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SUBJECT: Forwards one relief request for Turkey Point Unit 4 class 1
 & class 2 pressure retaining similiar & dissimilar metal
 welds in vessels & piping.

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APR 06 1995

L-95-100
10 CFR 50.55a
10 CFR 50.4

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Re: Turkey Point Unit 4
Docket No. 50-251
Impractical Inservice Inspection
Requirements - Second Ten Year
Interval Program Summary Report

By letter L-84-87, dated March 30, 1984, Florida Power and Light Co. (FPL) submitted a summary of the Inservice Inspection Program for the second ten year interval at Turkey Point Units 3 and 4. The second ten year interval for Turkey Point Unit 4 extended from April 15, 1984, to April 14, 1994. The second ten year interval was conducted in accordance with the 1980 Edition, through Winter 1981 Addenda, of the American Society of Mechanical Engineers (ASME) Code, Section XI.

Pursuant to 10 CFR 50.55a(g) (5) (iii), FPL has determined that conformance with certain code requirements was impractical for Turkey Point Unit 4. Attached please find one relief request for the Turkey Point Unit 4 Class 1 and Class 2 pressure retaining similar and dissimilar metal welds in vessels and piping. In addition, FPL is providing clarification in reference to the selection criteria used during the second ten year interval for Class 1 high stress welds.

Please contact us if there are any questions about this submittal.

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Plant

OIH

Attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey
Point Plant

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ATTACHMENT
RELIEF REQUEST

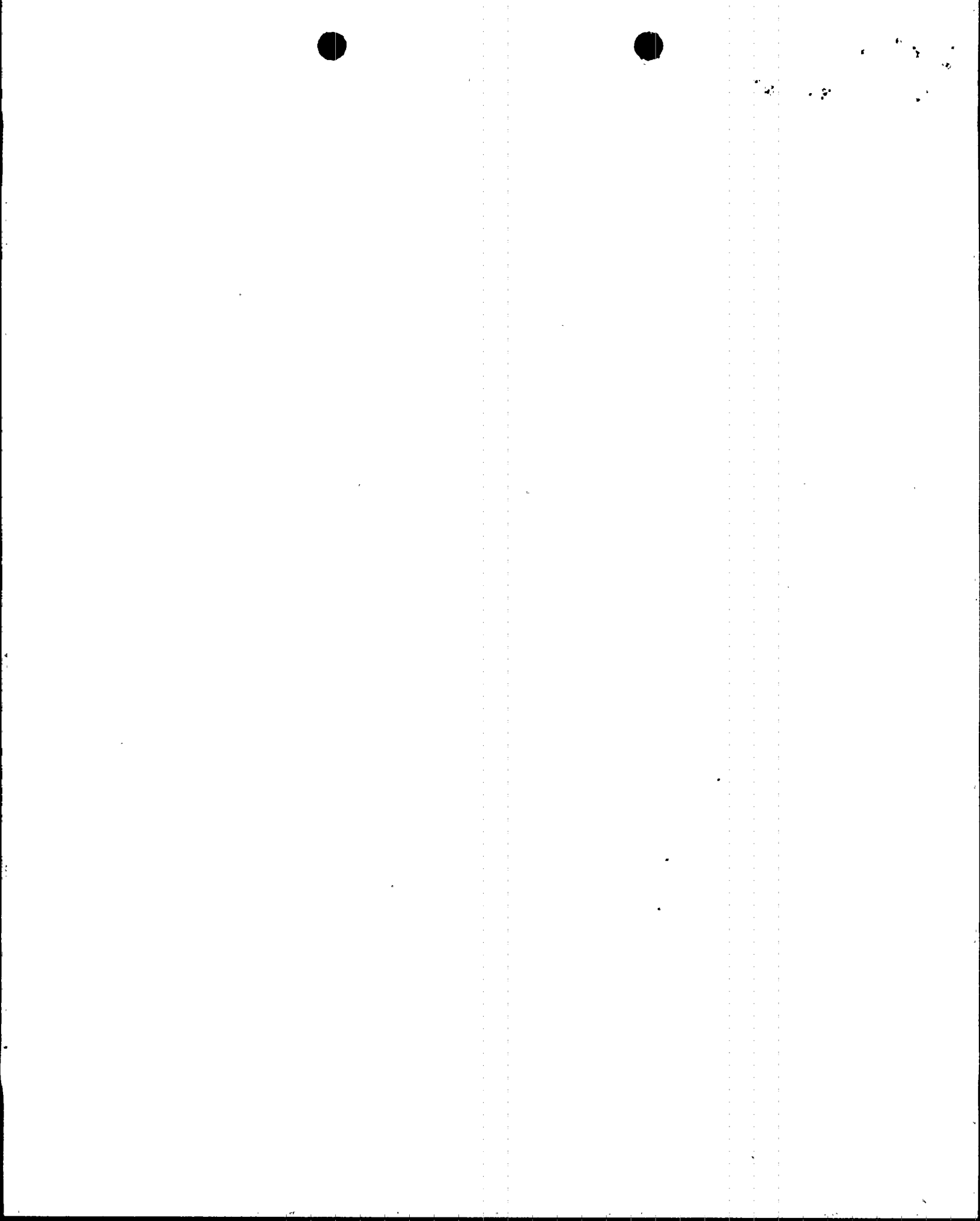
A. Component Identification:

Class 1 and Class 2 pressure retaining similar and dissimilar metal welds in vessels and piping

B. Examination Requirements:

Rules for Inservice Inspection of Nuclear Power Plant Components, Section XI, 1980 Edition with Addenda through Winter 1981

Category	Item No.	Examination Requirements
B-B	B2.11	Fig. IWB-2500-1, weld and 1/2t of base metal to each side of the weld
B-D	B3.120	Fig. IWB-2500-7(a through d), area defined by M-N-O-P
	B3.140	Fig. IWB-2500-7(a through d), area defined by M-N-O-P
B-F	B5.10	Fig. IWB-2500-8(b), weld and 1/2" to each side of the weld
	B5.40	Fig. IWB-2500-8(b), weld and 1/2" to each side of the weld
	B5.70	Fig. IWB-2500-8(b), weld and 1/2" to each side of the weld
B-J	B9.11	Fig. IWB-2500-8(b), weld and 1/2" to each side of the weld
	B9.21	Fig. IWB-2500-8(b), weld and 1/2" to each side of the weld
C-A	C1.10	Fig. IWC-2500-1, weld and 1/2" of base metal
C-C	C3.20	Fig. IWC-2500-5, weld and 1/2" of surface base metal



Category	Item No.	Examination Requirements
C-F	C5.21	Fig. IWC-2500-7(b), surface of weld and 1/2" of surface base metal (area A-B), 1/3t from the inside surface out to 1/4" from a line drawn from the toe of the outside surface weld crown (area C-D-E-F)

ASME Code Case N-460 - Alternative Examination Coverage for Class 1 and Class 2 Welds

C. Relief Requested:

Relief is requested from the required code examination area during volumetric and surface examinations.

D. Basis for Relief:

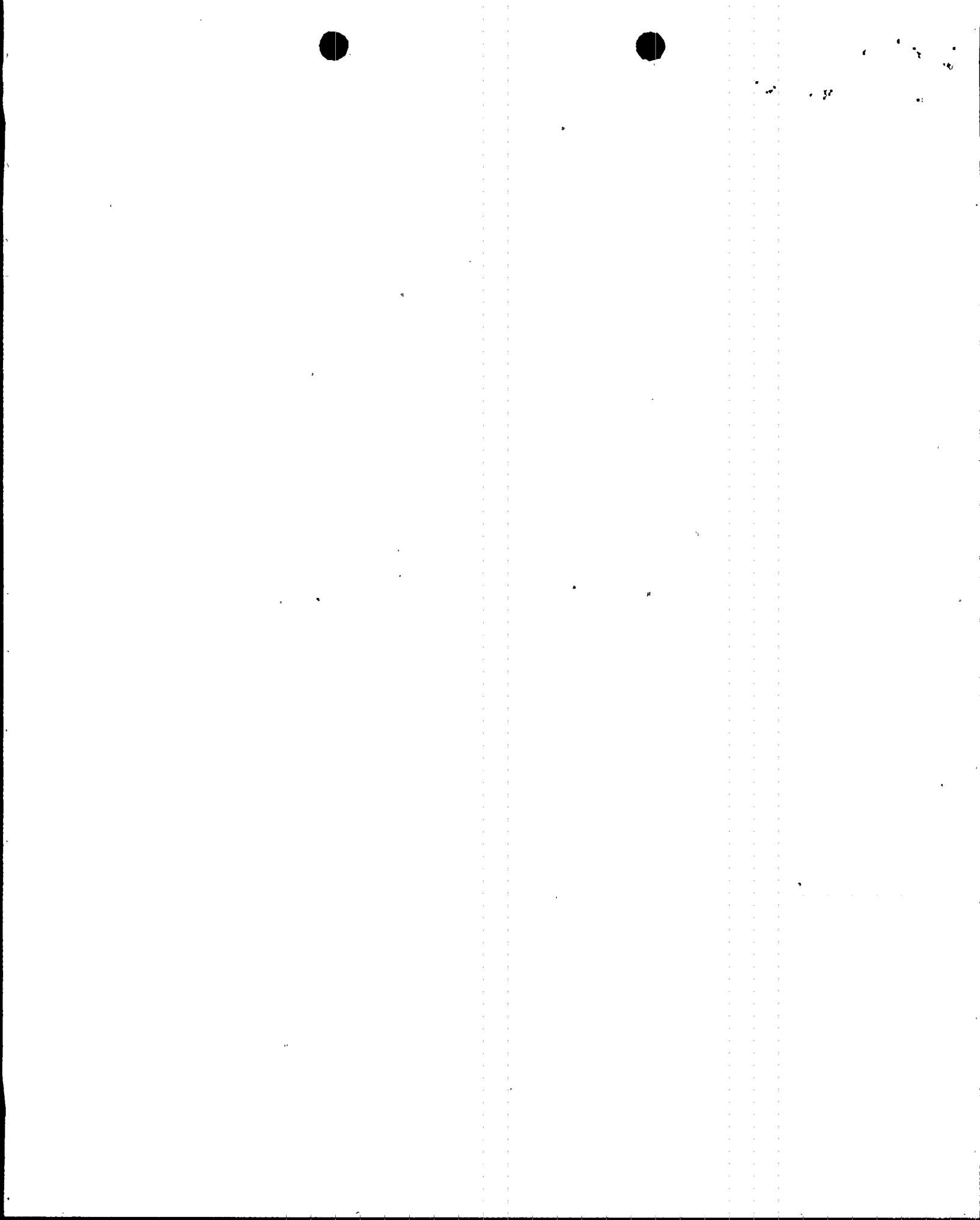
Several welds examined during the second ISI interval did not receive the required volumetric and/or surface examinations due to one or more factors:

1. Portions of the required volumetric and surface area are inaccessible due to permanent physical obstructions.
2. Some welds could be examined from only one side due to the configuration of the component, high attenuation of the ultrasonic sound, or other technical reason.

FPL performed the examinations to the extent possible. The surface and volumetric examinations along with the required system pressure tests provide assurance of an acceptable level of quality and safety. The attached table summarizes the percent of coverage achieved and references specific figures that show the extent of the limitations.

E. Alternative Examinations or Tests:

1. Volumetric and surface examinations were performed to the extent possible.
2. System pressure tests as required by the Turkey Point Inservice Pressure Test Program were performed.



3. As part of the development of the system engineer program during the second interval, monthly walkdowns were initiated on Class 2 systems to check for leakage or other problems. During outages, system engineers walk down Class 1 and Class 2 systems inside containment.
4. During the third interval, FPL will consider substituting other welds in order to further reduce the number of components with limitations. Substitutions will generally be in the immediate vicinity and of the same configuration, to the extent practical.

The examination volume achieved by surface and/or ultrasonic examination, combined with the system pressure tests and system engineer walkdowns, provide an acceptable level of quality and safety. If permanent obstructions are removed for other reasons, FPL will examine those areas that become accessible to the extent practical.

F. Implementation Schedule:

These examinations were performed during the second inservice inspection interval, from April 15, 1984 through April 14, 1994.

The same areas are scheduled to be examined during the third inservice inspection interval, from April 15, 1994 through April 14, 2004. Examinations performed will encounter the same limitations. FPL will continue to evaluate other NDE techniques and apply those where significant improvements in coverage can be obtained, or will consider substituting other welds in order to reduce the number of limited examinations.

G. Attachments

Table showing areas where limited examinations were performed and the extent of coverage.

Sketches of areas with limited examinations (sketches are for illustrative purposes and are not to scale.)



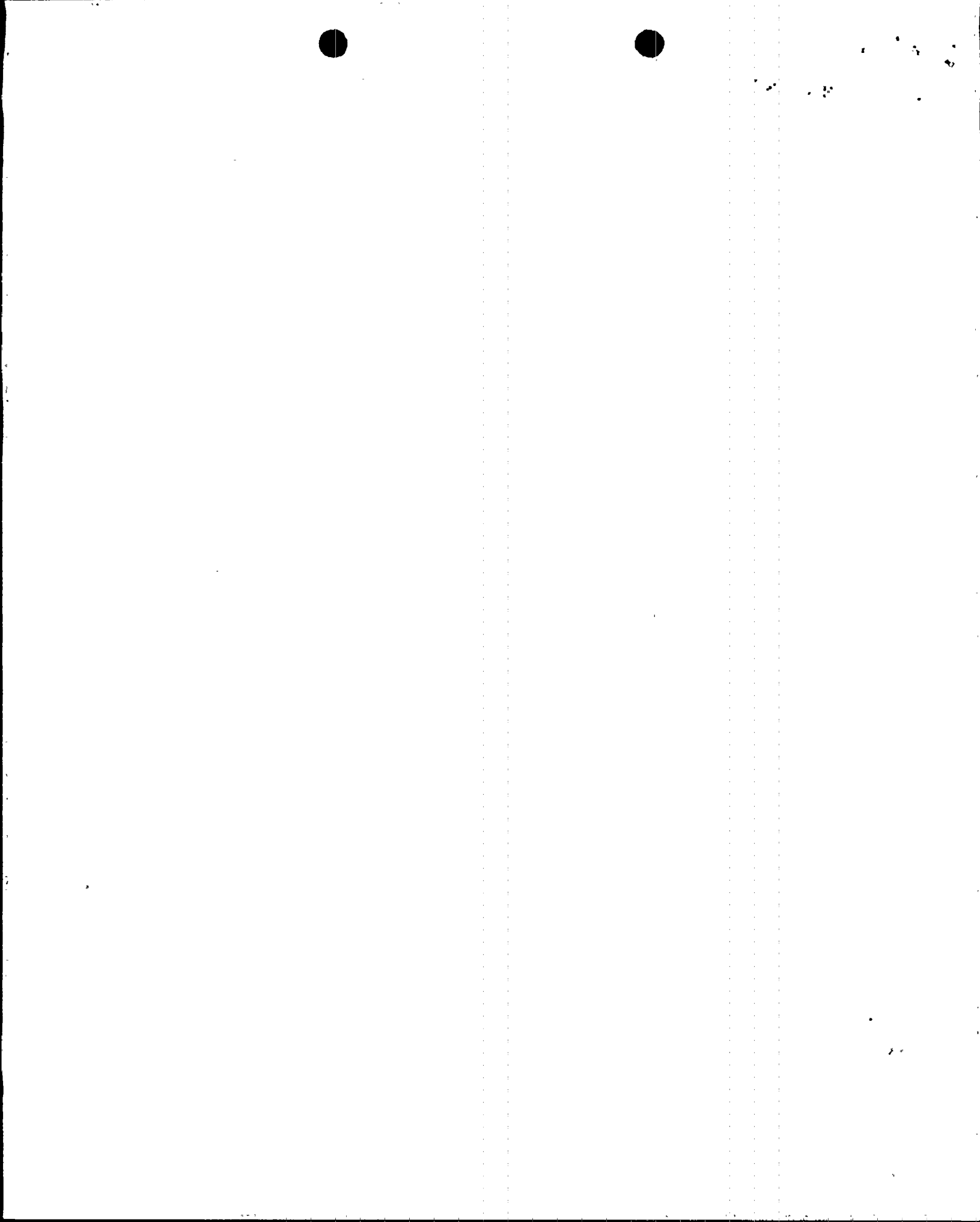
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

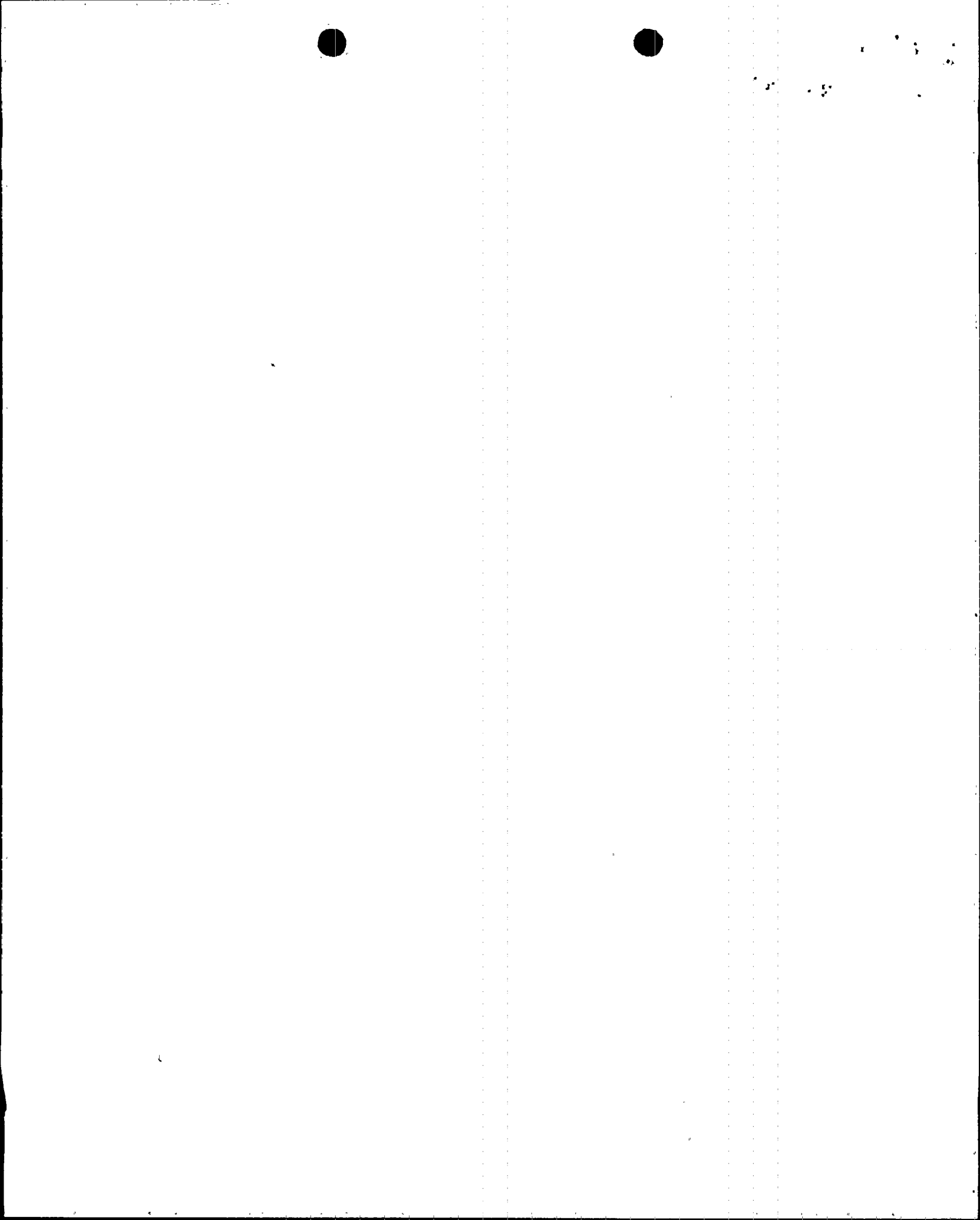
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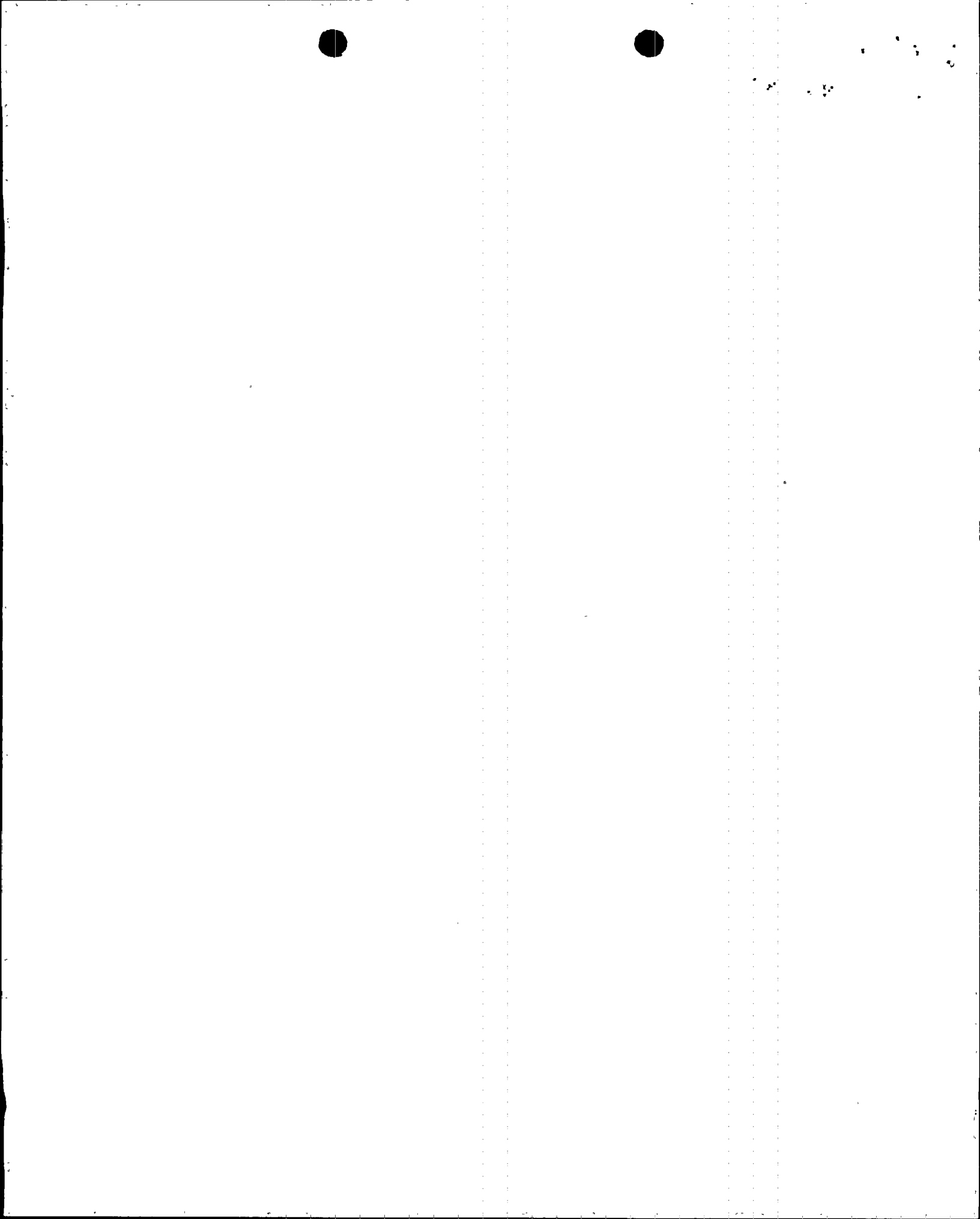
Catgy/ Item No.	Year of Exam	Zone	Item	NDE Technique	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	11/2 V			
B-D B3.140	86	4-003	4-SGA-I-IRS	UT	45	-	-	Steam generator inner radius section, vessel support, insulation tabs, outside configuration	6	70% coverage achieved in 2 directions
B-D B3.140	86	4-003	4-SGA-O-IRS	UT	45	-	-	Steam generator inner radius section, vessel support, insulation tabs, outside configuration	6	70% coverage achieved in 2 directions
B-F B5.70	86	4-007	31"-RCS-1401-5	UT	45 60	- -	- -	Steam generator nozzle to elbow	11	0% from nozzle side, 75% from elbow side
B-J B9.11	86	4-015	27.5"-RCS-1409-11	UT	45	-	-	Reactor coolant pump casing to pipe	11	100% from pipe side, 0% from pump side
B-F B5.30	86	4-020	4"-RC-1404-31	UT	-	-	45	Safe-end to nozzle	13	50% from nozzle side, 50% from safe-end side
C-F C5.21	86	4-105	6"-BDA-2401-6	UT	- -	- -	45 60	Reducer to valve SGB-4-002	14	85% from reducer side, 70% from valve side
B-D B3.120	88	4-006	SP-04-I-IR	UT	60	-	-	Pressurizer inner radius, raised letters, nozzle configuration, spray inner radius	10	70% coverage achieved from 2 directions, 15% coverage 1 direction, 15% not covered
B-D B3.120	88	4-006	RV-4-551-A-IR	UT	30 60	- -	- -	Pressurizer inner radius section, insulation on bottom	10	85% coverage achieved in 2 directions
B-D B3.120	88	4-006	RV-4-551-C-IR	UT	30 60	- -	- -	Pressurizer inner radius section, insulation on bottom	10	85% coverage achieved in 2 directions



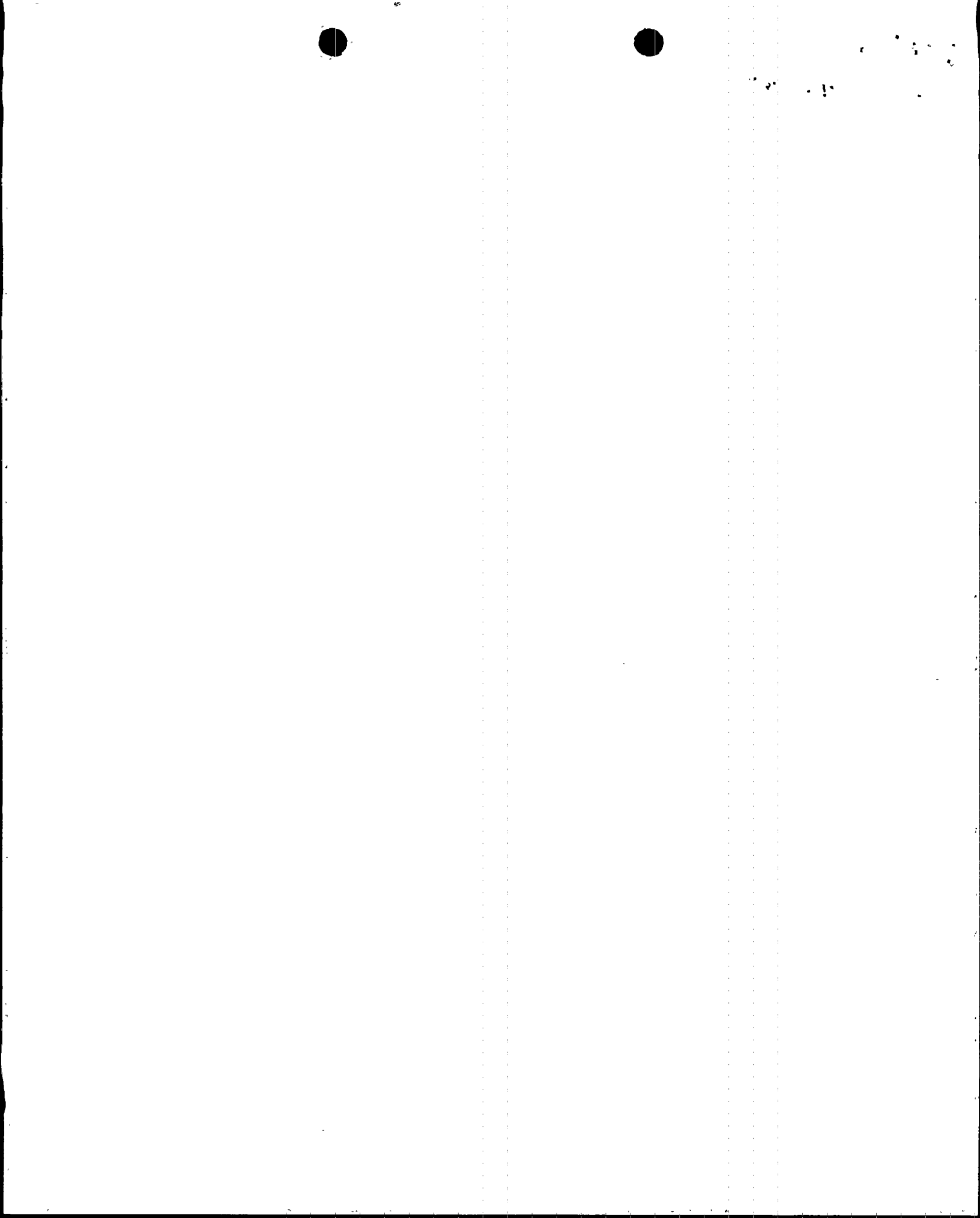
Catgy/ Item No.	Year of Exam	Zone	Item	NDE Technique	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	11/2 V			
B-D B3.120	88	4-006	4-SRGN-01-IR	UT	30 60	- -	- -	Pressurizer inner radius section, heater penetrations	9	55% coverage in 2 directions
B-F B5.70	88	4-008	29"-RCS-1404-4	UT	45	-	-	Elbow to steam generator nozzle	11	100% from elbow side, 0% from nozzle side
B-F B5.70	88	4-010	31"-RCS-1402-5	UT	45	-	-	Steam generator nozzle to elbow	11	75% from elbow side, 0% from nozzle side
B-F B5.70	88	4-011	29"-RCS-1405-4	UT	45	-	-	Elbow to steam generator nozzle	11	100% from elbow side, 0% from nozzle side
B-J B9.11	88	4-016	12"-RC-1401-4	PT	-	-	-	Pipe to pipe, support on bottom of pipe	2	88% surface coverage achieved
B-J B9.11	88	4-017	4"-RC-1401-9	UT	- 60	- -	45 -	Pipe to flange	19	100% from pipe side, 50% from flange side
B-J B9.11	88	4-036	14"-RHR-1401-5	UT	45 60	- -	- -	Pipe to valve MOV- 4-750	12	100% from pipe side, 0% from valve side
B-J B9.11	88	4-037	8"-RHR-1401-6	UT	- 60	- -	45 -	Valve 4-876E to elbow	18	100% from elbow side, 50% from valve side
B-J B9.11	88	4-038	8"-RHR-1402-7	UT	45 60	- -	- -	Tee to reducing tee	22	70% from tee side, 31% from reducing tee side
B-J B9.11	88	4-038	10"-SI-1402-1	UT	45 60	- -	- -	Valve 4-875E to elbow	12	100% from elbow side, 0% from valve side
B-J B9.11	88	4-039	10"-SI-1403-14	UT	45 60	- -	- -	Valve 4-875C to elbow	12	100% from elbow side, 0% from valve side



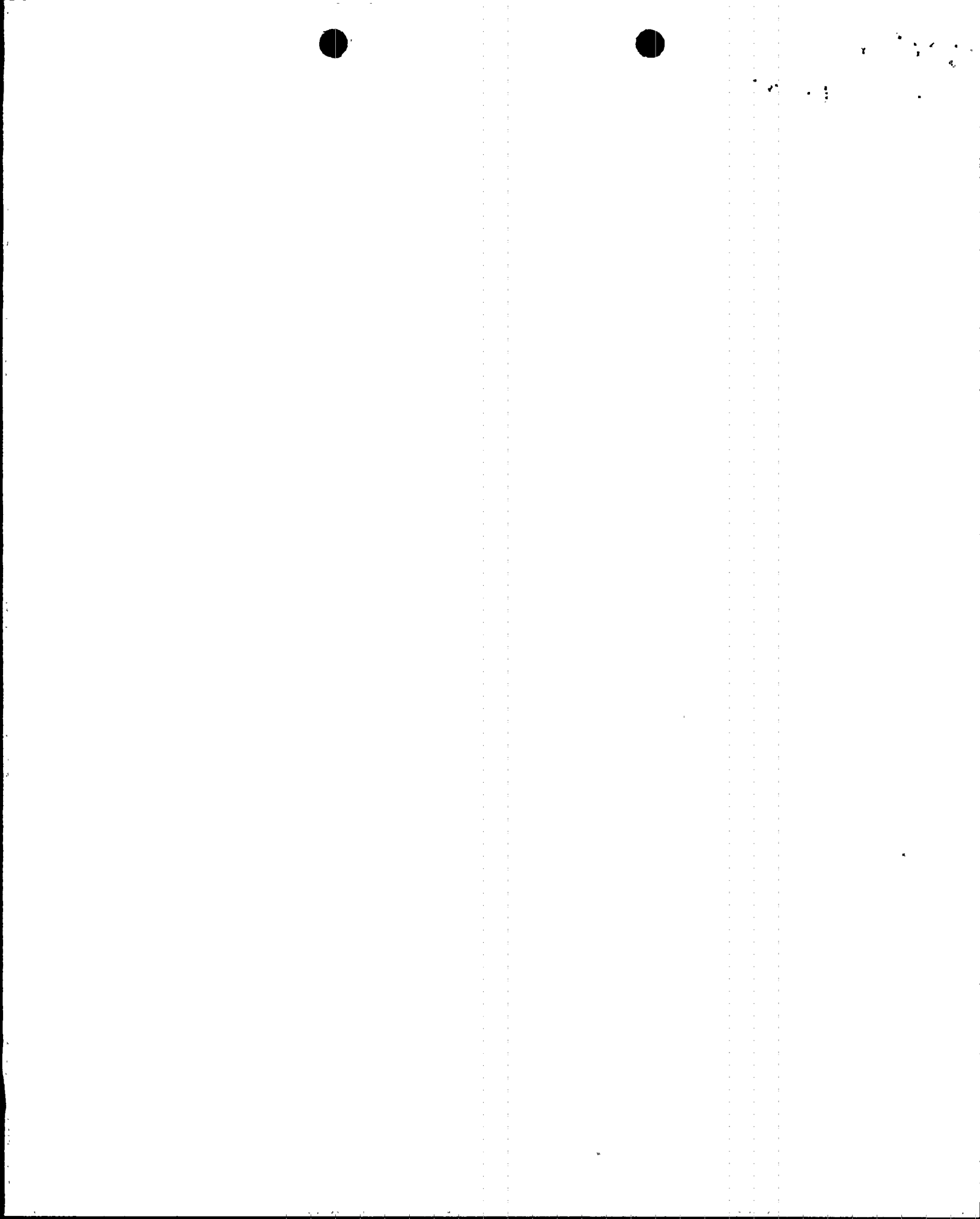
Catgy/ Item No.	Year of Exam	Zone	Item	NDE Technique	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	11/2 V			
B-D B3.140	88	4-061	4-SGB-I-IR	UT	45	-	-	Steam generator inner radius section, configuration, welded on pads, support	6	70% coverage in 2 directions
B-D B3.140	88	4-061	4-SGB-O-IR	UT	45	-	-	Steam generator inner radius section, configuration, welded on pads, support	6	70% coverage in 2 directions
C-F C5.21	88	4-067	14"-RHR-2406-10	PT	-	-	-	Elbow to pipe, 4 welded pads close to weld	1	68% surface coverage achieved
C-F C5.21	88	4-078	10"-SI-2401-1A	UT	45 60	- -	- -	Nozzle to pipe	12	100% from pipe side, 0% from nozzle side
C-F C5.21	88	4-078	10"-SI-2401-6	UT	45 60	- -	- -	Pipe to valve 4- 875D	12	100% from pipe side, 0% from valve side
C-F C5.21	88	4-080	10"-SI-2403-1A	UT	45 60	- -	- -	Nozzle to pipe	12	100% from pipe side, 0% from nozzle side
C-F C5.21	88	4-080	10"-SI-2403-4	UT	45 60	- -	- -	Elbow to valve 4-865C, branch connection	12	85% from elbow side, 0% from valve side
C-F C5.21	88	4-081	10"-SI-2407-4	UT	45 60	- -	- -	Pipe to valve 4- 885	12	100% from pipe side, 0% from valve side
C-F C5.21	88	4-081	10"-SI-2407-5	UT	45 60	- -	- -	Valve 4-885 to elbow	12	100% from elbow side, 0% from valve side
C-F C5.21	88	4-084	8"-SI-2402-18	UT	- 60	- -	45 -	Pipe to valve 4- 876C	18	100% from pipe side, 50% from valve side
C-F C5.21	88	4-089	8"-SI-2407-8	UT	- 60	- -	45 -	Tee to pipe, tee radius	17	100% from pipe side, 50% from tee side



Catgy/ Item No.	Year of Exam	Zone	Item	NDE Technique	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	11/2 V			
C-F C5.21	88	4-089	8"-SI-2407-22	UT	- 60	- -	45 -	Pipe to valve 4- 876E	18	100% from pipe side, 50% from valve side
C-F C5.21	88	4-102	12"-MSA-2401-2	MT	-	-	-	Tee to 8" flange, flange nut limitation	3	85% surface coverage achieved
C-F C5.21	88	4-103	12"-MSB-2403-4	MT	-	-	-	Tee to 8" flange, flange nuts, restraint	3	78% surface coverage achieved
C-F C5.21	88	4-106	6"-BDB-2402-1	UT	- 60	- -	45 -	Reducer to valve SGB-4-003	16	76% from reducer side, 69% from valve side
C-F C5.21	88	4-108	6"-BDA-2404-45	UT	- 60	- -	45 -	Valve SGB-4-007 to pipe	15	100% from pipe side, 50% from valve side
C-F C5.21	88	4-109	6"-BDB-2405-42B	UT	- 60	- -	45 -	Valve SGB-4-011 to pipe	15	100% from pipe side, 50% from valve side
B-D B3.140	91	4-005	4-SGC-I-IRS	UT	45	-	-	Steam generator inner radius section, vessel support, insulation tabs, outside configuration	6	70% coverage achieved in 2 directions
B-D B3.140	91	4-005	4-SGC-O-IRS	UT	45	-	-	Steam generator inner radius section, vessel support, insulation tabs, outside configuration	6	70% coverage achieved in 2 directions
B-J B9.11	91	4-010	31"-RCS-1402-10	UT	45	-	-	Elbow to reactor coolant pump casing	11	75% from elbow side, 0% from pump side
B-F B5.70	91	4-013	31"-RCS-1403-5	UT	45	-	-	Steam generator nozzle to elbow	11	75% from elbow side, 0% from nozzle side



Catgy/ Item No.	Year of Exam	Zone	Item	NDE Technique	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	11/2 V			
B-F B5.70	91	4-014	29"-RCS-1408-4	UT	45	-	-	Elbow to steam generator nozzle, I-beam at top	11	94% from elbow side, 0% from nozzle side
B-J B9.11	91	4-022	4"-RC-1406-8	UT	- 60	-	45 -	Tee to pipe, tee inner radius	20	79% from pipe side, 79% from tee side
B-J B9.11	91	4-036	14"-RHR-1401-6	UT	45 60	- -	- -	Valve MOV-4-750 to pipe	12	100% from pipe side, 0% from valve side
B-J B9.11	91	4-036	14"-RHR-1401-16	UT	45 60	- -	- -	Pipe to valve MOV- 4-751	12	100% from pipe side, 0% from valve side
B-J B9.11	91	4-037	10"-SI-1401-14	UT	45 60	- -	- -	Pipe to valve 4- 875A	12	100% from pipe side, 0% from valve side
B-J B9.11	91	4-038	10"-SI-1402-13	UT	45 60	- -	- -	Valve 4-875B to pipe	12	100% from elbow side, 0% from valve side
B-J B9.11	91	4-039	10"-SI-1403-1	UT	45 60	- -	- -	Valve 4-875F to tee, tee branch	21	75% from tee side, 0% from valve side
C-F C5.21	93	4-079	10"-SI-2402-1A	UT	45 60	- -	- -	Nozzle to pipe	8	72% from pipe side, 0% from nozzle side
C-F C5.21	93	4-085	8"-SI-2403-1	UT	45 60	- -	- -	Tee to pipe	7	58% from pipe side, 0% from tee side
C-F C5.21	93	4-085	8"-SI-2403-17	UT	45 60	- -	- -	Pipe to valve 4- 876B	7	58% from pipe side, 0% from valve side
C-F C5.21	93	4-090	8"-SI-2408-16	UT	45 60	- -	- -	Valve MOV-4-872 to elbow	4	40% from elbow side, 0% from valve side
C-A C1.10	93	4-117	4-RHE-A1	UT	45 60	- -	- -	Head to shell, supports, inlet & outlet nozzles	5	53% from head side, 46% from shell side



CLARIFICATION OF SELECTION OF CLASS 1 HIGH STRESS WELDS

The ASME Rules for Inservice Inspection of Nuclear Power Plant Components, Section XI, 1980 Edition with Addenda through Winter 1981, Inservice Inspection Program for the Second Ten-Year Interval, and the 1989 Edition for the third ten year interval, require examination of "high stress" welds in Class 1 piping as described in a footnote to Table IWB-2500-1, examination category B-J. This examination selection criteria requires stress intensities and cumulative usage factors from an ASME Section III Class 1 type analysis.

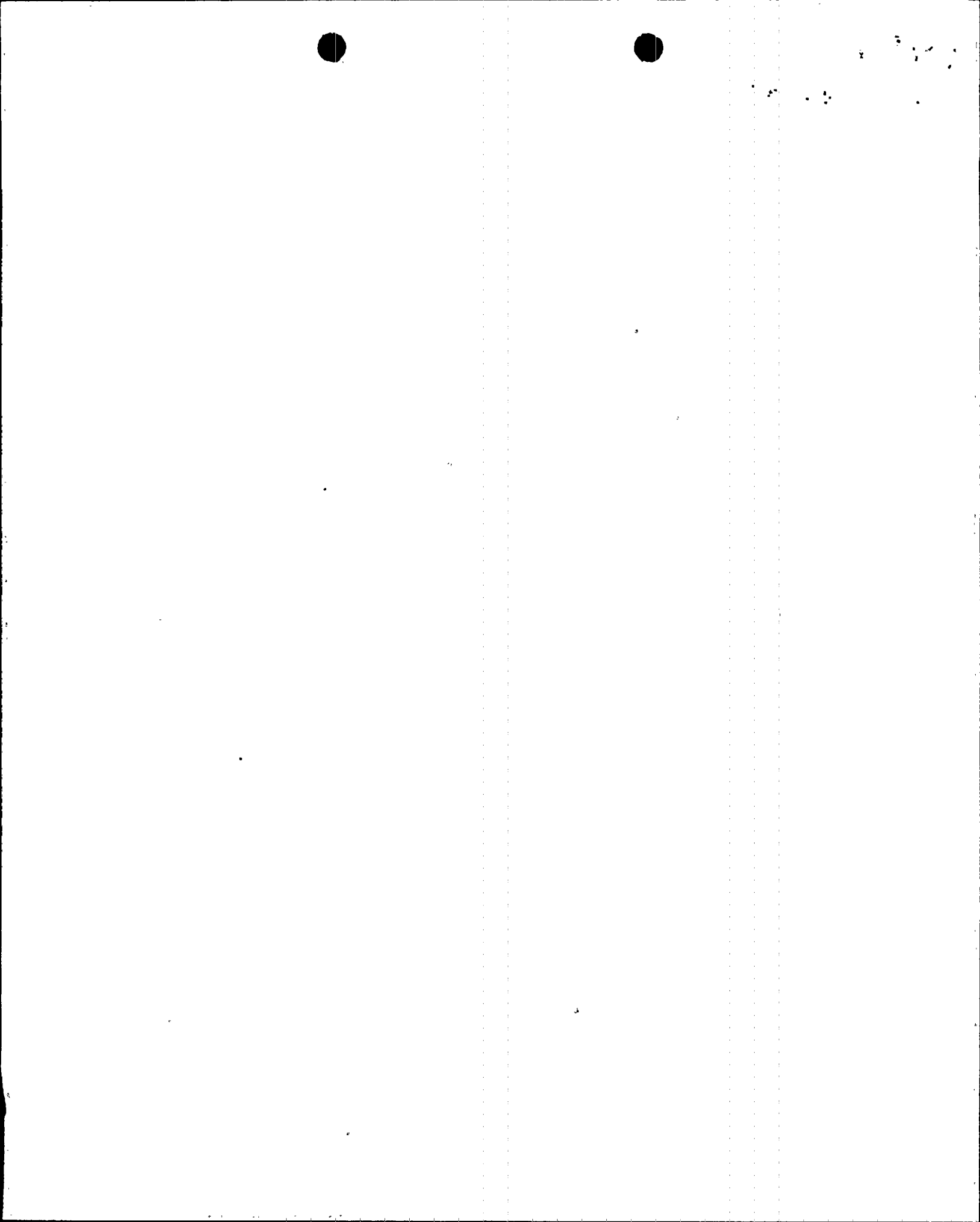
FPL's second ten year ISI Program submittal stated that an engineering evaluation had been initiated to determine which welds, if any, may be subject to examination due to the high stress criteria. If any welds are identified, they would be incorporated into the plan. The third ten year ISI Program submittal references the 1989 Edition of Section XI which still includes this selection criteria.

Category B-J Note (1)(b) - All terminal ends and joints in each pipe or branch run connected to other components where the stress levels exceed the following limits under loads associated with specific seismic events and operational conditions:

- (1) primary plus secondary stress intensity range of $2.4S_m$ for ferritic and austenitic steel;
- (2) cumulative usage factor U of 0.4

Because of the vintage of Turkey Point, ASME Section III Class 1 type analyses were not required nor performed for Class 1 systems. Turkey Point was designed and analyzed in accordance with the rules of the 1955 Edition of Power Piping ASA B31.1. The selection criteria specified in Table IWB-2500-1 for Category B-J cannot be used because the stress criteria specified in ASA B31.1 is not compatible with ASME Section III, Class 1 analyses.

In order to comply with the intent of ASME Section XI for identification of "high stress" welds, FPL used the criteria specified in ASME Section XI, 1980 addenda through Winter 1981, Table IWC-2500-1, Category C-F, note(1)(a). These criteria were used because it is based on ASME Section III Class 2 design rules which closely resemble ASA B31.1.



This note states:

Welds at locations where the stresses under the loadings resulting from Normal and Upset plant conditions as calculated by the sum of Equations (9) and (10) in NC-3652 exceed $0.8(1.2Sh + SA)$.

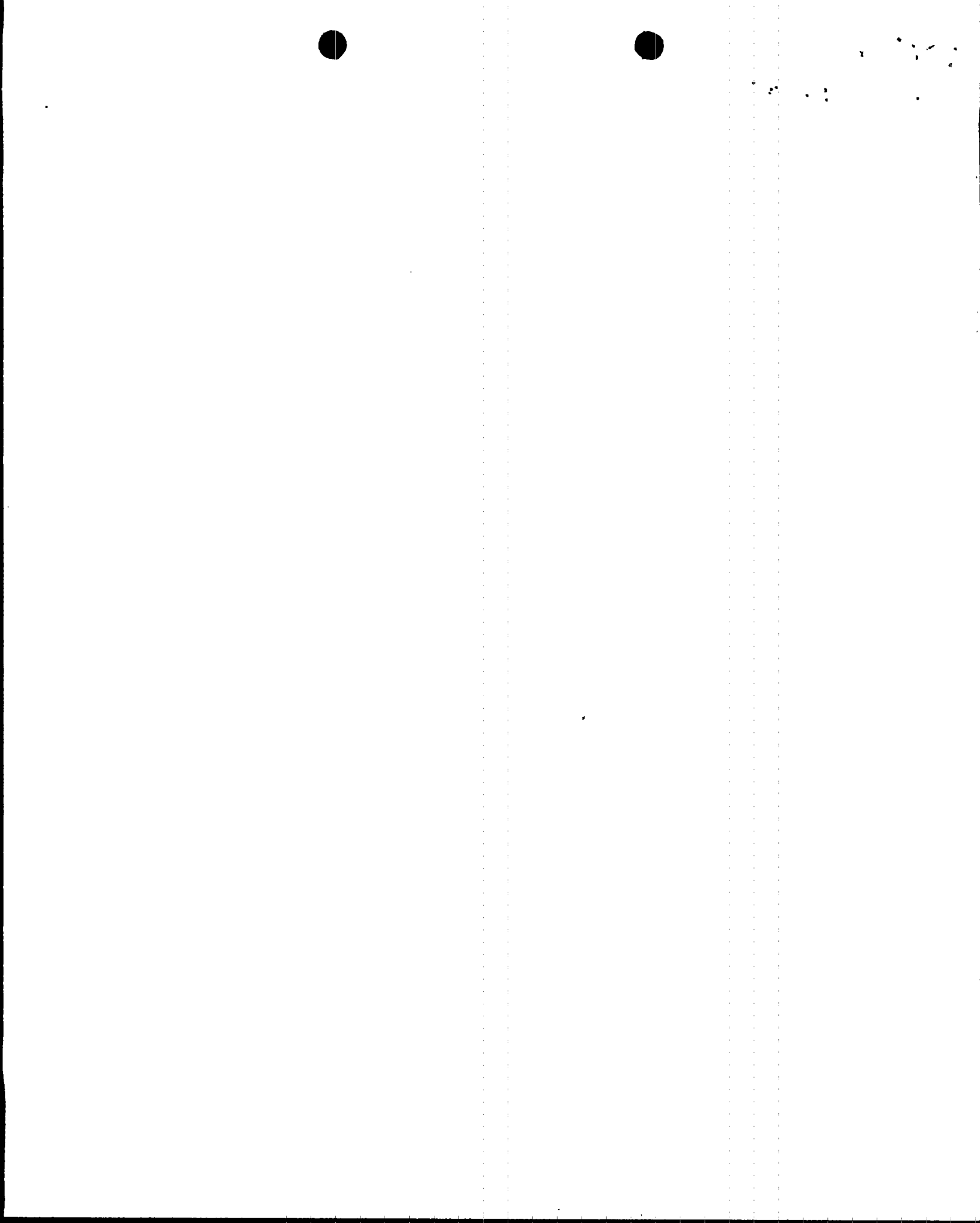
The exception to this is the pressurizer surge line which was reanalyzed in accordance with ASME Section III rules in response to NRC Bulletin No. 88-08 (Zones 3-016 and 4-016.) This criteria was used for the second ten year interval and will be used for the third.

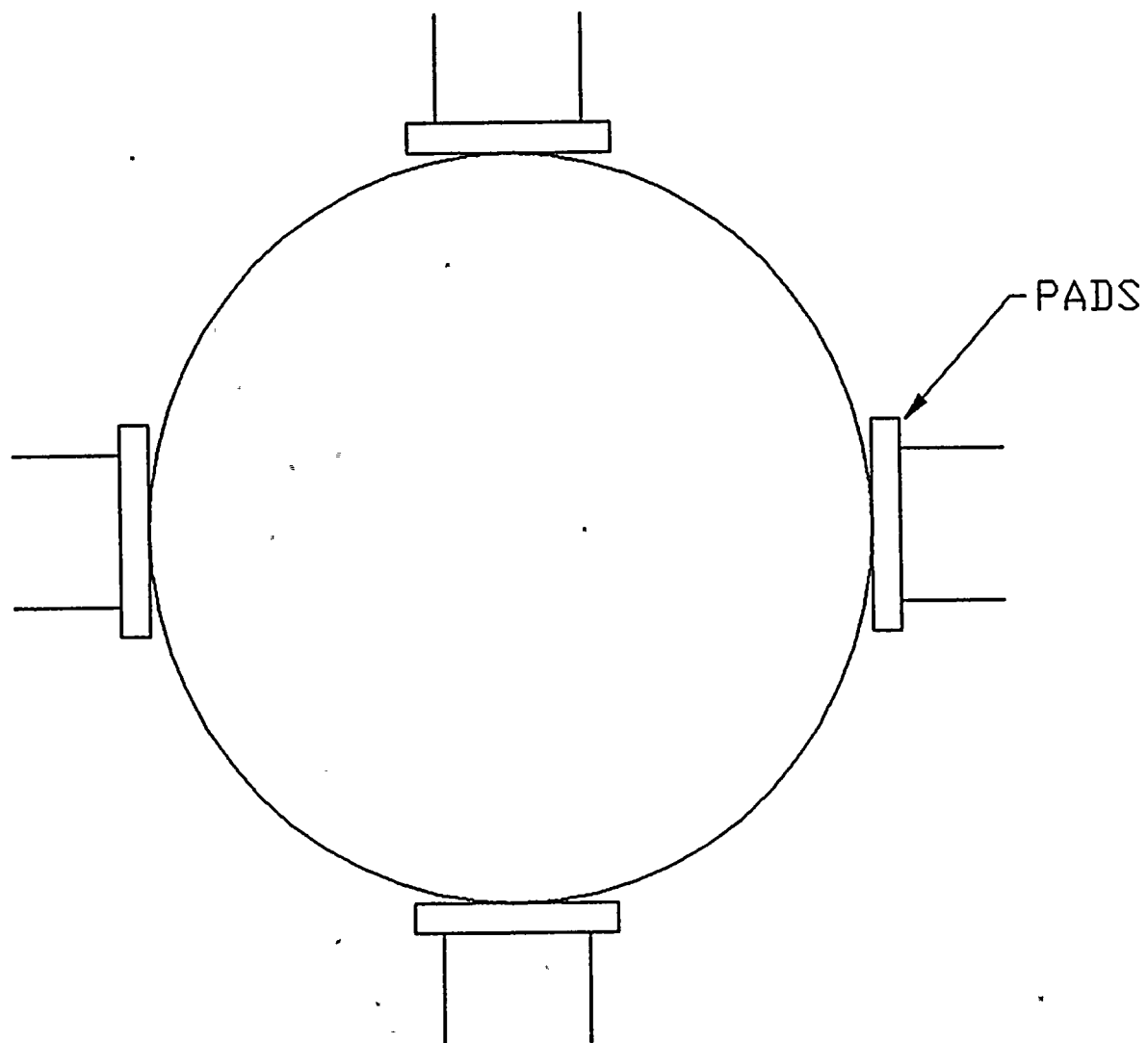
10CFR50.55a(g)(4) states "Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, 2 and 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in section XI of editions of the ASME Boiler and Pressure Vessel Code and Addenda that become effective subsequent to editions specified in paragraphs (g)(2) and (g)(3) of this section and that are incorporated by reference in paragraph (b) of this section, to the extent practical within the limitations of design, geometry and materials of construction of the components."

Based on the difference in design philosophies of ASME Section III Class 1 and ASA B31.1, the required stress intensities and usage factors cannot be calculated unless a complete system reanalysis to an upgraded code is performed. This cannot be reasonably done because current versions of ASME Section III Class 1 would require additional design requirements associated with loading, load combinations, cycle counting, etc. The substantial reanalysis / redesign effort required to perform Class 1 analyses would not be consistent with 10CFR50.55a(g)(4).

Since there was no design requirement at the time of construction to perform Class 1 analyses, they are not available nor required. Title 10 CFR 50.55a(g)(4) does not require FPL to perform these calculations for the sole purpose of identifying those Class 1 welds that would exceed the Category B-J stress criteria.

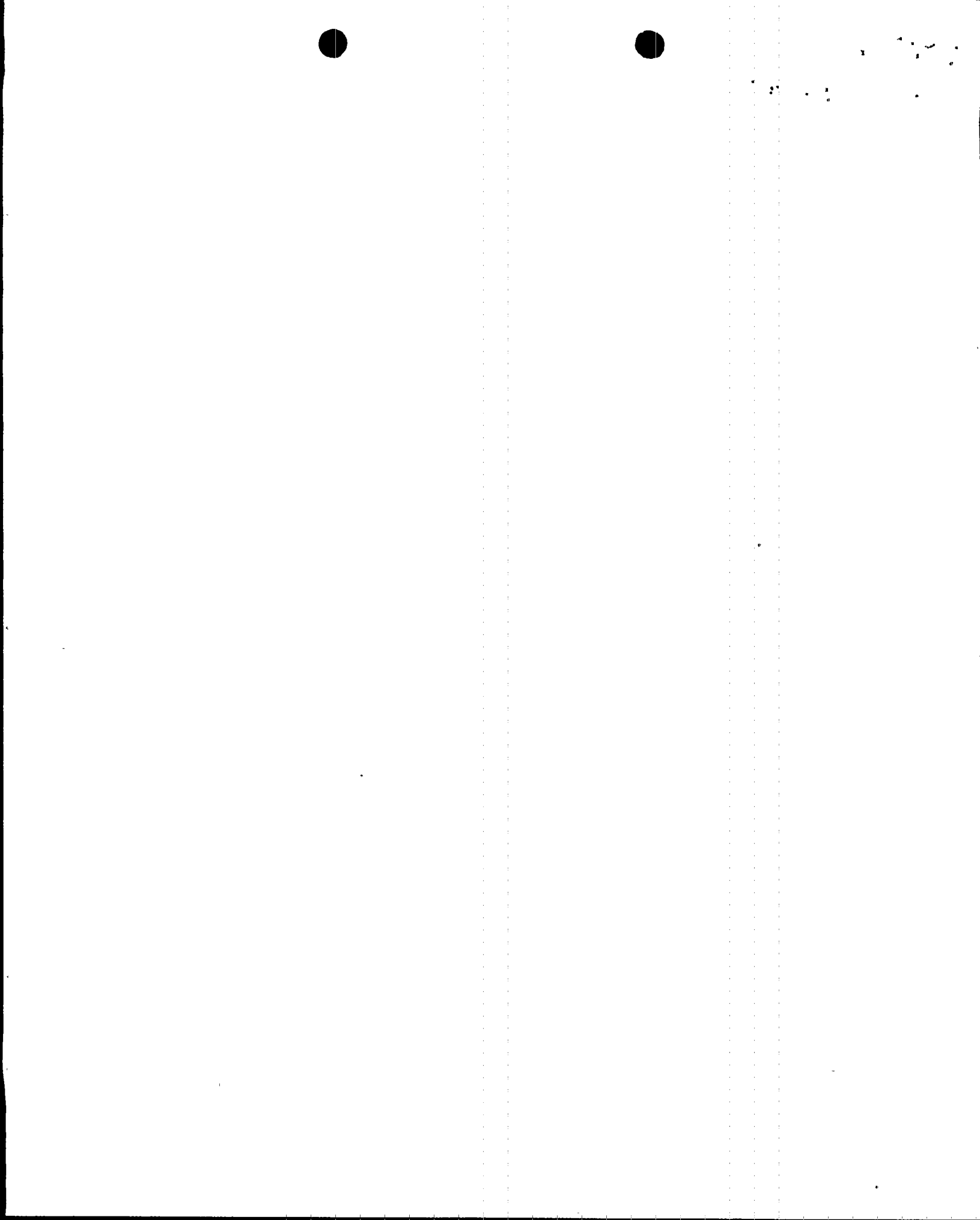
FPL has examined the Class 1 welds on the pressurizer surge line (which were reanalyzed to the Class 1 criteria), and Class 1 and 2 welds that exceeded the Class 2 criteria. The Class 1 welds are scheduled for examination during the third interval.

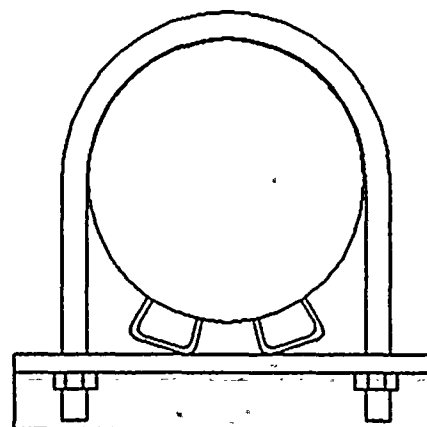
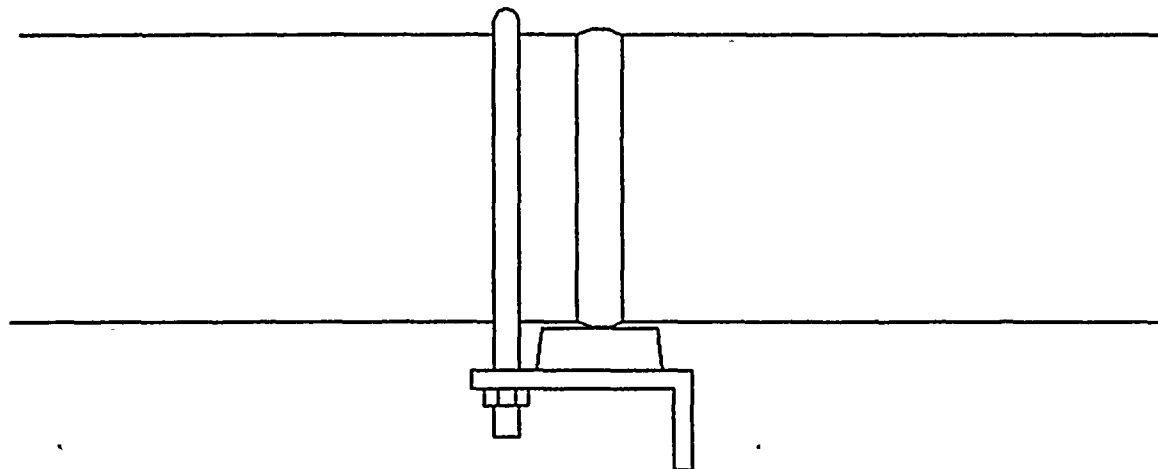




14"-RHR-2406-10

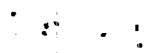
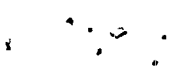
FIGURE 1

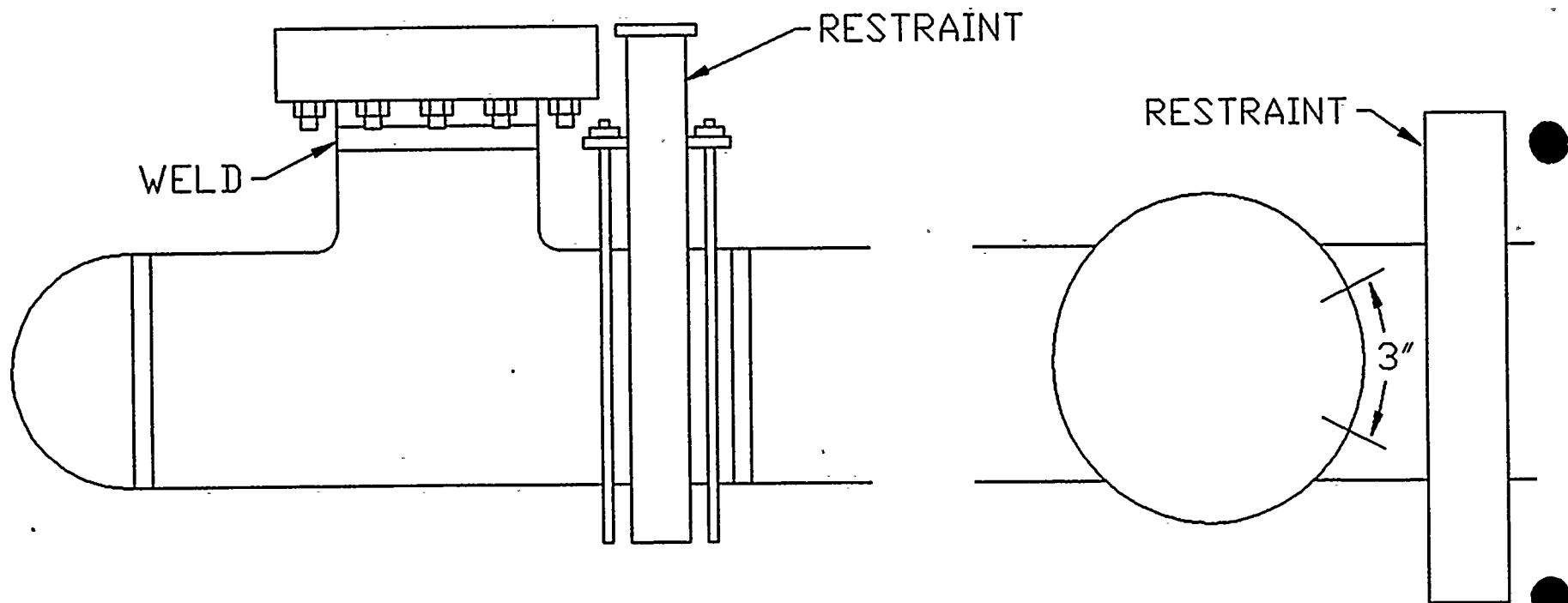




12"-RC-1401-4

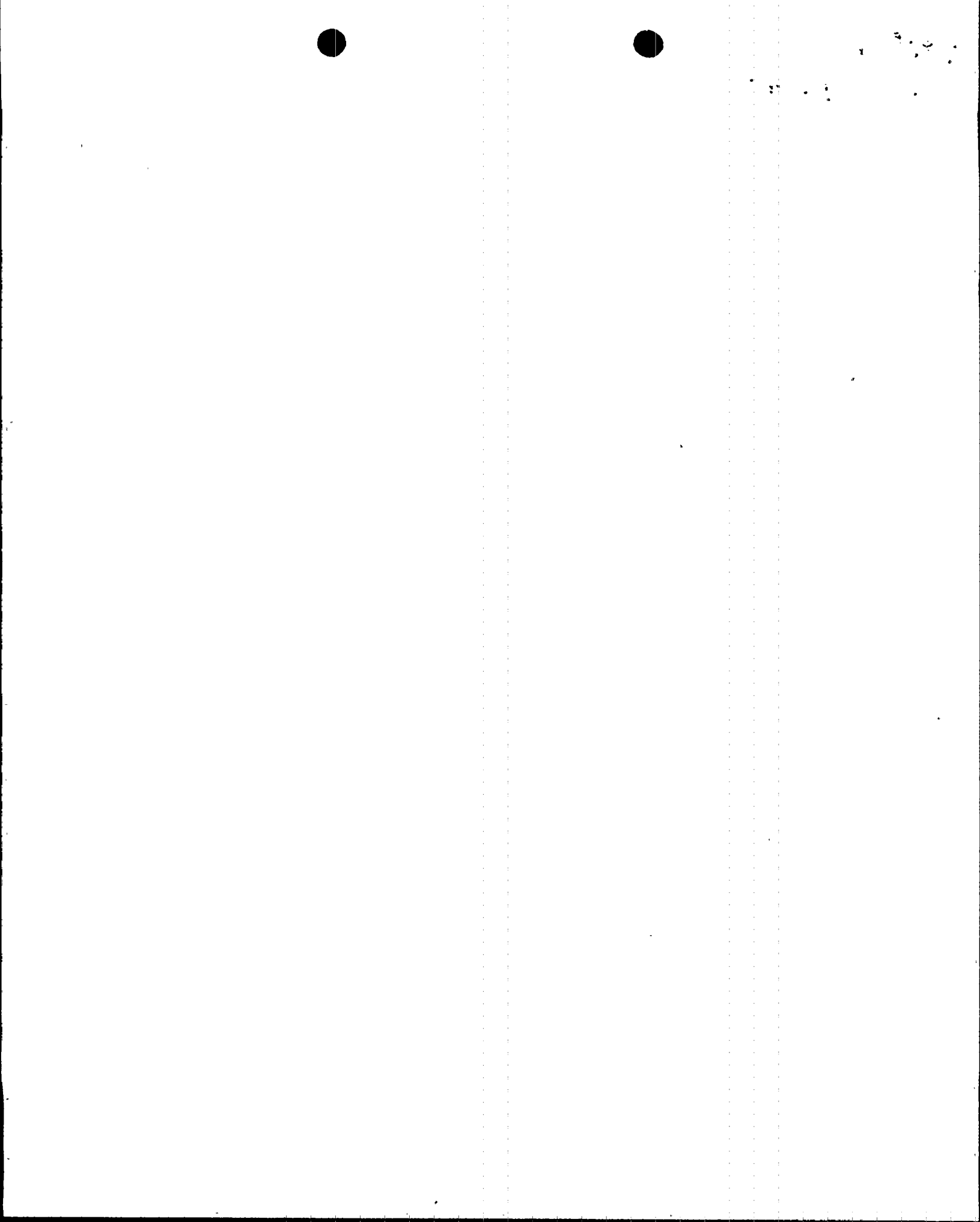
FIGURE 2





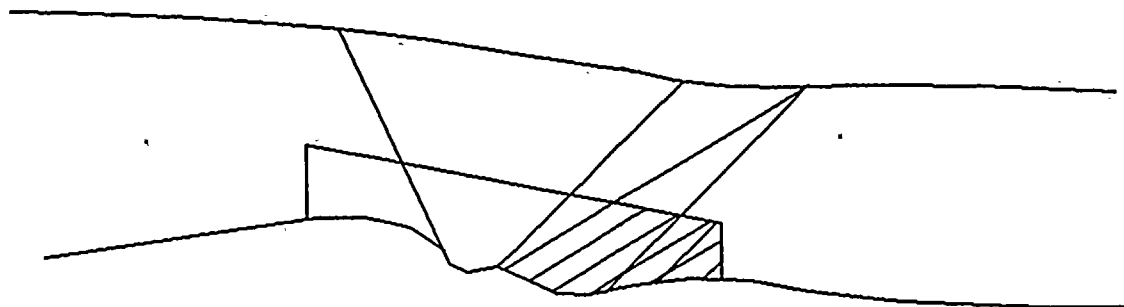
12"-MSB-2403-4
12"-MSA-2401-2

FIGURE 3



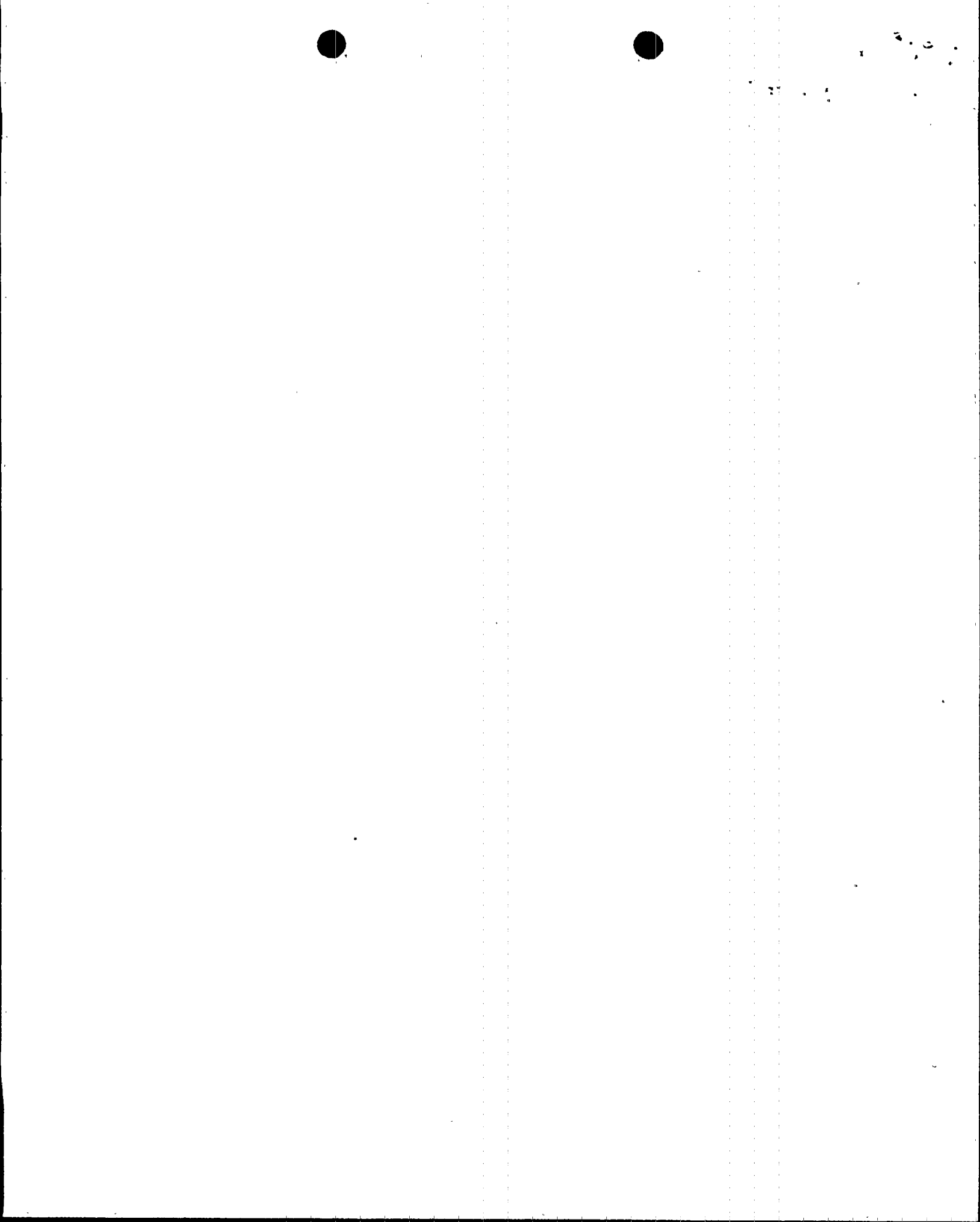
VALVE

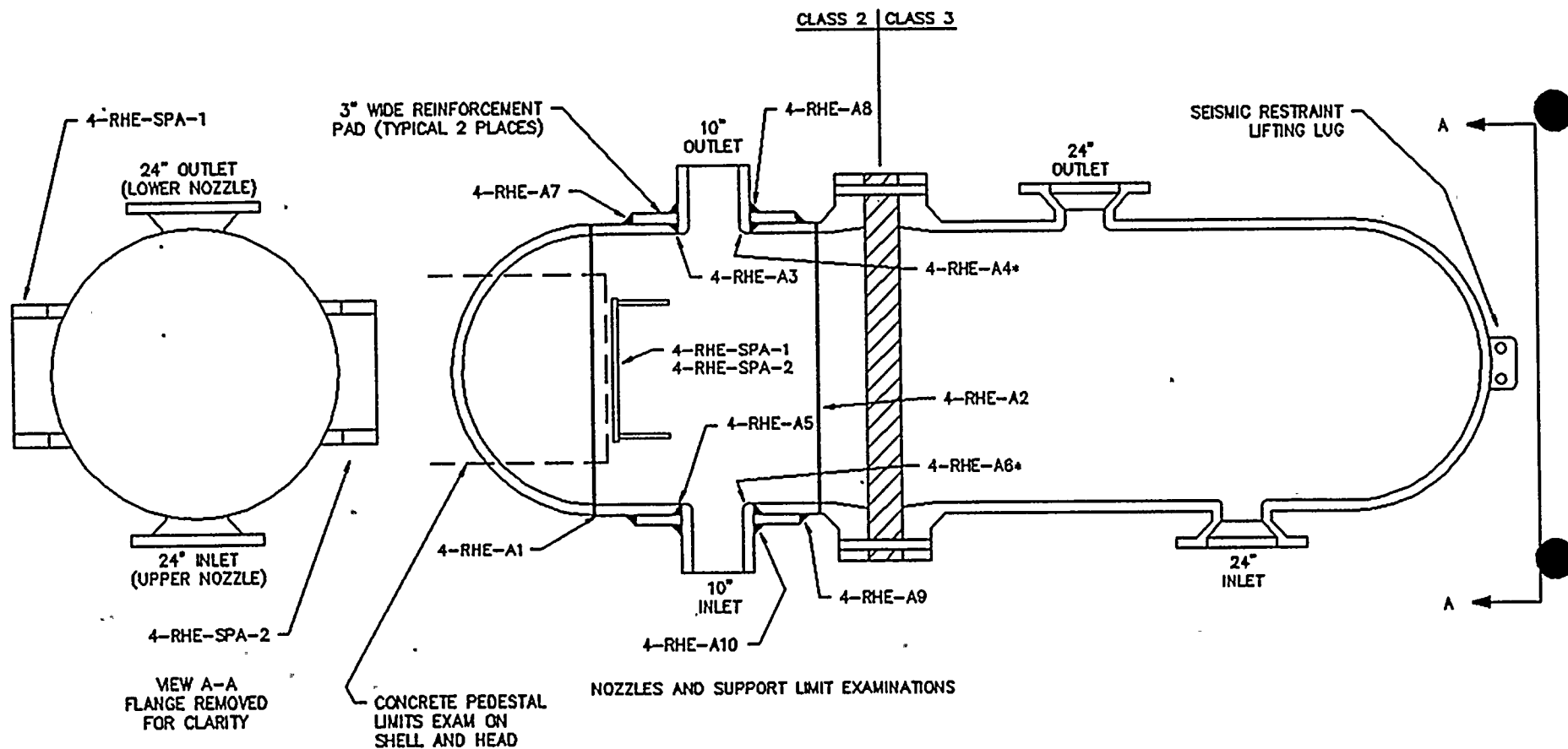
ELBOW



8"-SI-2408-16

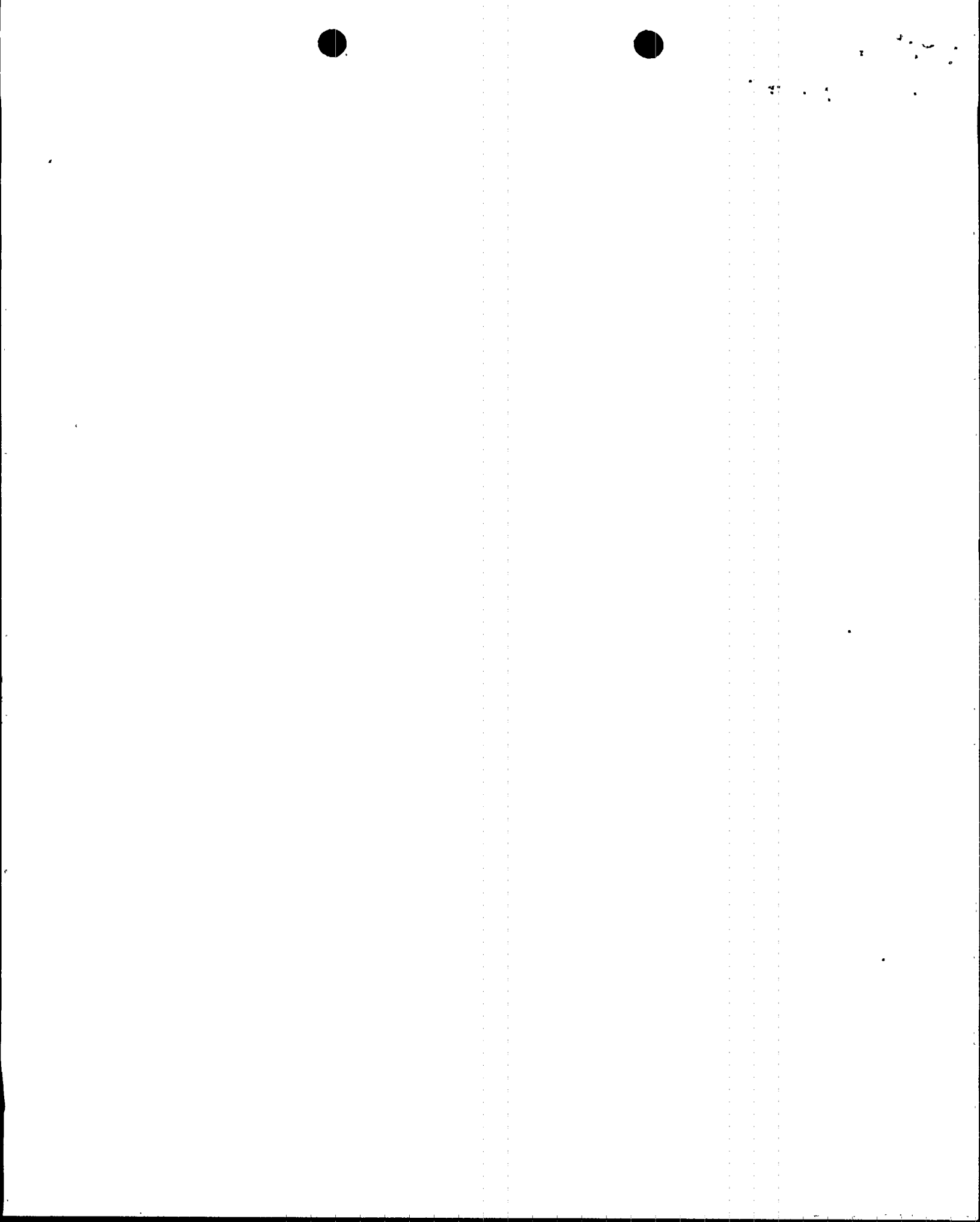
FIGURE 4

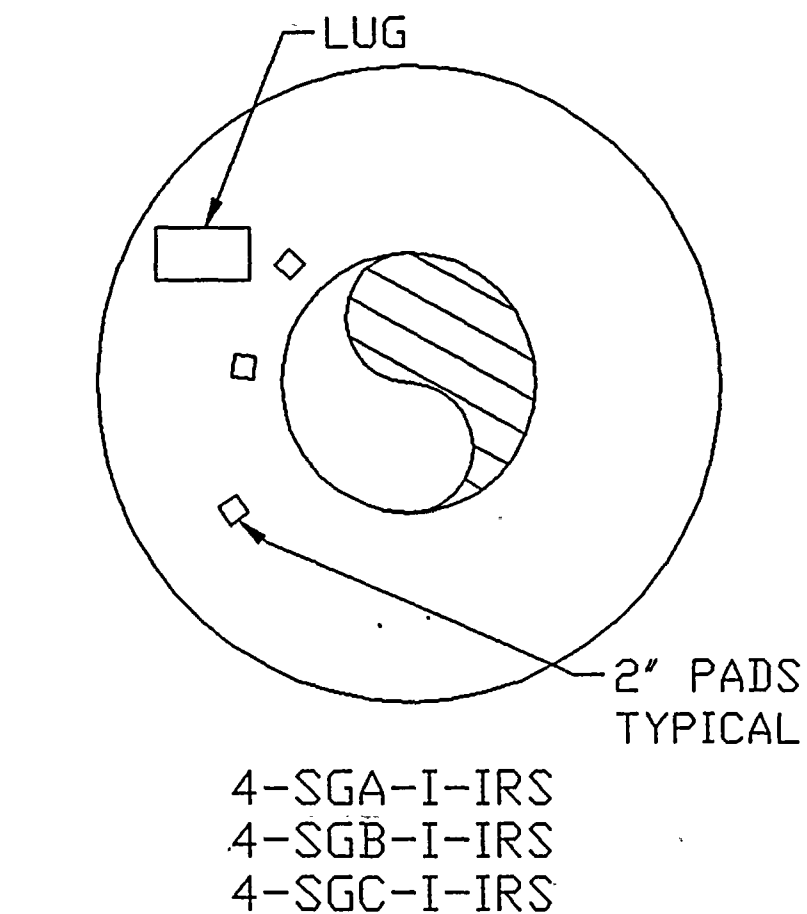




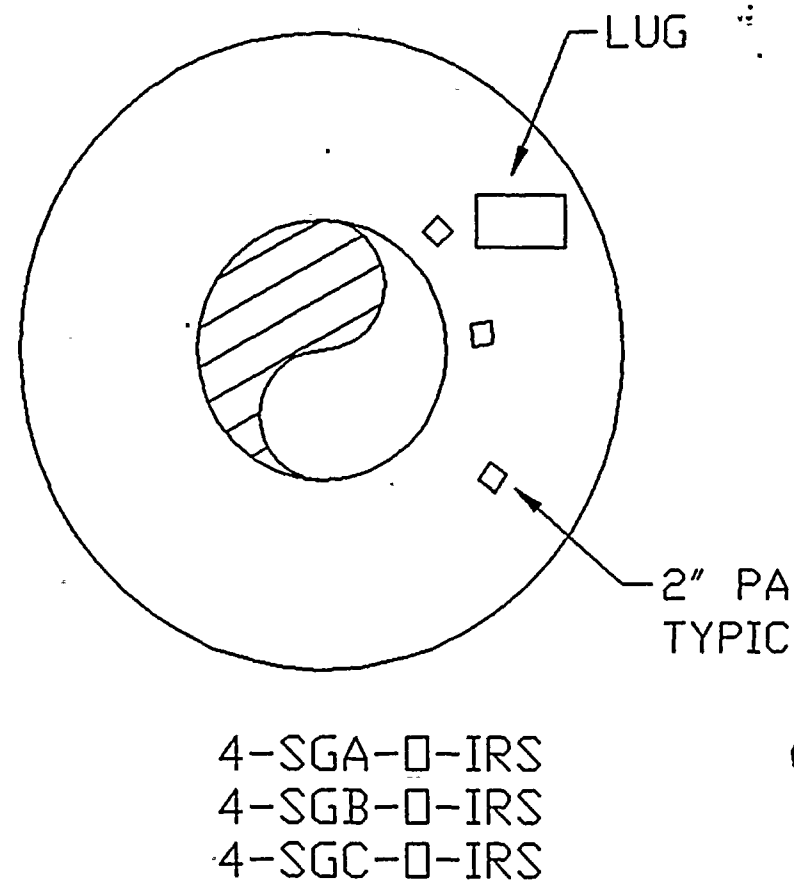
RHR HEAT EXCHANGER

FIGURE 5





INLET NOZZLE INNER RADIUS



OUTLET NOZZLE INNER RADIUS

FIGURE 6

VALVE SURFACE IS IN
THE AS-CAST CONDITION.
NOT CONDUCTIVE TO PROPER
EXAMINATION.

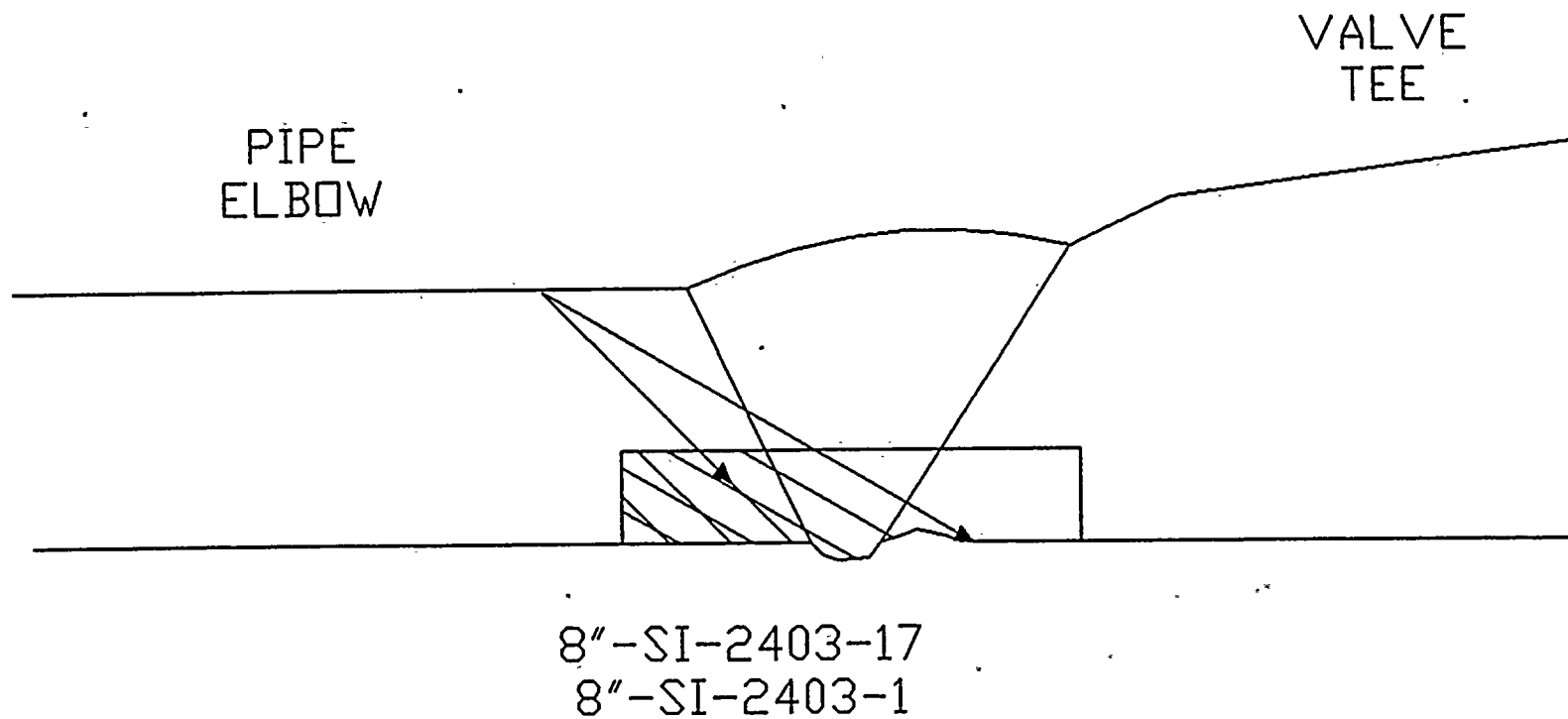
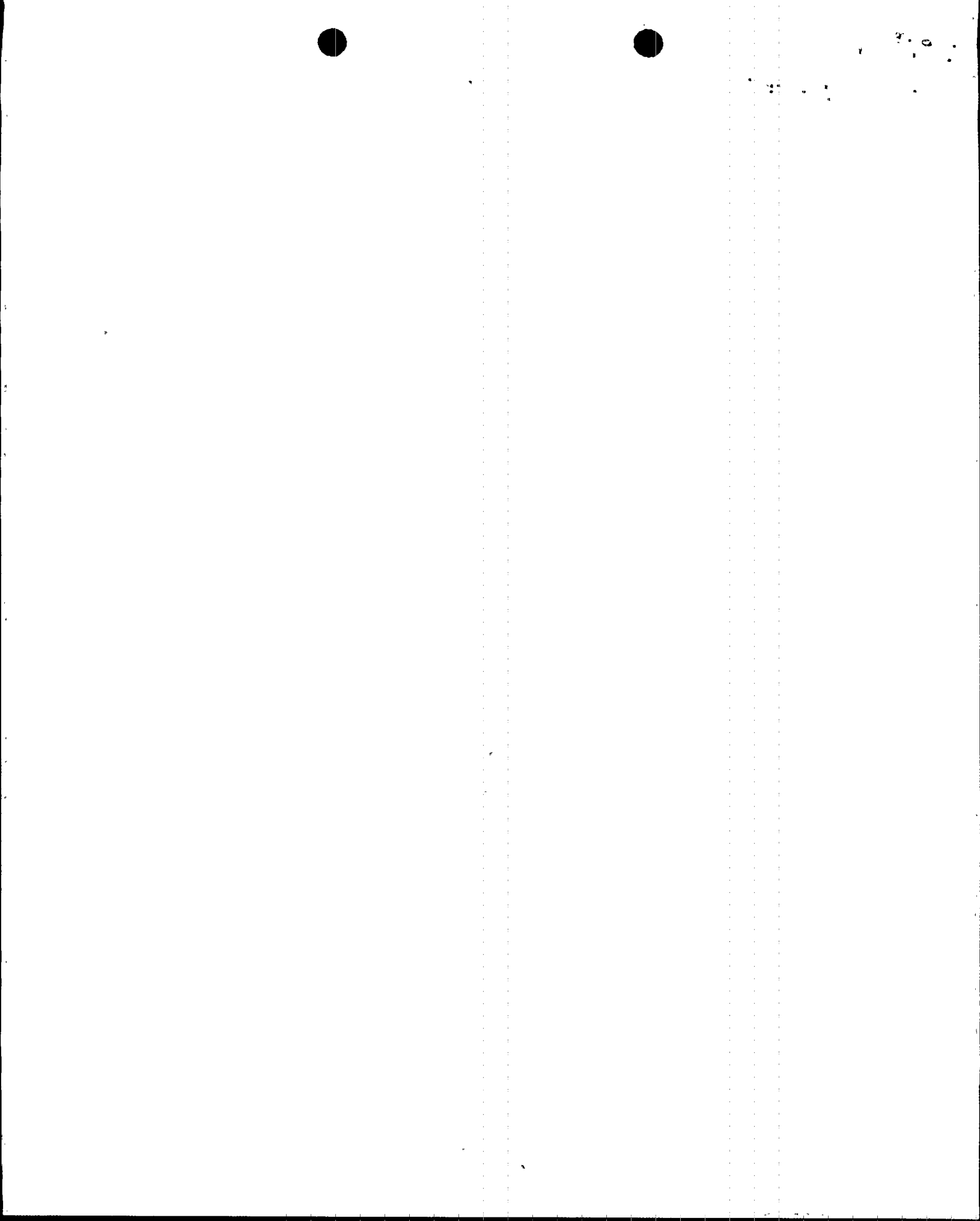
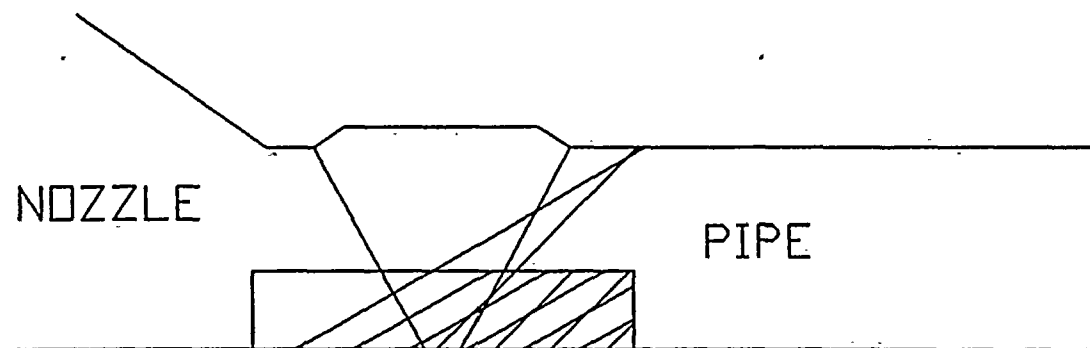


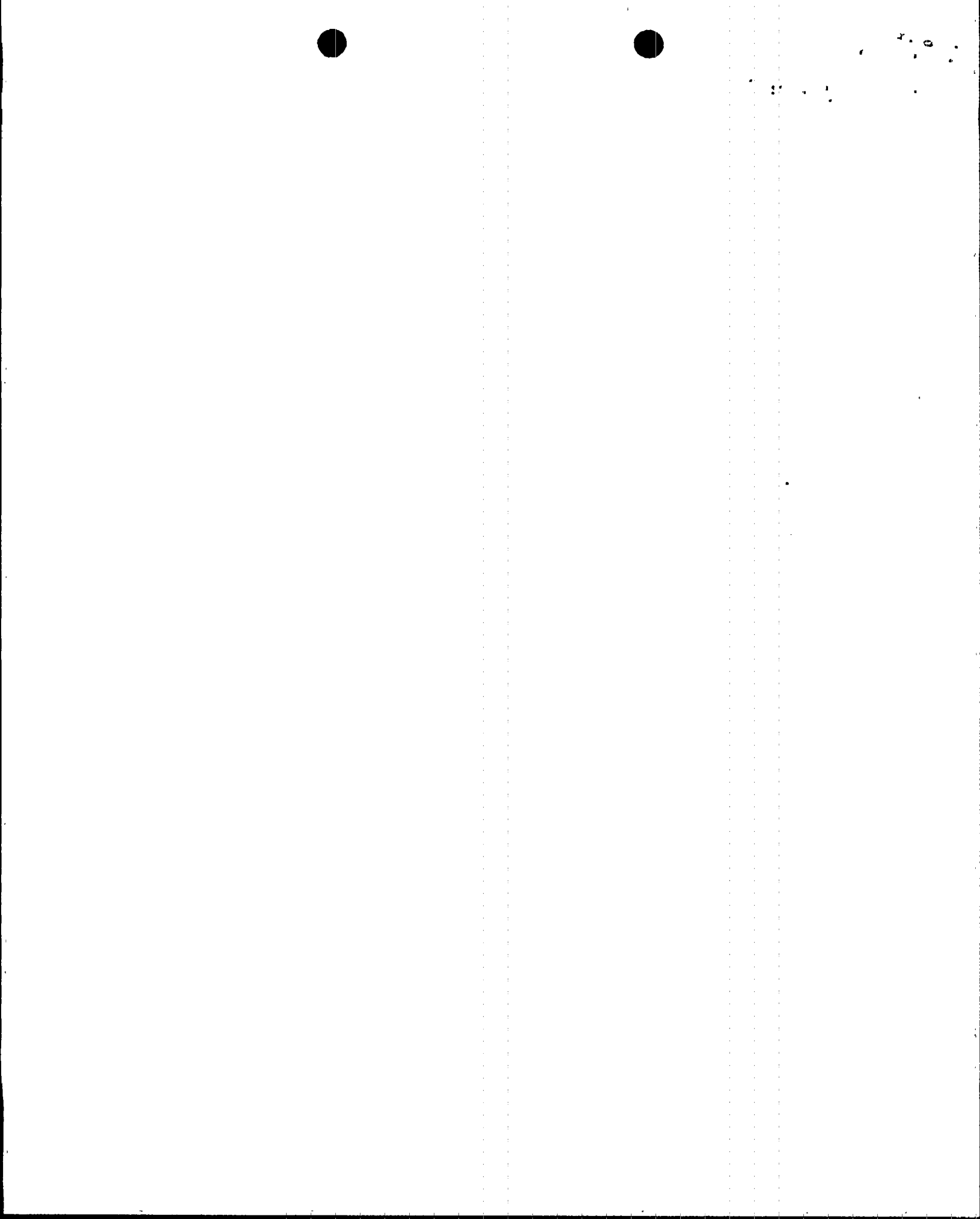
FIGURE 7

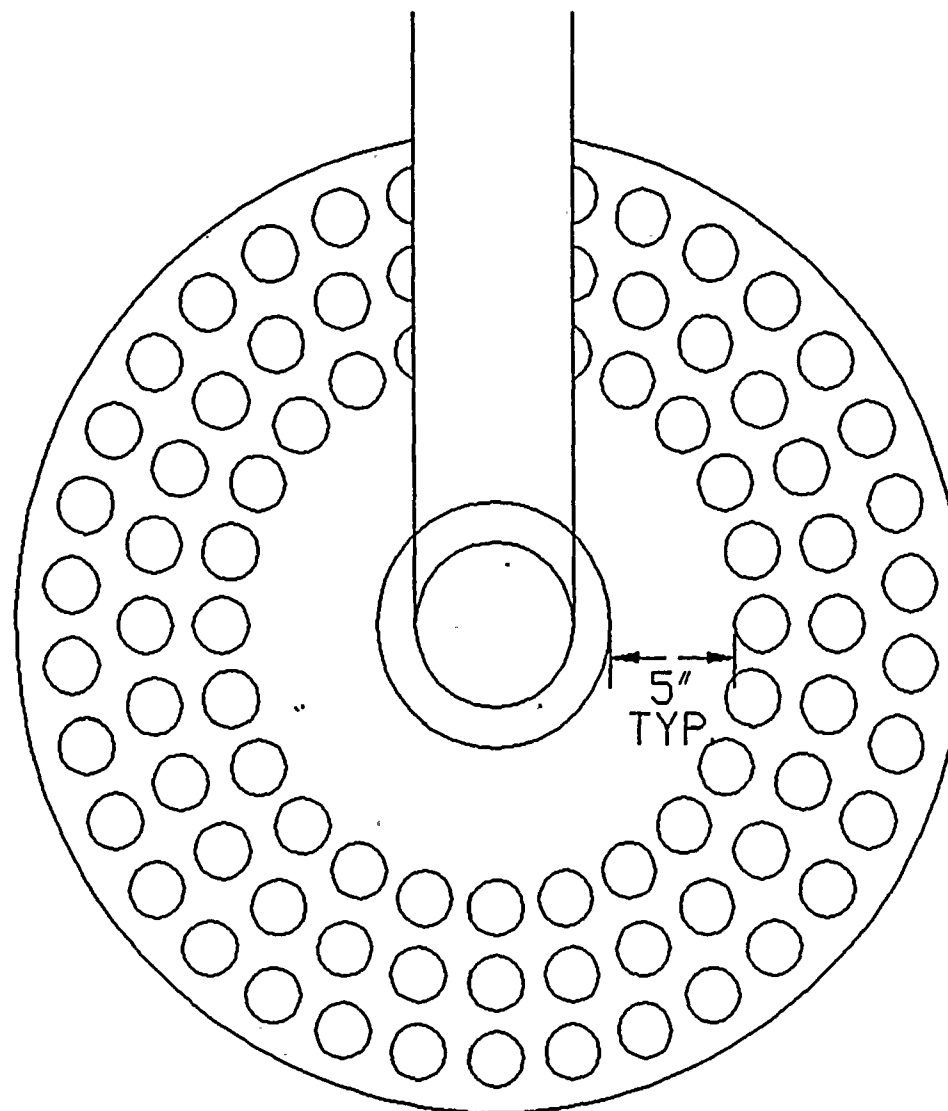




10"-SI-2402-1A

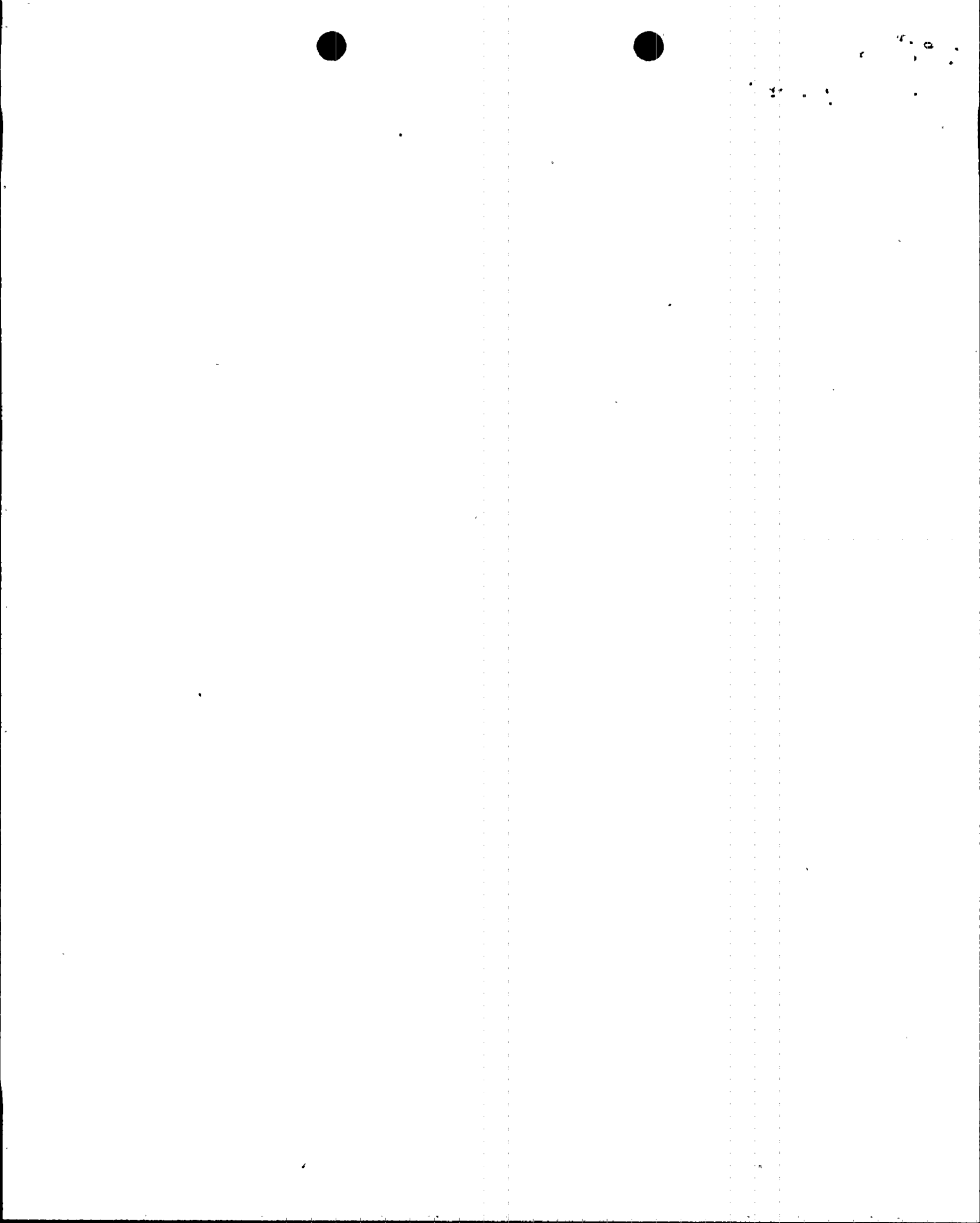
FIGURE 8

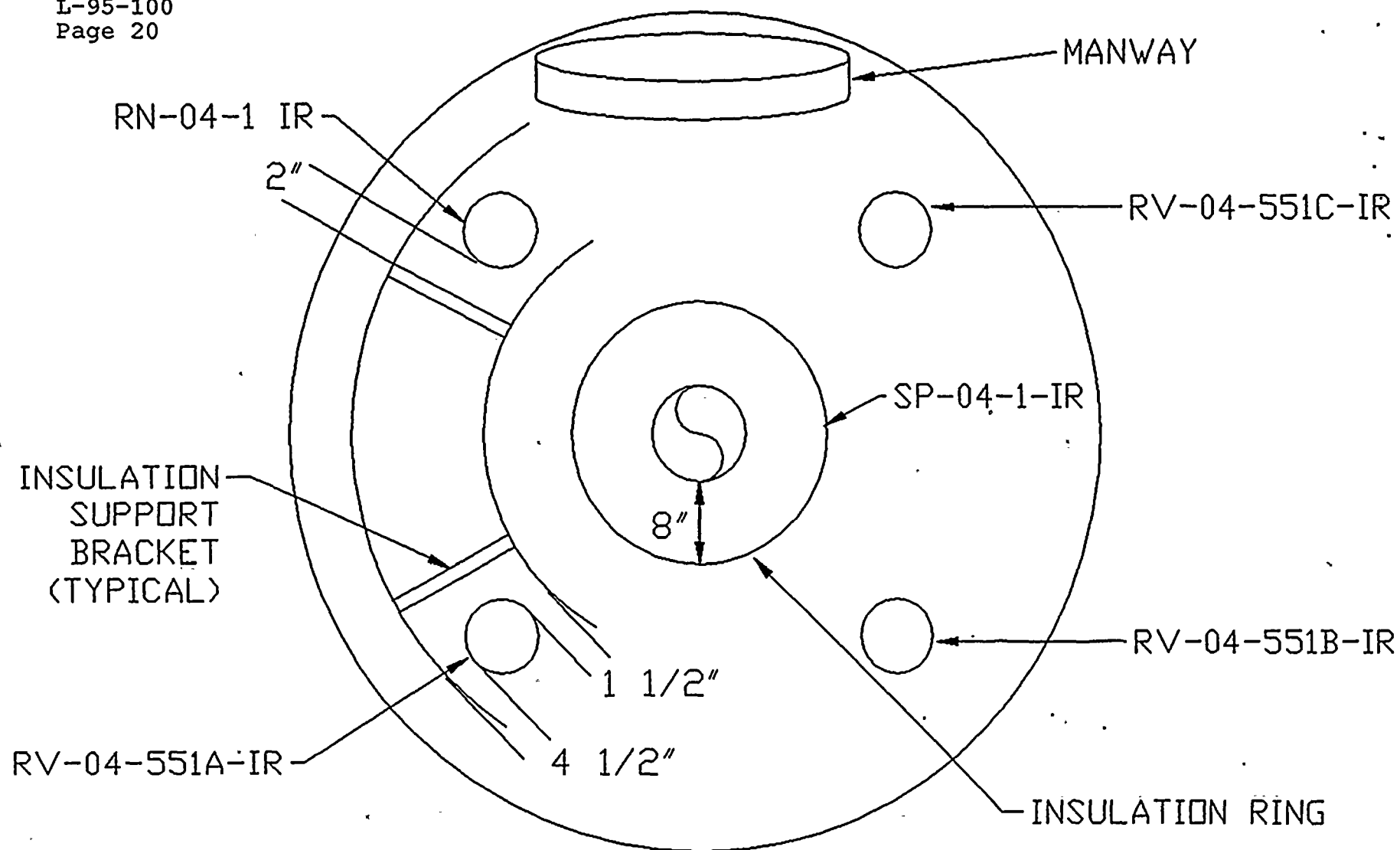




PRESSURIZER SURGE NOZZLE
SP-04-I-IR

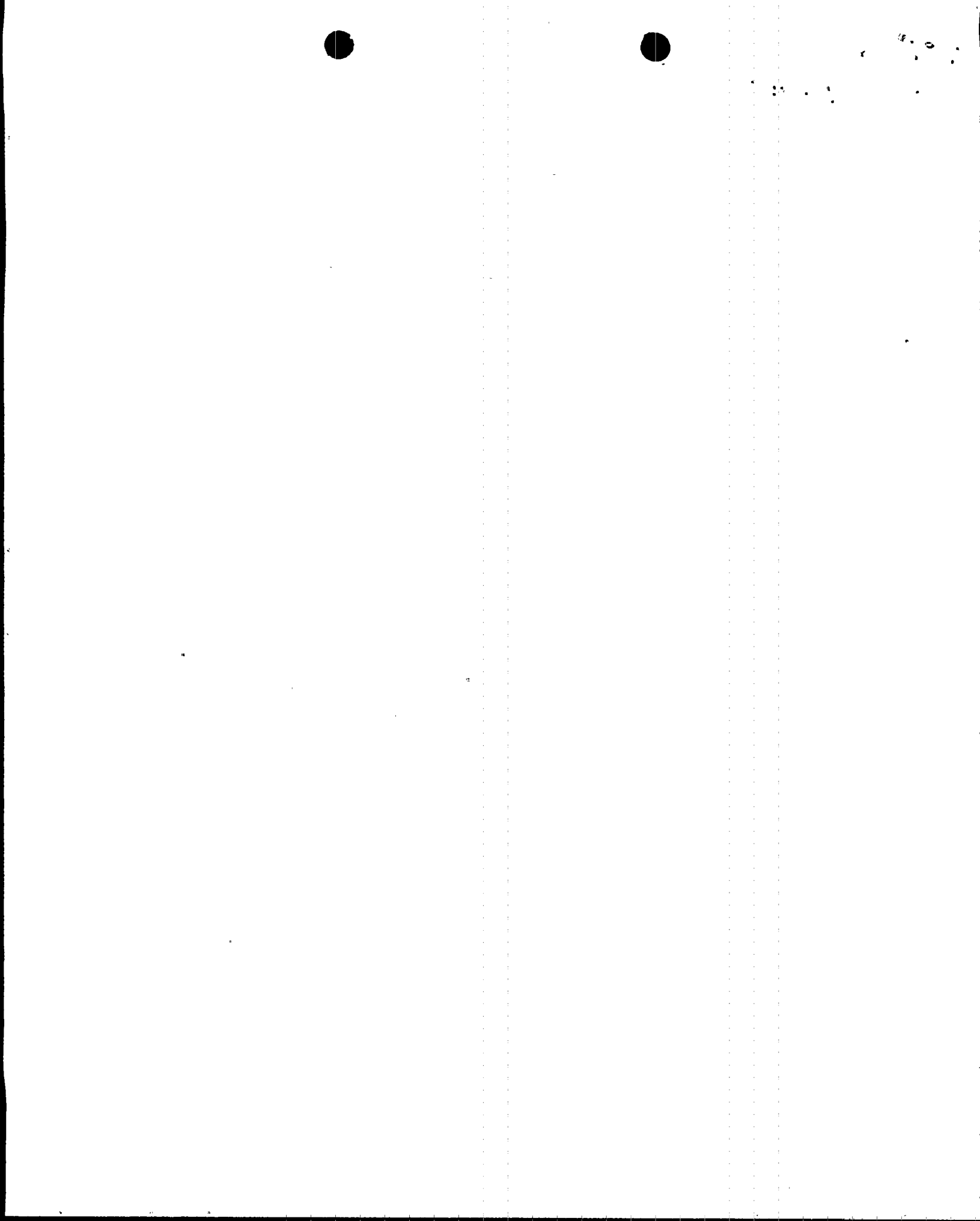
FIGURE 9

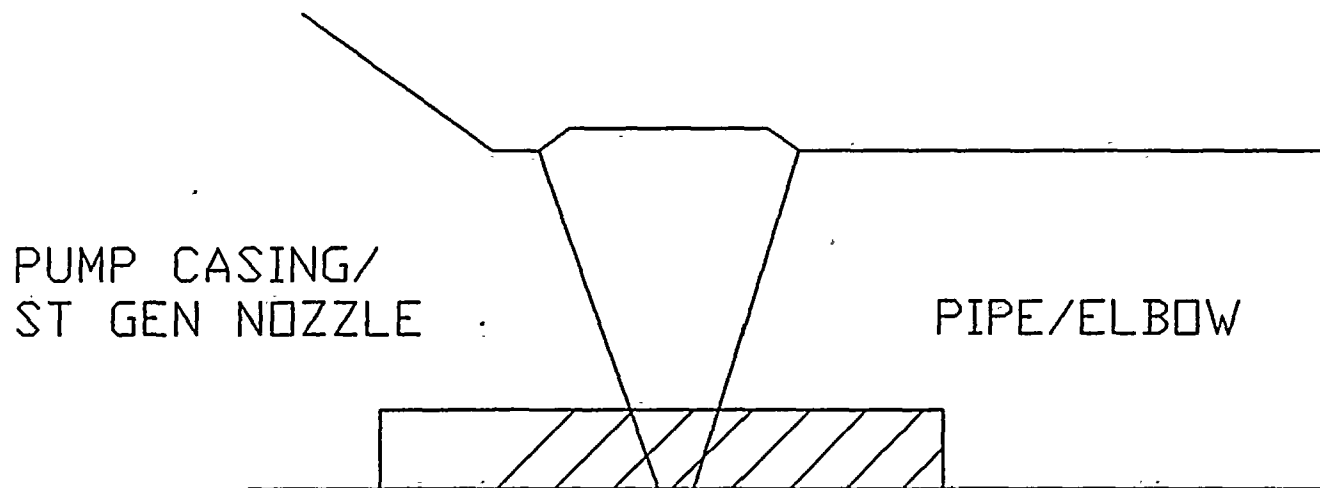




ALL MEASUREMENTS TYPICAL

FIGURE 10

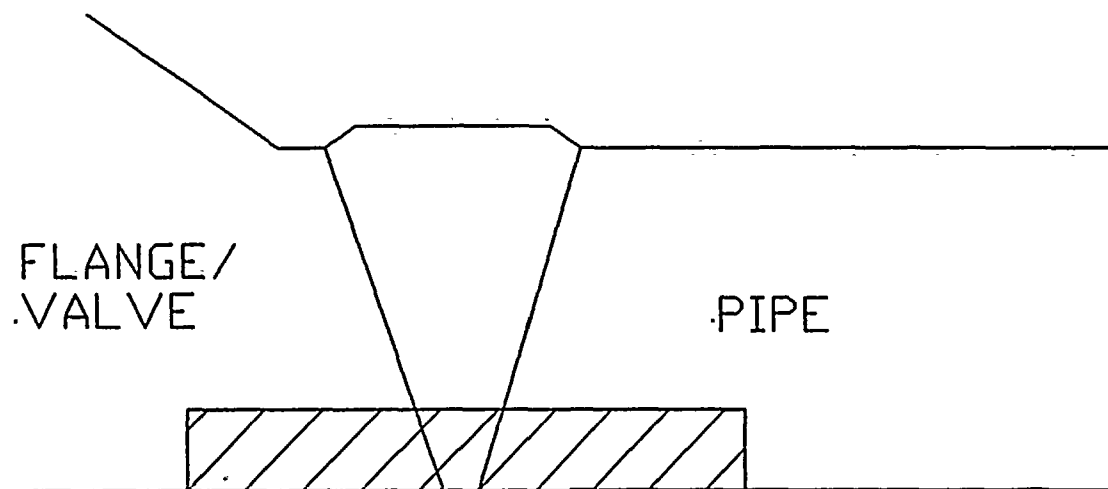




29"-RCS-1404-4
31"-RCS-1402-5
31"-RCS-1402-10
31"-RCS-1403-5
31"-RCS-1401-5
27.5"-RCS-1409-11
29"-RCS-1408-4
29"-RCS-1405-4

FIGURE 11





14"-RHR-1401-5

10"-SI-2401-6

10"-SI-1403-14

10"-SI-1402-1

10"-SI-2403-4

14"-RHR-1401-6

10"-SI-1401-14

10"-SI-2407-4

10"-SI-2407-5

10"-SI-2401-1A

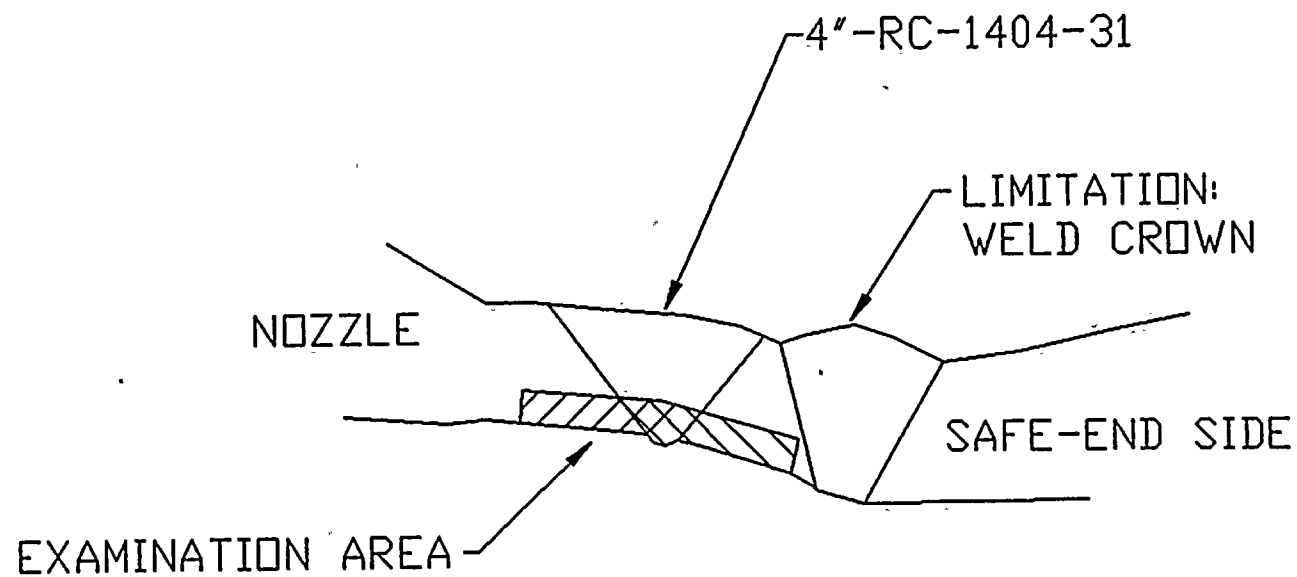
10"-SI-2403-1A

10"-SI-1402-13

14"-RHR-1401-16

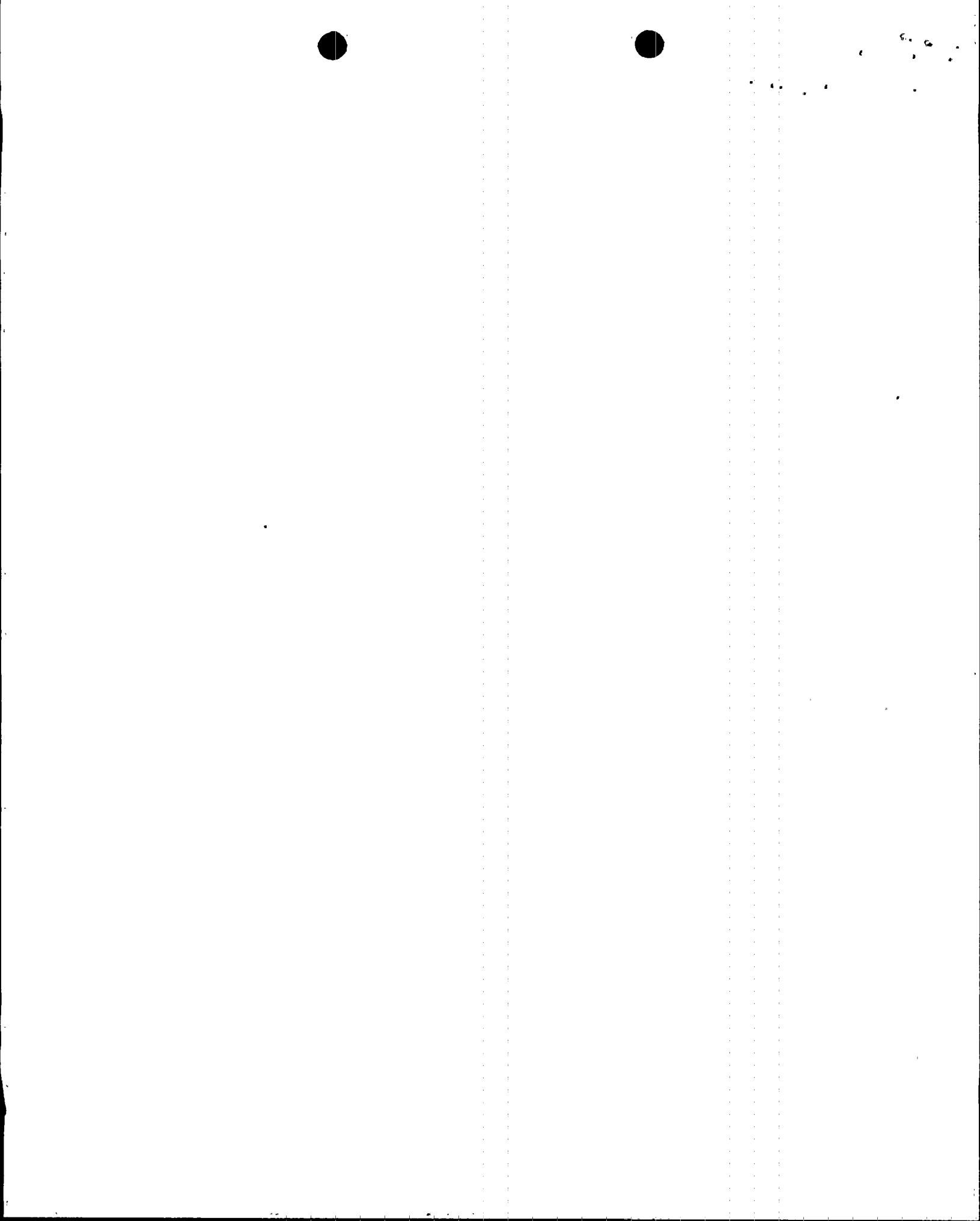
FIGURE 12

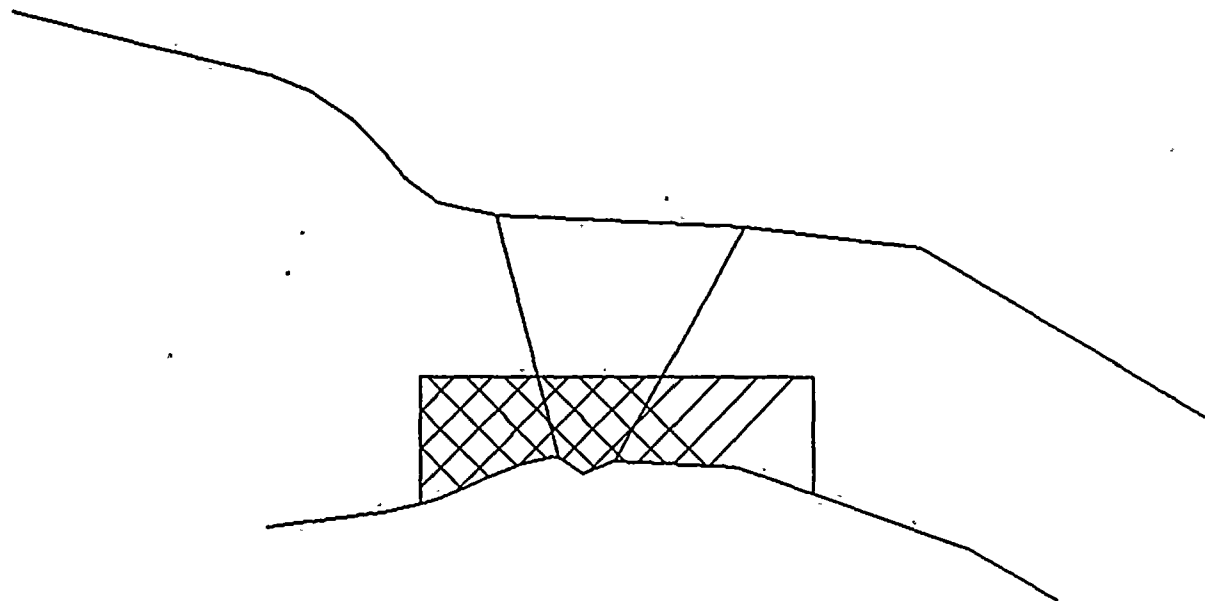




4"-RC-1404-31

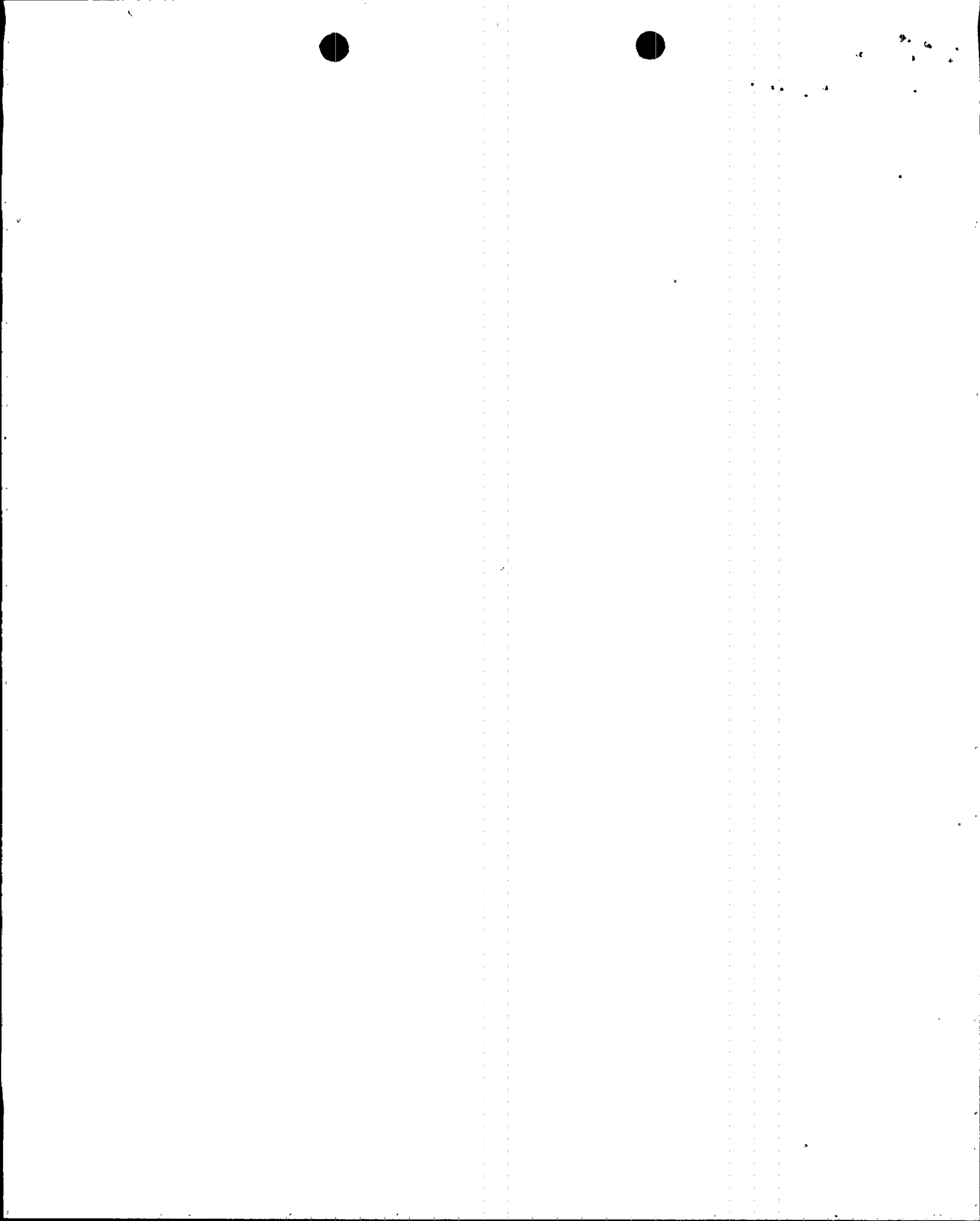
FIGURE 13

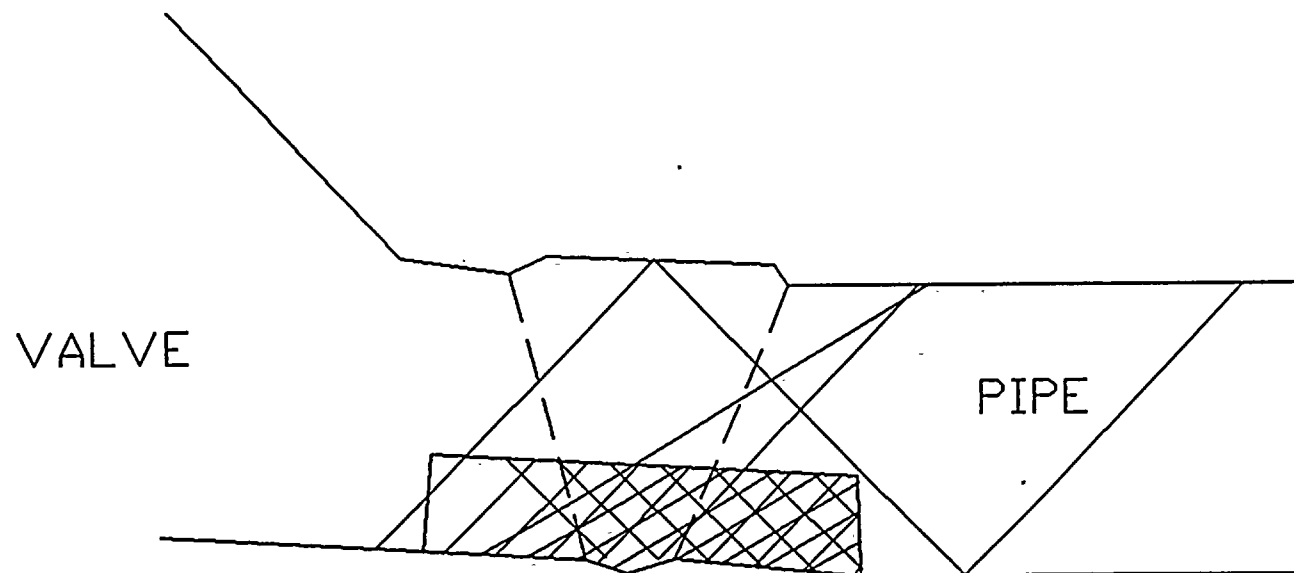




6"-BDA-2401-6

FIGURE 14





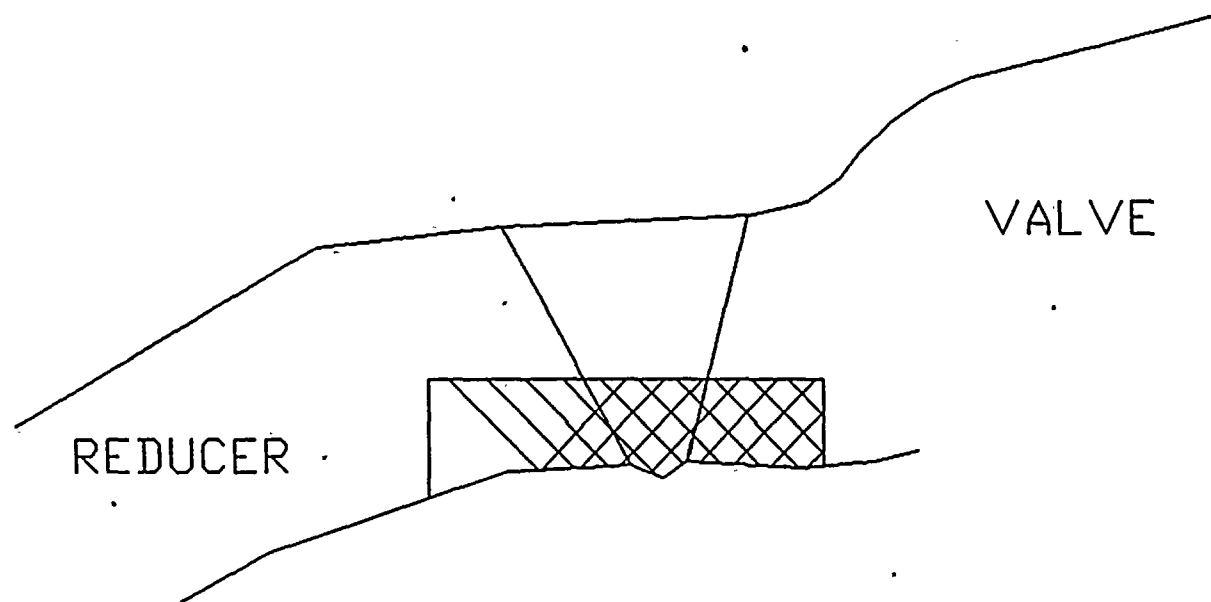
6"-BDA-2404-45
6"-BDB-2405-42B

FIGURE 15



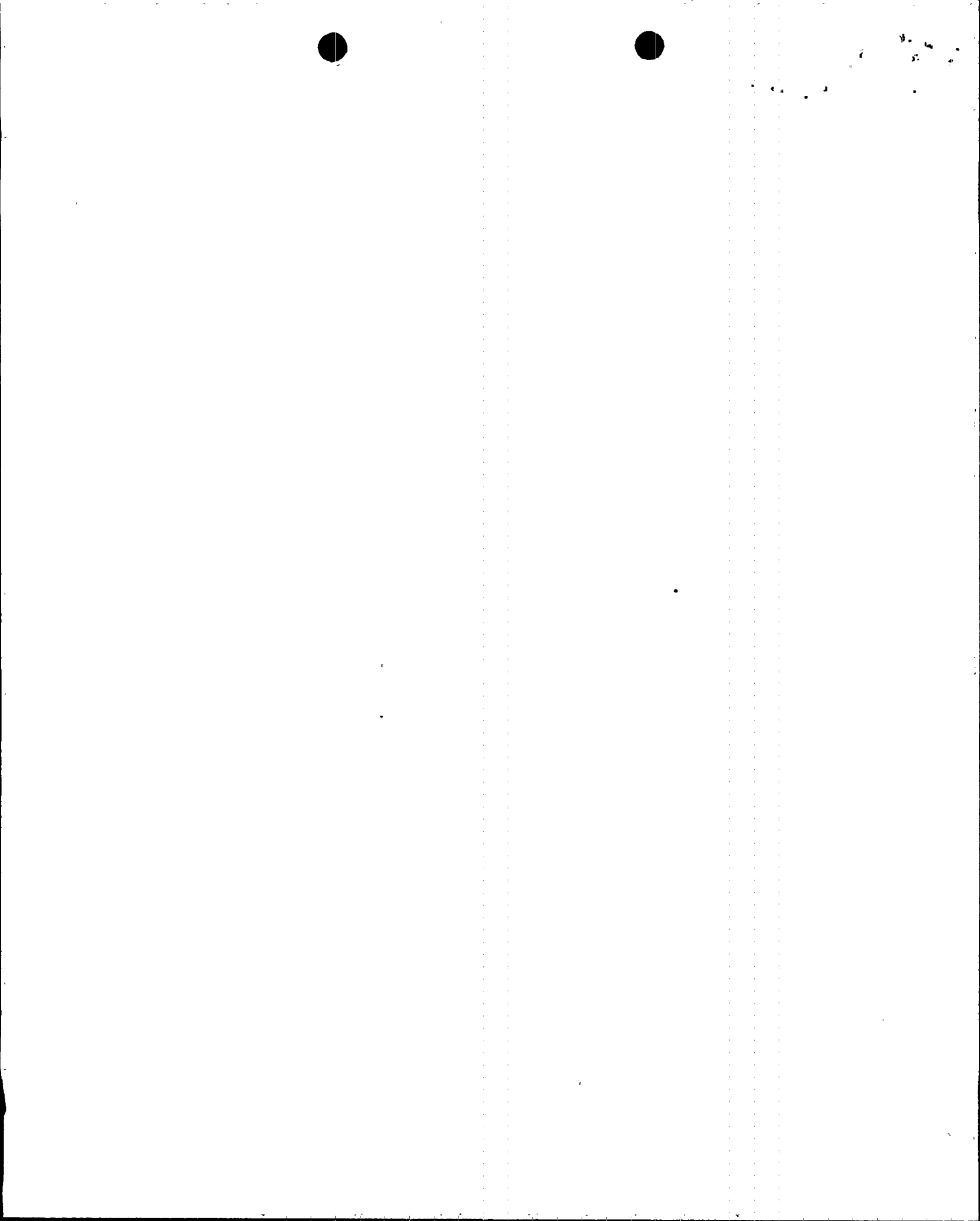
9. 5. 1.

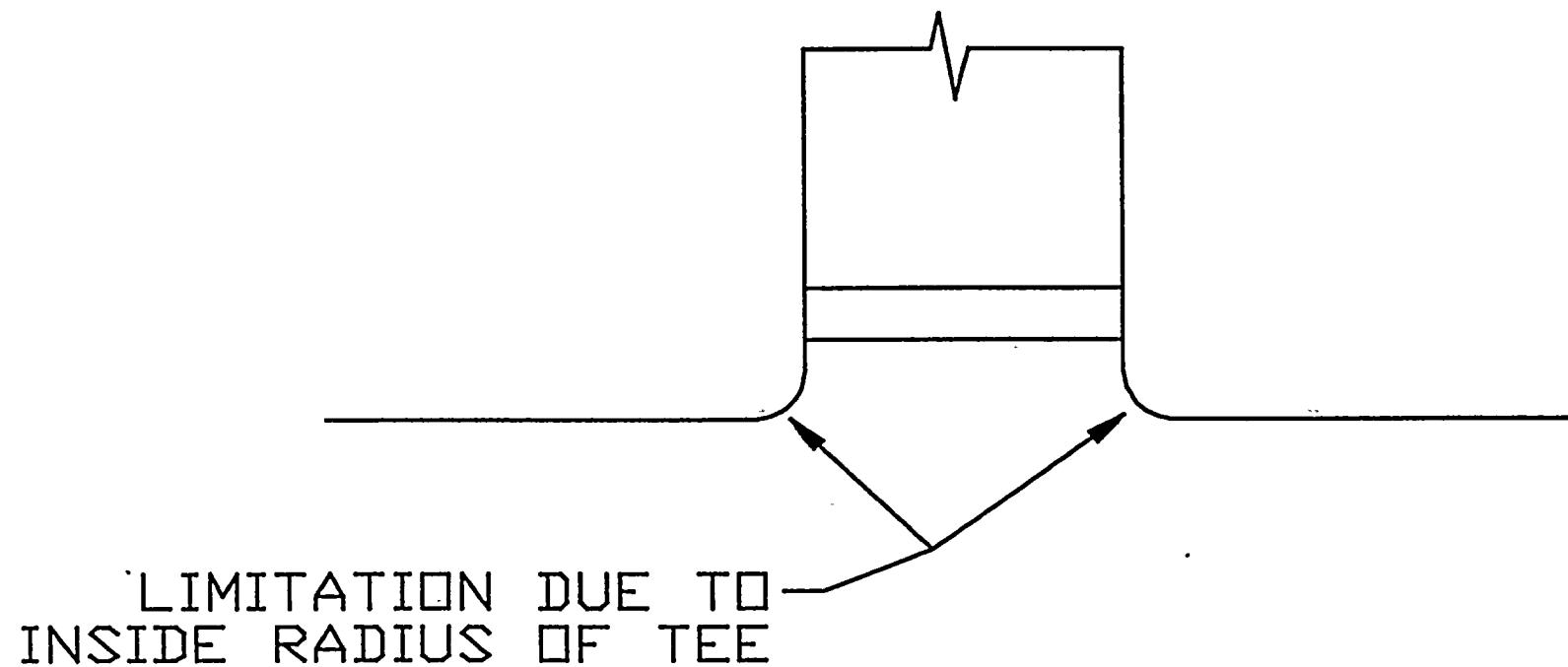
2.



6"-BDB-2402-1

FIGURE 16

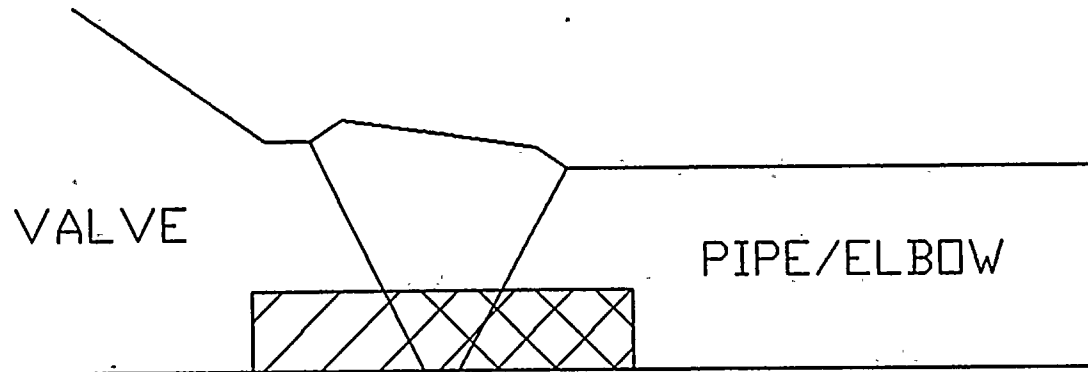




8"-SI-2407-8

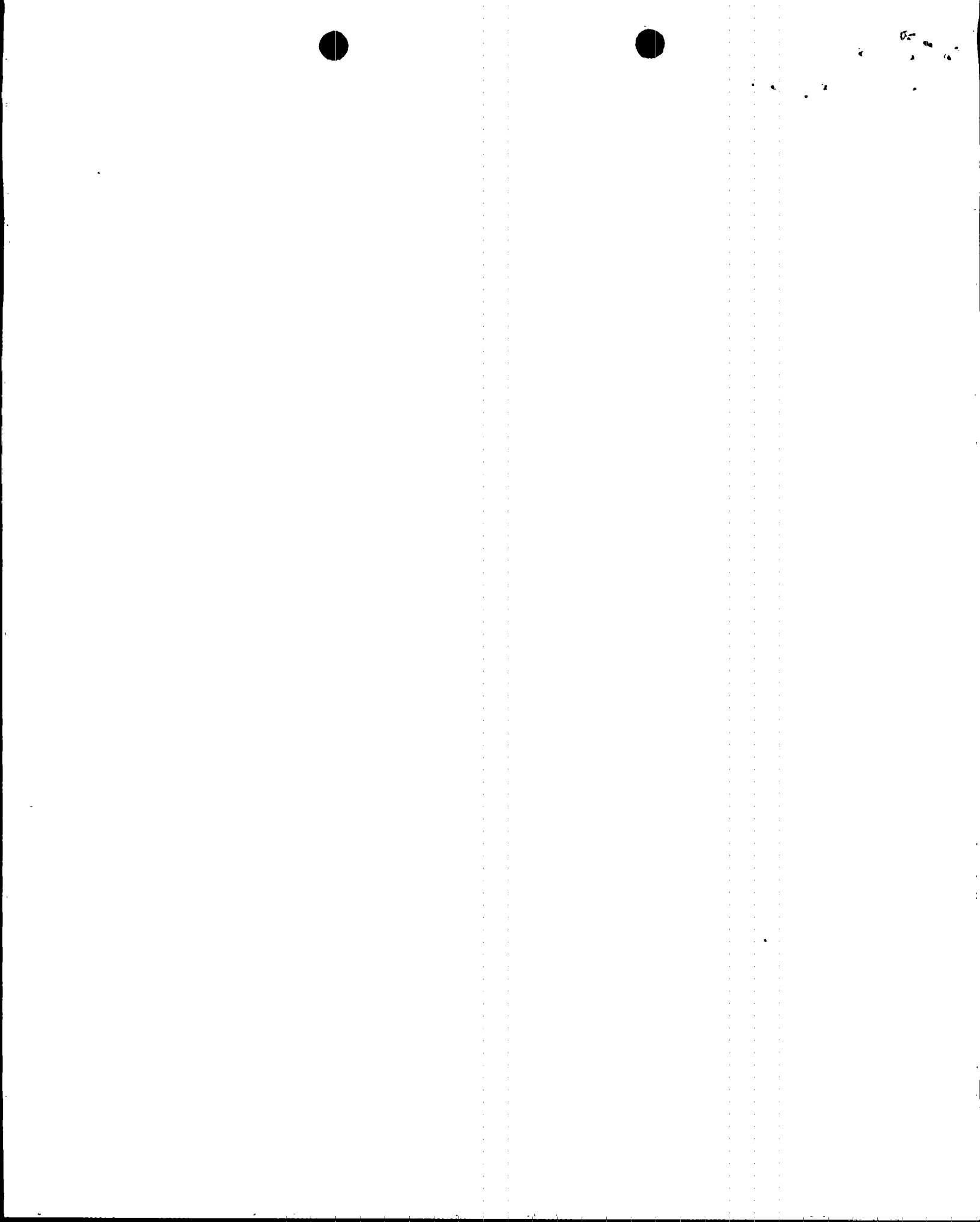
FIGURE 17

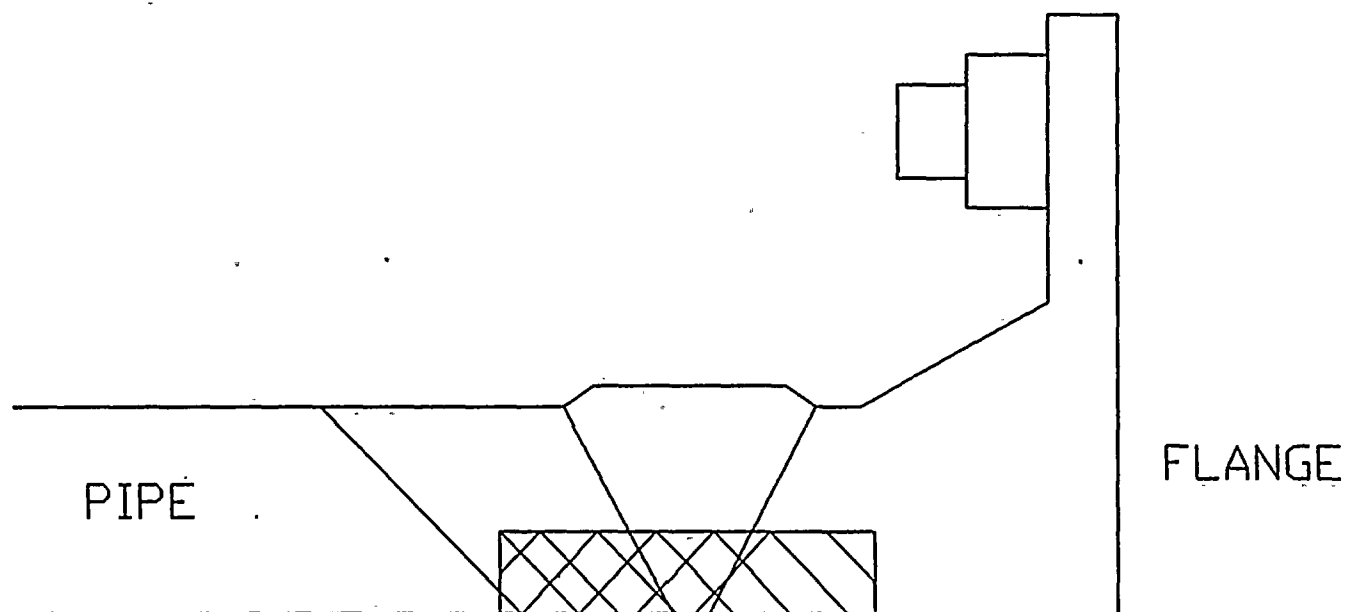




8"-SI-2407-22
8"-RHR-1401-6
8"-RHR-2402-18

FIGURE 18

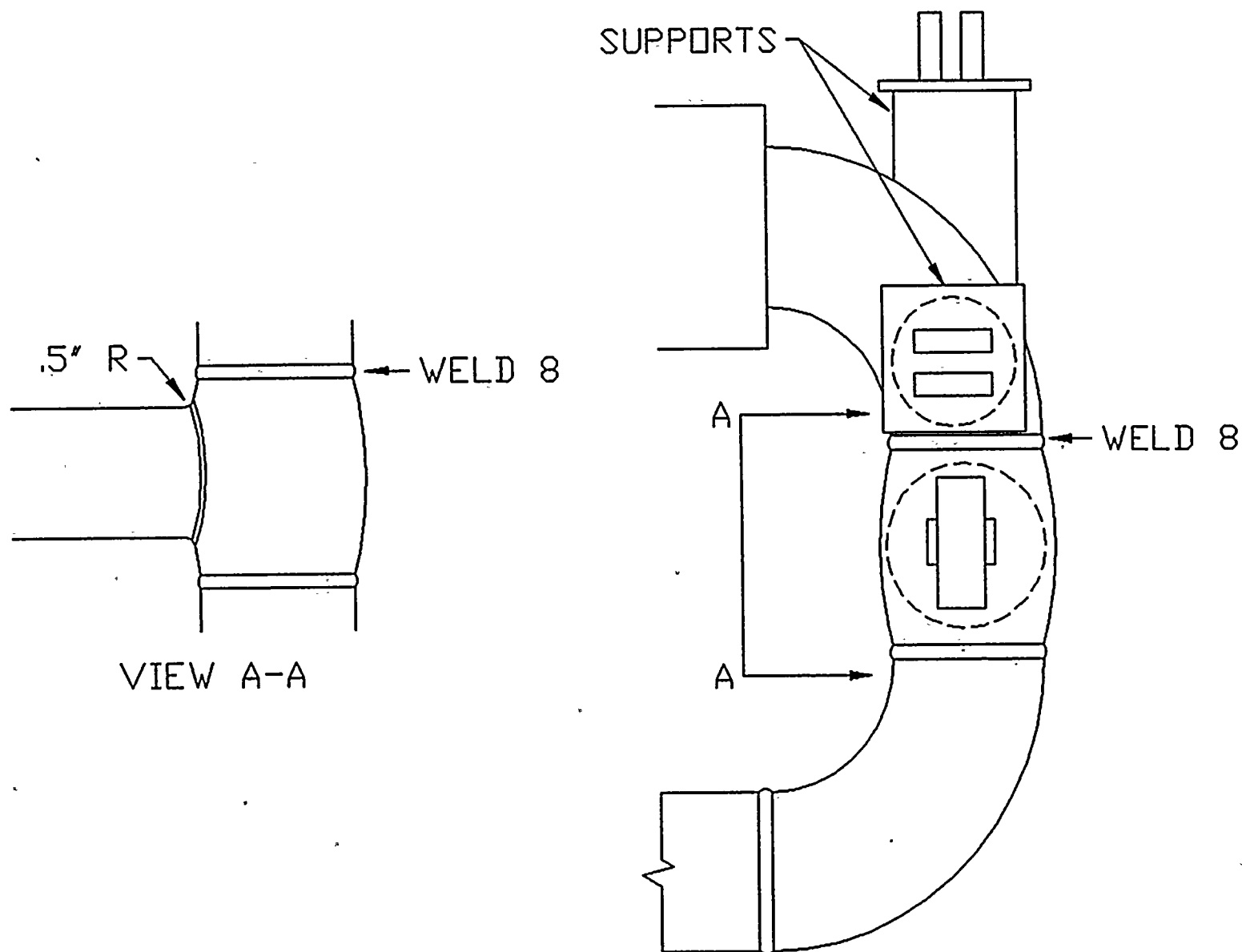




4"-RC-1401-9

FIGURE 19

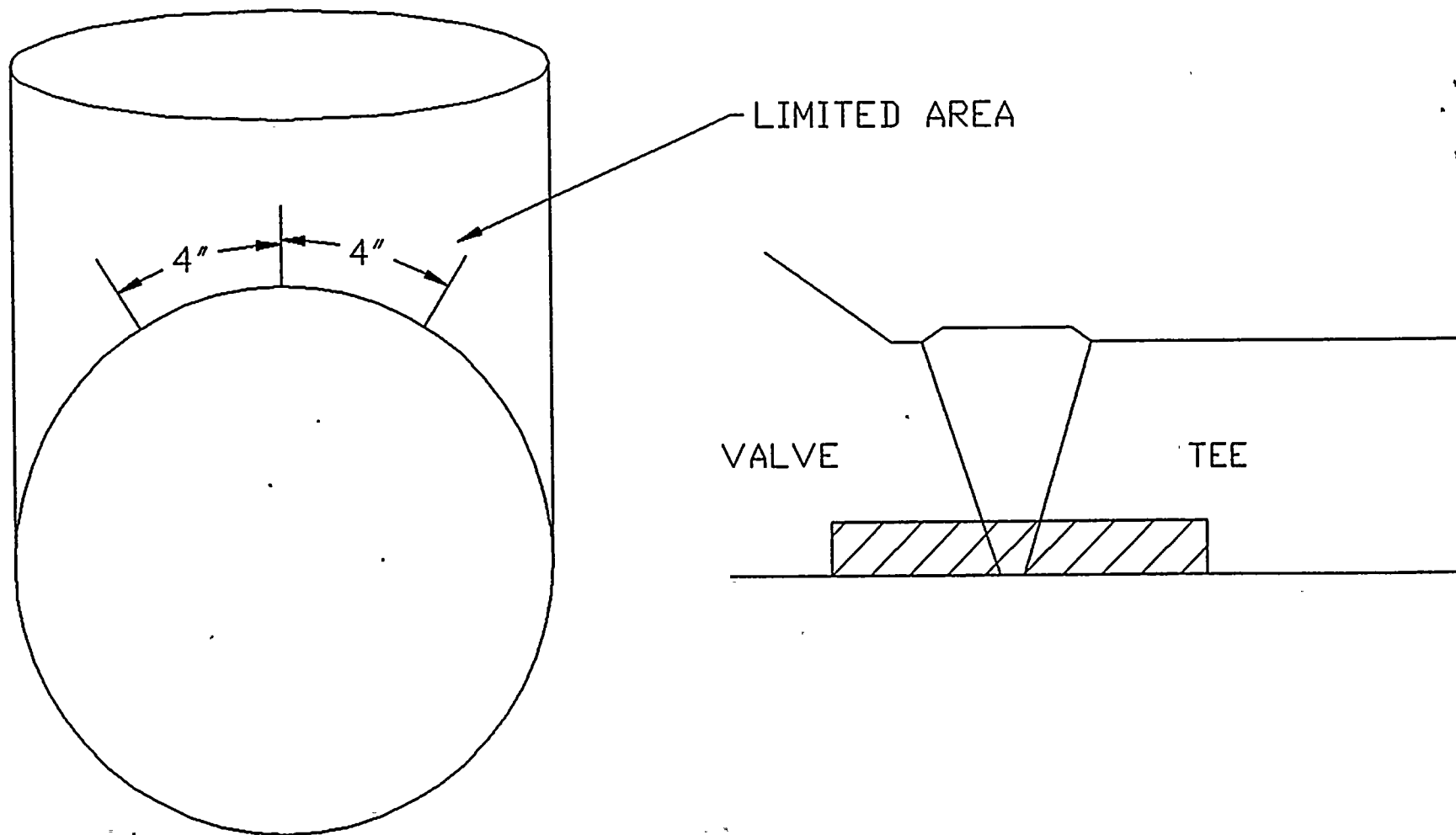




4"-RC-1406-8

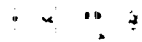
FIGURE 20

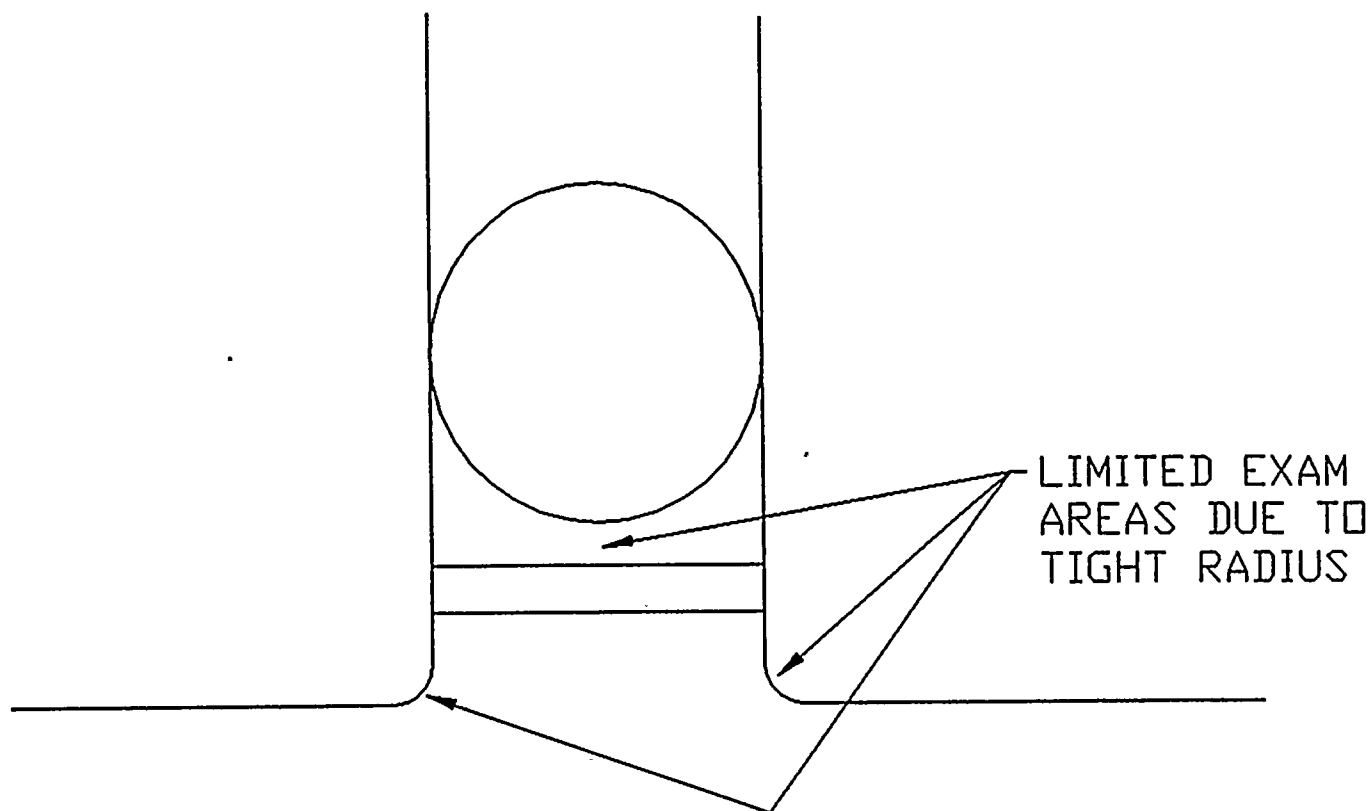




10"-SI-1403-1

FIGURE 21





8"-RHR-1402-7

FIGURE 22

Handwritten signature: *Handwritten signature*