VIKING®

TECHNICAL DATA

GRATE NOZZLE®

1. PRODUCT NAME

Viking Grate Nozzle® Model GN 200 Viking Trench Drain Grate
Model 1120, Part Number F02022
Model 1126, Part Number F02012
(Grate included with nozzle)
Manufactured since 2000

2. MANUFACTURER

The Viking Corporation
210 N. Industrial Park Rd.
Hastings, Michigan 49058 U.S.A.
Telephone: (269) 945-9501
(877) 384-5464
Fax: (269) 945-9599
email: techsvcs@vikingcorp.com

3. PRODUCT DESCRIPTION

The Viking Model GN 200 Grate Nozzle is specifically designed for the protection of aircraft hangars. The Grate Nozzle is an AFFF foam discharge device located at the floor level of an aircraft hangar. Located in trench drains, the Grate Nozzle does not take any floor space. The Grate Nozzle is designed to discharge foam solution in a 360° radius. The Grate Nozzle is designed to provide uniform discharge over a maximum area of 1250 sq. ft. (116 sq. meters). The companion Model 1120 and Model 1126 trench drain grate is specially engineered to receive the Grate Nozzle and serve as a cover for the drain trench.

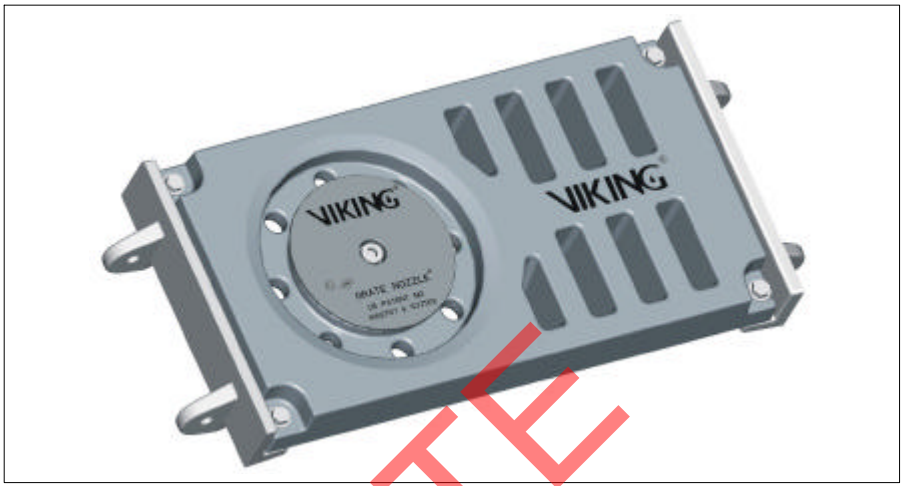
4. TECHNICAL DATA

K-Factor: 23.4 (33.6 metric)

Listings and approvals:

UL listed
FM Approved
US DOD Acceptance
U.S. Patent number 6,182,767
U.S. Patent number 6,371,212
Shipping Weight:
20" Grate - 105 lbs
26" Grate - 130 lbs.
Recommended Discharge Pressure:
40-60 PSI
Deflector Retaining Allen Bolt:
Minimum torque req'd - 8 ft. /lbs.

Material Standards:



The Model GN/200 Grate Nozzle is constructed of 316L Stainless steel.
The Model 1120 and Model 1126 trench drain grate is constructed of cast ductile iron, ASTM A536 Grade 80-55-06
(Refer to Figures 3 & 4 for illustration of Grate Nozzle in trench drain grate)

5. FEATURES

Grate Nozzle

A. The Grate Nozzle spreads AFFF foam solution over the burning liquid faster than conventional overhead deluge foam systems or oscillating monitors because the Grate Nozzles are located where the flammable liquid spill will happen, at the floor.
B. 2" grooved inlet for simple installation and removal.
C. Durable construction designed for maximum direct load of 350 PSI over surface area of assembly, (designed to withstand load of airplane parked over Grate Nozzle).
D. The Grate Nozzle has no moving parts. The spray pattern is developed from its installed position.
E. 360° discharge pattern allows for less discharge nozzles in trench drain grate than 180° discharge devices.
F. Grate Nozzles are located in trench drains so valuable floor space is left for aircraft storage and servicing. The Grate Nozzle discharges foam solution at the floor level in the same location that a fuel spill will occur. The location of Grate Nozzles eliminates the need for expensive underwing oscillating monitors.
G. The Grate Nozzle has been tested for obstruction to discharge such as aircraft tires, 55 gallon barrels, 3/4" rubber hoses, construction materials, with little effect on time of floor coverage. Grate Nozzles have been covered during discharge, (such as would happen if an airplane tire were parked over it), only to have Grate Nozzles located in the same supply piping increase their flow rate and make up the discharge area lost by the covered Grate Nozzle.
H. The Grate Nozzle system can also be used for floor wash-down as well. Operating the floor nozzle system without foam solution is a superb method of operating fire protection systems as per NFPA 25 requires, as well as

Replaces page 302a-g dated June 25, 2003.
(Updated drawings on page 302d and 302e.)

VIKING® TECHNICAL DATA GRATE NOZZLE®

determining if Grate Nozzles require cleaning.

I. Maximum height of spray pattern above floor is 12" - 18".

Model 1120 and Model 1126 trench drain grate

A. The Model 1120 and Model 1126 trench drain grate are designed as a receiver for the Grate Nozzle.

B. The Model 1120 and Model 1126 trench drain grate is placed in line with other lengths of trench drain grates to provide a uniform floor and trench drain level.

C. The Model 1120 and Model 1126 trench drain grate are designed to blend with existing and new trench drain installation.

D. Grate drain slots in the Model 1120 and Model 1126 trench drain grate are of uniform size with standard grating to enable drainage to occur at the special grate placement.

6. AVAILABILITY AND SERVICE

Viking Grate Nozzles and Trench Drain Grates are available through a network of domestic and international distributors. See the Yellow Pages of the telephone directory for a local distributor (listed under "Sprinklers-Automatic-Fire") or contact Viking.

Viking Technical Data may be found on The Viking Corporation's Web site at http://www.vikingcorp.com. The Web site may include a more recent edition of this technical data page.

7. GUARANTEES

For details of warranty, refer to Viking's current list price schedule or contact The Viking Corporation directly.

8. INSTALLATION AND OPERATION

Note: Minimum concrete grade shall be 4500 PSI compression load. This is to stand maximum design load of grate assembly.

The Grate Nozzle is a deluge discharge device located at the floor level of an aircraft hangar. Grate Nozzles provide floor coverage by discharging foam solution at the floor level in a 50' diameter 360° discharge pattern. Grate Nozzles are installed into a Model 1120 or Model 1126 trench drain grate. Grate Nozzles are supplied from a deluge type system.

A. The water or foam/water solution supply to Grate Nozzles must be continuous, clean, and obstruction free.

B. Viking Grate Nozzles are only to be installed with the companion Viking trench drain grate. The Grate Nozzle and Viking trench drain grate were designed to work in concert with each other.

C. Installation of Grate Nozzles or trench drain grates require that adequate trench drain sizing has been accounted for. Trench drain size should be investigated by the architect or engineer prior to installation.

D. The Grate Nozzle is provided with a 2" grooved inlet for ease of installation and removal.

E. Supply piping must be located in the trench. A 2" supply pipe should be piped horizontally from the supply main located in the trench, and then vertically to the Grate Nozzle. The 2" supply must terminate in a grooved connection to allow for installation to the Grate Nozzle. The supply piping must be self supporting.

Spacing of Grate Nozzles

1. Refer to Figures 2 & 3 for an example of spacing Grate Nozzles. Standard practice is to locate the Grate Nozzles so that the maximum distance between nozzles in a trench is 25' and that trench drains are not located in excess of 50' on center, (25' maximum from walls). Configurations other than this may be acceptable, contact Viking for designs other than what is indicated.
2. Grate Nozzles should be installed so that a particular building feature such as a column or raised floor does not cause an obstruction to discharge to the Grate Nozzle.
3. The "X" frame furnished with the Grate Nozzle assembly shall be set in concrete using re-rod as shown in Figure 6. Positioning must be flush with floor, aligned for bolting of grate to frame and placed to accommodate the remaining grate drainage system.

Minimum Trench Drain Dimension

1. The trench drain should be of a minimum dimension of 20" or 26" wide to receive Viking Grate.
2. Trench drains will vary in length due to hangar dimensions, but the trench length shall be such that a Grate Nozzle can be located half of its maximum dimension to a wall. (Refer to Figure 3).

9. TESTING AND MAINTENANCE

A. Grate Nozzles are open discharge devices and require inspection, per NFPA 25, be conducted at least annually. As the nozzles are part of a deluge system, system testing and maintenance shall be that of NFPA 25 and the manufacturer's recommendations.

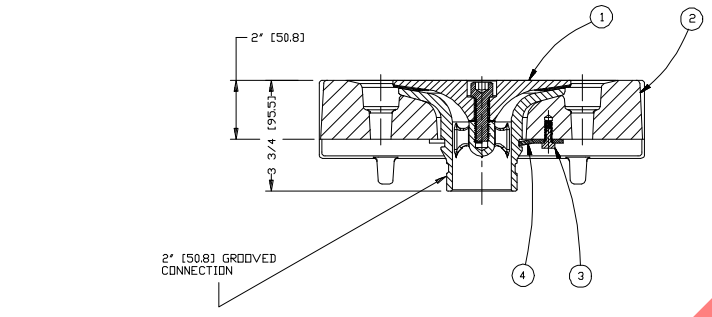
10. FREEZE PROTECTION

If Grate Nozzles are installed in an area subject to freezing, frequent inspections may be required to ensure particles of ice have not formed in front of the discharge ports of the Grate Nozzle

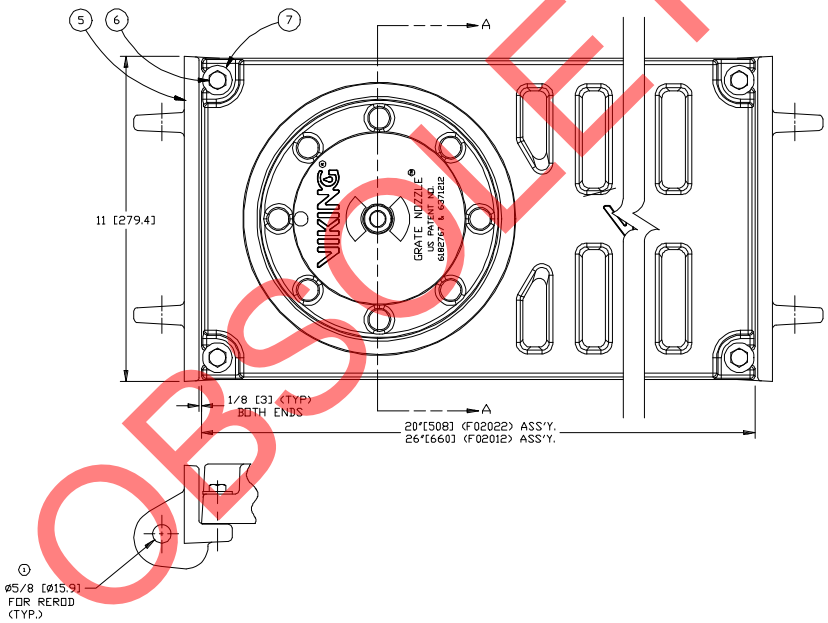
VIKING®

TECHNICAL DATA

GRATE NOZZLE®



SECTION A-A
GROOVED



REPLACEMENT PARTS

F02012 - GROOVED ASS'Y					F02022 - GROOVED ASS'Y				
NO.	PART NO.	DESCRIPTION	QTY.	MATERIAL	NO.	PART NO.	DESCRIPTION	QTY.	MATERIAL
1	F02013	NOZZLE ASS'Y	1	316 SST.	1	F02013	NOZZLE ASS'Y	1	316 SST.
2	--	GRATE, 26"	1	80-55-06 D.I.	2	--	GRATE, 20"	1	80-55-06 D.I.
3	01761A	1/4 x 1/2 S.S. HHCS.	3	18-8 SST.	3	01761A	1/4 x 1/2 S.S. HHCS.	3	18-8 SST.
4	F02008	SPRING CLIP	3	316 SST.	4	F02008	SPRING CLIP	3	316 SST.
5	--	"X" FRAME SUPPORT	2	CLASS 35B C.I.	5	--	"X" FRAME SUPPORT	2	CLASS 35B C.I.
6	10949	3/8 X 1 1/2 S.S. HHCS	4	18-8 SST.	6	10949	3/8 X 1 1/2 S.S. HHCS	4	18-8 SST.
7	10951	3/8 FLT. WASHER, S.S.	4	316 SST.	7	10951	3/8 FLT. WASHER, S.S.	4	316 SST.
8	10950	1/2-13 x 1-1/2 SCREW	1	316 SST.	8	10950	1/2-13 x 1-1/2 SCREW	1	316 SST.

Grate and Nozzle Assembly
Plan & Side View

Figure 1

VIKING®

TECHNICAL DATA

GRATE NOZZLE®

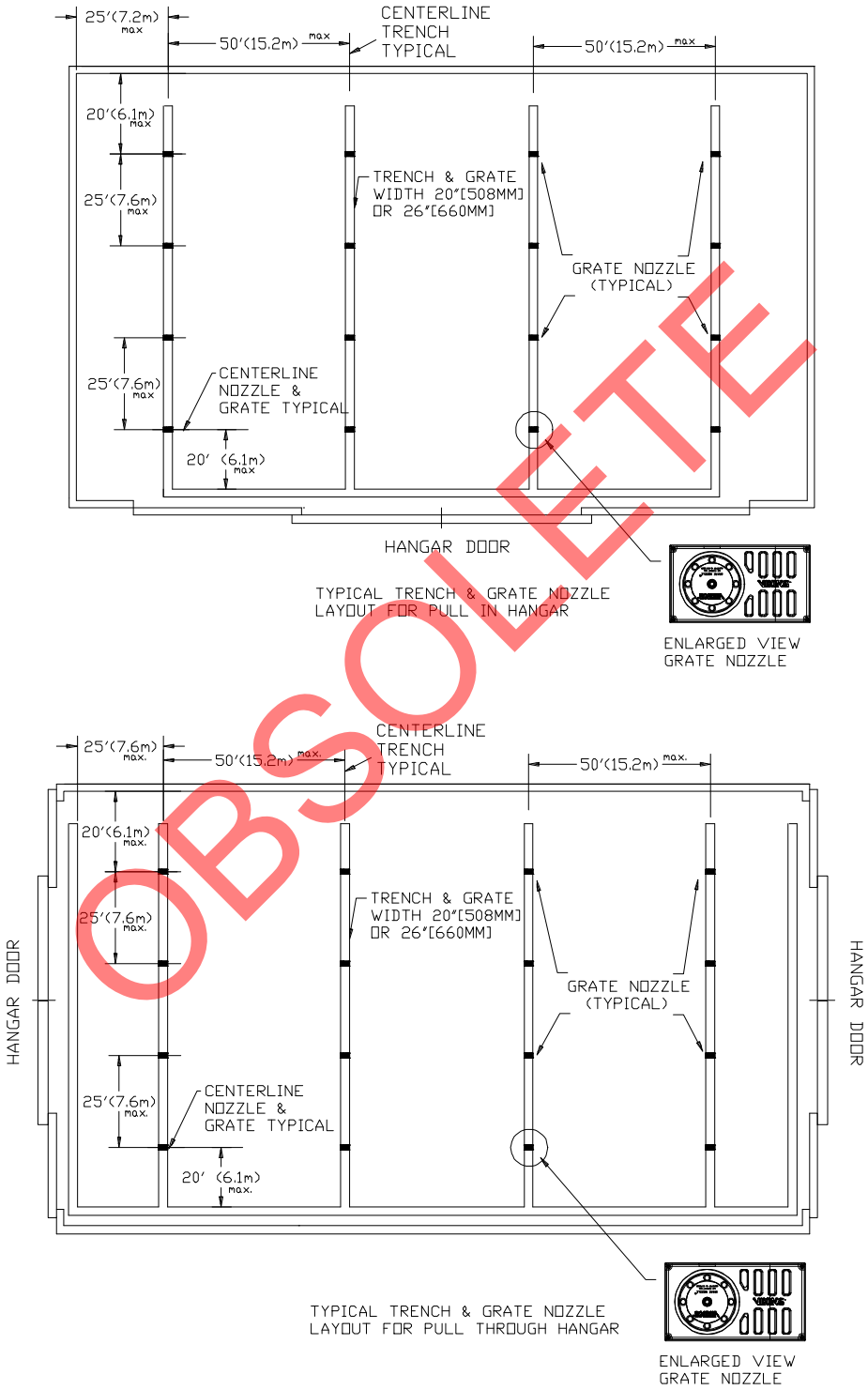


Figure 2

VIKING®

TECHNICAL DATA

GRATE NOZZLE®

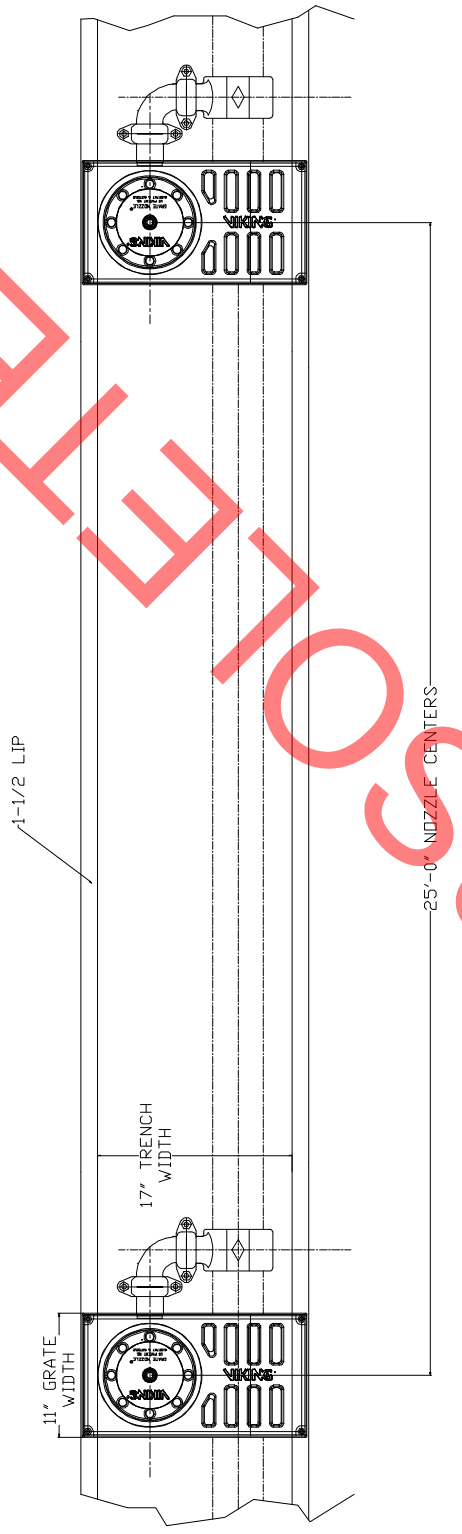
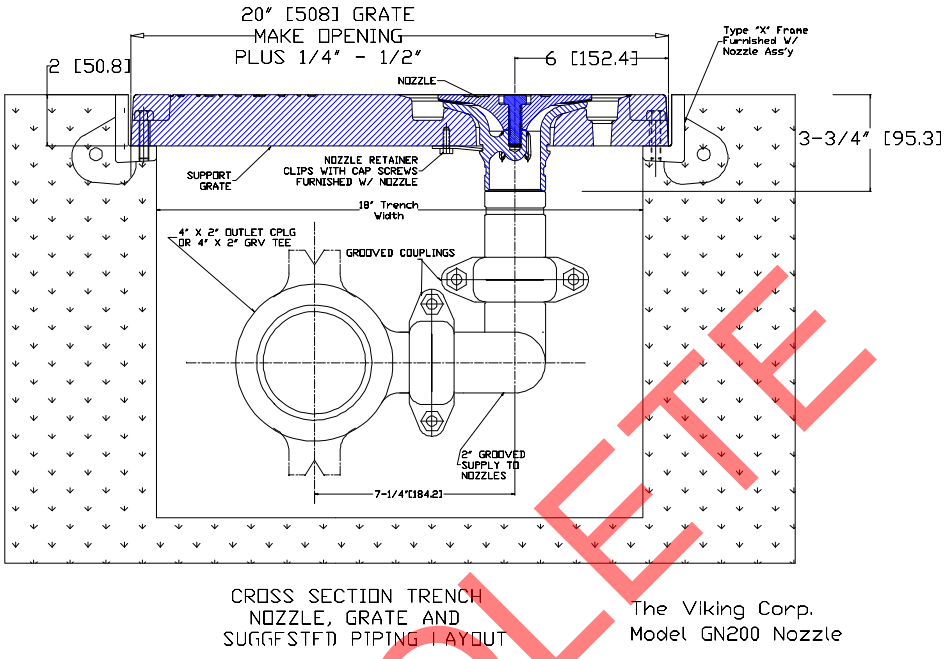


Figure 3

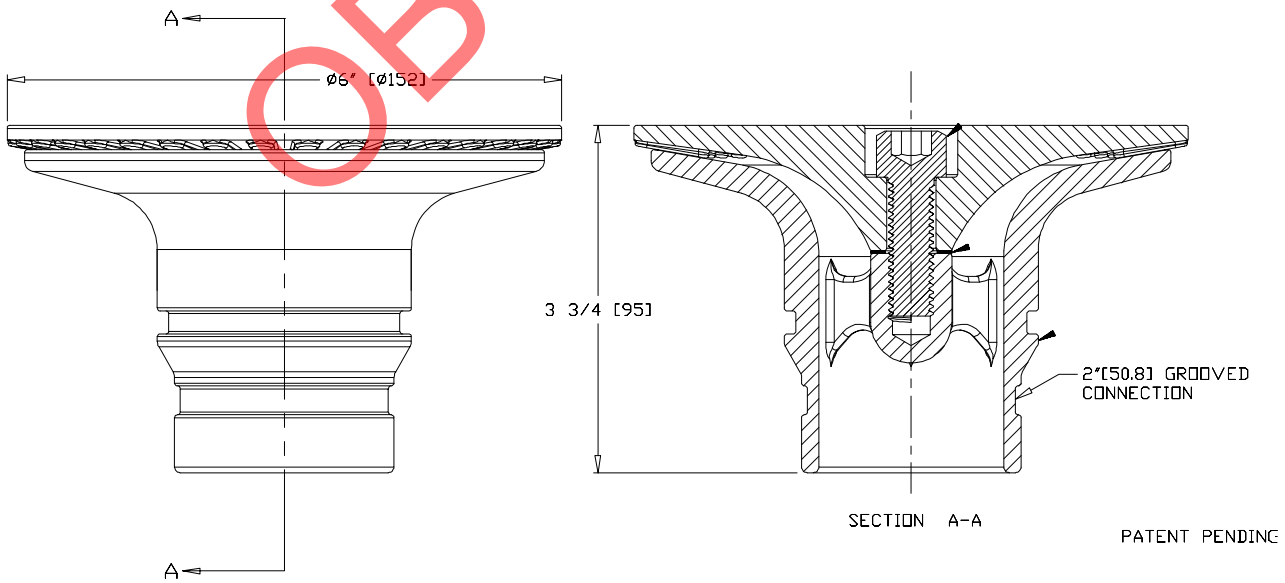
VIKING® **TECHNICAL DATA** GRATE NOZZLE®



CROSS SECTION TRENCH NOZZLE, GRATE AND SUGGESTED PIPING LAYOUT

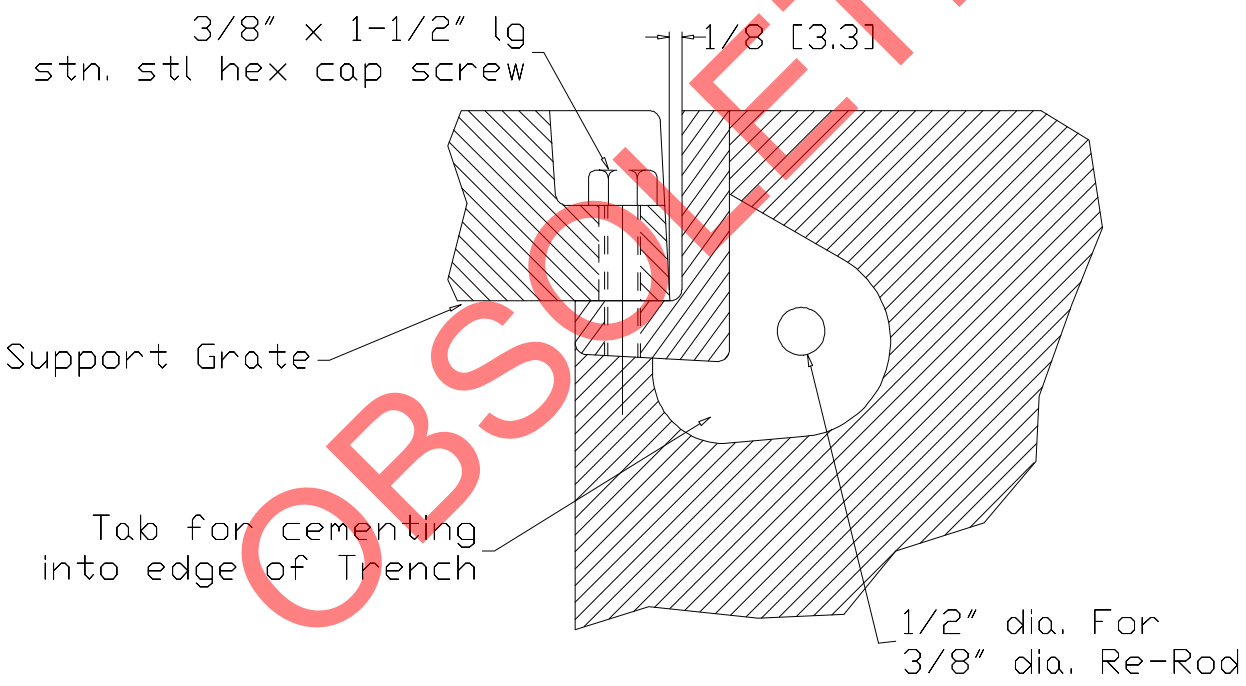
The Viking Corp.
Model GN200 Nozzle

Figure 4



Model GN 200 Grate Nozzle

Figure 5



Cross Section of "X" Frame and Support Grate Installation

Figure 6

THIS PAGE INTENTIONALLY LEFT BLANK