BUILDING CODE SUMMARY

REFERENCE: APPLICABLE 2010 FLORIDA BUILDING CODES WITH LATEST AMENDMENTS, 2008 NEC, AND 2010 FFPC AND APPLICABLE CODES AND STANDARDS BY REFERENCE, 2012 FLORIDA ACCESSIBILITY CODE

EXISTING BUILDING: ALTERATION LEVEL 3
USE DESCRIPTION: COMMERCIAL
OCCUPANCY CLASSIFICATION: A-2 RESTAURANT
CONSTRUCTION TYPE: TYPE -IB (8" CMU EXTERIOR WALLS) AUTOMATIC FIRE SPRINKLER SYSTEM
ROOF LOADS: 20 PSF UNIFORM, 300 LBS CONCENTRATED
SOIL BEARING: 2,000 PSF
FLOOD ZONE: X

FLORIDA ACCESSIBILITY

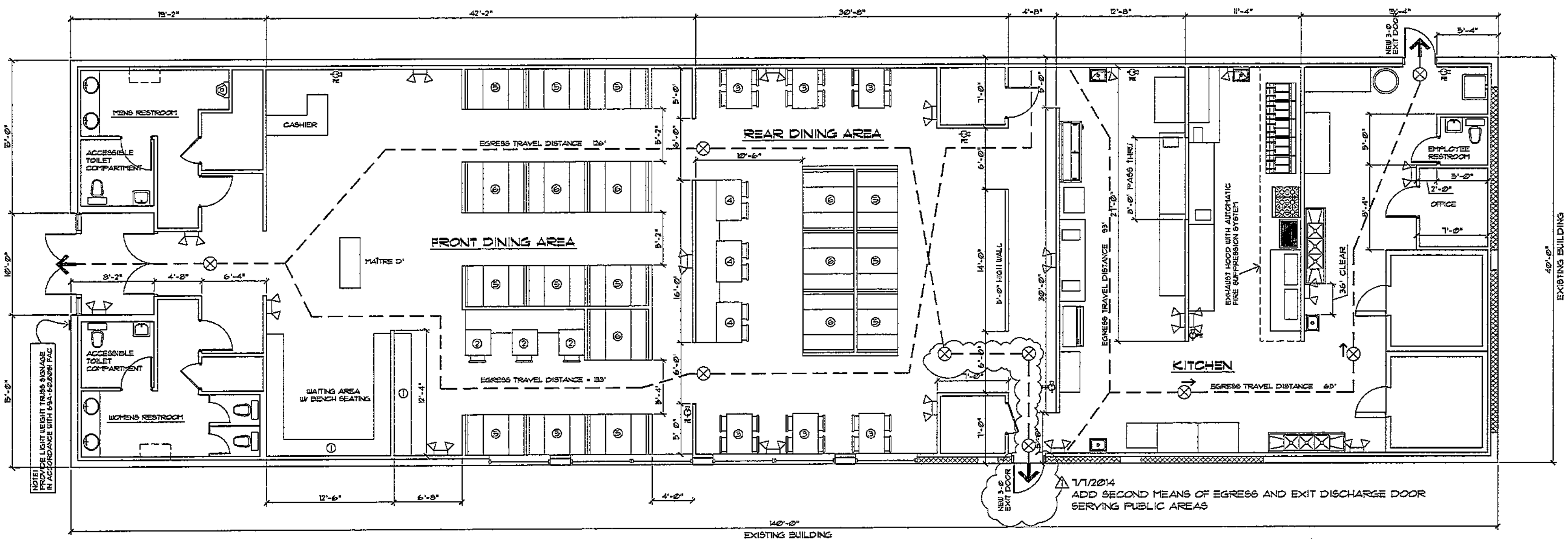
100% ADA COMPLIANT	YES
AN ACCESSIBLE ENTRANCE	YES
RAMP TO ENTRANCE	YES
ACCESSIBLE REST ROOMS	YES

FIRE RESISTANCE:

BUILDING: EXISTING COMMERCIAL
PROJECT IS WITHIN FIRE DISTRICT
STRUCTURE WILL HAVE AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM
MAXIMUM TRAVEL DISTANCE TO POINT OF EXIT DISCHARGE IS 133'

	HOURLY RATING
EXTERIOR BEARING WALLS	0
INTERIOR WALLS	0
SEPARATION WALL	2
COLUMNS	0
BEAMS, GIRDERS, TRUSSES	0
FLOOR SYSTEM	0
ROOF AND ROOF / CEILING ASSEMBLIES	0

INDEX OF SHEETS



DINING ROOMS SEATING LAYOUT AND LIFE SAFETY PLAN

SCALE: 3/16" 1'-0"

DINING ROOMS SEATING SCHEDULE

MARK	NO. OF UNITS	DESCRIPTION OF UNIT	SEATING CAPACITY OF EACH UNIT	SEATING CAPACITY OF THE TOTAL NUMBER OF UNITS OF EACH TYPE
①		WAITING AREA BENCH SEATING	20	20
②	3	30x30 TABLE AND BENCH	2	6
③	6	30x48 TABLE	4	24
④	3	30x48 TABLE AND BENCH	4	12
⑤	12	BOOTH WITH 30x48 TABLE	4	48
⑥	7	BOOTH WITH 30x60 TABLE	6	42

TOTAL SEATING CAPACITY OF ALL UNITS = 152

FRONT DINING MAXIMUM OCCUPANCY BY CODE = 106 PERSONS ACTUAL SEATING = 86
REAR DINING MAXIMUM OCCUPANCY BY CODE 71 PERSONS ACTUAL SEATING 66

LIFE SAFETY LEGEND

- — — PATH OF EXIT TRAVEL
- NOTE: MAXIMUM EGRESS DISTANCE TO POINT OF EXIT DISCHARGE IS 133'
- → POINT OF EXIT DISCHARGE
- ⊗ EXIT SIGN
- EMERGENCY LIGHT
- FIRE EXTINGUISHER WALL MOUNT WITH SIGNAGE

NOTE

STRUCTURE WILL HAVE AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM

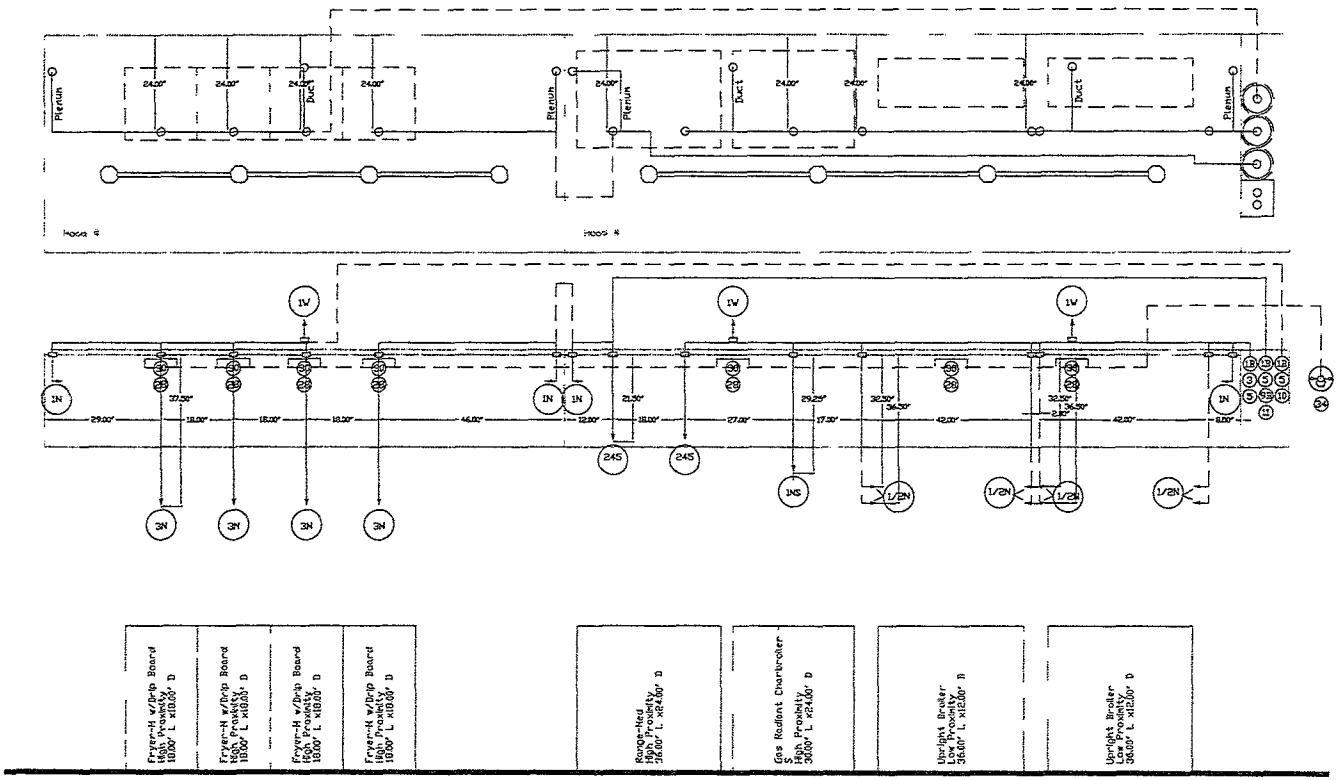
EXISTING BUILDING BUILD-OUT FOR
CEDAR RIVER SEAFOOD RESTAURANT
1592 W. US HIGHWAY 90
LAKE CITY FL 32055

FRANK SPENCER III
ARCHITECT
1112 16th AVENUE NORTH JACKSONVILLE BEACH, FL 32250

FLORIDA REG. AR0013664

JOB COMM-0214-1
DATE 4/28/2014
REVISIONS
△ 7/1/2014

SHEET A-1 of 4



NOTES
- FIELD PIPE DROPS AS SHOWN
  SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE.
- MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE.
- IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6' ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS

Job # 1978750
Job Name: Cedar River Seafood - Lake City FL
Drawn By:
System Size: ANSUL-3.0/3.0/3.0 Total FP required 28
Hood # 1 10' 9.00" Long x 54" Wide x 24" High
Riser # 1 Size: 1½" Dia.
Hood # 1 Metal Blow-Off Caps Included.
Hood # 2 14' 0.00" Long x 54" Wide x 24" High
Riser # 1 Size: 1½" Dia.
Riser # 2 Size: 1½" Dia.
Hood # 2 Metal Blow-Off Caps Included.

32376

SYSTEM DESIGN

The ANSUL R-102 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 R-102 system must be trained and hold a current ANSUL certificate in an R-102 training program

The R-102 and the PIRANHA systems use compatible agents and components, therefore, they may be used together for cooking appliance, hood, and duct protection. The primary ANSUL AUTOMAN Release can be either an R-102 or a PIRANHA ANSUL AUTOMAN Release and can actuate up to two additional R-102 or PIRANHA Regulated Actuators In systems utilizing a 101 remote release, any combination of the maximum number of regulated actuators can be used

- Both systems must actuate simultaneously
- Each system must be designed and installed per its appropriate manual
- Adjacent appliances requiring protection must be protected with the same type of system, either R-102 or PIRANHA, unless the center-to-center spacing between the adjacent R-102 and PIRANHA nozzles is no less than 36 in (91 4 cm)
- When appliances are protected with R-102 nozzles, the hood and connecting duct above those appliances cannot be protected with PIRANHA nozzles
- Mixing systems in a common plenum is not allowed

One of the key elements for restaurant fire protection is a correct system design This section is divided into ten sub-sections· Nozzle Placement Requirements, Tank Quantity Requirements, Actuation and Expellant Gas Line Requirements, Distribution Piping Requirements, Detection System Requirements, Manual Pull Station Requirements, Mechanical Gas Valve Requirements, Electrical Gas Valve Requirements, Electrical Switch Requirements, and Pressure Switch Requirements. Each of these sections must be completed before attempting any installation System design sketches should be made of all aspects of design for reference during installation

NOZZLE PLACEMENT REQUIREMENTS

This section gives guidelines for nozzle type, positioning, and quantity for duct, plenum, and individual appliance protection This section must be completed before determining tank quantity and piping requirements.

Duct Protection – Single Nozzle

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

The R-102 system uses different duct nozzles depending on the size of duct being protected.

GENERAL INFORMATION

1 Nozzles must be located 2-8 in. (5-20 cm) into the center of the duct opening, discharging up. See Figure 1.

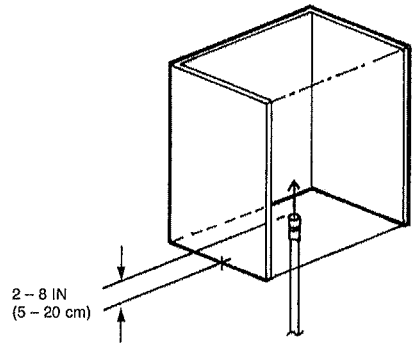


FIGURE 1
000173

2 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.

3 Previously listed 3 flow number and 5 flow number duct protection detailed in earlier published manual, Part No. 418087-06, can also still by utilized.

DUCT SIZES UP TO 50 IN (127 cm) PERIMETER/ 16 IN (41 cm) DIAMETER

- One 1W nozzle (Part No 419336) = one flow number
- 50 in (127 cm) perimeter maximum
- 16 in. (41 cm) diameter maximum

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

The chart below shows the maximum protection available from each duct nozzle

Description	Part No	3 0 Gallon System	1 5 Gallon System
2W Nozzle	419337	Maximum 100 in. (254 cm) Perimeter	Maximum 100 in (254 cm) Perimeter
1W Nozzle	419336	Maximum 50 in. (127 cm) Perimeter	Maximum 50 in. (127 cm) Perimeter

Duct Protection – Multiple Nozzle (Continued)

▸ DUCT SIZES GREATER THAN 100 IN. (254 cm) PERIMETER

▸ • Ducts over 100 in. (254 cm) perimeter may be modularized using 2W nozzles (Part No. 419337)
- No round duct option available
- Follow the design chart to determine maximum module size for each 2W nozzle
- When determining number of nozzles required, it is sometimes an advantage to check the chart using the shortest side as Side "A" and then recheck it using the longest side as Side "A". This comparison may reveal a need for a lesser quantity of nozzles one way versus the other way.

When working with Chart 1, the quantity of nozzles determined must be equally divided within the duct area.

When working with Chart 2, one half of the quantity of nozzles determined must be equally positioned in the top half of the area of the duct and the remaining half of the nozzles must be positioned in the bottom half of the duct area.

Example: The duct to be protected has a Side "A" of 40 in. ▸ (101.6 cm) and a Side "B" of 60 in. (152.4 cm). Referring to the design chart, this duct requires 4 nozzles. One half of 4 = 2. Therefore, 2 nozzles must be equally positioned in each of the two duct areas. See Figure 3.

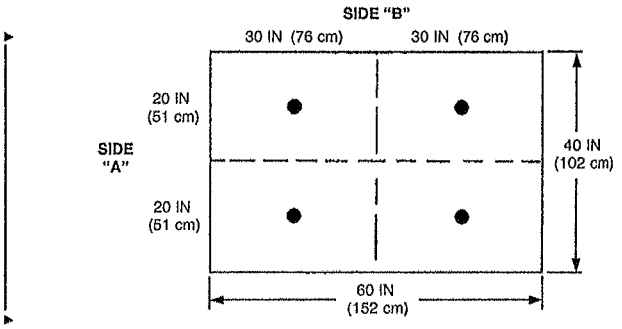


FIGURE 3

CHART NO. 1

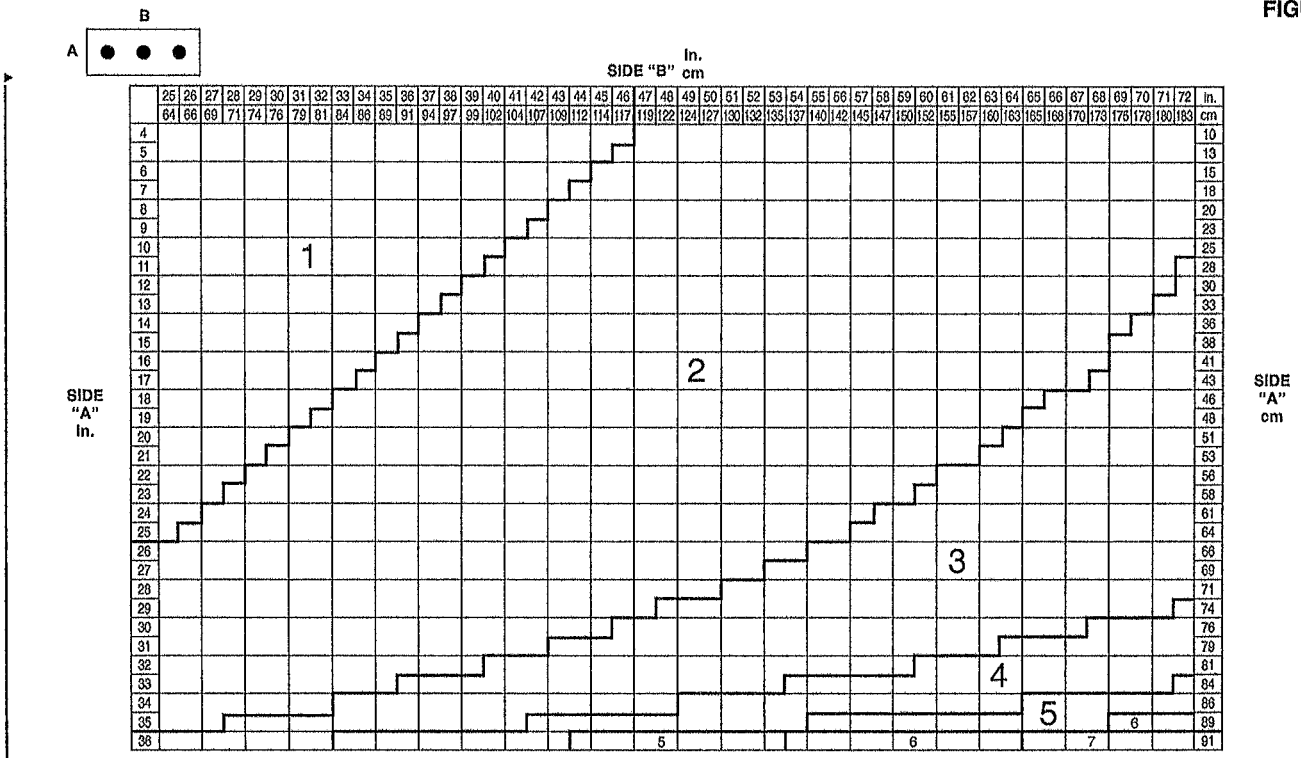
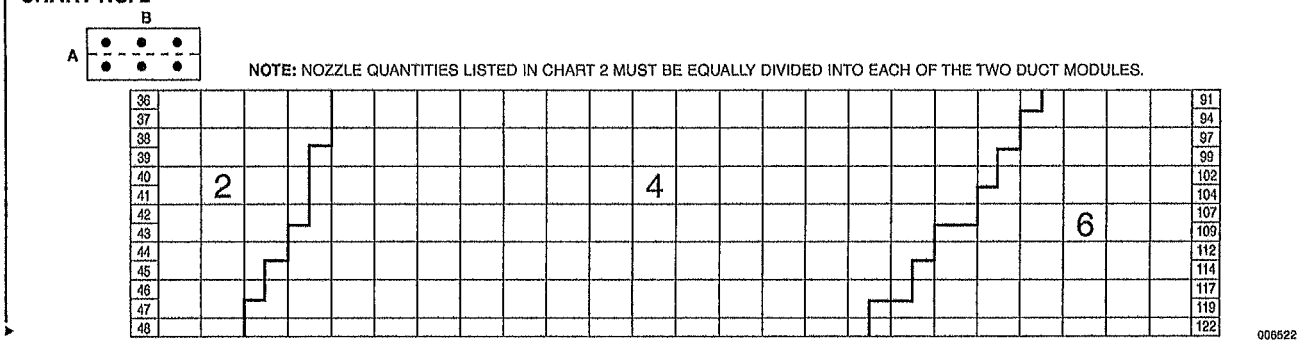


CHART NO. 2



Plenum Protection

The R-102 system uses the 1W Nozzle (Part No. 419336) or the 1N Nozzle (Part No. 419335) for plenum protection. The 1W nozzle tip is stamped with 1W and the 1N nozzle tip is stamped with 1N, indicating they are one-flow nozzles and must be counted as one flow number each. When protecting a plenum chamber, the entire chamber must be protected regardless of filter length.

VERTICAL PROTECTION – GENERAL

▸ 1W NOZZLE – PART NO. 419336 – SINGLE AND "V" BANK
▸ PROTECTION

One 1W nozzle will protect 4 linear feet (1.2 m) of plenum. The maximum distance from the end of the hood to the first and last nozzle must be no more than 2 ft (0.6 m). After the first nozzle, any additional nozzles must be positioned at a maximum of 4 ft (1.2 m) apart down the entire length of the plenum. The plenum width must not exceed 4 ft (1.2 m). (The 1W nozzle can be used on single or V-bank filter arrangements.) See Figure 6.

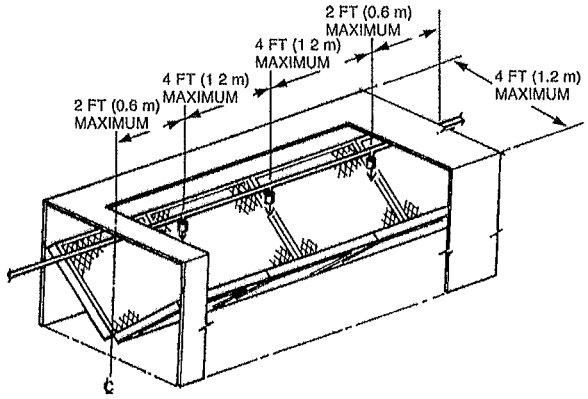


FIGURE 6
000197

When protecting plenums with the 1W nozzle, two options of coverage are available:

Option 1: The 1W nozzle must be on the center line of the single or "V" bank filter and positioned within 1-20 in. (2.5-51 cm) above the top edge of the filter. See Figure 7.

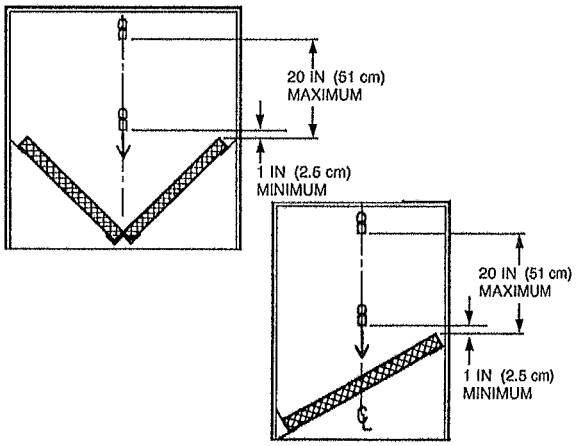


FIGURE 7
000199

Option 2: The 1W nozzle must be placed perpendicular, 8-12 in. (20-30 cm) from the face of the filter and angled to the center of the filter. The nozzle tip must be within 2 in. (5 cm) from the perpendicular center line of the filter. See Figure 8

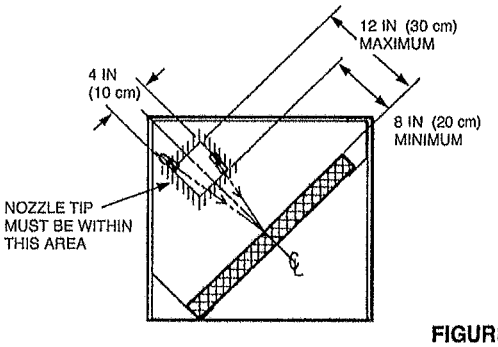


FIGURE 8
000200

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.

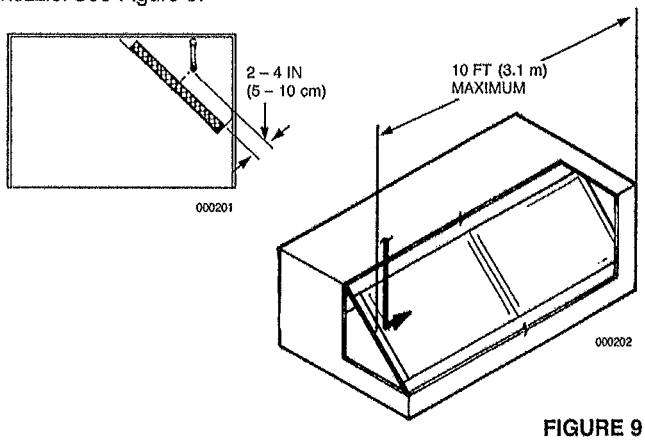


FIGURE 9

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

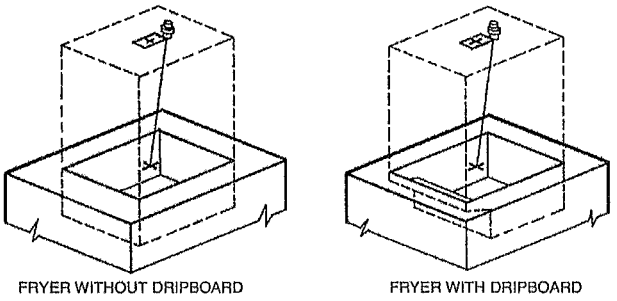
      If the fryer includes any dripboard areas, measure both the internal depth (horizontal dimension from front to back) and length of the frypot portion, and then measure the internal depth and length of the overall hazard area including any dripboard areas
2. Using Table, "Maximum Cooking Area Dimension – 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.

Fryer – Single Nozzle Protection (Continued)

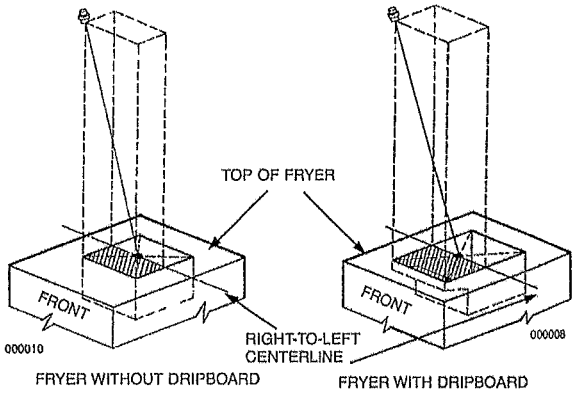
Maximum Area Dimensions – Single Nozzle Fryer Protection (Continued)

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 17
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 18	See Figure 18
▸ 18 in. x 18 in ▸ (46 cm x 46 cm)	18 in. x 27 3/4 in. (46 cm x 70.5 cm)	3N	25 in. to 35 in. (64 cm to 89 cm)	See Figure 19



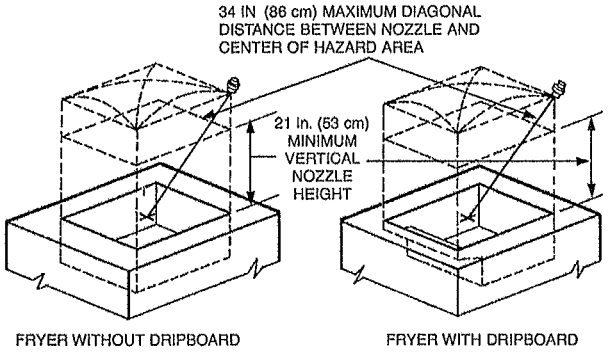
290 NOZZLE TIP POSITIONED OVER THE MIDPOINT OF THE HAZARD AREA ± 3 IN (7.6 cm) FROM THE MIDPOINT ALONG THE LONGEST SIDE OF THE HAZARD AND ± 1 IN (2.5 cm) FROM THE MIDPOINT ALONG THE SHORTEST SIDE OF THE HAZARD AND AIMED AT THE MIDPOINT OF THE COOKING AREA.

FIGURE 17
002286



NOTE: 3N NOZZLE TIP MUST BE LOCATED WITHIN THE PERIMETER OF THE SURFACE AREA WITHIN THE FRONT HALF OF THE FRY POT AND AIMED AT THE CENTER

FIGURE 19



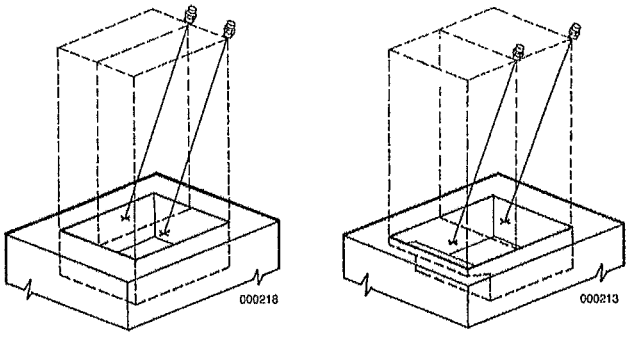
3N NOZZLE TIP POSITIONED ANYWHERE ALONG OR WITHIN PERIMETER OF COOKING SURFACE AND AIMED TO THE CENTER OF THE COOKING AREA.

FIGURE 18
002287

Fryer – Multiple Nozzle Protection (Continued)

Maximum Area Dimension – Multiple Nozzle Fryer Protection

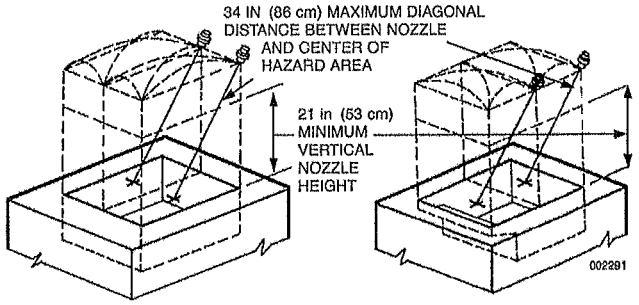
Max. Size Module Frypot Only	Max Size Module Overall With Dripboard	Type of Nozzle	Nozzle Height Above Top of Fryer	Nozzle Location
▸ Full or Split Vat 21 in. x 210 in.^{2} (53 cm x 0.14 m^2)	Full or Split Vat 21 in. x 294 in ^{2} (53 cm x 0.19 m^2)	230	27 in. to 47 in. (69 cm to 119 cm)	See Figure 21
▸ Full or Split Vat 21 in. x 210 in.^{2} (53 cm x 0.14 m^2)	Full or Split Vat 21 in. x 294 in ^{2} (53 cm x 0.19 m^2)	245	20 in to 27 in (51 to 69 cm)	See Figure 21
▸ Full or Split Vat 21 in. x 210 in.^{2} ▸ (53 cm x 0.14 m^2)	Full or Split Vat 21 in. x 294 in.^{2} (53 cm x 0 19 m^2)	290	13 in. to 16 in. (33 to 41 cm)	See Figure 22
25 3/8 x 370.5 in^2 (65 cm x 0.24 m^2)	25 3/8 x 495 in^2 (65 cm x 0.32 m^2)	290	13 in. to 16 in (33 to 41 cm)	See Figure 22
▸ Full or Split Vat 26 1/2 in x 203 in.^{2} ▸ (67 cm x 0 13 m^2)	Full or Split Vat 26 1/2 in. x 384 1/4 in.^{2} (67 cm x 0.25 m^2)	290	16 in. to 27 in. (41 to 69 cm)	See Figure 22
25 3/8 x 370 5 in^2 (65 cm x 0.24 m^2)	25 3/8 x 495 in^2 (65 cm x 0.32 m^2)	3N	See Figure 23	See Figure 23
▸ 27 3/4 x 324 in.^{2} ▸ (70.5 cm x 0.21 m^2)	27 3/4 x 497 in^2 (70.5 cm x 0.32 m^2)	3N	25 in. to 35 in. (64 cm to 89 cm)	See Figure 24



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

POSITION NOZZLE TIP ANYWHERE ALONG OR WITHIN THE PERIMETER OF THE MODULE IT IS PROTECTING AND AIM AT THE MIDPOINT OF THAT MODULAR AREA.

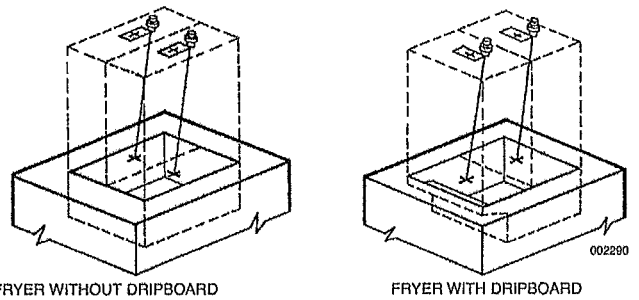
FIGURE 21



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

3N NOZZLE TIP MUST BE POSITIONED ANYWHERE ALONG OR WITHIN THE PERIMETER OF THE MODULAR IT IS PROTECTING AND AIMED AT THE MIDPOINT OF THAT RESPECTIVE MODULE AREA.

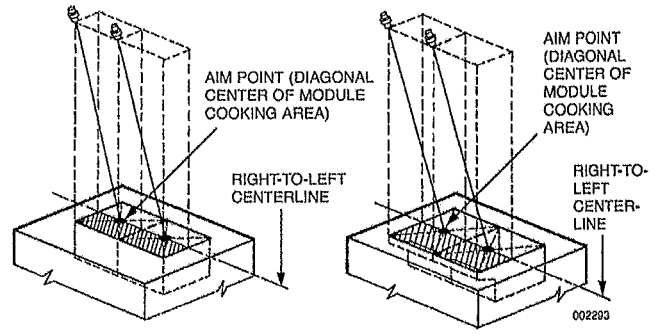
FIGURE 23



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

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

FIGURE 22



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

THE 3N NOZZLE TIP MUST BE POSITIONED ANYWHERE ALONG OR WITHIN THE PERIMETER AND FORWARD OF THE RIGHT-TO-LEFT CENTERLINE OF THE COOKING AREA. THE AIMING POINT OF THE NOZZLE MUST BE AT THE DIAGONAL CENTER OF THE MODULAR COOKING AREA.

FIGURE 24

Range Protection

The R-102 system uses five different nozzles for the protection of ranges. Two of the design options require a one-flow nozzle and three of the design options require two-flow nozzles.

NOTICE

A 13 in. (33 cm) diameter wok pan is the largest wok size that can be protected on ranges.

When protecting hot top ranges, the entire cooking surface must be protected.

Range Protection 1N (1-Flow) Nozzle – High Proximity Application

No Obstructions

Single and multiple burner ranges can be protected using a 1N nozzle, Part No. 419335. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.

When using this nozzle for range protection, the maximum length of the burner grates being protected with a single nozzle must not exceed 32 in. (81 cm) and the maximum area of the burner grates must not exceed 384 in.^{2} (2477 cm^2) per nozzle.

When protecting a range, the 1N nozzle must be located a maximum of 10 in. (25.4 cm) from each burner grate centerline and must be aimed at the center of the cooking surface. See Figures 27 and 28.

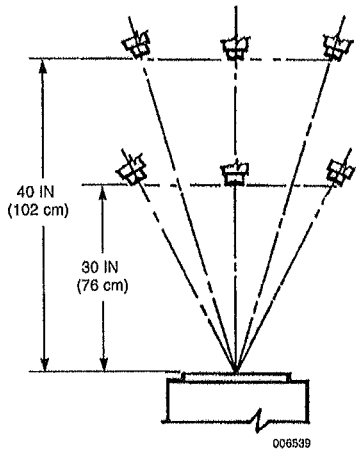


FIGURE 27

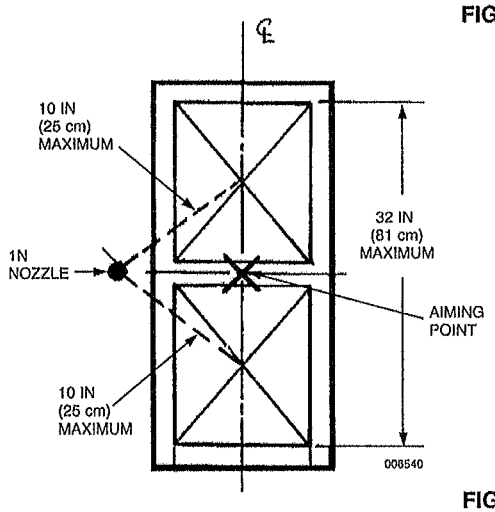


FIGURE 28

Range Protection 260 (2-Flow) Nozzle – Medium Proximity Application

No Obstructions

30 in. to 40 in. (76 cm to 102 cm) above the cooking surface.

The medium 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 cooking area of 768 in.^{2} (4955 cm^2) with a maximum dimension of 32 in. (81 cm).

When using this nozzle for range protection, the nozzle must be pointed vertically down and positioned as shown in Figures 31 and 32.

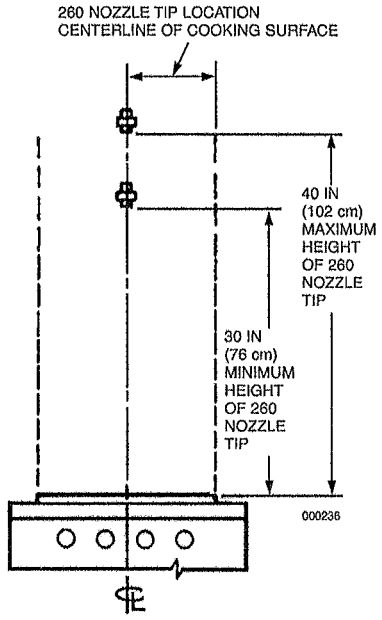


FIGURE 31

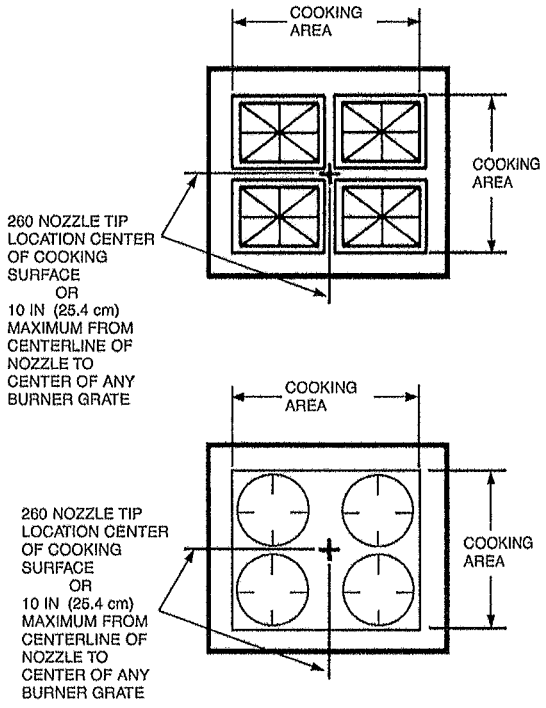


FIGURE 32
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NOTICE

Four burner grates shown in Figure 32. For single or double burner grates, locate nozzle at center of cooking surface.

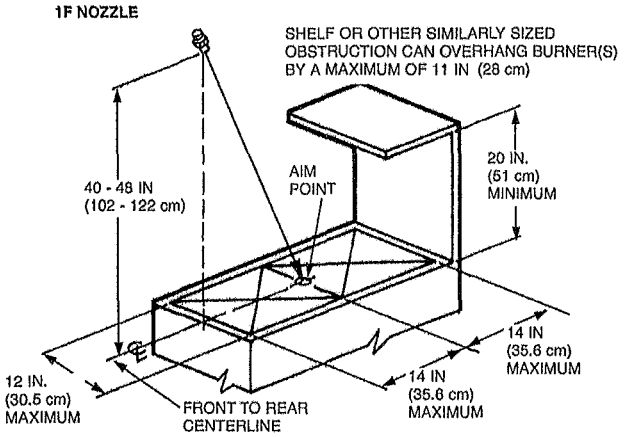
Range Protection (With or Without Back Shelf/Obstruction)

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, Part No. 419333, and the other option requires a 260 nozzle, Part No. 419341.

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

Range Protection 260 (2-Flow) Nozzle (With or Without Back Shelf/Obstruction)

Single and multiple burner ranges can be protected using a 260 nozzle, Part No. 419341. The nozzle tip 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. (81 cm) and the maximum area of the burner grates must not exceed 384 in.^{2} (2477 cm^2). Nozzle must be located on the front edge of the burner grates and aimed at a point 10 in. (25 cm) from the back edge of the burner grates. Nozzle must be mounted 30 to 40 in. (76 to 102 cm) above the hazard surface. See Figure 38.

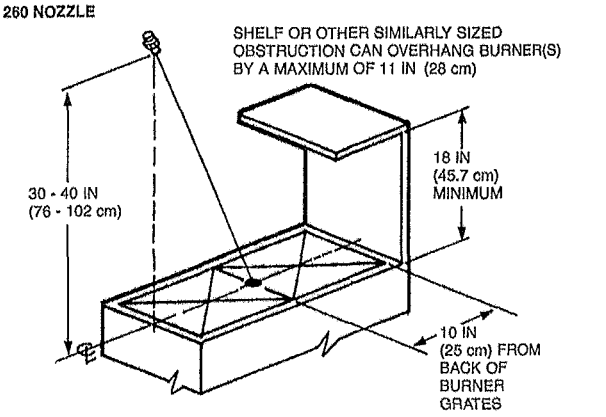


FIGURE 38
000238a

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.

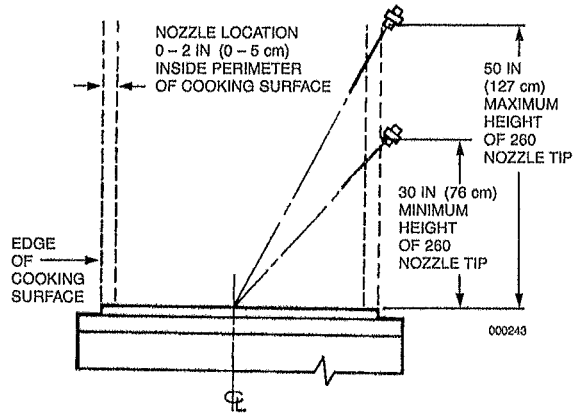


FIGURE 43
000243

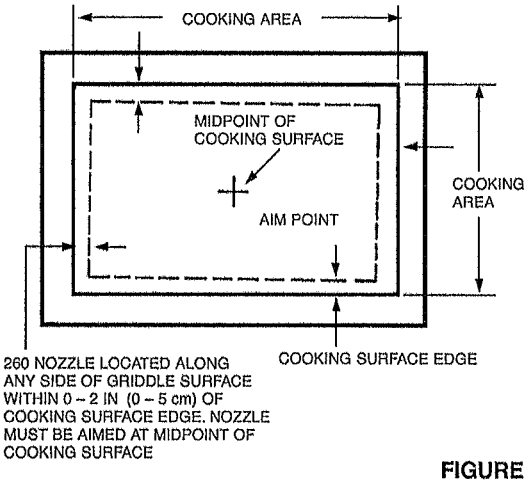


FIGURE 44
000241

Griddle Protection 290 (2-Flow) Nozzle – Medium Proximity Application

Option 2a – Nozzle Perimeter Located (Continued)

20 in. to 30 in. (51 cm to 76 cm) above the cooking surface

The medium proximity application uses the 290 nozzle, Part No. 419342.

The nozzle tip is stamped with 290 indicating this is a two-flow nozzle and must be counted as two flow numbers.

One 290 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 perimeter to 2 in. (5.1 cm) inside perimeter, and aimed at the center of the cooking surface. See Figure 45 and 46

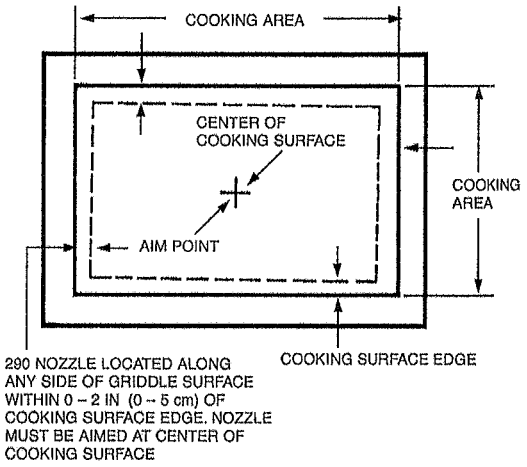


FIGURE 45
000241

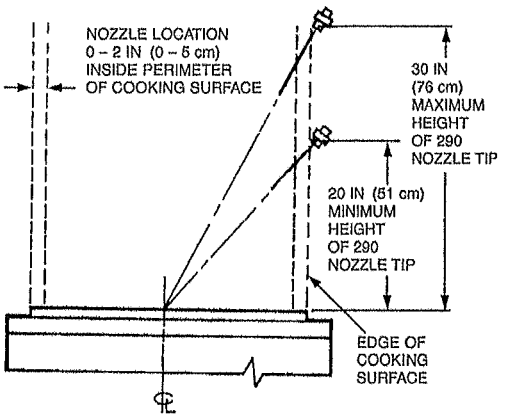


FIGURE 46
000243

Griddle Protection 1W (1-Flow) Nozzle – Low Proximity Application

15 in. to 20 in. (38.1 cm to 50.8 cm) above the cooking surface.

The low proximity 1-flow nozzle application for the protection of griddles requires the 1W nozzle, Part No. 419336.

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

When using the 1W nozzle for low proximity griddle protection with our without obstruction, the maximum length of the cooking surface to be protected must not exceed 26 in. (66.0 cm). The nozzle must be centered at one end of the maximum 26 in. (66.0 cm) length, aimed along a centerline to a point 20 in. (50.8 cm) from the end of the length, protecting a maximum width of 20.5 in. (52.1 cm).

The 1W nozzle tip must be positioned at or below the obstruction, if present. The protected area begins at the point straight down from the nozzle tip. The nozzle can be positioned above the edge of the hazard area to be protected. See Figures 51 and 52

Note: If the hazard area exceeds the single nozzle coverage listed above, additional nozzles will be required. The additional nozzle can be positioned in front at high proximity or at the side at low proximity.

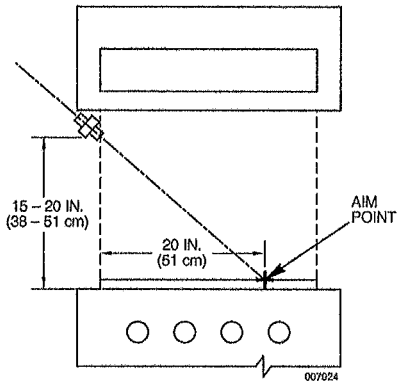


FIGURE 51

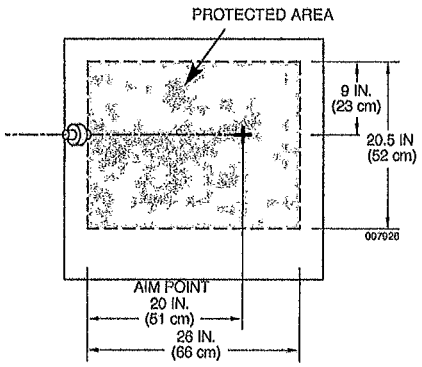


FIGURE 52

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.

Salamander Broiler Protection

The R-102 system uses three different nozzle locations for salamander broiler protection. All of the design options require a one-flow nozzle.

Salamander Broiler Protection – 1N (1-Flow) Nozzle Overhead

A salamander broiler with a maximum hazard area (internal broiler chamber) of 16 in. (41 cm) deep x 29 in. (74 cm) wide can be protected using a 1N nozzle, Part No. 419335. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle

The single 1N nozzle must be located directly in line with either vertical edge of the broiler opening, 6 in. (15 cm) to 12 in. (30 cm) in front of the broiler, and 0 in. to 12 in. (30 cm) above the top of the broiler. The nozzle must be aimed at the center of the broiler opening See Figure 57a.

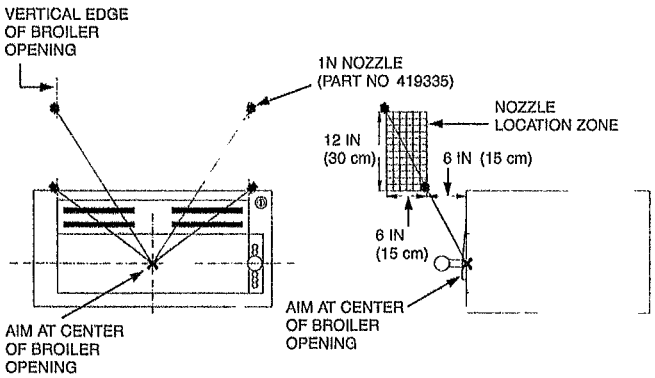


FIGURE 57a
008426

Salamander Broiler Protection – 1F (1-Flow) Nozzle Overhead

A salamander broiler with a maximum hazard area (internal broiler chamber) of 15 in. (38 cm) deep x 31 in. (79 cm) wide can be protected using a 1F nozzle, Part No. 419333. The nozzle tip is stamped with 1F, indicating that this is a one-flow nozzle.

The single 1F nozzle must be located directly in line with the center of the broiler opening, 8 in. (20 cm) to 12 in. (30 cm) in front of the broiler and 12 in. (30 cm) to 18 in. (46 cm) above the top of the broiler. The nozzle must be aimed at the center of the top broiler opening when the grate is located in the middle position. The nozzle must be orientated so the nozzle tip flats are parallel with the grate left to right centerline. See Figure 57b.

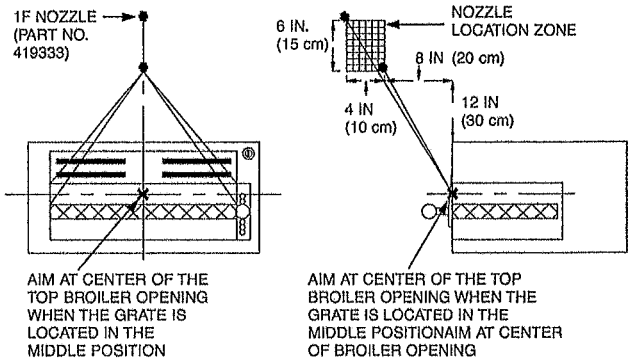


FIGURE 57b
008426

Salamander Broiler Protection – 1N (1-Flow) Nozzle Local

A salamander broiler with a maximum hazard area (internal broiler chamber) of 15 in. (38 cm) deep x 31 in. (79 cm) wide can be protected using a 1N nozzle, Part No 419335. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle.

The single 1N nozzle must be located above the grate on either vertical edge of the broiler opening. The nozzle must be aimed at the center of the grates See Figure 57c.

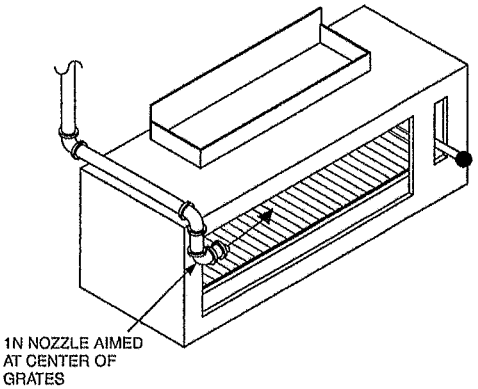
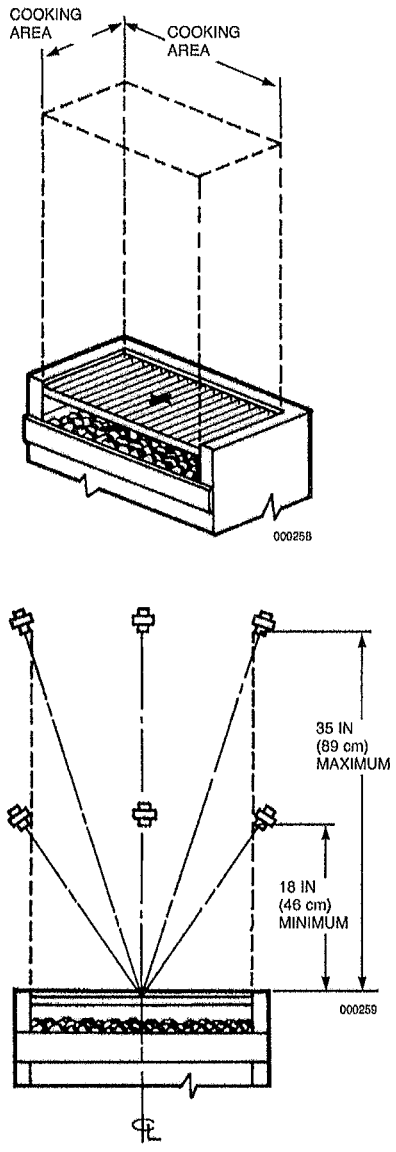


FIGURE 57c
008426

Lava Rock (Ceramic) Char-Broiler Protection

The R-102 system uses the 1N Nozzle (Part No. 419335) for all lava rock char-broiler protection. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.

One 1N nozzle will protect a hazard which has a maximum length of 24 in. (61 cm) and a total cooking area which does not exceed ▸ 312 in.^{2} (2013 cm^2). The nozzle tip must be located 18 to 35 in. (46 to 89 cm) above the hazard surface. When using this nozzle for lava rock (ceramic) char-broiler protection, the nozzle must be positioned anywhere along or within the perimeter of the maximum ▸ cooking area and angled to the center. See Figure 60.



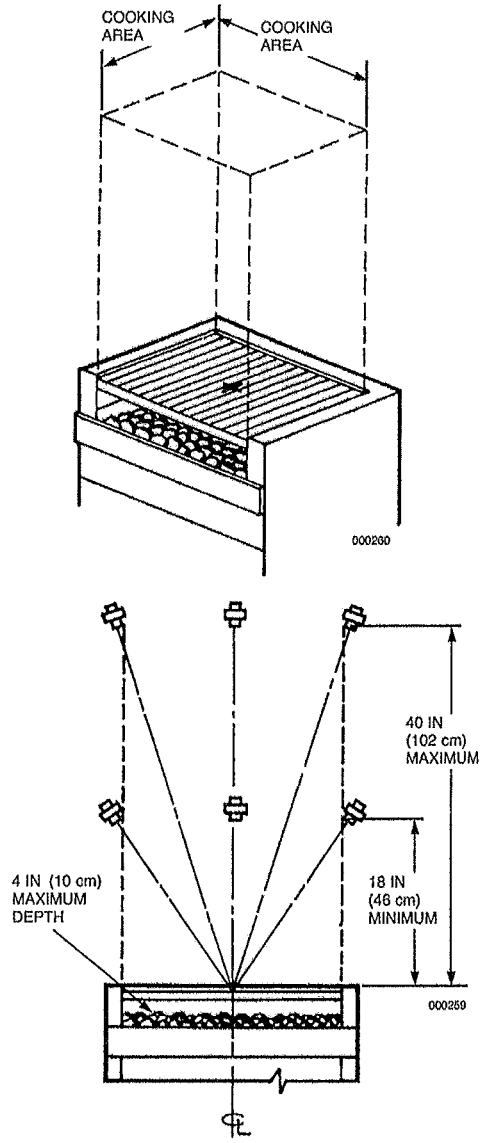
▸ FIGURE 60

Natural Charcoal Broiler Protection

The R-102 system uses the 1N Nozzle (Part No. 419335) for all natural charcoal broiler protection. The nozzle tip is stamped with 1N indicating that this is a one-flow nozzle and must be counted as one flow number.

One 1N nozzle will protect a hazard area which has a maximum length of 24 in. (61 cm) and a total cooking area which does not ▸ exceed 288 in.^{2} (1858 cm^2). The nozzle tip must be located 18 to 40 in. (46 to 102 cm) above the hazard surface. When using this nozzle for natural charcoal broiler protection, the nozzle must be positioned anywhere along or within the perimeter of the maximum cooking area and aimed at the center of the cooking surface. See ▸ Figure 61.

The coverage of such appliances only applies when the depth of the charcoal does not exceed 4 in. (10 cm)



▸ FIGURE 61

Wok Protection

The R-102 system uses two different nozzles for the protection of woks.

1. A 260 nozzle, Part No 419341, will protect a wok 14 in. (36 cm) minimum diameter up to 30 in. (76 cm) maximum diameter. The wok depth must be no less than 3.75 in. (9.5 cm) and no greater than 8 in. (20 cm).

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

   When using this nozzle, the nozzle must be positioned as shown in Figure 64.

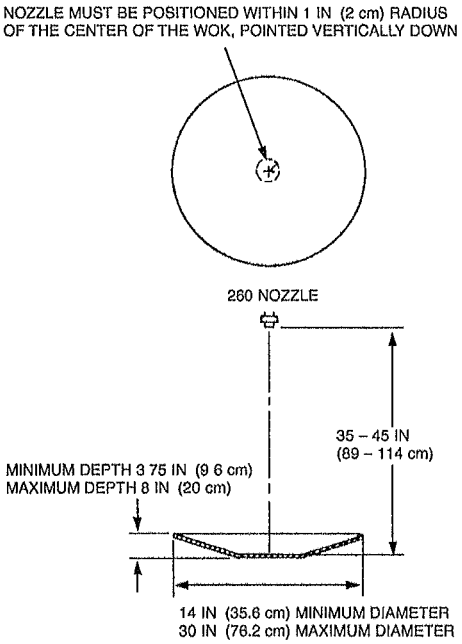


FIGURE 64
000261

2. A 1N Nozzle, Part No. 419335, will protect a wok 11 in. (28 cm) minimum diameter up to 24 in. (61 cm) maximum diameter. The wok depth must be no less than 3 in. (8 cm) and no greater than 6 in. (15 cm). The nozzle tip is stamped with 1N indicating that this a one-flow nozzle and must be counted as one flow number. When using this nozzle, the nozzle must be positioned anywhere along or within the perimeter of the wok, aimed at the center, 30 in. to 40 in. (76 to 102 cm) above the hazard surface, as shown in Figure 65.

NOTICE

When using this type of wok protection, only 5 flow numbers are allowed on a 1 1/2 gal (5.7 L) system, and only 11 flow numbers are allowed on a 3 gal (11.4 L) system.

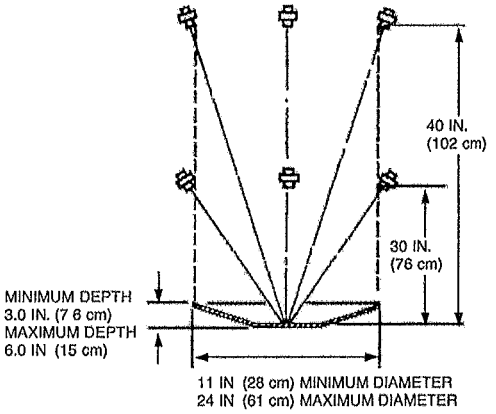


FIGURE 65
000261

Nozzle Application Chart (Continued)

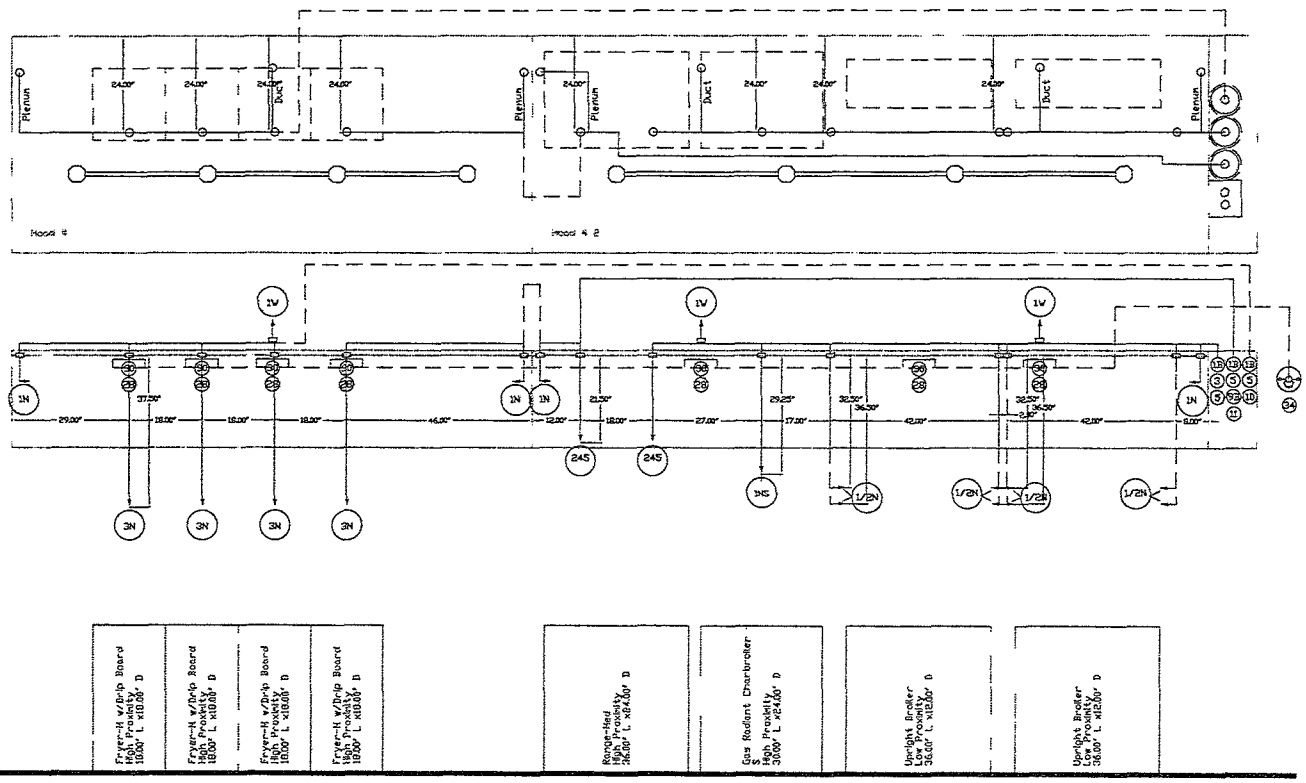
Hazard	Maximum Hazard Dimensions	Minimum Nozzle Quantity	Nozzle Heights	Nozzle Part No.	Nozzle Tip Stamping – Flow No.
Fryer (Non-Split Vat Only)*	Maximum Size (with drip board) 21 in. (53 cm) x 14 in. (36 cm) (Fry Pot must not exceed 15 in x 14 in. (38 cm x 36 cm))				
	High Proximity	1	27 – 47 in	419339	230
	Medium Proximity	1	20 – 27 in.	419340	245
	Maximum Size (with drip board) 25 3/8 in. (64.4 cm) x 19 1/2 in. (49 5 cm) (Fry pot side must not exceed 19 1/2 in. (49.5 cm) x 19 in (48.2 cm)				
	High Proximity	1	21 – 34 in.	419338	3N
	Low Proximity	1	13 – 16 in.	419342	290
	Maximum Size (with drip board) 18 in (45.7 cm) x 27 3/4 in. (70.5 cm)				
	High Proximity	1	25 – 35 in. (64-89 cm)	419338	3N
Fryer (Split or Non-Split Vat)	Maximum Size (with drip board) 14 in. (36 cm) x 21 in. (53 cm)				
	Low Proximity	1	13 – 16 in (33 – 41 cm)	419342	290
Fryer (Split or Non-Split Vat)	Maximum Size (with drip board) 14 1/2 in. (37 cm) x 26 1/2 in. (67 cm)				
	Medium Proximity	1	16 – 27 in (41 – 69 cm)	419342	290
▸ Range	Longest Side (High Proximity) 32 in. (81 cm) Area – 384 sq. in. (2477 sq cm)	1	30 – 40 in. (76 – 102 cm)	419335	1N
▸	Longest Side (Low Proximity) 24 in. (61 cm) Area – 432 in.^{2} (2787 cm^2)	1	15 – 20 in. (38 – 51 cm)	419335	1N
▸	Longest Side 28 in. (71 cm) Area – 336 sq in (2168 sq cm)		40 – 48 in (102 – 122 cm) (With Backshelf)	419333	1F
	Longest Side (High Proximity) 28 in. (71 cm) Area – 672 sq in (4335 sq cm)	1	40 – 50 in. (102 – 127 cm)	419340	245
	Longest Side (Medium Proximity) 32 in. (81 cm) Area – 768 sq in. (4955 sq cm)	1	30 – 40 in. (76 – 102 cm)	419341	260

▸ * For multiple nozzle protection of single fryers, see detailed information on Pages 4-10 and 4-11

Nozzle Application Chart (Continued)

Hazard	Maximum Hazard Dimensions	Minimum Nozzle Quantity	Nozzle Heights	Nozzle Part No.	Nozzle Tip Stamping – Flow No.
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
Wood Fueled Char-Broiler	Longest Side – 30 in (76 cm) Area – 720 sq in. (4645 sq cm)	1	14 – 40 in (36 – 102 cm)	419338	3N
Upright Broiler	Length – 32.5 in. (82.5 cm) Width – 30 in. (76 cm)	2	–	419334	1/2N
▸ Salamander Broiler	Length – 29 in. (74 cm) Width – 16 in. (41 cm)	1	–	419335	1N
	Length – 31 in (79 cm) Width – 15 in. (38 cm)	1	–	419333	1F
▸	Length – 31 in. (79 cm) Width – 15 in. (38 cm)	1	–	419335	1N
Wok	14 in – 30 in. (36 – 76 cm) Diameter 3 75 – 8.0 in (9.5 – 20 cm) Deep	1	35 – 45 in (89 – 114 cm)	419341	260
▸	11 in. – 24 in (28 – 61 cm) Diameter 3 0 – 6.0 in (8 – 15 2 cm) Deep		30 – 40 in. (76 – 102 cm)	419335/435672	1N/1NSS

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



NOTES
- FIELD PIPE DROPS AS SHOWN
  SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY GAS
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE.
- MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE.
- IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6' ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS

Job # 1978750
Job Name: Cedar River Seafood - Lake City FL
Drawn By:
System Size: ANSUL-3.0/3.0/3.0 Total FP required: 28
Hood # 1 10' 9.00" Long x 54" Wide x 24" High
Riser # 1 Size: 1½" Dia.
Hood # 1 Metal Blow-Off Caps included.
Hood # 2 14' 0.00" Long x 54" Wide x 24" High
Riser # 1 Size: 1½" Dia.
Riser # 2 Size: 1½" Dia.
Hood # 2 Metal Blow-Off Caps included.

32376

SYSTEM DESIGN

The ANSUL R-102 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 R-102 system must be trained and hold a current ANSUL certificate in an R-102 training program.

The R-102 and the PIRANHA systems use compatible agents and components, therefore, they may be used together for cooking appliance, hood, and duct protection The primary ANSUL AUTOMAN Release can be either an R-102 or a PIRANHA ANSUL AUTOMAN Release and can actuate up to two additional R-102 or PIRANHA Regulated Actuators In systems utilizing a 101 remote release, any combination of the maximum number of regulated actuators can be used

- Both systems must actuate simultaneously.
- Each system must be designed and installed per its appropriate manual
- Adjacent appliances requiring protection must be protected with the same type of system, either R-102 or PIRANHA, unless the center-to-center spacing between the adjacent R-102 and PIRANHA nozzles is no less than 36 in. (91.4 cm)
- When appliances are protected with R-102 nozzles, the hood and connecting duct above those appliances cannot be protected with PIRANHA nozzles
- Mixing systems in a common plenum is not allowed

One of the key elements for restaurant fire protection is a correct system design. This section is divided into ten sub-sections Nozzle Placement Requirements, Tank Quantity Requirements, Actuation and Expellant Gas Line Requirements, Distribution Piping Requirements, Detection System Requirements, Manual Pull Station Requirements, Mechanical Gas Valve Requirements, Electrical Gas Valve Requirements, Electrical Switch Requirements, and Pressure Switch Requirements. Each of these sections must be completed before attempting any installation. System design sketches should be made of all aspects of design for reference during installation

NOZZLE PLACEMENT REQUIREMENTS

This section gives guidelines for nozzle type, positioning, and quantity for duct, plenum, and individual appliance protection This section must be completed before determining tank quantity and piping requirements

Duct Protection – Single Nozzle

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

The R-102 system uses different duct nozzles depending on the size of duct being protected.

GENERAL INFORMATION

1 Nozzles must be located 2-8 in. (5-20 cm) into the center of the duct opening, discharging up. See Figure 1.

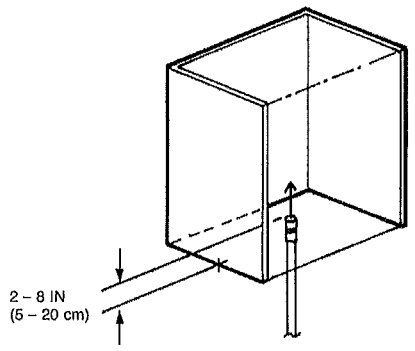


FIGURE 1
000173

2 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.

3 Previously listed 3 flow number and 5 flow number duct protection detailed in earlier published manual, Part No 418087-06, can also still by utilized.

DUCT SIZES UP TO 50 IN (127 cm) PERIMETER/ 16 IN. (41 cm) DIAMETER

- One 1W nozzle (Part No. 419336) = one flow number
- 50 in (127 cm) perimeter maximum
- 16 in. (41 cm) diameter maximum

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

The chart below shows the maximum protection available from each duct nozzle

Description	Part No.	3.0 Gallon System	1 5 Gallon System
2W Nozzle	419337	Maximum 100 in (254 cm) Perimeter	Maximum 100 in (254 cm) Perimeter
1W Nozzle	419336	Maximum 50 in. (127 cm) Perimeter	Maximum 50 in. (127 cm) Perimeter

Duct Protection – Multiple Nozzle (Continued)

DUCT SIZES GREATER THAN 100 IN (254 cm) PERIMETER

- Ducts over 100 in. (254 cm) perimeter may be modularized using 2W nozzles (Part No. 419337)
- No round duct option available
- Follow the design chart to determine maximum module size for each 2W nozzle
- When determining number of nozzles required, it is sometimes an advantage to check the chart using the shortest side as Side "A" and then recheck it using the longest side as Side "A". This comparison may reveal a need for a lesser quantity of nozzles one way versus the other way.

When working with Chart 1, the quantity of nozzles determined must be equally divided within the duct area.

When working with Chart 2, one half of the quantity of nozzles determined must be equally positioned in the top half of the area of the duct and the remaining half of the nozzles must be positioned in the bottom half of the duct area.

Example. The duct to be protected has a Side "A" of 40 in. (101.6 cm) and a Side "B" of 60 in. (152.4 cm). Referring to the design chart, this duct requires 4 nozzles. One half of 4 = 2. Therefore, 2 nozzles must be equally positioned in each of the two duct areas. See Figure 3

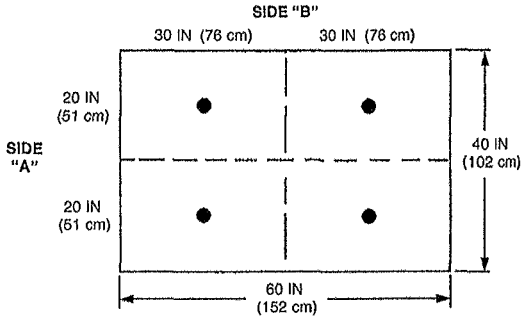


FIGURE 3

CHART NO. 1

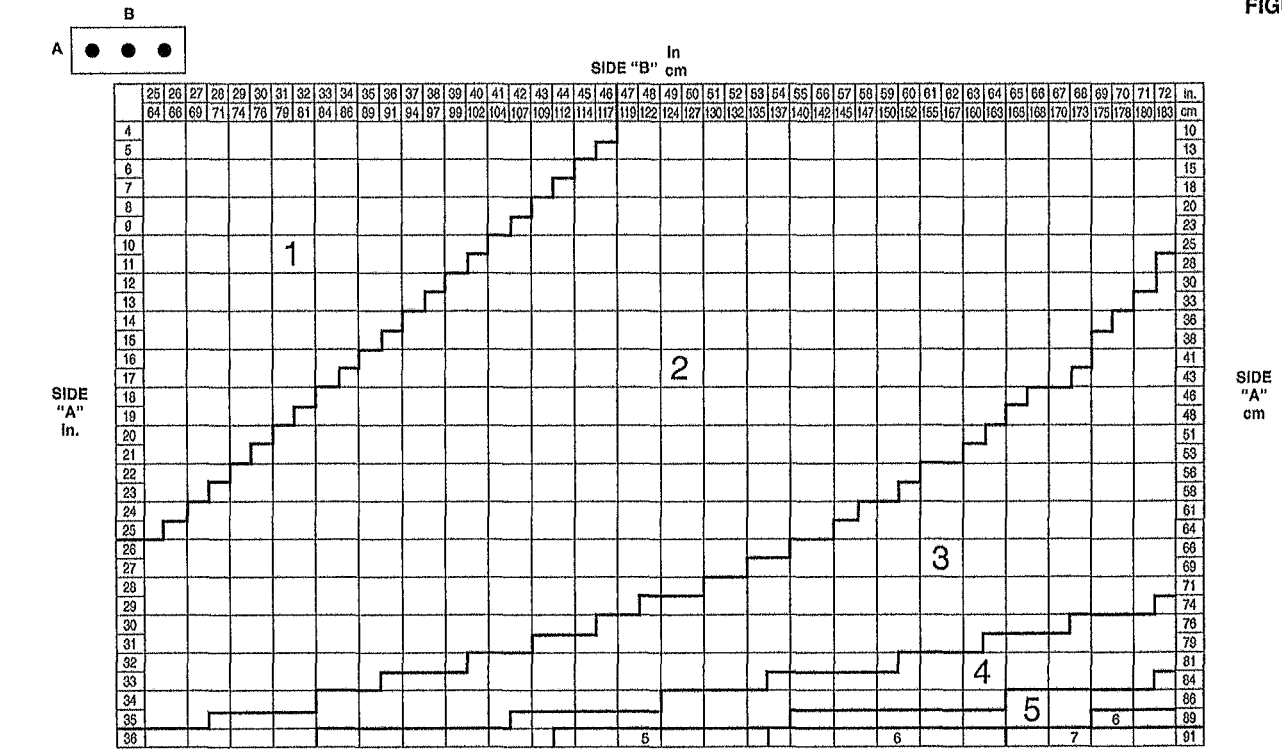
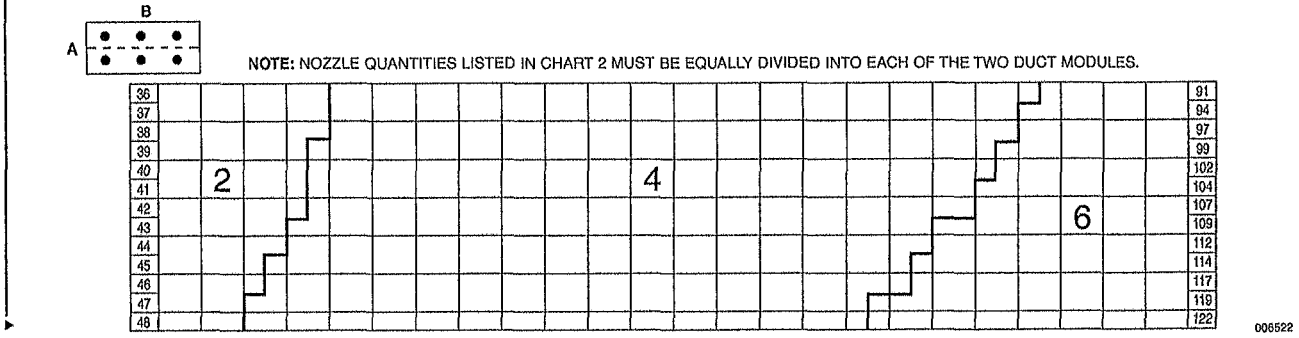


CHART NO. 2



006522

Plenum Protection

The R-102 system uses the 1W Nozzle (Part No. 419336) or the 1N Nozzle (Part No. 419335) for plenum protection. The 1W nozzle tip is stamped with 1W and the 1N nozzle tip is stamped with 1N, indicating they are one-flow nozzles and must be counted as one flow number each. When protecting a plenum chamber, the entire chamber must be protected regardless of filter length

VERTICAL PROTECTION – GENERAL

▸ 1W NOZZLE – PART NO. 419336 – SINGLE AND "V" BANK
▸ PROTECTION

One 1W nozzle will protect 4 linear feet (1 2 m) of plenum. The maximum distance from the end of the hood to the first and last nozzle must be no more than 2 ft (0.6 m) After the first nozzle, any additional nozzles must be positioned at a maximum of 4 ft (1.2 m) apart down the entire length of the plenum. The plenum width must not exceed 4 ft (1.2 m). (The 1W nozzle can be used on single or V-bank filter arrangements.) See Figure 6

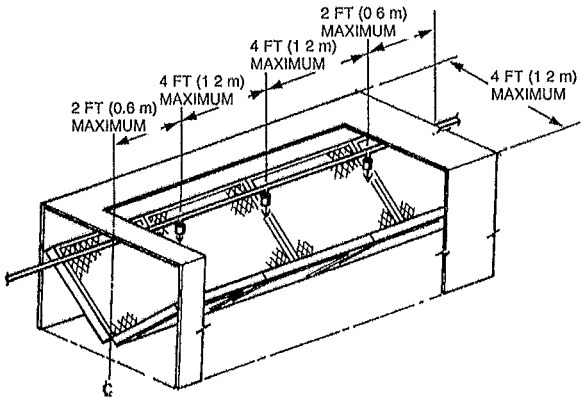


FIGURE 6
000197

When protecting plenums with the 1W nozzle, two options of coverage are available:

Option 1: The 1W nozzle must be on the center line of the single or "V" bank filter and positioned within 1-20 in. (2.5-51 cm) above the top edge of the filter See Figure 7

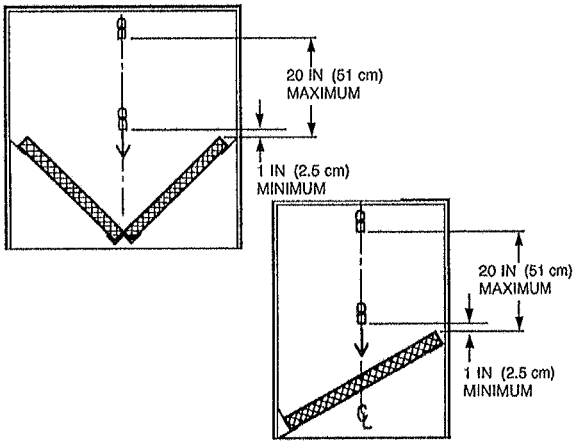


FIGURE 7
000199

Option 2: The 1W nozzle must be placed perpendicular, 8-12 in. (20-30 cm) from the face of the filter and angled to the center of the filter. The nozzle tip must be within 2 in. (5 cm) from the perpendicular center line of the filter. See Figure 8

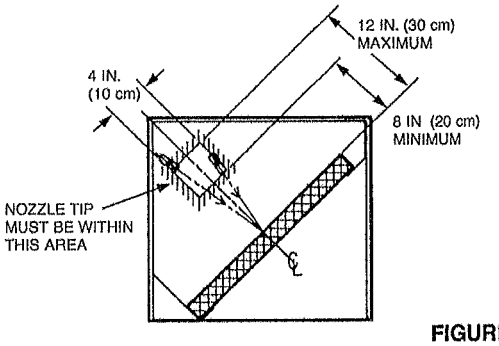


FIGURE 8
000200

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.

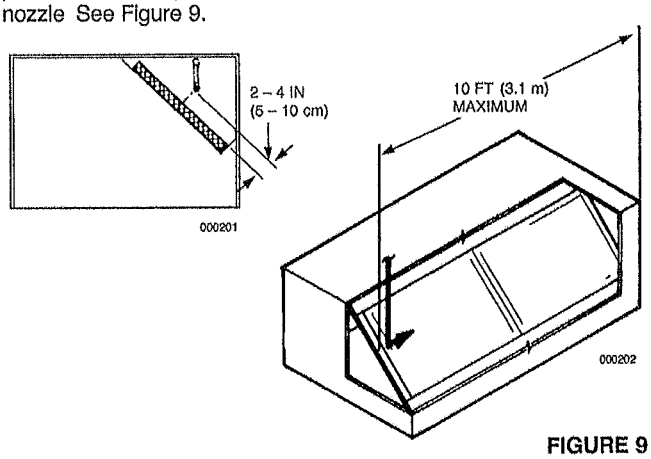


FIGURE 9

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.

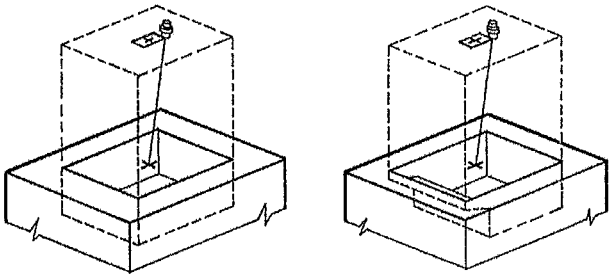
   B. If the fryer includes any dripboard areas, use both the maximum frypot dimensions in the first column of the table, **and** the maximum overall dimensions in the second column of the table to select the correct nozzle. None of the maximum dimensions in either column may be exceeded.
3. If either the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

Fryer – Single Nozzle Protection (Continued)

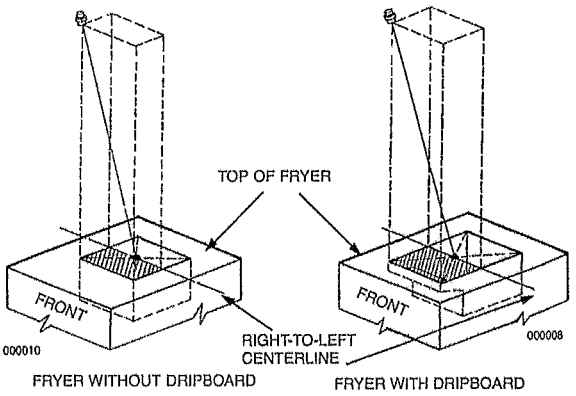
Maximum Area Dimensions – Single Nozzle Fryer Protection (Continued)

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 17
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 18	See Figure 18
▸ 18 in. x 18 in. ▸ (46 cm x 46 cm)	18 in x 27 3/4 in. (46 cm x 70.5 cm)	3N	25 in to 35 in. (64 cm to 89 cm)	See Figure 19



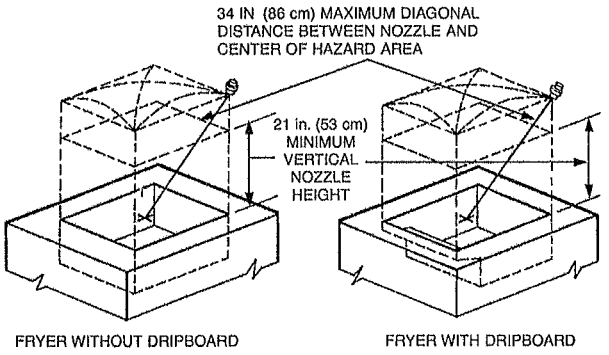
290 NOZZLE TIP POSITIONED OVER THE MIDPOINT OF THE HAZARD AREA ± 3 IN (7.6 cm) FROM THE MIDPOINT ALONG THE LONGEST SIDE OF THE HAZARD AND ± 1 IN. (2.5 cm) FROM THE MIDPOINT ALONG THE SHORTEST SIDE OF THE HAZARD AND AIMED AT THE MIDPOINT OF THE COOKING AREA.

FIGURE 17
002288



NOTE: 3N NOZZLE TIP MUST BE LOCATED WITHIN THE PERIMETER OF THE SURFACE AREA WITHIN THE FRONT HALF OF THE FRY POT AND AIMED AT THE CENTER.

FIGURE 19



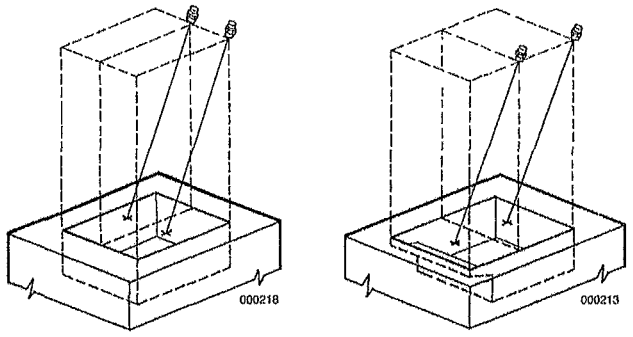
3N NOZZLE TIP POSITIONED ANYWHERE ALONG OR WITHIN PERIMETER OF COOKING SURFACE AND AIMED TO THE CENTER OF THE COOKING AREA.

FIGURE 18
002287

Fryer – Multiple Nozzle Protection (Continued)

Maximum Area Dimension – Multiple Nozzle Fryer Protection

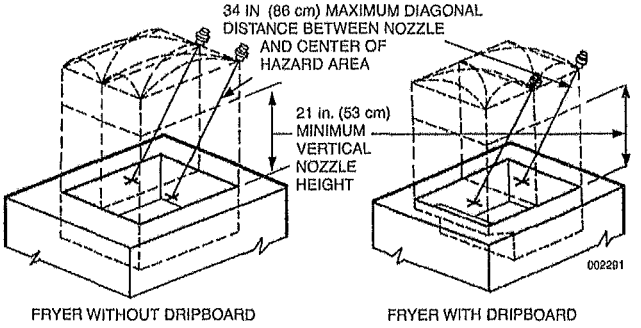
Max. Size Module Frypot Only	Max Size Module Overall With Dripboard	Type of Nozzle	Nozzle Height Above Top of Fryer	Nozzle Location
► Full or Split Vat 21 in. x 210 in.^{2} (53 cm x 0 14 m^2)	Full or Split Vat 21 in. x 294 in ^{2} (53 cm x 0.19 m^2)	230	27 in to 47 in (69 cm to 119 cm)	See Figure 21
► Full or Split Vat 21 In x 210 in.^{2} (53 cm x 0.14 m^2)	Full or Split Vat 21 in. x 294 in ^{2} (53 cm x 0.19 m^2)	245	20 in. to 27 in (51 to 69 cm)	See Figure 21
► Full or Split Vat 21 in. x 210 in.^{2} ► (53 cm x 0 14 m^2)	Full or Split Vat 21 in. x 294 in.^{2} (53 cm x 0 19 m^2)	290	13 in to 16 in. (33 to 41 cm)	See Figure 22
25 3/8 x 370.5 in^2 (65 cm x 0.24 m^2)	25 3/8 x 495 in^2 (65 cm x 0.32 m^2)	290	13 in. to 16 in (33 to 41 cm)	See Figure 22
► Full or Split Vat 26 1/2 in. x 203 in.^{2} ► (67 cm x 0.13 m^2)	Full or Split Vat 26 1/2 in. x 384 1/4 in ^{2} (67 cm x 0.25 m^2)	290	16 in. to 27 in. (41 to 69 cm)	See Figure 22
25 3/8 x 370 5 in^2 (65 cm x 0.24 m^2)	25 3/8 x 495 in^2 (65 cm x 0.32 m^2)	3N	See Figure 23	See Figure 23
► 27 3/4 x 324 in.^{2} ► (70.5 cm x 0.21 m^2)	27 3/4 x 497 in^2 (70.5 cm x 0.32 m^2)	3N	25 in to 35 in. (64 cm to 89 cm)	See Figure 24



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

POSITION NOZZLE TIP ANYWHERE ALONG OR WITHIN THE PERIMETER OF THE MODULE IT IS PROTECTING AND AIM AT THE MIDPOINT OF THAT MODULAR AREA.

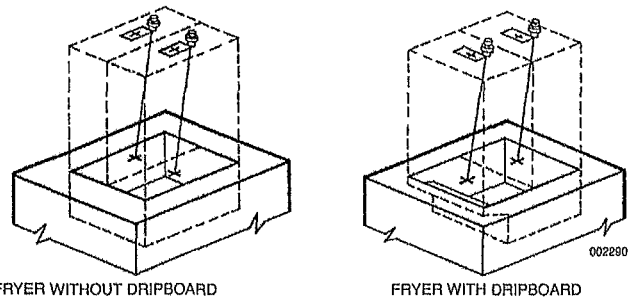
FIGURE 21



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

3N NOZZLE TIP MUST BE POSITIONED ANYWHERE ALONG OR WITHIN THE PERIMETER OF THE MODULAR IT IS PROTECTING AND AIMED AT THE MIDPOINT OF THAT RESPECTIVE MODULE AREA.

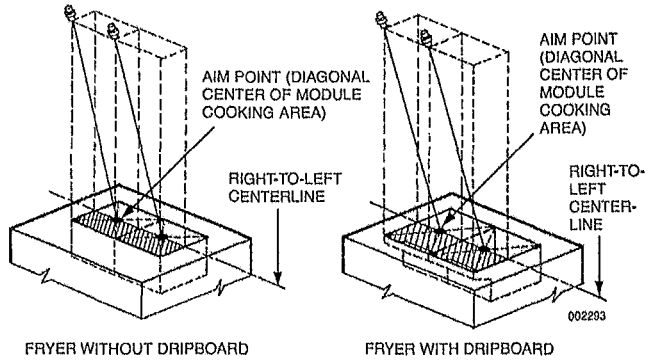
FIGURE 23



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

290 NOZZLE TIP POSITIONED OVER THE MIDPOINT OF THE RESPECTIVE MODULAR AREA ± 3 IN (7 6 cm) FROM THE MIDPOINT ALONG THE LONGEST SIDE OF THE MODULE AND ± 1 IN (2.5 cm) FROM THE MIDPOINT ALONG THE SHORTEST SIDE OF THE MODULE AND AIMED AT THE MIDPOINT OF THE MODULE.

FIGURE 22



FRYER WITHOUT DRIPBOARD FRYER WITH DRIPBOARD

THE 3N NOZZLE TIP MUST BE POSITIONED ANYWHERE ALONG OR WITHIN THE PERIMETER AND FORWARD OF THE RIGHT-TO-LEFT CENTERLINE OF THE COOKING AREA. THE AIMING POINT OF THE NOZZLE MUST BE AT THE DIAGONAL CENTER OF THE MODULAR COOKING AREA.

FIGURE 24

Range Protection

The R-102 system uses five different nozzles for the protection of ranges. Two of the design options require a one-flow nozzle and three of the design options require two-flow nozzles.

NOTICE

A 13 in. (33 cm) diameter wok pan is the largest wok size that can be protected on ranges.

When protecting hot top ranges, the entire cooking surface must be protected.

Range Protection 1N (1-Flow) Nozzle – High Proximity Application

No Obstructions

Single and multiple burner ranges can be protected using a 1N nozzle, Part No. 419335. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.

When using this nozzle for range protection, the maximum length of the burner grates being protected with a single nozzle must not exceed 32 in. (81 cm) and the maximum area of the burner grates must not exceed 384 in.^{2} (2477 cm^2) per nozzle.

When protecting a range, the 1N nozzle must be located a maximum of 10 in. (25.4 cm) from each burner grate centerline and must be aimed at the center of the cooking surface. See Figures 27 and 28.

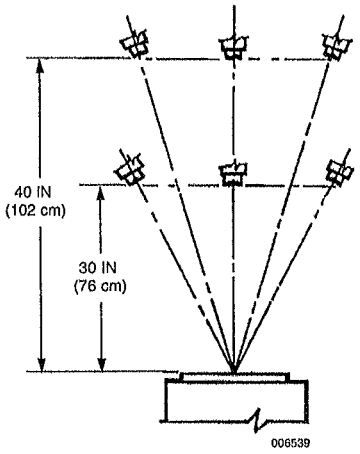


FIGURE 27

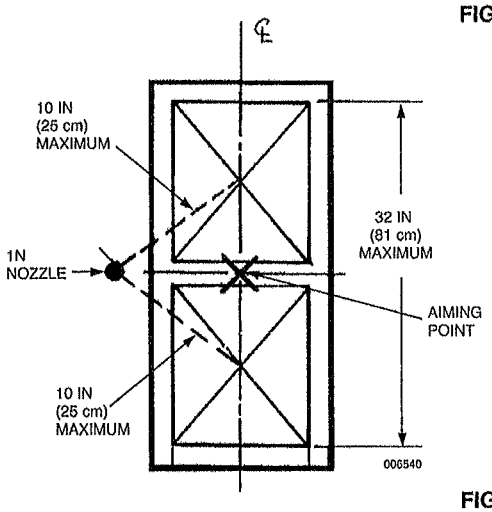


FIGURE 28

Range Protection 260 (2-Flow) Nozzle – Medium Proximity Application

No Obstructions

30 in. to 40 in. (76 cm to 102 cm) above the cooking surface.

The medium 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 cooking area of 768 in.^{2} (4955 cm^2) with a maximum dimension of 32 in (81 cm).

When using this nozzle for range protection, the nozzle must be pointed vertically down and positioned as shown in Figures 31 and 32.

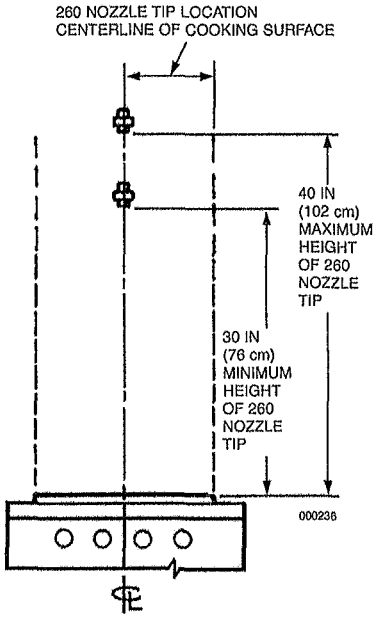


FIGURE 31

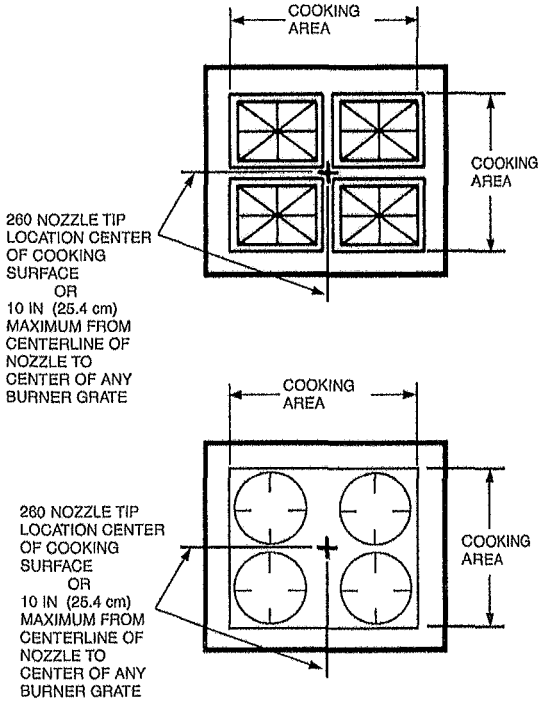


FIGURE 32
000766

NOTICE

Four burner grates shown in Figure 32. For single or double burner grates, locate nozzle at center of cooking surface.

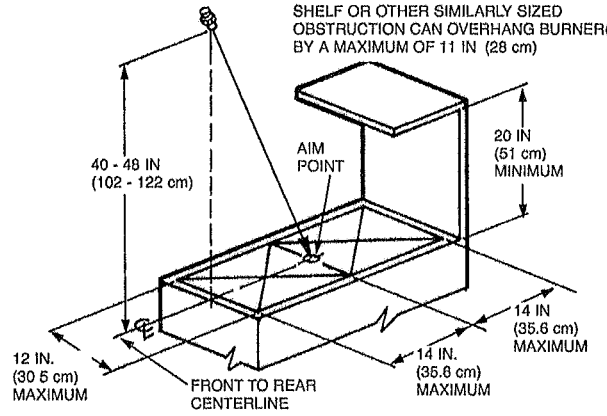
Range Protection (With or Without Back Shelf/Obstruction)

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, Part No. 419333, and the other option requires a 260 nozzle, Part No. 419341.

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

Range Protection 260 (2-Flow) Nozzle (With or Without Back Shelf/Obstruction)

Single and multiple burner ranges can be protected using a 260 nozzle, Part No. 419341. The nozzle tip 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. (81 cm) and the maximum area of the burner grates must not exceed 384 in.^{2} (2477 cm^2). Nozzle must be located on the front edge of the burner grates and aimed at a point 10 in (25 cm) from the back edge of the burner grates. Nozzle must be mounted 30 to 40 in. (76 to 102 cm) above the hazard surface. See Figure 38.

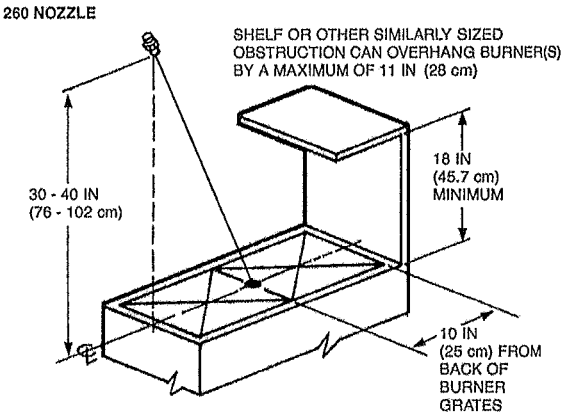


FIGURE 38
000238a

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

Option 2 – Nozzle Perimeter Located

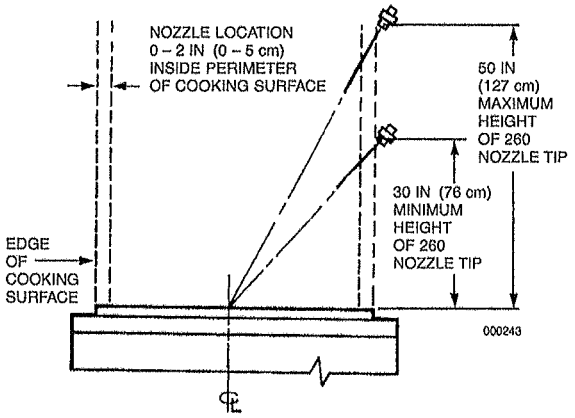
▸ 30 in. to 50 in. (76 cm to 127 cm) above the cooking surface.

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

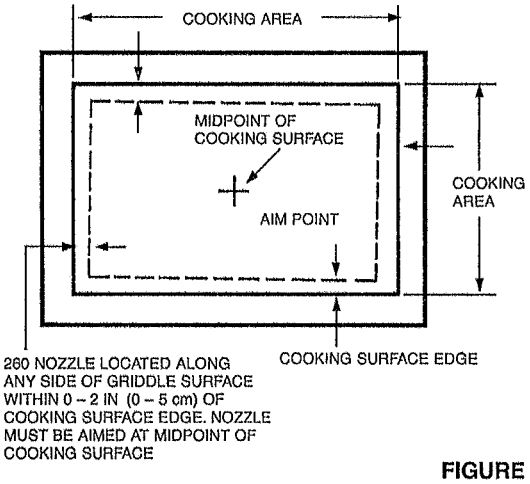
The nozzle tip is stamped with 260 indicating this is a two-flow nozzle and must be counted as two flow numbers.

▸ 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

▸ **Griddle Protection 290 (2-Flow) Nozzle – Medium Proximity Application**

Option 2a – Nozzle Perimeter Located (Continued)

20 in. to 30 in. (51 cm to 76 cm) above the cooking surface.

The medium proximity application uses the 290 nozzle, Part No. 419342.

The nozzle tip is stamped with 290 indicating this is a two-flow nozzle and must be counted as two flow numbers.

One 290 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 perimeter to 2 in. (5.1 cm) inside perimeter, and aimed at the center of the cooking surface See Figure 45 and 46

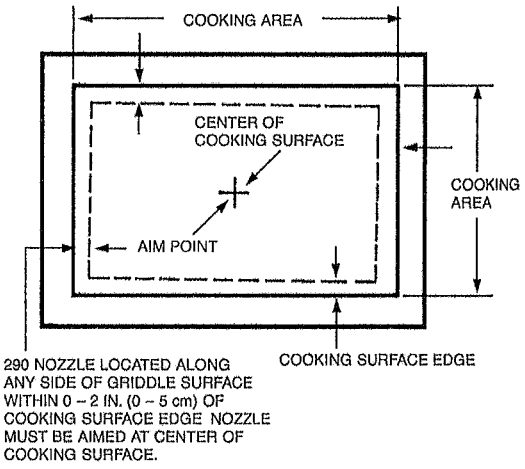


FIGURE 45
000241

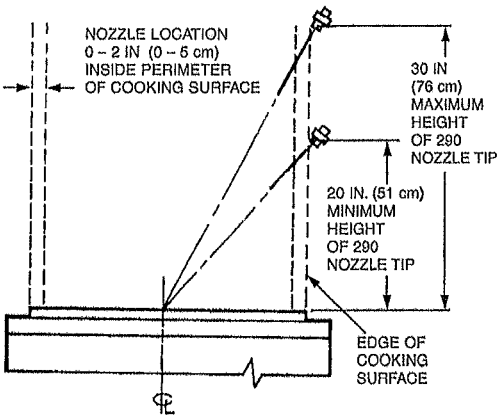


FIGURE 46
000243

Griddle Protection 1W (1-Flow) Nozzle – Low Proximity Application

15 in. to 20 in. (38.1 cm to 50.8 cm) above the cooking surface.

The low proximity 1-flow nozzle application for the protection of griddles requires the 1W nozzle, Part No. 419336.

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

When using the 1W nozzle for low proximity griddle protection with our without obstruction, the maximum length of the cooking surface to be protected must not exceed 26 in. (66.0 cm). The nozzle must be centered at one end of the maximum 26 in. (66.0 cm) length, aimed along a centerline to a point 20 in. (50.8 cm) from the end of the length, protecting a maximum width of 20.5 in. (52.1 cm).

The 1W nozzle tip must be positioned at or below the obstruction, if present. The protected area begins at the point straight down from the nozzle tip. The nozzle can be positioned above the edge of the hazard area to be protected. See Figures 51 and 52.

Note: If the hazard area exceeds the single nozzle coverage listed above, additional nozzles will be required. The additional nozzle can be positioned in front at high proximity or at the side at low proximity

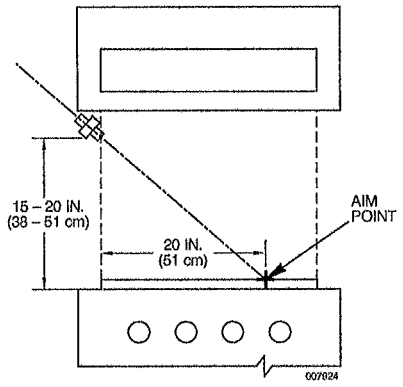


FIGURE 51

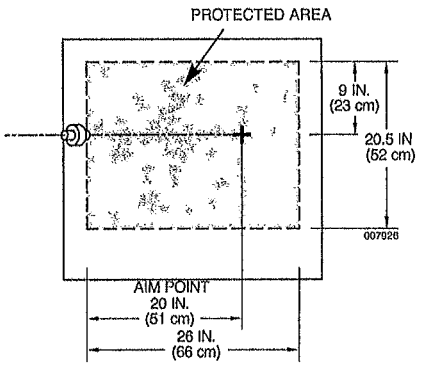


FIGURE 52

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.

Salamander Broiler Protection

The R-102 system uses three different nozzle locations for salamander broiler protection. All of the design options require a one-flow nozzle.

Salamander Broiler Protection – 1N (1-Flow) Nozzle Overhead

A salamander broiler with a maximum hazard area (internal broiler chamber) of 16 in. (41 cm) deep x 29 in. (74 cm) wide can be protected using a 1N nozzle, Part No 419335 The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle.

The single 1N nozzle must be located directly in line with either vertical edge of the broiler opening, 6 in. (15 cm) to 12 in. (30 cm) in front of the broiler, and 0 in. to 12 in. (30 cm) above the top of the broiler. The nozzle must be aimed at the center of the broiler opening. See Figure 57a

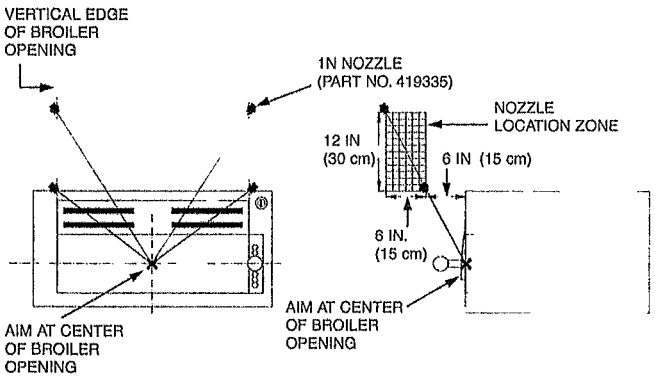


FIGURE 57a
008426

Salamander Broiler Protection – 1F (1-Flow) Nozzle Overhead

A salamander broiler with a maximum hazard area (internal broiler chamber) of 15 in. (38 cm) deep x 31 in. (79 cm) wide can be protected using a 1F nozzle, Part No. 419333. The nozzle tip is stamped with 1F, indicating that this is a one-flow nozzle.

The single 1F nozzle must be located directly in line with the center of the broiler opening, 8 in. (20 cm) to 12 in. (30 cm) in front of the broiler and 12 in. (30 cm) to 18 in. (46 cm) above the top of the broiler The nozzle must be aimed at the center of the top broiler opening when the grate is located in the middle position. The nozzle must be orientated so the nozzle tip flats are parallel with the grate left to right centerline. See Figure 57b

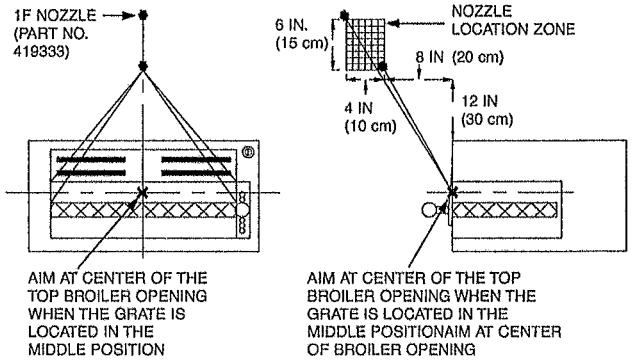


FIGURE 57b
008426

Salamander Broiler Protection – 1N (1-Flow) Nozzle Local

A salamander broiler with a maximum hazard area (internal broiler chamber) of 15 in. (38 cm) deep x 31 in. (79 cm) wide can be protected using a 1N nozzle, Part No. 419335. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle.

The single 1N nozzle must be located above the grate on either vertical edge of the broiler opening. The nozzle must be aimed at the center of the grates. See Figure 57c.

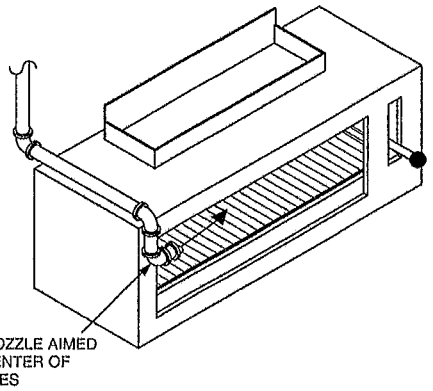


FIGURE 57c
008426

Lava Rock (Ceramic) Char-Broiler Protection

The R-102 system uses the 1N Nozzle (Part No. 419335) for all lava rock char-broiler protection. The nozzle tip is stamped with 1N, indicating that this is a one-flow nozzle and must be counted as one flow number.

One 1N nozzle will protect a hazard which has a maximum length of 24 in. (61 cm) and a total cooking area which does not exceed ▸ 312 in.^{2} (2013 cm^2). The nozzle tip must be located 18 to 35 in. (46 to 89 cm) above the hazard surface. When using this nozzle for lava rock (ceramic) char-broiler protection, the nozzle must be positioned anywhere along or within the perimeter of the maximum ▸ cooking area and angled to the center. See Figure 60.

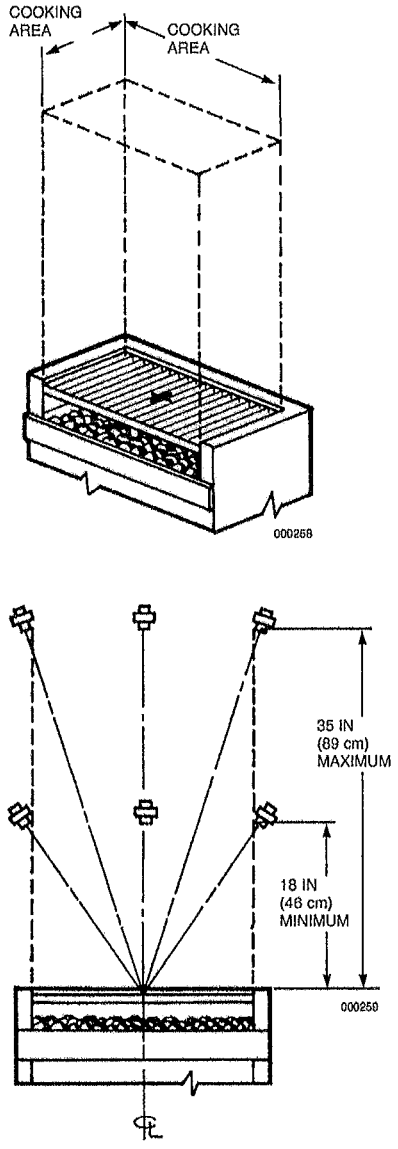


FIGURE 60

Natural Charcoal Broiler Protection

The R-102 system uses the 1N Nozzle (Part No. 419335) for all natural charcoal broiler protection. The nozzle tip is stamped with 1N indicating that this is a one-flow nozzle and must be counted as one flow number.

One 1N nozzle will protect a hazard area which has a maximum length of 24 in. (61 cm) and a total cooking area which does not ▸ exceed 288 in.^{2} (1858 cm^2). The nozzle tip must be located 18 to 40 in. (46 to 102 cm) above the hazard surface. When using this nozzle for natural charcoal broiler protection, the nozzle must be positioned anywhere along or within the perimeter of the maximum cooking area and aimed at the center of the cooking surface. See ▸ Figure 61.

The coverage of such appliances only applies when the depth of the charcoal does not exceed 4 in. (10 cm).

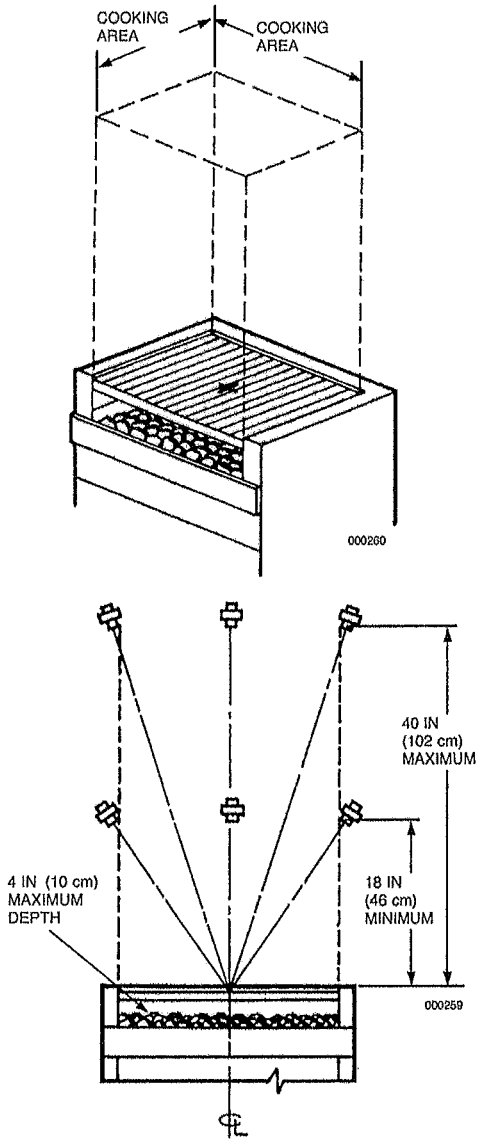


FIGURE 61

Wok Protection

The R-102 system uses two different nozzles for the protection of woks.

1. A 260 nozzle, Part No. 419341, will protect a wok 14 in (36 cm) minimum diameter up to 30 in. (76 cm) maximum diameter. The wok depth must be no less than 3.75 in. (9.5 cm) and no greater than 8 in. (20 cm).

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

   When using this nozzle, the nozzle must be positioned as shown in Figure 64.

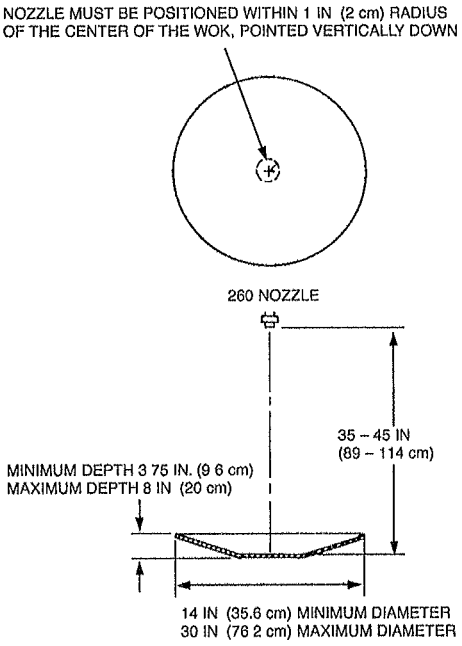


FIGURE 64
000261

2. A 1N Nozzle, Part No. 419335, will protect a wok 11 in. (28 cm) minimum diameter up to 24 in. (61 cm) maximum diameter. The wok depth must be no less than 3 in. (8 cm) and no greater than 6 in. (15 cm). The nozzle tip is stamped with 1N indicating that this a one-flow nozzle and must be counted as one flow number. When using this nozzle, the nozzle must be positioned anywhere along or within the perimeter of the wok, aimed at the center, 30 in. to 40 in. (76 to 102 cm) above the hazard surface, as shown in Figure 65.

NOTICE

When using this type of wok protection, only 5 flow numbers are allowed on a 1 1/2 gal (5.7 L) system, and only 11 flow numbers are allowed on a 3 gal (11.4 L) system.

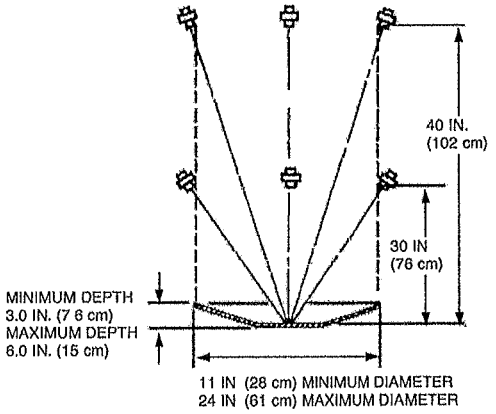


FIGURE 65
000261

Nozzle Application Chart (Continued)

Hazard	Maximum Hazard Dimensions	Minimum Nozzle Quantity	Nozzle Heights	Nozzle Part No.	Nozzle Tip Stamping – Flow No.
Fryer (Non-Split Vat Only)*	Maximum Size (with drip board) 21 in. (53 cm) x 14 in. (36 cm) (Fry Pot must not exceed 15 in. x 14 in. (38 cm x 36 cm))				
	High Proximity	1	27 – 47 in.	419339	230
	Medium Proximity	1	20 – 27 in.	419340	245
	Maximum Size (with drip board) 25 3/8 in. (64.4 cm) x 19 1/2 in. (49.5 cm) (Fry pot side must not exceed 19 1/2 in (49.5 cm) x 19 in (48.2 cm)				
	High Proximity	1	21 – 34 in	419338	3N
	Low Proximity	1	13 – 16 in.	419342	290
	Maximum Size (with drip board) 18 in (45.7 cm) x 27 3/4 in (70.5 cm)				
	High Proximity	1	25 – 35 in. (64-89 cm)	419338	3N
Fryer (Split or Non-Split Vat)	Maximum Size (with drip board) 14 in. (36 cm) x 21 in. (53 cm)	1	13 – 16 in. (33 – 41 cm)	419342	290
	Low Proximity				
Fryer (Split or Non-Split Vat)	Maximum Size (with drip board) 14 1/2 in (37 cm) x 26 1/2 in. (67 cm)	1	16 – 27 in (41 – 69 cm)	419342	290
	Medium Proximity				
► Range	Longest Side (High Proximity) 32 in. (81 cm) Area – 384 sq. in. (2477 sq cm)	1	30 – 40 in. (76 – 102 cm)	419335	1N
►	Longest Side (Low Proximity) 24 in. (61 cm) Area – 432 in.^{2} (2787 cm^2)	1	15 – 20 in. (38 – 51 cm)	419335	1N
◄	Longest Side 28 in. (71 cm) Area – 336 sq in. (2168 sq cm)		40 – 48 in. (102 – 122 cm) (With Backshelf)	419333	1F
	Longest Side (High Proximity) 28 in. (71 cm) Area – 672 sq in (4335 sq cm)	1	40 – 50 in. (102 – 127 cm)	419340	245
	Longest Side (Medium Proximity) 32 in. (81 cm) Area – 768 sq in. (4955 sq cm)	1	30 – 40 in (76 – 102 cm)	419341	260

► * For multiple nozzle protection of single fryers, see detailed information on Pages 4-10 and 4-11

Nozzle Application Chart (Continued)

Hazard	Maximum Hazard Dimensions	Minimum Nozzle Quantity	Nozzle Heights	Nozzle Part No.	Nozzle Tip Stamping – Flow No.
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
Wood Fueled Char-Broiler	Longest Side – 30 in (76 cm) Area – 720 sq in (4645 sq cm)	1	14 – 40 in (36 – 102 cm)	419338	3N
Upright Broiler	Length – 32.5 in. (82.5 cm) Width – 30 in. (76 cm)	2	–	419334	1/2N
▸Salamander Broiler	Length – 29 in. (74 cm) Width – 16 in. (41 cm)	1	–	419335	1N
	Length – 31 in. (79 cm) Width – 15 in. (38 cm)	1	–	419333	1F
▸	Length – 31 in (79 cm) Width – 15 in. (38 cm)	1	–	419335	1N
Wok	14 in – 30 in (36 – 76 cm) Diameter 3 75 – 8.0 in. (9 5 – 20 cm) Deep	1	35 – 45 in (89 – 114 cm)	419341	260
▸	11 in – 24 in (28 – 61 cm) Diameter 3 0 – 6.0 in. (8 – 15.2 cm) Deep		30 – 40 in (76 – 102 cm)	419335/435672	1N/1NSS

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

Lake City Parking & Seafood Restaurant Modifications

1620 W US Highway 90
Lake City Florida 32025

for

Hurst Contracting, Inc.
P.O. Box 551260
Jacksonville, FL 32255

PROJECT CONTACTS

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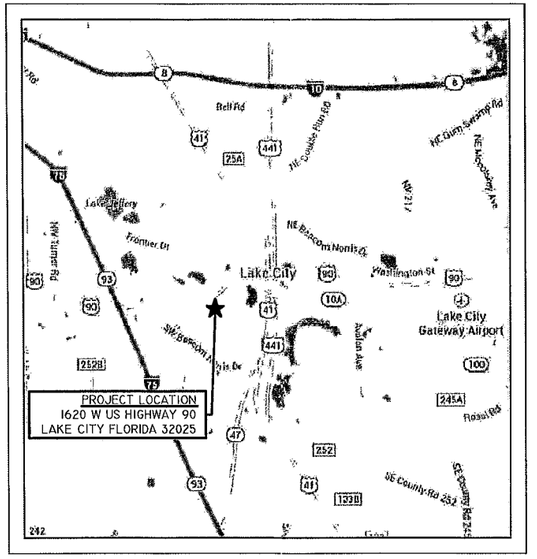

VICINITY MAP
NTS

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9	GENERAL DETAILS
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11	LIFE SAFETY PLAN
12	SEDIMENT AND EROSION CONTROL PLAN
13	CONTRACTOR CERTIFICATION SHEET
14	STORM WATER PREVENTION PLAN
15	MAINTENANCE OF TRAFFIC
L-1	LANDSCAPE PLAN
IR-1	IRRIGATION PLAN

ALMOND
ENGINEERING
CONSULTING CIVIL ENGINEERS
- ENGINEERING - WATER RESOURCES - STORMWATER DESIGN -
- REGULATORY PERMITTING - PLANNING -
3609 HENDRICKS AVENUE
JACKSONVILLE FL 32207
(904) 306-0162 PHONE - (904) 306-2185 FAX
CERTIFICATE OF AUTHORIZATION NO 27254

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ERIC JOHN ALMOND ★ PROFESSIONAL ENGINEER ★ No 59246 ★ STATE OF FLORIDA ★

COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY
Code Compliance
PLANS EXAMINER

GENERAL PROJECT INFORMATION

GENERAL	
City Development Number	N/A
Concurrency Application Number	N/A
Property Appraiser Number (RE #)	31-3S-17-06214-000
Zoning Designation	MKT
PUD Ordinance Number	N/A
FIRM – Community – Panel	X
Flood Zones (Show in Plans)	ZONE X/
Base Flood Elev (MAP #12031C0182H)	XXXXXX
Vertical Datum Used for Project	NAVD-88
JEA Availability Number	N/A
SJRWMD Permit Number	N/A
SUBDIVISION	
PSD Number	N/A
City or Private Inspection	N/A
Public or Private Roads	N/A
Subdivision ("911") Disk Provided?	N/A
NON-SUBDIVISION	
North American Industry Classification System (NAICS)	-
Impervious Area (Sq Ft.)	-

ALMOND ENGINEERING
CONSULTING CIVIL ENGINEERS

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS
(AE PROJECT #14-03)

SUBMITTAL
SUBMITTAL #1

REVISION INFO

DATE	DESC.

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE JOB SITE TO INSURE THAT ALL NEW WORK WILL FIT IN THE MANNER INTENDED ON THE PLANS. SHOULD ANY CONDITIONS EXIST THAT ARE CONTRARY TO THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SUCH DIFFERENCES IMMEDIATELY AND PRIOR TO PROCEEDING WITH THE WORK.

2. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS AS SET FORTH BY THE ISSUED SUWANNEE RIVER WATER MANAGEMENT DISTRICT ENVIRONMENTAL RESOURCE PERMIT AND ARMY CORP OF ENGINEERS PERMIT.

3. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE IN A SECURE MANNER. ALL OPEN TRENCHES AND EXCAVATED AREAS SHALL BE PROTECTED FROM ACCESS BY THE GENERAL PUBLIC.

4. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHOULD NOTIFY THE ENGINEER.

5. THE SITE IS LOCATED IN SECTION 36, TOWNSHIP 1 NORTH, RANGE 16 EAST, COLUMBIA COUNTY, FLORIDA.

6. THE CONTRACTOR SHALL IMPLEMENT ALL COMPONENTS OF THE EROSION AND SEDIMENTATION CONTROL PLAN PRIOR TO ANY EARTH DISTURBING ACTIVITIES. ALL COMPONENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL VEGETATION IS ESTABLISHED, THE ENTIRE PROJECT AREA IS STABILIZED AND THE OWNER HAS ACCEPTED OPERATION AND MAINTENANCE.

7. THE STORMWATER BASIN IS DESIGNED IN ACCORDANCE WITH CHAPTER 40B-4 F.A.C.

8. ALL SLOPES OF THE STORMWATER BASIN SHALL BE SODDED. ALL SLOPES STEEPER THAN 3:1 SHALL BE STAPLED SOD.

9. ALL DISTURBED AREAS NOT SODDED SHALL BE SEEDED WITH A MIXTURE OF LONG-TERM VEGETATION AND QUICK GROWING SHORT-TERM VEGETATION FOR THE FOLLOWING CONDITIONS. FOR THE MONTHS FROM SEPTEMBER THROUGH MARCH, THE MIX SHALL CONSIST OF 70 POUNDS PER ACRE OF LONG-TERM SEED AND 20 POUNDS PER ACRE OF WINTER RYE. FOR THE MONTHS OF APRIL THOUGH AUGUST, THE MIX SHALL CONSIST OF 70 PER ACRE OF LONG-TERM SEED AND 20 POUNDS PER ACRE OF MILLET.

10. EXISTING DRAINAGE STRUCTURES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED.

11. THE LOCATION OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT ALL UTILITIES WITHIN THE PROJECT AREAS.

12. THE CONTRACTOR SHALL WASTE ALL EXCESS EARTH ON SITE AS DIRECTED BY THE ENGINEER.

13. ALL SITE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COLUMBIA COUNTY LAND DEVELOPMENT REGULATIONS.

14. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS WITHIN PROJECT AREA.

15. CONTRACTOR SHALL PROVIDE ACTUAL INVERT ELEVATIONS ON ALL DRAINAGE STRUCTURES, INCLUDING CULVERTS, PRIOR TO PLACING ANY BASE MATERIAL. DEVIATIONS FROM THE PLANS SHALL BE APPROVED BY THE ENGINEER BEFORE CONTINUING WORK.

16. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION) AND THE F.D.O.T. DESIGN STANDARDS (CURRENT EDITION), AND THE COLUMBIA COUNTY DEVELOPMENT STANDARDS UNLESS OTHERWISE NOTED.

17. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS PREPARED BY NORTH FLORIDA PROFESSIONAL SERVICES, INC., MARCH 2014.

18. IF UNSUITABLE MATERIAL IS ENCOUNTERED DURING GRADING, CONTRACTOR SHALL REMOVE UNSUITABLE MATERIAL TO A DEPTH OF 24" BELOW FINISHED GRADE WITHIN THE CONSTRUCTION LIMITS.

19. THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION.

20. THE CONTRACTOR SHALL SUBMIT A NOTICE OF CONSTRUCTION COMMENCEMENT TO THE WATER MANAGEMENT DISTRICT AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.

21. NO WORK SHALL BE PERFORMED ON SATURDAY, SUNDAY OR HOLIDAY (SEE BID DOCUMENTS) WITHOUT WRITTEN NOTIFICATION TO THE COUNTY AND COUNTY ENGINEER.

22. CONTRACTOR SHALL PROVIDE AN AS-BUILT SURVEY MEETING THE REQUIREMENTS OF CHAPTER 61G17 F.A.C. FOR THE STORMWATER MANAGEMENT SYSTEMS. INCLUDE HORIZONTAL AND VERTICAL DIMENSIONAL DATA SO THAT IMPROVEMENTS ARE LOCATED AND DELINEATED RELATIVE TO THE BOUNDARY. PROVIDE SUFFICIENT DETAILED DATA TO DETERMINE WHETHER THE IMPROVEMENTS WERE CONSTRUCTED IN ACCORDANCE WITH THE PLANS. SUBMIT THE SURVEY TO THE ENGINEER ON REPRODUCIBLE 20LB. VELLUM. A COPY OF THE AS-BUILT PLANS (IN PAPER AND DIGITAL AUTOCAD FORMAT) MUST BE SUBMITTED TO THE ENGINEER.

23. THE CONTRACTOR SHALL SUBMIT A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM NOTICE OF INTENT ALONG WITH SUPPORTING DOCUMENTATION TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMIT FEES.

24. IF DURING CONSTRUCTION OR OPERATION OF THE STORM WATER MANAGEMENT SYSTEM, A STRUCTURAL FAILURE IS OBSERVED THAT HAS THE POTENTIAL TO CAUSE THE DIRECT DISCHARGE OF SURFACE WATER INTO THE FLORIDIAN AQUIFER SYSTEM, CORRECTIVE ACTIONS DESIGNED OR APPROVED BY A REGISTERED PROFESSIONAL SHALL BE TAKEN AS SOON AS PRACTICAL TO CORRECT THE FAILURE. A REPORT PREPARED BE A REGISTERED PROFESSIONAL MUST BE PROVIDED AS SOON AS PRACTICAL TO THE DEPARTMENT FOR REVIEW AND APPROVAL THAT PROVIDES REASONABLE ASSURANCE THAT THE BREACH WILL BE PERMANENTLY CORRECTED.

ROADWAY CONSTRUCTION REQUIREMENTS

1. THE ROADWAY CONSTRUCTION PLANS MUST BE REVIEWED AND APPROVED PRIOR TO COMMENCING CONSTRUCTION.

2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.

3. A TESTING LABORATORY RETAINED BY THE CONTRACTOR SHALL CERTIFY THE MATERIALS AND CONSTRUCTION. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED PRIOR TO ACCEPTANCE.

4. ALL TRAFFIC CONTROL AND SAFETY ITEMS (STRIPPING, STOP BARS, REGULATORY SIGNS, ETC.) SHALL BE IN PLACE.

5. THE TEMPORARY GRASS SHALL BE SUFFICIENT TO CONTROL EROSION.

6. FINAL INSPECTION FOR ACCEPTANCE TO BE PERFORMED BY COUNTY ENGINEER, COUNTY PUBLIC WORKS DIRECTOR AND COUNTY COMMISSIONER (SHOULD HE/SHE DESIRE TO ATTEND).

INSPECTION BY COUNTY REPRESENTATIVE

1. COMPLETION OF CLEARING AND GRUBBING. VISUAL ONLY - NO TEST REQUIREMENTS.

2. ROUGH GRADE AND DRAINAGE STRUCTURES IN PLACE. TEST RESULTS - LBR - PIPE BACKFILL DENSITY.

3. SUBGRADE COMPLETE. TEST RESULTS - DENSITY.

4. LIMEROCK PLACE AND FINISHED. TEST RESULTS - THICKNESS. CROSS SECTION AND DENSITY.

5. ASPHALT CONCRETE IN PLACE. TEST RESULTS - THICKNESS AND DENSITY.

6. SEE PROJECT MANUALS FOR FURTHER SPECIFICATIONS.

7. FINAL INSPECTION.

SYMBOLS LEGEND

BENCHMARK
BOX CABLE
BOX ELECTRICAL
BOX TRAFFIC LIGHT
CATCH BASIN ROUND
CATCH BASIN SQUARE
CLEANOUT EXISTING
CLEANOUT PROPOSED
CULVERT MITERED END SECTION
DITCH BLOCK
DOT MARKER FOUND
ELECTRICAL DISTRIBUTION SWITCH
FLOW ARROW
GRINDER STATION EXISTING
GRINDER STATION PROPOSED
HANDICAP SYMBOL
HANDHOLE STORM
HANDHOLE WATER
HYDRANT, FIRE EXISTING
HYDRANT, FIRE PROPOSED
HYDRANT, FLUSHING EXISTING
HYDRANT FLUSHING PROPOSED
IRON ROD SET
IRON ROD FOUND
LINE, BASE
LINE, CENTER
LINE, PROPERTY
LIFT STATION EXISTING
LIFT STATION PROPOSED
MANHOLE, ELECTRICAL EXISTING
MANHOLE, ELECTRICAL PROPOSED
MANHOLE, GAS EXISTING
MANHOLE, GAS PROPOSED
MANHOLE SANITARY EXISTING
MANHOLE SANITARY PROPOSED
MANHOLE STORM EXISTING
MANHOLE STORM PROPOSED
MANHOLE WATER EXISTING
MANHOLE WATER PROPOSED
DELTA POINT EXISTING
DELTA POINT PROPOSED
STANDARD POINT
METER, GAS EXISTING
METER, GAS PROPOSED
METER, SANITARY EXISTING
METER, SANITARY PROPOSED
METER, WATER EXISTING
METER, WATER PROPOSED
METER WATER STATION
MONUMENT FOUND CONCRETE
MONUMENT (PRM) MARKER CONCRETE
MONUMENT SET CONCRETE
PEDESTAL, TELEPHONE EXISTING
PEDESTAL TELEPHONE PROPOSED
POLE, GUY WIRE EXISTING
POLE, GUY WIRE PROPOSED
POLE, LIGHT EXISTING
POLE, LIGHT PROPOSED
POLE, POWER EXISTING
POLE, POWER PROPOSED
POLE, POWER W/TRANSFORMER
POLE, UTILITY
POST, FIBER OPTIC WARNING
SIGN, DOUBLE POST EXISTING
SIGN, DOUBLE POST PROPOSED
SIGN, SINGLE POST EXISTING
SIGN, SINGLE POST PROPOSED
SOIL BEARING LOCATION
TAP SANITARY SEWER EXISTING
TAP SANITARY SEWER PROPOSED
VALVE, AIR VENT AUTO EXISTING
VALVE, AIR VENT AUTO PROPOSED
VALVE, AIR VENT HAND EXISTING
VALVE, AIR VENT HAND PROPOSED
VALVE, BACKFLOW PREVENTER EXISTING
VALVE, BACKFLOW PREVENTER PROPOSED
VALVE, GAS SHUT OFF EXISTING
VALVE, GAS SHUT OFF PROPOSED
VALVE, GATE GAS EXISTING
VALVE, GATE GAS PROPOSED
VALVE, GATE WATER EXISTING
VALVE,GATE WATER PROPOSED
VALVE, WATER IRRIGATION CONTROL
VALVE, SANITARY VAULT EXISTING
VALVE, SANITARY VAULT PROPOSED
VALVE, WATER VAULT EXISTING
VALVE, WATER VAULT PROPOSED
WATER STATION
WATER TANK
WELL
WELL, MONITORING
SEPTIC TANK

ASPHALT
CONCRETE
GRAVEL

VIEW # / PAGE # — X / PG — TITLE / SCALE — TITLE MARK

VIEW # / PAGE # — X / PG — SECTION DETAIL MARK

LINETYPE LEGEND

EXISTING	PROPOSED	
E-FM	FM	FORCE MAIN
E-W	W	WATER
E-SAN	SAN	SANITARY
E-GAS	GAS	GAS
E-BE	BE	BURIED ELECTRIC
E-BT	BT	BURIED TELEPHONE
E-CATV	CATV	CABLE TV
E-FO	FO	FIBER OPTIC
E-OHU	OHU	OVERHEAD UTILITIES
E-OHE	OHE	OVERHEAD ELECTRIC

MISCELLANEOUS LINETYPES

E-CMP	EXISTING CORRUGATED METAL PIPE
E-RCP	EXISTING ROUND CONCRETE PIPE
E-ECP	EXISTING ELIPTICAL CONCRETE PIPE
E-CPP	EXISTING CORRUGATED PLASTIC PIPE
X X	FIELD FENCE
	CHAIN LINK FENCE
	WOOD POST FENCE
	PROPERTY BOUNDARY
	RIGHT OF WAY LINE
100' 100'	EXISTING CONTOUR
100' 100'	PROPOSED CONTOUR
V	SILT FENCE

ABBREVIATION LEGEND

ARC LENGTH	L	POINT OF BEGINNING	PB
BENCHMARK	BM	POINT OF COMMENCEMENT	PC
CALCULATED	(C)	POINT OF CURVATURE	POC
CHORD BEARING	CH	POINT OF COMPOUND CURVATURE	PCC
CONCRETE MONUMENT	CM	POINT OF INTERSECTION	PI
CLEANOUT	CO	POINT OF REVERSE CURVATURE	PR
DEED	(D)	POINT OF TANGENT	PT
DITCH TOP OF	TOD	PIPE, CORRUGATED METAL	CMP
DITCH, BOTTOM OF	BOD	PIPE, METAL ARC BITUMINOUS COATED	CMPA
EAST	E	PIPE, REINFORCED CONCRETE	RCP
EDGE OF PAVEMENT	EOP	PIPE, REINFORCED CONCRETE ELECTRICAL	E
		ELLIPTICAL	RCP
END VERTICAL CURVE ELEVATION	EVCE	PIPE, POLYETHYLENE	PE
END VERTICAL CURVE STATION	EVCS	PIPE, POLYETHYLENE HIGH DENSITY	HDPE
FOUND	FND	PLAT	(P)
FINISH FLOOR ELEVATION	FFE	PROFILE GRADE LINE	PGL
GAS	G	RADIUS	R
GROUND SPOT ELEVATION	X	RANGE	RNG
IRON PIPE	IP	REBAR	RB
IRON ROD	IR	REBAR AND CAP	RBC
IRON ROD AND CAP	IRC	RECLAIMED WATER	RW
LINEAR FEET	LF	RIGHT OF WAY	R/W
LINE, BASE	℄	SANITARY SEWER	SAN
LINE, CENTER	℄	SECTION	SEC
LINE, PROPERTY	℄	SEWER TAP	ST
MEASURED	(M)	SOUTH	S
NAIL	NL	STORM SEWER	SS
NAIL AND DISK	NL+D	STORM WATER MANAGEMENT FACILITY	SWMF
MANHOLE	MH	TANGENT	T
NO IDENTIFICATION	NO	TOWNSHIP	TW
NORTH	N	UNDERGROUND CABLE	UC
OFFICIAL RECORD BOOK	ORB	UNDERGROUND ELECTRIC	UG
OFFSET	O/S	UNDERGROUND TELEPHONE	UT
OVERHEAD CABLE	OC	VALVE, COMBINATION AIR/VACUUM	CAV
OVERHEAD ELECTRIC	OE	WATER LINE	W
OVERHEAD TELEPHONE	OT	WATER METER	WM
PAGE(S)	PG		
PERMANENT CONTROL POINT	PCP		

FLORIDIAN PROFESSIONAL ENGINEER — JOHN ALMOND LICENSE — 52246 — STATE OF FLORIDA

Date	Revision

AE JOB NO.: 14-03
DESIGN: E.J.A.
DRAWN: T.K.B.
CHECKED: E.J.A.
START DATE: 4-25-14
PLOT DATE: 7-31-2014

GENERAL NOTES

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

ALMOND ENGINEERING
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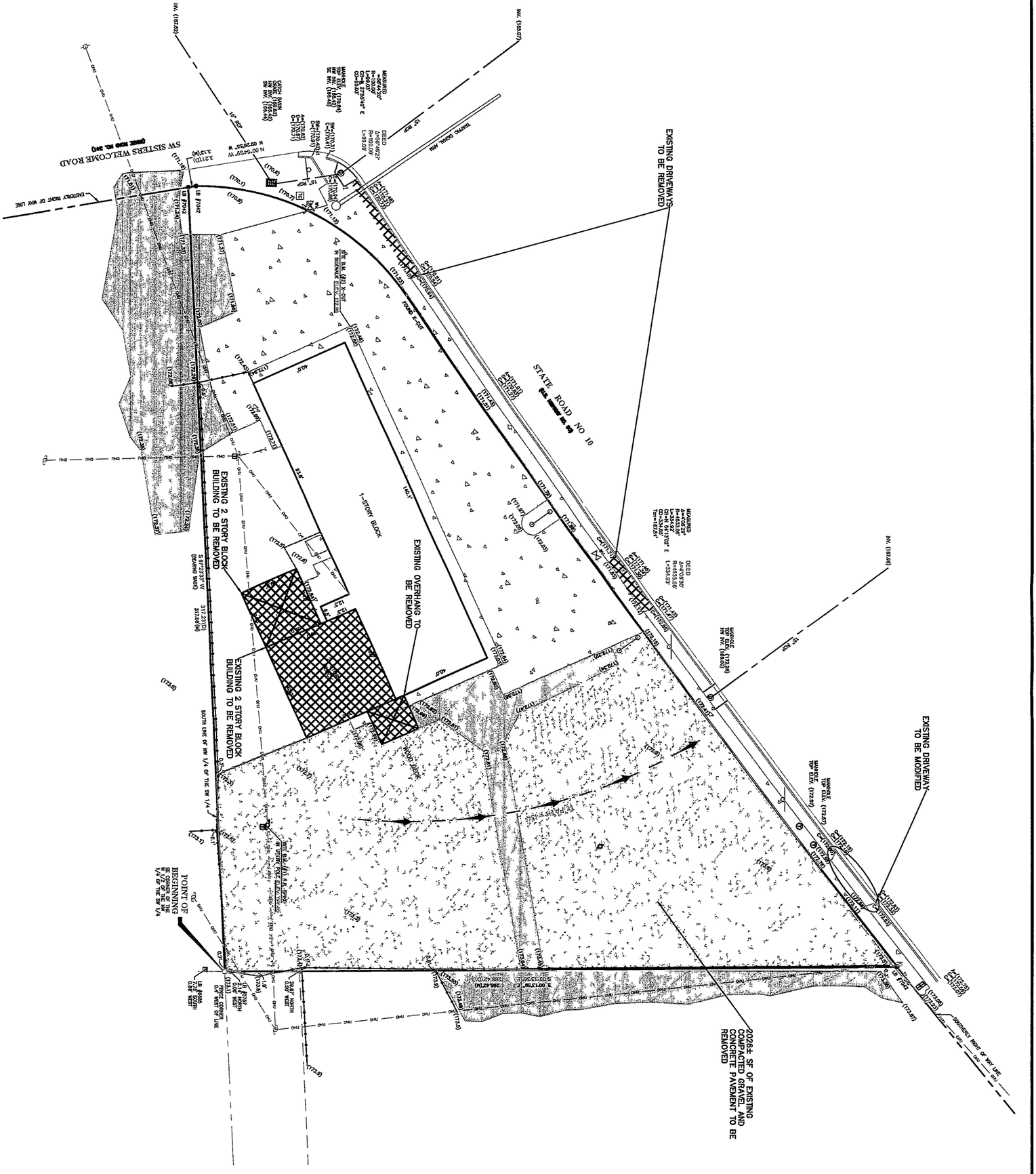
P:\AE Projects\2014\14-03 Lake City Parking\Design\PLOT\03 EXISTING CONDITIONS.dwg

Plotted: Jul 31, 2014 - 10:16am, By: Bailey



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LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

PRE-DEVELOPMENT - EXISTING CONDITIONS - DEMOLITION

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Date	Revision

ERIC JOHN ALMOND
LICENSE NO. 59246
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ERIC ALMOND P.E.
FL LIC. NO. 59246

3

SITE DATA SUMMARY

PROJECT SUMMARY:
TOTAL SITE AREA. 50,217.87 SF (1.15 Ac)

EXIST PVMT AREA: 13,766.33 SF (0.316 Ac) (27.4%) (CONC.)

NEW PVMT AREA: 19,808.97 SF (0.604 Ac.) (39.45%) (ASPH)
13,766.33 SF (0.316 Ac.) (27.4%) (CONC.)

BUILDING AREA: 5,683.95 SF (0.13 Ac.) (11.32%)
1)
TOTAL BUILDING AREA: 5,683.95 SF (0.13 Ac.) (11.32%)

CITY OF JACKSONVILLE
MINIMUM PARKING REQUIREMENTS

OFF STREET PARKING REQUIREMENTS:
STAND ALONE RESTAURANT:
1 SPACES PER 4 SEATS PLUS 1 SPACE PER 2 EMPLOYEES
(200 / 4) + (20 / 2) = 60 (USE 60)

60 SPACES REQ'D.

MIN PARKING REQ'D : 60 SPACES
PARKING PROVIDED : 72 SPACES

HANDICAPPED PARKING REQUIREMENTS:
* PER FLORIDA STATUTE 316.1955 & 316.1956
* PER A.D.A.A.G. s.4.1.2 (5)

TOTAL PARKING IN LOT	REQUIRED ACCESSIBLE SPACES
1–25	1
26–50	2
51–75	3
76–100	4
101–150	5
151–200	6

PARKING REQ'D : 2 SPACE
PARKING PROVIDED : 3 SPACE

TOTAL OFF STREET VEHICLE PARKING:

PARKING REQ'D : 60 SPACES
PARKING PROVIDED : 72 SPACES

Date	Revision

ERIC JOHN ALMOND
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PROFESSIONAL ENGINEER

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MASTER SITE PLAN

LAKE CITY PARKING &
SEAFOOD RESTAURANT
MODIFICATIONS

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5

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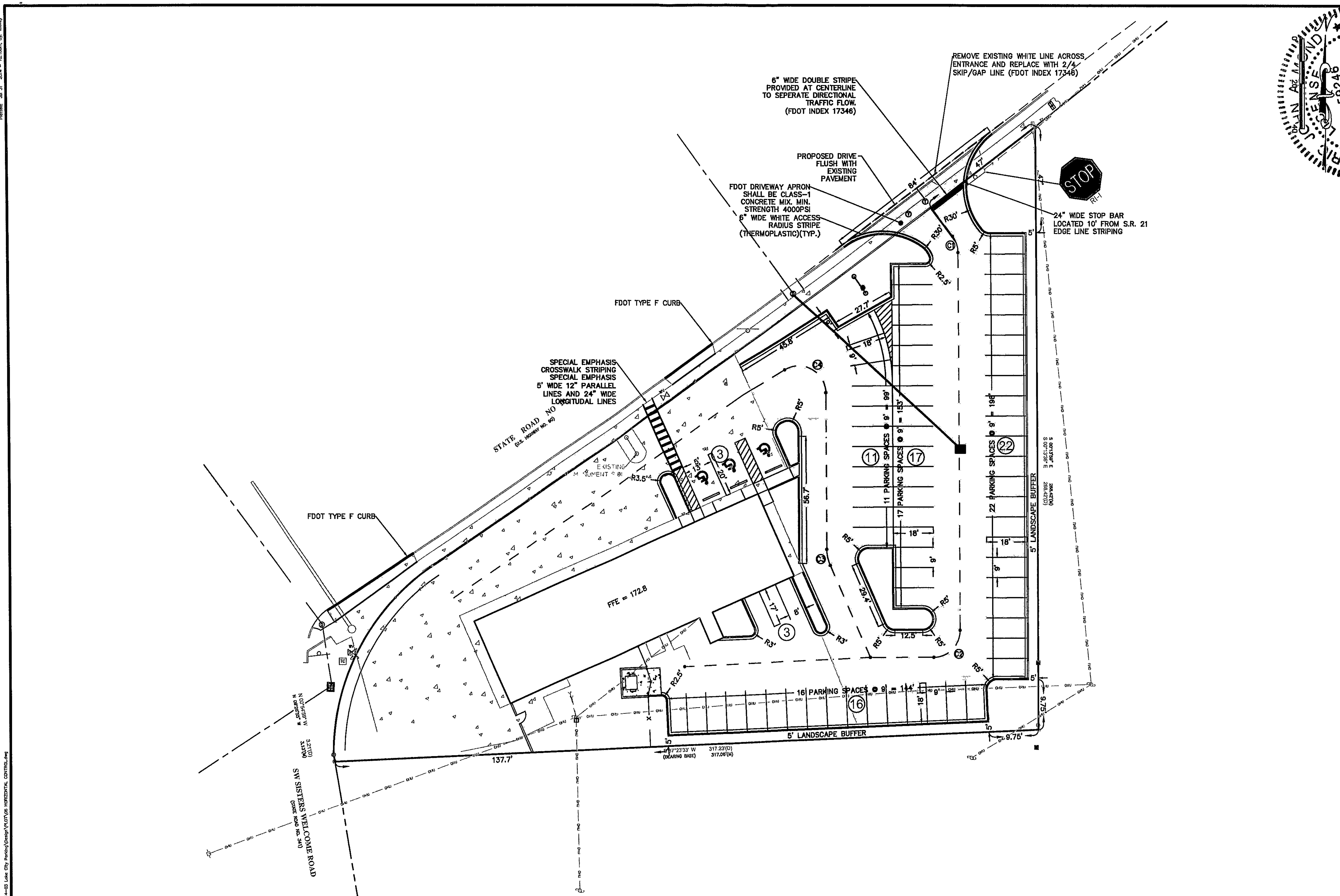

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	BEARING
C1	12.00	7 76	37d2'55"	4.02	7.62	S 18°45'27" E
C2	12.00	18.85	90d0'0"	12.00	16.97	N 44°46'01" E
C3	18.00	7.39	23d31'55"	3.75	7.34	N 11°59'57" W
C4	12.00	25.39	121d14'6"	21.31	20.91	S 60°51'02" E

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HORIZONTAL CONTROL

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

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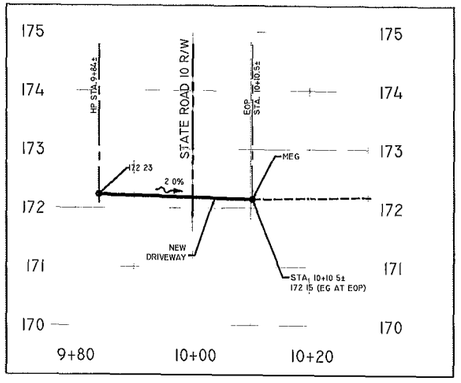

SECTION A–A
H = 1:10 ; V = 1:1

PROPOSED DRIVE FLUSH WITH EXISTING PAVEMENT

CENTER LINE AT EOP STA. 10+10.5±

ADJUST MANHOLE TOPS TO BE FLUSH WITH PAVEMENT

CONNECT TO EXISTING STORM STRUCTURE RIM:172.26 INV EL:168.00 SE

FDOT TYPE F CURB

CONTRACTOR TO VERIFY THAT EXISTING SLOPES WITHIN THE PROPOSED ADA PARKING AREA MEET ADA REQUIREMENTS. IF REQUIREMENTS ARE NOT MET, CONTRACTOR TO REMOVE AND REPLACE EXISTING PAVEMENT AND REPLACE TO ADA SPECIFICATIONS

ST – 1 TYPE "C" INLET RIM:171.27 INV EL:169.01 NW

STATE ROAD NO 10 (U.S. HIGHWAY NO. 90)

EXISTING MONUMENT

CONTRACTOR TO CONSTRUCT ADA COMPLIANT LANDINGS AND RAMPS

CONTRACTOR TO CONSTRUCT ADA COMPLIANT LANDINGS AND RAMPS

FFE = 172.8

EXISTING PAVEMENT TO REMAIN, NO WORK THIS AREA

5' LANDSCAPE BUFFER

5' LANDSCAPE BUFFER

SW SISTERS WELCOME ROAD (STATE ROAD NO. 247)

S 87°23'33" W (BEARING BASIS) 317.23'(D) 317.09'(M)

NOTE: SEE ARCHITECT LIFE SAFETY PLAN FOR ADA ACCESSIBLE FIRE EXIT

NOTES:
1. ALL THE FACILITIES AND ELEMENTS OF THE SITE (INCLUDING ACCESSIBLE ROUTES AND PARKING) SHALL MEET THE REQUIREMENTS OF THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC), THE AMERICANS DISABILITY ACT ACCESSIBILITY GUIDELINES (ADAAG) ESTABLISHED BY FLORIDA LAW AND THE FAIR HOUSING ACT IF APPLICABLE.

LEGEND

- PROJECT BOUNDARY
- EXISTING CONTOURS
- SPOT ELEVATION
- SOIL NUMBERS
- SOIL DIVIDE LINE
- SOIL BEARING LOCATION
- TIME OF CONCENTRATION PATH
- RUNOFF FLOW ARROW
- DRAINAGE DIVIDE
- BRN NODAL AREA NAME & AREA
- JURISDICTIONAL WETLAND AREA

WET-2 6.15 Ac. Tc = 79.00 To = 0.33 Hr.

ERIC JOHN ALMOND — STATE OF FLORIDA — PROFESSIONAL ENGINEER

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PAVING, GRADING, AND DRAINAGE

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

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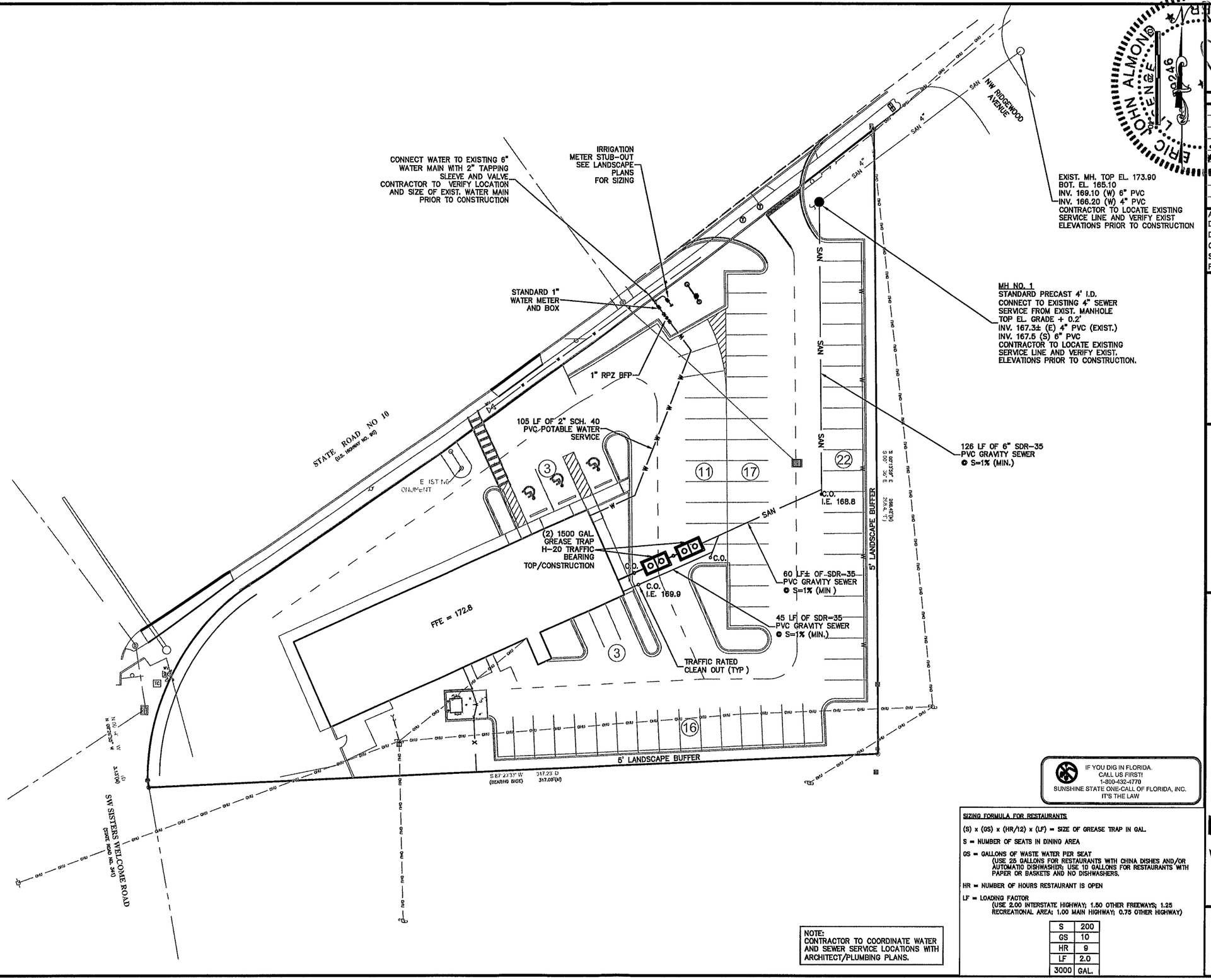

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SIZING FORMULA FOR RESTAURANTS

(S) x (OS) x (HR/12) x (LF) = SIZE OF GREASE TRAP IN GAL.

S = NUMBER OF SEATS IN DINING AREA

OS = GALLONS OF WASTE WATER PER SEAT
(USE 25 GALLONS FOR RESTAURANTS WITH CHINA DISHES AND/OR AUTOMATIC DISHWASHER; USE 10 GALLONS FOR RESTAURANTS WITH PAPER OR BASKETS AND NO DISHWASHERS.

HR = NUMBER OF HOURS RESTAURANT IS OPEN

LF = LOADING FACTOR
(USE 2.00 INTERSTATE HIGHWAY; 1.50 OTHER FREEWAYS; 1.25 RECREATIONAL AREA; 1.00 MAIN HIGHWAY; 0.75 OTHER HIGHWAY)

S	200
OS	10
HR	9
LF	2.0
3000	GAL.

NOTE:
CONTRACTOR TO COORDINATE WATER AND SEWER SERVICE LOCATIONS WITH ARCHITECT/PLUMBING PLANS.

ERIC JOHN ALMOND
STATE OF FLORIDA
PROFESSIONAL ENGINEER
No. 69246

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UTILITIES

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

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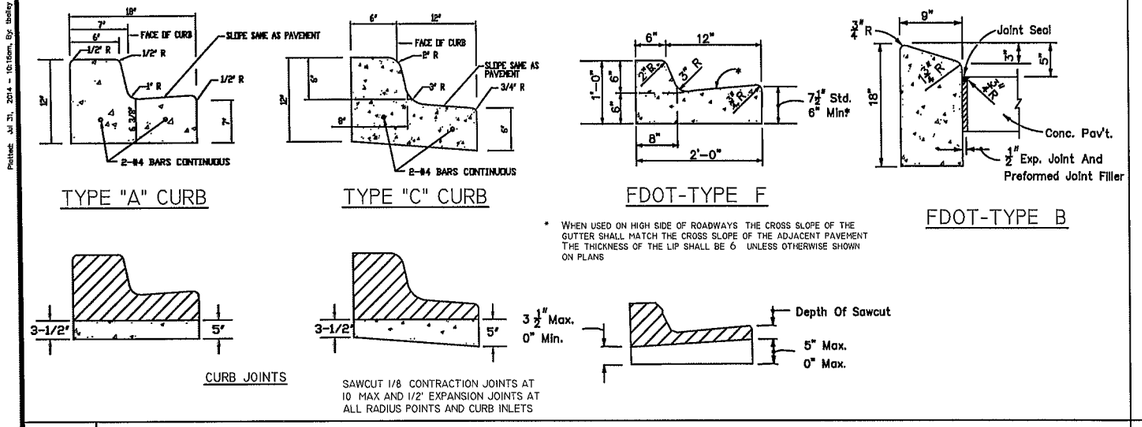
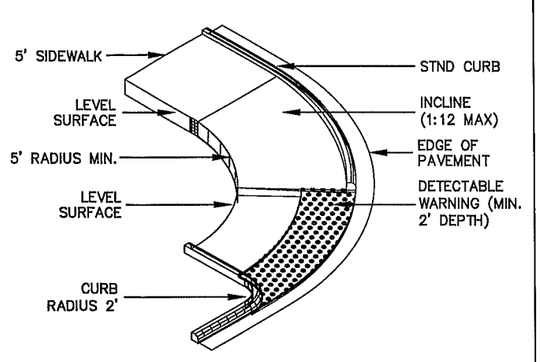
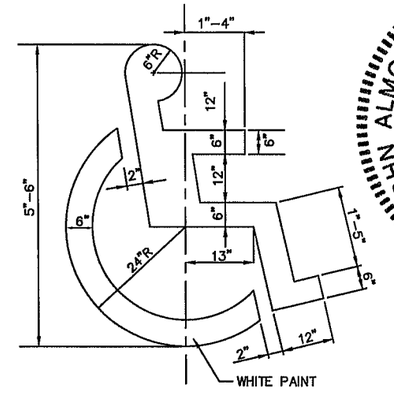


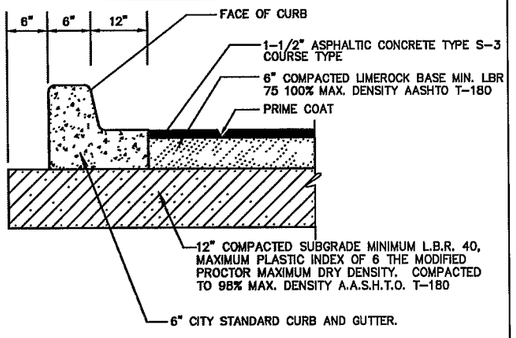
1 CURB & CURB AND GUTTER
PAVING, GRADING, & DRAINAGE N T S



7 RAMP DETAIL (SIDEWALK FLUSH W/ CURB)
PAVING, GRADING, AND DRAINAGE N T S

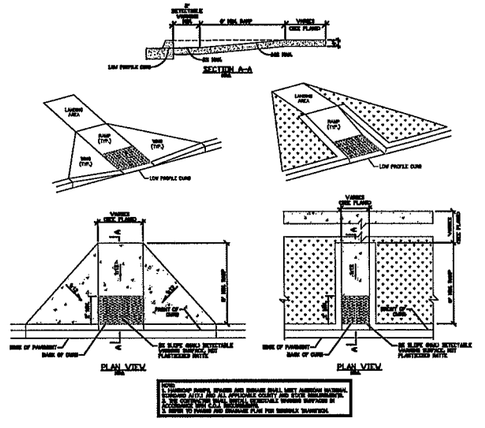


10 HANDICAP PAVEMENT MARKINGS
AMERICAN DISABILITIES ACT N T S

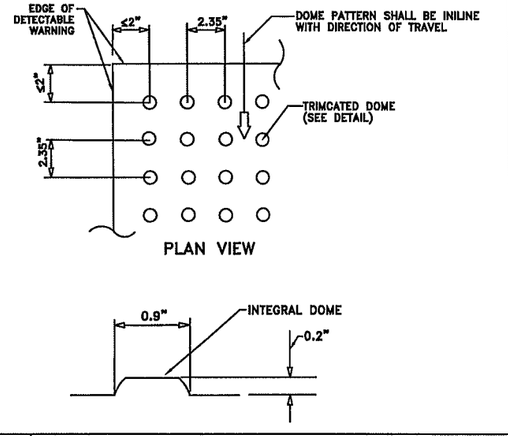


NOTE:
SOIL ANALYSIS MAY INDICATE THE NEED FOR A THICKER BASE COURSE. THE PAVEMENT THICKNESS MAY BE MODIFIED TO ACCOMMODATE THE BEARING CAPACITY OF VARIOUS SUBGRADES.

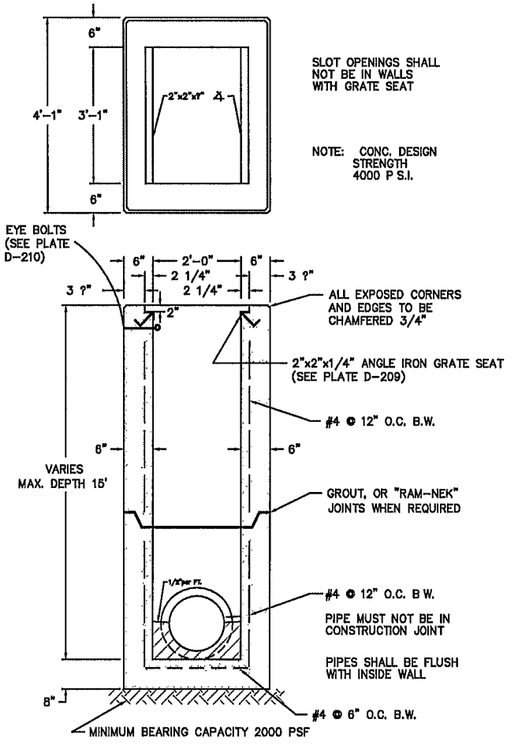
2 TYPICAL ASPHALT PAVEMENT
PAVING, GRADING, AND DRAINAGE N T S



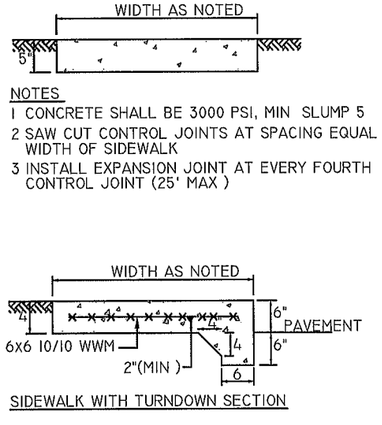
5 STANDARD HANDICAP RAMP DETAILS
PAVING, GRADING, AND DRAINAGE N T S



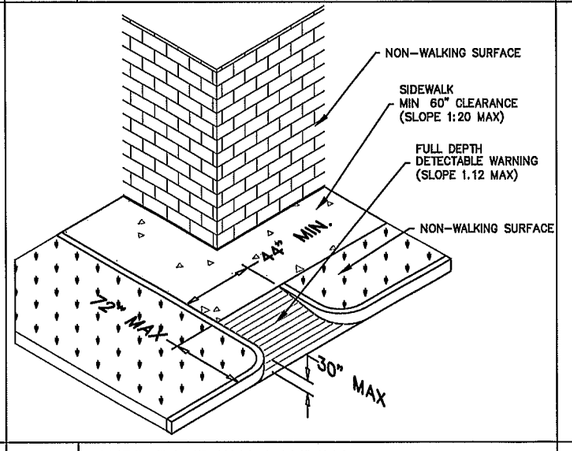
8 TRUNCATED DOME
PAVING, GRADING, AND DRAINAGE N T S



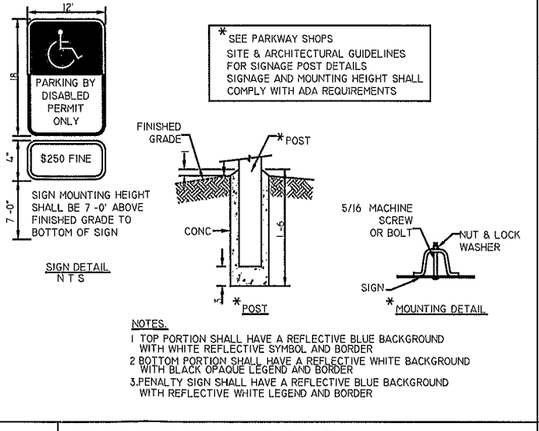
11 STORM SEWER INLET - TYPE "C"
PAVING, GRADING, AND DRAINAGE N T S



3 SIDEWALK SECTION
PAVING, GRADING, AND DRAINAGE N T S



6 CURB RAMP W/O LANDING
AMERICAN DISABILITIES ACT N T S



9 HANDICAP SIGN AND POST
AMERICAN DISABILITIES ACT N T S

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JOHN ALMOND LICENSE 59246 STATE OF FLORIDA PROFESSIONAL ENGINEER

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GENERAL DETAILS

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

9

Plotted: Jul 31, 2014 - 10:18am, By: Shelley
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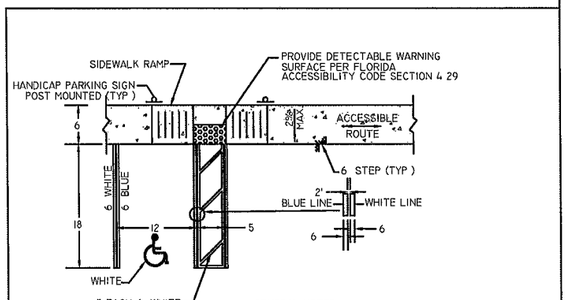
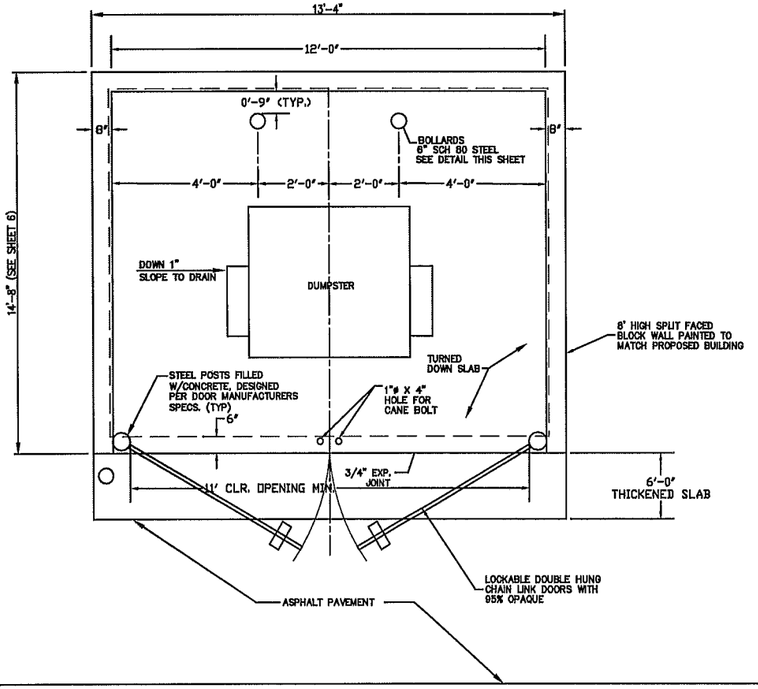


GENERAL NOTES.

1 CURB CUTS SHALL HAVE A MAXIMUM RISE OF 8 INCHES
2 THE MAXIMUM SLOPE FOR A CURB RAMP IS 1:12 OR 8% SEE GRADING PLAN FOR SPOT ELEVATIONS
3 ACCESS RAMP AND HANDICAP SYMBOL SHALL BE PAINTED WHITE
4 HANDICAP SYMBOL SHALL BE 5 FEET HIGH
5 TOP PORTION OF HANDICAP SIGN SHALL HAVE A REFLECTIVE BLUE BACK GROUND WITH WHITE REFLECTIVE SYMBOL AND BORDER BOTTOM PORTION SHALL HAVE A REFLECTIVE WHITE BACK GROUND WITH BLACK OPAQUE LEGEND AND BORDER

11 HANDICAP PARKING SPACE

AMERICAN DISABILITIES ACT N T S

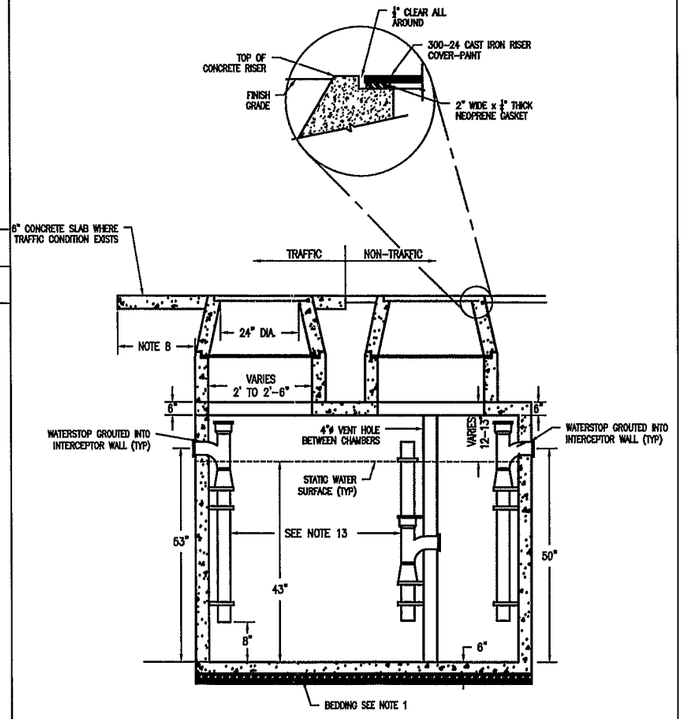


12 GREASE TRAP

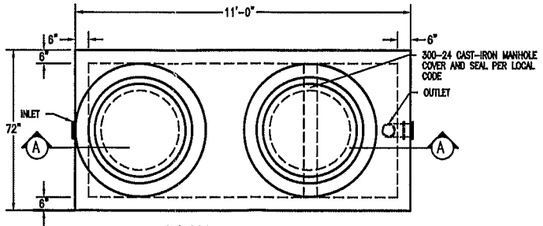
PAVING, GRADING, AND DRAINAGE N T S

NOTES

1. 3" MIN. BEDDING MATERIAL
2. ALL SURFACE WATER MUST DRAIN AWAY FROM MANHOLE.
3. PIPE SHALL BE 4" MAX. OR PER LOCAL CODE
4. CONCRETE MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
5. ALL WYES SHALL BE ONE-WAY CLEANOUT WYES EXCEPT AS NOTED.
6. GREASE INTERCEPTORS SHALL BE LOCATED OUTSIDE OF BUILDINGS IN A LOCATION ACCESSIBLE TO WASTE-HAULER PUMPER.
7. SLAB TO EXTEND 24" BEYOND ALL SIDES OF TANK (TRAFFIC AREAS).
8. ALL WASTE MUST ENTER THROUGH INLET FITTING ONLY.
9. TANK TO BE STENCILED OR UPPER LEFT HAND CORNER OF INLET END IN WHITE.
10. STAINLESS STEEL CLAMP & BOLTS 3'-0" O.C. MAX. (TYP.) MIN 2 REQ'D.
11. WATERSTOP CONSISTING OF A STD. MANHOLE ADAPTER GASKET AS SUPPLIED BY THE PIPE MANUFACTURER SHALL BE GROUTED INTO THE INTERCEPTOR WALL NEAR THE CENTER OF THE WALL.
12. PIPE & FITTINGS TO BE 4" SCH. 40 PVC.
13. REINFORCING BAR INTERMEDIATE GRADE ASTM A615-62T & A305-56T. REINFORCING WIRE FABRIC - ASTM A185-61T
14. ALTERNATE DESIGN BY A REGISTERED ENGINEER MAY BE SUBSTITUTED FOR REVIEW BY CITY



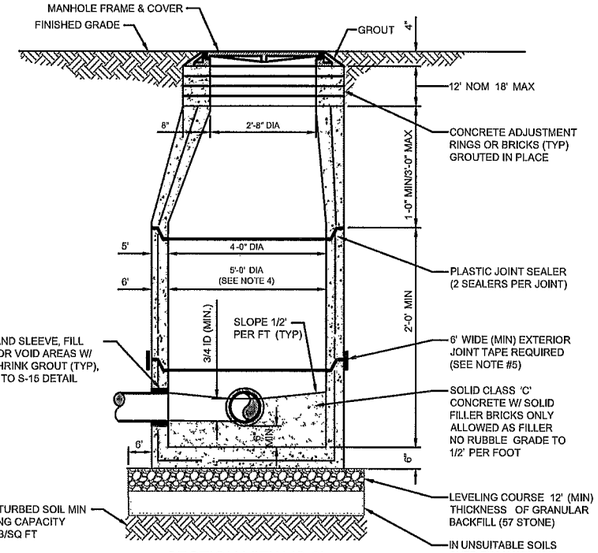
SECTION A-A



PLAN

13 GREASE TRAP

PAVING, GRADING, AND DRAINAGE N T S



SECTION VIEW (S-2)

(FOR PLAN VIEW SEE S-3)

NOTES.

1 PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M C-478 WITH 4000 LB. CONC. TYPE II CEMENT ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.

2. THE INTERIOR AND EXTERIOR OF MANHOLE AND ADJUSTING RINGS SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.

3. IF SPECIALTY LINER IS TO BE INSTALLED ON INSIDE SURFACE OF MANHOLE THE BITUMINOUS WATERPROOFING MATERIAL SHALL BE OMITTED ON THE INSIDE

4. JUNCTION MANHOLE (CLOSEST TO WETWELL) SHALL BE 5' DIA WITH SPECIALTY LINER.

5 ALL MANHOLE JOINTS BELOW THE TOP COVER SECTION SHALL INCLUDE A 6' WIDE (MIN) EXTERIOR JOINT TAPE (WITH PRIMER). TAPE ON THE CONE SECTION IS OPTIONAL. SEE PLATE S-17

6 IN SILTS CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL MH CH OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24 (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98% ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12' (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (57 STONE).

SANITARY SEWER TYPE "A" MANHOLE 8"-21" SEWERS

JANUARY 2014 PLATES S-2, S-3

14 GREASE TRAP

PAVING, GRADING, AND DRAINAGE N T S

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JOHN ALMOND LICENSE No 59246 STATE OF FLORIDA PROFESSIONAL ENGINEER

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9/2	

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GENERAL DETAILS

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

10

Plotted: Jul 31, 2014 - 10:10am By: Bailey

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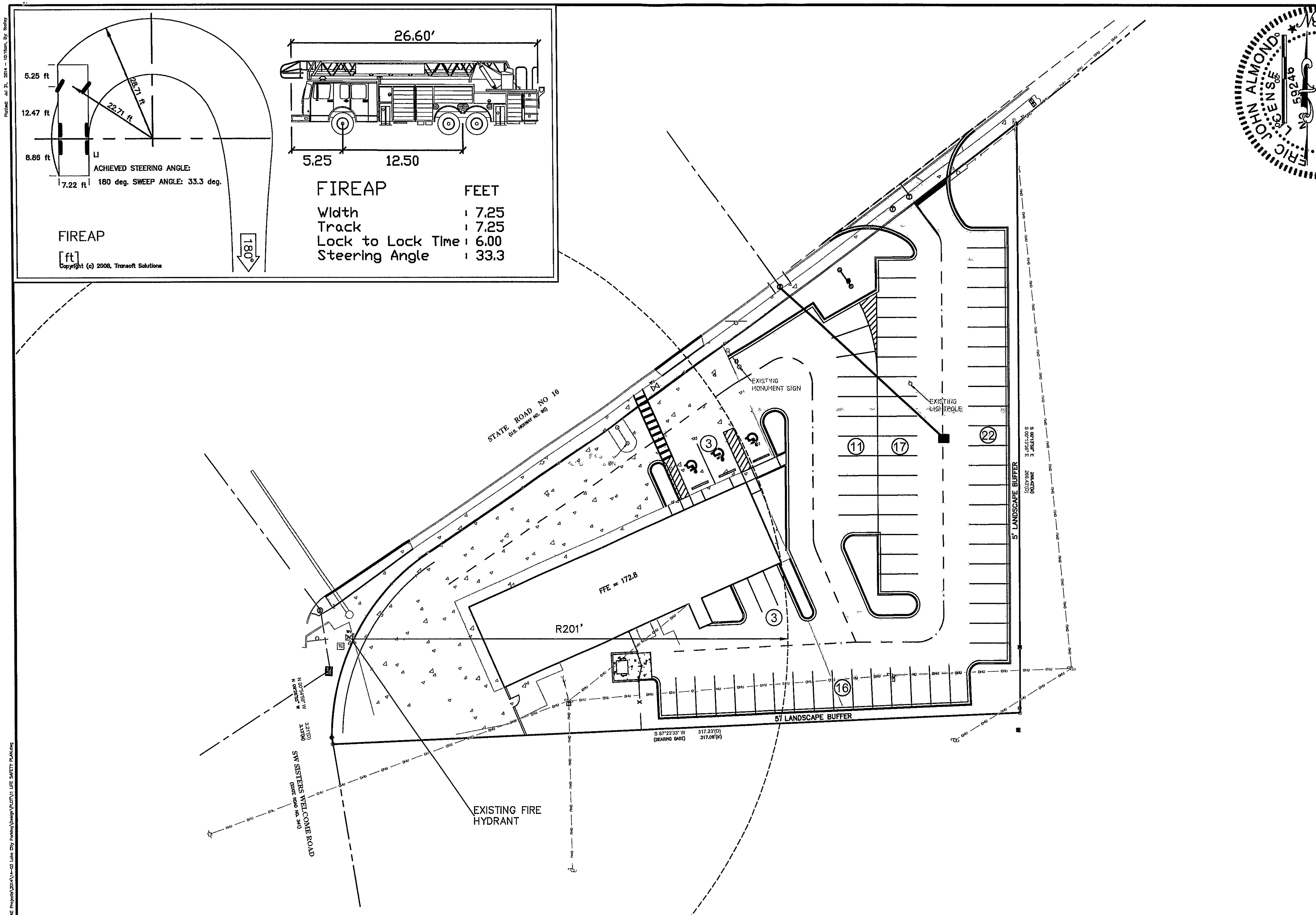

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Date | Revision

ERIC JOHN ALMOND P.E.
PE 59246

LIFE SAFETY PLAN

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

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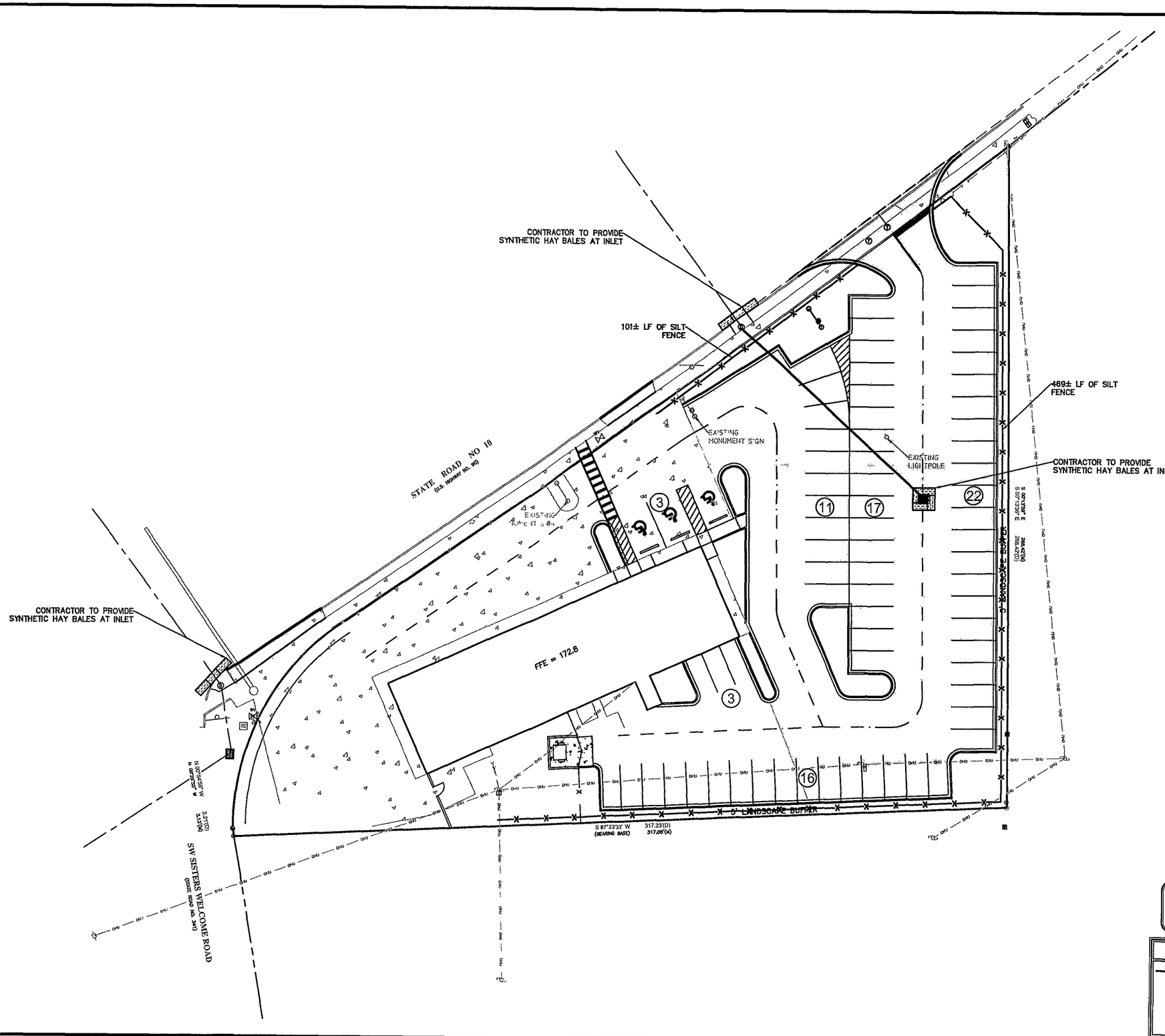

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LEGEND

SILT FENCES TO BE INSTALLED BY THE CONTRACTOR

HAY BALES OR SEDIMENT FILTER AROUND EACH DRAINAGE STRUCTURE

ERIC JOHN ALMOND
No 59248
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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SEDIMENT AND EROSION CONTROL PLAN

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

ALMOND ENGINEERING
CONSULTING CIVIL ENGINEERS
3609 HENDRICKS AVENUE JACKSONVILLE FL 32207
(904) 306-0162 PHONE (904) 306-2185 FAX

LAKE CITY PARKING

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.25 INCHES OR MORE

INSPECTOR _____ DATE:_____

INSPECTOR'S QUALIFICATIONS:

_____

_____

_____

_____

DAYS SINCE LAST RAINFALL:_____ AMOUNT OF LAST RAINFALL _____ INCHES

STABILIZATION MEASURES

INSPECTION AREA (DESCRIPTION OF LOCATION)	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED ? (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED

_____

_____

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

PAGE 1 OF 4

LAKE CITY PARKING

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE:_____

EARTH DIKES/SWALES

DIKE OR SWALE	FROM	TO	IS DIKE/SWALE STABILIZED ?	IS THERE EVIDENCE OF WASHOUT OR OVERTOPPING

MAINTENANCE REQUIRED FOR EARTH DIKE/SWALE

_____

_____

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

CATCH BASIN/CURB INLET/OUTFALL TURBIDITY CONTROLS

STRUCTURE/ OUTFALL	ARE TURBIDITY CONTROLS IN PLACE	ANY EVIDENCE OF CLOGING/WASHOUT OR BYPASSING ?	ARE TURBIDITY CONTROLS IN NEED OF REPLACING	DOES SILT NEED TO BE REMOVED FROM AROUND CONTROL

MAINTENANCE REQUIRED FOR CATCH BASIN/CURB INLETS/OUTFALLS TURBIDITY CONTROLS:

_____

_____

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

PAGE 2 OF 4

LAKE CITY PARKING

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN

DEPTH OF SEDIMENT IN BASIN	DEPTH OF SEDIMENT SIDE BASIN	ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT ?	COND TION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN

_____

_____

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE

DOES MUCH SEDIMENT GET TRACKED ON TO ROAD ?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE ?	IS THE CULVERT BENEATH THE ENTRANCE WORKING? (IF APPLICABLE)

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE

_____

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

PAGE 3 OF 4

LAKE CITY PARKING

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

REASONS FOR CHANGES.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNATURE:_____

DATE _____

PAGE 4 OF 4

ERIC JOHN ALMOND LICENSE No 59246 STATE OF FLORIDA PROFESSIONAL ENGINEER

ALMOND ENGINEERING
CONSULTING CIVIL ENGINEERS
3609 HENDRICKS AVENUE JACKSONVILLE FL 32207
(904) 306-0162 PHONE (904) 306-2185 FAX

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

CONTRACTOR CERTIFICATION SHEET

AE JOB NO.: 14-03
DESIGN: E.J.A.
DRAWN: T.K.B.
CHECKED: E.J.A.
START DATE: 4-25-14
PLOT DATE: 7-31-2014

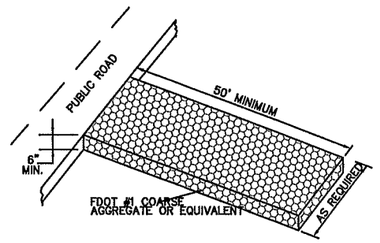
DATE

REVISIONS

ERIC JOHN ALMOND, P.E.
FL # 59246

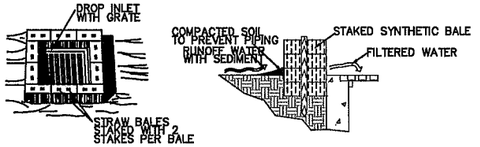
SEDIMENT AND EROSION CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION
2. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
3. ADDITIONAL PROTECTION — ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
4. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
5. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
6. FDOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED ON SEDIMENT FILTER DETAIL (SEE DETAIL THIS SHEET). THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
7. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
8. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
9. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
10. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
11. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
12. LOOSE STRAW SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.
13. STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
14. CLOSE ATTENTION SHALL BE GIVEN TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
16. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. IT MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
17. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE OR FILTER BARRIERS, AND OR SILT FENCES ARE NO LONGER REQUIRED, SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
18. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
19. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
20. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
21. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A WAY THAT IT WILL NOT ERODE.
22. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
23. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO THE FLORIDA DEVELOPMENT MANUAL — A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION (F.D.E.R.) CHAPTER 6.
24. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAILS (THIS SHEET) FOR TYPICAL CONSTRUCTION.
25. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
26. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
27. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST JOHNS RIVER WATER MANAGEMENT DISTRICT
28. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED AND MULCHED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED. CONTRACTOR SHALL USE ADDITIONAL MEASURES TO STABILIZE DISTURBED AREAS THROUGH COMPOST, SILT SCREENS, HAY BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.
29. ALL DEWATERING, EROSION, AND SEDIMENT CONTROL SHALL REMAIN IN PLACE UNTIL AFTER COMPLETION OF CONSTRUCTION, AND REMOVED ONLY WHEN AREAS HAVE BEEN STABILIZED.
30. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
31. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES RELATIVE TO COMPLIANCE OF SWMMP FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.
32. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS AND SPECIFICATIONS AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT RULES AND REGULATIONS.
33. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS AND PRESERVATION EASEMENTS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION
34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING A PERMANENT STAND OF SOD AND OR GRASS PER THE CONTRACT DOCUMENTS, THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND ST. JOHNS COUNTY STANDARDS AND MEETING THE NPDES FINAL STABILIZATION REQUIREMENTS.
35. THESE PLANS INCLUDING THE POLLUTION PREVENTION PLAN INDICATE THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES REQUIRED FOR THIS PROJECT. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL — A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.) CHAPTER 6. CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND TURBIDITY CONTROL AS REQUIRED TO INSURE CONFORMANCE TO STATE AND FEDERAL WATER QUALITY STANDARDS AND MAY NEED TO INSTALL ADDITIONAL CONTROLS TO CONFORM TO AGENCIES REQUIREMENTS. IF A WATER QUALITY VIOLATION OCCURS, THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING LEGAL FEES, CONSULTANT FEES, CONSTRUCTION COSTS, AND FINES.
36. 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS. (FOR ANY CONSTRUCTION NOT COVERED BY THE OWNER'S "NOTICE OF INTENT" PERMIT)



STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

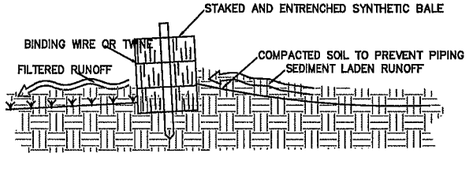


SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

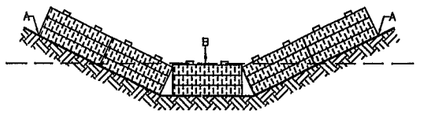
STRAW BALE DROP INLET SEDIMENT FILTER

N.T.S.



CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

N.T.S.

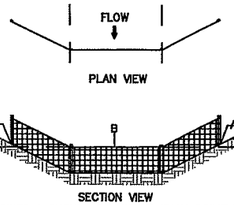


POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF STRAW BALE

IN A DRAINAGE WAY

N.T.S.

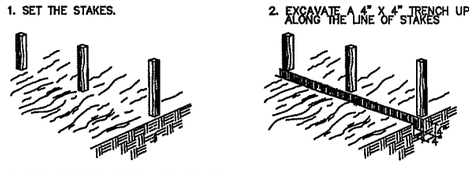


POINTS A SHOULD BE HIGHER THAN POINT B

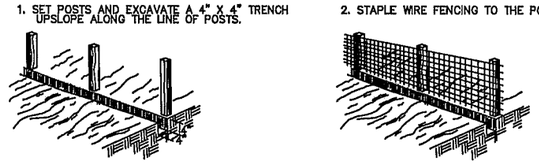
PROPER PLACEMENT OF A

FILTER BARRIER IN DRAINAGE WAY

N.T.S.

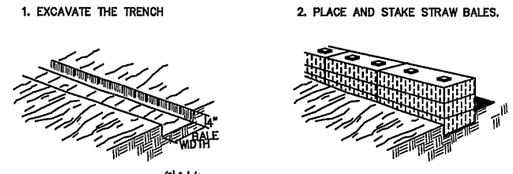


CONSTRUCTION OF A FILTER BARRIER



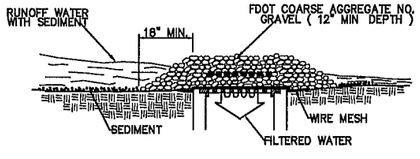
CONSTRUCTION OF SILT FENCE

N.T.S.



CONSTRUCTION OF A STRAW BALE BARRIER

N.T.S.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL AND WIRE MESH DROP INLET

SEDIMENT FILTER

N T.S.

ERIC JOHN ALMOND
No 59246
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date	Revision

AE JOB NO.: 14-03
DESIGN. E.J.A.
DRAWN: T.K.B.
CHECKED: E.J.A.
START DATE: 4-25-14
PLOT DATE: 7-31-201

STORM WATER PREVENTION PLAN

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

ALMOND ENGINEERING
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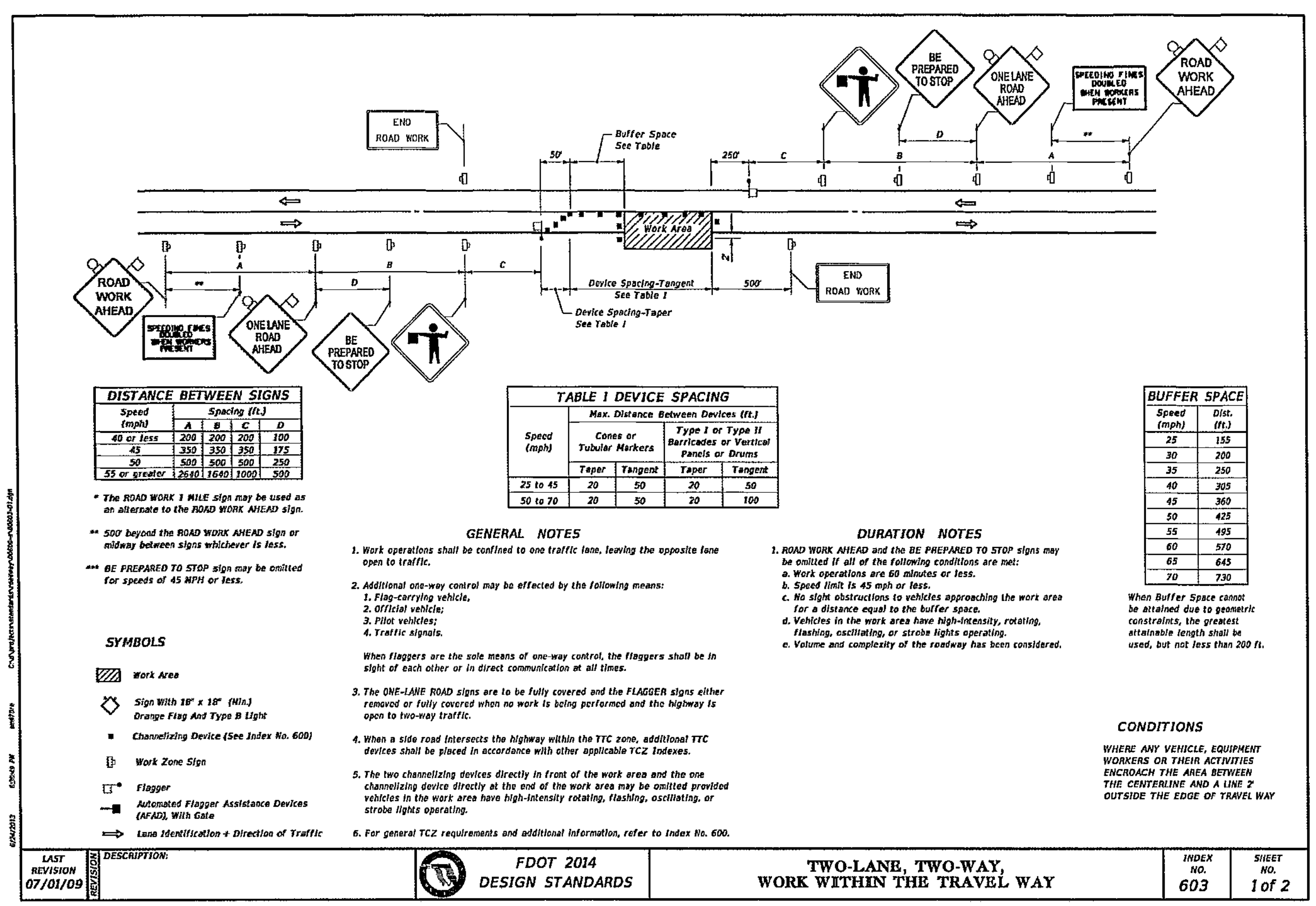

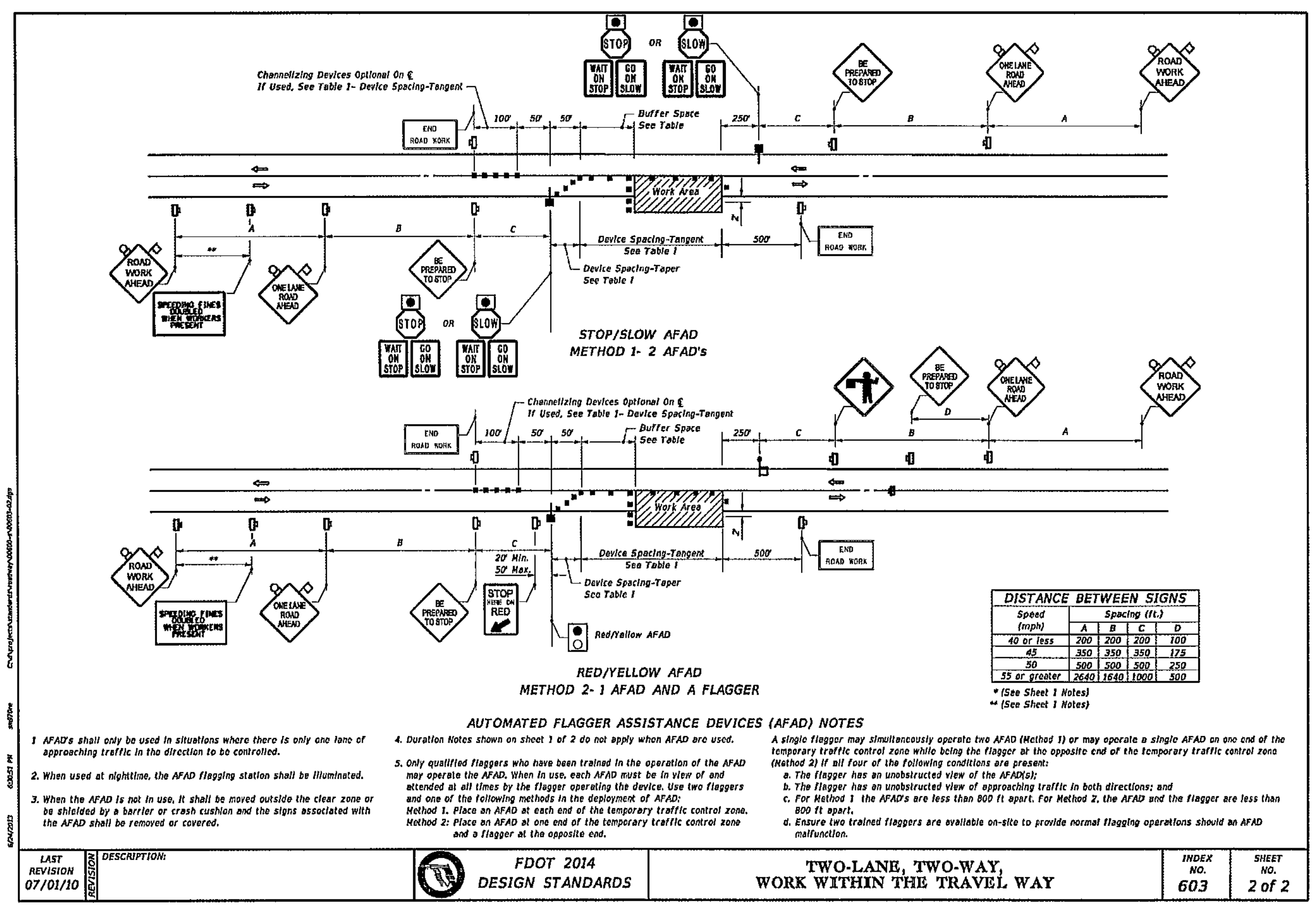

FDOT NOTES

- No lane closures from 4.00pm to 6:30pm
- All work performed within the Florida Department of Transportation Right-of-Way shall conform to the most current edition of the following publications:
  - Standard Specifications for Road and Bridge Construction English)
  - FDOT Standards Index (English)
  - FDOT Plans Prep Manual
  - FDOT Flexible Pavement Design Manual for New Construction and Pavement Rehabilitation
- Should a conflict arise between the details shown in the plans and the Department of Transportation Standards the Engineer/ Permittee shall immediately confer with the Department's Engineer in order to resolve the discrepancy In no case will anything less that the Department's minimum standard be allowed.
- All traffic striping and markings are to be lead-free, non-solvent based thermoplastic
- Removal of existing striping shall be accomplished using the "hydro-blast" method. If this process damages/scars pavement, then the pavement shall be milled and resurfaced per FDOT Standards.
- Existing paved shoulder shall be removed full depth prior to widening of the roadway
- All curb and gutter and sidewalk will be removed and replaced joint to joint.
- All disturbed area with the Department of Transportation right of way will restored to original or better condition by grading and sodding the area disturbed (Bermuda in rural, centipede in utility strips).
- Burning of material and/or debris is prohibited within FDOT right-of-way.
- All lanes must be opened for traffic during an evacuation notice of a hurricane or other catastrophic event and shall remain open for the duration or the evacuation or event.

ERIC JOHN ALMOND
LICENSE
No 59246
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date	Revision

AE JOB NO.: 14-03
DESIGN: E.J.A.
DRAWN: T.K.B.
CHECKED: E.J.A.
START DATE: 4-25-14
PLOT DATE: 7-31-2014

MAINTENANCE OF TRAFFIC

LAKE CITY PARKING & SEAFOOD RESTAURANT MODIFICATIONS

ALMOND ENGINEERING
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IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	ARC	PSI	GPM	RADIUS	PRECIP
	Rain Bird 1806-PRS 15 Strip Series	6	65T	30	0.61	4'x15'	1 58/hr
	Rain Bird 1806-PRS 15 Strip Series	1	65T	30	1 21	4'x30'	1 58/hr
	Rain Bird 1806-PRS 8 Series MPR	10	180	30	0 52	8'	1 58/hr
	Rain Bird 1806-PRS 8 Series MPR	2	90	30	0 26	8'	1 58/hr
	Rain Bird 1806-PRS 8 Series MPR	1	120	30	0 35	8'	1 58/hr
	Rain Bird 1806-PRS 10 Series MPR	2	180	30	0 79	10'	1 58/hr
	Rain Bird 1806-PRS 12 Series MPR	2	60	30	1 30	12'	1 58/hr
	Rain Bird 1806-PRS 12 Series MPR	7	90	30	0 65	12'	1 58/hr
	Rain Bird 1806-PRS 12 Series MPR	1	120	30	0.87	12'	1 58/hr
	Two Rain Bird PCT-07 Pressure Compensating Modules	20	360	30	0 25	1	NA

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PRECIP
	Area to Receive Dripline Rain Bird XFD-09-12 XFD On-Surface Pressure Compensating Landscape Dripline 0 90PH emitters at 12 0 O.C Dripline laterals spaced at 16.0' apart with emitters offset for triangular pattern UV Resistant.	1 200 s f	1 1/hr

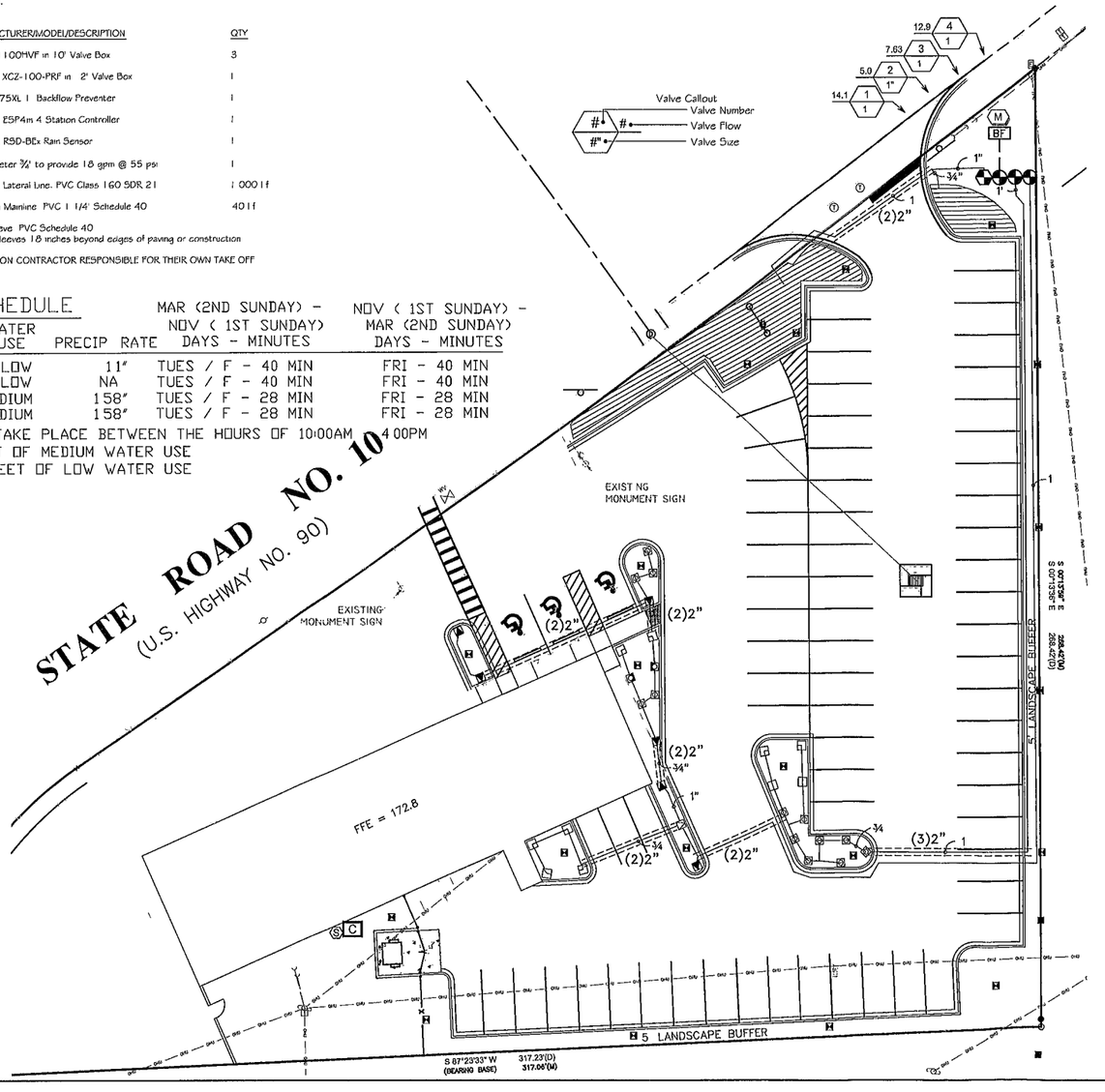
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird 100HVF in 10' Valve Box	3
	Rain Bird XCZ-100-PRF in 2' Valve Box	1
BF	Wilkins 975XL 1 Backflow Preventer	1
C	Rain Bird ESP4m 4 Station Controller	1
S	Rain Bird RSD-BEx Rain Sensor	1
M	Water Meter ¾' to provide 18 gpm @ 55 psi	1
	Irrigation Lateral Line. PVC Class 160 SDR 21	1 000 l f
	Irrigation Mainline PVC 1 1/4' Schedule 40	40 l f
	Pipe Sleeve PVC Schedule 40 Extend sleeves 18 inches beyond edges of paving or construction	

IRRIGATION CONTRACTOR RESPONSIBLE FOR THEIR OWN TAKE OFF

WATERING SCHEDULE

ZONE	GPM	WATER USE	PRECIP RATE	MAR (2ND SUNDAY) - NOV (1ST SUNDAY) DAYS - MINUTES	NOV (1ST SUNDAY) - MAR (2ND SUNDAY) DAYS - MINUTES
1	14 1	LOW	11"	TUES / F - 40 MIN	FRI - 40 MIN
2	5 0	LOW	NA	TUES / F - 40 MIN	FRI - 40 MIN
3	7 6	MEDIUM	158"	TUES / F - 28 MIN	FRI - 28 MIN
4	12 9	MEDIUM	158"	TUES / F - 28 MIN	FRI - 28 MIN

NO WATERING TO TAKE PLACE BETWEEN THE HOURS OF 10:00AM - 4 00PM
1300 SQ FEET OF MEDIUM WATER USE
1200 SQUARE FEET OF LOW WATER USE



1.0 GENERAL

1 1 SUMMARY: Includes but not limited to:
A. Furnishing and installing sprinkler system as described in Contract Documents complete with accessories necessary for proper functioning.

1.2 SYSTEM DESCRIPTION:
A. Design Requirements:
1 Layout of Irrigation Heads:
a. Location of heads shown on Drawings is approximate. Actual placement may vary slightly as is required to achieve full, even coverage without spraying onto buildings, sidewalks, fences, etc.
b. During layout, consult with Landscape Architect to verify proper placement and make recommendations, where revisions are advisable.

1.3 QUALITY ASSURANCE:
A. Regulatory Requirements:
1 Work and materials shall be in accordance with latest rules and regulations, and other applicable state or local laws. Nothing in Contract Documents is to be construed to permit work not conforming to these codes.
B. Pre-Installation Conference:
1 Meet with Owner and Landscape Architect to discuss and clarify all aspects of job requirements prior to commencing work of this Section.
C. System Adjustments:
1 Minor adjustments in system will be permitted to avoid existing fixed obstructions.
2. Mainline, laterals, and valves are shown for clarity purposes only. All irrigation equipment to be with landscape area. Mainline, laterals and valves to be installed as far away from existing and new specimen trees as possible.
D. 1 Documentation and submittal of actual water supply performance prior to commencing installation.

1.4 SUBMITTALS:
A. Record Drawings:
1 Prepare an accurate as-built drawing as installation proceeds to be submitted prior to final inspection. Drawing shall include:
a. Detail and dimension changes made during construction.
b. Significant details and dimensions not shown in original Bidding Documents.
2. Maintain, at job site, one copy of Contract Documents (as defined in General Conditions) and relevant shop drawings.
3. Clearly mark each document "PROJECT RECORD COPY" and maintain in good condition for use of the Landscape Architect and Owner
4. As-built drawing shall be clearly drawn.
5. Submit product literature for all sprinklers, valves, pipe, wire, wire connectors and controller
6. Final payment for system will not be authorized until accurate and complete submittals are delivered to the Landscape Architect.
B. Instruction Manual:
1 Provide instruction manual which lists complete instructions for system operation and maintenance.

1.5 PRODUCT STORAGE:
A. During construction and storage, protect materials from damage and prolonged exposure to sunlight.

1.6 WARRANTY:
A. Standard one (1) year warranty stipulated in General Conditions shall include:
1 Completed system including parts and labor
2. Filling and repairing depressions and replacing plantings due to settlement of irrigation trenches for one (1) year following final acceptance.
3. System adjustment to supply proper coverage to areas to receive water

1 7 MAINTENANCE:
A. Extra Materials:
1 In addition to installed system, furnish Owner with the following items at close-out:
a. Two sprinkler head bodies of each size and type.
b. Two nozzles for each size and type.
c. Two adjusting keys for each sprinkler head cover type.

2.0 PRODUCTS:

2.1 PIPE, PIPE FITTINGS, AND CONNECTIONS:
A. Pipe shall be continuously and permanently marked with Manufacturer's name, size, schedule, type, and working pressure.
B. Pipe:
1 Pressure Lines: as indicated on plans.
2. Lateral Lines: as indicated on plans.
3. Risers: sch. 80 PVC, gray
C. Fittings:
1 Schedule 40 PVC.
D. Sleeving:
1 Schedule 40 PVC.

2.2 SPRINKLER HEADS:
A. Conform to requirements shown on Drawings as to type, radius of throw, pressure, and discharge.

2.3 AUTOMATIC SPRINKLER SYSTEM:
A. Control valves shall be of size and type indicated on Drawings.
B. Control wire shall be UL listed, color coded copper conductor direct burial size 14. Tape control wire to bottom of main line every ten (10') feet. Use 3M-DBY waterproof wire connectors at splices and locate all splices within valve boxes. Use white or gray color for common wire and other colors for all other wire. Each common wire may serve only one controller
C. Add one extra control wire from panel to valves for use if a wire fails and mark the wire in the control box as an extra wire.

2.4 VALVES:
A. Electric Valves:
1 Make and model shown on Drawings.
B. Gate valves:
1 Bronze construction angle type, 150 pound class, threaded connections, with cross-type operating handle designed to receive operating key.
C. Automatic Controller
1 Make and model shown on Drawings.

2.5 VALVE ACCESSORIES:
A. Valve Boxes:
1 Ametek or Brooks size per legend heavy duty valve box with locking lid or Landscape Architect approved equal.
2. Do not install more than one (1) valve in a single box.
3. Valve boxes shall be large enough for easy removal or maintenance of valves.

3.0 EXECUTION:

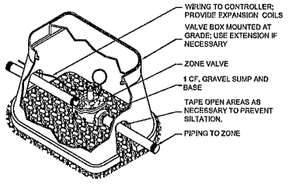
3.1 PREPARATION:
A. Protection:
1 Work of others damaged by this Section during course of its work shall be replaced or repaired by original installer at this Section's expense.

3.2 INSTALLATION:
A. Trenching and Backfilling:
1 Over-excavate trenches by two (2") inches and bring back to indicated depth by filling with fine, rock-free soil or sand.
2. Cover pipe both top and sides with two (2") inches of material specified in paragraph above. In no case shall there be less than two (2") inches of rock-free soil or sand surrounding pipe.
B. Installation of Plastic Pipe:
1 Install plastic pipe in a manner to provide for expansion and contraction as recommended by Manufacturer
2. Unless otherwise indicated on Drawings, install main lines with a minimum cover of eighteen (18") inches based on finish grade. Install lateral lines with a minimum cover of twelve (12") inches based on finish grade.
3. Install pipe and wires under driveways or parking areas in specified sleeves a minimum of eighteen (18") inches below finish grade or as shown on Drawings.
4. Locate no sprinkler head closer than twelve (12") inches from building foundation. Heads immediately adjacent to mowing strips, walks or curbs shall be one (1") inch below top of mowing strip, walk or curb and have a minimum of one (1") inch clearance between head and mowing strip, walk or curb.
5. Drawings show arrangement of piping. Should local conditions necessitate rearrangement, obtain approval of Landscape Architect prior to proceeding with work.
6. Cut plastic pipe square. Remove burrs at cut ends prior to installation so unobstructed flow will result.
7 Make solvent weld joints in the following manner
a. Clean mating pipe and fitting with clean, dry cloth and apply one (1) coat of P-70 primer to each.
b. Apply uniform coat of 711 solvent to outside of pipe.
c. Apply solvent to fitting in similar manner
d. Reapply a light coat of solvent to pipe and quickly insert into fitting.
e. Give pipe or fitting a quarter turn to insure even distribution of solvent and make sure pipe is inserted to full depth of fitting socket.
f. Hold in position for fifteen (15) seconds minimum or long enough to secure joint.
g. Wipe off solvent appearing on outer shoulder of fitting.
h. Do not use an excessive amount of solvent thereby causing an obstruction to form on the inside of pipe.
i. Allow joints to set at least 24 hours before applying pressure to PVC pipe.
8. Tape threaded connection with teflon tape.
9. Install concrete thrust blocks wherever change of direction occurs a PVC main pressure lines unless otherwise detailed on Drawings.
C. Control Valves and Controller
1 Install controller control wires, and valves in accordance with Manufacturer's recommendations and according to applicable electrical code.
2. Install valves in plastic boxes with reinforced heavy duty plastic covers. Locate valve box tops at finish grade.
3. Install remote control valves in valve boxes positioned over valve so all parts of valve can be reached for service. Set cover of valve box even with finish grade.
4 Install all valve boxes over nine (9") inches of gravel for drainage.
D. Sprinkler Heads:
1 Prior to the installation of sprinkler heads, open control valves and use full head of water to flush out system.
2. Set sprinkler heads perpendicular to finish grade.
3. Set lawn sprinkler heads adjacent to existing walks, curbs, and other paved areas to grade.
E. Dripline:
1 Stake dripline every 6' with 6' sod staple.
2. Install drip zone indicator head by each drip zone control valve.

3.3 ADJUSTMENT AND CLEANING:
A. Adjust heads to proper grade when turf is sufficiently established to allow walking on it without appreciable harm. Such lowering or raising of of heads shall be part of the original contract with no additional charge to the Owner
B. Adjust sprinkler heads for proper distribution and trim to ensure spray does not fall on building.
C. Adjust watering time of valves to provide proper amounts of water to all plants.

3.5 DEMONSTRATION:
A. After system is installed and approved, Instruct Owners Representative in complete operation and maintenance.

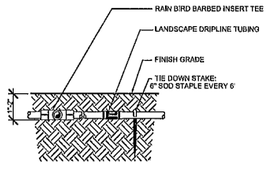
END OF SECTION



INSTALL TOP OF VALVE A MAXIMUM OF 15" FROM FINISHED GRADE.

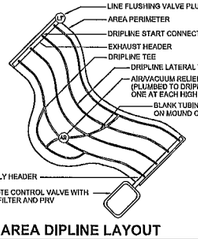
ZONE VALVE INSTALLATION DETAIL

SCALE: NTS



NOTE(S):
IF PUTTING LANDSCAPE DRIPLINE UNDER SOIL, DO NOT BURY MORE THAN 2" BELOW GRADE AND INCLUDE AIR RELIEF VALVE (SEE DRAWING- "AIR RELIEF VALVE KIT-AIR VALVE KIT").

LANDSCAPE DRIPLINE 2" BELOW MULCH



IRREGULAR AREA DIPLINE LAYOUT

Crawford Irrigation Design, Inc
IRRIGATION DESIGN AND CONSULTATION SERVICES
Edgewater, Florida
Tel: (386) 424-0027
EMAIL cid@atlantic.net
Fax (866) 654-2902

JANET O. WHITMILL,R.L.A.,INC.
LANDSCAPE ARCHITECTURE * PLANNING
P.O.BOX 5212 JACKSONVILLE, FL. 32247 (904) 398-7688

LAKE CITY PARKING AND SEAFOOD
PARKING LOT EXPANSION
LAKE CITY, FLORIDA

IRRIGATION PLAN

07.01.14

REV	DATE	DESCRIPTION

JOB NO. 14714
DRAWN: DHM
CHECKED: JWO
SCALE: 1 20

IR-1
DRAWING NO.

PLANTING NOTES:

1 The LANDSCAPE CONTRACTOR is responsible for verifying project site conditions and all quantities indicated on these plans before commencing any work LANDSCAPE CONTRACTOR shall notify the LANDSCAPE ARCHITECT if soil conditions are poorly drained to determine is substitution of materials is necessary.

2. Soil tests shall be provided to evaluate various areas of the landscape (especially the parking lot islands) for pH, available nutrients, phosphorus content, bulk density, etc. This will serve to ensure proper plant selection according to prevailing soil conditions, what lime/sulphur applications are needed (if any) and long-term survival of plant material

3. All plant material shall be Florida Grade No. 1 or better nursery grown in accordance to Florida Grades and Standards Latest Grades and Standards For Nursery Plants, Part I AND II, 'Florida Department of Agriculture And Consumer Services or To The Standards In the latest American Standard for Nursery Stock', America National Standards Institute.

4. All plant material shall be container grown or B&B. B&B materials shall be 'hardened off' root pruned during field production and shall be dug at least several weeks before planting is performed.

5. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf They shall be free of disease, insects eggs or larvae and shall have healthy, well developed root systems. They shall be free from physical damage or adverse conditions that would prevent thriving growth.

6 All plants shall conform to the varieties indicated in the plant list

7 Substitution of plant materials will not be permitted unless authorized in writing by the LANDSCAPE ARCHITECT If proof is submitted that any plant specified in not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of contract price.

8. Plant material locations and bed outlines shall be staked or flagged on site by the CONTRACTOR and shall be adjusted if required to fit actual as-built conditions on site and approved by the owner or owners representative

9 All proposed tree planting locations shall be staked or flagged before installation by the LANDSCAPE ARCHITECT and approved by the owner or owners representative.

10. The CONTRACTOR shall estimate the depth of the planting hole by measuring the distance between the point where the topmost root emerges from the trunk and the bottom of the root ball The planting hole shall be slightly shallower than this distance. No more than 2 to 3 inches of the root ball needs to be above the soil unless the site is poorly drained. Poorly drained soil requires planting depths even or higher Planting holes dug too deep are required to have soil added to the bottom and loosely compacted If planting holes should fill with water as it is dug, position the bottom of the root ball above the water and mound soil to cover the sides of the ball The hole shall be at least 1 5 times the diameter of the root ball. Wider holes shall be used for compacted soil and wet sites.

11 The soil shall be freshly tilled and large clods of soil broken up. The growing medium shall be settled and firm at the time of herbicide application Herbicides may be mechanically incorporated by mixing into top layer at a depth of 1–3 inches

12. All backfill around plant material shall be worked firmly by slicing a shovel down into the backfill 20 to 30 times around the tree as you add backfill soil Large clumps shall be broken up. Do not pack the backfill Only step firmly on backfill soil to stabilize the root ball The top of the root ball shall remain 1 inch (small trees) to 3 inches (large trees) or approximately 10% above grade. Do not over-pack the loosened soil when wet. Add 10 to 20 gallons of water to the rootball and backfill Fill in any holes or depressions with backfill soil Do not attempt to eliminate air pockets by compaction Water infiltrating the backfill soil will eliminate large air pockets.

13. LANDSCAPE CONTRACTOR shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drawings, obstruction on the site or prior to work done by any other party, which the CONTRACTOR feels precludes establishing proper drainage shall be brought to the attention of the LANDSCAPE ARCHITECT for correction or relief of said responsibility.

14. When planting on slopes, set tree so top-most root in the ball on the uphill side is even with the soil The side of the root ball on the downhill side will be well above the surrounding soil Soil shall cover the sides of the root ball Mulch shall cover the edge of the rootball and not piled on top

15. Planting beds shall be cut or edged to form a uniform clean line between beds and lawn areas.

16. After all plant material in a plant bed area has been installed and approved, the areas between plants shall be raked to an even grade to conform to premulching finish grades. All planting beds and plant saucers shall then be uniformly covered with a minimum four inches of #2 grade or better of pine bark mini nuggets.

17 Before fertilization a soil and/or foliar nutrient analysis shall be performed to determine whether phosphorus fertilizer with 30% slow release nitrogen will be required All planting bed areas shall be fertilized approximately 4–6 weeks after installation

18. Plant material soil shall be native soil that was removed from the planting hole. If soil is badly contaminated, good quality soil shall be used as replacement after contaminated soil has been completely removed from planting area

19 After sodding is completed the entire side areas shall be watered by hand or irrigation system each day for two weeks. After approximately one month of installation, sodded areas shall then be top dressed with a 15-0-15 commercial slow-release fertilizer at a rate of 6 67 pounds per 1 000 square feet of area in an evenly broad-case pattern

20. The LANDSCAPE CONTRACTOR is responsible for all fine grading preparation for planting. Apply pre-emergent to all beds prior to planting

21 Rough grades will be established by the owners general contractor at approximately 3 inches below curbs sidewalks, hardscape amenities, mowing strips and abutments. All materials shall be a minumim 24 from buildings or walks.

22. CONTRACTOR shall coordinate construction of planting areas with installation of irrigation system

23. Where seeding may be required on the plans, germination rate shall be the maximum percentage required for the variety specified at the rate of application specified.

24. Sod areas shall be SPECIFIED Grass. Grass for sodding shall be freshly cut in squares one foot wide by two feet long. Sod shall be healthy, free of insects and weeds, in naturally flourishing conditions. Dry, brown and unfresh sod will be rejected.

25. Sod shall be laid end to end and side to side in a staggered line to form a uniform layer All uneven edges shall be squarely trimmed to allow close and firm fitting of each piece.

26. After sodding is completed, the entire sod areas shall be watered by hand or irrigation system each day for two weeks. Sodded areas shall then be top dressed with a commercial fertilizer as directed herein at the rate of 12 pounds per 1000 square feet of area in an evenly broad case pattern

27 The LANDSCAPE CONTRACTOR is responsible for fully maintaining all plant material on site during and before planting, until the work in accepted by the LANDSCAPE ARCHITECT and/or owner The LANDSCAPE CONTRACTOR is responsible for removing tree stakes after tree is established

28. All plants shall be guaranteed by the LANDSCAPE CONTRACTOR to be healthy plants and in flourishing condition of active growth for ninety (90) days from final inspection and acceptance. All trees shall be guaranteed an additional one year from final inspection and acceptance.

29 The LANDSCAPE ARCHITECT owner or owners representative shall have the right to reject any and all work which in his opinion does not meet with the requirements of the specifications at any stage of the project operation

30. In general the work shall proceed as rapidly as the site becomes available. Keep all areas of work clean neat and orderly at all times.

31 There will be special care to all existing trees to be retained on site to avoid construction damage.

32. An automatic irrigation system is to be provided and a shop drawing of the layout and design must be submitted to the governmental agency, for review and approval prior to installation.

33. Irrigation system shall be fully automatic, providing 100% coverage to all planting areas, with all pop up heads in lawn area.

34. Irrigation station shall be set where there will be no mixing of shrub and lawn areas, fixed spray heads with gear driven heads or impacts. Shrub risers shall be minimum 2.5' from EOP and all heads minimum 1' from buildings.

35. A double check backflow prevention (or approved equal)' equal to a DCA-100; to be mounted in a rectangular valve box (12 x 10') on the service side of the meter and immediately adjacent to the water meter

36. After the landscape plan is approved by the governmental agency any subsequent changes must be resubmitted for review and approval

37 Shade trees shall be planted minimum 4 from EOP and 25 from OHE.

38. Do not plant trees below Normal Water Line (NWL) see civil drawings. Sod all 4:1 or greater slopes. Seed all other disturbed areas.

39 B&B strapping wire, and any synthetic material shall be removed prior to final inspection Wire baskets should be cut 8 below grade.

40. A mulch ring for all newly planted trees shall be provided at least (5) five feet in diameter and not closer than (6) six inches from tree trunk.

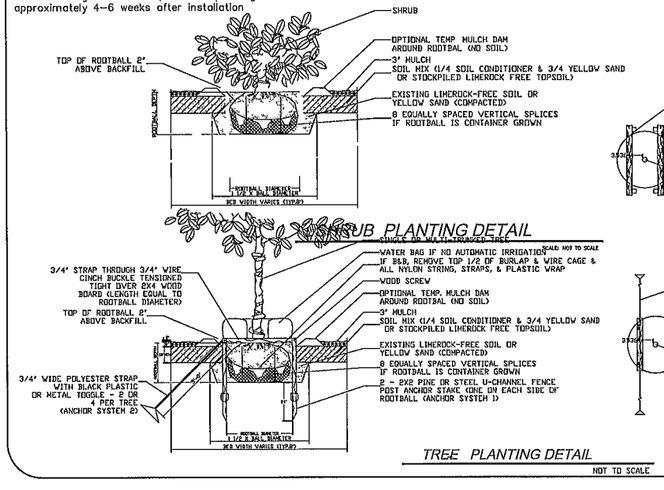
41 Soil in tree islands shall have at least(12) twelve inches of suitable soil and be void of any construction debris orunsuitable materials.

42. Tress must be a minimum (7 5) seven and one half feet from water lines.

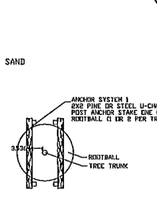
43. Irrigation will be provided with eitheran automatic irrigation system or hose bibs within (50) fifty feet of all newly planted materials, unless approved alternate means of establishment of planted materials is provided

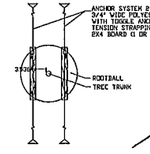
44. Shrubs shall not be planted closer than (2.5) two and one half feet from any structure

45. All projects shall be required to submit one photo of all specified plant materials and one group phot of each specified plant material.



SHRUB PLANTING DETAIL
NOT TO SCALE





TREE PLANTING DETAIL
NOT TO SCALE

PLANT LIST

QTY	SYM	DESCRIPTION	SIZE	SPACING	* NOTES
8	UP	ULMUS PARVIFOLIA 'DRAKE ELM	10'-12 x 5-6' 2 CAL 4' CT MATCHED	AS SHOWN	FYN FF WW OHE
4	IAS	ILEX X ATTENUATA DAHOON HOLLY'	10 -12 x 3-4 2 CAL , FTG, MATCHED	AS SHOWN	N, FYN, FF WW
8	LI	LAGERSTROMEIA INDICA 'TUSCARORA CRAPE MYRTLE"	8 x 4 3 TRK 4 CT MATCHED	AS SHOWN	FYN FF WW OHE
0	VO	VIBURNUM OBUVATUM WALTER S VIBURNUM	24 x 24 FULL, MATCHED	36 OC	FYN FF WW
0	DLC	LOROPETALUM CHINENSE 'DWF RED RAZZLEBERRY	18 x 18 FULL MATCHED	36 OC	FYN FF WW
0	IVN	ILEX VOMITORIA SCHILLINGS HOLLY	16 x 16 FULL MATCHED	36 OC	N FYN FF WW
0	LA	LANTANA SPP DWF GOLD MOUND LANTANA	24 x 18 FULL MATCHED	36 OC	N FYN, FF WW
	SOD	PASPALUM NOTATUM ARGENTINE BAHIA TSA FREE (WEED FREE)			

SOD ALL 4 1 SLOPES OR GREATER 10' FROM EOP AND ALL DISTURBED ROW COORDINATE FURTHER GRASSING WITH GENERAL CONTRACTOR
SELECTED SOD SPECIES MEETS ALL CURRENT LANDSCAPE AND IRRIGATION REQUIREMENTS ANY VARIABLE WILL REQUIRE GOVERNMENT APPROVAL

*PLANT LIST LEGEND N-NATIVE FYN FLORIDA YARDS & NEIGHBORHOODS 2006 FF FLORIDA FRIENDLY WW WATER WISE 2008
OHE JEA OVERHEAD ELECTRIC (ACCEPTABLE PLANT LIST)

LANDSCAPE CALCULATIONS

REQUIRED LANDSCAPE INTERIOR VUA
PUBLIC VUA. 19 775 SF
REQUIRED· 1 975 SF
PROVIDED 3 956 SF
TREES 5 TREES (3 SHADE)
SHRUBS· 1 975 X 25% = 495 SF/9 SF/SHRUB 55 SHRUBS

NORTH REQUIRED LANDSCAPE, STREET FRONTAGE
VUA FRONTAGE 170 FT
REQUIRED: 1 700 SF
PROVIDED 1 880 SF
TREES: 3 TREES (2 SHADE)
SHRUBS· 170 LF X 75% 127 LF/3 OC /SHRUB 45 SHRUBS

SOUTH REQUIRED LANDSCAPE ADJACENT PROPERTY
VUA FRONTAGE 190 FT
REQUIRED: 950 SF
PROVIDED: 1 085 SF
TREES 4 TREES (2 SHADE)

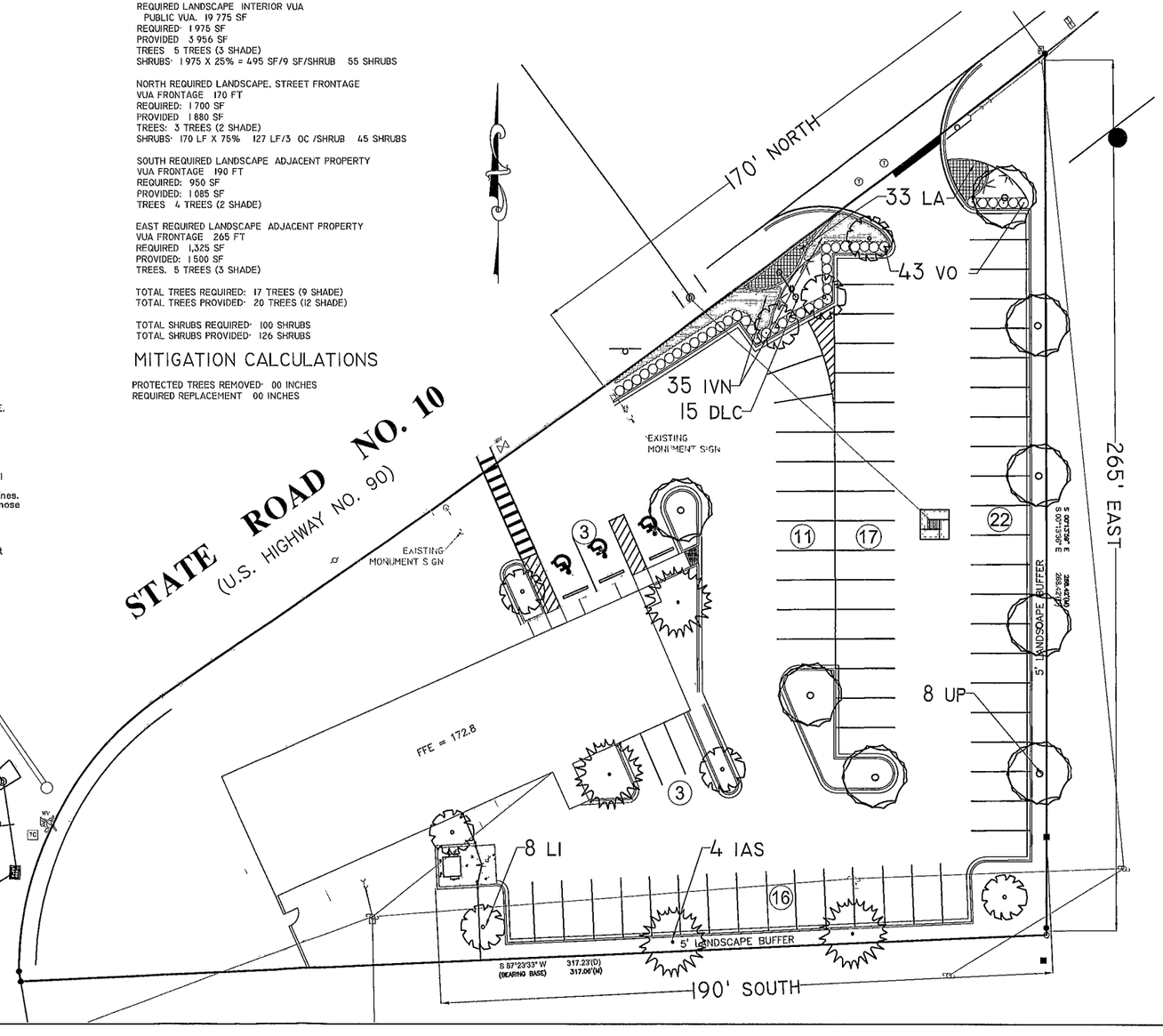
EAST REQUIRED LANDSCAPE ADJACENT PROPERTY
VUA FRONTAGE 265 FT
REQUIRED 1,325 SF
PROVIDED: 1 500 SF
TREES. 5 TREES (3 SHADE)

TOTAL TREES REQUIRED: 17 TREES (9 SHADE)
TOTAL TREES PROVIDED· 20 TREES (12 SHADE)

TOTAL SHRUBS REQUIRED· 100 SHRUBS
TOTAL SHRUBS PROVIDED· 126 SHRUBS

MITIGATION CALCULATIONS

PROTECTED TREES REMOVED· 00 INCHES
REQUIRED REPLACEMENT 00 INCHES



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Janet O Whitmill
Landscape Architect
FL 000012B9

LAKE CITY PARKING AND SEAFOOD
PARKING LOT EXPANSION
LAKE CITY, FLORIDA

LANDSCAPE PLAN

07.01 14

REV	DATE	DESCRIPTION

JOB NO. 14714
DRAWN JWO
CHECKED: DHM
SCALE: 1 20

L—1
DRAWING NO.