PRIORITY 1
(ACCELERATED RIDS PROCESSING)

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9503010391 DOC.DATE: 95/02/20 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
AUTH.NAME AUTHOR AFFILIATION
PLUNKETT,T.F. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards relief request for Turkey Point Unit 3 Class 1 & Class 2 pressure retaining similar & dissimilar metal welds in vessels & piping.

DISTRIBUTION CODE: A047D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 35
TITLE: OR Submittal: Inservice/Testing/Relief from ASME Code - GL-89-04

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-2 LA	1	1	PD2-2 PD	1	1
	CROTEAU,R	1	1			
INTERNAL:	AEOD/SPD/RAB	1	1	FILE CENTER 01	1	1
	NRR/DE/EMCB	1	1	NRR/DE/EMEB	1	1
	NUDOCS-ABSTRACT	1	1	OGC/HDS3	1	0
	RES/DSIR/EIB	1	1			
EXTERNAL:	LITCO BROWN,B	1	1	LITCO RANSOME,C	1	1
	NOAC	1	1	NRC PDR	1	1

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 504-2083) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 14 ENCL 13

PRIORITY 1 DOCUMENT

MAT

FPL

FEB 20 1995

L-95-33
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 3
Docket Nos. 50-250
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 In-Service Inspection Program for the second ten year interval at Turkey Point Units 3 and 4. The second ten year interval for Turkey Point Unit 3 extended from February 22, 1984, to February 21, 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 3. Attached please find one relief request for the Turkey Point Unit 3 Class 1 and Class 2 pressure retaining similar and dissmilar 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

TFP/OIH

Attachment

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

280007

A047
1/1

RELIEF REQUEST

Relief Request No. 1

A. Component Identification:

Turkey Point Unit 3 .

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. In accordance with this Code Case, welds examined during the Second Interval that exceeded 90% coverage are considered to meet the requirement of "essentially 100%" and not included in this request for relief.

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. Monthly walkdowns by system engineers are performed on Class 2 systems to check for leakage, piping configuration, and/or damage. During outages, system engineers walkdown 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 February 22, 1984 through February 21, 1994.

The same areas will be examined during the third inservice inspection interval, from February 22, 1994 through February 21, 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.)

Catgy/ Item No.	Year of Exam	Zone	Item	NDE Tech	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	1 1/2 V			
B-J B9.11	85	3-010	31"-RCS-1302-8	UT	45	-	-	Elbow configuration limits exam	1	100% from Pipe Side, 82% from Elbow Side
B-J B9.11	85	3-011	29"-RCS-1305-3	UT	45	-	-	Branch Connection Limit 18", Elbow configuration limits exam	2	93% from Pipe Side, 69% from Elbow Side
B-F B5.70	85	3-011	29"-RCS-1305-4	UT	45	-	-	Nozzle to Elbow	3	43% from Elbow Side, 2% from Nozzle Side
C-F C5.21	85	3-101	26"-MSB-2305-15	MT	-	-	-	Floor limits exam	4	85% Surface Coverage Achieved
C-F C5.21	85	3-103	6"-BDA-2301-2	UT	-	-	45	Pipe to Valve	5	100% from Pipe Side, 50% from Valve Side
C-F C5.21	85	3-103	6"-BDA-2301-8	UT	-	-	45	Tee to Pipe	5	100% from Pipe Side, 50% from Tee Side
C-F C5.11	85	3-106	6"-BDA-2304-26	MT	-	-	-	Floor limits exam	4	74% Surface Coverage Achieved
B-D B3.140	90	3-003	3-SGB-I-IRS	UT	45	-	-	Welded on pads, support, and configuration	11	70% Coverage Achieved in Two Directions
B-D B3.140	90	3-003	3-SGB-O-IRS	UT	45	-	-	Welded on pads, support, and configuration	11	70% Coverage Achieved Two Directions
B-D B3.120	87	3-006	3-SRGN-01-IR	UT	30 60	- -	- -	heater penetrations limited the exam area	6	55% coverage from 2 directions
B-J B9.21	87	3-043	2"-SI-1305-4	PT	-	-	-	Component Support limited the exam area	7	87% Surface Coverage Achieved
C-F C5.21	87	3-081	10"-SI-2304-3	UT	45	-	-	Valve MOV-3-744A to pipe	8	100% from the pipe side, 0% from valve side

Catgy/ Item No.	Year of Exam	Zone	Item	NDE Tech	Angle and Technique 1/2 V	Full V	1 1/2 V	Configuration or Limitations	Fig. No.	Comments / % Coverage
C-F C5.21	87	3-089	8"-SI-2310-24	UT	-	-	45	Pipe to Valve 3-876E	9	100% from the pipe side, 50% from the valve side
C-A C1.20	87	3-115	3-RHE-A1	UT	45	-	-	Inlet and outlet nozzles and component supports limit exam	10	27% from the shell side, 80% from the head side
B-D B3.140	90	3-003	3-SGA-I-IRS	UT	45	-	-	Welded on pads, support, and configuration	11	70% Coverage Achieved in Two Directions
B-D B3.140	90	3-003	3-SGA-O-IRS	UT	45	-	-	Welded on pads, support, and configuration	11	70% Coverage Achieved Two Directions
B-D B3.120	90	3-006	SP-03-I-IR	UT	30 60	- -	- -	Configuration of Spray Inner Radius limits exam	12	70% Coverage Achieved from 2 Directions, 15% Coverage 1 Direction, 15% Not Covered
B-D B3.120	90	3-006	RV-03-551C-IR	UT	60	-	-	Interference from Insulation Ring	12	40% Coverage Achieved in Two Directions
B-D B3.120	90	3-006	RN-03-1-IR	UT	60	-	-	Interference from Insulation Ring	12	40% Coverage Achieved in Two Directions
B-F B5.70	90	3-007	31"-RCS-1301-5	UT	45	-	-	Steam generator nozzle to elbow	13	75% from Elbow Side, 0% from Nozzle Side
B-F B5.70	90	3-010	31"-RCS-1302-5	UT	45	-	-	Steam generator nozzle to elbow	13	75% from Elbow Side, 0% from Nozzle Side
B-F B5.70	90	3-008	29"-RCS-1304-4	UT	45	-	-	Elbow to Nozzle	13	100% from Elbow Side, 0% from Nozzle Side
B-J B9.11	90	3-009	27.5"-RCS-1307-11	UT	45	-	-	Pump casing to pipe	13	55% from Pipe Side, 0% from Pump Side

Catgy/ Item No.	Year of Exam	Zone	Item	NDE Tech	Angle and Technique			Configuration or Limitations	Fig. No.	Comments / % Coverage
					1/2 V	Full V	1 1/2 V			
B-J B9.11	90	3-012	27.5"-RCS-1306-11	UT	45	-	-	Pump casing to pipe	14	100% from Pipe Side, 0% from Pump Side
B-J B9.11	90	3-016	12"-RC-1301-1	UT	45 60	- -	- -	Branch connection to pipe	15	100% from Pipe side, 0% from Nozzle side
B-F B5.40	90	3-017	4"-RC-1301-1A	UT	45	-	-	Nozzle to safe-end	23	50% from Safe End Side, 50% from Nozzle Side
B-F B5.40	90	3-022	4"-RC-1306-1A	UT	45	-	-	Nozzle to safe-end	23	50% from Safe End Side, 50% from Nozzle Side
B-J B9.11	90	3-036	14"-RHR-1301-6	UT	45 60	- -	- -	Pipe to valve 3-750	15	100% from Pipe Side, 0% from Valve
B-J B9.11	90	3-037	8"-RHR-1301-3	UT	45 60	- -	- -	Elbow to valve 3-876A	24	100% from Elbow side, 0% from Valve side
B-J B9.11	90	3-038	10"-SI-1302-1	UT	45 60	- -	- -	Elbow to branch connection	15	100% from Elbow Side, 0% from Branch Side
B-J B9.11	90	3-038	8"-RHR-1302-1	UT	45 60	- -	- -	Valve 3-876B to pipe	15	100% from Pipe Side, 0% from Valve Side
B-J B9.11	90	3-039	10"-SI-1303-11	UT	45 60	- -	- -	Elbow to valve 3-875C	8	100% from Elbow side, 0% from Valve side
C-F C5.21	90	3-079	10"-SI-2302-5	UT	45 60	- -	- -	Valve 3-865B to pipe	15	100% from pipe, 0% from valve, examination not required during third interval
C-F C5.21	90	3-079	10"-SI-2302-6	UT	45 60	- -	- -	Pipe to valve 3-875E	15	100% from pipe, 0% from valve, examination not required during third interval
C-F C5.21	90	3-081	10"-SI-2305-3	UT	45 60	- -	- -	Valve MOV-3-744B to pipe	15	100% from pipe, 0% from valve

Catgy/ Item No.	Year of Exam	Zone	Item	NDE Tech	Angle and Technique 1/2 V	Full V	1 1/2 V	Configuration or Limitations	Fig. No.	Comments / % Coverage
C-F C5.21	90	3-081	10"-SI-2305-8	UT	45 60	- -	- -	Elbow to valve 3-885	15	100% from elbow side, 0% from valve side
C-F C5.21	90	3-081	10"-SI-2304-2	UT	45 60	- -	- -	Elbow to valve MOV-3-744A	15	100% from elbow side, 0% from valve side
C-F C5.21	90	3-081	10"-SI-2304-3	UT	45 60	- -	- -	Valve MOV-3-744A to pipe	15	100% from pipe side, 0% from valve side
C-F C5.21	90	3-085	8"-SI-2303-1	UT	45 60	- -	- -	Reducer to pipe	9	100% from pipe side, 0% from reducer side
C-F C5.21	90	3-104	6"-BDB-2302-1	UT	- 60	- -	45 -	Reducer to valve SGB-3-003	17	75% from reducer side, 70% from valve side
C-F C5.11	90	3-113	6"-FWB-2302-3	MT	-	-	-	Valve 3-20-231 to pipe, double acting restraint limits access	21	50% surface coverage examined one direction only parallel to weld, for axial flaws only
B-J B9.11	91	3-007	31"-RCS-1301-10	UT	45	-	-	Elbow to pump casing	13	75% from elbow side, 0% from pump side
B-J B9.11	91	3-010	31"-RCS-1302-10	UT	45	-	-	Elbow to pump casing	13	75% from elbow side, 0% from pump side
B-F B5.70	91	3-013	31"-RCS-1303-5	UT	45	-	-	Steam Generator nozzle to elbow	13	75% coverage from elbow side, 0% coverage from nozzle side
B-F B5.70	91	3-014	29"-RCS-1308-4	UT	45	-	-	Elbow to steam generator nozzle	13	100% from elbow side, 0% from nozzle side
B-J B9.11	91	3-020	4"-RC-1304-18	UT	- 60	- -	45 -	Elbow to tee	18	70% from elbow side, 70% from tee side

Catgy/ Item No.	Year of Exam	Zone	Item	NDE Tech	Angle and Technique 1/2 V	Angle and Technique Full V	Angle and Technique 1 1/2 V	Configuration or Limitations	Fig. No.	Comments / % Coverage
B-J B9.11	91	3-021	4"-RC-1305-19	UT	- 60	- -	45 -	Pipe to tee	18	100% from pipe side, 60% from tee side
B-J B9.11	91	3-022	4"-RC-1306-7	UT	- - 60	- - -	45 - -	Tee to reducer	19 22	100% from reducer side, 65% from tee side
B-J B9.11	91	3-037	8"-RHR-1301-1	UT	45 60	-	-	Tee to elbow	20	100% from elbow side, 31% from tee Side
B-J B9.11	91	3-038	10"-SI-1302-4	UT	45 60	- -	- -	Elbow to valve 3-875B, sweepolet limits coverage	15	85% from elbow side, 25% from valve side
C-F C5.21	91	3-105	6"-BDC-2303-1	UT	- 60	- -	45 -	Reducer to valve SGB-3-005	17	85% from reducer side, 72% from valve side
C-F C5.21	91	3-105	6"-BDC-2303-5	UT	- 60	- -	45 -	Reducer to valve SGB-3-006	17	72% from reducer side, 66% from valve side
C-C C3.10	92	3-115	3-RHE-SPA-1 3-RHE-SPA-2	PT	-	-	-	Support attachment, no exam on bottom due to concrete pedestal	10	No exam on bottom of integral attachment due to permanent support structure
C-A C1.10	92	3-115	3-RHE-A2 ,	UT	45 60	- -	- -	Shell to Flange configuration, Branch Connections and Welded Support Pads limit exam	16	82% from Shell Side, 0% From Flange Side
B-D B3.140	92	3-005	3-SGC-I-IRS	UT	45	-	-	Welded on pads, support, and configuration	11	70% Coverage in 2 Directions
B-D B3.140	92	3-005	3-SGC-O-IRS	UT	45	-	-	Welded on pads, support, and configuration	11	70% Coverage in 2 Directions

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 2.4Sm for ferritic and austenitic steel;
> (2) cumulative usage factor U of 0.4

Based on 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). This criteria was 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).

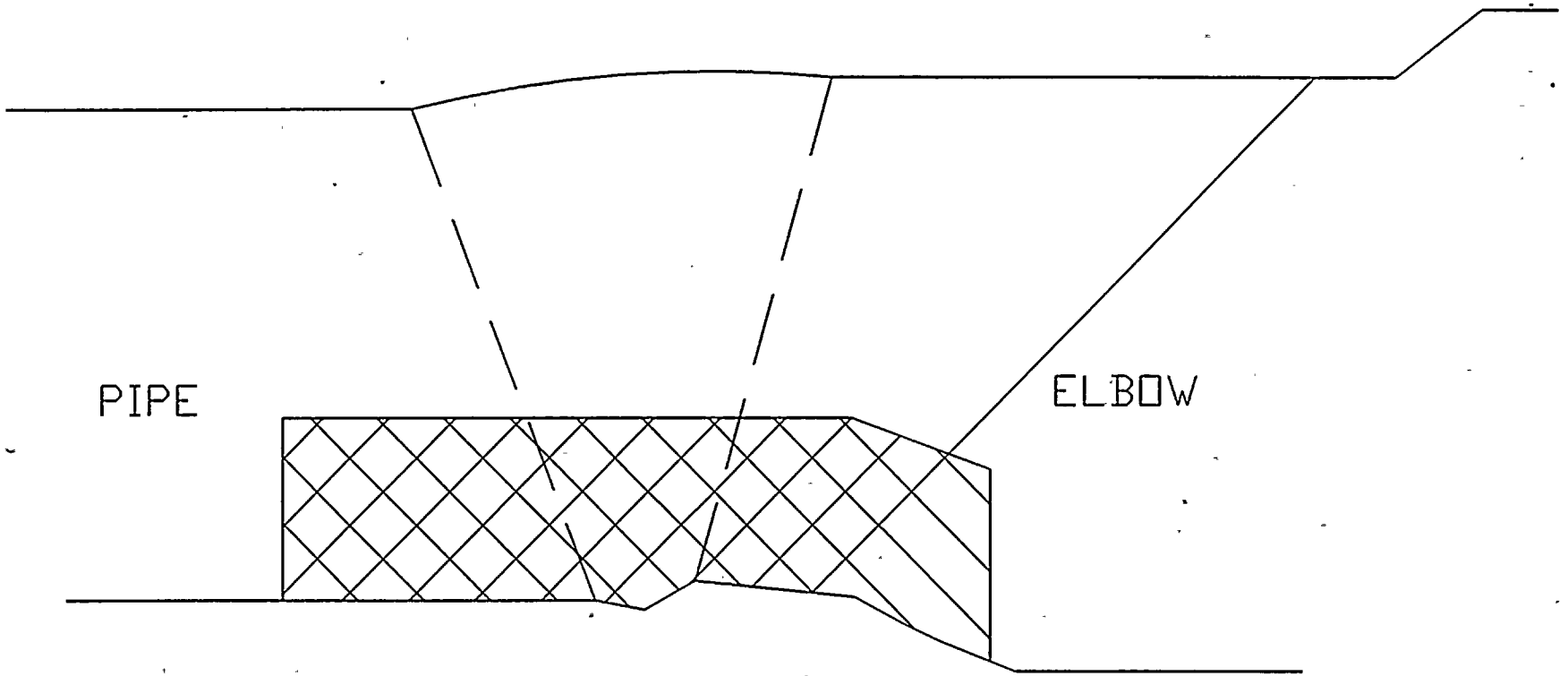
The exception to this is the Pressurizer Surge line which was reanalyzed in accordance with ASME Section III rules in response to IEB 88-08 (Zones 3-016 and 4-016.) This criteria was used for the second ten year interval and will be used for the third.

10CFR50.55a(g)(4) states "Throughout the service life of a boiling or pressurized water-cooled nuclear 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 reanalyses 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).

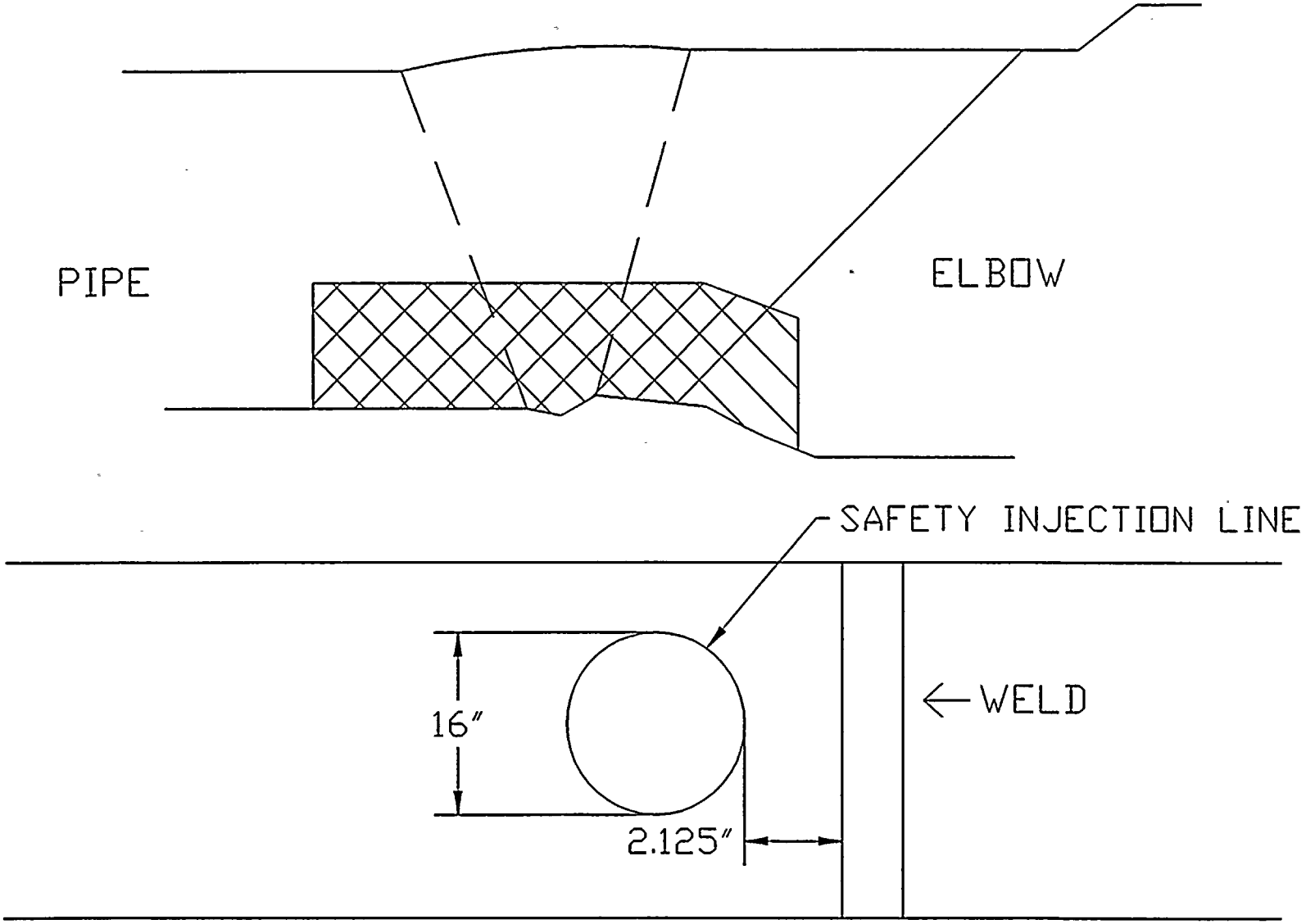
Since there was no design requirement at the time of construction to perform Class 1 analysis, they are not available nor required. 10CFR50.55a(g)(4) does not require FPL to perform these calculations for the sole purpose of identifying those Class 1 welds that would exceed the Category B-J stress criteria.

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.



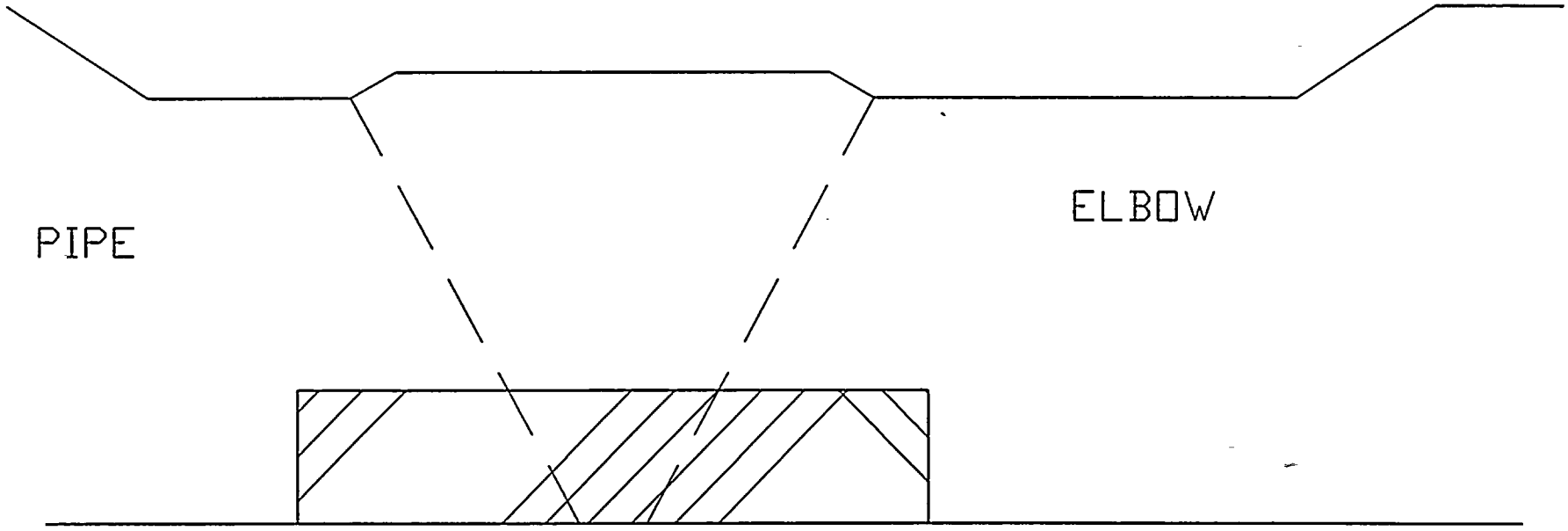
31"-RCS-1302-8

FIGURE 1



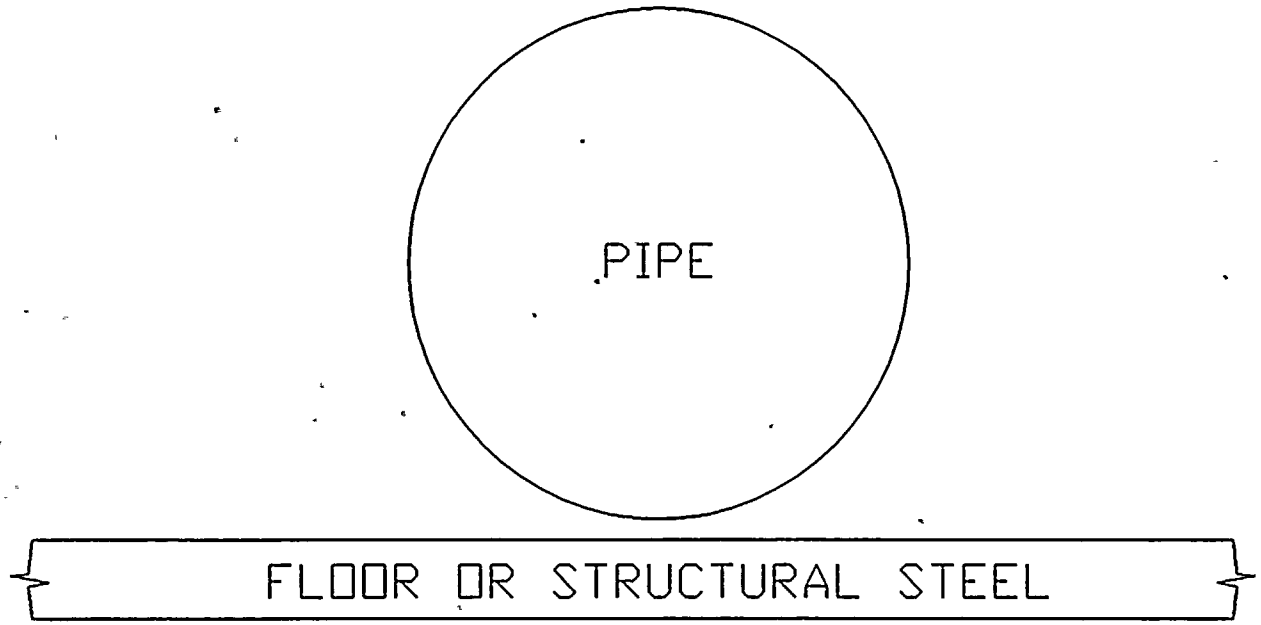
29″-RCS-1305-3

FIGURE 2



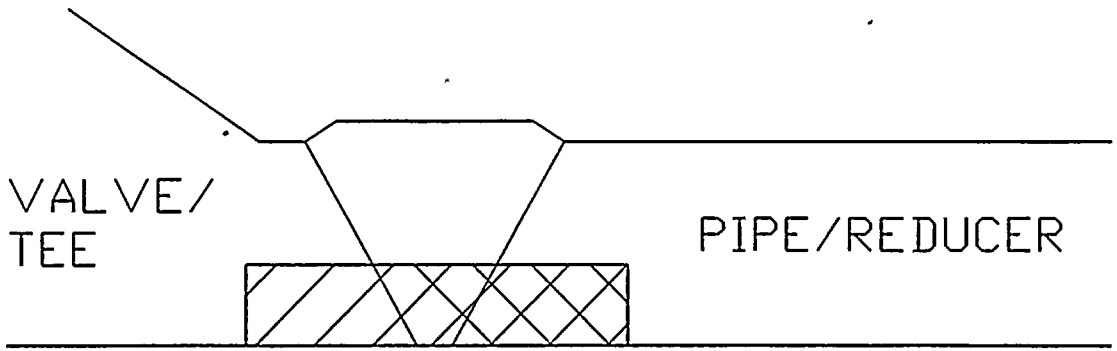
29"-RCS-1305-4

FIGURE 3



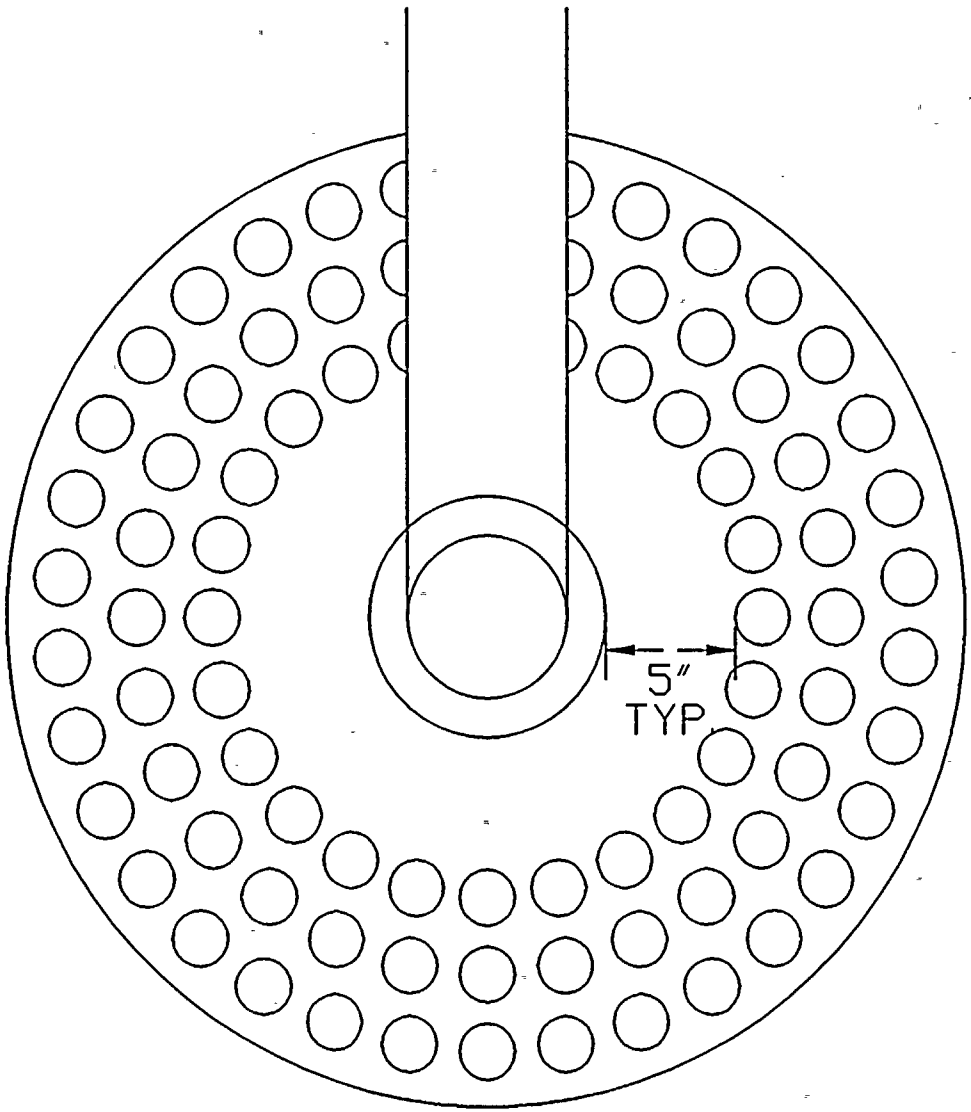
26"-MSB-2305-15
6"-BDA-2304-26

FIGURE 4



6"-BDA-2301-8
6"-BDA-2301-2

FIGURE 5



PRESSURIZER SURGE NOZZLE
SP-03-I-IR

FIGURE 6

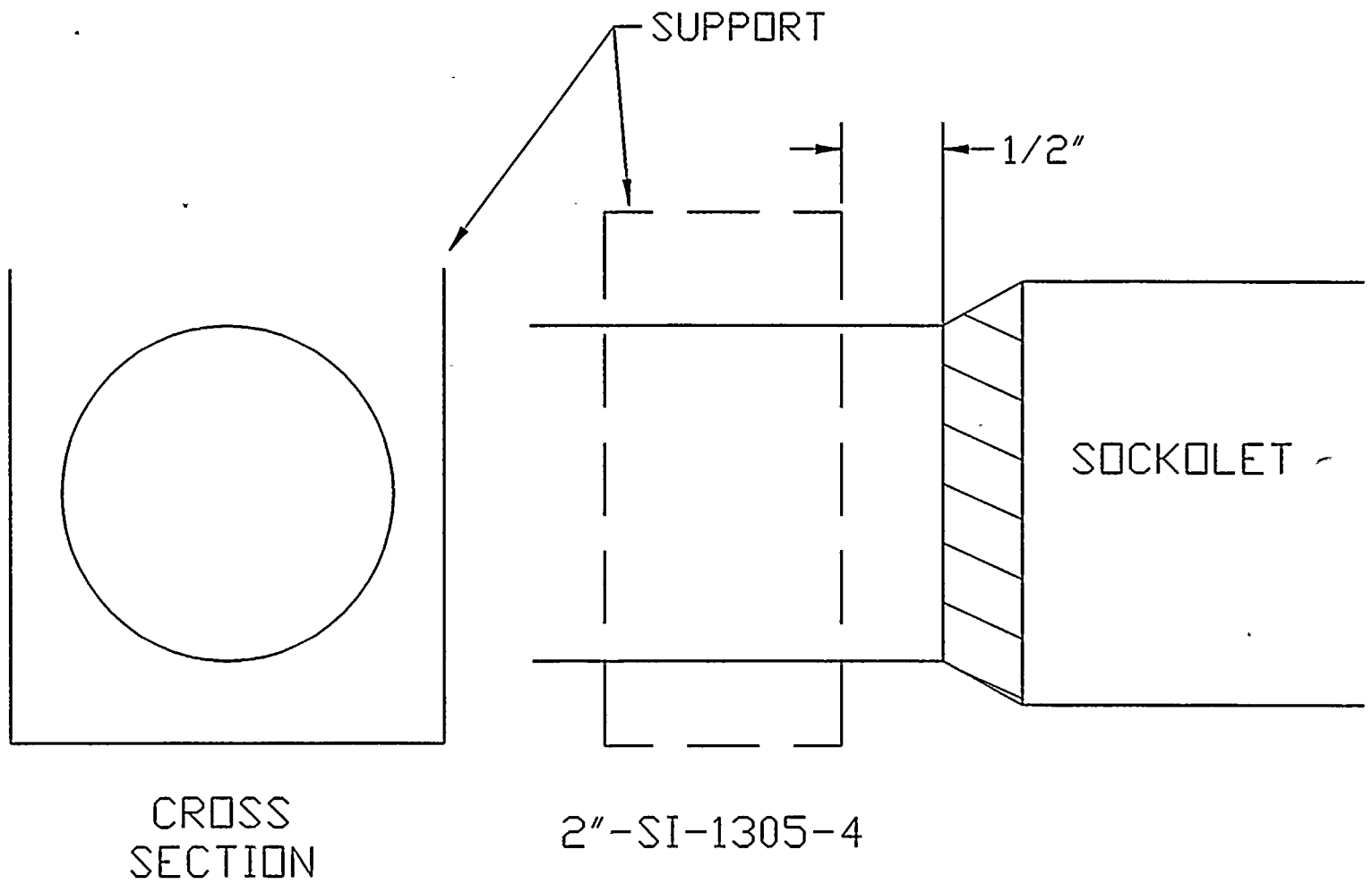
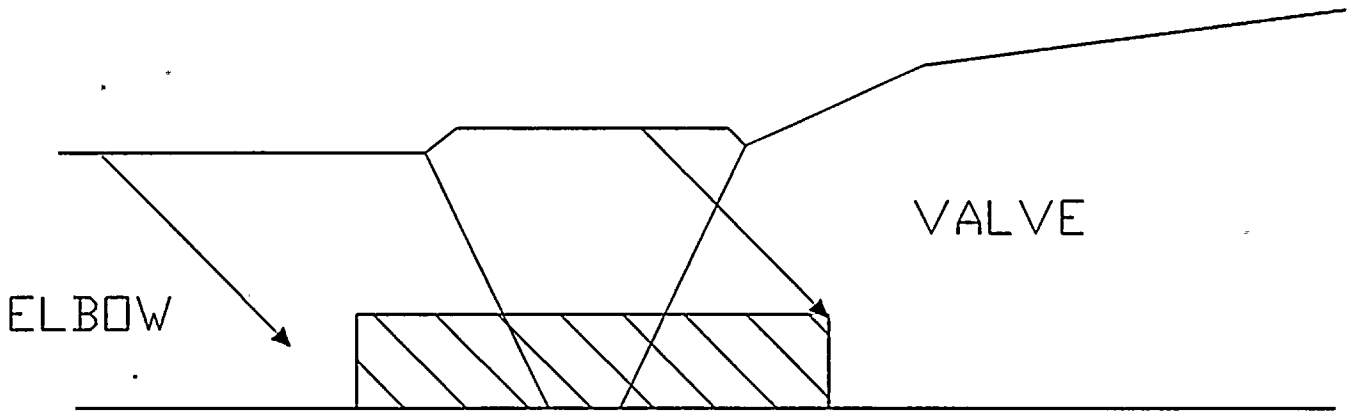


FIGURE 7

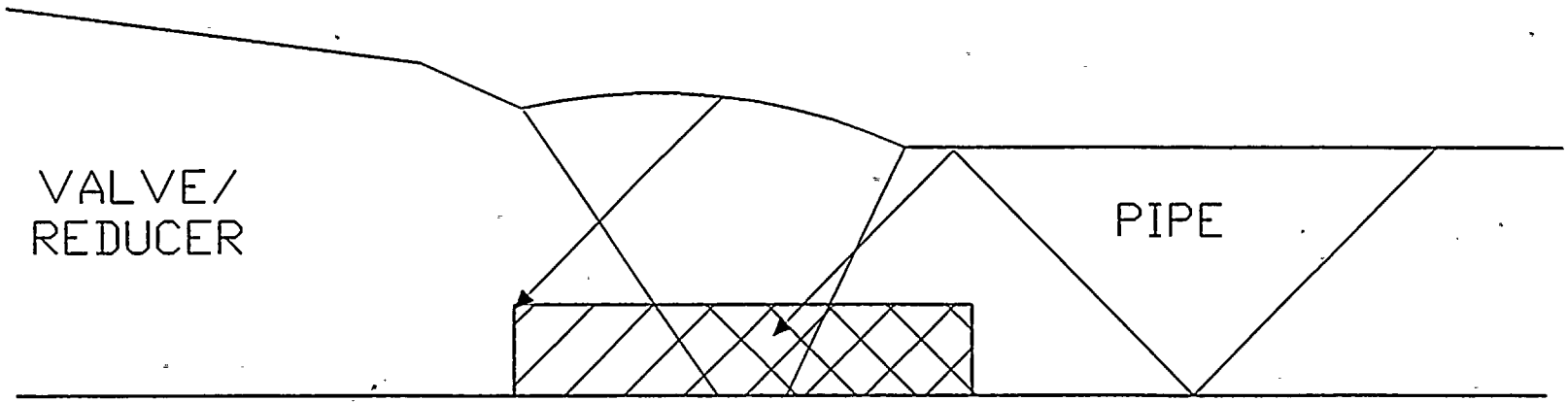
VALVE SURFACE IS IN
THE AS-CAST CONDITION.
NOT CONDUCIVE TO PROPER
EXAMINATION.



10″-SI-1303-11
10″-SI-2304-3

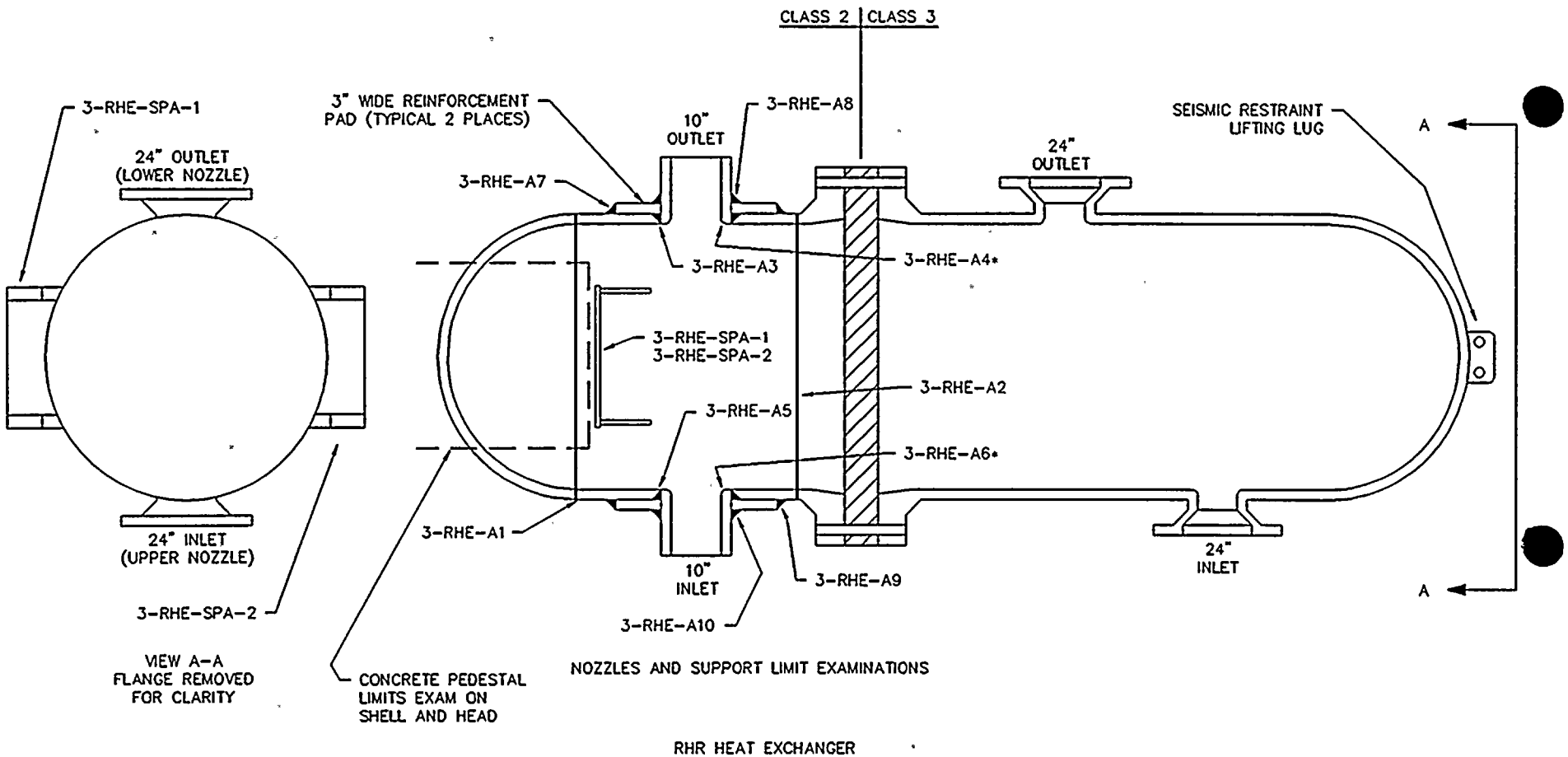
FIGURE 8

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



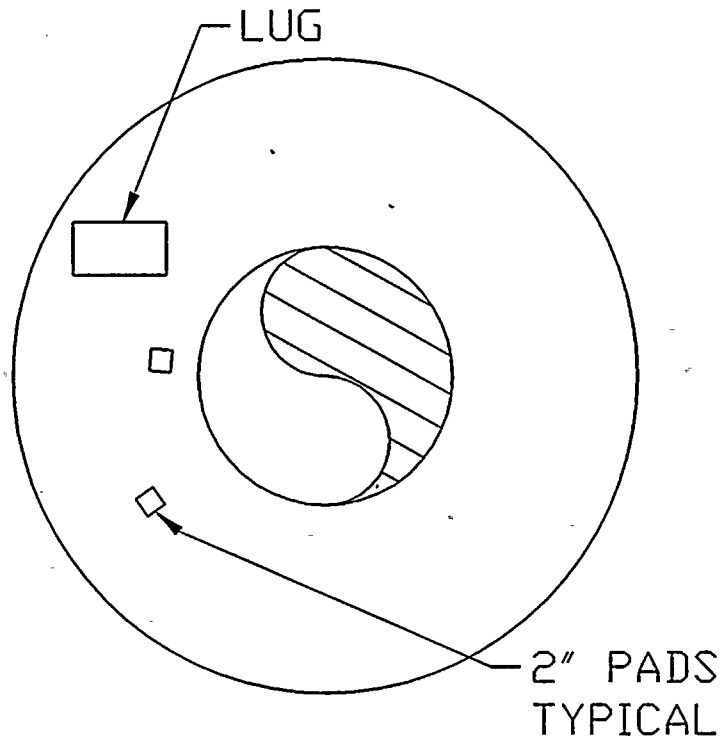
8"-SI-2310-24
8"-SI-2303-1

FIGURE 9



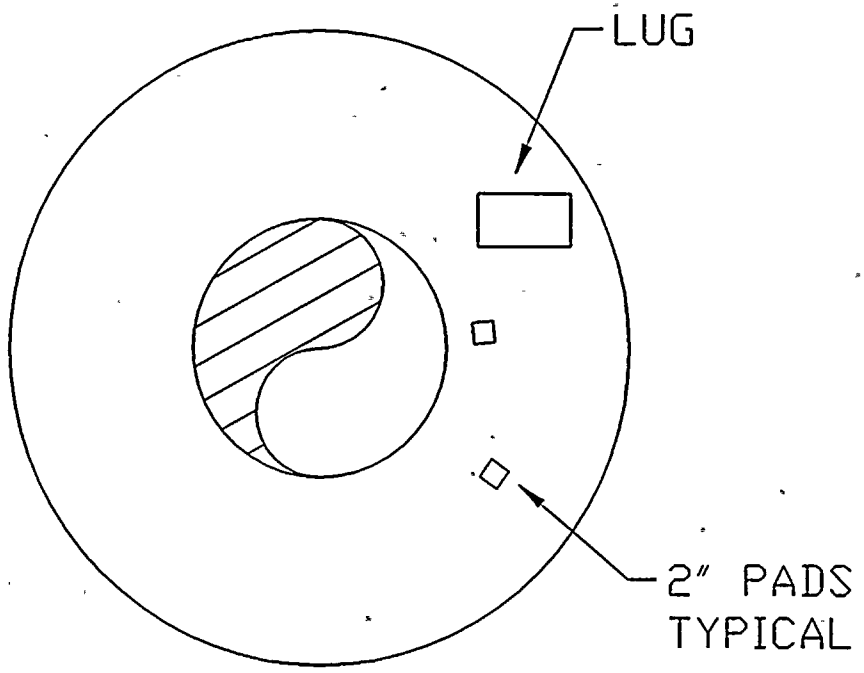
RHR HEAT EXCHANGER

FIGURE 10



3-SGA-I-IRS
3-SGB-I-IRS
3-SGC-I-IRS

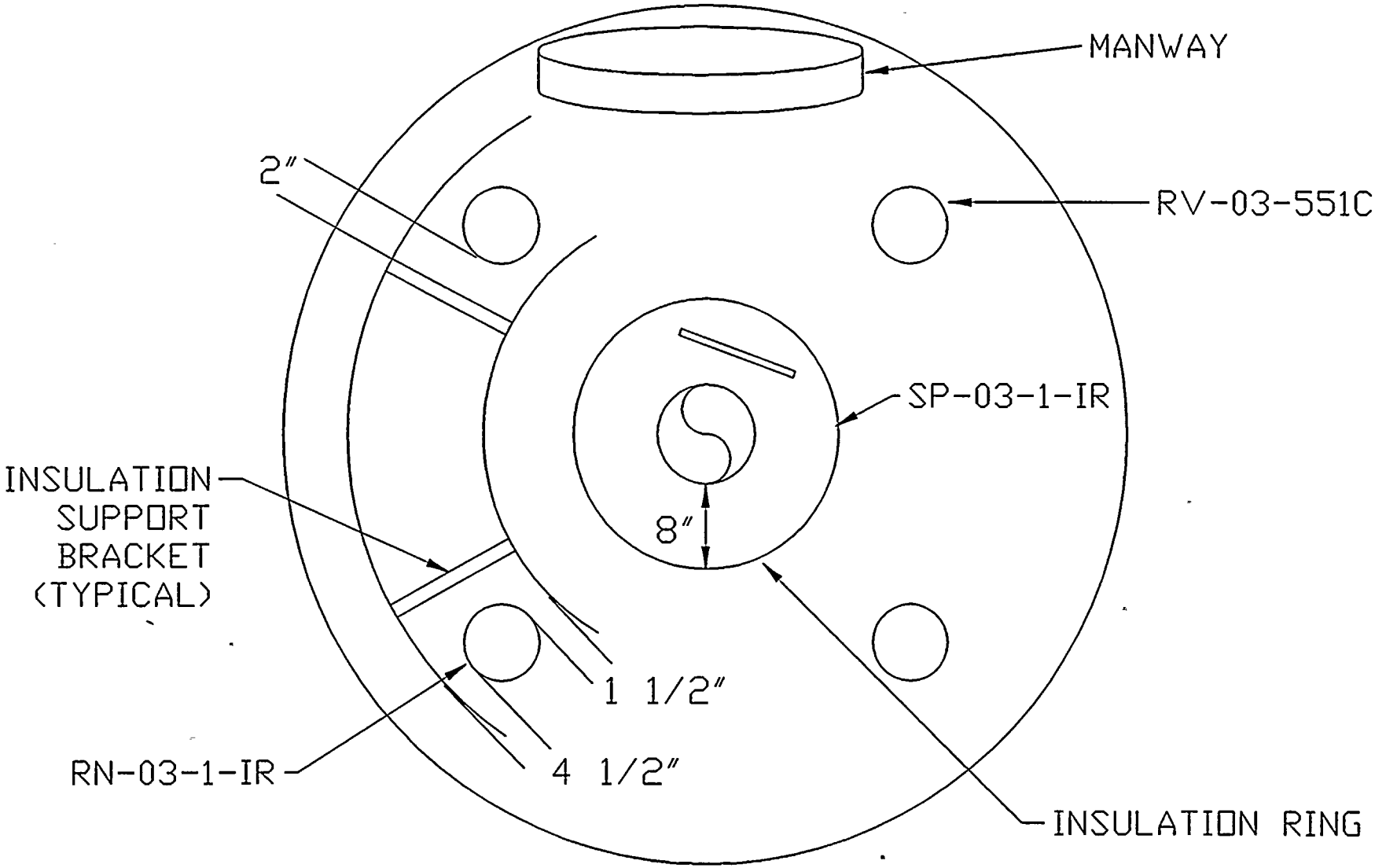
INLET NOZZLE INNER RADIUS



3-SGA-O-IRS
3-SGB-O-IRS
3-SGC-O-IRS

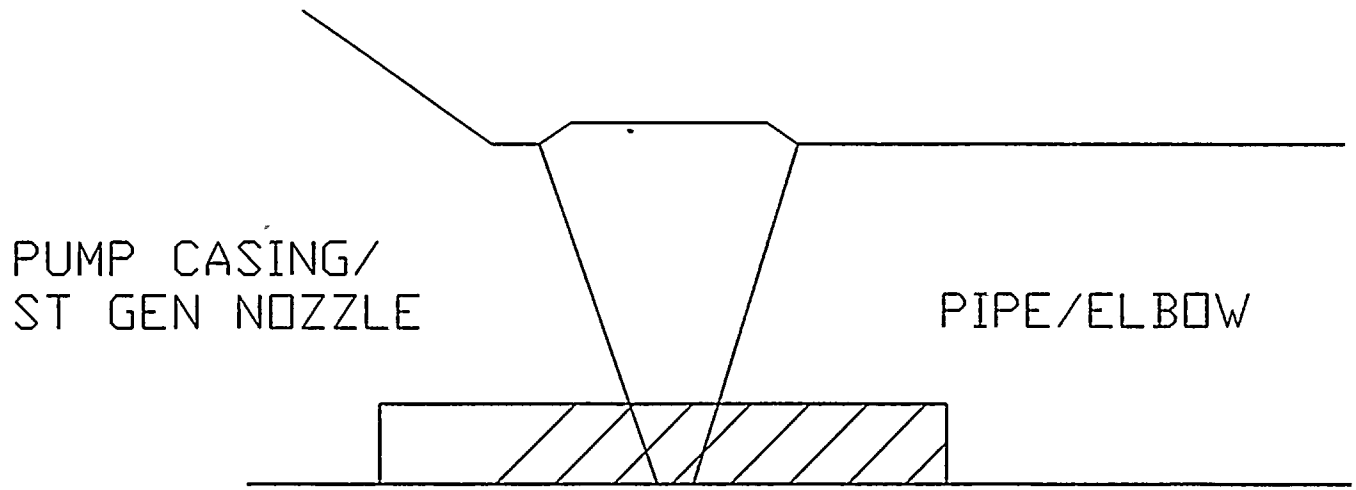
OUTLET NOZZLE INNER RADIUS

FIGURE 11



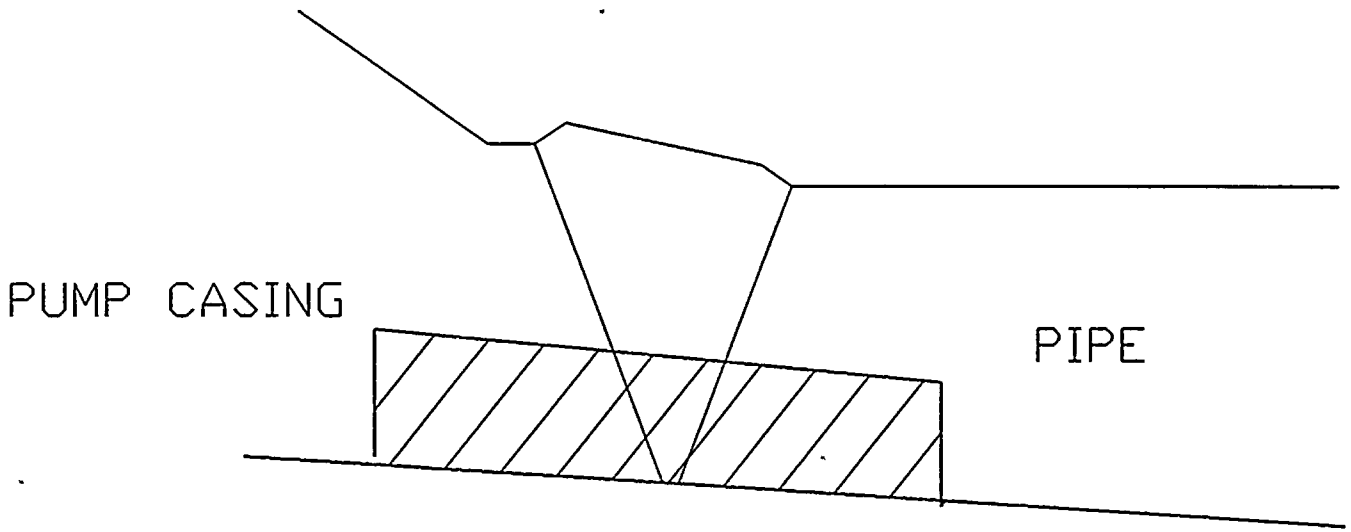
ALL MEASUREMENTS TYPICAL

FIGURE 12



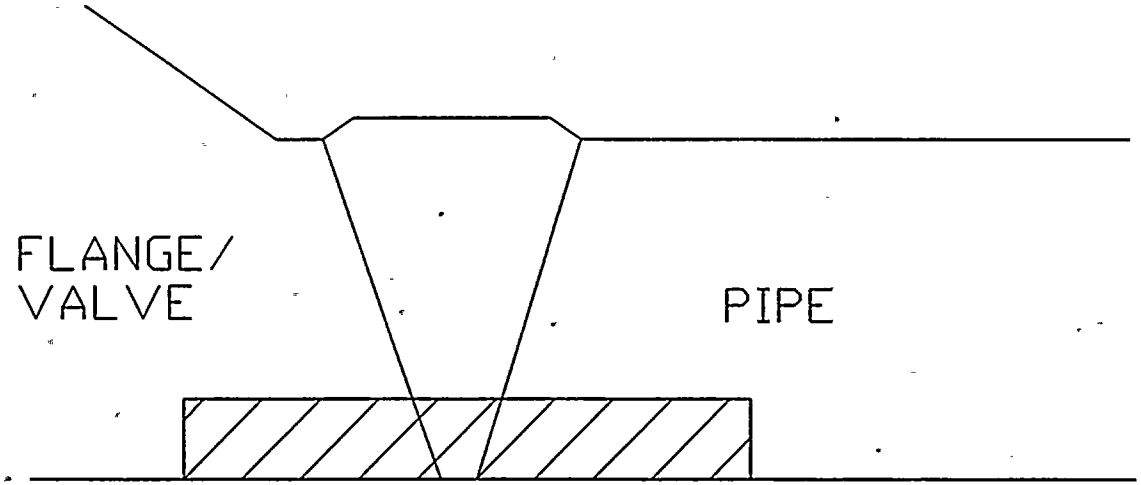
27.5""-RCS-1307-11
31"-RCS-1303-5
31"-RCS-1301-10
31"-RCS-1302-10
31"-RCS-1302-5
31"-RCS-1301-5
29"-RCS-1308-4
29"-RCS-1304-4

FIGURE 13



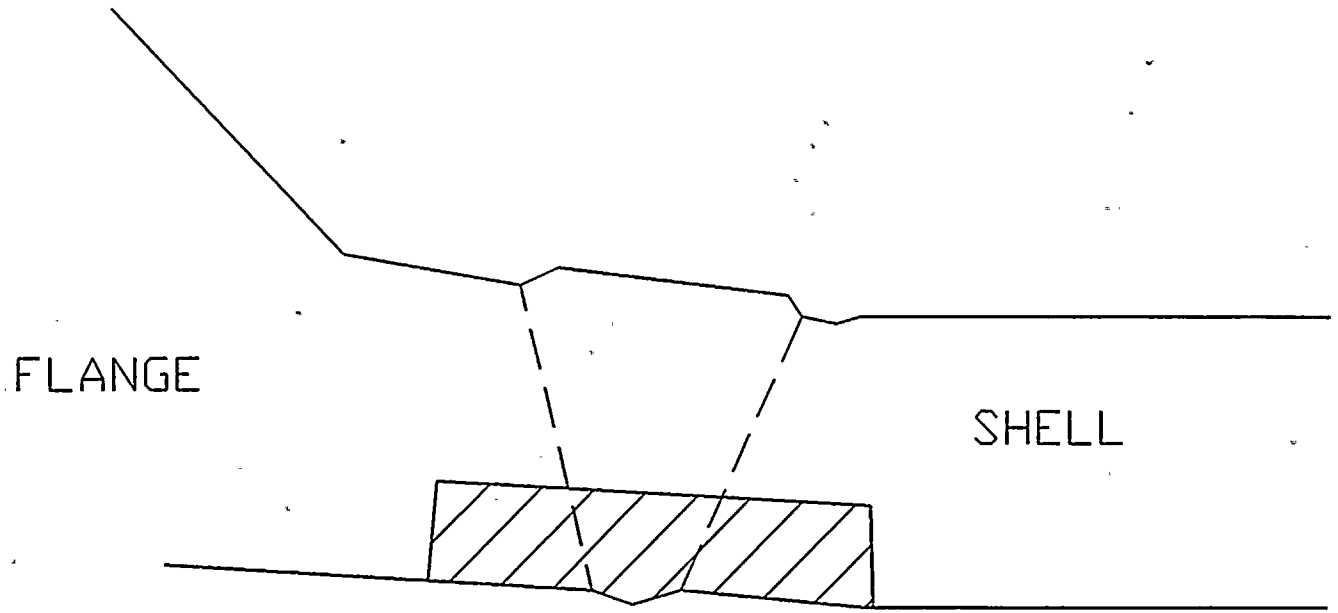
27.5"-RCS-1306-11

FIGURE 14



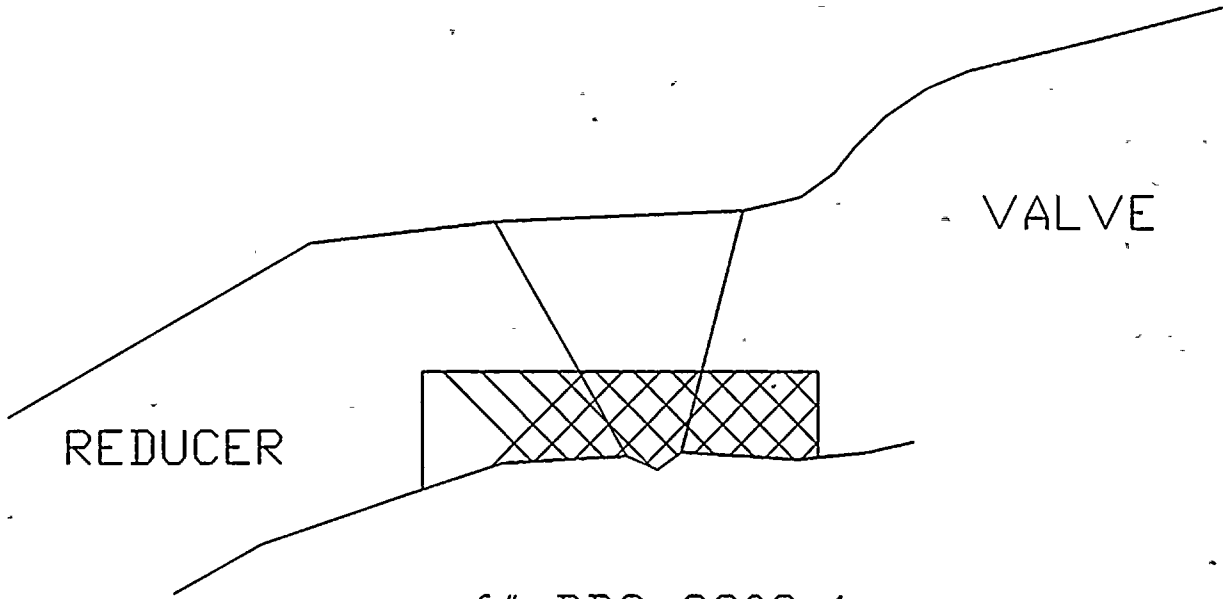
12″-RC-1301-1
14″-RHR-1301-6
10″-SI-1302-1
8″-RHR-1302-1
10″-SI-2302-5
10″-SI-2302-6
10″-SI-2305-3
10″-SI-2305-8
10″-SI-2304-2
10″-SI-2304-3
10″-SI-1302-4

FIGURE 15



3-RHE-A2

FIGURE 16



6"-BDC-2303-1
6"-BDC-2303-5
6"-BDB-2302-1

FIGURE 17

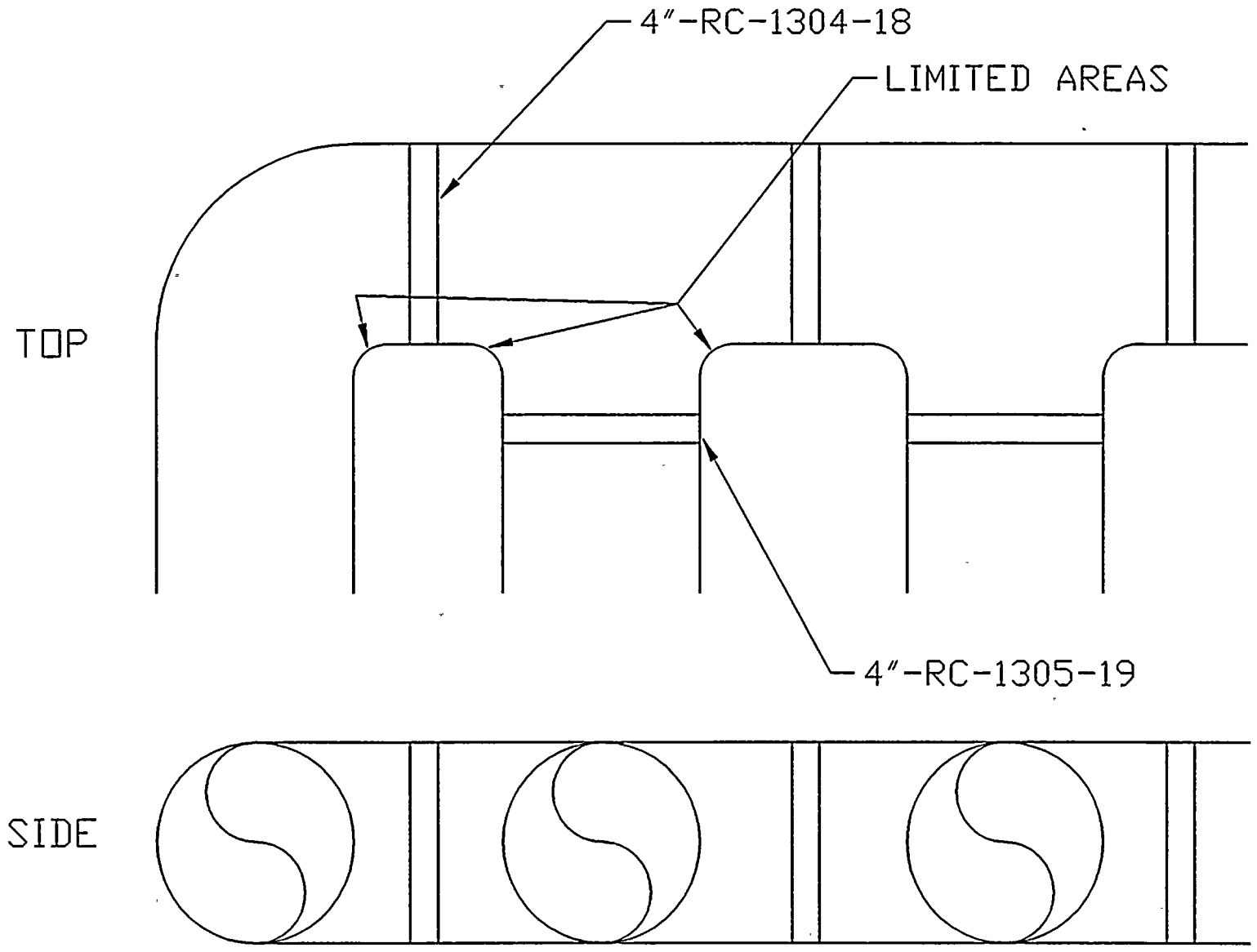
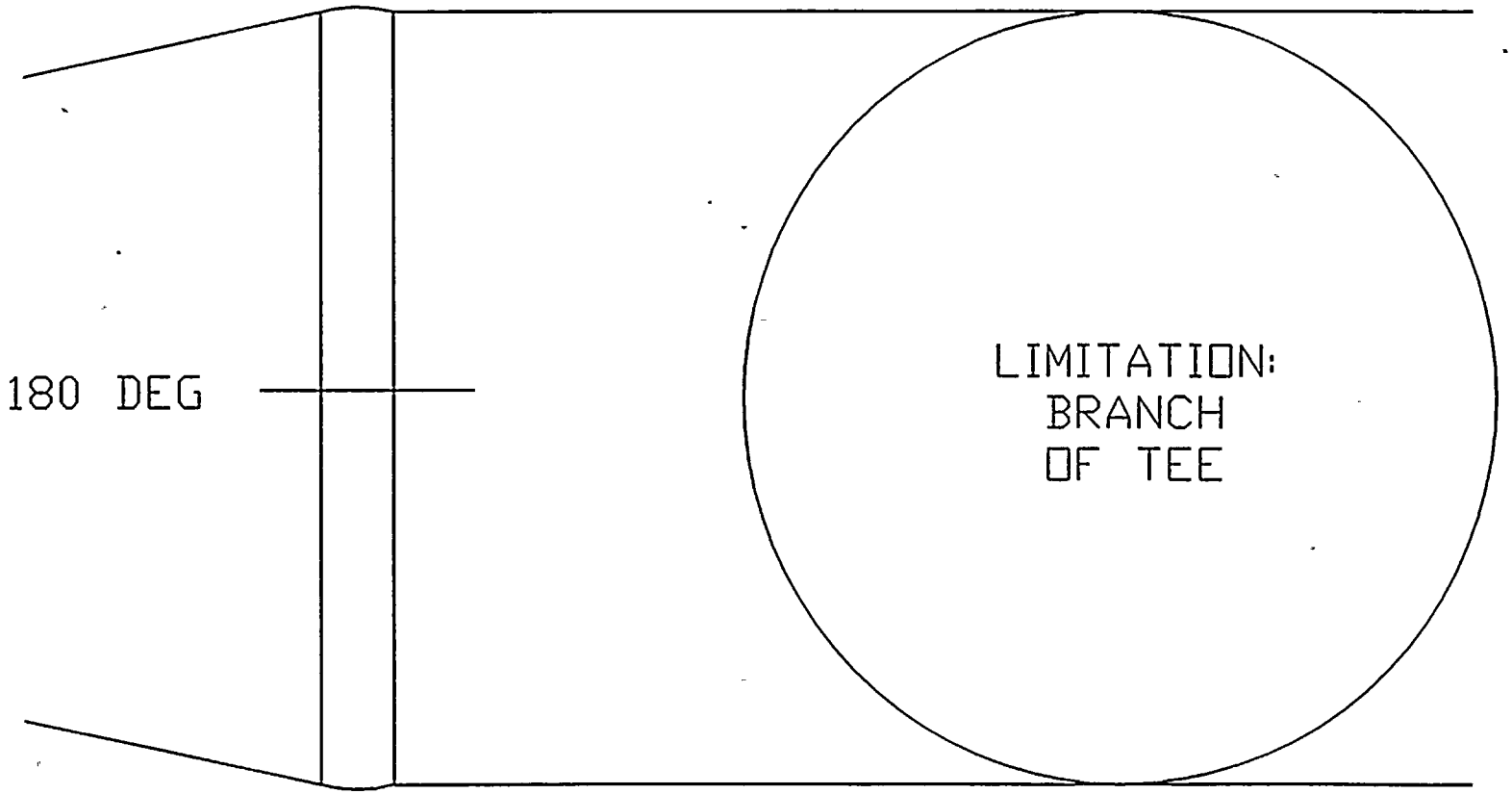
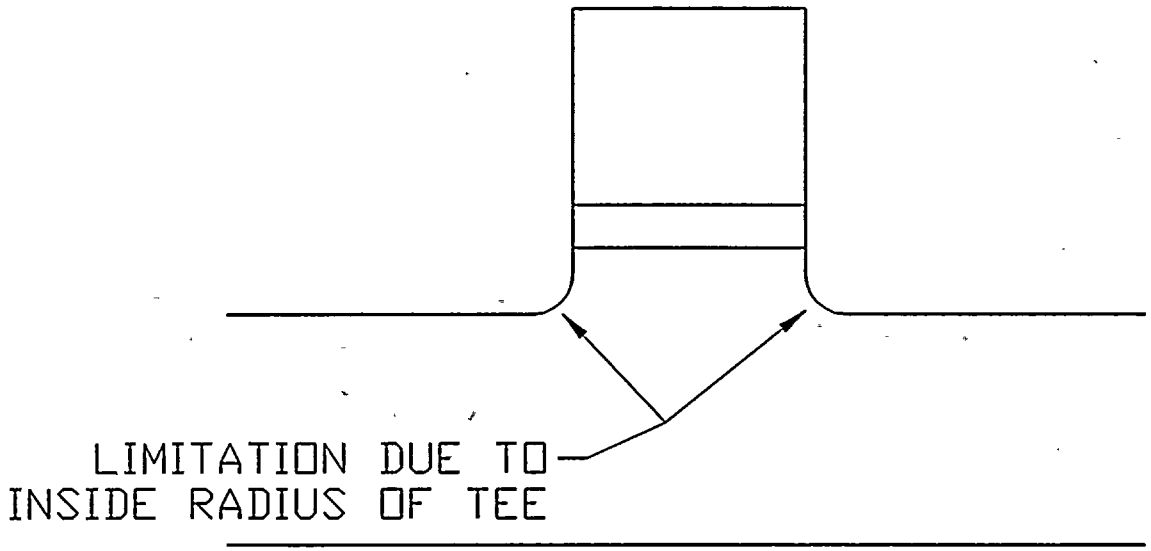


FIGURE 18



4"-RC-1306-7

FIGURE 19



8"-RHR-1301-1

FIGURE 20

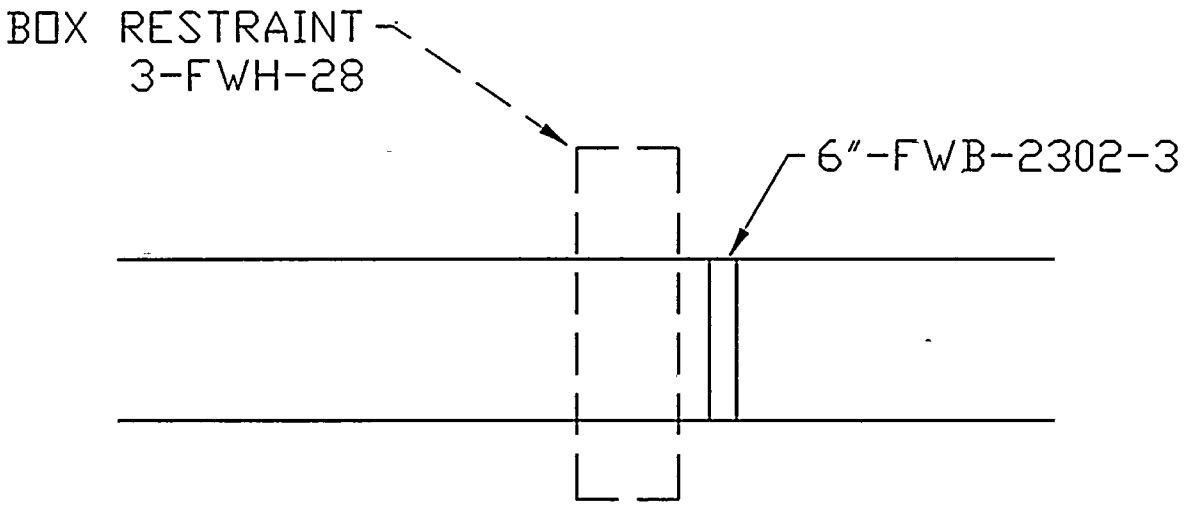
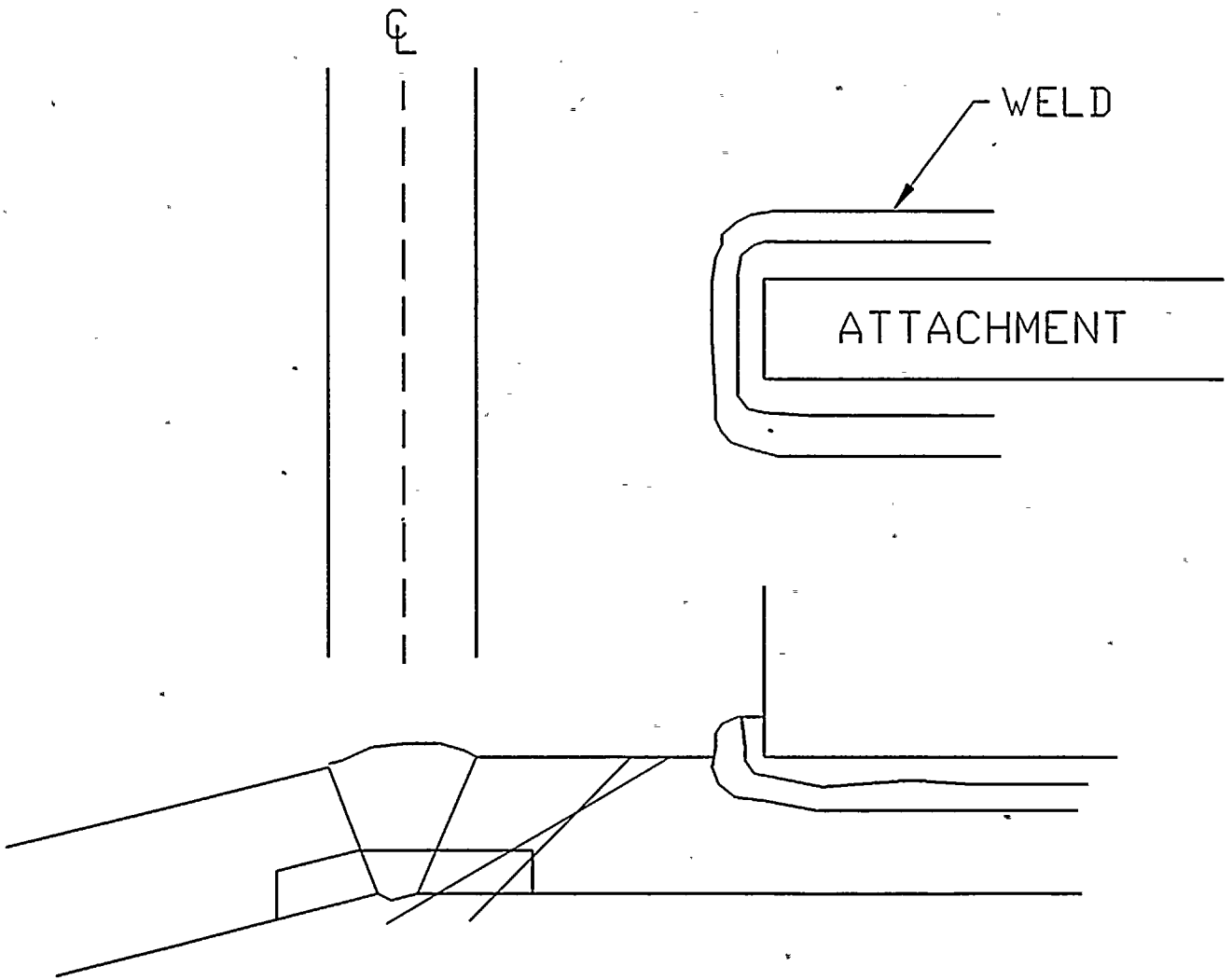


FIGURE 21



4"-RC-1306-7

FIGURE 22

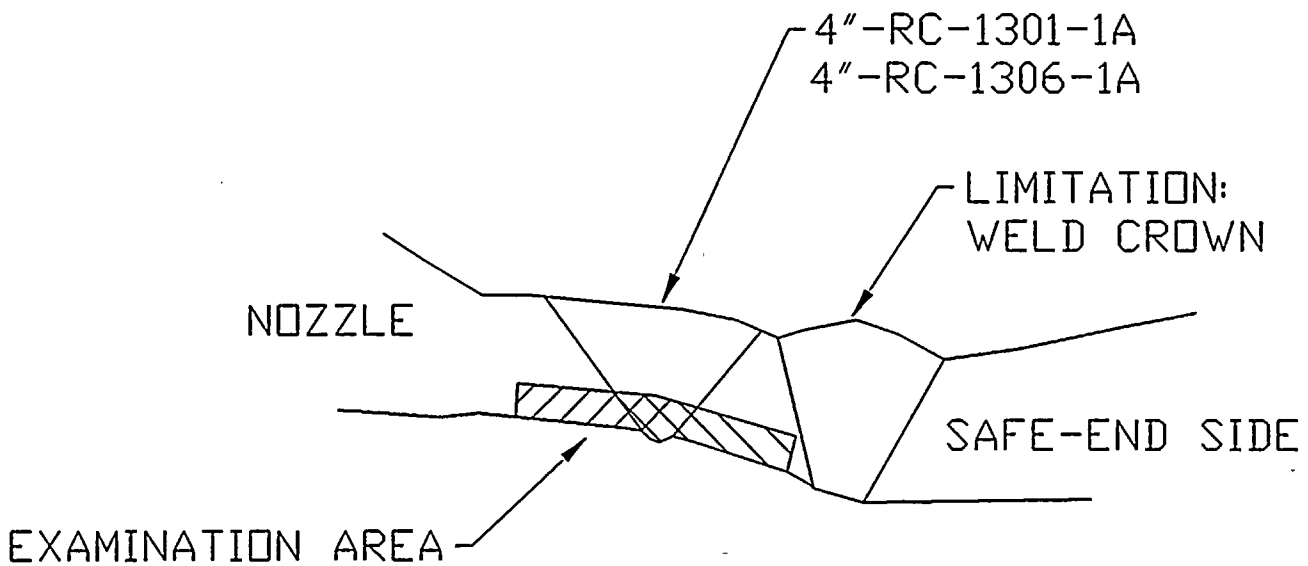
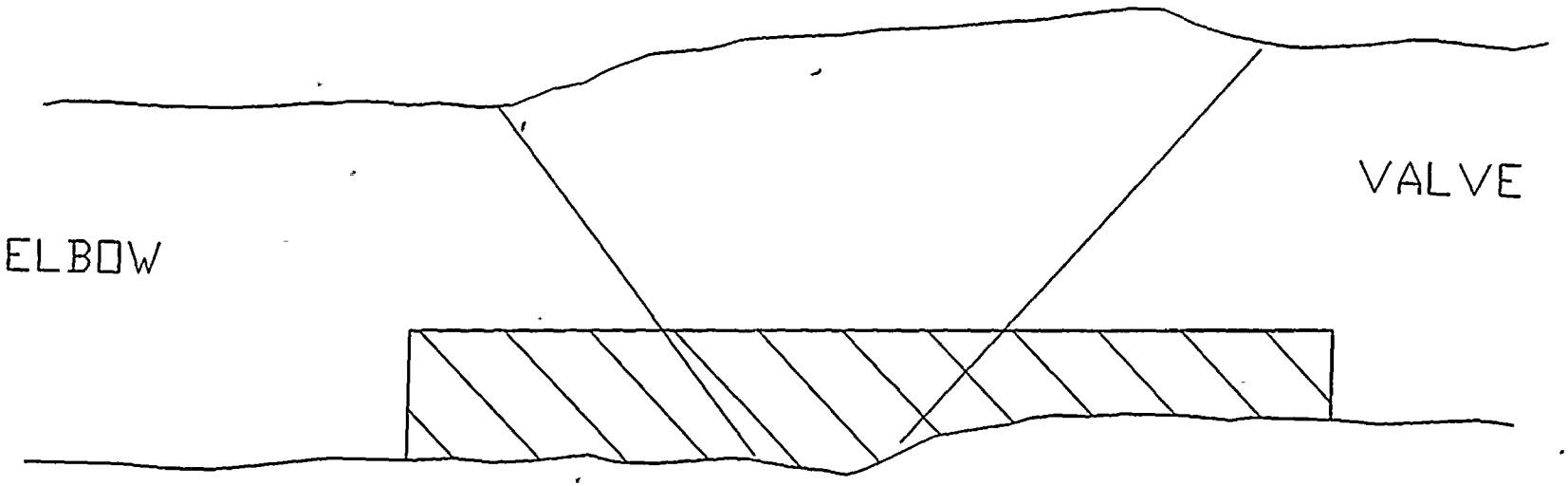

4"-RC-1301-1A
4"-RC-1306-1A
LIMITATION:
WELD CROWN
NOZZLE
SAFE-END SIDE
EXAMINATION AREA

FIGURE 23



8"-RHR-1301-3

FIGURE 24