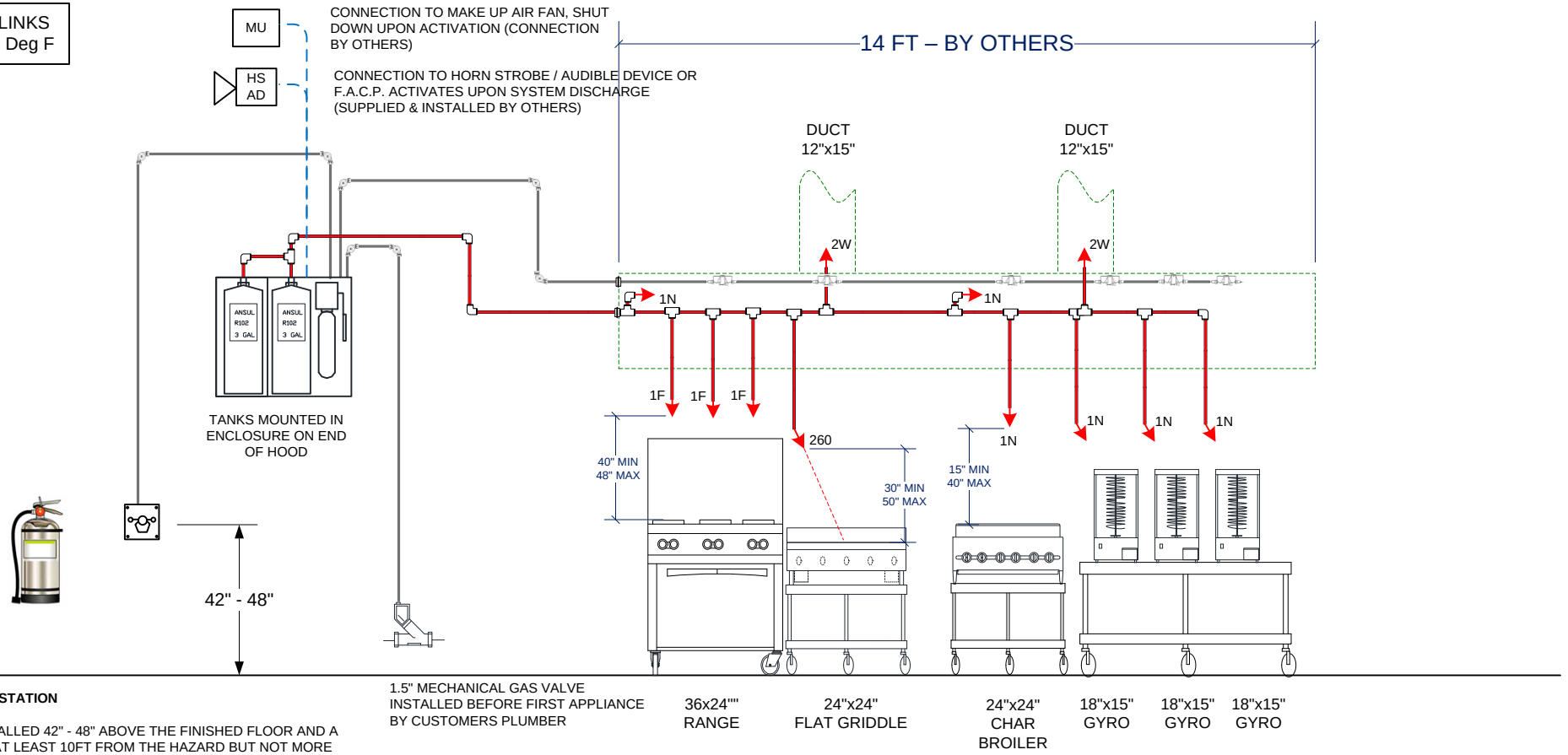
ALL FUSIBLE LINKS
RATED AT 450 Deg F



REMOTE PULL STATION

SHALL BE INSTALLED 42" - 48" ABOVE THE FINISHED FLOOR AND A DISTANCE OF AT LEAST 10FT FROM THE HAZARD BUT NOT MORE THAN 20FT. IT SHALL BE INSTALLED IN THE PATH OF EXIT AND REQUIRE A MAXIMUM FORCE OF 40 LBS AND A MAXIMUM MOVEMENT OF 14" FOR ACTUATION

CLASS K WET CHEMICAL EXTINGUISHER
SHALL BE INSTALLED 42" - 48" ABOVE THE FINISHED FLOOR

SEE NOZZLE DETAILS AND HEIGHTS ON PAGES 3 - 5

APPLIANCE / HAZARD	NOZ QTY	NOZ TYPE	FLOW PTS / NOZZLE	TOTAL PTS
36" RANGE	3	1F	1	3
23" FLAT GRIDDLE	1	260	2	2
24" CHAR BROILER	1	1N	1	1
GYRO MACHINE	3	1N	1	3
PLENUM	2	1N	1	2
DUCT UP TO 100" PERIMETER	2	2W	2	4
				15

ANSUL®

ANSUL R102 – 6 GALLON SYSTEM
22 FLOW POINTS MAX
15 POINTS USED

CITY OF BREMERTON

FIRE EQUIPMENT CONTRACTOR
345 6TH STREET, SUITE 600 BREMERTON, WA 98337
360-473-5290

SOME RESTAURANT
123 MAIN STREET
BREMERTON, WA 98337

SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	

SCALE N/A SHEET 1 OF 5

EXAMPLE DRAWINGS PROVIDED BY: http://www.firesystemdrawings.com

GENERAL NOTES:

1.System shall be Pre-Engineered

2.System shall be manufactured by ANSUL INC.

3.ANSUL R102 systems have the following Listings and Approvals:

Underwriters Laboratories Inc, UL 300 / UL 1254, UL EX 3470

4.System Temperature Limitations – 32F min / 120F Max

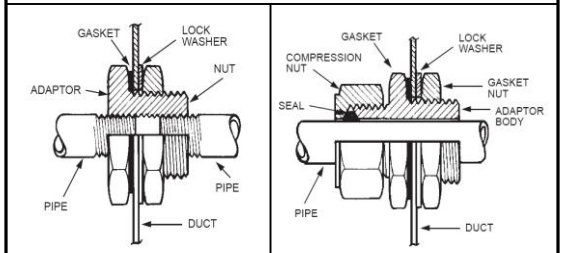
5.Installation requirements, nozzle limitations and design criteria shall comply with the ANSUL R102 Manual and all addendums as published by ANSUL

6.Pipe and fittings shall be Schedule 40 Black, Chrome Plated or Stainless. Galvanized Pipe Shall Not Be Used.

7.All required electrical work shall be performed by others and is not included on this shop drawing.

8.All required plumbing work be performed by others and is not included on this shop drawing

ALL PENETRATIONS TO THE HOOD SHALL BE SEALED WITH AN APPROVED QUICK SEAL DEVICE



General Piping Requirements

1. All R-102 system piping is straight line. Therefore, the need for critical lengths and balancing is minimized.
2. Two 45° elbows count as one 90° elbow.
3. Each branch line includes the tee or elbow leading to it, and all fittings within the branch line itself.
4. The minimum piping length of Schedule 40, 3/8 in. pipe from the tank outlet to any nozzle protecting a range, fryer, or wok must be 6 ft. (1.8 m).
5. Pipe lengths are measured from center of fitting to center of fitting. See Figure 85.

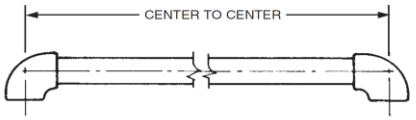


FIGURE 85
000778

6. All distribution piping must be 3/8 in. Schedule 40 black iron, chrome-plated, or stainless steel. **Do not use hot dipped galvanized pipe on the distribution piping.**
7. All threaded connections located in and above the protected area must be sealed with pipe tape. Tape should be applied to male threads only. Make certain tape does not extend over the end of the thread, as this could cause possible blockage of the agent distribution.
8. Before installing blow-off caps on nozzles, apply a small amount of Dow Corning No. 111 silicone grease across the opeing in the nozzle tip and also a small amount coating the exterior of the blow-off cap. This will help keep cooking grease from building up on the cap.
9. Tees used in the distribution piping can be used as thru tees, side outlet tees, or bull tees.

TANK AND CARTRIDGE REQUIREMENTS

Once the hazard analysis is completed and the total nozzle flow numbers are established, the quantity and size of agent tanks and cartridges needed to supply the nozzles with the proper volumes of agent at the proper flow rates can be determined. For cartridges used in the regulated release mechanism, flow capacities, tank quantities and sizes, and regulated release cartridge options are given in the table below.

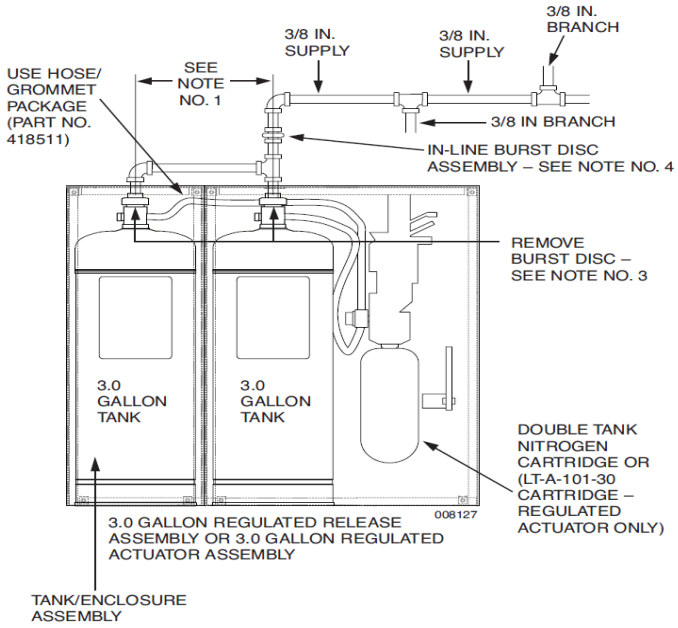
Total Flow Numbers*	Quantity and Size of Tank(s)	Regulated Release Cartridge Options	
		Nitrogen	Carbon Dioxide
1 – 5	(1) 1.5 Gallon	LT-20-R	101-10
6 – 11	(1) 3.0 Gallon	LT-30-R	101-20
11 – 16	(1) 1.5 Gallon (1) 3.0 Gallon	Double	101-30
16 – 22	(2) 3.0 Gallon	Double	101-30**

When one or more regulated actuators are used, the following tank and cartridge combinations apply for each regulated actuator:

Regulated Actuator Tank(s)	Regulated Actuator Cartridge
(1) 1.5 Gallon	LT-20-R or 101-10
(1) 3.0 Gallon	LT-30-R or 101-20
(1) 1.5 Gallon and (1) 3.0 Gallon	LT-A-101-30 or 101-30** or double tank
(2) 3.0 Gallon	LT-A-101-30 or 101-30** or double tank

Distribution Piping Requirements – 6.0 Gallon Manifolded System (Continued)

This configuration consists of two 3 gallon tanks. Both tanks are connected to a common manifold tee and are pressurized from a single double tank (Part No. 73022) nitrogen cartridge in the regulated release assembly. See Figure 115. **Note**: A tank mounting bracket can be utilized instead of the tank/enclosure assembly. See Figure 117.



NOTE 1: THE PIPE CONNECTION FROM TANK CENTER TO TANK CENTER CANNOT EXCEED 8-1/2 IN. (21.5 cm). ALSO, OEM RELEASE/BRACKET ASSEMBLY CAN BE UTILIZED WHEN MANIFOLDING 3.0 GALLON TANK.

NOTE 2: ONLY 3 GALLON TANKS CAN BE MANIFOLDED.

NOTE 3: THE BURST DISC THAT IS PART OF THE TANK ADAPTOR/BURST DISC ASSEMBLY MUST BE REMOVED AND MODIFIED. SEPARATE THE ALUMINUM DISC MATERIAL FROM THE PLASTIC GASKET. DISCARD THE ALUMINUM DISC MATERIAL AND REINSTALL THE PLASTIC GASKET BACK INTO THE TANK ADAPTOR/BURST DISC ASSEMBLY.

NOTE 4: THE IN-LINE BURST DISC ASSEMBLY, PART NO. 416790, IS TO BE MOUNTED AS CLOSE TO THE TANK OUTLET AS POSSIBLE. AFTER SYSTEM DISCHARGE, THE ASSEMBLY MUST BE DISASSEMBLED AND A NEW BURST DISC INSTALLED.

FIGURE 115

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123 MAIN STREET
BREMERTON, WA 98337

SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	

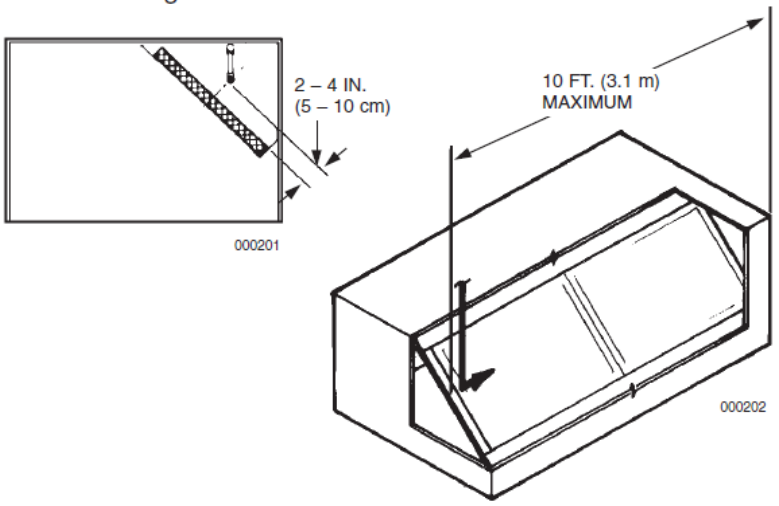
SCALE N/A SHEET 2 OF 5

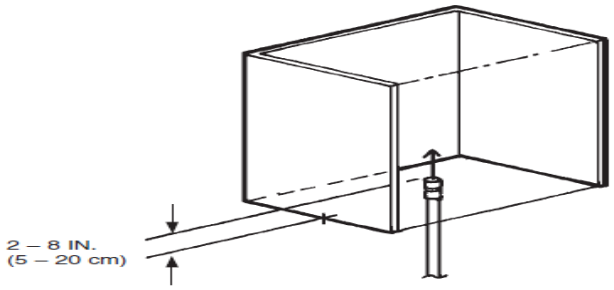
EXAMPLE DRAWINGS PROVIDED BY: http://www.firesystemdrawings.com

HORIZONTAL PROTECTION – OPTION 1

1N NOZZLE – PART NO. 419335 – SINGLE BANK PROTECTION

One 1N nozzle will protect 10 linear feet (3.1 m) of single filter bank plenum. The nozzle(s) must be mounted in the plenum, 2 to 4 in. (5 to 10 cm) from the face of the filter, centered between the filter height dimension, and aimed down the length. The nozzle must be positioned 0-6 in. (0-15 cm) from the end of the hood to the tip of the nozzle. See Figure 9.





DUCT SIZES UP TO 100 IN. (254 cm) PERIMETER/ 32 IN. (81.3 cm) DIAMETER

- One 2W Nozzle (Part No. 419337) = two flow numbers
- 100 in. (254 cm) perimeter maximum
- 32 in. (81.3 cm) diameter maximum

Description	Part No.	3.0 Gallon System
2W Nozzle	419337	Maximum 100 in. (254 cm) Perimeter

FUSIBLE LINK

Select correct UL Listed fusible link(s) for installation in detector(s) according to the temperature condition chart below:

SL STYLE

Fusible Link Shipping Assembly Part No.	Temperature Rating	To Be Used Where Temperature Does Not Exceed	Color of Link
439085 (25)	165 °F	100 °F (74 °C)	Black (38 °C)
439086 (25)	212 °F	150 °F (100 °C)	White (66 °C)
439087 (25)	280 °F	225 °F (138 °C)	Blue (107 °C)
439088 (25)	360 °F	290 °F (182 °C)	Red (143 °C)
439089 (25)	450 °F	360 °F (232 °C)	Green (182 °C)

A-PC STYLE

Fusible Link Shipping Assembly Part No.	Temperature Rating	To Be Used Where Temperature Does Not Exceed
439227 (10)	165 °F (74 °C)	100 °F (38 °C)
439228 (10)	212 °F (100 °C)	150 °F (66 °C)
439229 (10)	280 °F (138 °C)	225 °F (107 °C)
439230 (10)	360 °F (182 °C)	290 °F (143 °C)
439231 (10)	450 °F (232 °C)	360 °F (182 °C)
439232 (25)	500 °F (260 °C)	400 °F (204 °C)

EXAMPLE DRAWINGS PROVIDED BY: http://www.firesystemdrawings.com

CITY OF BREMERTON

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SOME RESTAURANT
123 MAIN STREET
BREMERTON, WA 98337

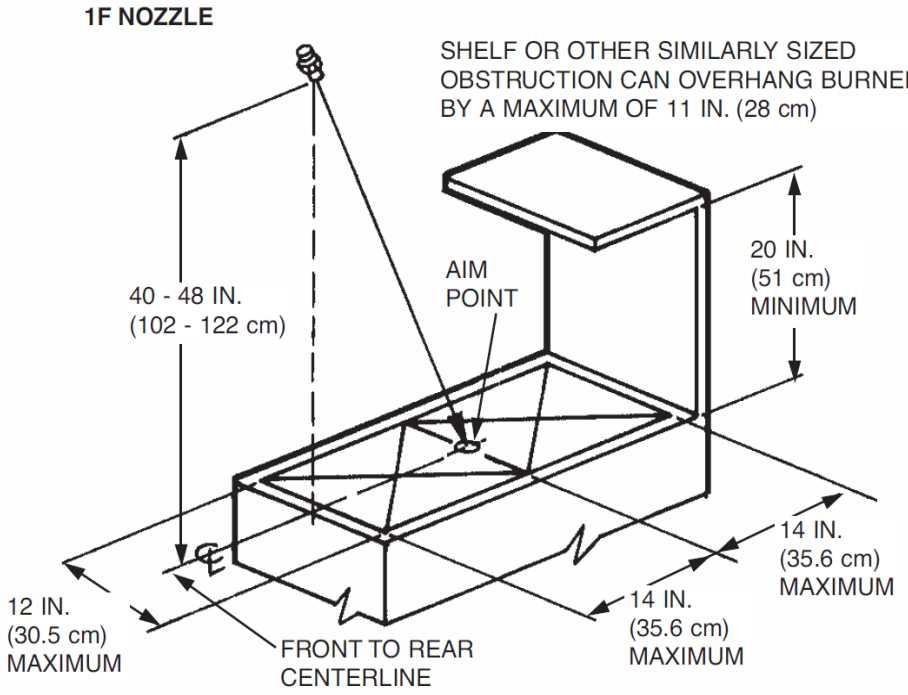
SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	

SCALE N/A

Range Protection 1F (1-Flow) Nozzle (With or Without Back Shelf/Obstruction)

Single and multiple burner ranges can be protected using a 1F nozzle, Part No. 419333. The nozzle tip is stamped with 1F indicating that it is a one-flow nozzle and must be counted as one flow number.

When using the 1F nozzle for range protection with or without back shelf or other similarly sized obstruction, the maximum length of the burner grates being protected must not exceed 28 in. (71 cm) and the maximum area of the burner grates must not exceed 336 in.^{2} (2168 cm^2). See Figure 37 for nozzle location details.



1F NOZZLE LOCATED OVER FRONT EDGE OF BURNER GRATE AND ORIENTED SO NOZZLE TIP FLATS ARE PARALLEL WITH BURNER GRATE FRONT TO REAR CENTERLINE AND SHALL BE AIMED AT THE CENTER OF THE COOKING SURFACE.

FIGURE 37
000238

Gas-Radiant/Electric Char-Broiler Protection

The R-102 system uses the 1N nozzle, (Part No. 419335) for gas-radiant/electric char-broiler protection.

The nozzle tip on the 1N nozzle is stamped with a 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.

One IN nozzle will protect a hazard with a maximum length of 36 in. (91 cm) and a total cooking area which does not exceed 864 in.^{2} (5574 cm^2). The nozzle tip must be located 15 to 40 in. (38 to 102 cm) above the hazard surface. When using this nozzle for gas-radiant/electric char-broiler protection, the nozzle must be positioned anywhere along or within the perimeter of the maximum cooking area and shall be aimed at the center of the cooking surface. See Figure 59.

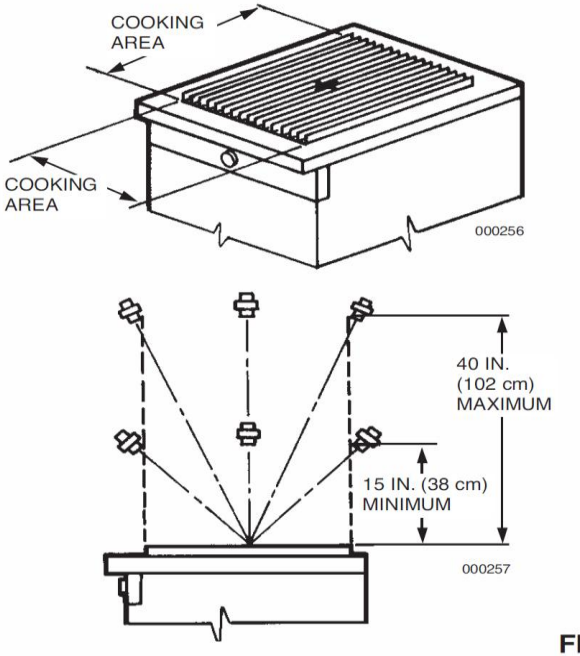


FIGURE 59

EXAMPLE DRAWINGS PROVIDED BY: http://www.firesystemdrawings.com

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	SOME RESTAURANT 123 MAIN STREET BREMERTON, WA 98337			
	SIZE	FSCM NO	DWG KITCHEN FIRE SYSTEM	REV
	SCALE N/A		SHEET 4 OF 5	

- **Griddle Protection 260 (2-Flow) Nozzle – High Proximity**
- **Application**

Option 2 – Nozzle Perimeter Located

- 30 in. to 50 in. (76 cm to 127 cm) above the cooking surface.

This high proximity application uses the 260 nozzle, Part No. 419341.

The nozzle tip is stamped with 260 indicating this is a two-flow nozzle and must be counted as two flow numbers.

- One 260 nozzle will protect a maximum cooking area of 1440 in.^{2}
- (9290 cm^2) with a maximum dimension of 48 in. (122 cm).

When using this nozzle for griddle protection, the nozzle must be positioned along the cooking surface perimeter to 2 in. (5.1 cm) inside perimeter, and aimed at the center of the cooking
- surface. See Figure 43 and 44.

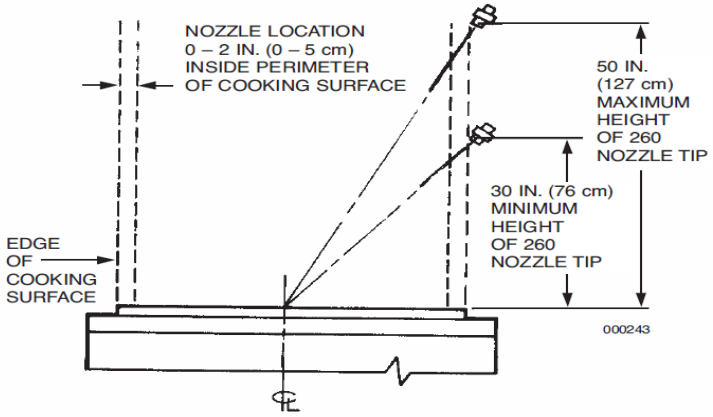

FIGURE 43
000243

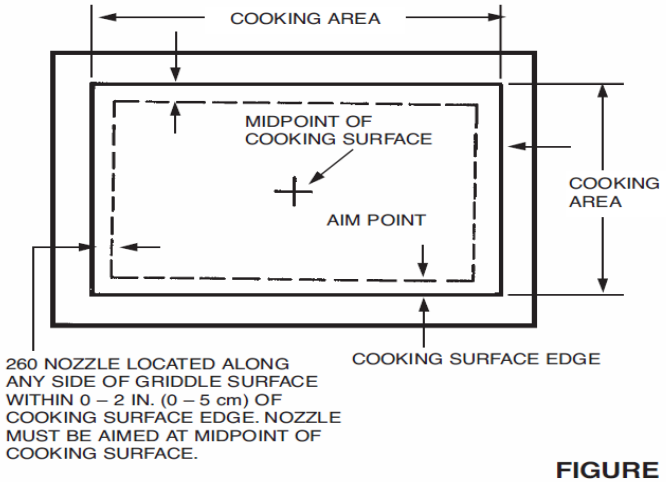

FIGURE 44
000241

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123 MAIN STREET
BREMERTON, WA 98337

SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	

SCALE N/A SHEET 5 OF 5