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SUBJECT: Forwards ISI program Relief Request SR-021 for partial exams conducted during 1993 Surry Unit 2 refueling outage.

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VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA 23261

October 8, 1993

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Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNIT 2
INSERVICE INSPECTION PROGRAM RELIEF REQUEST

Surry Power Station Unit 2 is presently in the third period of its second ten-year interval for inservice inspections. Examinations during this interval have been conducted to the requirements of the 1980 Edition and Winter 1980 Addenda of ASME Section XI.

Pursuant to 10 CFR 50.55a (g) 5, relief is requested from certain requirements of ASME Section XI associated with partial examinations conducted during the 1993 Surry Unit 2 refueling outage. Relief request, RR-021, is provided detailing the basis of these requests.

These relief requests have been reviewed and approved by the Station Nuclear Safety and Operating Committee.

Should you have any additional questions or require additional information, please contact us.

Very truly yours,

W. L. Stewart
Senior Vice President - Nuclear

Attachments

cc: U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W.
Suite 2900
Atlanta, Georgia 30323

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

140012

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1/1

Attachment 1

Surry Power Station Unit 2

ISI Examination Relief

Relief Request SR-021

I. Identification of Components

Weld No.	Line/Mark No.	System	Drawing Number	Class
1-01	02-RC-R-1	RC	11548-WMKS-RC-R-1.2	1
1-10	31"-RC-308-2501R	RC	11548-WMKS-RC-10-1	1
1-12	27.5"-RC-309-2501R	RC	11548-WMKS-RC-10-1	1
1-13	27.5"-RC-309-2501R	RC	11548-WMKS-RC-10-1	1
1-14	27.5"-RC-309-2501R	RC	11548-WMKS-RC-10-1	1
1-22	29"-RC-307-2501R	RC	11548-WMKS-RC-10-1	1
2-02	02-RC-E-1A	RC	11548-WMKS-RC-E-1A.1	2
	02-RC-E-1B		11548-WMKS-RC-E-1B.1	2
	02-RC-E-1C		11548-WMKS-RC-E-1C.1	2
2-06	02-RC-E-1A	RC	11548-WMKS-RC-E-1A.1	2
	02-RC-E-1C		11548-WMKS-RC-E-1C.1	2
1-A01	02-RH-E-1A	RH	11548-WMKS-RH-E-1A	2
1-B01	02-RH-E-1B	RH	11548-WMKS-RH-E-1B	2

System Abbreviations

RC - Reactor Coolant System
RH - Residual Heat Removal System

II. Impracticable Code Requirements

The 1980 Edition, Winter 1980 Addenda (inclusive) of ASME Section XI in Tables IWB-2500-1 and IWC-2500-1 does not allow any limitations to the required volumetric and surface examinations. Code Case N-460 (Alternative Examination Coverage For Class 1 and Class 2 Welds) allows a reduction in coverage, if the reduction is less than 10%.

III. Basis For relief

The components listed above have been examined to the extent practicable as required by the Code. Due to interferences of other components or weld joint geometry the reduction in coverage for the listed components was greater than 10%. Tables SR-021-1, 2, 3, 4 and 5 are provided detailing the limitations experienced. Amplifying sketches or drawings are also provided. Alternative components could not be substituted for examination due to the mandatory

selection requirements of the Code, or because the examination coverage attained was representative of what could be expected for that type configuration.

IV. Alternate provisions

It is proposed that the examinations already completed at the reduced coverage be counted as meeting the Code requirements.

Table SR-021-1
Surry Unit 2
***Examination Coverage Estimates (Reactor Vessel)**
Category B-A, Item B1.40

Weld No.	Beam Angle	Exam Area	Scan Direction	%Exam	Reason For Partial	Sketch/Drawing No.
1-01	0	Weld		97	Proximity to	1
(0°-360°)	45	Weld	2	28	Flange and lifting	11548-WMKS-RC-R-1.2
	45	Weld	5	97	Lug Interference.	
	45	Weld	7	97	Lifting lugs are	
	45	Weld	8	97	approximately 5"	
	60	Weld	2	14	in width.	
	60	Weld	5	97		
	60	Weld	7	97		
	60	Weld	8	97		
	45 & 60	Base	2	36		
	45 & 60	Base	5	96		
	45 & 60	Base	7	84		
	45 & 60	Base	8	84		
	0	Base		84		

* Estimates are based on 1991 and 1993 examination results. Earlier examination results (Period 1) occurred prior to our procedures requiring specific scan coverage percentages. The examination reports indicated what caused limitations, but not the degree of limitation by scan.

UT Scan Direction Definitions.

2 - Axial scan flange side of weld

5 - Axial scan head side of weld

7 - Circumferential scan, clockwise (looking down on head)

8 - Circumferential scan, counterclockwise (looking down on head)

Table SR-021-2
Surry Unit 2
Examination Coverage Estimates (Piping)

Weld No.	Category	Item No.	UT Scan Coverage % 2	5	7	8	Reason For Partial	Sketch/Drawing No.
1-10	B-J	B9.11	100	60	100	100	Pipe to elbow joint configuration.	2 11548-WMKS-RC-10-1
1-12	B-J	B9.11	56	86	100	100	Pipe to Reactor Coolant pump configuration. 2t Calibration achived maximum coverage practicable.	3 11548-WMKS-RC-10-1
1-13	B-J	B9.11	86	56	100	100	Pipe to valve configuration. 2t calibration achieved maximum coverage practicable.	3 11548-WMKS-RC-10-1
1-14	B-J	B9.11	56	86	100	100	Pipe to valve configuration. 2t calibration achieved maximum coverage practicable.	3 11548-WMKS-RC-10-1
1-22	B-J	B9.11	98.6	61	100	100	Valve to elbow configuration.	4A/4B 11548-WMKS-RC-10-1

Table SR-021-3
Surry Unit 2
*Examination Coverage Estimates (Steam Generator)
Category C-A, Item C1.30

Weld No.	Beam Angle	Exam Area	Scan Direction	%Exam	Reason For Partial	Sketch/Drawing No.
2-02	0	Weld & Base		96	Handholes,	11548-WMKS-RC-E-1A.1
(0°-360°)	45	Weld & Base	2	96	blowdown piping,	11548-WMKS-RC-E-1B.1
	45	Weld & Base	5	80	and nozzles	11548-WMKS-RC-E-1C.1
	45	Weld & Base	7	96		
	45	Weld & Base	8	96		
	60	Weld & Base	2	96		
	60	Weld & Base	5	80		
	60	Weld & Base	7	96		
	60	Weld & Base	8	96		

* Estimates are based on 1988 and 1993 examination results. Earlier examination results (Period 1) occurred prior to our procedures requiring specific scan coverage percentages. The examination reports indicated what caused limitations, but not the degree of limitation by scan.

UT Scan Direction Definitions.

2 - Axial scan tube sheet side of weld

5 - Axial scan shell side of weld

7 - Circumferential scan, clockwise

8 - Circumferential scan, counterclockwise

Steam Generator "A" 1983 Examined 21" - 144"

Steam Generator "B" 1988 Examined 144" - 284"

Steam generator "C" 1993 Examined 284" - 21"

Table SR-021-4
Surry Unit 2
***Examination Coverage Estimates (Steam Generator)**
Category C-A, Item C1.10

Weld No.	Beam Angle	Exam Area	Scan Direction	%Exam	Reason For Partial	Sketch/Drawing No.
2-06	0	Weld & Base		96.4	Insulation supports,	11548-WMKS-RC-E-1A.1
(0°-360°)	45 & 60	Weld & Base	2	96	welded pads,	11548-WMKS-RC-E-1C.1
	45 & 60	Weld & Base	5	82.8	and nozzles	
	45 & 60	Weld & Base	7	96.4		
	45 & 60	Weld & Base	8	96.4		

* Estimates are based on 1991 and 1993 examination results. Earlier examination results (Period 1) occurred prior to our procedures requiring specific scan coverage percentages. The examination reports indicated what caused limitations, but not the degree of limitation by scan.

UT Scan Direction Definitions.

2 - Axial scan transition side of weld

5 - Axial scan shell side of weld

7 - Circumferential scan, clockwise

8 - Circumferential scan, counterclockwise

Steam Generator "A" 1983 Examined 0" - 184"

Steam Generator "C" 1991 Examined 184" - 369"

Steam generator "C" 1993 Examined 368" - 552"

Table SR-021-5
Surry Unit 2
***Examination Coverage Estimates (RH heat Exchanger)**
Category C-A, Item C1.20

Weld No.	Beam Angle	Exam Area	Scan Direction	%Exam	Reason For Partial	Sketch/Drawing No.
1-A01/	45	Weld & Base	2	62	welded supports,	11548-WMKS-RH-E-1A
1-B01	45	Weld & Base	5	54.5	and nozzles.	11548-WMKS-RH-E-1B
(0°-360°)	45	Weld & Base	7	62		
	45	Weld & Base	8	62		

* Earlier examination results (Period 1) occurred prior to our procedures requiring specific scan coverage percentages. The examination reports indicated what caused limitations, but not the degree of limitation by scan. An extended beam bath was used to increase coverage.

UT Scan Direction Definitions.

2 - Axial scan bottom side of weld

5 - Axial scan top side of weld

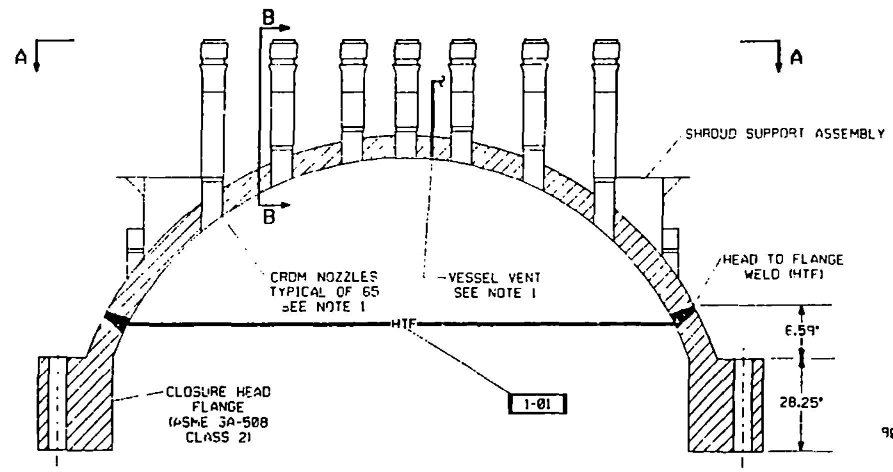
7 - Circumferential scan, clockwise

8 - Circumferential scan, counterclockwise

02-RH-E-1A "Weld 1-A01" 1988 Examined 44" - 88"

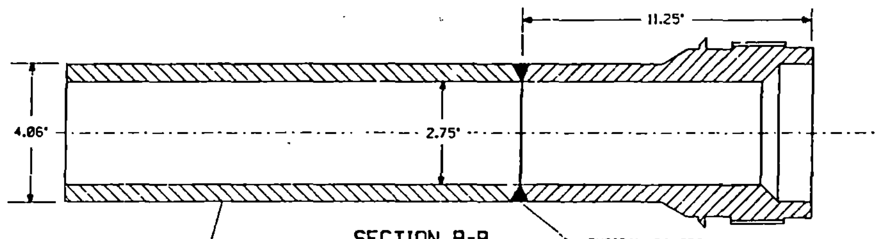
02-RH-E-1B "Weld 1-B01" 1986 Examined 0" - 44"

02-RH-E-1B "Weld 1-B01" 1993 Examined 88" - 0"

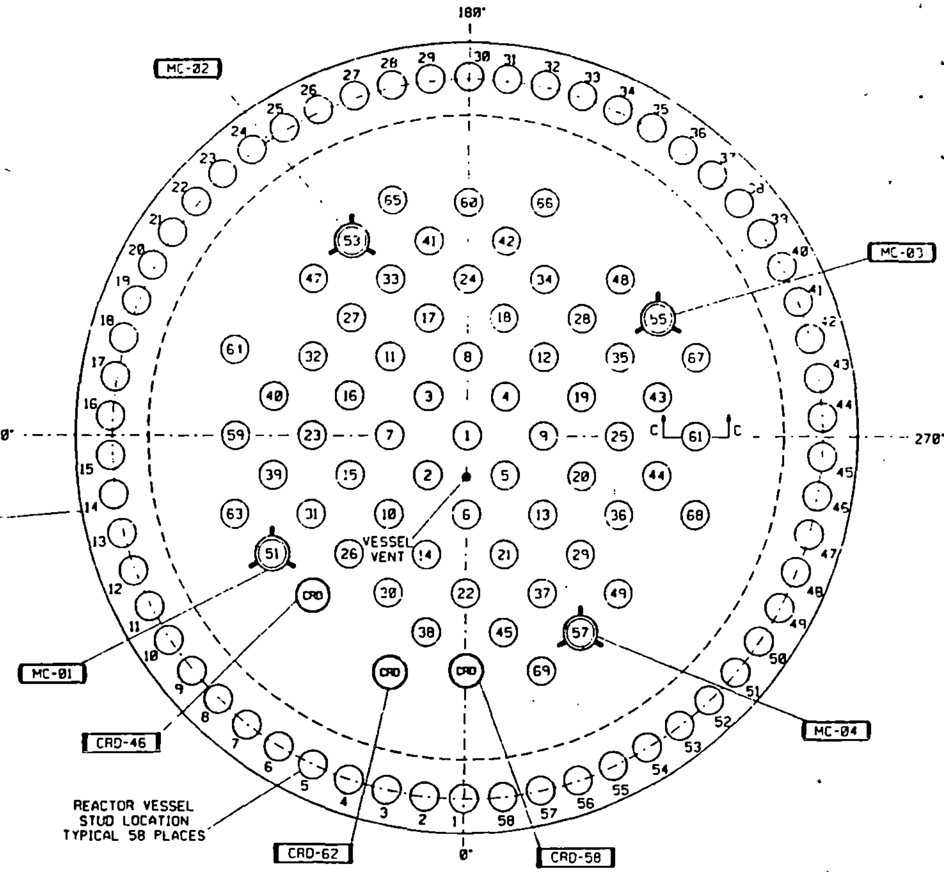


REACTOR VESSEL
2-RC-R-1

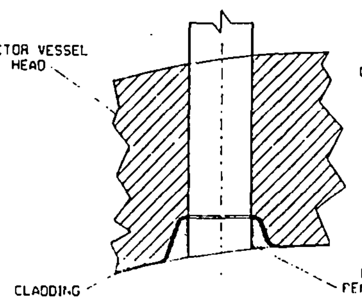
ELEVATION VIEW - REACTOR VESSEL HEAD



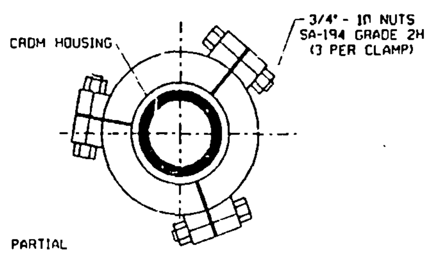
SECTION B-B
TYPICAL CONTROL ROD DRIVE HOUSING



SECTION A-A
TOP VIEW-REACTOR VESSEL HEAD
CONTROL ROD DRIVE HOUSING WELD LOCATIONS



SECTION C-C
TYPICAL CRDM HOUSING HEAD PENETRATION



DETAIL 1
TYPICAL MARMON CLAMP
(HOUSINGS 51,53,55,57)

3/4" - 10 CAP SCREWS
SA-193 GRADE B-7
(3 PER CLAMP)

VIRGINIA POWER
NORTH CAROLINA POWER
POWER ENGINEERING SERVICES
RICHMOND, VIRGINIA

INSERVICE INSPECTION DETAIL DRAWING
REACTOR VESSEL HEAD & CRDM WELDS
SURRY POWER STATION UNIT 2
VIRGINIA POWER

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CHKD	LEAD ENGR —		
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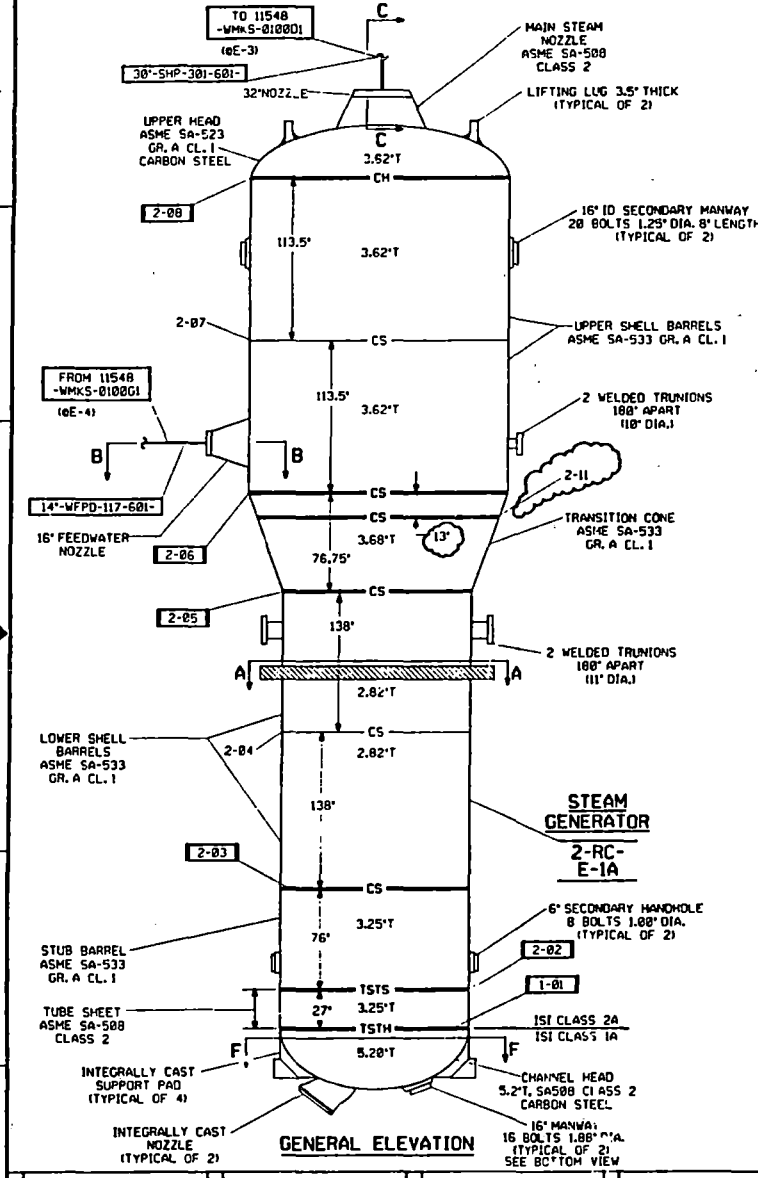

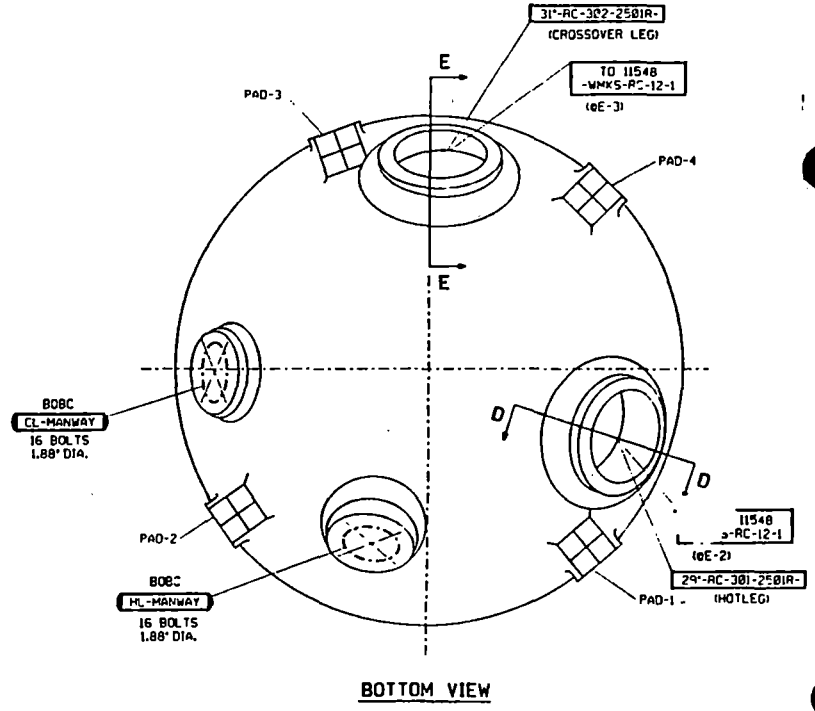

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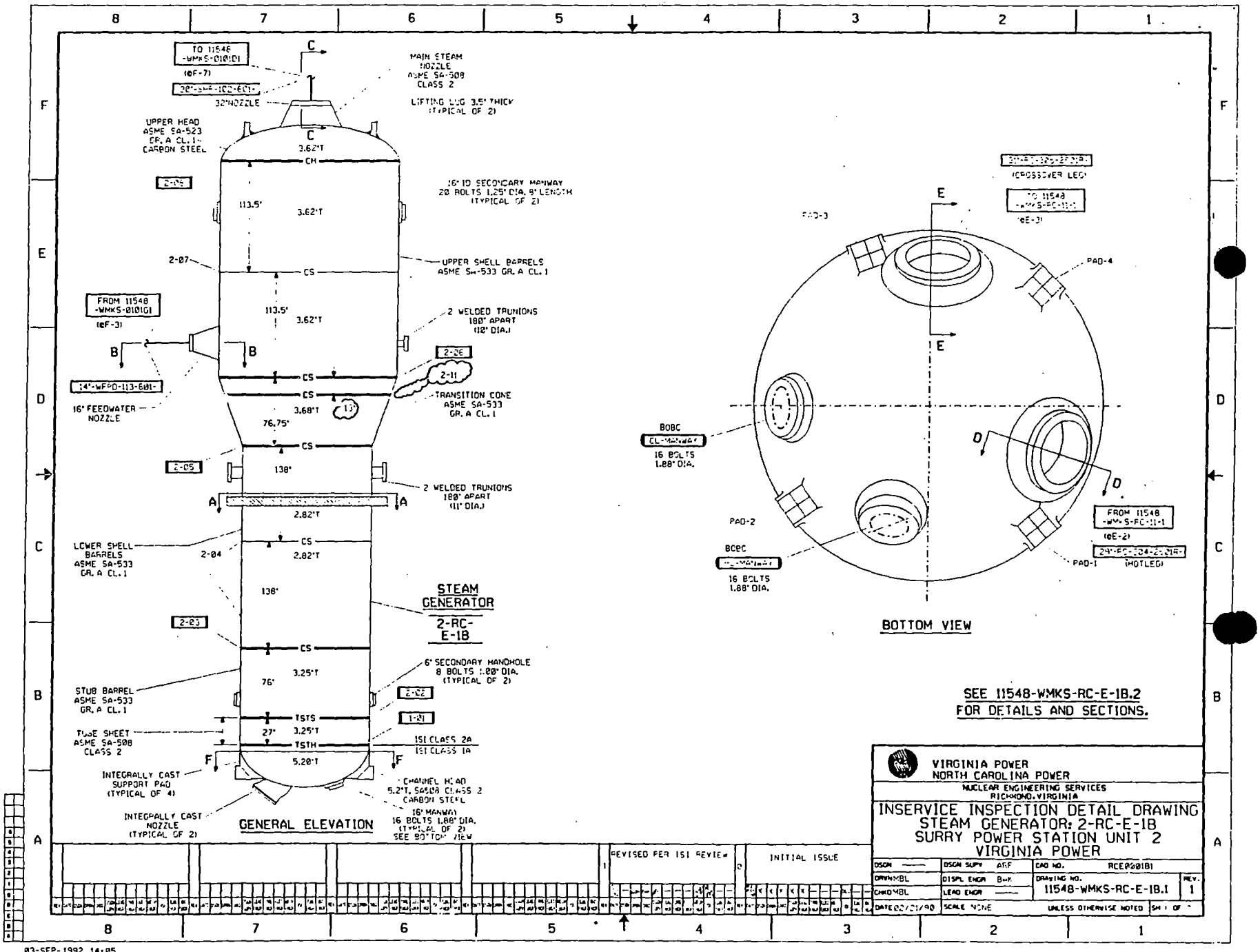

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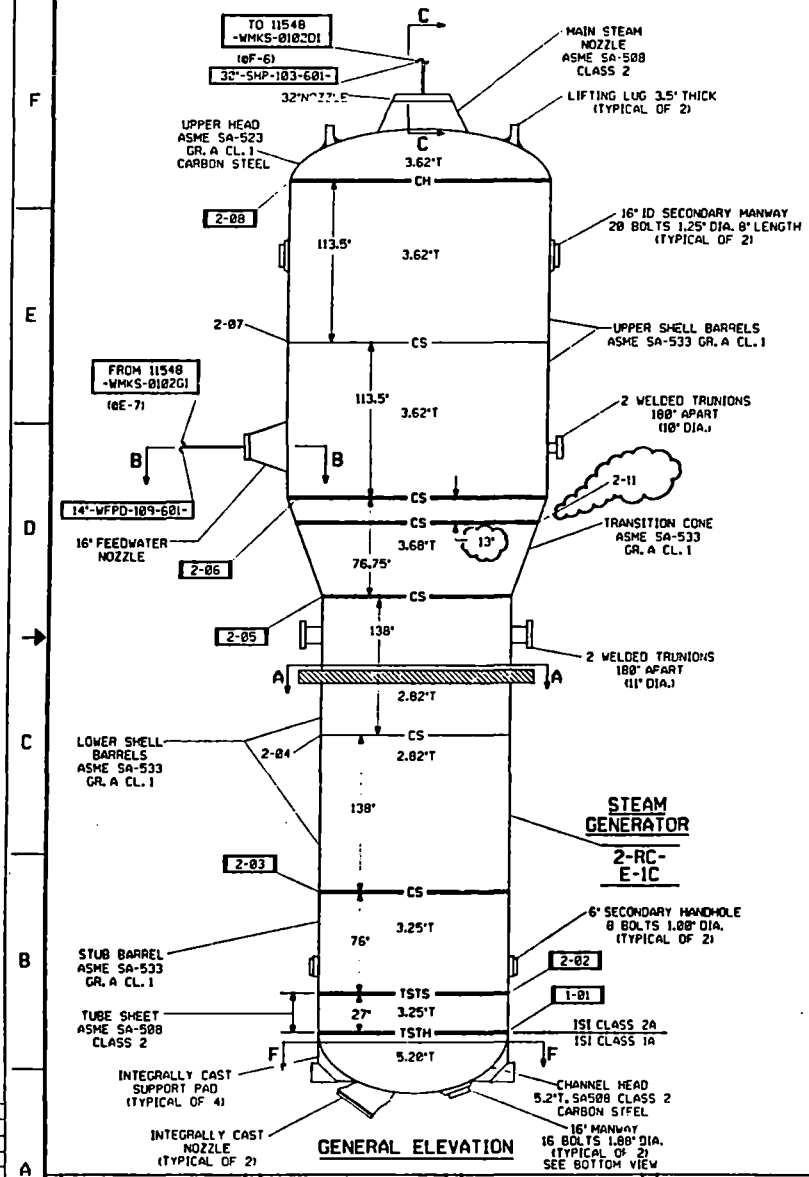

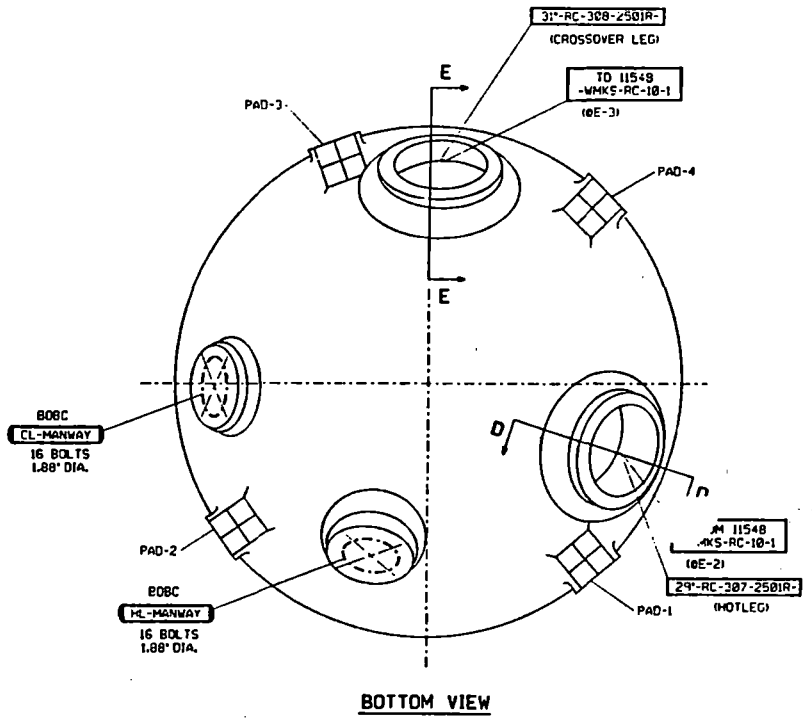

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INSERVICE INSPECTION DETAIL DRAWING STEAM GENERATOR: 2-RC-E-1C SURRY POWER STATION UNIT 2 VIRGINIA POWER

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CHKD MBL	LEAD ENGR ——		
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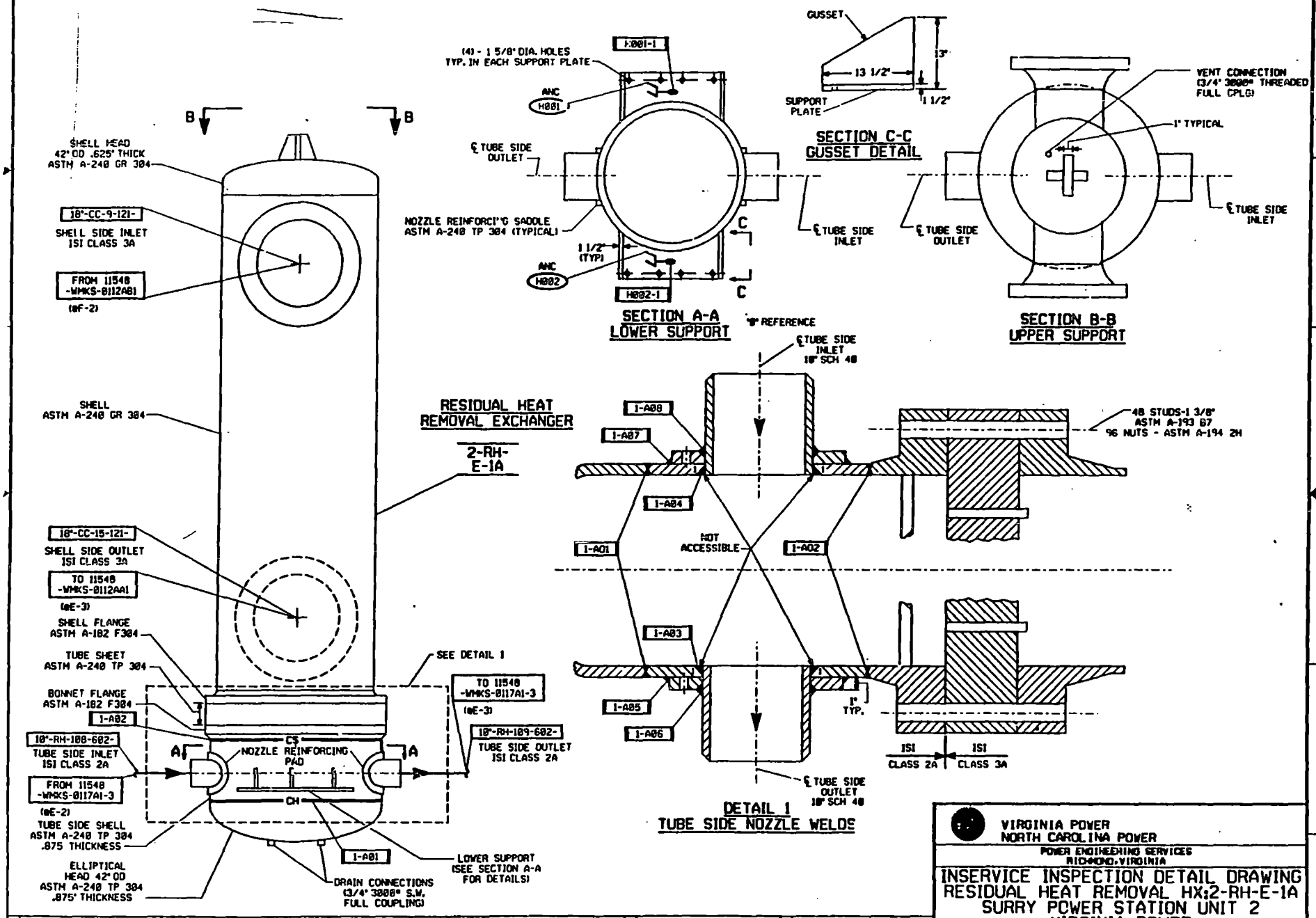

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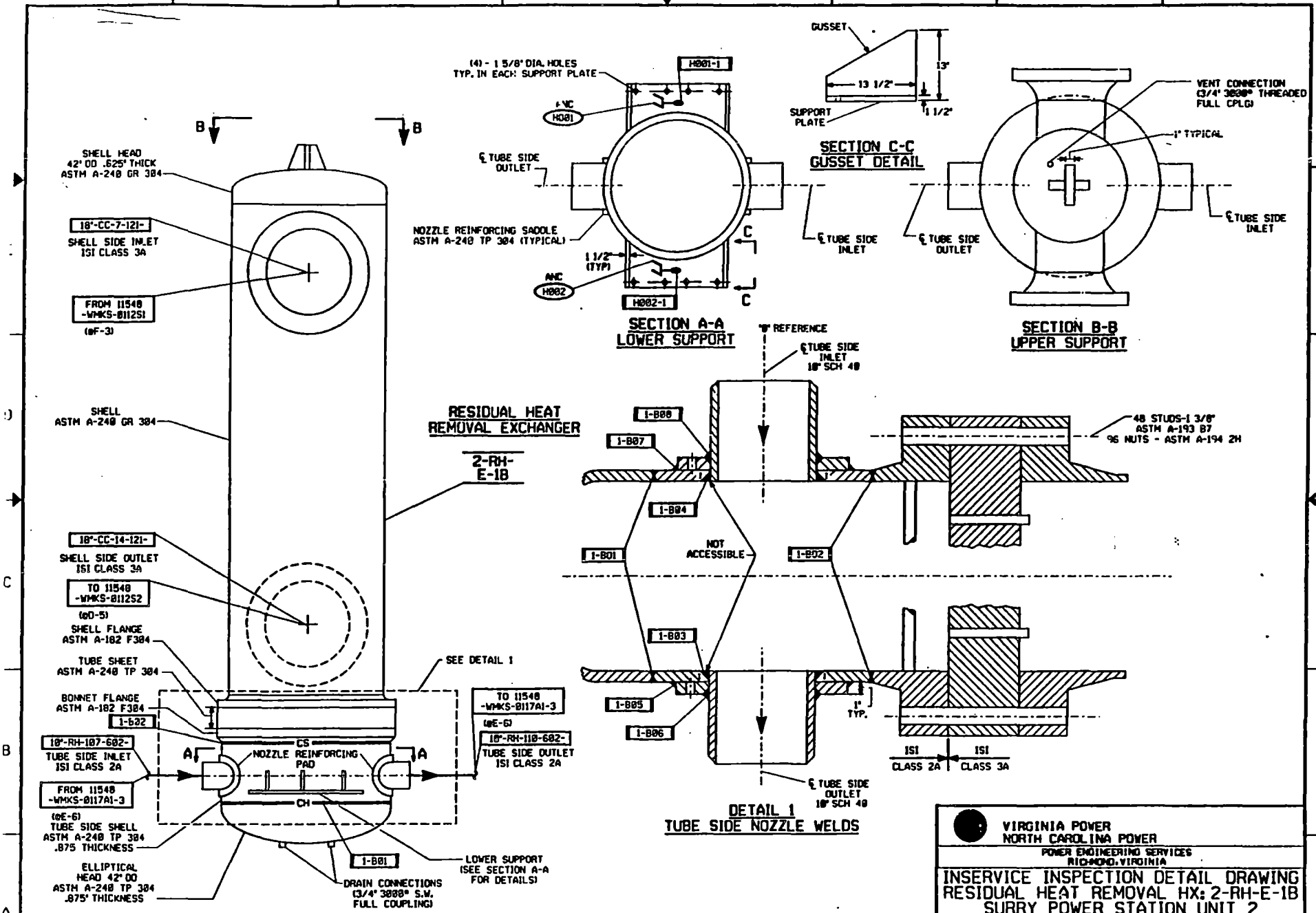

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RESIDUAL HEAT REMOVAL HX: 2-RH-E-1B
SURRY POWER STATION UNIT 2
VIRGINIA POWER

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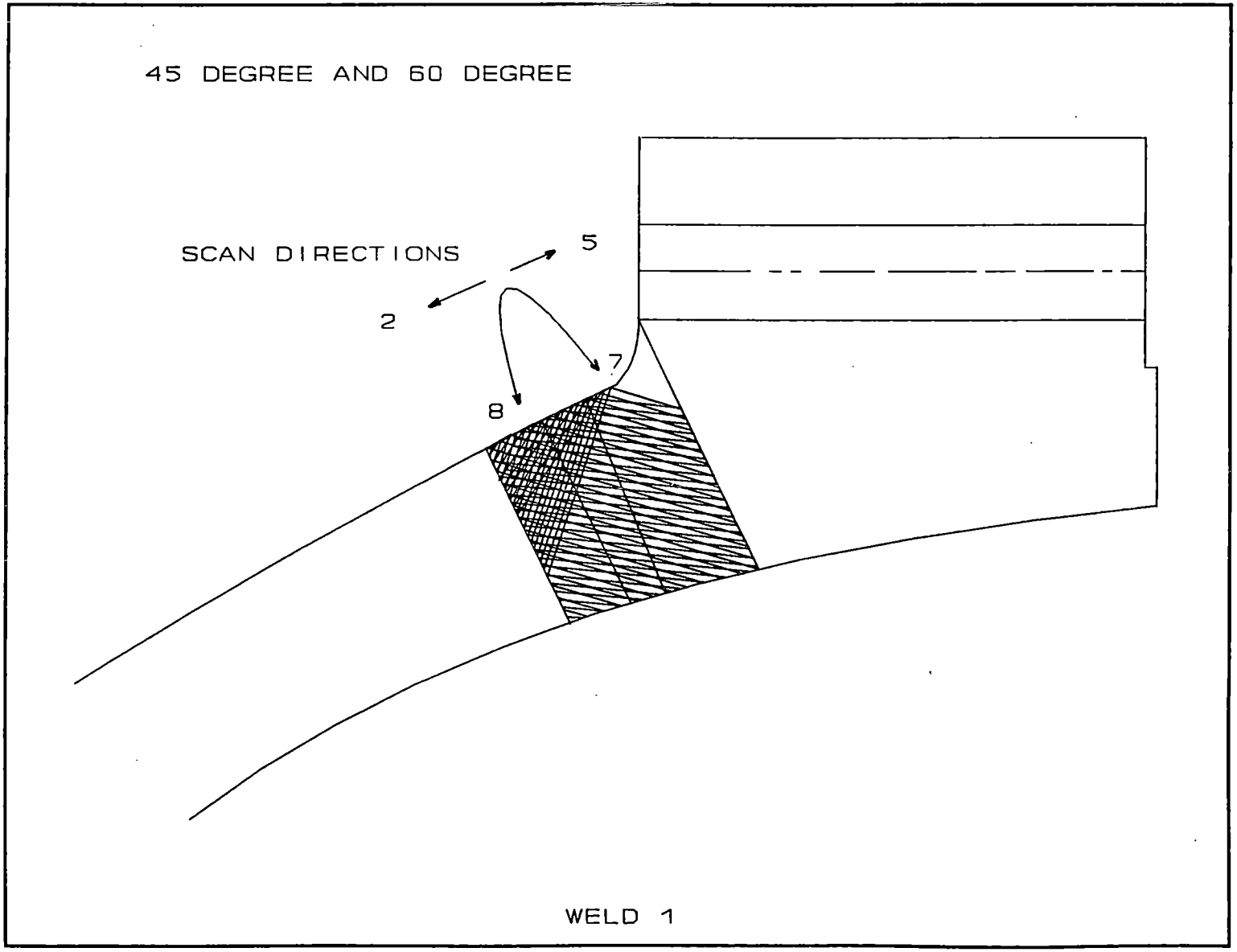
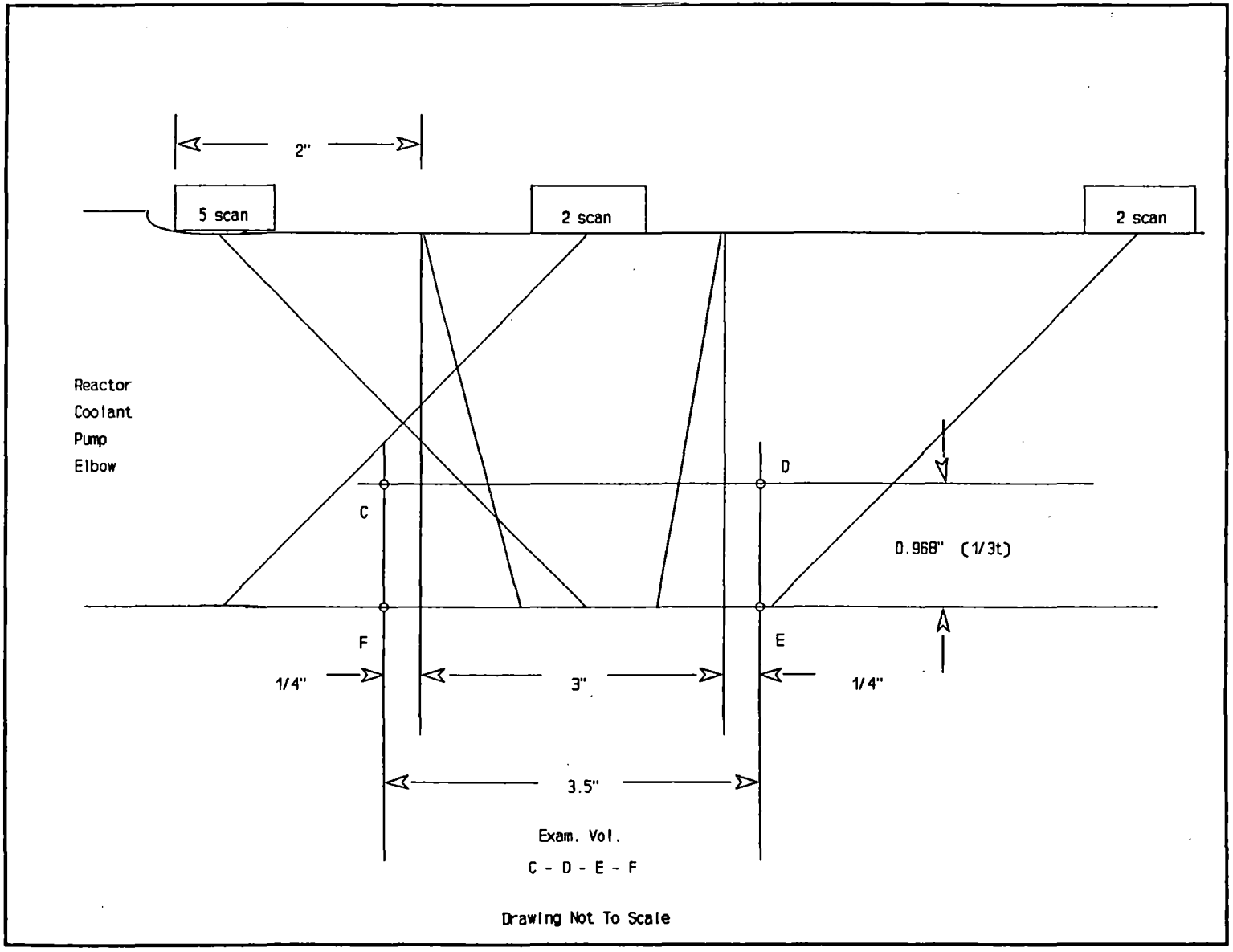
Reactor Vessel Head Weld 1-01



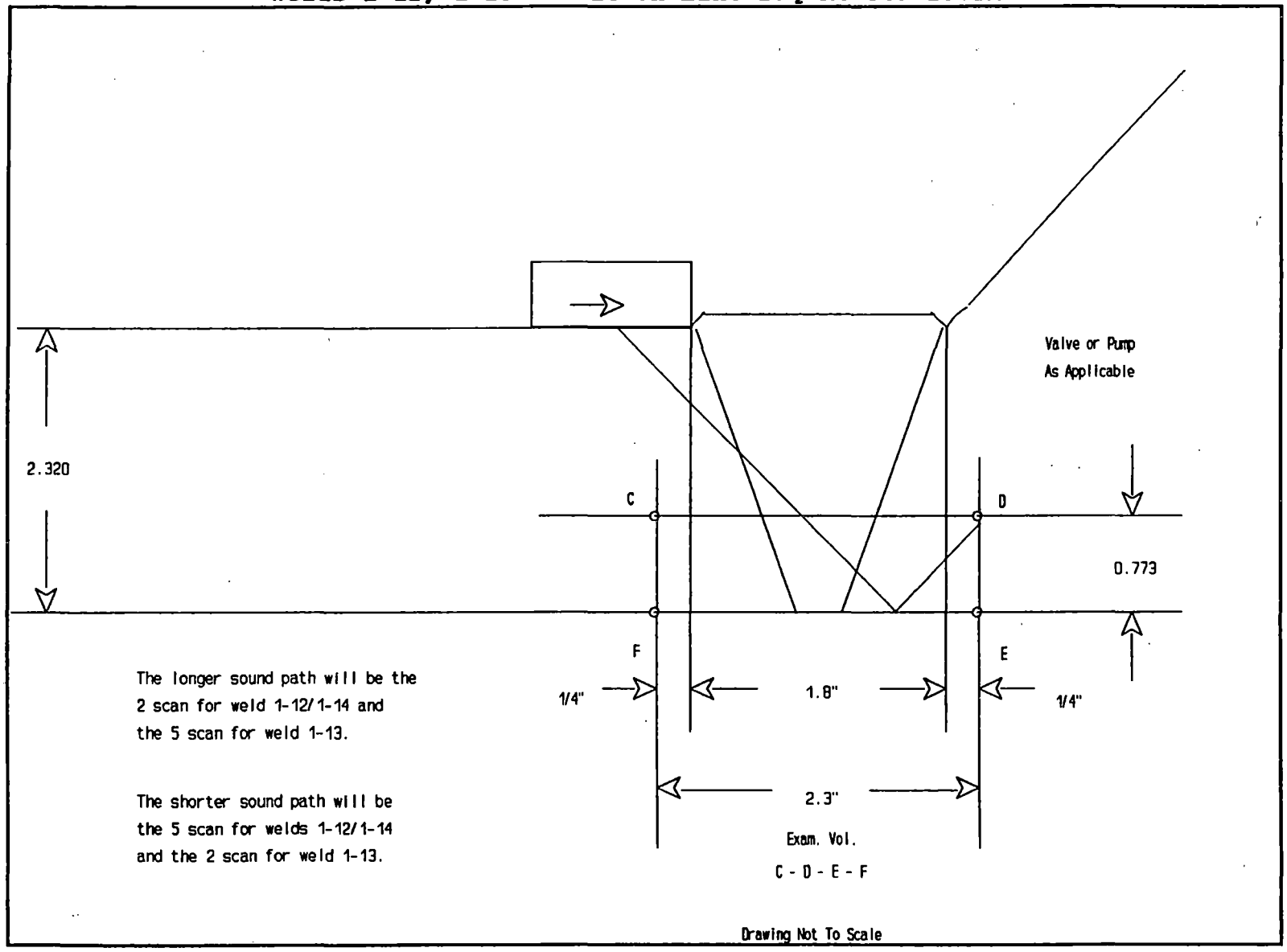
Sketch 1

Weld 1-10 on Line 31"-RC-308-2501R



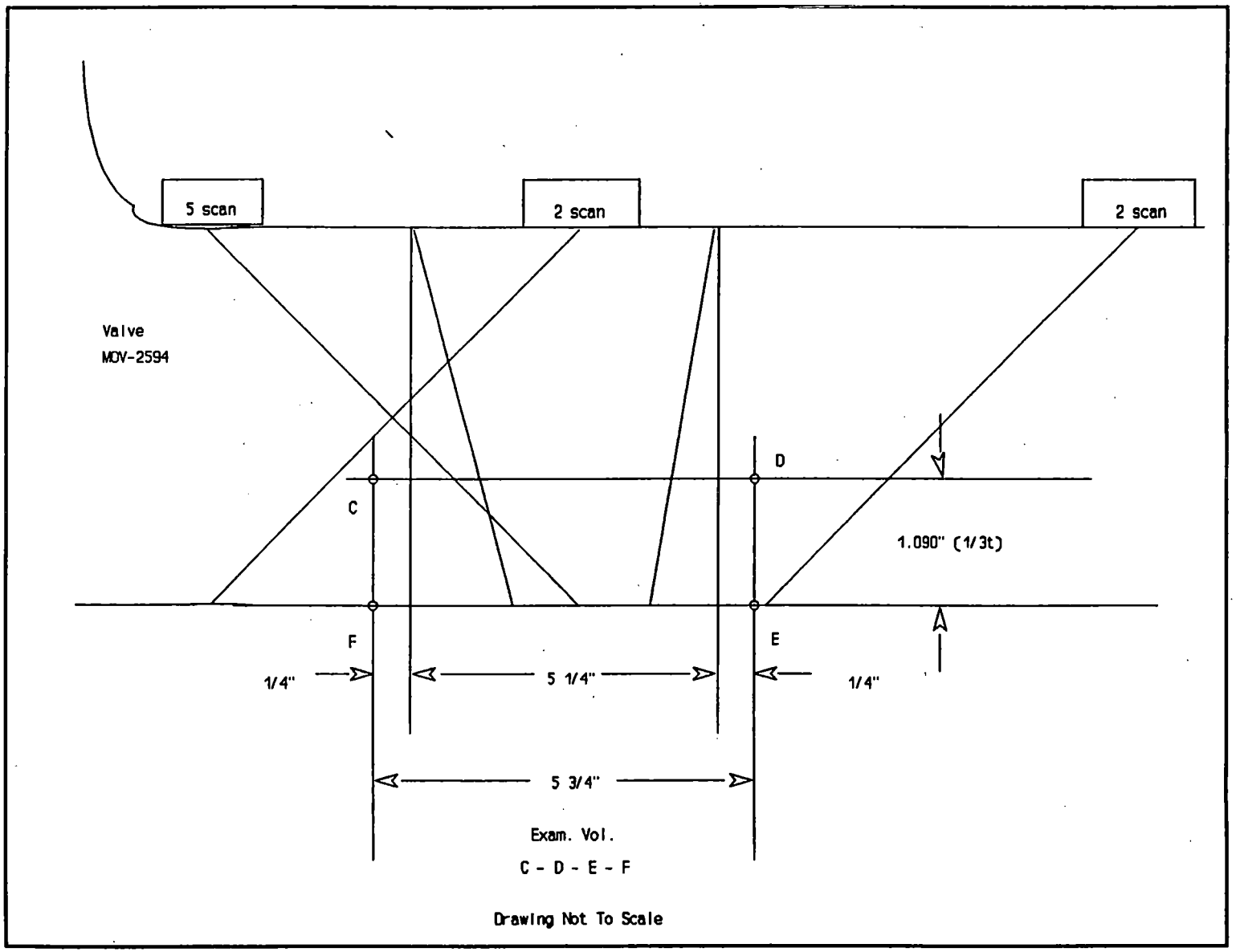
Sketch 2

Welds 1-12, 1-13 & 1-14 on Line 27½-RC-309-2501R



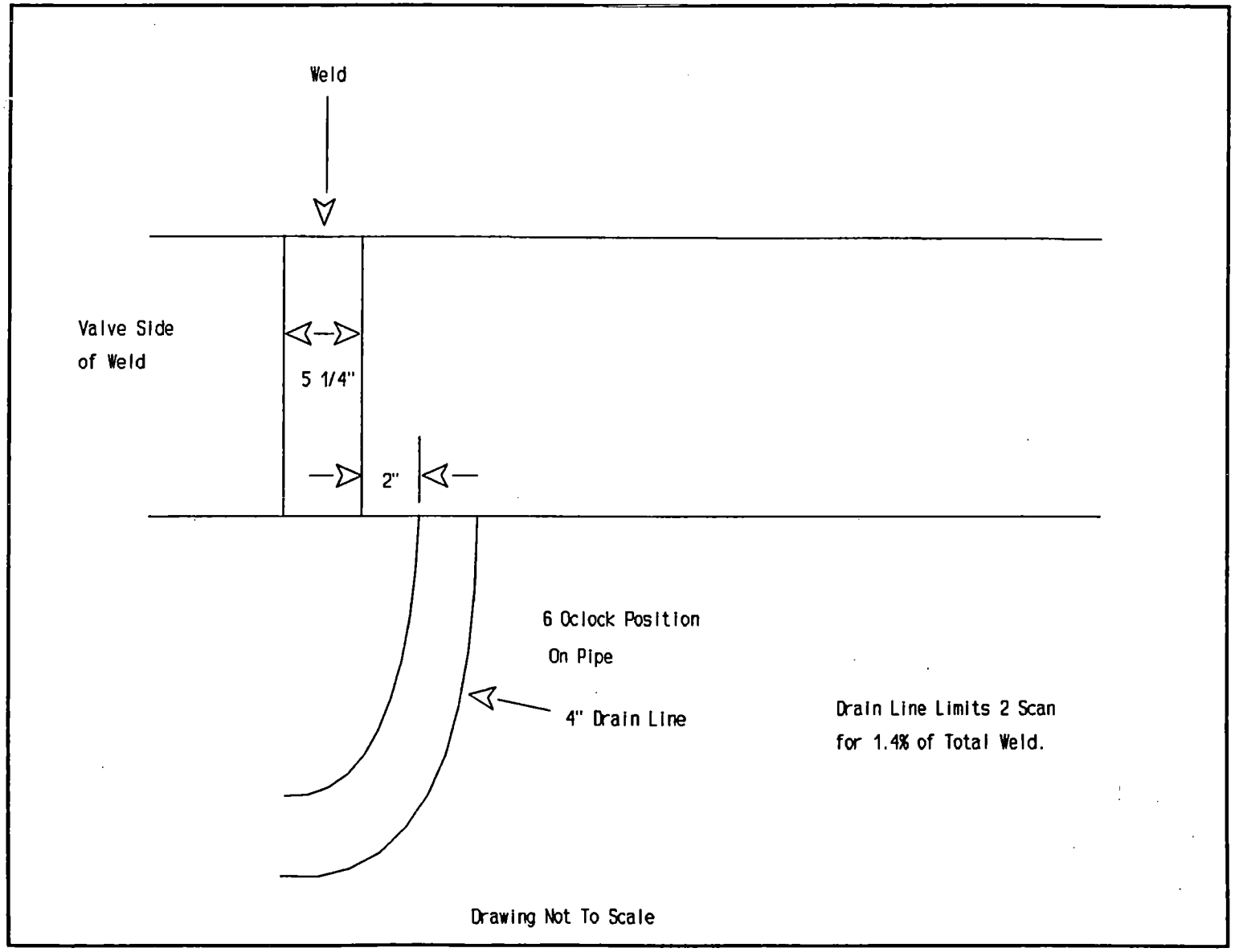
Sketch 3

Weld 1-22 on Line 29"-RC-307-2501R



Sketch 4A

Weld 1-22 on Line 29"-RC-307-2501R



Sketch 4B

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