Harnett COUNTY NORTH CAROLINA

Emergency Services Department
www.harnett.org

Fire Marshal Division
P.O. Box 370
Lillington, NC 27546
910-893-7580

Application for Plan Review

Permit Type: Fire Suppression

Date Received: _____ Received By: _____

Name of Project: Champs Fresh Food

Physical Address of Project: 8909 Hwy 401 Fuquay Varina, NC 27526

Plans Submitted By: Buck's Fire Extinguisher

Project Phone: (_____)-_____-_____

Contact Person/Address: Ralph LeGrand

252 Sawlston Rd Goldsboro, NC 27534

Contact Phone: (919)-778-2878 (_____)-_____-_____

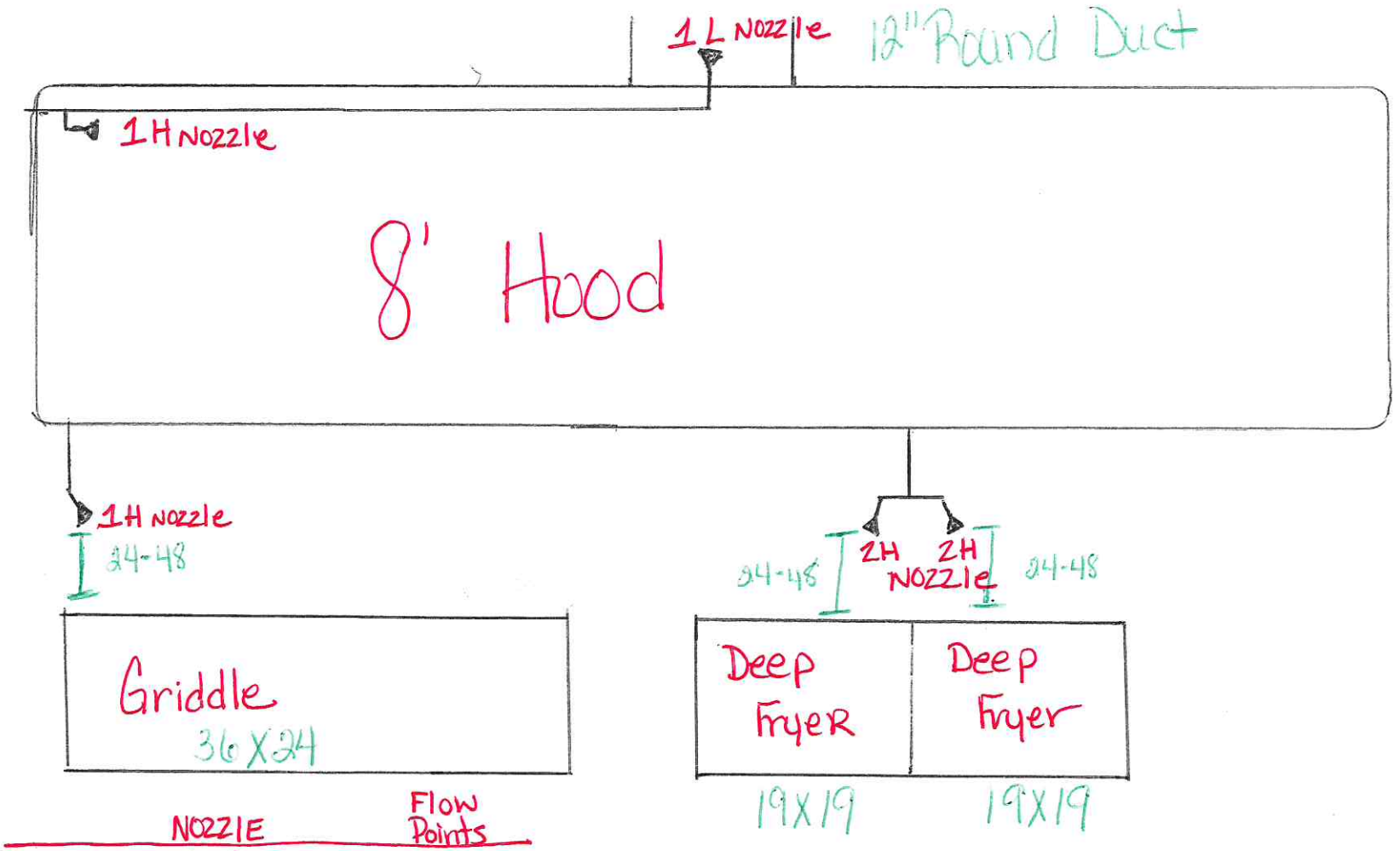
Contractor's Name/Info: Jason

_____

Contractor's Phone: (910)-824-4006

Contact Email: bucksfire@gmail.com

- **Plans that are submitted will be reviewed as quickly as possible with an average time of review between 7-10 working days.**
- **Status checks may be conducted on plan reviews by visiting the website http://hteweb.harnett.org/Click2GovBP/Index.jsp or by calling the Harnett County Central Permitting Office (910-893-7525 : Opt. 2), or the Harnett County Fire Marshal's Office (910-893-7580).**
- **Approved plans must be picked up from the Central Permitting Office and all fees paid before any required inspections can be conducted.**



NOZZLE	Flow Points
Plenum - 1H	1
Exhaust - 1L	1
Griddle - 1H	1
Deep Fryer - 2H	2
Deep Fryer - 2H	2
	7 flow pts

L3000 Tank 10 total flow pts.

CHAPTER III
SYSTEM DESIGN

GENERAL

The ProTex II® Restaurant Fire Suppression System may be used on a number of different types of restaurant cooking appliances and hood and duct configurations. The design information listed in this section deals with the limitations and parameters of this pre-engineered system. Those individuals responsible for the design of the ProTex II® system must be trained and hold a current Heiser BHC, LLC. certificate in a ProTex II® training program.

This section will cover the proper design of the ProTex II® Restaurant Fire Suppression System. It is divided into four (4) sections:

- Cylinder Sizing
- Nozzle Coverage and Placement
- Piping Limitations
- Detector Requirements

Each of these sections must be completly understood before attempting any installation.

SYSTEM CYLINDER SIZING

Each of the nozzles in the section, "Nozzle Coverage and Placement" has its own flow point value. Each of the four different cylinders can support a maximum number of flow points, based on the volume of the pipe used. Select the system cylinder(s) by calculating the total number of flow points associated with the appliances(s), plenum, and ducts, plus the total piping volume.

NOZZLE COVERAGE AND PLACEMENT

This section will provide guidelines for determining nozzle type, positioning, and quantity for duct, plenum, and appliance protection.

DUCT PROTECTION

It is not required that the fan be shut down or the exhaust duct be dampered for the system to operate properly. Each nozzle is approved to protect exhaust ducts of unlimited length.

All duct protection is UL listed without limitation of maximum duct length (unlimited length). This includes all varieties of ductwork both horizontal and vertical including ducts that run at angles to the horizontal and ducts with directional bends.

Duct protection requires that a nozzle be positioned to discharge into the duct. Two nozzles are available for duct protection.

The nozzle(s) must be installed at the geometric center of the duct opening, with the tip located 0 - 6" into the duct opening, and aimed directly into the duct. See Figure **3-1**.

In installations where a UL listed damper assembly is employed, the duct nozzle can be installed beyond the 6 in. (152 mm) maximum, to a point just beyond the damper assembly that will not interfere with the damper. Exceeding the maximum of 6 in. (152 mm) in this way will not void the UL listing of the system.

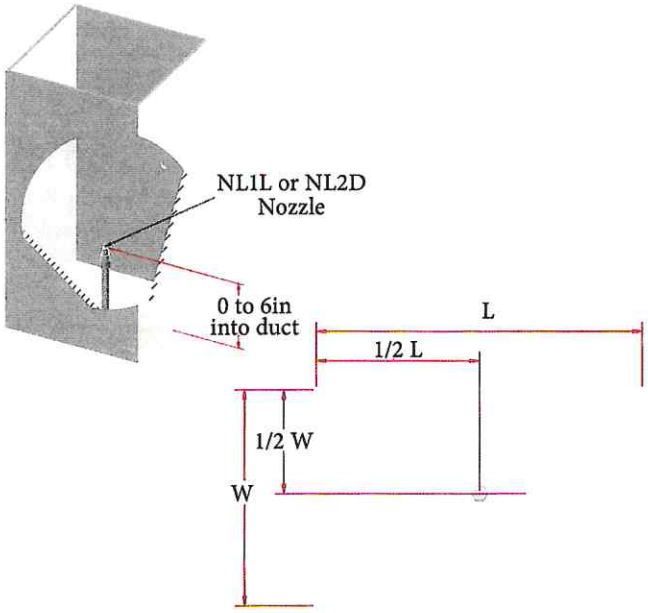


Figure **3-1**

ONE FLOW DUCT PROTECTION WITH 1L NOZZLE (P/N NL1L)

The 1L Nozzle (P/N NL1L) is a one (1) flow nozzle. A single 1L nozzle is capable of protecting square or rectangular ducts with a maximum perimeter of 50" (maximum side of 16¾", with the diagonal being a maximum of 18¾".) It can also protect a round duct with a maximum diameter of 16". See Figures **3-2** & **3-3**.

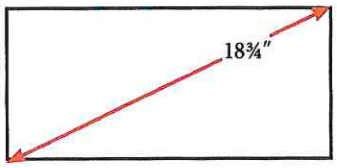


Figure **3-2**: Maximum rectangular duct perimeter of 50"

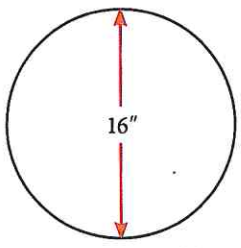
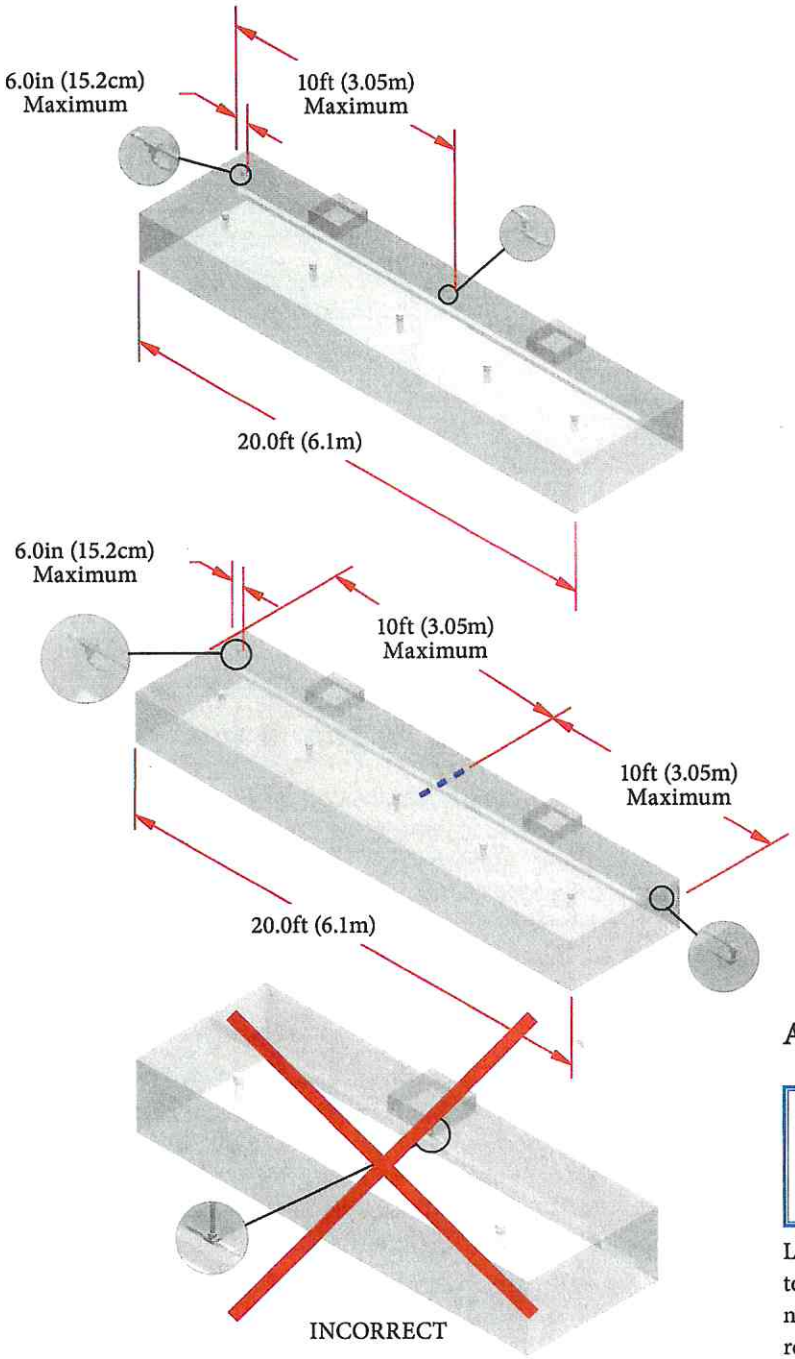


Figure **3-3**: Maximum cylindrical duct diameter of 16"

PLENUM PROTECTION

The 1H nozzle (P/N NL1H) is a one (1) flow nozzle used for plenum protection. A single 1H nozzle can protect a plenum (with single or V-bank filters) 10′ long by 4′ wide. Dividing the length into sections equal to or less than 10′ in length and positioning a nozzle at the start of each section can be done to protect longer plenums.

On V-bank plenums, the nozzle(s) must be located at the center of the V-bank width, ⅓ of the vertical height of the filters. On single filter bank plenums, the nozzle must be located 2″ from the back edge of the filter, ⅓ down from the vertical height. For either application, the nozzle must be located within 6″ of the end of the plenum (or module) and aimed directly down the length of the plenum. The nozzles may point in opposite directions as long as the entire plenum area is protected, and the 10′ limitation is not exceeded. See Figure 3-9.



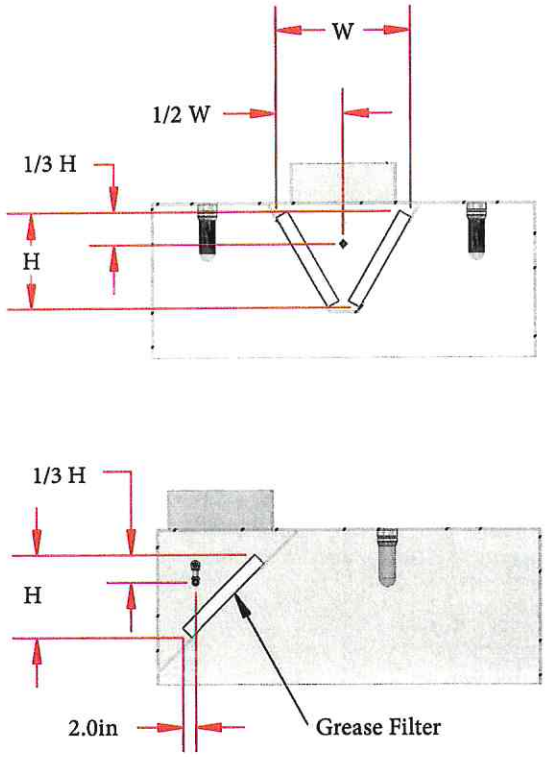


Figure 3-9: Plenum Protection

APPLIANCE PROTECTION

NOTE

When protecting appliances which are larger than single nozzle coverage, multiple nozzles can be used.

Larger appliances can be divided into several modules, each equal to or smaller than single nozzle coverage. Exception: Fryers must not exceed a maximum of 864 sq. in.. For modularizing fryers, refer to "Protecting Large Fryers by Dividing Their Area Into Modules," page 24.

Fryers Without Drip Board (High Mount Nozzle)

Compulsory Nozzle	NL2H
Flow Points Per Nozzle	2 (Two)
Number of Nozzles Required	1 (One)
Maximum Area of Protection (no drip board)	19″ × 19½″
Nozzle Location	Anywhere over the hazard surface
Nozzle Height	24" - 48″ above the hazard surface
Nozzle Aiming	Aimed at the center of the hazard surface
Graphic Representation	See Figure **3-3**

Nozzle must be located anywhere within the shaded area and aimed at the center of the hazard surface.

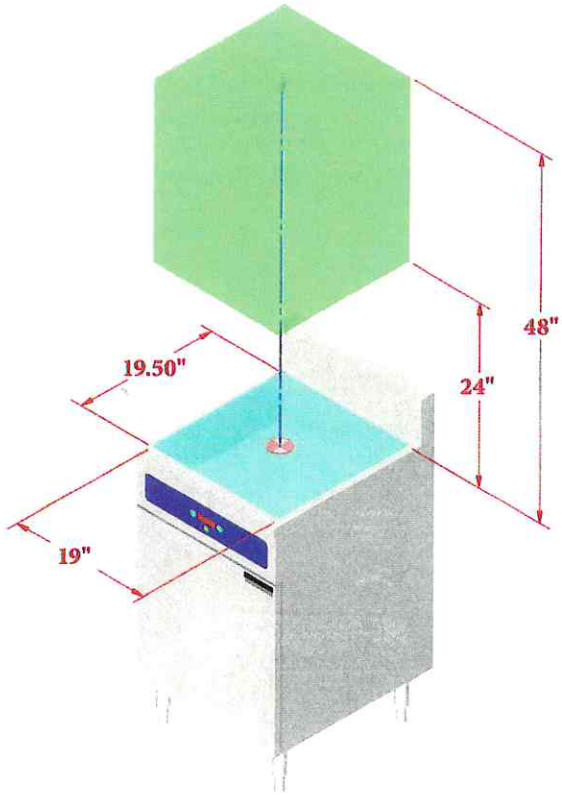


Figure **3-3**: Fryers without Drip Board (High Mount Nozzle)

Small Griddle (High Mount Nozzle)

Compulsory Nozzle	NL1H	NL2H
Flow Points Per Nozzle	1 (One)	2 (Two)
Number of Nozzles Required	1 (One)	1 (One)
Maximum Area of Protection	1080 square inches with a longest side dimension of 36"	
Nozzle Location	Above any corner of the hazard surface	0" - 6" From either of the short sides of the hazard surface
Nozzle Height	24" - 48" above the hazard surface	
Nozzle Aiming	At a point 12" in and 12" over from the corner below the nozzle.	At the center of the hazard surface
Graphic Representation	Figure 3-16a	Figure **3-16b**

NL1H Nozzle must be located directly above any corner of the hazard surface and aimed at the intersecting point 12" from each side of the corner below the nozzle.

NL2H Nozzle must be located 0" - 6" from either of the short sides of the hazard surface, and aimed at the center of the hazard surface

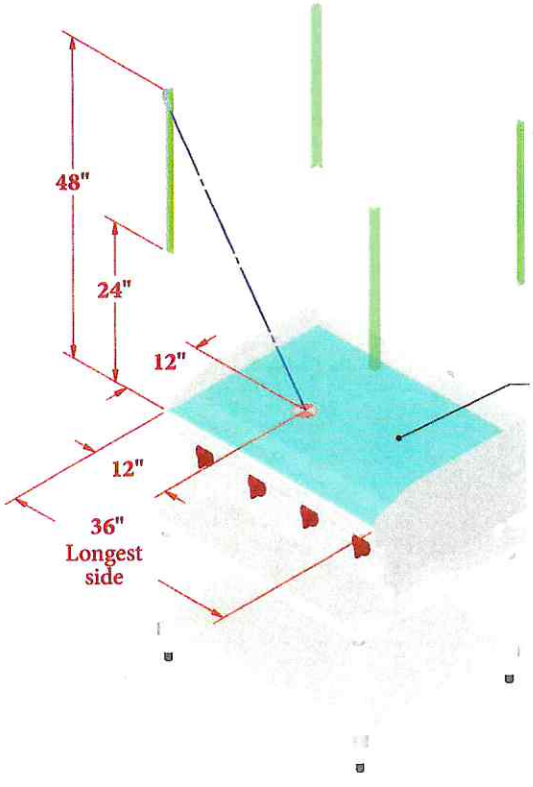


Figure **3-16a**: NL1H Nozzle

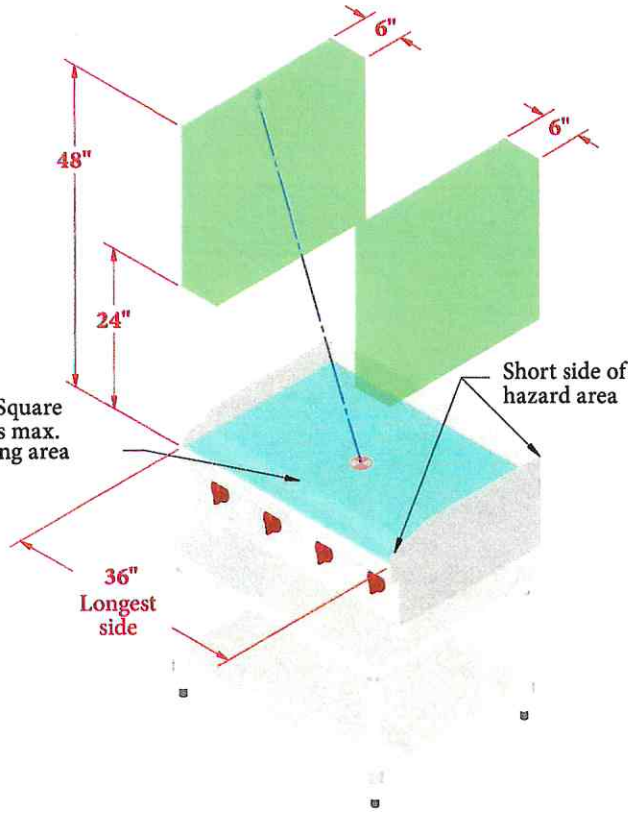


Figure **3-16b**: NL2H Nozzle