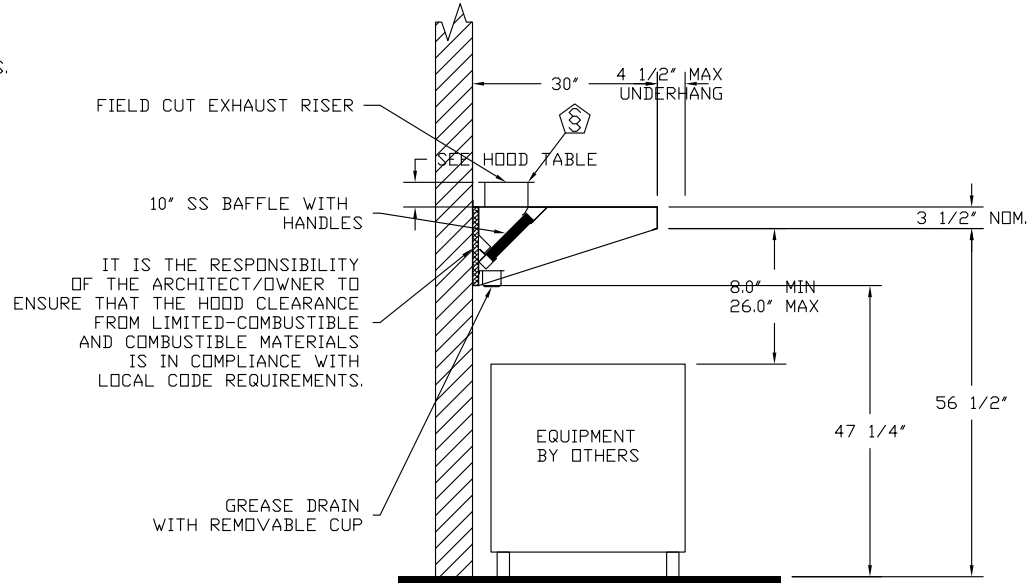
**HOOD INFORMATION**

HOOD NO.	TAG	FILTER(S)					LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WGT		
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 9 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL			SWITCHES	
												TYPE	SIZE	MODEL #	QUANTITY			
1		SS Baffle with Handles	2	10"	16"	30%	0										NO	86 LBS

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



PLAN VIEW - Hood #1  
4' 0.00" LONG 3012BLL



SECTION VIEW - MODEL 3012BLL  
HOOD - #1



JOB Bayside Bowl - BLL	
LOCATION Lewiston, ME,	
DATE 1/31/2017	JOB # 2907054
DWG # 1	DRAWN BY BFC-21
REV.	SCALE 3/8" = 1'-0"

**EXHAUST FAN INFORMATION - Job#2907054**

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES
1		DU30HFA	800	0.670	1460	0.250	0.1610	1	115	3.8	109	11

**FAN OPTIONS**

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1		1 - Grease Box
		1 - Full Crating For Exhaust Fans
		1 - Wallmount 20.5' sq. x 2'
		1 - Wall Mount Construction for Fan
		1 - 3 Year Extended Motor Warranty
		1 - Fan Base Ceramic Seal - For Grease Ducts

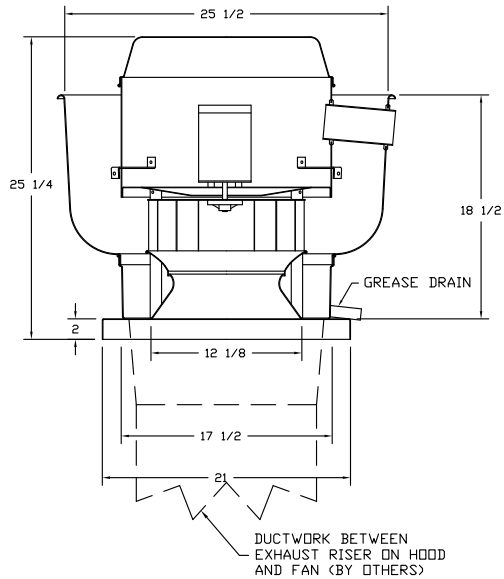
**FAN ACCESSORIES**

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

**FAN SOUND INFORMATION**

FAN UNIT NO.	MOTOR	RPM	LWA	SONES	DBA	DISTANCE FT	OCTAVE 1	OCTAVE 2	OCTAVE 3	OCTAVE 4	OCTAVE 5	OCTAVE 6	OCTAVE 7	OCTAVE 8
1	Exhaust	1460	73.3	11	61.8	5	72.9	75.8	76.8	69.6	65.7	63.8	58.9	48.9

**FAN #1 DU30HFA - EXHAUST FAN**



**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.

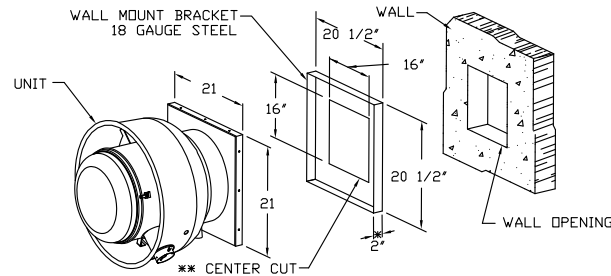
**ABNORMAL FLARE-UP TEST**

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.

**OPTIONS**

- GREASE BOX
- FULL CRATING FOR EXHAUST FANS
- WALLMOUNT 20.5" SQ. X 2"
- WALL MOUNT CONSTRUCTION FOR FAN
- 3 YEAR EXTENDED MOTOR WARRANTY
- FAN BASE CERAMIC SEAL - FOR GREASE DUCTS

**WALL MOUNT BRACKET**



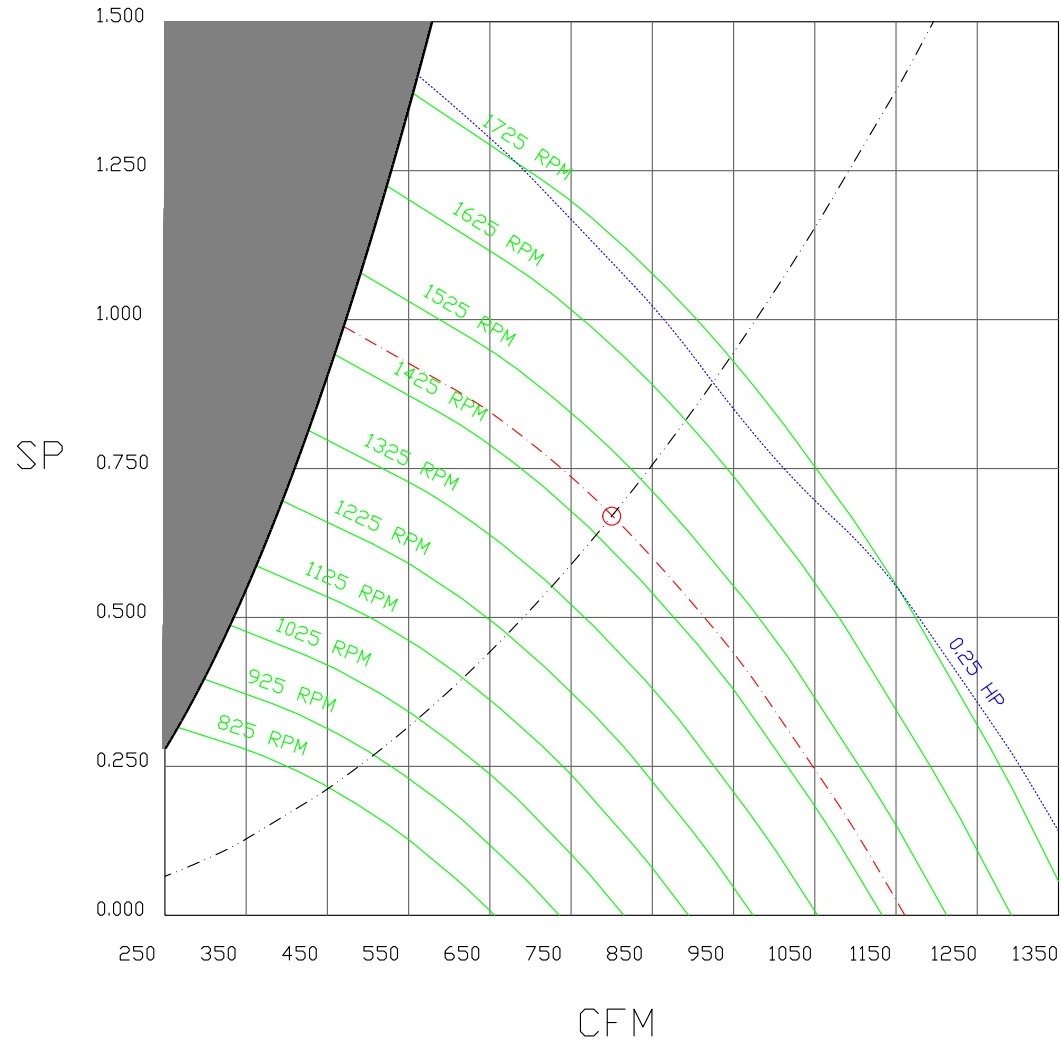
- WALL BRACKET FITS INTO BASE OF FAN
- SELF DRILLING SCREWS SHOULD BE USED FOR UNIT ATTACHMENT TO WALL MOUNT BRACKET
- \* DIMENSION = 5" WHEN USED WITH DAMPER
- \*\* CENTERED IN WALL MOUNT



JOB Bayside Bowl - BLL	
LOCATION Lewiston, ME,	
DATE 1/31/2017	JOB # 2907054
DWG # 2	DRAWN BY BFC-21
REV.	SCALE 3/8" = 1'-0"

FAN#1 - EXHAUST PERFORMANCE CURVES.

800 CFM, 0.67 SP @ 1460 RPM and 0.161 BHP at 243 feet and 70 deg F  
 \* Please note that these curves were adjusted for job specific temperature and altitude.



			JOB Bayside Bowl - BLL	
			LOCATION Lewiston, ME,	
			DATE 1/31/2017	JOB # 2907054
			DWG # 3	DRAWN BY BFC-21
			REV.	SCALE 3/8" = 1'-0"



**GREASE DUCT SPECIFICATIONS:**

PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.

PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

**CUSTOMER APPROVAL TO MANUFACTURE:**

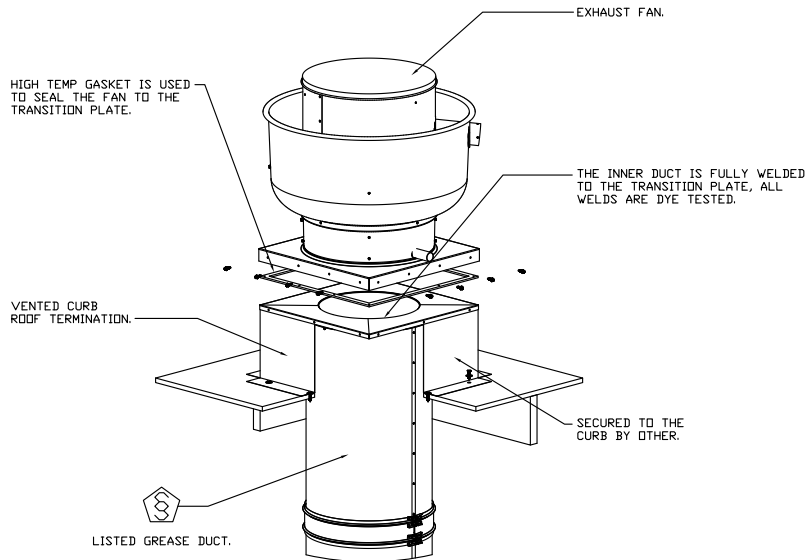
Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

SIGNATURE \_\_\_\_\_

Your Title \_\_\_\_\_ Date \_\_\_\_\_



JOB Bayside Bowl - BLL	
LOCATION Lewiston, ME,	
DATE 1/31/2017	JOB # 2907054
DWG # 4	DRAWN BY BFC-21
REV.	SCALE 3/8" = 1'-0"

Exhaust Fan Wiring

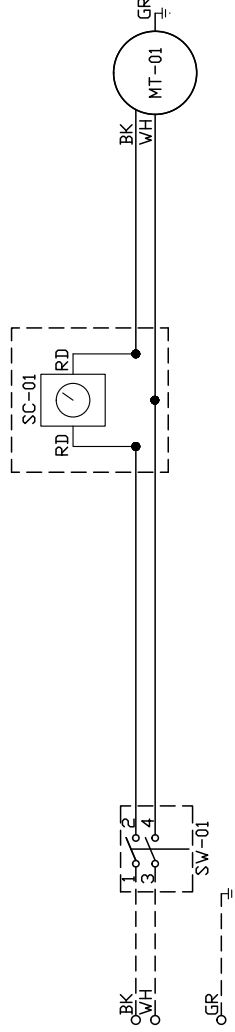
JOB 2907054 - Bayside Bowl - BLL

DRAWING NUMBER EXH2907054-1

SHIP DATE 1/31/2017

MODEL DU30HFA

Installed Options  
Speed Control



Component Identification Location

Label	Description	Location
MT-01	Fan Motor	[20]
QD-01	Quick Disconnect	[20]
SC-01	Speed Control	[10]
SW-01	Main disconnect switch	[20]

EXHAUST MOTOR\_INFO  
0.25HP-115V-IP-38FLA

ELECTRICAL INFORMATION  
MOTOR/CTRL MOP: 48A  
MOTOR/CTRL MOP: 15A

NOTES  
--- DENOTES FIELD WIRING  
\_\_\_ DENOTES INTERNAL WIRING

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