

**CERTIFICATE OF TRAINING**

Johnson Controls

It is hereby certified that  
**Michael Edwards**  
BFPE INTERNATIONAL-CLAYTON  
has successfully completed the training course for  
**ANSUL R-102 Restaurant Fire Suppression Systems - Online Recertification**  
Completed On 9/9/2022  
This certificate is considered valid for a period of three years from completion date and linked to the attendee and the company mentioned above.  
Training Hours: \_\_\_\_\_

ANSUL

Technical Training Manager - Fire Suppression

**SECTION 4 - SYSTEM DESIGN**  
UL EX3470 ULC EX3470  
PAGE 4-18 REV. 13 2022-NOV-14

ANSUL R-102 Restaurant  
Fire Suppression Manual  
(Part No. 418087)

**APPLIANCE PROTECTION (Continued)**  
**Range Protection (With or Without Back Shelf/Obstruction)**  
When this type of hazard is equipped with a back shelf or other similarly sized obstruction located above the range top, two protection options are available: One requires a 1F nozzle and the other option requires a 260 nozzle.  
**RANGE PROTECTION 1F (1-FLOW) NOZZLE (WITH OR WITHOUT BACK SHELF/OBSTRUCTION)**  
Single and multiple burner ranges can be protected using a 1F nozzle. The nozzle is stamped with 1F indicating that it is a one-flow nozzle and must be counted as one flow number.  
The 1F nozzle range protection allows the shelf to be installed at a minimum height of 18 in. (457 mm) above the hazard area.  
When using the 1F nozzle for range protection with or without back shelf, the maximum length of the hazard area being protected must not exceed 36 in. (914 mm) and the maximum area of the hazard area must not exceed 536 in.<sup>2</sup> (0.218 m<sup>2</sup>). See Figure 4-39 for nozzle location details.  
**IF NOZZLE LOCATED OVER FRONT EDGE OF BURNER GRATE AND ORIENTED AS NOZZLE TIP MUST BE PARALLEL WITH BURNER GRATE FRONT TO REAR. CENTERLINE AND SHALL BE AIMED AT THE CENTER OF THE COOKING SURFACE.**

**FIGURE 4-39**

**RANGE PROTECTION 260 (2-FLOW) NOZZLE (WITH OR WITHOUT BACK SHELF/OBSTRUCTION)**  
Single and multiple burner ranges can be protected using a 260 nozzle. The nozzle is stamped with 260 indicating that it is a two-flow nozzle and must be counted as two flow numbers.  
When using the 260 nozzle for range protection with or without back shelf or other similarly sized obstruction, the maximum length of burner grates being protected must not exceed 32 in. (812 mm) and the maximum area of the burner grates must not exceed 384 in.<sup>2</sup> (0.247 m<sup>2</sup>). Nozzle must be located on the front edge of the burner grate and aimed at a point 10 in. (254 mm) from the back edge of the burner grate. Nozzle must be mounted 30 in. to 40 in. (762 mm to 1,016 mm) above the hazard surface. See Figure 4-40.  
**SHALL OR OTHER SIMILARLY SIZED OBSTRUCTION CAN DEFINES BURNERS BY A MAXIMUM OF 1 IN. (25.4 mm)**

**FIGURE 4-40**

**APPLIANCE PROTECTION (Continued)**  
**Upright Broiler/Salamander Protection (Continued)**

**FIGURE 4-42**

**FIGURE 4-43**

**Gas-Radiant/Electric Char-Broiler Protection**  
The R-102 system uses the 1N nozzle for gas-radiant/electric char-broiler protection.  
The nozzle is stamped with a 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.  
One 1N nozzle protects a hazard with a maximum length of 36 in. (914 mm) and a total cooking area which does not exceed 694 in.<sup>2</sup> (0.457 m<sup>2</sup>). The nozzle tip must be located 15 in. to 40 in. (381 mm to 1,016 mm) 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 4-64.  
**Electric Char-Broiler Protection (Optional)**  
The R-102 system uses the 1N nozzle for electric char-broiler protection.  
The nozzle is stamped with a 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.  
One 1N nozzle protects a hazard with a maximum length of 34 in. (863 mm) and a total cooking area which does not exceed 600 in.<sup>2</sup> (0.438 m<sup>2</sup>). The nozzle tip must be located 30 in. to 50 in. (762 mm to 1,270 mm) above the hazard surface. When using this nozzle for 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 4-65.  
**Griddle Protection 260 (2-Flow) Nozzle - High Proximity Application**  
30 in. to 50 in. (762 mm to 1,270 mm) above the cooking surface.  
This high proximity application uses the 260 nozzle.  
The nozzle is stamped with 260 indicating this is a two-flow nozzle and must be counted as two flow numbers.  
One 260 nozzle protects a maximum cooking area of 1,440 in.<sup>2</sup> (0.929 m<sup>2</sup>) with a maximum dimension of 48 in. (1,219 mm).  
When using this nozzle for griddle protection, the nozzle must be positioned along the cooking surface perimeter to 2 in. (51 mm) inside perimeter, and aimed at the center of the cooking surface. See Figure 4-46 and Figure 4-46a.  
**Griddle Protection 260 (2-Flow) Nozzle - Medium Proximity Application**  
20 in. to 30 in. (508 mm to 762 mm) above the cooking surface.  
The medium proximity application uses the 260 nozzle.  
The nozzle is stamped with 260 indicating this is a two-flow nozzle and must be counted as two flow numbers.  
One 260 nozzle protects a maximum cooking area of 1,440 in.<sup>2</sup> (0.929 m<sup>2</sup>) with a maximum dimension of 48 in. (1,219 mm).  
When using this nozzle for griddle protection, the nozzle must be positioned along the perimeter to 2 in. (51 mm) inside perimeter, and aimed at the center of the cooking surface. See Figure 4-47 and Figure 4-48.  
**TABLE 4-2: MAXIMUM AREA DIMENSIONS - SINGLE NOZZLE FRYER PROTECTION (Continued)**

Max. Size Frypot Only	Max. Size Overall With Disposition	Type of Fryer	Nozzle Height Above Top of Fryer	Nozzle Location
14 1/2 in. x 16 1/2 in. (368 mm x 419 mm)	14 1/2 in. x 26 1/2 in. (368 mm x 673 mm)	290	16 in. to 21 in. (406 mm to 533 mm)	See Figure 4-17
19 1/2 in. x 19 in. (493 mm x 483 mm)	19 1/2 in. x 29 3/8 in. (493 mm x 644 mm)	290	13 in. to 16 in. (330 mm to 406 mm)	See Figure 4-17
19 1/2 in. x 19 in. (493 mm x 483 mm)	19 1/2 in. x 29 3/8 in. (493 mm x 644 mm)	3N	See Figure 4-18	See Figure 4-18
18 in. x 18 in. (457 mm x 457 mm)	18 in. x 27 3/4 in. (457 mm x 704 mm)	3N	25 in. to 35 in. (635 mm to 889 mm)	See Figure 4-19

**FIGURE 4-46**

**FIGURE 4-46a**

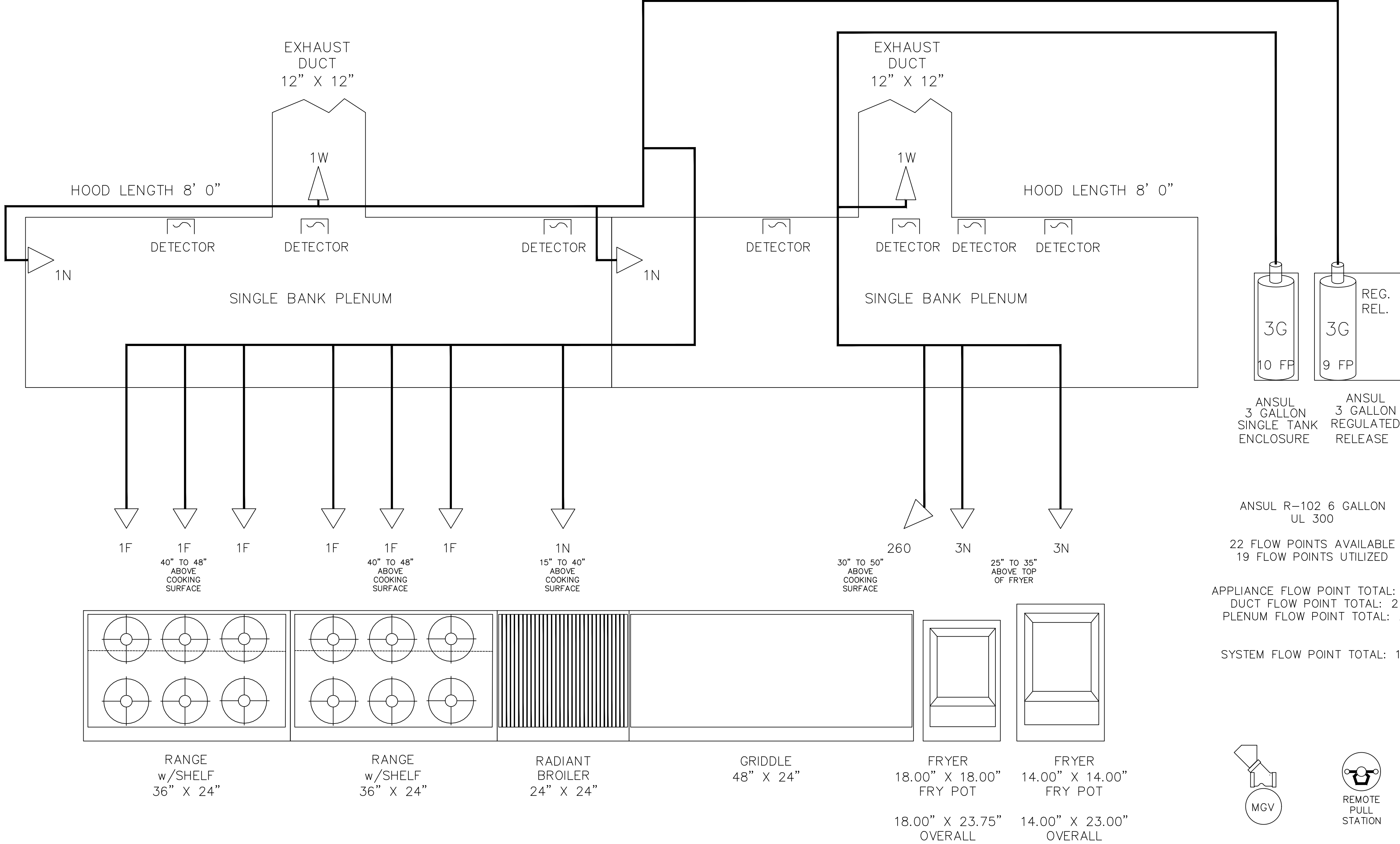
**FIGURE 4-47**

**FIGURE 4-48**

**FIGURE 4-17**

**FIGURE 4-18**

**FIGURE 4-19**



NO.	DATE	BY	REVISION

MARK

REVISIONS:

Seal

Pre-engineered Fire System Seal Not Required

SHOP DRAWINGS

**BFPE INTERNATIONAL**  
FIRE SAFETY & SECURITY  
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DRAWN BY: MWE

CHECKED BY:

SCALE: N.T.S.

SHEET NO. 1 OF 1 SHEETS

DATE: August 27, 2024

PROJECT NO: N/A

Sheet Contents:  
Fire Suppression System

El Burrito Mexican Restaurant  
6743 Overhills Road  
Spring Lake, NC 28390

DRAWING NO. :  
**FS100**