

**CITY OF SACRAMENTO**  
1231 I Street, Sacramento, CA 95814

**Permit No: 0103770**  
**Insp Area: 2**

**Site Address: 2450 MEADOWVIEW RD SAC**  
Parcel No: 053-0010-043

Sub-Type: NOTHR  
Housing (Y/N): N

**CONTRACTOR**  
JORGENSEN & CO  
153 S. SANTA CRUZ  
MODESTO CA 95354

**OWNER**  
CITY OF SACRAMENTO  
915 I ST RM12  
SACRAMENTO CA 95814

**ARCHITECT**

**Nature of Work: HOOD & DUCT FIRE SUPPRESSION SYS.**

**CONSTRUCTION LENDING AGENCY:** I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name \_\_\_\_\_ Lender's Address \_\_\_\_\_

**LICENSED CONTRACTORS DECLARATION:** I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class C16 License Number 262995 Date 3-28-01 Contractor Signature [Signature]

**OWNER-BUILDER DECLARATION:** I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code: any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00).

\_\_\_\_\_, I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

\_\_\_\_\_, I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

\_\_\_\_\_, I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_

Date \_\_\_\_\_ Owner Signature \_\_\_\_\_

**IN ISSUING THIS BUILDING PERMIT,** the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 3-28-01 Applicant/Agent Signature [Signature]

**WORKER'S COMPENSATION DECLARATION:** I hereby affirm under penalty of perjury one of the following declarations:

\_\_\_\_\_, I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier STATE FUND Policy Number 7164300 Exp Date 10/01/2001

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 3-28-01 Applicant Signature [Signature]

**WARNING:** FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

**THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.**

**APPLICATION FOR COMMERCIAL BUILDING PERMIT**

**CITY OF SACRAMENTO**  
 DEVELOPMENT SERVICES DIVISION  
 PERMIT SERVICES SECTION

2311 Street, Rm. 200  
 Sacramento, CA 95814 (916) 264-7619 FAX 264-7046

ACTIVITY # <u>0103770</u>	Insp. Area <u>2C</u>
------------------------------	-------------------------

*Applicant MUST complete ALL Unshaded areas*

ADDRESS 2450 MEADOWVIEW RD Suite \_\_\_\_\_  
 PARCEL # 053-0010-043

<p align="center"><b>CONTACT</b></p> Name <u>JORGENSEN &amp; CO</u> Street Address <u>1535 SANB CREEK</u> City/State/Zip <u>MOBILE AL</u> Phone <u>400-606-0835</u> FAX <u>202-527-0298</u> E-mail: _____		<p align="center"><b>LICENSED CONTRACTOR</b> Lic No. # <u>262995</u></p> Name <u>JORGENSEN &amp; CO</u> Address <u>SACRAMENTO</u> City/State/Zip <u>SACRAMENTO</u> Phone _____ FAX _____ E-mail: _____	
<p align="center"><b>ARCHITECT/ENGINEER</b></p> Name _____ Address _____ City/State/Zip _____ Phone _____ FAX _____ E-mail: _____		<p align="center"><b>OWNER</b></p> Name <u>SAMUEL PARNELL COMM CTR</u> Address <u>2450 MEADOWVIEW RD</u> City/State/Zip <u>SACRAMENTO</u> Phone _____ FAX _____ E-mail: _____	

→ Will permittee have any employees on the jobsite?  No  Yes → INSURANCE CO: \_\_\_\_\_  
 → WORKER'S COMPENSATION POLICY # 0800006278 EXPIRATION DATE: 6-01

NATURE OF WORK IN DETAIL: HOOD & DUCT FIRE SYSTEM

OCCUPANT/TENANT: \_\_\_\_\_ VALUATION: \$ 340<sup>00</sup>

FLOOD STATUS:				S.C.A.T.						
JOB DESCRIPTION		BLDG	SHELL	APT	TI( )	REM( )	SW	FIRE	ADD	OTH
INSPECTION DISCIPLINES			BLDG	MECH	PLUMB	ELEC		SITE	FIRE	
# Stories	1st flr Area.	Total Area	Use Zone	Occp Group	Const type	Fire Req. <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		Fed Code	Vio. File	
<u>1</u>				<u>A3/S2</u>	<u>VM</u>	<input checked="" type="checkbox"/> SPR	<input type="checkbox"/> ALARM	<u>08</u>	[H]	[Quad]
B	L	P	M	E	<u>F</u>	S		<u>D</u>	PW	UTIL
					<u>00/13</u>			<u>8EB</u>		

COMMENTS: \_\_\_\_\_

REGIONAL SANITATION FEES?  Yes  No HEALTH DEPARTMENT?  Yes  No

WATER FLOW TEST FOR NEW BUILDINGS OR ADDITIONS?  Provided  Faxed

2450 MEADOWVIEW 0103770

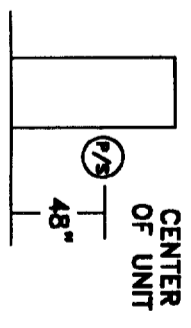
**NOTES**

1. THE SYSTEM SHALL CONFORM TO (1994) NFPA 17A FOR WET SYSTEMS U.L. 300 STANDARD.
2. SYSTEM SHALL BE TESTED IN PRESENCE OF THE A.H.J. UPON COMPLETION OF INSTALLATION.
3. THE MICRO SWITCH IN THE AUTOMAN IS FOR FIRE ALARM/ELECTRICAL INITIATION, MADE BY OTHERS. ALL CONNECTIONS MADE OUTSIDE OF AUTOMAN.
4. MEASUREMENTS (+ / -)". ACTUAL INSTALLATION MAY VARY.
5. EXHAUST FAN TO REMAIN RUNNING DURING SYSTEM ACTUATION, MAKE UP AIR MUST SHUTDOWN.
6. GAS & ELECTRICAL POWER UNDER PROTECTED EXHAUST HOOD TO BE SHUTDOWN DURING ACTUATION.

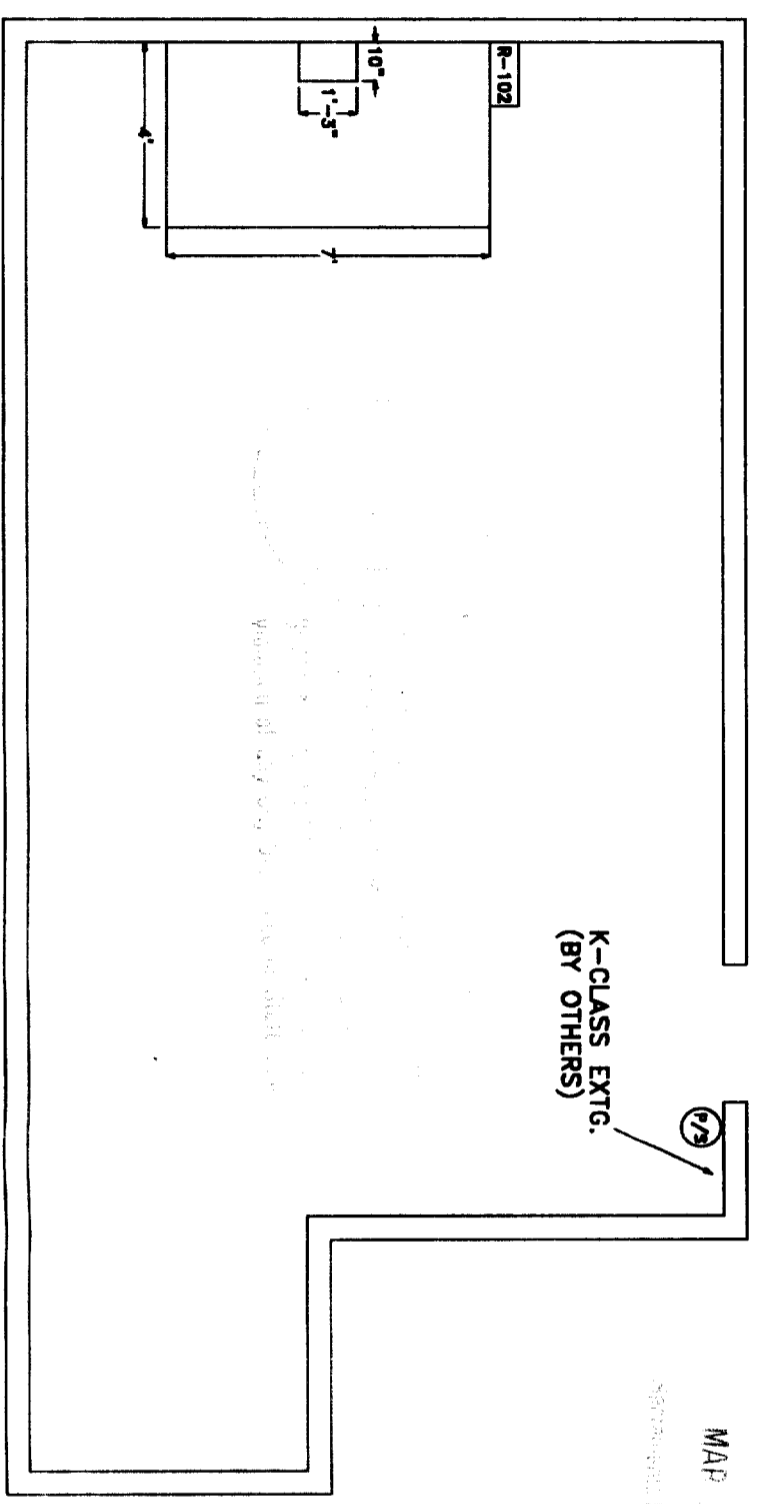
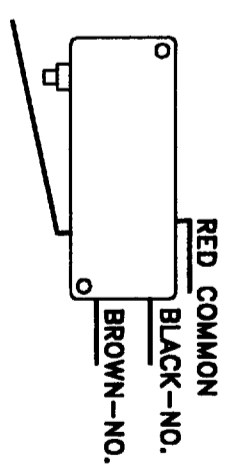
**SYMBOLS LEGEND**

Qty.	Device	Description
1		ANSUL R-102 U.L. 300 WET CHEMICAL FIRE SUPPRESSION SYSTEM 3 GAL.
1	2W	2W NOZZLE PART # 419337 - DUCT.
1	1N	1N NOZZLE PART # 419335 - PLUNUM.
1	3N	3N NOZZLE PART # 419338 - FRYER
2	1/2	1/2 NOZZLE PART # 419334 - SALAMANDER.
1	2120	2120 NOZZLE PART # 419343 - GRILL
1		ANSUL MECHANICAL GAS VALVE 2 IN., PART # 55610.
1		PULL STATION 48" A.F.F.
3		360° FUSEABLE LINKS, PART # 415745.
		ALL PIPE 3/8" BLACK.

**MOUNTING HEIGHT DETAIL**



**ELECTRICAL SWITCH(S)**



K-CLASS EXTG.  
(BY OTHERS)

**ISSUED**

MAP 2 X 8

**ISSUED**

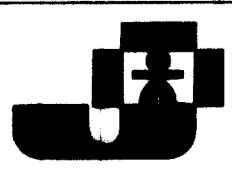
MAP 2 X 8

**APPROVED**  
*Ken Lingo* 3/28/01  
Sacramento Fire Department  
PENDING FIELD INSPECTION

REVISIONS

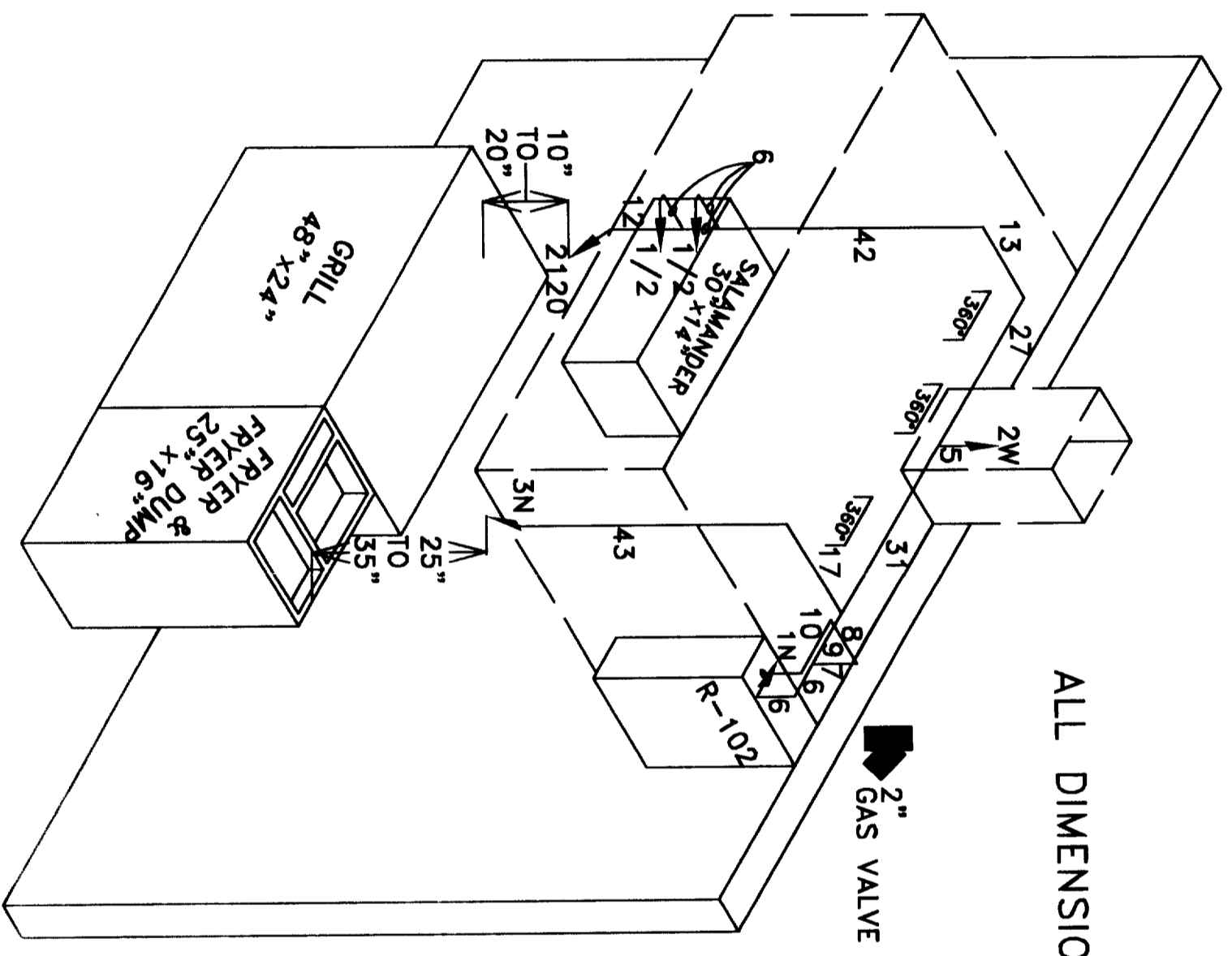
ANSUL R-102 FIRE SUPPRESSION SYSTEM  
SAMUEL PANNELL COMMUNITY CENTER  
2450 MEADOWVIEW RD.  
SACRAMENTO, CALIFORNIA  
FLOOR PLAN, SYMBOL LEGEND, NOTES  
MOUNTING DETAIL & ELECTRICAL SWITCH

JORGENSEN & CO.  
153 S. SANTA CRUZ  
MODESTO, CA. 95353  
PROTECTIVE SYSTEMS DIVISION  
TEL. 1-800-896-0835 FAX (209) 529-0298  
CONTRACTOR'S LICENSE #282985 C10 & C18



DATE: 03-20-01  
SCALE: 1/4" = 1'  
DRAWN BY: KEN LINGO

01



ALL DIMENSIONS ARE IN INCHES

2" GAS VALVE

**ISSUED**  
 MAR 28 2001  
 Sacramento Building Division

**ISSUED**  
 MAP 2 R  
 Sacramento Building Division

ISOMETRIC DRAWING

**APPROVED**  
*[Signature]*  
 Sacramento Fire Department  
 PENDING FIELD INSPECTION

REVISIONS

ANSUL R-102 FIRE SUPPRESSION SYSTEM  
 SAMUEL PANNELL COMMUNITY CENTER  
 2450 MEADOWVIEW RD.  
 SACRAMENTO, CALIFORNIA  
 ISOMETRIC DRAWING

**JORGENSEN & CO.**  
 153 S. SANTA CRUZ  
 MODESTO, CA. 95353  
 PROTECTIVE SYSTEMS DIVISION  
 TEL. 1-800-606-0835 FAX (209) 529-0288  
 CONTRACTOR'S LICENSE #282985 C10 & C16



DATE: 03-21-01  
 SCALE: 1/2" = 1'  
 DRAWN BY: KEN LINDO  
 CHECKED BY: [Signature]

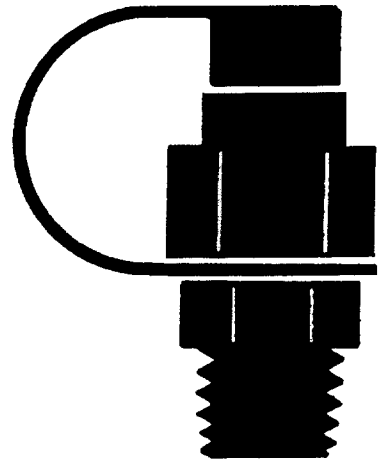
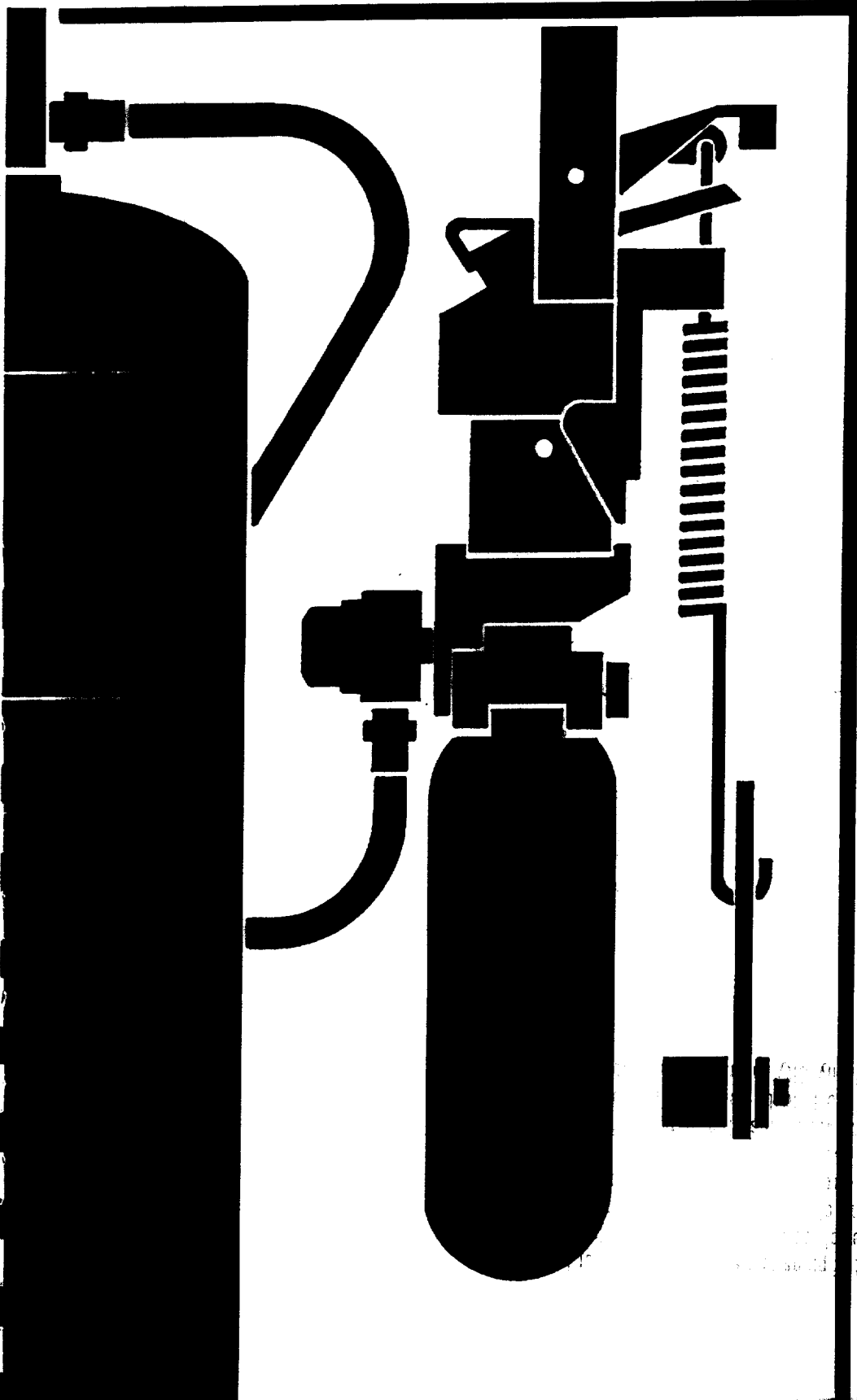
02

**ANSUL<sup>®</sup>**

DESIGN  
INSTALLATION  
RECHARGE AND  
MAINTENANCE  
MANUAL

0103779

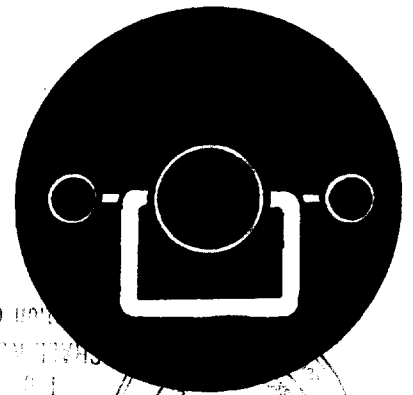
**R-102 RESTAURANT  
FIRE SUPPRESSION  
SYSTEM**  
(Standard UL 300 Listed)



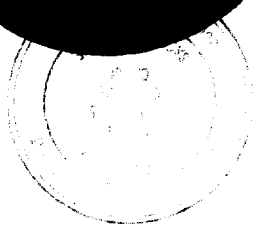
**ISSUED**

MAR 28 1977

Sacramento Building Division



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**TOTAL SYSTEM**

There are three types of R-102 Restaurant Fire Suppression Systems:

1. Single-tank System
2. Double-tank System
3. Multiple-tank System

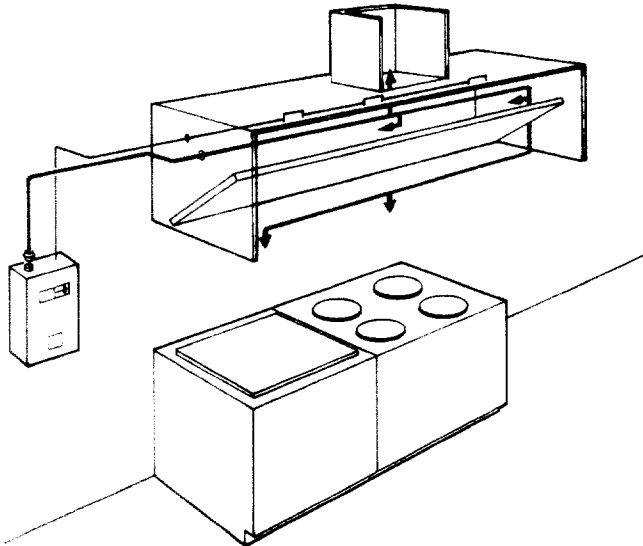
The type of system required for the particular installation will be determined through the guidelines covered in "System Design." Additional equipment which may be required to complete the system design is explained in the "System Components" section. Additional devices covered are: remote manual pull stations, mechanical and electrical gas shut-off valves, electrical switches, and pressure switches.

**Single-Tank System**

The R-102 single-tank system is available with a stainless steel enclosure and consists of:

1. ANSUL AUTOMAN Regulated Release Assembly (Electrical or Mechanical)
2. Nitrogen Cartridge and/or Carbon Dioxide Cartridge
3. ANSULEX Low pH Liquid Fire Suppressant
4. Discharge Nozzles
5. Detection Components
6. Additional Devices (As Required)

The regulated release assembly contains the regulated release mechanism, agent tank, expellant gas hose for agent tank hookup, and enclosure knockouts to facilitate installing detection system and additional equipment. Refer to "System Components" section for individual component descriptions.



**FIGURE 1**  
000133

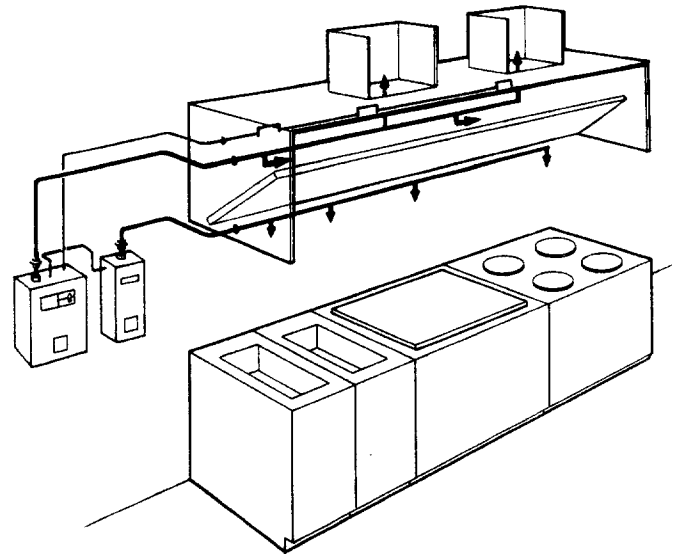
**Double-Tank System**

The R-102 double-tank system is available with a stainless steel enclosure and consists of:

1. ANSUL AUTOMAN Regulated Release Assembly (Electrical or Mechanical)
2. Nitrogen Cartridge and/or Carbon Dioxide Cartridge
3. ANSULEX Low pH Liquid Fire Suppressant
4. Tank-Enclosure or Tank-Bracket Assembly
5. Discharge Nozzles
6. Detection Components
7. Additional Devices (As Required)

The regulated release assembly contains the regulated release mechanism, agent tank, expellant gas hose for agent tank hookup, and enclosure knockouts to facilitate installing expellant piping, detection system, and additional equipment.

The tank-enclosure or tank-bracket assembly is mounted separately but within the guidelines of the regulated release assembly expellant gas piping requirements to ensure simultaneous actuation of the system. Refer to "System Components" section for individual component descriptions.



**FIGURE 2**  
000134

**SECTION IV – SYSTEM DESIGN**

**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**Duct Protection (Continued)**

**NOTICE**

A 2WH nozzle must be substituted for a 2W nozzle for any installation using Option 2 of the 1.5 gallon system coverage (6 flow duct and plenum protection only).

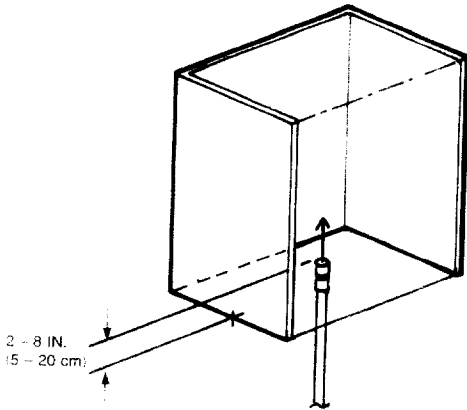
**2. 2W Nozzle (Part No. 419337):**

The R-102 System, uses the 2W nozzle (Part No. 419337) for duct protection of 75 in. (190.5 cm) perimeter or less, or 24 in. (61 cm) diameter or less. The nozzle tip is stamped with 2W, indicating that this is a two-flow nozzle and must be counted as two flow numbers.

The 1W and 2W nozzles will protect the following:

**3. Single Nozzle (2W) Duct Protection:**

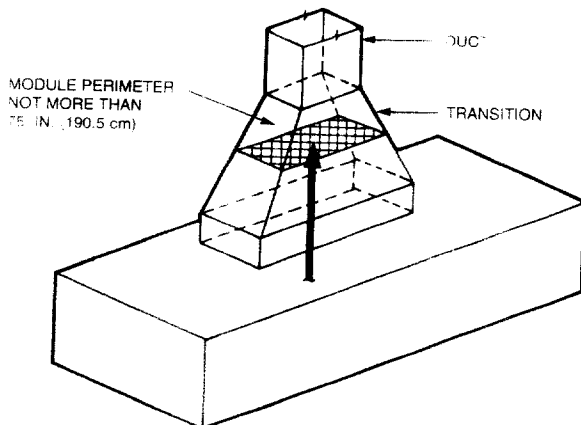
One 2W nozzle will protect ducts with a maximum perimeter of 75 in. (190.5 cm) or a maximum diameter of 24 in. (61 cm). The nozzle must be installed 2-8 in. (5-20 cm) into the center of the duct opening and positioned as shown in Figure 4.



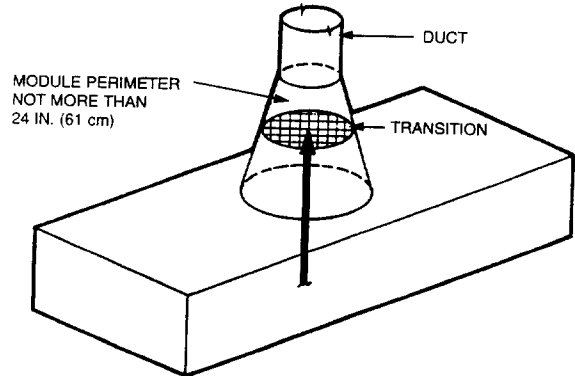
**FIGURE 4**  
000173

**4. Single Nozzle (2W) Transition Protection:**

One 2W nozzle will protect transitions at the point where the perimeter of 75 in. (190.5 cm) or the diameter of 24 in. (61 cm) or less begins within that transition. The nozzle must be placed in the center of the transition opening where the maximum perimeter or diameter begins as shown in Figures 5 and 6



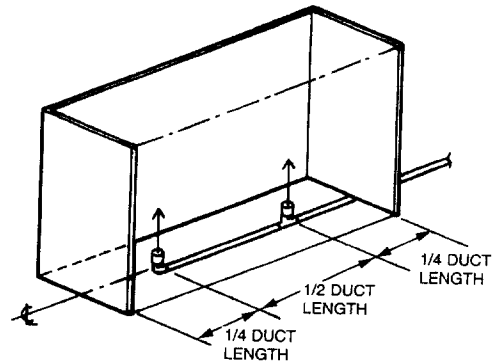
**FIGURE 5**  
000174



**FIGURE 6**  
000175

**5. Dual-Nozzle Duct Protection:**

Two 2W nozzles will protect ducts with a maximum perimeter of 150 in. (381 cm) or a maximum diameter of 48 in. (122 cm). The nozzles must be installed 2-8 in. (5-20 cm) into the duct opening and positioned as in Figure 7.



**FIGURE 7**  
000176

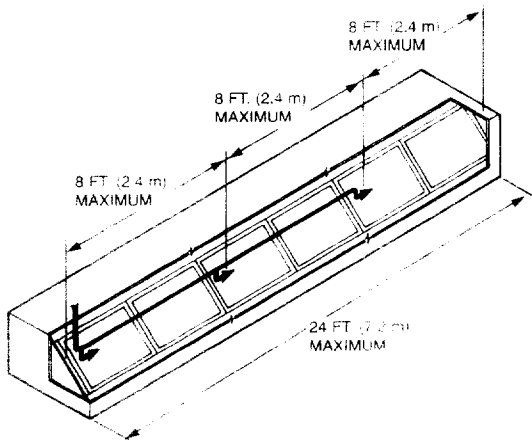
**NOTICE**

In installations where a UL listed damper assembly is employed, the duct nozzle can be installed beyond the 8 in. (20 cm) maximum, to a point just beyond the damper assembly that will not interfere with the damper. Exceeding the maximum of 8 in. (20 cm) in this way will not void the UL listing of the system.

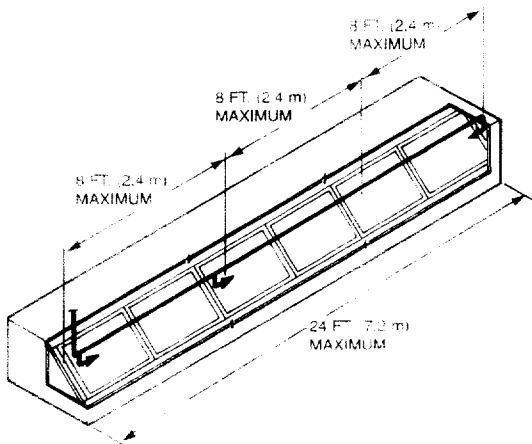
**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**Plenum Protection (Continued)**

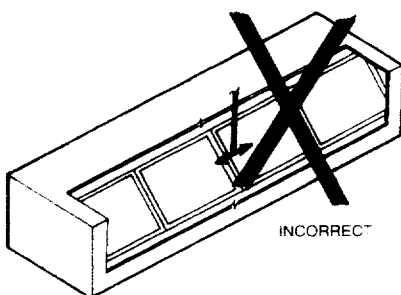
For a plenum, either single or "V" bank, with a linear extension longer than 8 feet (2.4 m), each bank may be protected using one 1N nozzle every 8 ft. (2.4 m) or less depending on the overall length of the plenum. See Figure 28. The nozzles may point in the opposite directions as long as the entire plenum area is protected, and the 8 ft. (2.4 m) limitation is not exceeded. See Figure 29. The nozzle positioning shown in Figure 30 is not an acceptable method of protection because the plenum area directly under the tee is not within the discharge pattern of either nozzle.



**FIGURE 28**  
000206



**FIGURE 29**  
000207



**FIGURE 30**  
000208

**Appliance Protection**

The following pages detail types of appliance protection. Each design requires several factors: correct nozzle choice, correct nozzle height above hazard, correct nozzle location and correct aiming point.

**Fryer – Single Nozzle Protection**

1. Design requirements for fryers are broken down into two types.

**A. FRYERS WITHOUT DRIPBOARDS**

If the fryer does not include a dripboard, measure the internal depth (horizontal dimension from front to back) and length of the frypot.

**B. FRYERS WITH DRIPBOARDS**

If the fryer includes any dripboard areas, measure both the internal depth (horizontal dimension from front to back) and length of the frypot portion, and then measure the internal depth and length of the overall hazard area including any dripboard areas.

2. Using Table, "Maximum Cooking Area Dimension – Single Nozzle Fryer Protection," determine which nozzle is needed to protect the fryer based on the maximum dimensions listed.

A. If the fryer does not include a dripboard, use the maximum dimensions listed in the first column of the table to select the correct nozzle.

B. If the fryer includes any dripboard areas, use both the maximum frypot dimensions in the first column of the table, **and** the maximum overall dimensions in the second column of the table to select the correct nozzle. None of the maximum dimensions in either column may be exceeded.

3. If either the maximum frypot or the overall sizes are exceeded, an additional nozzle(s) will be required. Refer to the multiple nozzle requirements.

*Example: A fryer with a dripboard. The inside of the frypot without the dripboard measures 18 in. in depth x 18 in. in length (46 cm x 46 cm) and the inside of the overall area including the dripboard measures 18 in. in depth x 24 in. in length (46 cm x 61 cm). From the Table "Maximum Cooking Area Dimension – Single Nozzle Fryer Protection," either the 3N or the 290 nozzle should be selected to protect the fryer, depending on the maximum nozzle height above the fryer and the positioning requirements allowed. Refer to appropriate Figures.*

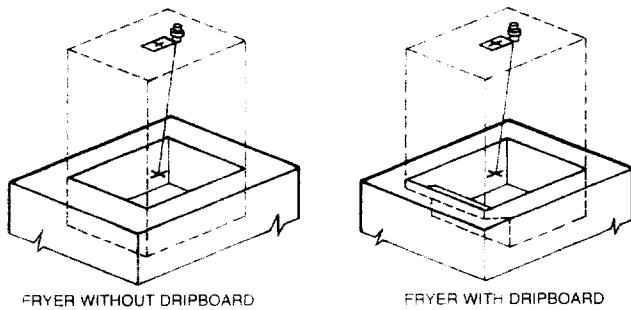


**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**Fryer – Single Nozzle Protection (Continued)**

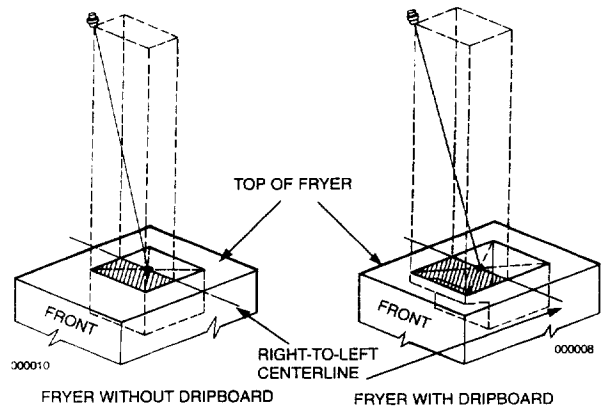
**Maximum Area Dimensions – Single Nozzle Fryer Protection (Continued)**

Max. Size Frypot Only	Max. Size Overall With Dripboard	Type of Nozzle	Nozzle Height Above Top of Fryer	Nozzle Location
19.5 in. x 19 in. (50 cm x 48 cm)	19.5 in. x 25 3/8 in. (50 cm x 65 cm)	290	13 in. to 16 in. (33 to 41 cm)	See Figure 33
19.5 in. x 19 in. (50 cm x 48 cm)	19.5 in. x 25 3/8 in. (50 cm x 65 cm)	3N	See Figure 34	See Figure 34
18 in. x 18 in. (46 cm x 46 cm)	18 in. x 27 5/8 in. (46 cm x 70 cm)	3N	25 in. to 35 in. (64 cm to 89 cm)	See Figure 35



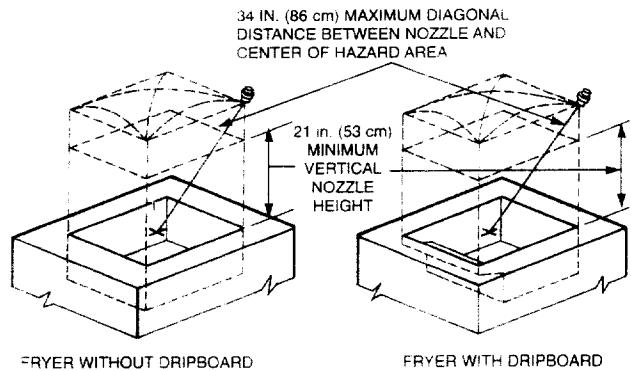
290 NOZZLE TIP POSITIONED OVER THE MIDPOINT OF THE HAZARD AREA ± 3 IN. (7.6 cm) FROM THE MIDPOINT ALONG THE LONGEST SIDE OF THE HAZARD AND ± 1 IN. (2.5 cm) FROM THE MIDPOINT ALONG THE SHORTEST SIDE OF THE HAZARD AND AIMED AT THE MIDPOINT OF THE COOKING AREA

**FIGURE 33**  
002286



NOTE: 3N NOZZLE TIP MUST BE LOCATED WITHIN THE PERIMETER OF THE SURFACE AREA AND FORWARD OF THE RIGHT-TO-LEFT CENTERLINE.

**FIGURE 35**



3N NOZZLE TIP POSITIONED ANYWHERE ALONG OR WITHIN PERIMETER OF COOKING SURFACE AND AIMED TO THE CENTER OF THE COOKING AREA

**FIGURE 34**  
002287

**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**2-Flow Griddle Protection (Continued)**

**▶ Option 2 - Nozzle Perimeter Located (Continued)**

**▶ Low Proximity Application:** 10 in. to 20 in. (25 cm to 51 cm) above the cooking surface.

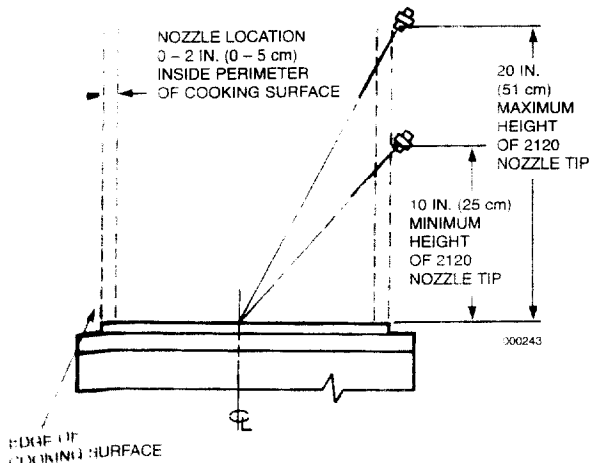
The low proximity application uses the 2120 nozzle, Part No. 419143.

The nozzle tip is stamped with 2120 indicating this is a two-flow nozzle and must be counted as two flow numbers.

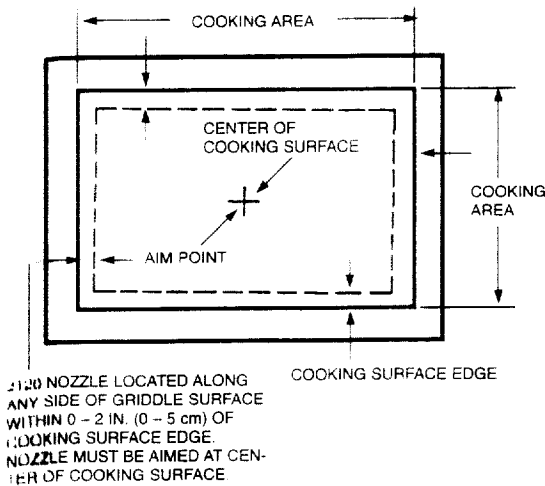
▶ One 2120 nozzle will protect a maximum cooking area of 1440 sq. in. (9290 sq. cm) with a maximum dimension of 48 in. (122 cm)

When using this nozzle for griddle protection, the nozzle must be positioned along the perimeter to 2 in. (5.1 cm) inside perimeter, and aimed at the center of the cooking surface. See Figure 56 and 57

▶ 56 and 57



**FIGURE 56**  
 000243



**FIGURE 57**  
 000241

**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**Overhead Chain Broiler Protection (Continued)**

**Example No. 1** – Internal broiler size is 24 in. long x 20 in. wide (61 x 51 cm), with an opening of 16 in. x 16 in. (40.6 x 40.6 cm).

To determine minimum opening size, multiply the internal length and the internal width by 0.6:

Length of opening – 24 in. x 0.6 = 14.4 in.  
(61 cm x 0.6 = 36.6 cm)

Width of opening – 20 in. x 0.6 = 12.0 in.  
(51 cm x 0.6 = 30.5 cm)

The minimum allowable opening for overhead protection would be 14.4 in. x 12.0 in. (36.6 x 30.5 cm).

This example would be acceptable for overhead protection.

**Example No. 2** – Internal broiler size is 30 in. long x 24 in. wide (76 x 61 cm) with an opening of 22 in. x 12 in. (56 x 30 cm).

To determine minimum opening size, multiply internal length and internal width by 0.6:

Length of opening – 30 in. x 0.6 = 18.0 in.  
(76 cm x 0.6 = 45.7 cm)

Width of opening – 24 in. x 0.6 = 14.4 in.  
(61 cm x 0.6 = 36.6 cm)

Minimum allowable opening for overhead protection would be 18 in. x 14.4 in. (45.7 x 36.6 cm).

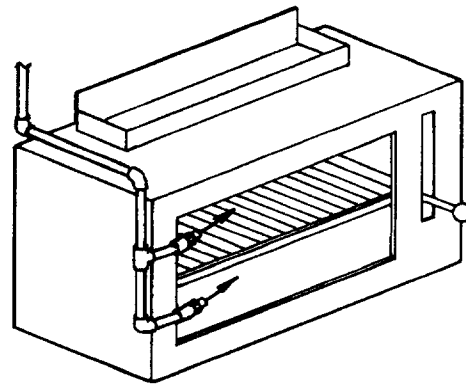
Because this broiler has an opening of 22 in. x 12 in., the 12 in. width is below the minimum allowable calculated dimension of 14.4 in. (36.6 cm) and therefore would not be acceptable for overhead protection.

**Upright/Salamander Broiler Protection**

The R-102 system uses two 1/2N Nozzles (Part No. 419334) for all upright/salamander broiler protection. The nozzle tip is stamped 1/2N, indicating that this is a half-flow nozzle. A pair of these nozzles will equal one flow number.

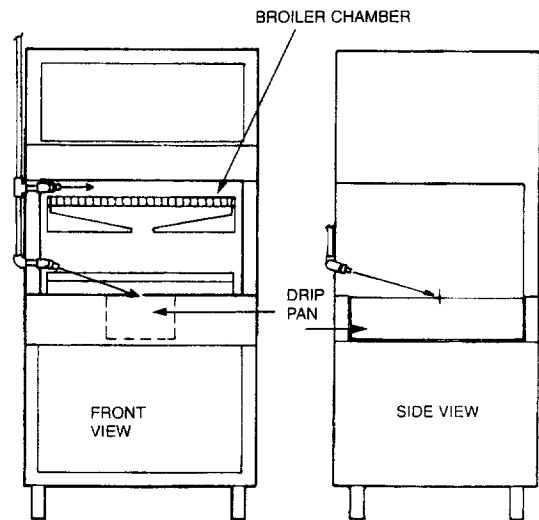
- ▶ Two 1/2N nozzles will protect a maximum hazard area (internal broiler chamber) of 30 in. x 32.5 in. (76 cm x 82.5 cm). These nozzles must always be used in pairs on an upright/salamander broiler. One nozzle must be positioned above the grate and pointed at the back opposite corner of the broiler chamber. The second nozzle must be pointed down into the center of the drip pan through the open slot. See Figure 62.

SALAMANDER BROILER



000251

UPRIGHT BROILER



000252

**FIGURE 62**

**SECTION IV – SYSTEM DESIGN**

**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**Nozzle Application Chart**

The following chart has been developed to assist in calculating the quantity and type of nozzle required to protect each duct, plenum, or appliance.

**NOTICE**

This chart is for general reference only. See complete details for each type of hazard.

Hazard	Maximum Hazard Dimensions	Nozzle Quantity	Nozzle Heights	Nozzle Part No.	Nozzle Tip Stamping – Flow No.
Duct or Transition (Single Nozzle)	Length – Unlimited Perimeter – 27 in. (67 cm) Diameter – 8.5 in. (22 cm)	1	–	419336	1W
Duct or Transition (Single Nozzle)	Length – Unlimited Perimeter – 75 in. (190.5 cm) Diameter – 24 in. (61 cm)	1	–	419337/78078*	2W/2WH*
Duct or Transition (Dual Nozzle)	Length – Unlimited Perimeter – 150 in. (381 cm) Diameter – 48 in. (122 cm)	2	–	419337/78078*	2W/2WH*
Electrostatic Precipitator (At Base of Duct)	Individual Cell	1	–	419334	1/2N
Plenum (Horizontal Protection)	Length – 8 ft. (2.4 m) Filter Height – 20 in. (51 cm)	1	–	419335/417332	1N/1NSS
Plenum (Vertical Protection)	Length – 4 ft. (1.2 m) Width – 4 ft. (1.2 m)	1	–	419336/417333	1W/1WSS
▶ Fryer/Split Vat Fryer**	Maximum Size (without drip board) 15 in. (38 cm) x 14 in. (36 cm)	1	27 – 47 in.	419339	230
	High Proximity	1	20 – 27 in.	419340	245
	Medium Proximity	1			
	Maximum Size (without drip board) 19 1/2 in. (49.5 cm) x 19 in. (48.2 cm)	1	21 – 34 in.	419338	3N
	High Proximity	1	13 – 16 in.	419342	290
	Low Proximity	1			
	Maximum Size (without drip board) 18 in. (45.7 cm) x 18 in. (45.7 cm)	1	25 – 35 in. (64-89 cm)	419338	3N

\* Use 2WH nozzle on 1.5 gallon, 6 flow, duct and plenum protection only.  
▶ For multiple nozzle protection of single fryers, see detailed information on Pages 4-12 through 4-14.

**SECTION IV – SYSTEM DESIGN**

**NOZZLE PLACEMENT REQUIREMENTS (Continued)**

**Nozzle Application Chart (Continued)**

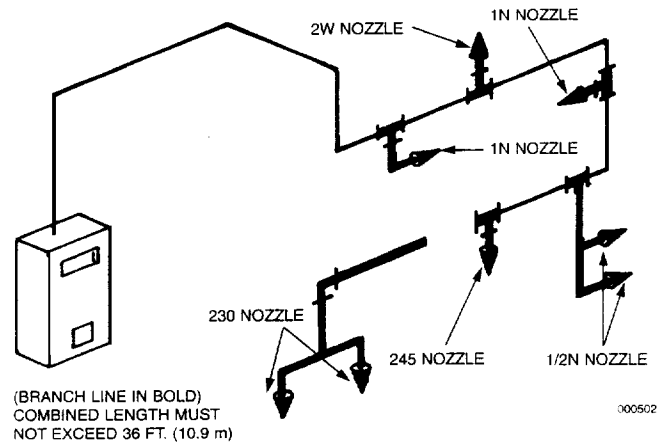
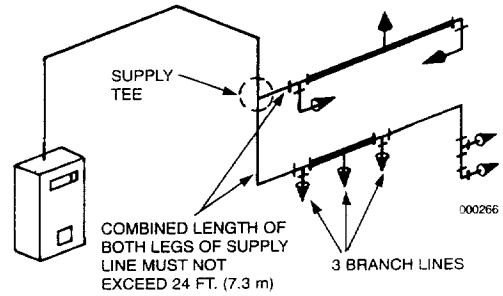
Hazard	Maximum Hazard Dimensions	Nozzle Quantity	Nozzle Heights	Nozzle Part No.	Nozzle Tip Stamping – Flow No.
Griddle	Longest Side (High Proximity) 48 in. (122 cm) Area – 1440 sq. in. (9290 sq. cm)	1	30 – 50 in. (76 – 127 cm) (perimeter located)	419341	260
	Longest Side (High Proximity) 30 in. (76 cm) Area – 720 sq. in. (1829 sq. cm)	1	30 – 50 in. (76 – 127 cm) (center located)	419342	290
	Longest Side (High Proximity) 36 in. (91 cm) Area – 1080 sq. in. (2743 sq. cm)	1	35 – 40 in. (89 – 102 cm) (perimeter located)	419335/417332	1N/1NSS
	Longest Side (Medium Proximity) 48 in. (122 cm) Area – 1440 sq. in. (9190 sq. cm)	1	20 – 30 in. (51 – 76 cm) (perimeter located)	419342	290
	Longest Side (Low Proximity) 48 in. (122 cm) Area – 1440 sq. in. (9290 sq. cm)	1	10 – 20 in. (25 – 51 cm) (perimeter located)	419343	2120
Chain Broiler* (Overhead Protection)	Longest Side – 34 in. (86 cm) Area – 1088 sq. in. (7019 sq. cm)	2	10 – 26 in. (25 – 66 cm)	419336/417333	1W/1WSS
Chain Broiler (Horizontal Protection)	Length – 43 in. (109 cm) Width – 31 in. (79 cm)	2	1 – 3 in. (3 – 8 cm)	419335/417332	1N/1NSS
Gas-Radiant Char-Broiler	Longest Side – 24 in. (61 cm) Area – 528 sq. in. (3406 sq. cm)	1	18 – 40 in. (46 – 102 cm)	419340	245
	Longest Side – 24 in. (61 cm) Area – 528 sq. in. (3406 sq. m)	1	26 – 40 in. (66 – 102 cm)	419335/417332	1N/1NSS
Electric Char-Broiler	Longest Side – 34 in. (86 cm) Area – 680 sq. in. (4388 sq. cm)	1	20 – 50 in. (51 – 127 cm)	419335/417332	1N/1NSS
Lava-Rock Broiler	Longest Side – 24 in. (61 cm) Area – 312 sq. in. (2013 sq. cm)	1	18 – 35 in. (46 – 89 cm)	419335/417332	1N/1NSS
Natural Charcoal Broiler	Longest Side – 24 in. (61 cm) Area – 288 sq. in. (1858 sq. cm)	1	18 – 40 in. (46 – 102 cm)	419335/417332	1N/1NSS
Lava-Rock or Natural Charcoal Char-Broiler	Longest Side – 30 in. (76 cm) Area – 720 sq. in. (4645 sq. cm)	1	14 – 40 in. (36 – 102 cm)	419338	3N

Minimum chain broiler exhaust opening – 12 in. x 12 in. (31 cm x 31 cm), and not less than 60% of internal broiler size.

**DISTRIBUTION PIPING REQUIREMENTS (Continued)**

**Distribution Piping Requirements – 3.0 Gallon System**

1. The maximum length between the start of the first branch line and the start of the last branch line must not exceed 24 ft. (7.3 m). When the supply line is split, the **combined total** of both legs of the supply line (from the start of the first branch line to the start of the last branch line) must not exceed 24 ft. (7.3 m). See Figure 88.
2. The total length of all branch lines must not exceed 36 ft. (10.9 m). See Figure 88.
3. Use a 3/8 in. union to connect the tank adaptor to the 3/8 in. supply line.
4. A maximum of two nozzles are allowed per duct branch line.
5. The requirements of the following table must not be exceeded:



**FIGURE 88**

<u>Requirements</u>	<u>Supply Line</u>	<u>Duct Branch Line</u>	<u>Plenum Branch Line</u>	<u>Appliance Branch Line</u>
Pipe Size	3/8 in.	3/8 in.	3/8 in.	3/8 in.
Maximum Length	40 ft (12.2 m)	8 ft. (2.4 m)	4 ft. (1.2 m)	12 ft. (3.7 m)
Maximum Rise	6 ft. (1.8 m)	4 ft. (1.2 m)	2 ft. (.6 m)	2 ft. (.6 m)
Maximum 90° Elbows	9	4	4	6*
Maximum Tees	1	2	2	4
Maximum Flow Numbers	11*	4	2	4

**Exceptions:**

1. Twelve (12) flow numbers are allowed in any one tank **not** containing two-flow appliance nozzles, and/or, a 1N nozzle for wok or griddle protection, and/or, a 1F nozzle for range protection, and/or, a 3N nozzle for fryer protection.
2. Twelve (12) flow numbers are allowed with any one tank using only two-flow appliance nozzles.
3. Twelve (12) flow numbers are allowed with any one tank using only three-flow appliance nozzles.

**Special Instructions:**

1. Twelve (12) flow numbers are allowed when four (4) Dean Industries GTI Gas Fryers are protected at low proximity as shown in Figure 101 on Page 4-52. The discharge piping must be as shown in Figure 102 on Page 4-52.
2. For certain McDonald's applications, 11.5 flow numbers are allowed when using a combination of one (1) 2W duct nozzle, one (1) 1/2N electrostatic precipitator nozzle, one (1) 1N plenum nozzle, and four (4) two-flow appliance nozzles. Contact Ansul Applications Engineering Department for additional information.

**MEMORANDUM**

**SACRAMENTO FIRE DEPARTMENT**

**TO:** BUILDING DEPARTMENT

**DATE:** 4-4-01

**FROM:** Troy Malaspino  
Fire Marshal

**SUBJECT: FIRE SYSTEM INSPECTION**

A final inspection of the newly installed fire system at:

2450 Meadowview

Has been conducted by Inspector

R. Robles

On

4-3-01

01-03770-311

Permit Number

    
Square Footage

KIT Head

Type of Inspection

They system is acceptable by this department.

R. Woodman  
**By: Ross L. Woodman,**  
**Fire Prevention Officer II**

01-43  
**F.D. Reference Number**