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 FACIL:50-220 NINE MILE POINT NUCLEAR STATIONS, NIAGARA MOHAWK POWE 05000220
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 RECIP.NAME RECIPIENT AFFILIATION
 IPPOLITO,T.A. OPERATING REACTORS BRANCH 3

SUBJECT: DESCRIBES PLANNED MODS TO TORUS WHICH ARE DESIGNED TO
 MITIGATE LOADS DEFINED BY MARK I CONTAINMENT PROGRAM.

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MAR 13 1979

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March 2, 1979

Director of Nuclear Reactor Regulation
Attn: Mr. Thomas A. Ippolito, Chief
Operating Reactors/Branch #3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Gentlemen:

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

As a direct result of the Mark I Containment Program, Niagara Mohawk plans to make certain modifications to the torus at Nine Mile Point Unit 1. Although final plant unique analysis has not been completed and approved by the Nuclear Regulatory Commission, we have determined that certain conservative modifications can be made at this time. These modifications are designed to result in mitigating effects which bound the expected requirements of the final plant unique analysis.

The modifications planned at this time have been evaluated in accordance with 10CFR50.59. These modifications do not increase the probability or consequences of an accident nor do they create an accident or malfunction not previously analyzed. Their effect is to mitigate loads defined in the Mark I Containment Program. The Site Operations Review Committee and Safety Review and Audit Board concur with this analysis.

For your information, final descriptive information relating to the planned modifications is attached.

The modifications are planned to be completed during the Spring 1979 refueling outage. However, portions of these modifications may be rescheduled to a later date if installation time is significantly longer than currently predicted.

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...Continued

Mr. Thomas Ippolito
U. S. Nuclear Regulatory Commission

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Additional modifications may be required by the final approved plant unique analysis. Such modifications will be evaluated and implemented as soon as practical.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

Donald P. Dise

Donald P. Dise
Vice President-Engineering

MGM/szd

Attachment

NINE MILE POINT UNIT 1

TORUS AND ASSOCIATED
MODIFICATIONS

SPRING 1979
REFUELING OUTAGE

I. ABSTRACT

In April 1975, the Mark I Containment Owner's Group was formed to respond to Nuclear Regulatory Commission (NRC) concerns. These are related to relief valve blowdown and loss of coolant accident events. A two phase program was embarked upon at that time. The first phase which was completed in late 1976 demonstrated that a safety factor of at least two existed for the torus and its associated support structure.¹

Subsequent to this, the Mark I Containment Program was embarked upon which consists of testing and analysis of both structural and hydrodynamic phenomena. The objective is to demonstrate that Mark I Containments have acceptable structural margins throughout their design life when compared to criteria acceptable to the NRC.

Key elements of the program are:

1. Load Definition Report - Documentation of the design basis hydrodynamic pressure suppression loads and their possible combinations.
2. Structural Acceptance Criteria - Identification of the acceptance criteria against which the structural evaluation results will be assessed. They will consider current requirements and increased knowledge gained since original design, including specific test support as required.
3. Plant Unique Analysis - Specific structural evaluation of each plant by using the loads defined in the Load Definition Report in conjunction with the established Acceptance Criteria.

The Plant Unique Analyses Report will be submitted to NRC for review and approval. The approval of plant-unique analysis report with any required structural modifications and/or load mitigation devices completes the Program.

II. DESCRIPTION OF MODIFICATIONS

Table 1 lists the modifications currently planned for the Spring 1979 refueling outage.

¹ Plant Unique Analysis Report for Torus Support System and Attached Piping for Nine Mile Point Nuclear Power Station, July 26, 1976.

Table 1

TORUS MODIFICATIONS FOR SPRING 1979
REFUELING OUTAGE

1. Y-Quenchers, supports, relief valve line penetraton reinforcing
2. Vent header deflectors and supports
3. Downcomer tie straps
4. Vacuum Breakers, Adscs Bellows joints on relief valves
5. Miscellaneous (drain line-valve, enlargement of ring girder holes, monorail)

11. DESCRIPTION (Cont'd.)

1. Y-Quenchers will be installed to replace the present ramsheads. These will reduce the loads associated with relief valve discharge. As a result of the downward thrust associated with the relief valve blowdown, additional reinforcing will be made at the sphere penetration where the relief valve line enters the torus. Once installation of the quenchers has been completed, a test will be performed prior to startup to quantify its effectiveness. Figures 1 and 2 show these modifications.
2. A vent header deflector and supports will be installed as shown in Figures 2 through 5. These devices reduce pool swell loads on the ring header.
3. Downcomer Tie Straps - The downcomer tie straps will be removed and replaced as shown on Figure 6. The new tie straps will provide more load carrying capability. The removal of the old straps will facilitate installation of the vent header deflectors.
4. Two four inch vacuum breakers will be installed on each relief valve discharge line to decrease the water rise in the line after relief valve actuation. The water rise (water leg) will be minimized to limit the pressure if a "second pop" (relief valve actuation) occurred. With two four inch check valves (vacuum breakers) the water leg is limited so that the pressure due to a "second pop" is less than 300 psig. The existing bellows will be reinforced to 300 psig.
5. In addition, three miscellaneous modifications are to be installed. Two of them (enlargement of ring girder holes and drain line valves) will reduce the time required to drain the torus. The other (monorail) will facilitate installation of the modifications described in items 1 through 4 above.

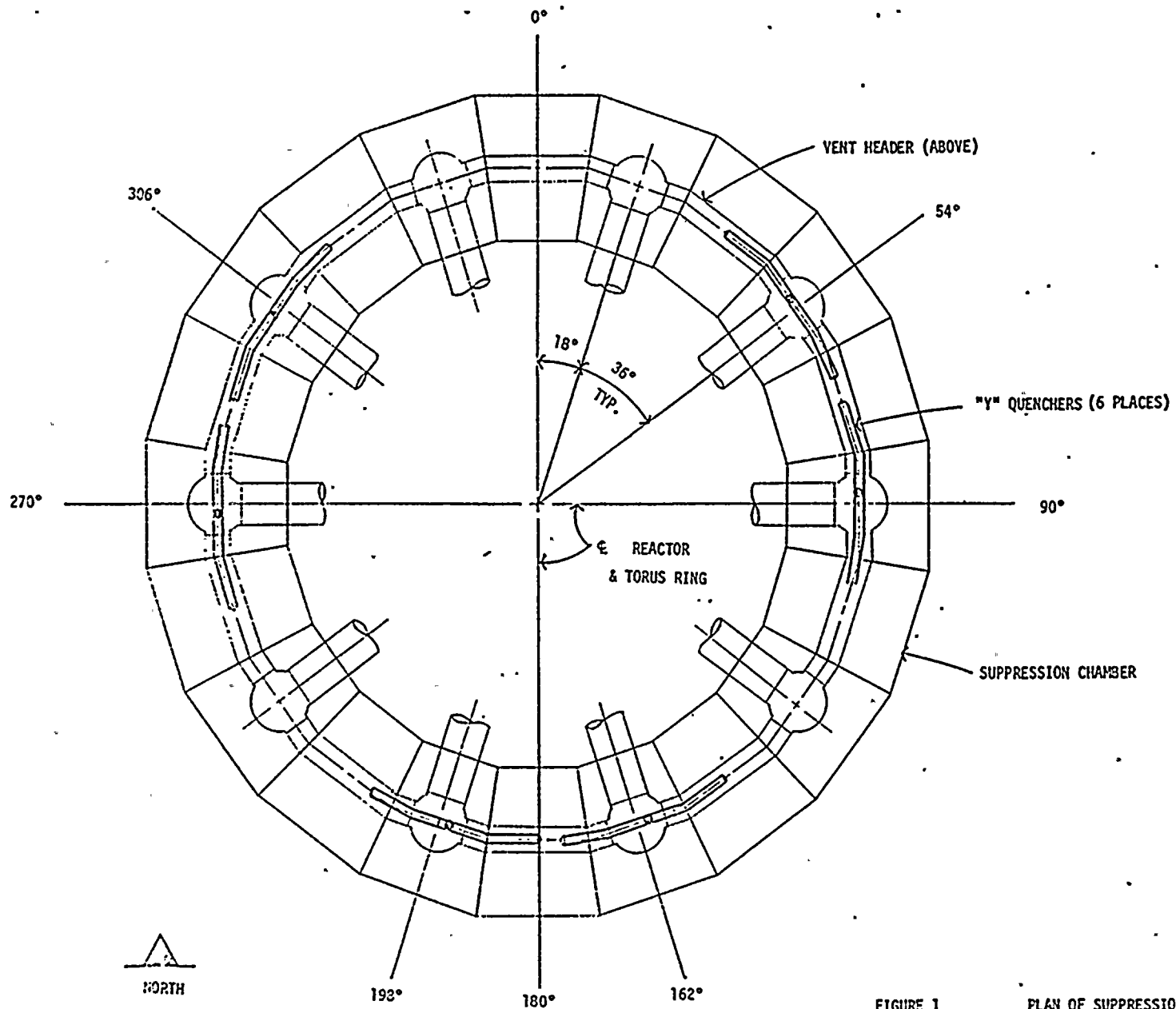


FIGURE 1

PLAN OF SUPPRESSION CHAMBER SHOWING
LOCATIONS OF "Y" QUENCHERS

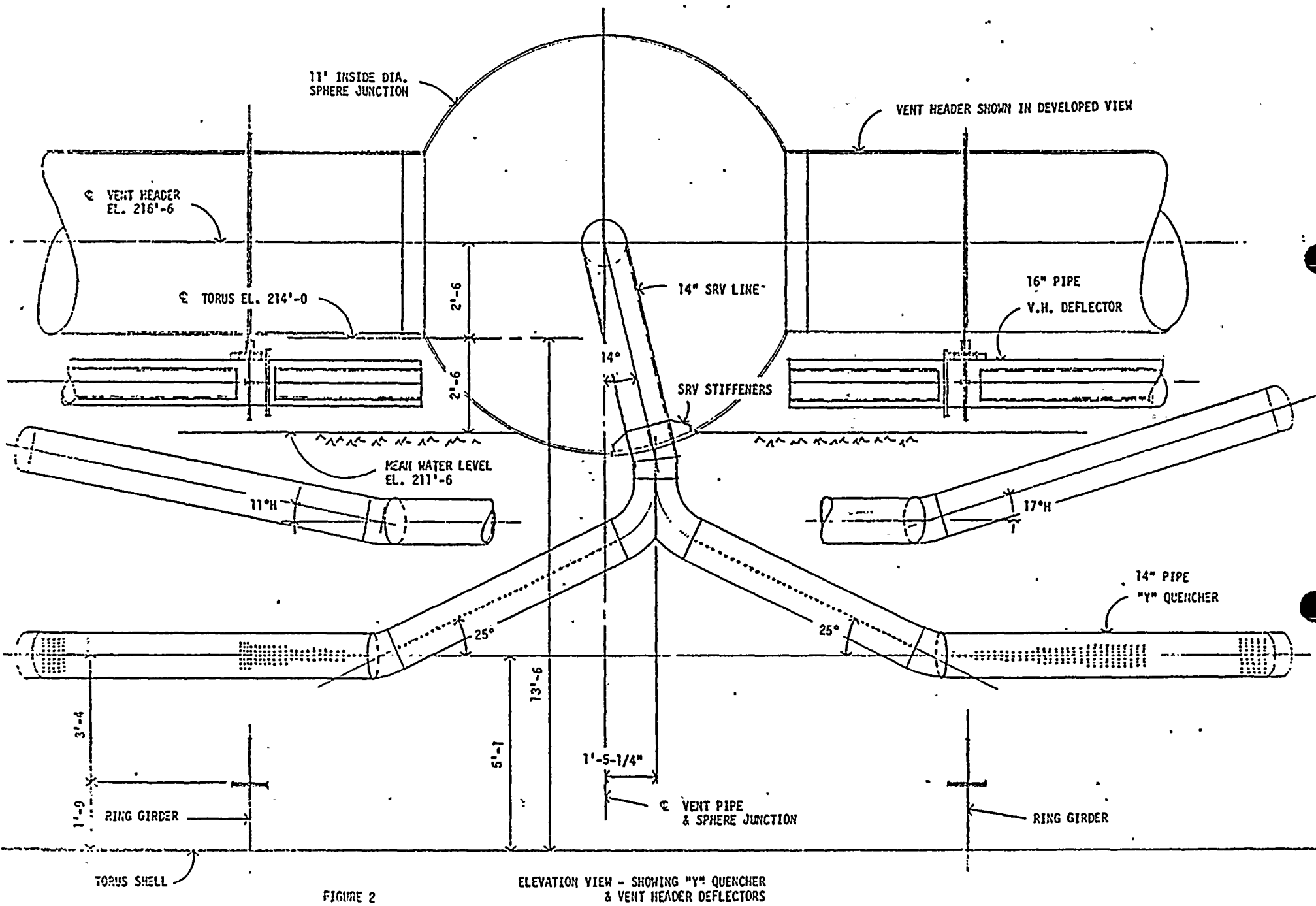


FIGURE 2

ELEVATION VIEW - SHOWING "Y" QUENCHER & VENT HEADER DEFLECTORS

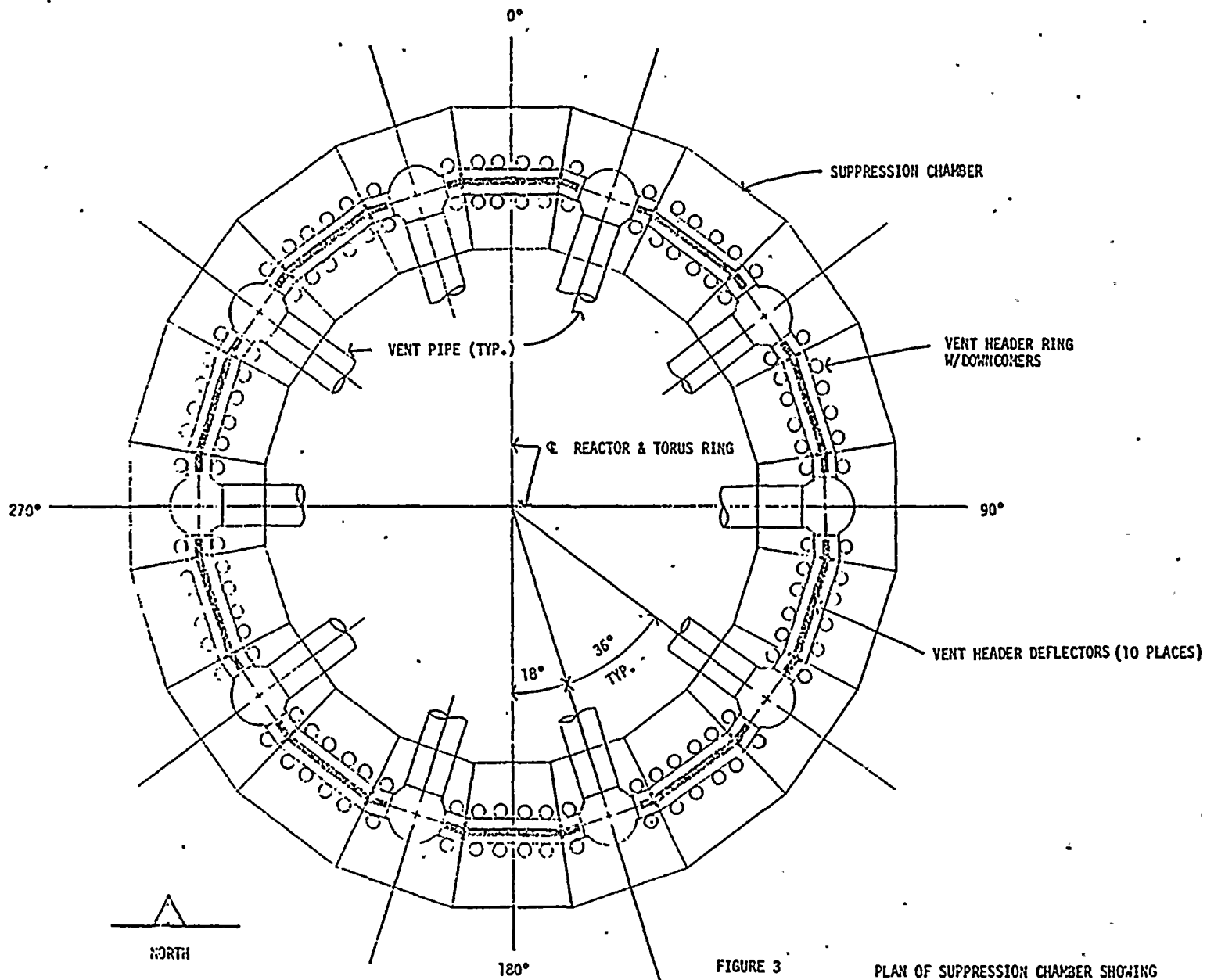
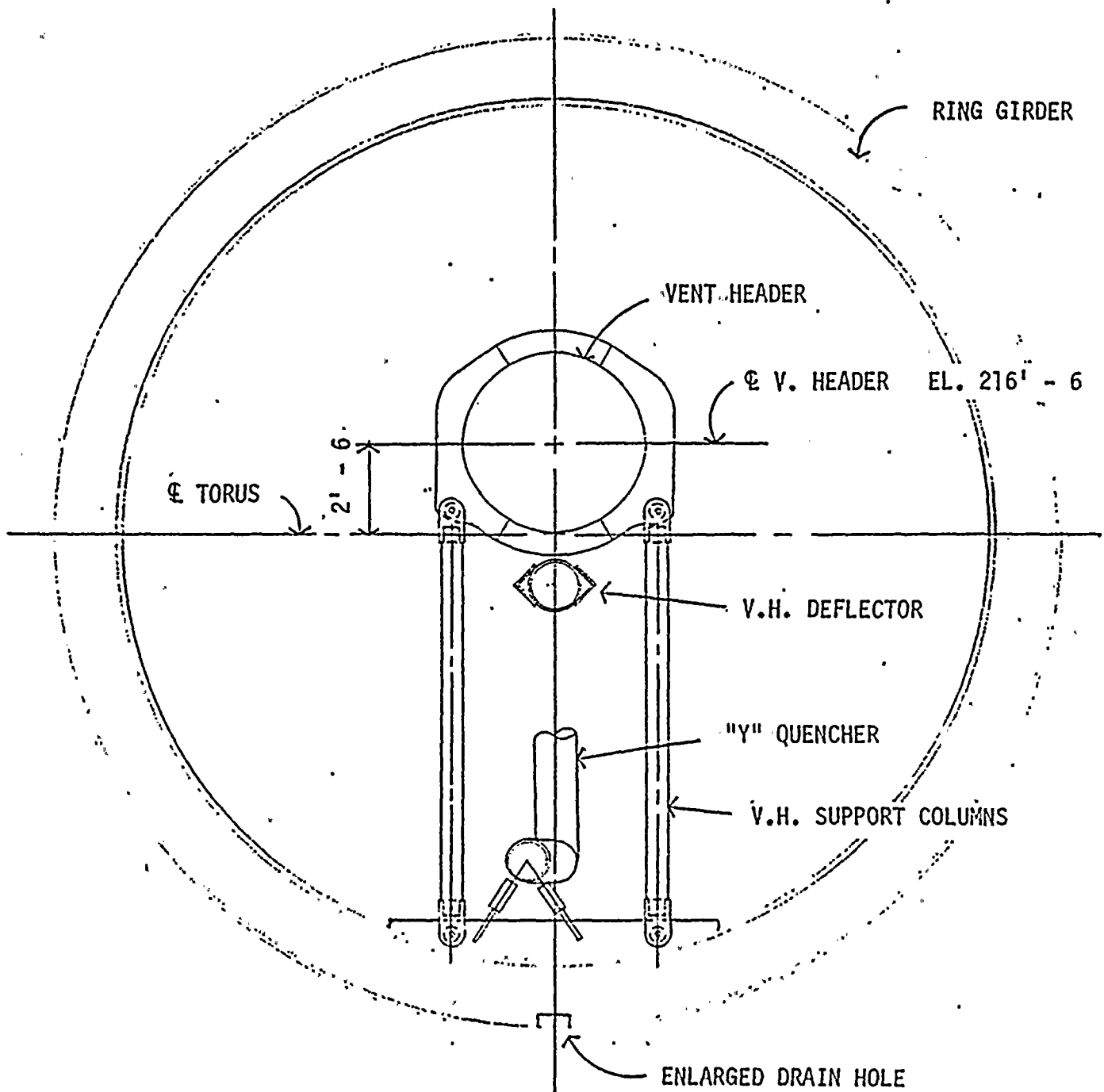


FIGURE 3

PLAN OF SUPPRESSION CHAMBER SHOWING
LOCATIONS OF VENT HEADER DEFLECTORS



CROSS-SECTION OF TORUS
 SHOWING V.H. DEFLECTORS & "Y" QUENCHER

FIGURE 4

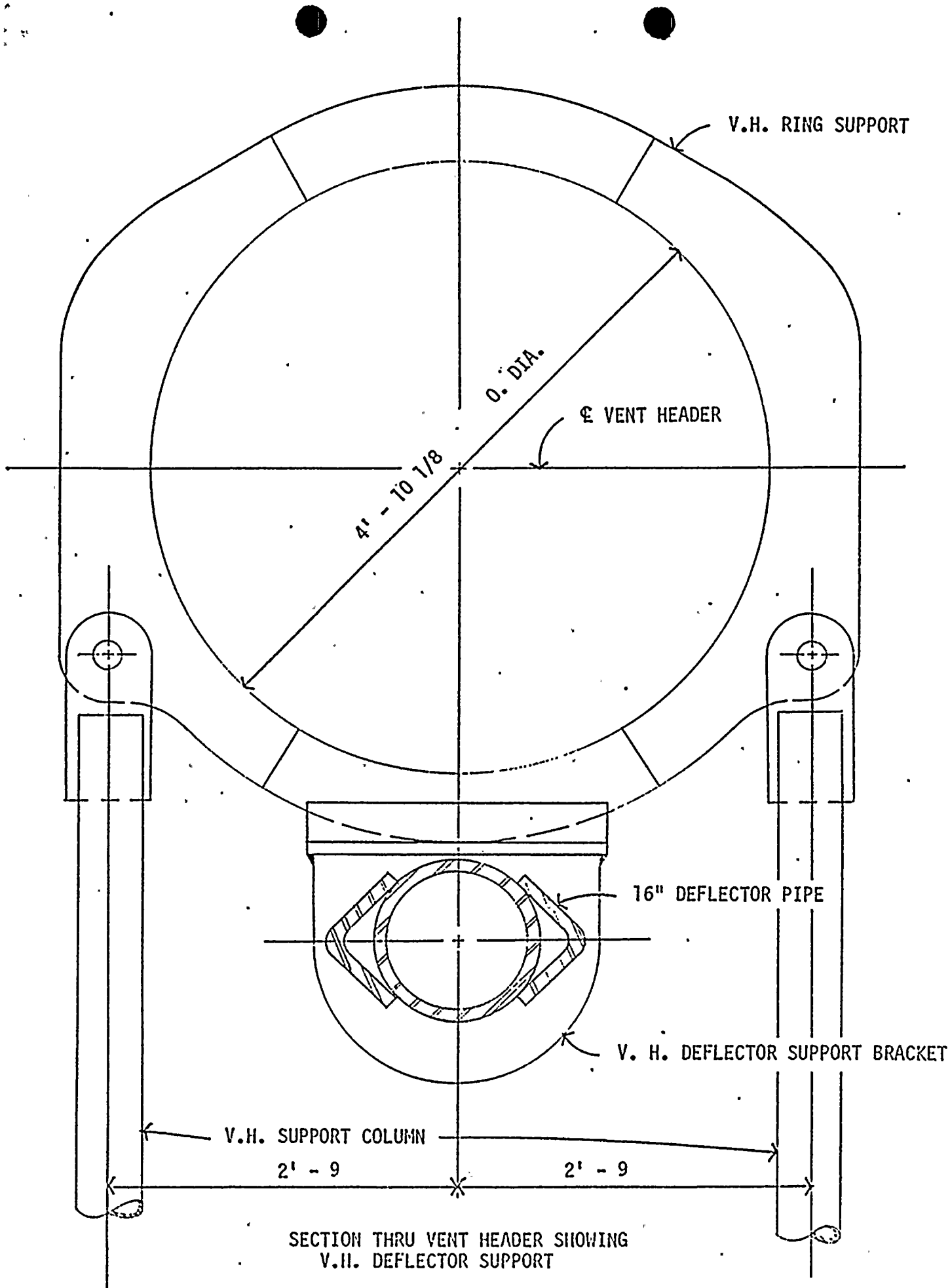
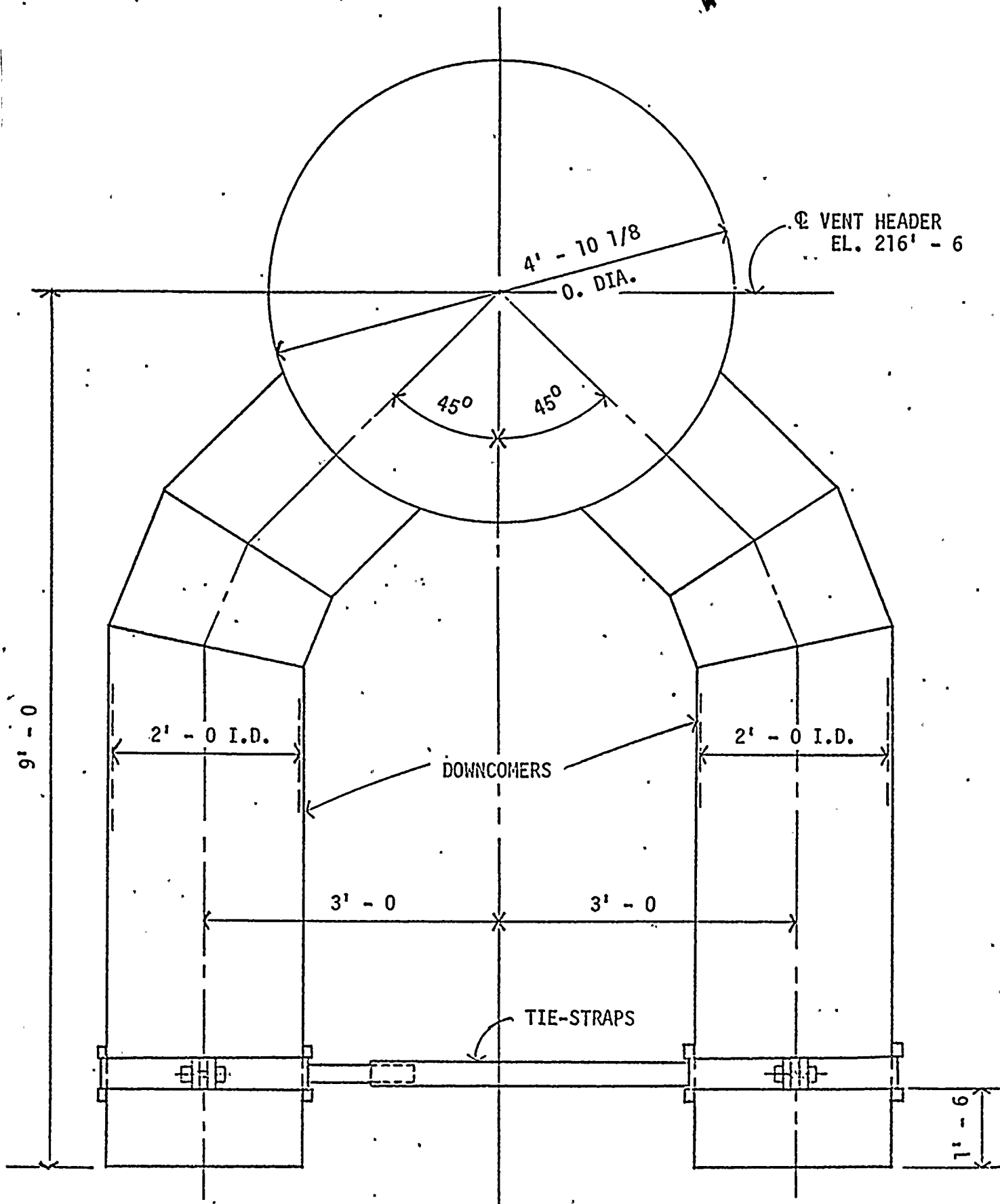


FIGURE 5



SECTION THRU VENT HEADER
SHOWING DOWNCOMER TIE-STRAPS



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