

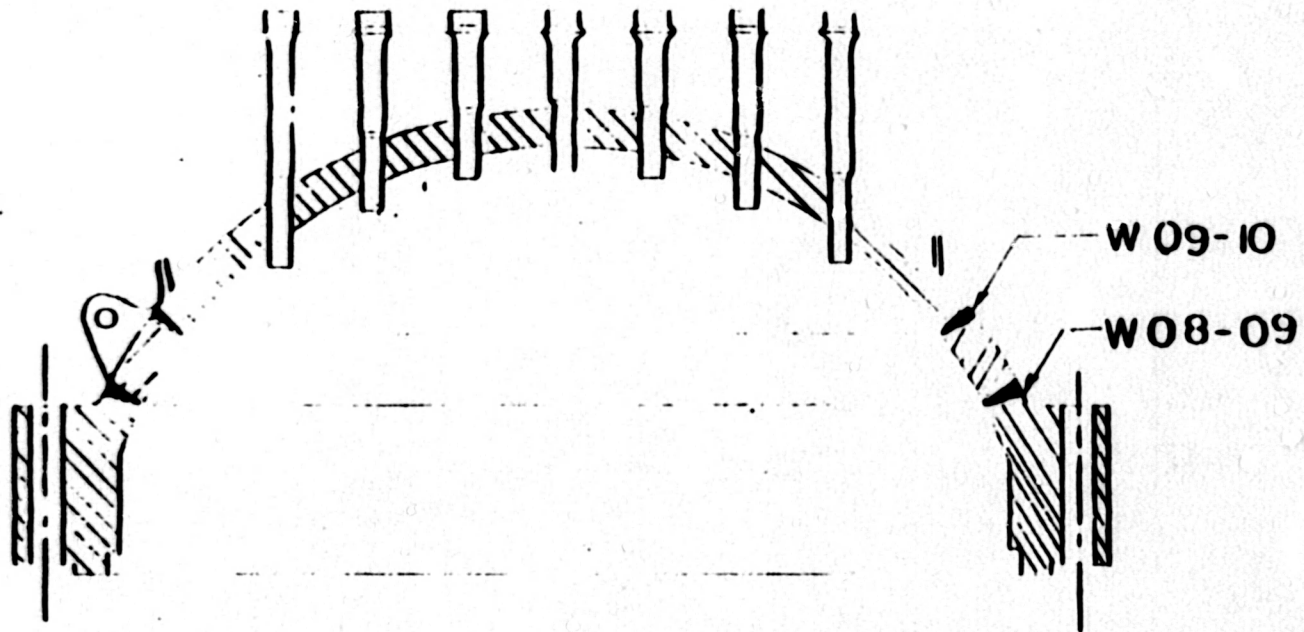
TABLE C
LIST OF DRAWINGS - UNIT #1

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>APPENDIX A PAGE NO.</u>
<u>REACTOR VESSEL</u>		
CHM-2549-A	Reactor Vessel Closure Head	13
CHM-2551-A	Reactor Vessel	14-20
CHM-2684-C	Upperhead Penetrations	29
CHM-2685-B	Auxiliary Head Adapter	30
ISI-0012-A	Control Rod Drive Housing	31
<u>REACTOR COOLANT PUMPS</u>		
ISI-0043-B	Reactor Coolant Pump Casing Weld Locations	32
CHM-2672-B	RCP Main Flange Bolt Circle	28
<u>PRESSURIZER</u>		
CHM-2570	Pressurizer	21-24
<u>STEAM GENERATORS</u>		
CHM-2660-B	Steam Generator	25-26
<u>RESIDUAL HEAT REMOVAL HEAT EXCHANGERS</u>		
CHM-2662	Residual Heat Removal Heat Exchanger Channel Welds	27
<u>BORON INJECTION TANK</u>		
ISI-0053-B	Boron Injection Tank Weld Locations	33
<u>LETDOWN HEAT EXCHANGER</u>		
ISI-0075-A	Letdown Heat Exchanger Weld Locations	34

TABLE C (Continued)

LIST OF DRAWINGS - UNIT #1

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>APPENDIX A PAGE NO.</u>
<u>EXCESS LETDOWN HEAT EXCHANGER</u>		
ISI-0076-A	Letdown Heat Exchanger Weld Locations	35
<u>REGENERATIVE HEAT EXCHANGER</u>		
ISI-0077-A	Regenerative Heat Exchanger Weld Locations	36-38
<u>PIPING AND VALVE WELD MAPS</u>		
ISI-0081-A	Mainsteam Relief Valve	39
ISI-0082-A	Feedwater Check Valve	40
CHM-2547-B	Reactor Coolant Piping	46-47
CHM-2636-C	Residual Heat Removal	48-55
CHM-2669-C	Mainsteam	56-59
CHM-2671-C	Feedwater	60-67
CHM-2758-C	Safety Injection	68-80 115-127
ISI-0005-C	Chemical and Volume Control	81-82
ISI-0017-C	Reactor Coolant System	83-93
ISI-0050-C	CVCS Seal Water Injection	94-97
<u>HANGER LOCATION DRAWING CLASS 1 AND CLASS 2</u>		
ISI-0010-C	Reactor Coolant System	98-108
ISI-0011-C	Mainsteam	109-112
ISI-0020-C	Residual Heat Removal	113-120
ISI-0021-C	Safety Injection	121-133
ISI-0026-C	Chemical and Volume Control	134-135
ISI-0062-C	Feedwater	136-143
ISI-0063-C	CVCS Seal Water Injection	144-147
ISI-0117-A	Residual Heat Removal Pump Supports	41
ISI-0118-A	Centrifugal Charging Pump Supports	42
ISI-0119-A	Reciprocation Charging Pump Supports	43
ISI-0120-A	Safety Injection Pump Supports	44
ISI-0121-A	Reactor Coolant Pump Supports	45
ISI-0124-A	Pressurizer Surge Line	148



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TRIUMPH VALLEY AUTHORITY
 DIVISION OF POWER PRODUCTION

WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REACTOR VESSEL
 CLOSURE HEAD

SCALE 1:15
 DRAWN BY
 CHECKED BY

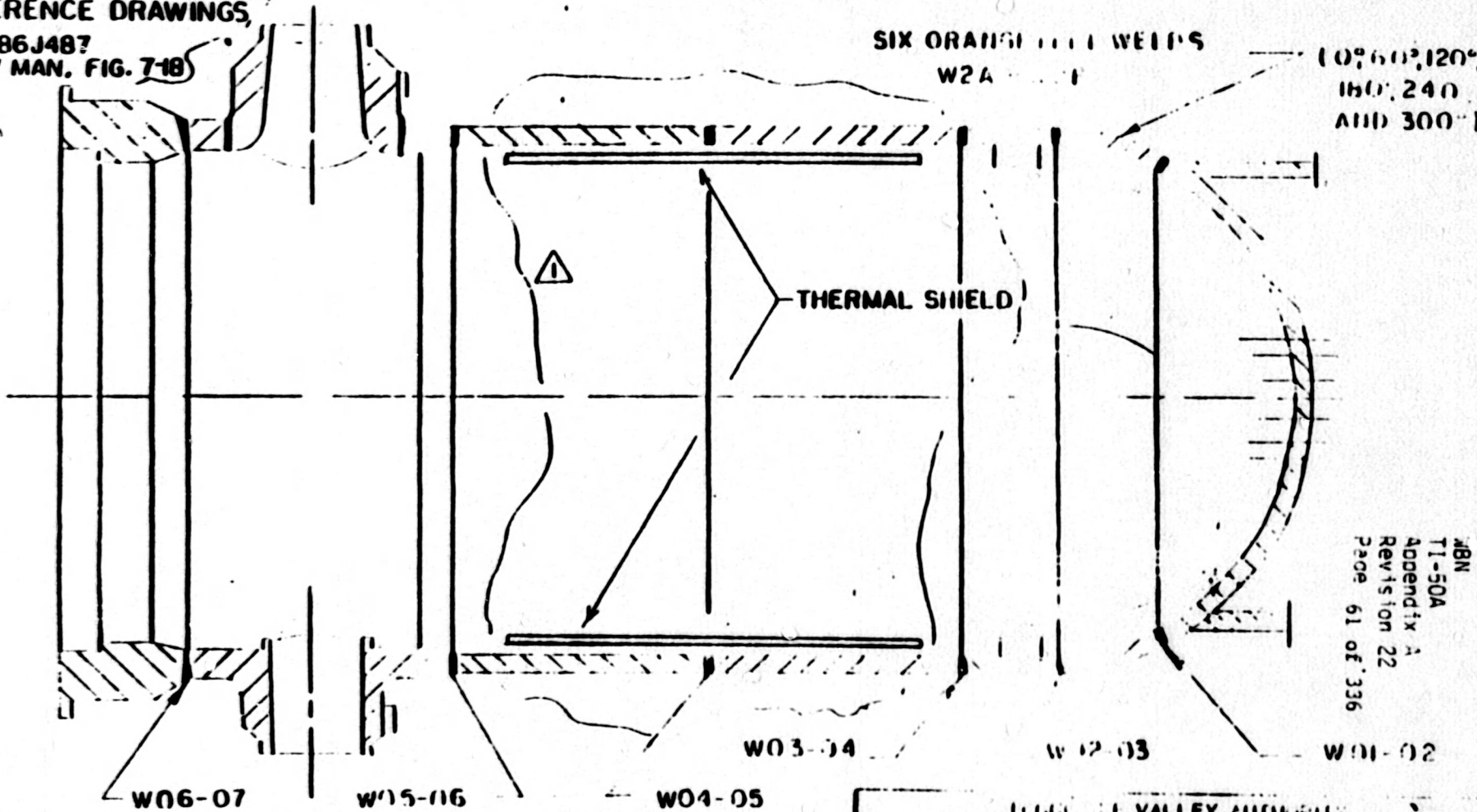
APPROVED
ASB

DATE 10-3-78
 DRAWING NO. CH-10-2519A

73 2070 A (REV 7-81)

REFERENCE DRAWINGS,

W686J487
RPV MAN, FIG. 7-18



(0°, 60°, 120°,
180°, 240°
AND 300°)

THERMAL SHIELD

SIX ORANGE WELDS
W2A

ABN
T1-50A
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NO.	DATE	REV.	VS	BY	CHK
1	4-7-82				

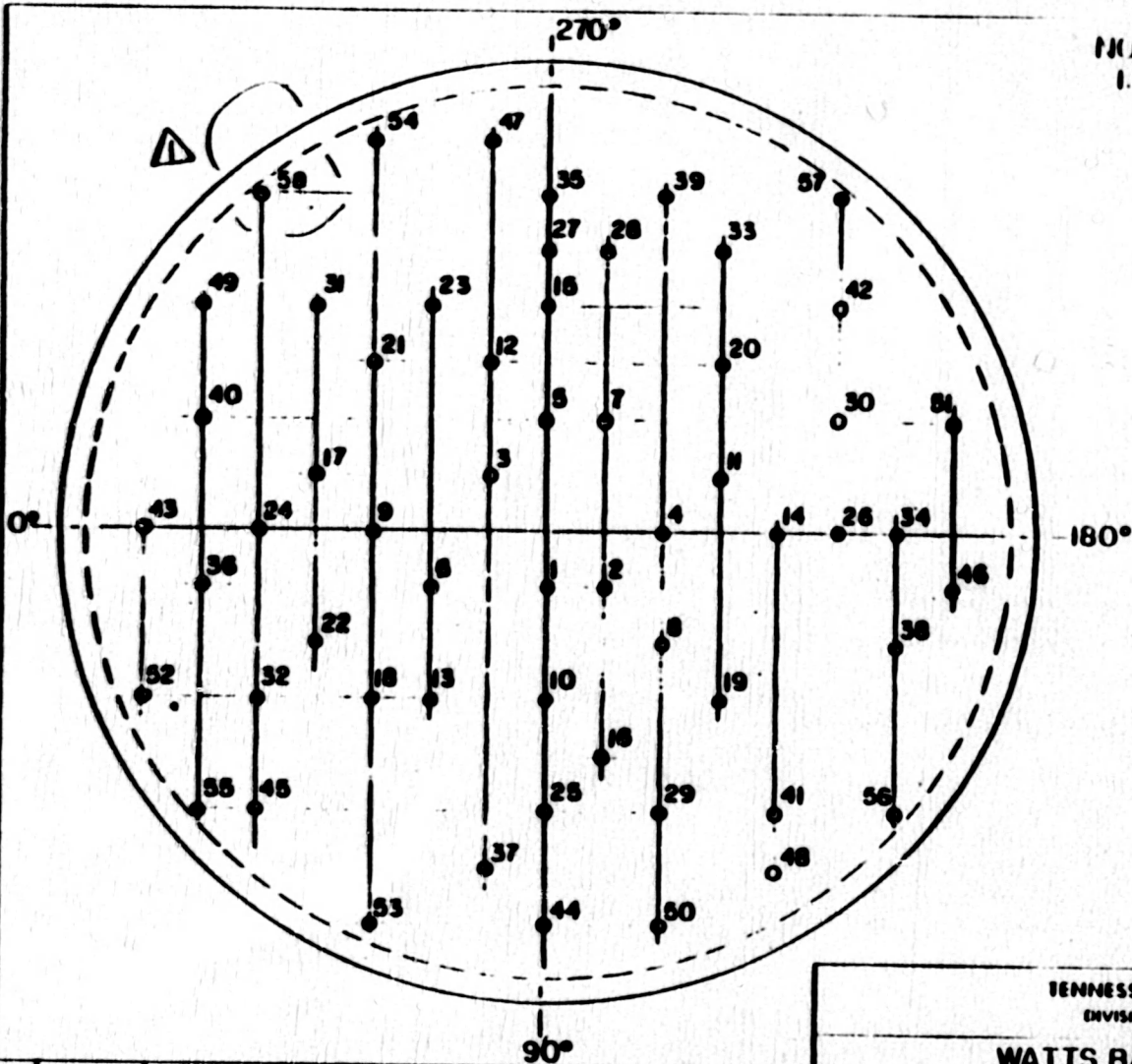
ADD THERMAL SHIELD AND REF. D...

ATOMIC ENERGY
DEPARTMENT OF POWER PRODUCTION
WATT BAR NUCLEAR PLANT
UNITS #1 & #2
REACTOR VESSEL
(SEAM WELDS)

SCALE: N.T.S.
BY: [Signature]
CHECKED: [Signature]

APPROVED
[Signature]

10-3-13
7



NOTES:
 1. FOR PENETRATION DETAIL SEE SHEET 3

MBN
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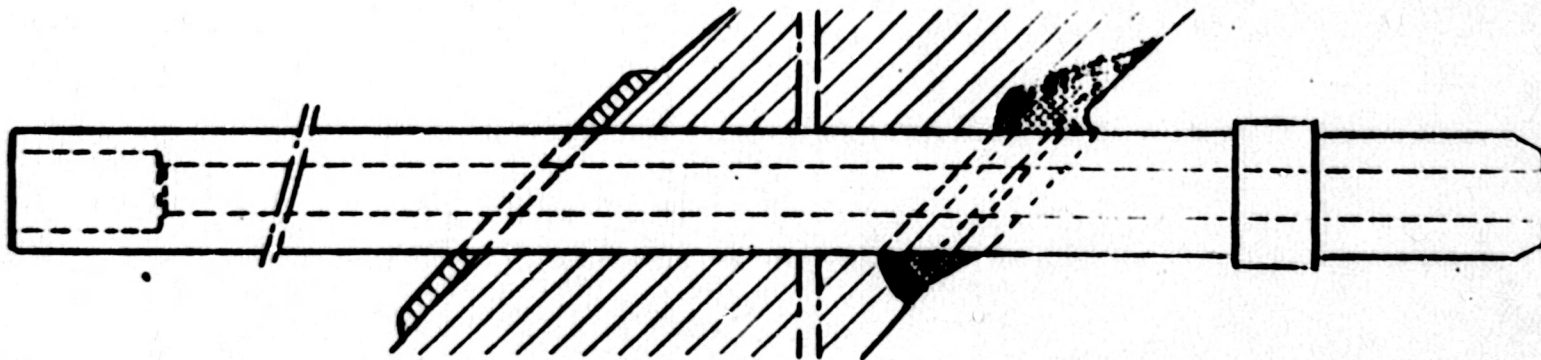
TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REACTOR VESSEL
 (BOTTOM HEAD PENETRATIONS)

SCALE: N/S	DATE: 12/23/80
DESIGN: R/C	SHEET: 2 of 7
REVISION: JCC	APPROVED: <i>[Signature]</i>
CK'D APP: <i>[Signature]</i>	CH-M-2551-A

NO	DATE	REVISIONS	CK'D APP
1	7-11-84	CORRECTED PENETRATIONS <i>[Signature]</i>	<i>[Signature]</i>

R 1



MBN
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TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

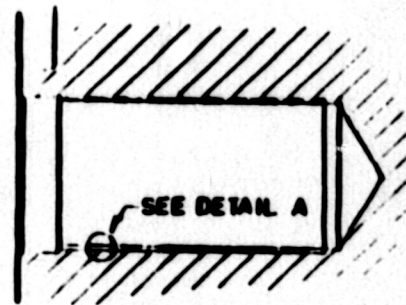
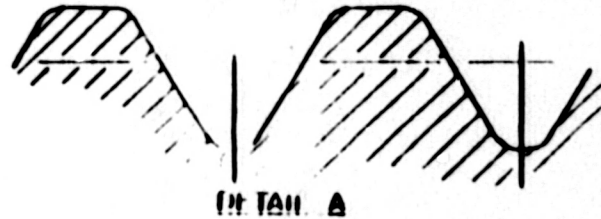
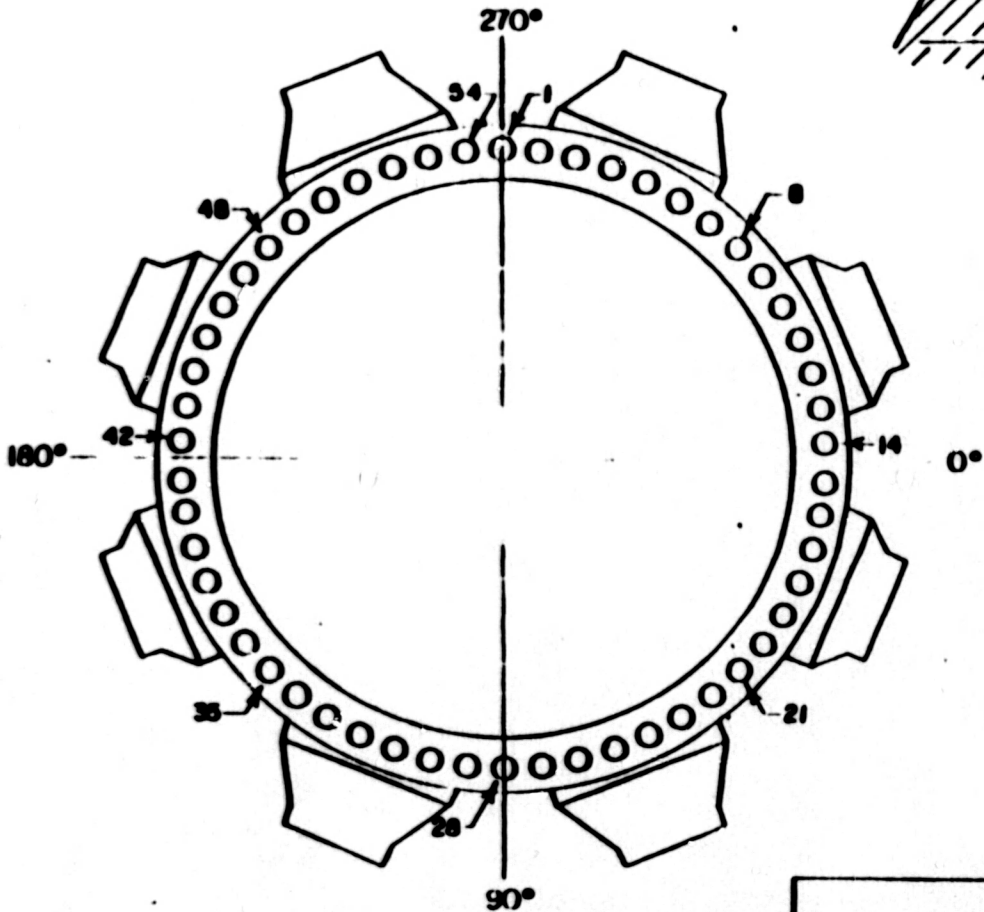
WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REACTOR VESSEL
 (BOTTOM HEAD PENETRATION DETAIL)

SCALE: NTS
 DRAWING NO.: 10-410
 CHECKED: KEV
 DATE: 11.62

SUBMITTED

APPROVED
H. B. B.

DATE: 12/24/80
 TIME: 3:17 PM
 CH-M-2551-1



DETAIL OF STUD HOLE

MEN
 T1-5CA
 Appendix A
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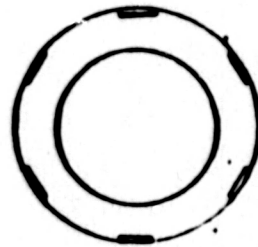
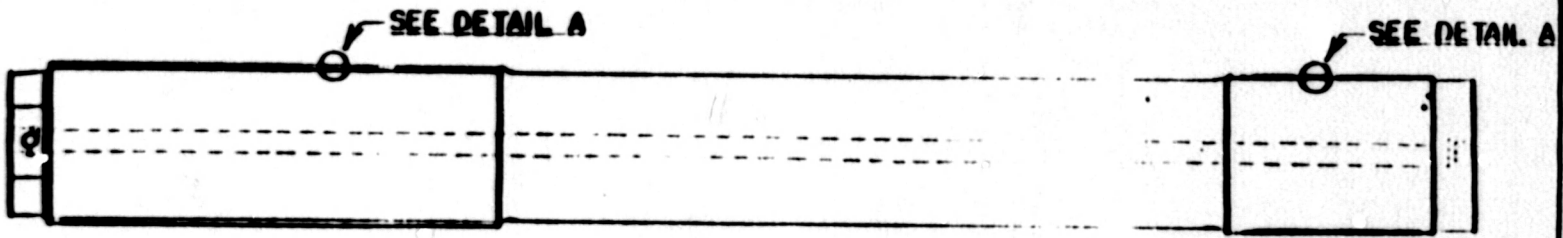
TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REACTOR VESSEL
 (RIGHT HALF)

SCALE: NTS
 DRAWN: BEV
 CHECKED: JBD

APPROVED: *HJB*

DATE: 12/24/80
 SHEET: 4 OF 7
 CH-M-2551-A



DETAIL A



DETAIL B

ABN
 T1-50A
 Appendix 1
 Revision 22
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MISSISSIPPI VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

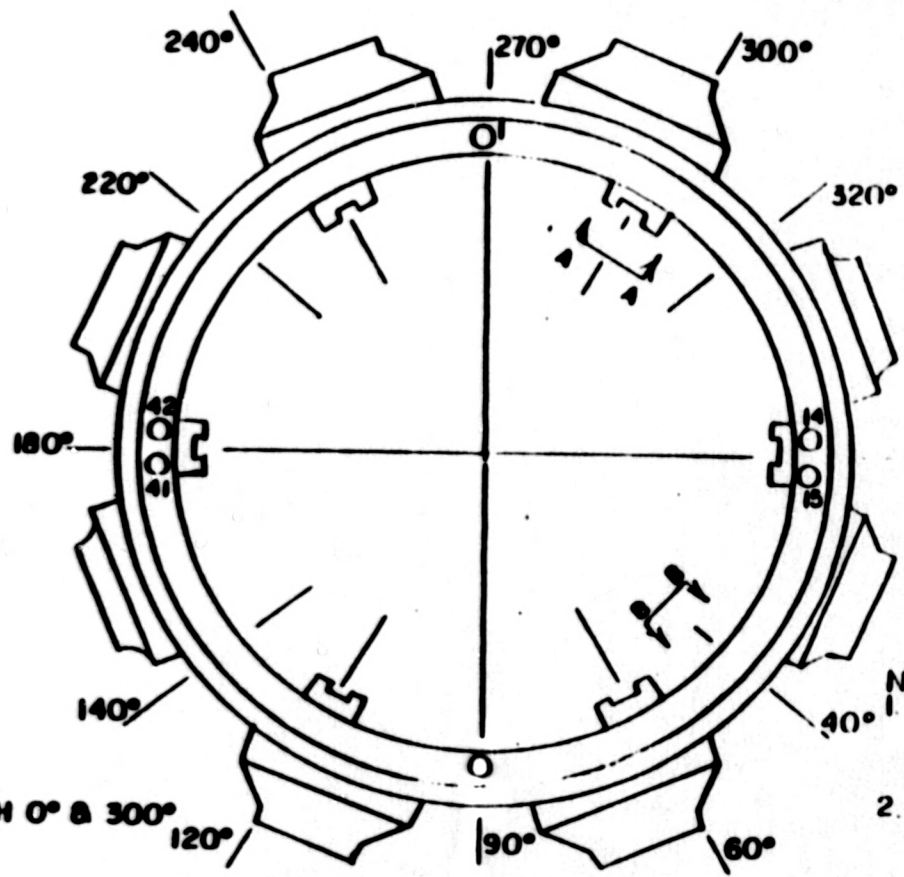
WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REACTOR VESSEL
 (CLOSURE STUDS,
 NUTS, AND WASHERS)

SCALE: NTS
 DRAWN: JPK
 CHECKED: JPK

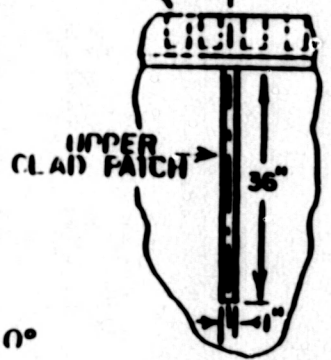
SUBMITTED:

APPROVED: *[Signature]*

DATE: 12/24/80
 SHEET: 5 OF 7
 CALL-M:



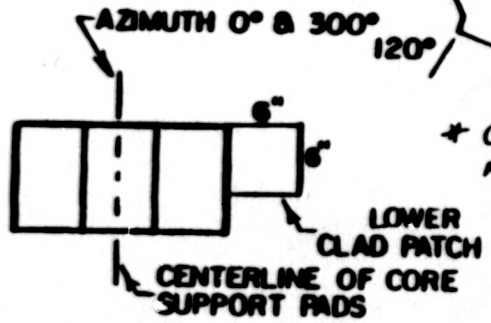
VESSEL FLANGE
AZIMUTH 40°, 120°, 220°, & 320°



SECTION B-B

MBN
TI-50A
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- NOTES:**
1. UPPER CLAD PATCH EXAMINATIONS SHALL BE DONE THROUGH THE RADIATION SPECIMEN ACCESS PORTS.
 2. AZIMUTHS ARE TAKEN OFF OF REACTOR CENTERLINE.



SECTION A-A

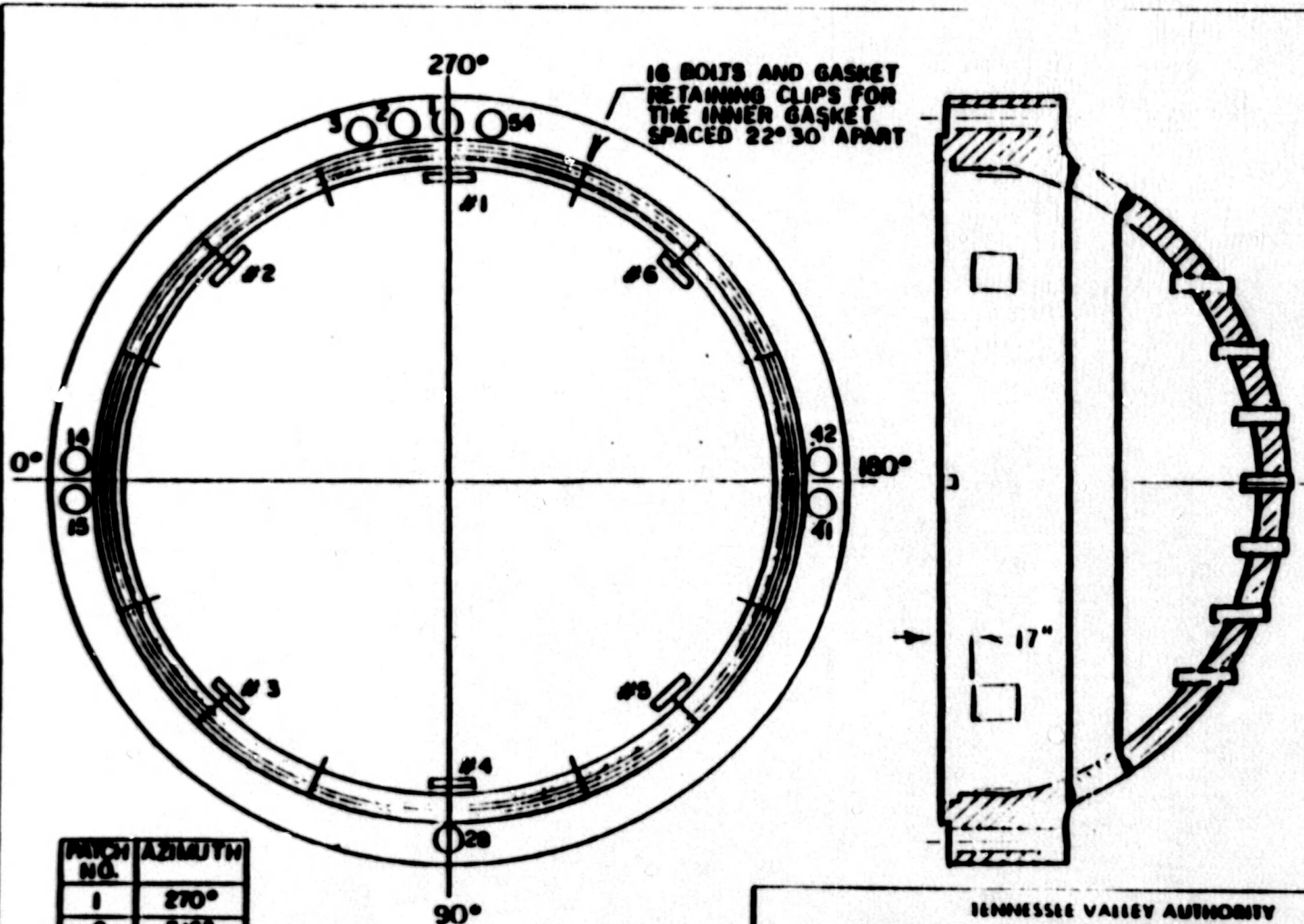
* CLAD PATCH EXAMINE NOT REQUIRED

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
REACTOR VESSEL
(CLAD PATCHES)

SCALE: NTS
DESIGNED: [Signature]
CHECKED: [Signature]
CONC'D: [Signature]

APPROVED: [Signature]

DATE: 12/24/80
SHEET 6 OF 7 SHEETS
CH-M-2551 A



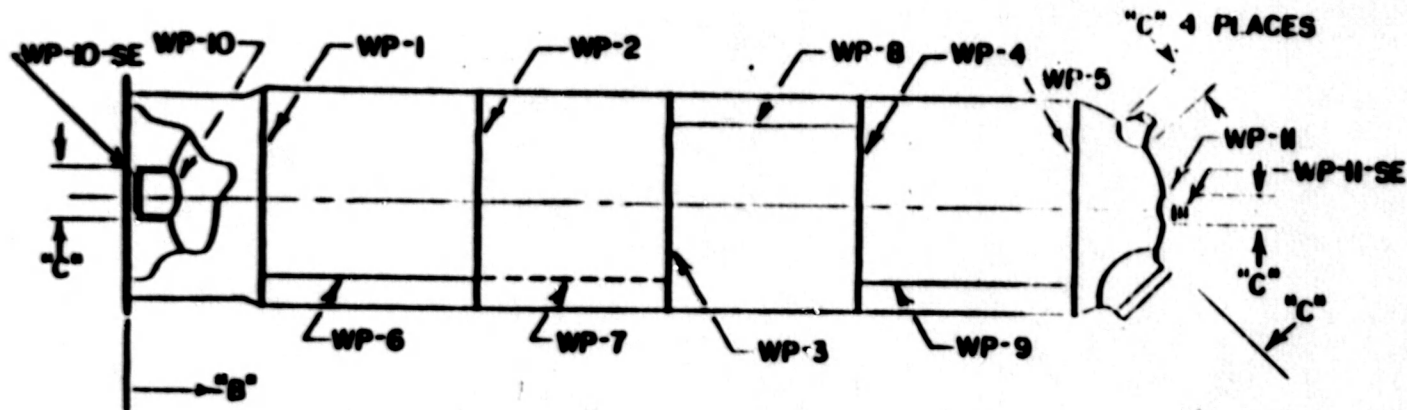
PATCH NO.	AZIMUTH
1	270°
2	315°
3	45°
4	90°
5	135°
6	225°

*1 CLAD PATCH EXAMINE
NOT REQUIRED*

MEM
T1-504
Appendix A
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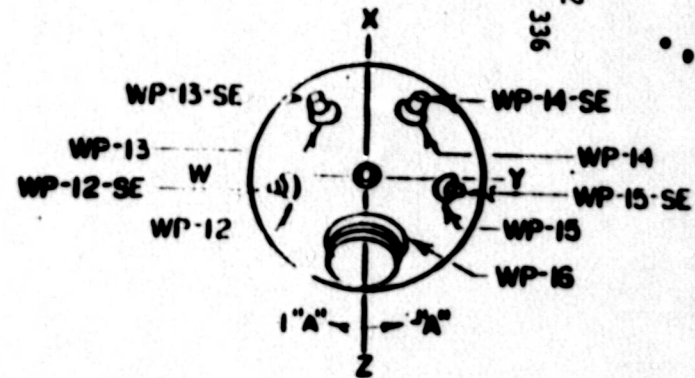
TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER
WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REACTOR VESSEL
 (CLOSURE HEAD CLADDING PATCHES)

DESIGNED BY: NTS
 DRAWN BY: REV
 CHECKED BY: JTB
 DATE: 1/5/81
 SHEET 7 OF 7
 T1-M-2551



IBN
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AS BUILT DIMENSIONS				
TITLE	SEAM NO.	"A"	"B"	"C"
GIRTH WELDS	1		56.44"	
	2		193.25"	
	3		322.12"	
	4		450.97"	
	5		588.12"	
LONGITUDINAL WELDS	6	+30°		
	7	-29°		
	8	+135°		
	9	+147°		
SURGE NOZ.	10	0°		24.50"
SPRAY NOZ.	11	0°		12.75"
SAFETY NOZ.	12	18°		15.00"
SAFETY NOZ.	13	+146° 59'		15.00"
SAFETY NOZ.	14	-147° 7'		15.00"
RELIEF NOZ.	15	-82°		15.00"
MANWAY	16	-1°		32.50"

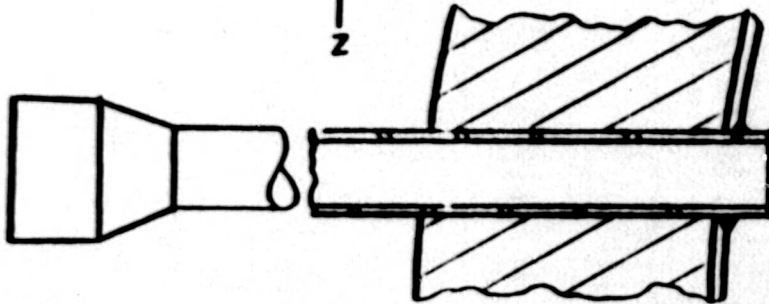
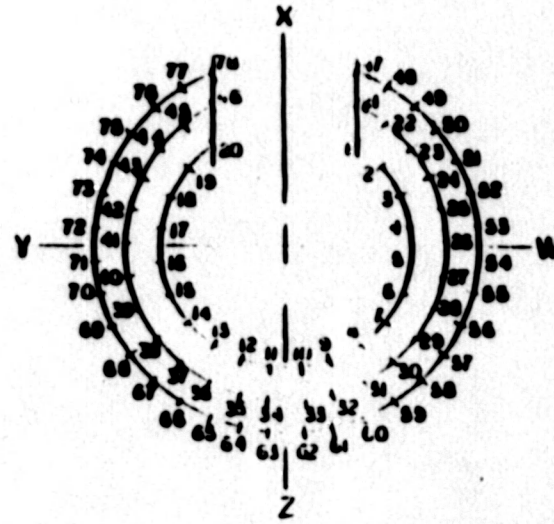
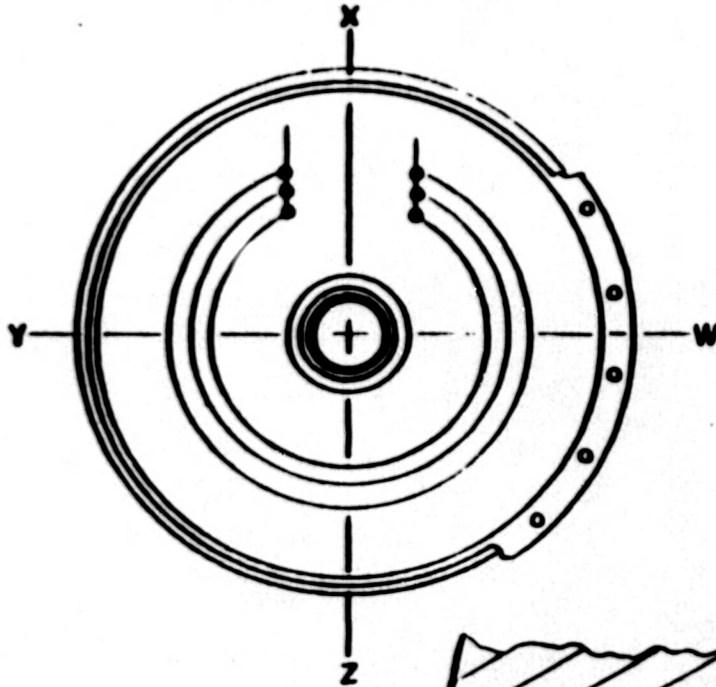


TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER
WATTS BAR NUCLEAR PLANT
 UNIT #1
 PRESSURIZER

SCALE: NIS
 DRAWN BY: KEY
 CHECKED BY:

DATE: 12/9/80
 SHEET: 1 of 4
 FILE: 68-25711-A

PARTIAL BOTTOM VIEW



HEATER PENETRATION DETAIL

ARH
 TI-50A
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TENNESSEE VALLEY AUTHORITY
 ENVISIONING OUR NUCLEAR FUTURE

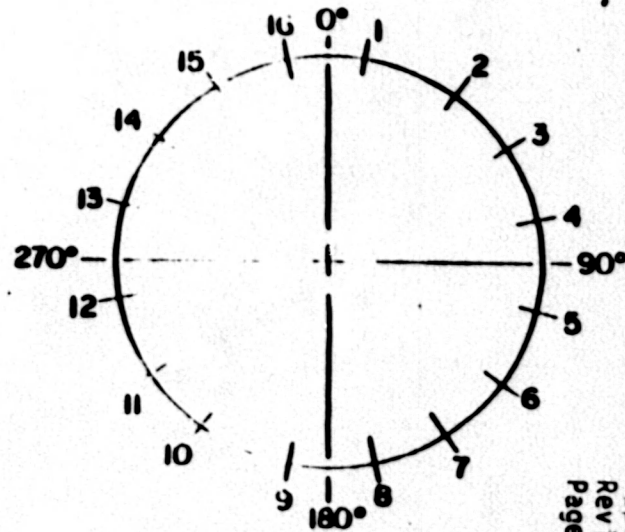
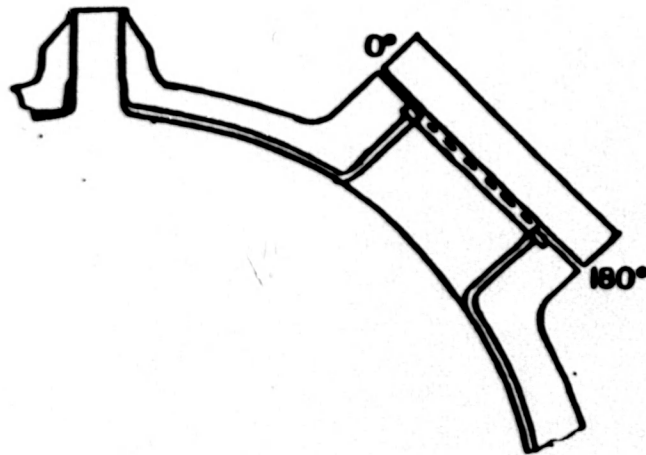
WATTS BAR NUCLEAR PLANT
 UNIT #1
 PRESSURIZER
 (HEATER PENETRATIONS)

SCALE: NTS
 DRAWING: KIV
 DATE: 1980

APPROVED: *ARH*

DATE: 12/9/80
 SHEET: 2 OF 4

M-2

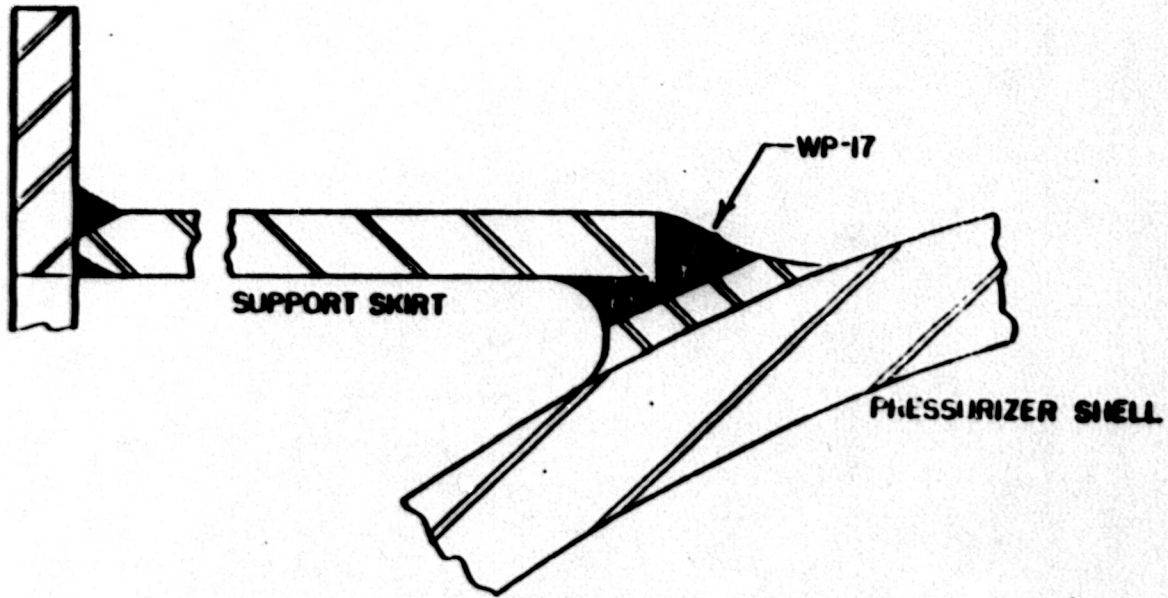


NOTE:
 TO DO THE CLAD PATCH INSPECTION,
 PLACE THE CLAD PATCH FRAME (SEE
 DRAWING NO. CH-M-2525-A) ON
 STUDS #8 AND #9.

*CLAD PATCH EXAMINE NOT REQUIRED

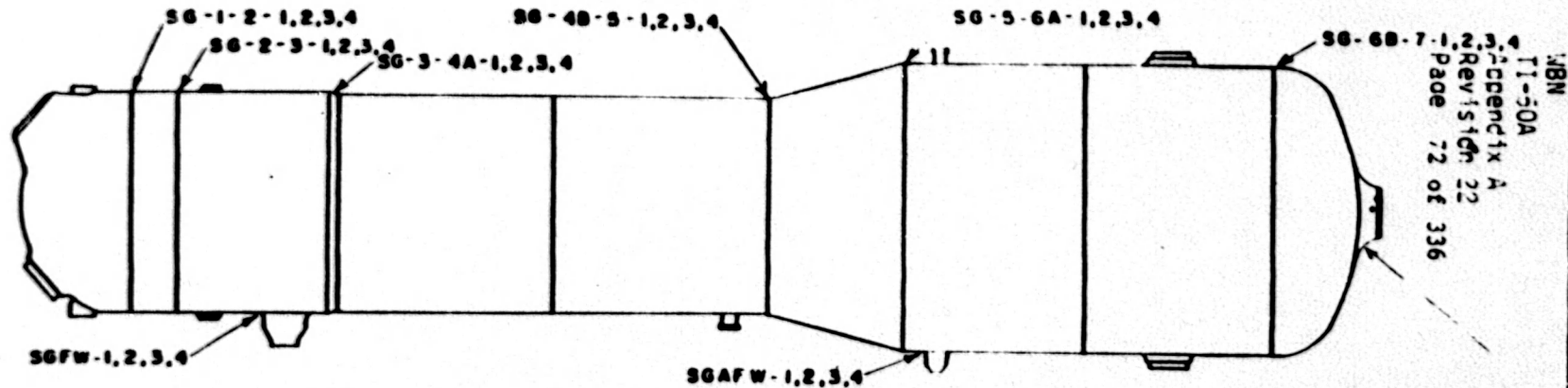
LBN
 T1-5CA
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TENNESSEE VALLEY AUTHORITY DIVISION OF NUCLEAR POWER			
WATTS BAR NUCLEAR PLANT UNIT #1 PRESSURIZER (MANWAY BOLT PATTERN)			
SCALE: <i>NTS</i> DRAWING NO.: <i>872</i> CONCEP.: <i>KL</i>	SUBMITTED:	DESIGNED: <i>[Signature]</i>	DATE: <i>12/9/80</i> SHEET: <i>3</i> OF <i>4</i>
CH-M-2570-A			<i>RU</i>



ABN
 T1-50A
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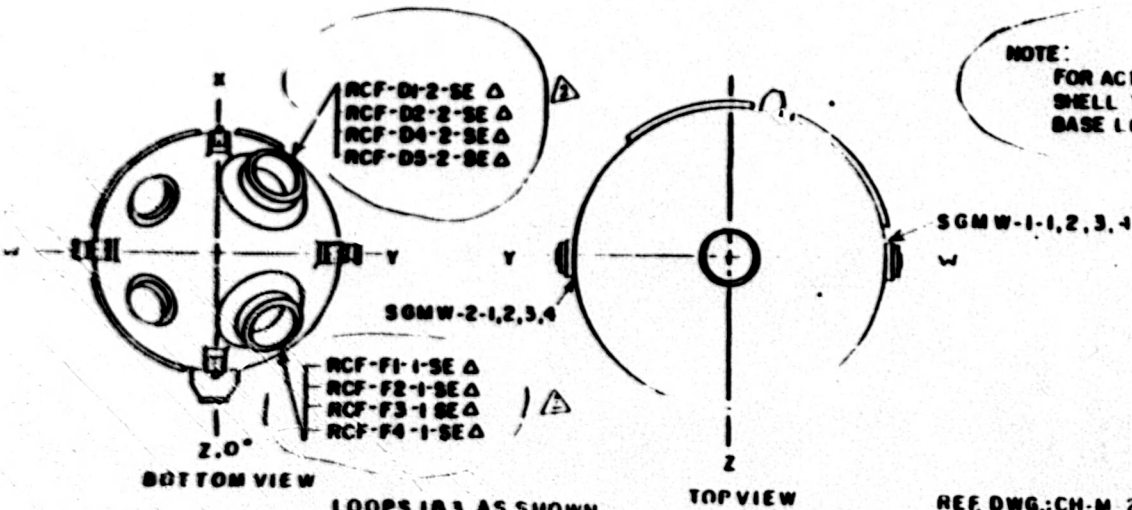
TENNESSEE VALLEY AUTHORITY DIVISION OF NUCLEAR POWER			
WATTS BAR NUCLEAR PLANT UNIT #1 PRESSURIZER (SUPPORT SKIRT WELD)			
DESIGNED BY DRAWN BY CHECKED BY ENGINEER BY	NTS KFK H.C.	SUBMITTED BY APPROVED BY <i>YFB</i>	DATE 12/10/80 TIME 4:04 PM FILE NO. M-257



18N

NOTE:
FOR ACTUAL HEAD AND
SHELL THICKNESS SEE
BASE LINE DATA

4 MAIN STEAM NOZZLES
WELD NOS. (TYPICAL):
LOOP 1, SGMS-1
LOOP 2, SGMS-2
LOOP 3, SGMS-3
LOOP 4, SGMS-4



LOOPS 1&3 AS SHOWN
 LOOPS 2&4 OPPOSITE HAND

REV	DATE	DESCRIPTION
1	6-13-81	ADD NOTES & CORRECT WEI... ADD BUTTERED SAFE END... REVISION

REF. DWG.: CH-M 2547-B

WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 STEAM GENERATOR

Δ BUTTERED SAFE END
 SEE DETAIL A ON SHEET 2

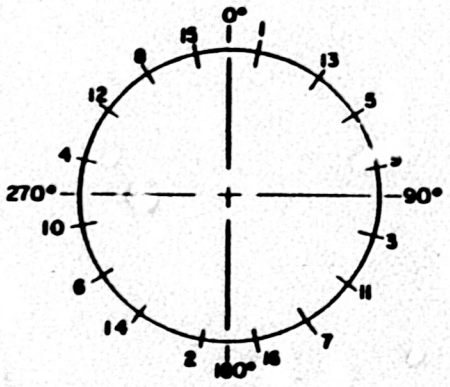
NIS

Handwritten signature

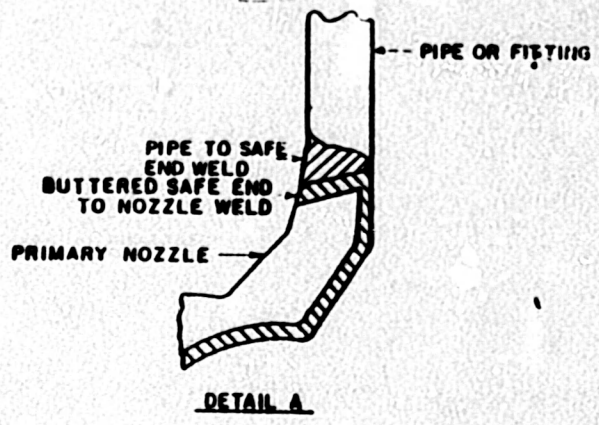
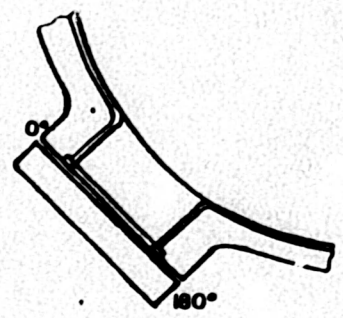
4-26-79
 1 2
 CH-M-2660-B 02

NOTES

1. PRECEED THE BOLT NUMBER WITH
 S&X-Y WHERE X=STEAM GENERATOR
 NUMBER & Y=C FOR COLD LEG MANWAY
 OR H FOR HOT LEG MANWAY



PRIMARY MANWAY BOLTING
 SEE NOTE 1



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3	3-6-85	ADD NOTES AND REFERENCES TO THE NOTES	
	8-6-84	ADD DETAIL A	
1	7-13-84	CORRECT BOLT NUMBER EQUIVALENT AND DELETED NOTE	
NO DATE		REVISIONS	

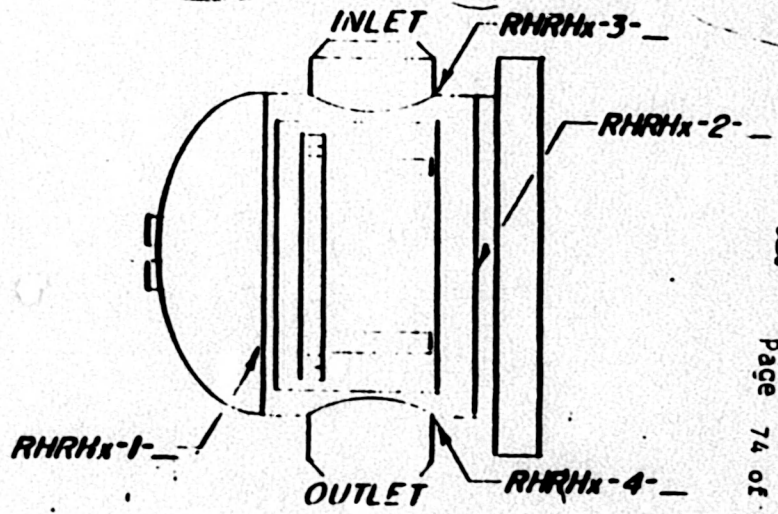
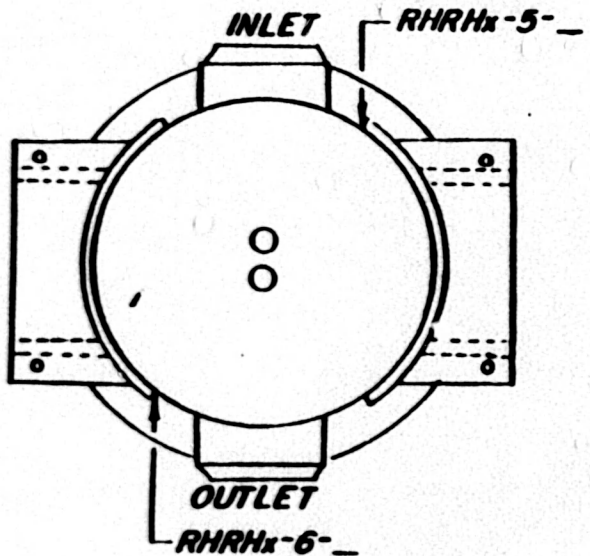
TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 STEAM GENERATOR

SCALE	1/8"	DATE	12/2/81
REVISED		BY	
APPROVED		BY	
			CI-M-2650-B

REFERENCE DRAWINGS

MATERIAL IDENTIFICATION
 CL A
 HEAD
 SA-240
 TUBES
 TUBES
 FLANGE
 A-307



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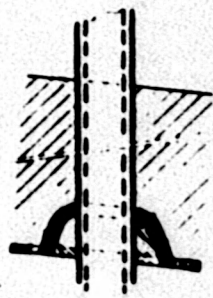
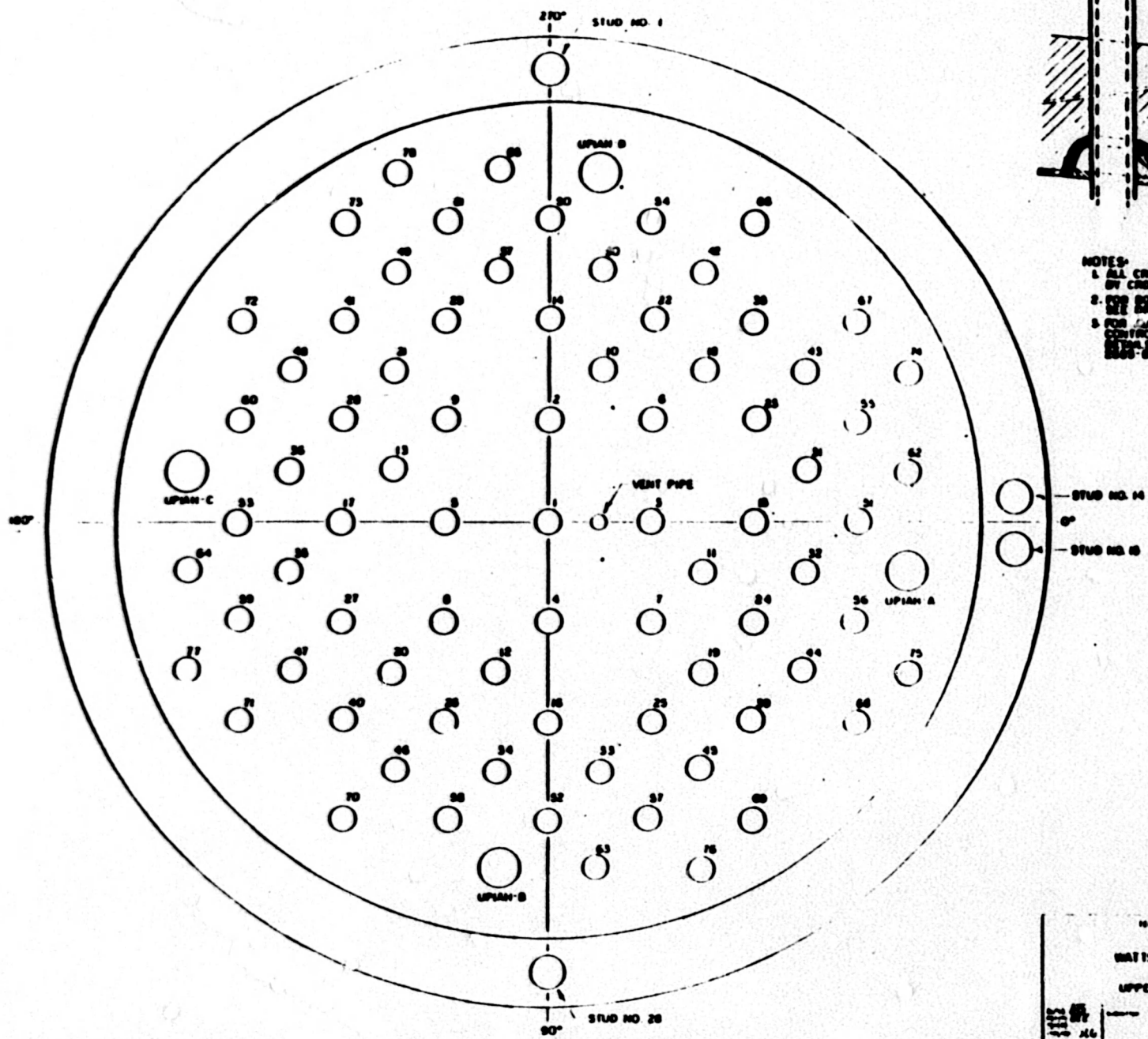
NOTE: PLACE HEAT EXCHANGER NUMBERS
 AT END OF WELD NUMBER

17-11-84	ADD MATERIAL SPECS.	JH	

THE VALLEY AUTHORITY
 POWER PROGRAM
WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
RESIDUAL HEAT REMOVAL
HEAT EXCHANGER
CHANNEL WELDS

SCALE: NTS
 DRAWN: KEV
 TRACED: [Signature]
 APPROVED: [Signature]

DATE: 5/3/79
 CH-M-2662-A-1



VENT PIPE PENETRATION DETAIL

- NOTES:
1. ALL CROWN NUMBERS ARE FILLED BY CROWN FOR THE WELD NUMBERS
 2. FOR BOTTOM HEAD PENETRATIONS SEE DRAWING NO. CH M 2551-A
 3. FOR UPPER HEAD ADAPTER AND CONTROL ROD DRIVE PENETRATION SEE DRAWING NOS. CH M 2552-B AND ISH-042-A RESPECTIVELY

MBN
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REVISIONS

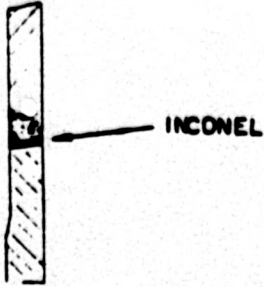
NO.	DATE	DESCRIPTION
1	11/15/77	WATTS BAR CLEAN UP AND UPPER HEAD PENETRATIONS

WATTS BAR CLEAN UP AND UPPER HEAD PENETRATIONS

UNIT: 01 IN 22

CH M 260-C

DETAIL-B



APPROXIMATELY 6" EXAMINER TO DETERMINE EXACT LOCATION ULTRASONICALLY

SEE DETAIL-B

SB-166

INCONEL BUTTER
 UPIAH-1-A,B,C,D*
 LOW ALLOY BUTTER

SA-182
 304 SS

UPIAH-4-A,B,C,D*
 UPIAH-3-A,b,C,D*
 INCONEL
 UPIAH-2-A,B,C,D*

SA-182

CL OF AUXILIARY HEAD ADAPTER
 TYPICAL 1/4" DIA. (1/8" DIA)
 WELD NOS UPIAH-123&4

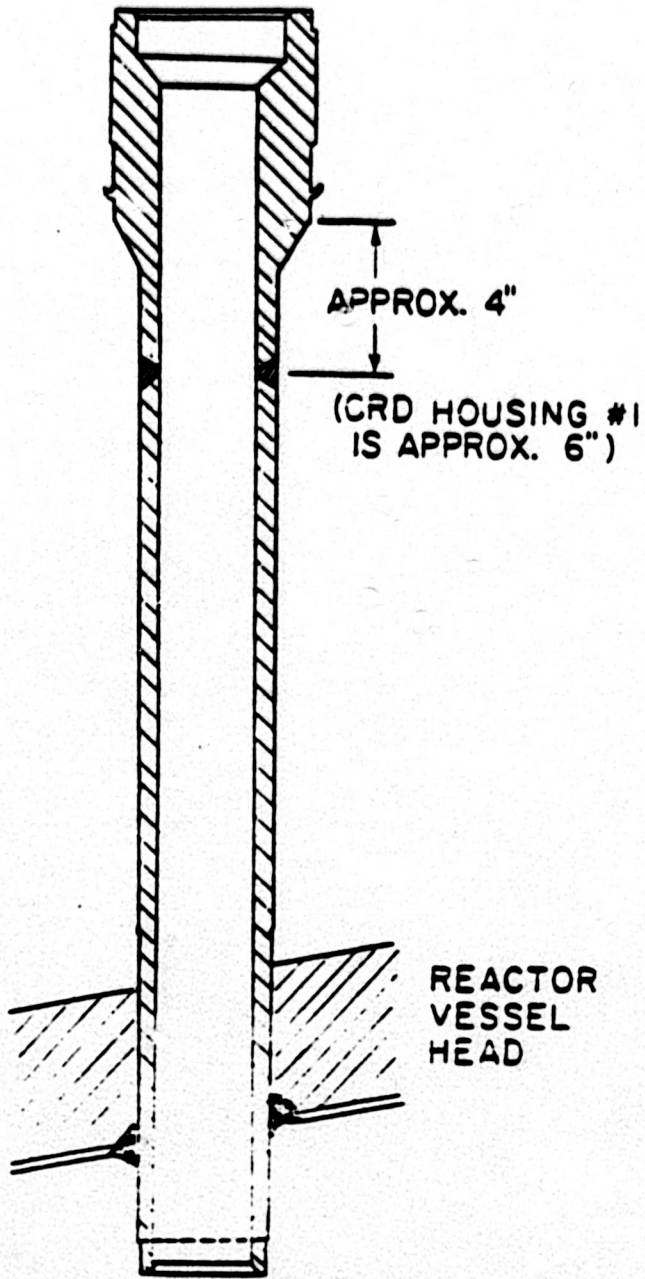
* REF. TO CHM-265-1-C FOR LOCATION OF HEAD

NO	DATE	REVISIONS
1	4/8/81	ADD DIMENSIONS

TENNESSEE VALLEY AUTHORITY
 DIVISION OF POWER RESEARCH
WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 AUXILIARY HEAD ADAPTER

T-50A
 Appendix A
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RB
 CHM-265B



APPROX. 4"

(CRD HOUSING #1 IS APPROX. 6")

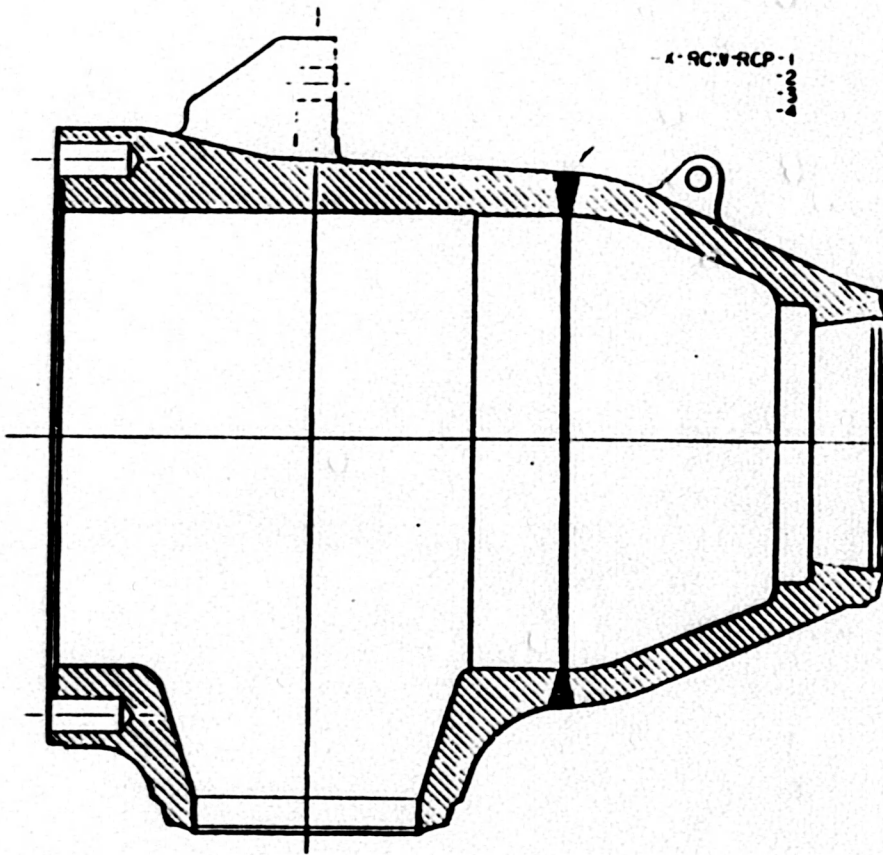
REACTOR VESSEL HEAD

SCALE: N/S
 WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 CONTROL ROD
 DRIVE HOUSING
 12-22-80
 ISI-0012-A

M8N
 T1-50A
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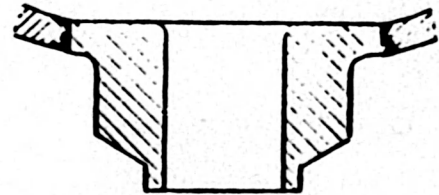
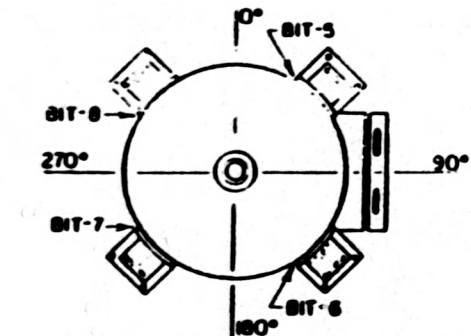
NOTES

1 REPLACE THE X IN THE WELD NUMBER WITH THE APPROPRIATE UNIT NUMBER

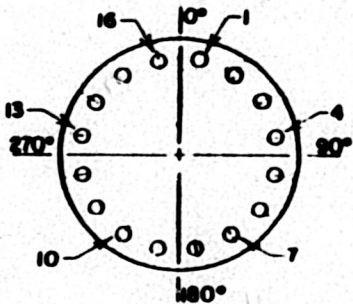
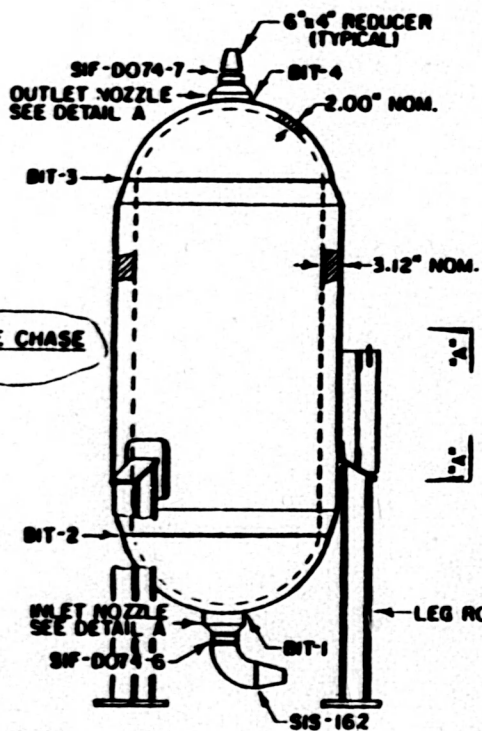


WBN
 T1-50A
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TENNESSEE VALLEY AUTHORITY DIVISION OF NUCLEAR POWER			
WATTS BAR NUCLEAR PLANT UNITS #1 & #2 REACTOR COOLANT PUMP CASING WELD LOCATIONS			
DATE 11/17/82	DRAWN [Signature]	CHECKED [Signature]	SCALE 1:1



DETAIL A



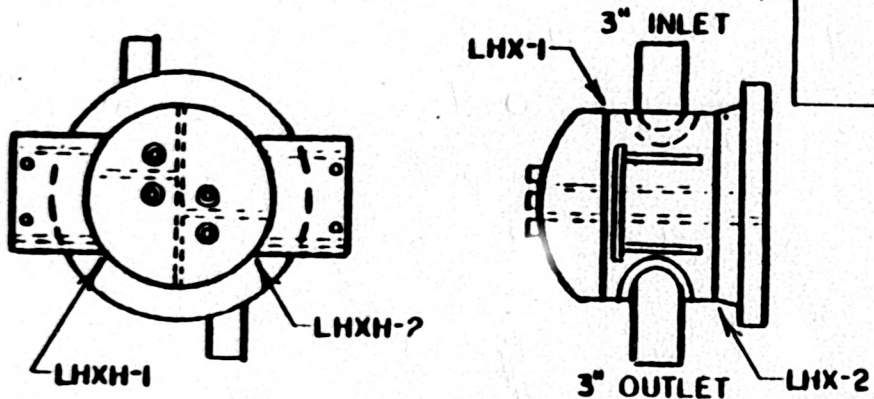
SECTION A-A

REFERENCE DRAWINGS
 WESTINGHOUSE 1100E48
 WBN E-2879 IC-74
 MATERIAL SPECIFICATIONS

- CLASS 2
- TANK
 - SHELL
 - SA-391 CF8A
 - 3.12" NOM.
 - HEADS
 - SA 240 TP 304
 - 2.00 NOM.
 - NOZZLES
 - SA 182 F 304
 - BOLTING
 - STUDS
 - SA 193 GR. B7
 - 2.50-BUN-2A-13.50
 - NUTS
 - SA 193 GR. 2H
 - 2.50-BUN-2B HVY.
 - FITTINGS
 - SA 403 WP 304
 - 6" SCH 160

MRN
 T1-50A
 Appendix A
 Revision 22
 Page 80 of 336

NO.	DATE	REVISIONS	EN. CHG.
1	1-14-83	CHANGED CLASS OF MATERIALS AND ADD WELD LOCATION 11V	XG
TENNESSEE VALLEY AUTHORITY DIVISION OF NUCLEAR POWER WATTS BAR NUCLEAR PLANT UNIT #1 BORON INJECTION TANK WELD LOCATIONS			
SCALE: NTS	DESIGNED BY	APPROVED BY	DATE: 2-19-82
BY: JBY			SI-0053-B



**LETDOWN HEAT EXCHANGER
ROOM 1A**

REFERENCE DRAWINGS

C-4149-1
D-4054-6

MATERIAL SPECIFICATIONS

CLASS 2

HEAD

SA 240 TP 304
.375" THK.

SHELL

SA 240 TP 304
.375" THK.
18" DIA.

FLANGE

SA 182 F 304

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NO.	DATE	REVISIONS	CK'D	APP.
2	9-7-84	ADD DIA TO MATERIAL SPECS	JLL	JHB
1	1-19-83	CHANGED CLASSIFICATION	JCC	JHB

TEENESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER

**WATTS BAR NUCLEAR PLANT
UNITS #1 & #2**

LETDOWN HEAT EXCHANGER

SCALE
DRAWN
CHECKED
DATE

NTS

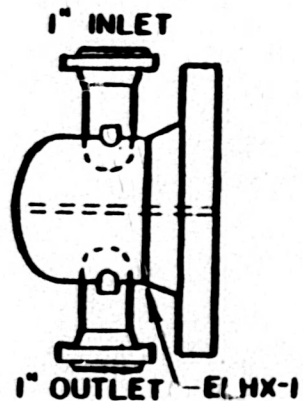
SUBMITTED
DAD

APPROVED
RJB

DATE 8-4-82

HEET 1 OF 1

07



**REGENERATIVE AND EXCESS LETDOWN
HEAT EXCHANGER ROOM**

REFERENCE DRAWINGS

D-4060-6

MATERIAL SPECIFICATIONS

CLASS 2

HEAD

SA 240 TP 304

.750" THK.

9.5" DIA.

FLANGE

SA 105 II

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NO.	DATE	REVISIONS	CK'D APP.
2	9-7-84	ADD DIA TO MATERIAL SPECS	DA
1	11-89	CHANGED CLASS DESIGNATION KEY	JKG

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER

**WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
EXCESS LETDOWN HEAT EXCHANGER**

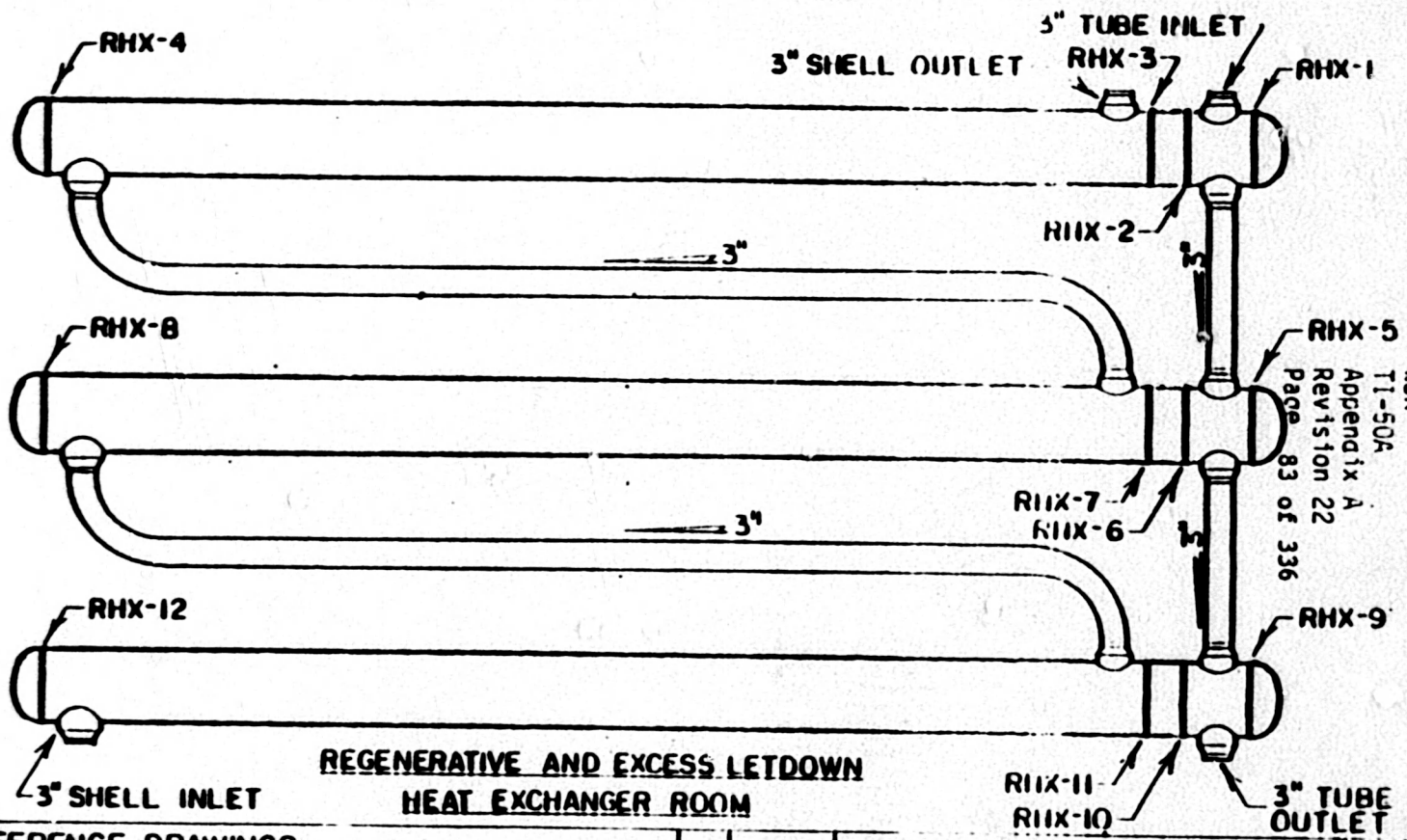
SCALE: NTS
DESIGN: KEY
CHECKED: 810

SUBMITTED: DAV

DESIGNED: LAB

DATE: 8-4-82
SCALE: 1/4" = 1'-0"
PROJECT: ISI-0076-A

K



**REGENERATIVE AND EXCESS LETDOWN
HEAT EXCHANGER ROOM**

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T1-50A
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REFERENCE DRAWINGS

- 5578
- 5579
- 5580

MATERIAL SPECIFICATIONS

- CLASS (2) ⚠
- SHELL
- SA 351 CF 8
- HEADS
- SA 240 TP 304L
- TUBE SHEET
- SA 182 F 304

NO.	DATE	REVISIONS	CK'D	APP
1	1-14-84	CHANGED (1) TO 1 SIGNATURES KEY	VC	MC

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER

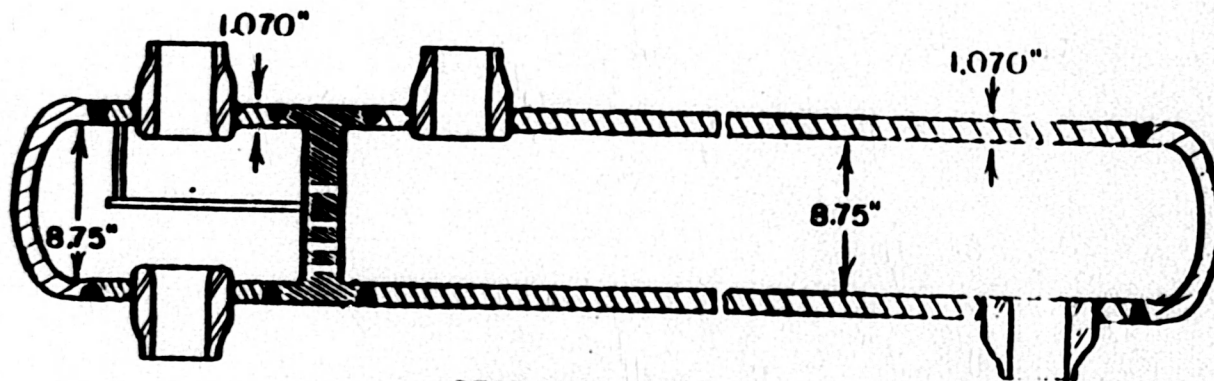
**WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
REGENERATIVE HEAT EXCHANGER**

SCALE: NTS
DRAWN BY: KEY
CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 8-5-82
REV: 1 OF 1
CSI-0077-1

R1



SECTIONAL VIEW

WBN
 T1-50A
 Appendix A
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 Page 84 of 336

TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

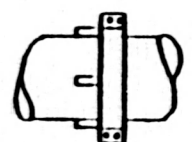
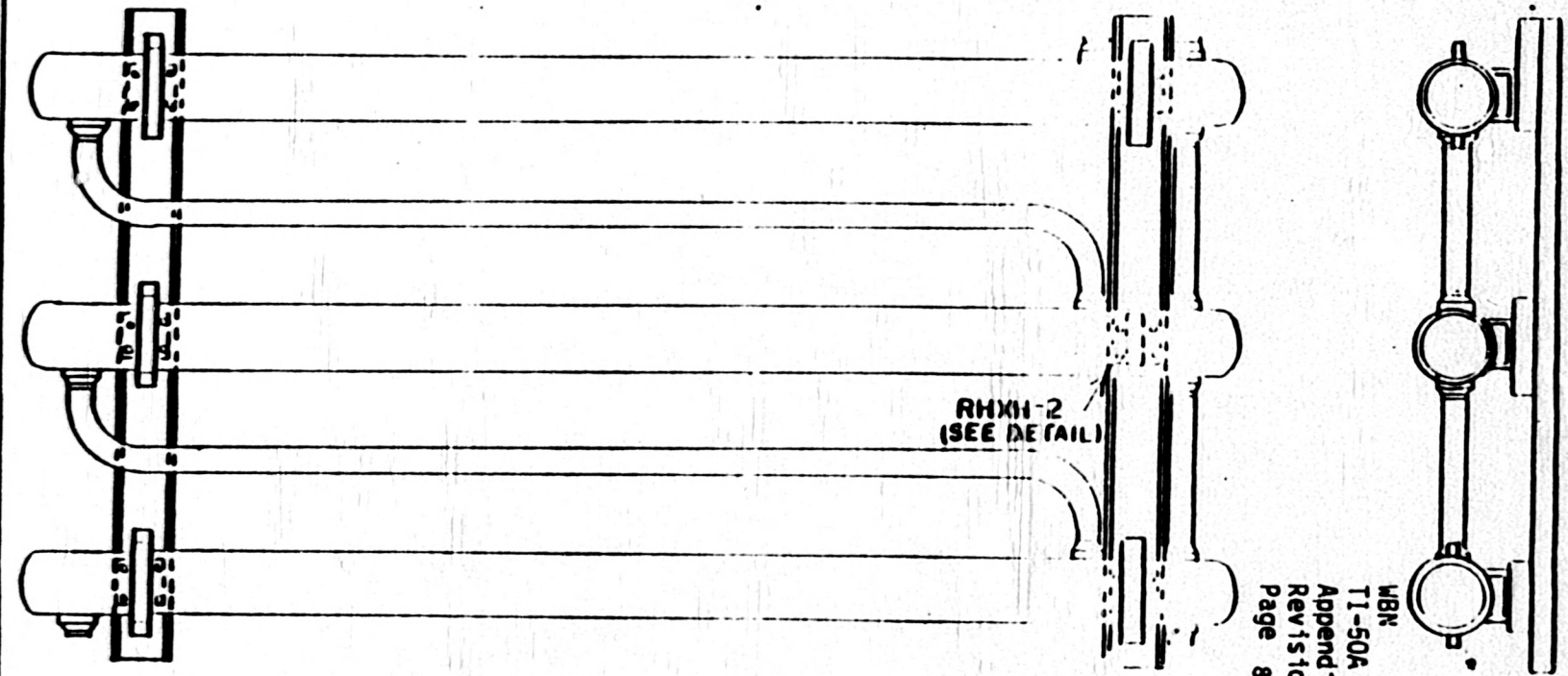
WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 REGENERATIVE HEAT EXCHANGER

SCALE NTS
 DRAWN
 CHECKED
 INCHES

SUBMITTED
 DAD

APPROVED
 YJB

DATE 8-5-82
 SHEET 2 OF 3
 ISI-0077-A



RHXH-1



RHXH-2

RHXH-2
(SEE DETAIL)

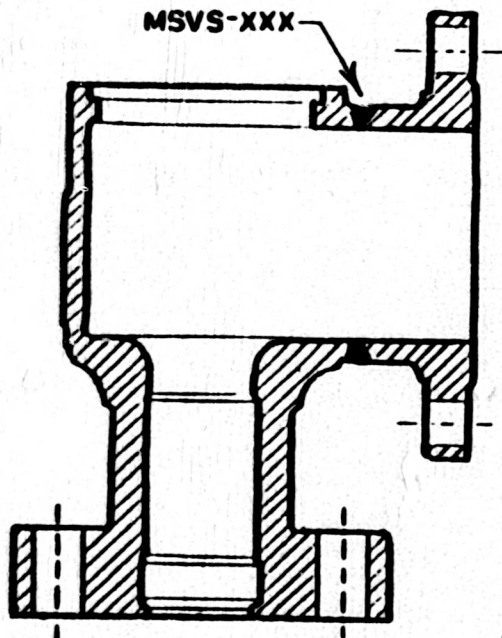
RHXH-1
(SEE DETAIL)

WBR
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TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER

WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
REGENERATIVE HEAT EXCHANGER

SCALE: <i>NTS</i> DRAWN: <i>REV</i> CHECKED: <i>DDO</i>	SUBMITTED: <i>JAL</i>	APPROVED: <i>HJB</i>	DATE: 8-5-82 TIME: 3:30 PM ISI-0077-A
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REFERENCE DRAWINGS

3NC-040
 CHM-2669-C (UNIT #1)
 ISI-0063-C (UNIT #2)

MATERIAL SPECIFICATIONS

CLASS 2
 VALVE BODY AND FLANGE
 SA 105

NOTES

1. REPLACE XXX WITH THE VALVE IDENTIFICATION NUMBER.
2. VALVE NUMBERS

1-512	1-517	1-522	1-527
1-513	1-518	1-523	1-528
1-514	1-519	1-524	1-529
1-515	1-520	1-525	1-530
1-516	1-521	1-526	1-531

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NO.	DATE	REVISIONS	CK'D APP.
1	1-11-84	CHANGED CLASS DESIGNATION AND ADD NOTE NO. 2 REV	JCG 1/13/84

TENNESSEE VALLEY AUTHORITY
 DIVISION OF NUCLEAR POWER

WATTS BAR NUCLEAR PLANT
 UNITS #1 & #2
 MAINSTEAM RELIEF VALVE
 WELD LOCATIONS

SCALE: NTS	SUBMITTED	APPROVED	DATE: 11-24-82
DRAWN: KEV	DATE: 1/13/84	BY: [Signature]	SHEET 1 OF 1 SHEETS
CHECKED: [Signature]			ISI-0081-A

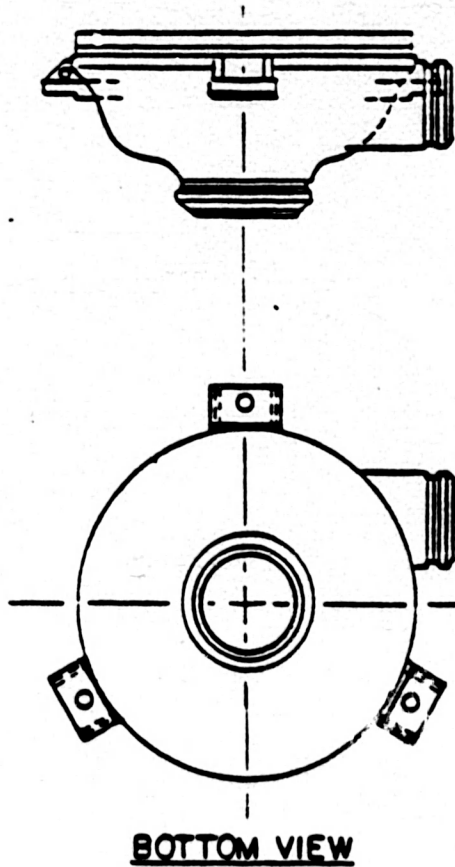
RI

WBN
TI-50A
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REFERENCE DRAWINGS
C-8X20WDF86X9-D

NOTES

1. THE THREE PUMP FEET ARE BOLTED TO A COMMON SUPPORT.
2. PUMP SUPPORT NUMBERS
RHRPH-1A-A
RHRPH-1B-B
RHRPH-2A-A
RHRPH-2B-B
3. THE PUMP FEET ARE INTERGRALLY WELDED TO THE CASING.



TENNESSEE VALLEY AUTHORITY			
DIVISION OF NUCLEAR POWER			
WATTS BAR NUCLEAR PLANT			
UNITS #1 & #2			
RESIDUAL HEAT REMOVAL PUMP SUPPORTS			
SCALE: 1/2" = 1"	DESIGNED	APPROVED: <i>JJB</i>	DATE: 8-31-83
DRAWN: <i>REV</i>	-----	-----	SHEET 01 OF 01
CHECKED: <i>CC</i>	-----	-----	ISI-0117-A

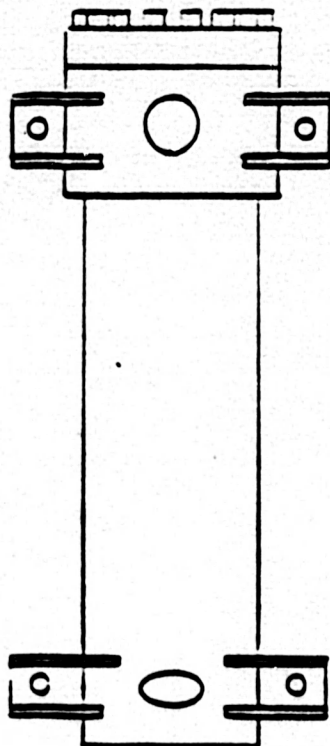
WBN
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..

REFERENCE DRAWINGS

FC-48590

NOTES

1. THE PUMP FEET ARE BOLTED TO A COMMON SUPPORT.
2. PUMP SUPPORT NUMBERS
CCPH-1A-A
CCPH-1B-B
CCPH-2A-A
CCPH-2B-B
3. THE PUMP FEET ARE INTERGALLY WELDED TO THE CASING.



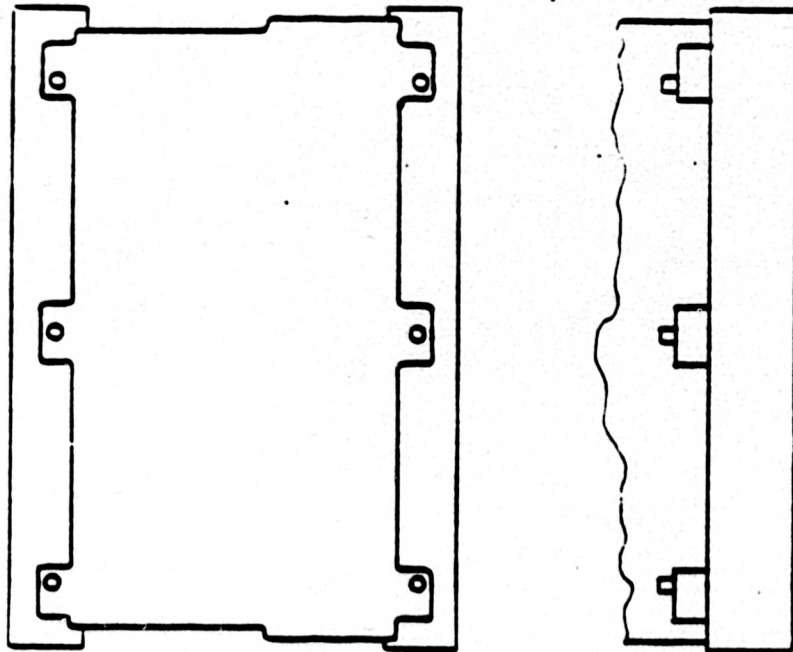
TENNESSEE VALLEY AUTHORITY			
DIVISION OF NUCLEAR POWER			
WATTS BAR NUCLEAR PLANT			
UNITS #1 & #2			
CENTRIFUGAL CHARGING PUMP SUPPORTS			
SCALE	DESIGNED	APPROVED	DATE
N/S			9-2-83
DRAWN	CHECKED		SHEET
REV			OF
			SHEETS
			ISI-0118-A

WBN
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REFERENCE DRAWINGS
OP-EN742865

NOTES

1. THE PUMP FEET ARE BOLTED TO A COMMON SUPPORT.
2. PUMP SUPPORT NUMBERS
PDPH-1C
PDPH-2C



TENNESSEE VALLEY AUTHORITY DIVISION OF NUCLEAR POWER			
WATTS BAR NUCLEAR PLANT UNITS #1 & #2			
RECIPROCATING CHARGING PUMP SUPPORTS (POSITIVE DISPLACEMENT PUMP)			
SCALE <i>NTS</i>	DRAWN <i>REV</i>	APPROVED <i>[Signature]</i>	DATE <i>9-2-83</i>
TRACED			SHEET <i>1</i> OF <i>1</i> SHEETS
CHECKED <i>CG</i>			ISI-0119-A

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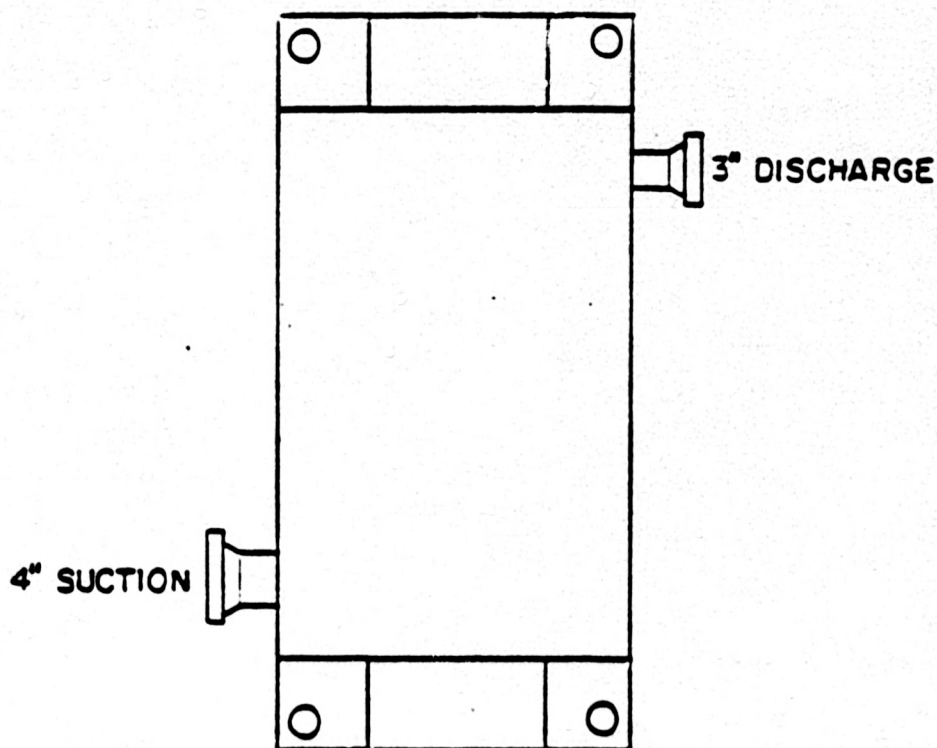
REFERENCE DRAWINGS

FC-49351

NOTES

1. THE PUMP FEET ARE BOLTED TO A COMMON SUPPORT
2. PUMP SUPPORT NUMBERS

SIPH-1A-A
SIPH-1B-B
SIPH-2A-A
SIPH-2B-B



TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER

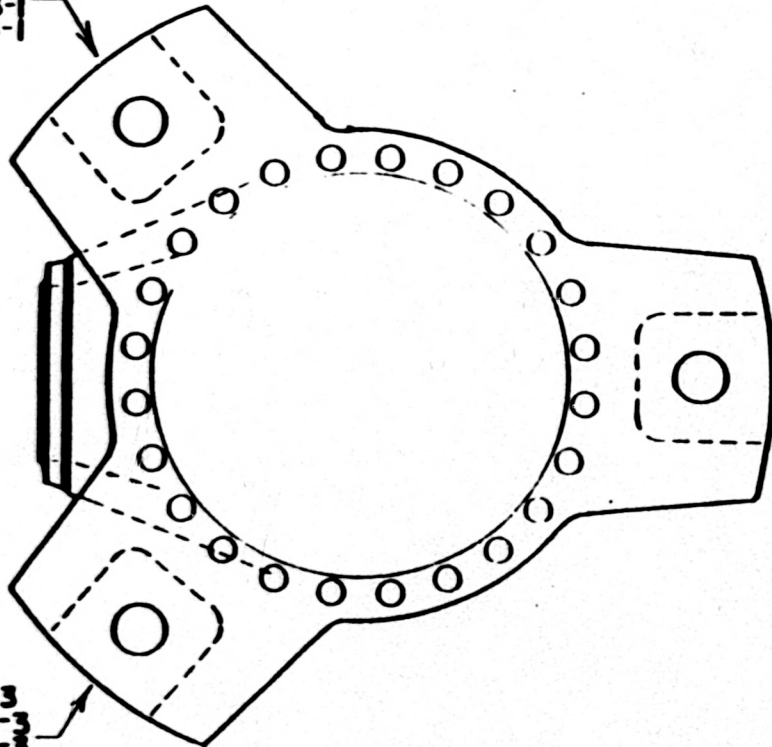
WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
SAFETY INJECTION PUMP SUPPORTS

DESIGNER NTS	DESIGNED MEV	APPROVED <i>[Signature]</i>	DATE 9-5-93
DRAWN MEV			SHEET OF SHEETS
CHECKED JCS			ISI-0120-A

NOTES

I. REPLACE X WITH UNIT NUMBER

X-RCPH-1-1
X-RCPH-2-1
X-RCPH-3-1
X-RCPH-4-1



X-RCPH-1-2
X-RCPH-2-2
X-RCPH-3-2
X-RCPH-4-2

X-RCPH-1-3
X-RCPH-2-3
X-RCPH-3-3
X-RCPH-4-3

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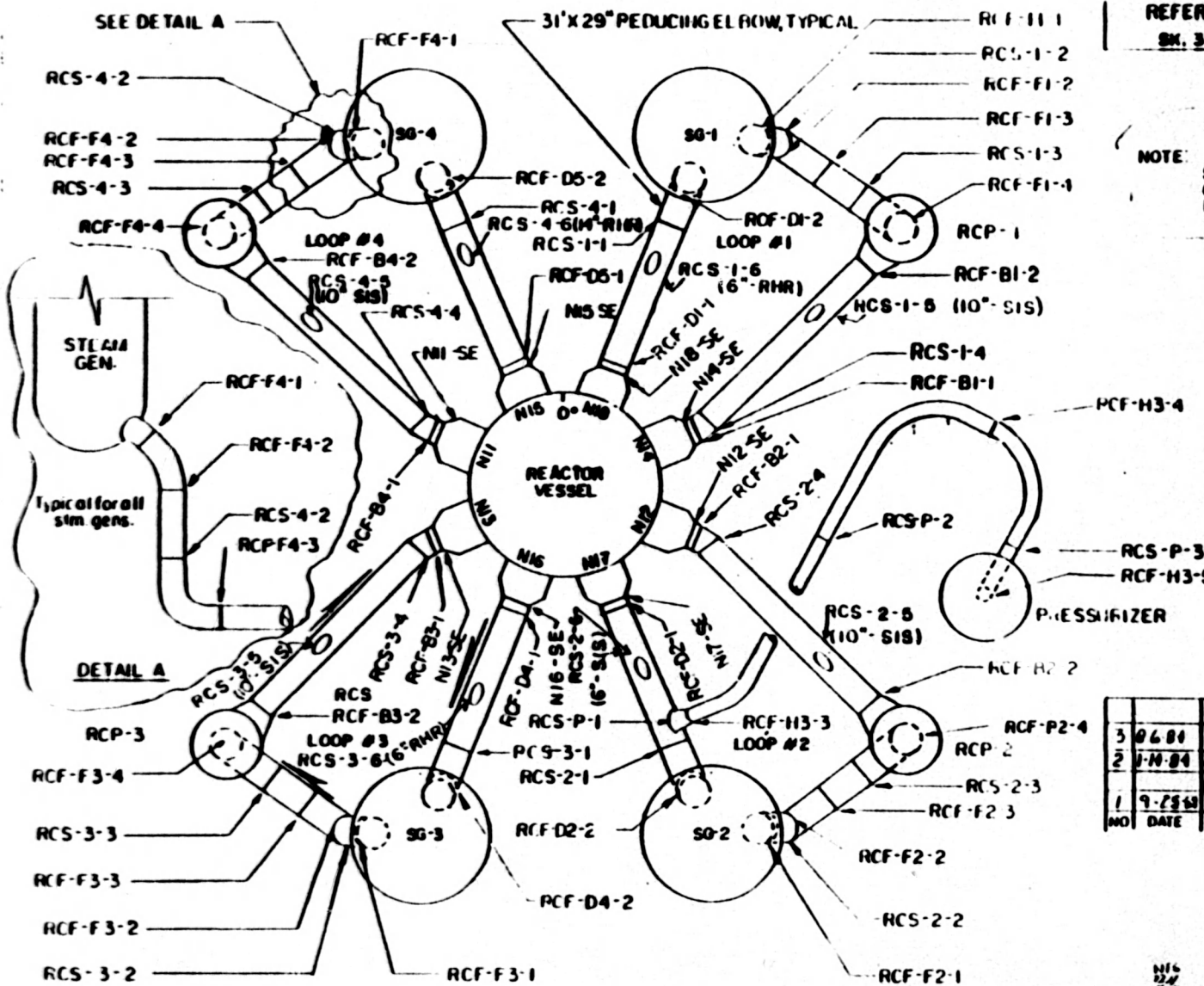
TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER

WATTS BAR NUCLEAR PLANT
UNITS #1 & #2
REACTOR COOLANT PUMP SUPPORTS

SCALE: 1/2" = 1'-0"
DRAWN: MS
CHECKED: JG
DATE: 12/83

APPROVED: [Signature]
DATE: 9-6-83
BY: [Signature]
ISI-0121-A

KO



REFERENCE DRAWINGS
 SM. 304-1 SMS. 1 THRU 12

NOTE:
 SEE DETAIL A ON DWG
 CM-M-2660-B, SHEET 2
 FOR THE STEAM GENERATOR
 TO PIPING WELDS

PRESSURIZER SURGE LINE
 NDA PIPE SIZE - 14"
 SCHLIGO SA-376 SML'S

HOT LEG
 29" I.D., 2.33" MW
 SA-351 CF-8A

CROSS-OVER LEG
 31" I.D., 2.48" MW
 SA-351 CF-8A

COLD LEG
 27.5" I.D., 2.21" MW
 SA-351 CF-8A

M.B.N.
 TI-50A
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NO	DATE	REVISIONS	REVISED BY	CHK'D APP
3	9-6-84	ADD NOTE	JH	JC
2	8-10-84	ADD WELD AND CORRECT LINE DIS-CARDING	JH	JC
1	9-23-80	ADD WELD AND CORRECT DIMS.	JH	JC
1	9-23-80	CORRECT WELD NO AND DIMS.	JH	JC

MECHANICAL
 REACTOR COOLANT PIPING
 WATTS BAR NUCLEAR PLANT
 UNIT 1

N16
 224
 614

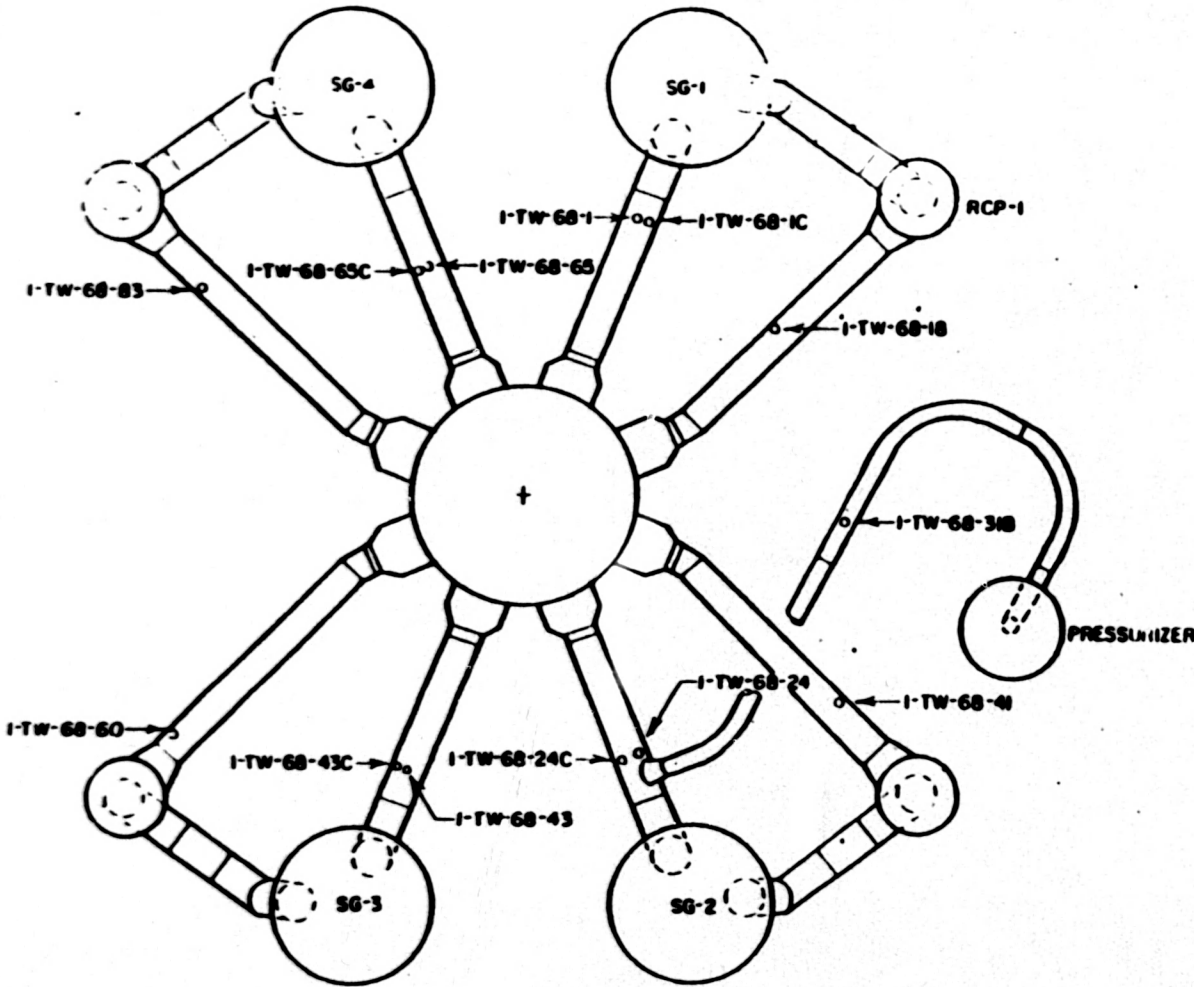
9/27/78
 12
 1:54:00

REFERENCE DRAWINGS

SK. 304-1 SH. 1
 SK. 304-1 SH. 2
 SK. 304-1 SH. 3
 SK. 304-1 SH. 4
 SK. 304-1 SH. 5
 SK. 304-1 SH. 6
 SK. 304-1 SH. 7
 SK. 304-1 SH. 8

MATERIAL SPECIFICATIONS

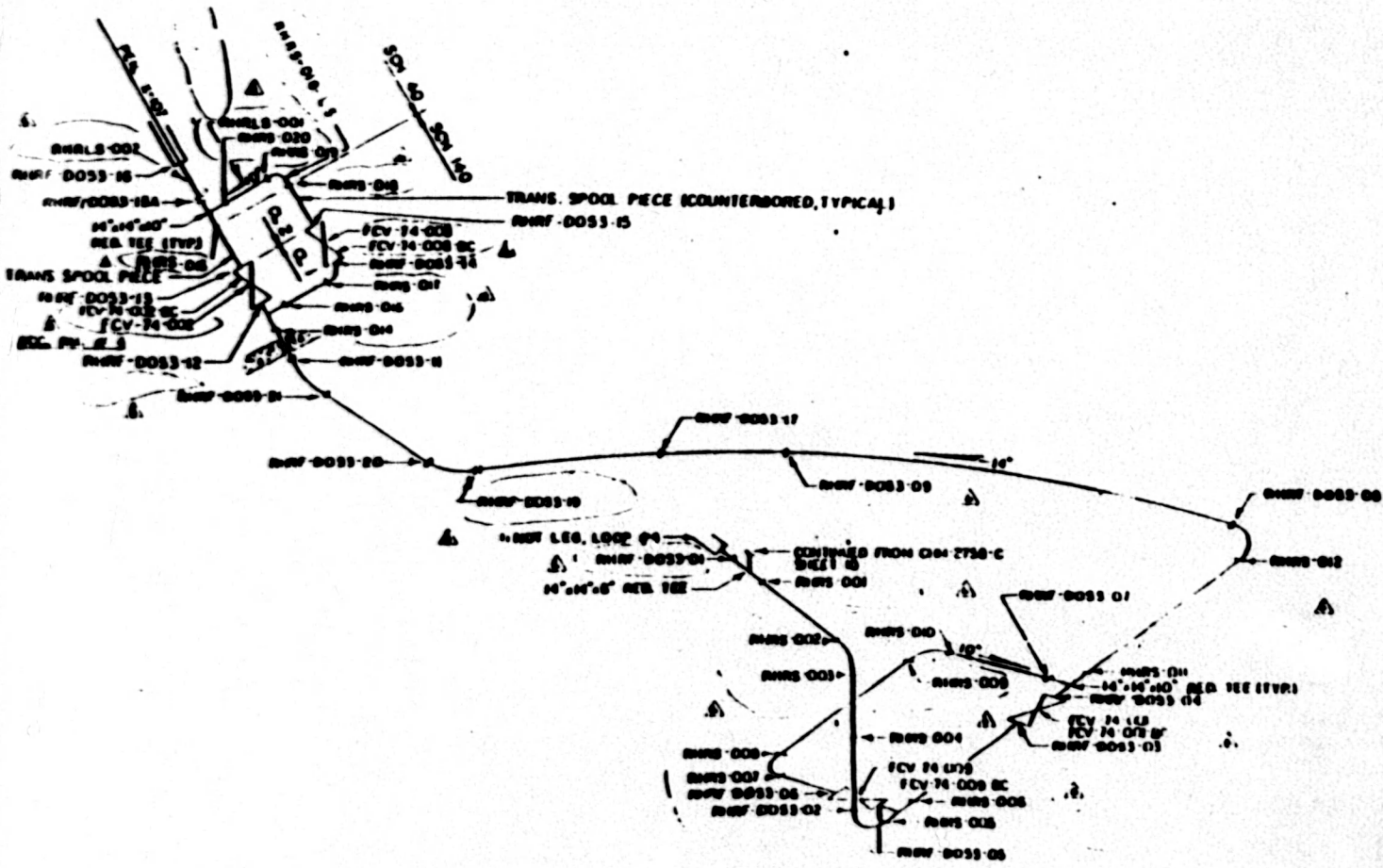
CLASS I
 TEMPERATURE WELLS
 STAINLESS STEEL
 SA 192 F 316
 2 1/2" O.D. BOSS



MBN
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NO.	DATE	REVISIONS	CHK'D/APP.
1	1-19-84	CHANGED CLASS DESIGNATIONS AND REFERRED TO REFERENCE DRAWING HIDDEN LINES 411	JLG
TENNESSEE VALLEY AUTHORITY DIVISION OF NUCLEAR POWER WATTS BAR NUCLEAR PLANT UNIT #1 REACTOR COOLANT PIPING WELD LOCATIONS			
DESIGNED BY	DATE	BY	CHK'D
WELDED BY	DATE	BY	CHK'D
APP'D	DATE	BY	CHK'D
		JLG	8-23-84 CIM-2547-8

CONT. ON SHEET 2 OF 7



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- CLASS I**
 PIPE
 14" SCH 40, SA-312 TP 304 S
 FITTINGS
 14" SCH 40, SA-312 TP 304 S
- CLASS II**
 PIPE
 14" SCH 40, SA-312 CL 1 TP 304 S
 14" SCH 40, SA-312 TP 304 S
 FITTINGS
 14" SCH 40, SA-312 TP 304 S
 TRANSMISSION SPOOL PIECES
 14" SCH 40, SA-312 TP 304 S
 14" SCH 40, SA-312 TP 304 S

SEE DWGS
 DRAWING 2070 K-33

SHOW WELDS AND CONNECTIONS

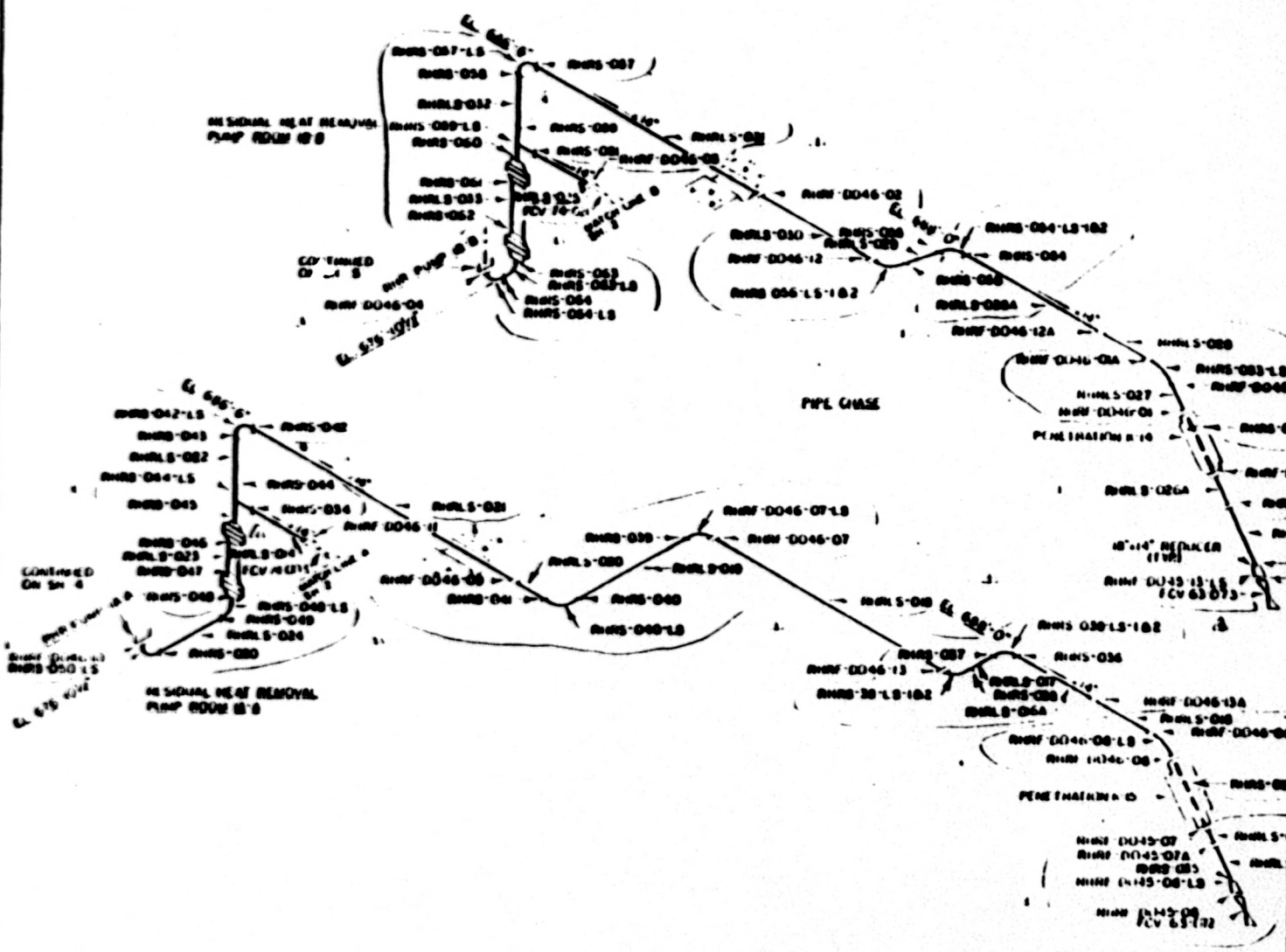
NO	DATE	REVISIONS	BY	CHKD	APP'D	DATE	DESCRIPTION
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

REFERENCE DRAWINGS

WMB E-2070 IC-45
 WMB E-2070 IC-46
 PFD-20-014

MATERIAL SPECIFICATIONS

CLASS 2
 PIPE
 SA 308 Cl 1 TP 304H
 1/2" SCH 40
 FITTINGS
 SA 308 WP 304H
 1/2" SCH 40
 1/4" SCH 40
 FLANGES
 SA 308 F 316
 1/2" BORE SCH 40



CONTINUED
 ON SH 4

MBN
 TI-50A
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NO.	DATE	DESCRIPTION
1	11/15/68	ISSUED FOR CONSTRUCTION
2	11/15/68	ISSUED FOR CONSTRUCTION
3	11/15/68	ISSUED FOR CONSTRUCTION
4	11/15/68	ISSUED FOR CONSTRUCTION
5	11/15/68	ISSUED FOR CONSTRUCTION
6	11/15/68	ISSUED FOR CONSTRUCTION
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10	11/15/68	ISSUED FOR CONSTRUCTION

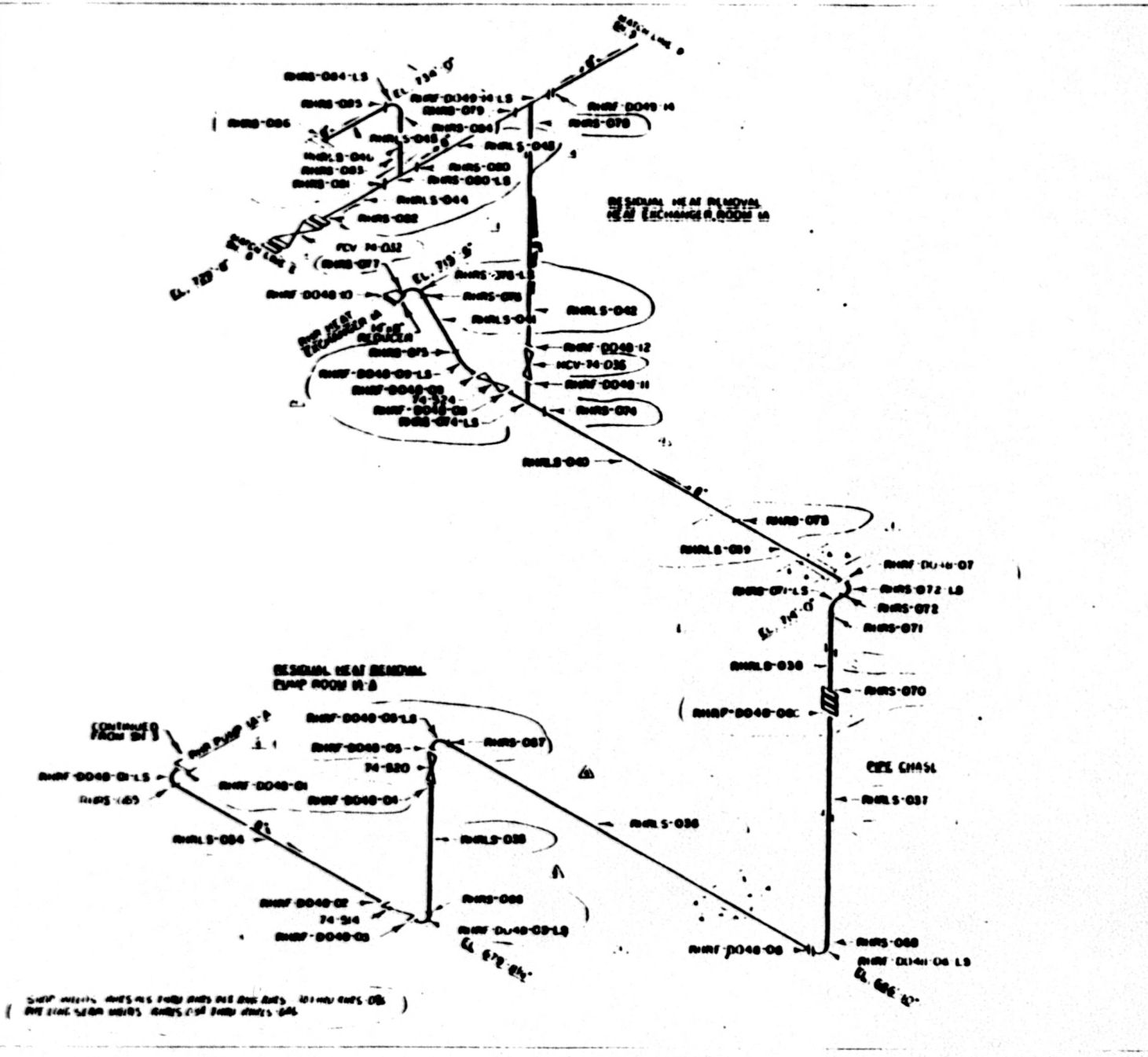
PREPARED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
WATTS BAR NUCLEAR PLANT
 UNIT #1
RESIDUAL HEAT REMOVAL SYSTEM
 SHEET 100 OF 100

1. ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE SPECIFIED.
 2. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.

REFERENCE DRAWINGS
 WATT 1-5010 R 23
 MATERIAL SPECIFICATION,
 CLASS 2
 PIPE
 SA-312 TP-304W
 6" SCH 415
 FITTINGS
 SA-403 WP-316WSS
 1/2" SCH 40
 6" SCH 405
 FLANGES
 SA-182 F-306
 8" BORE 6" SCH 415

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NO.	DATE	BY	CHKD	APP'D
WATTS BAR NUCLEAR PLANT RESIDUAL HEAT REMOVAL SYSTEM				
WELDED DRAWING				
REV.	DATE	BY	CHKD	APP'D



(SHEET 98 OF 336)
 (THIS SHEET IS PART OF THE RESIDUAL HEAT REMOVAL SYSTEM DRAWING)

REFERENCE DRAWINGS

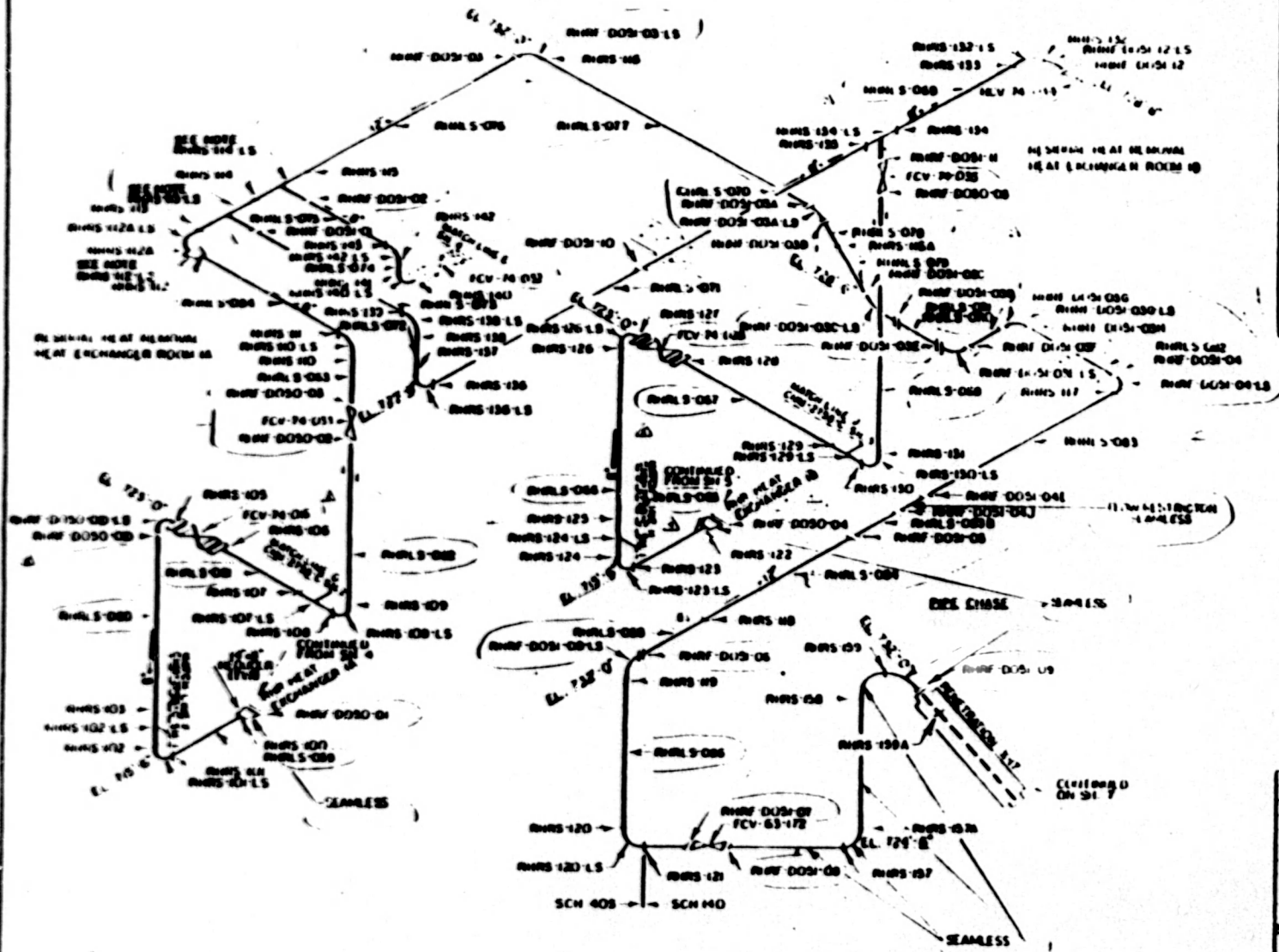
WHYTS BAR 10" X 1/2" P-10432 C01
WHYTS BAR 10" X 1/2" P-10432 C01

MATERIAL SPECIFICATIONS

- CLASS 2
- PIPE
- SA 370 1/2" 3/4"
- 12" SCH 40
- SA 370 1/2" 1/2"
- 12" SCH 40S
- 8" SCH 40S
- FITTINGS
- SA 403 WP 3/4"
- 12" SCH 40
- SA 403 WP 1/2"
- 12" SCH 40S
- 14" SCH 40
- 8" SCH 40S
- FLANGES
- SA 403 F-316
- 8" BUILT UP SCH 40S

NOTES

1. ALL OF REDUCER LONG SEAM WELD
ENDS 120-LS AND 121-LS TO BE WELDED
TO LONG SEAM WELDS WITH FILED
MATERIAL.



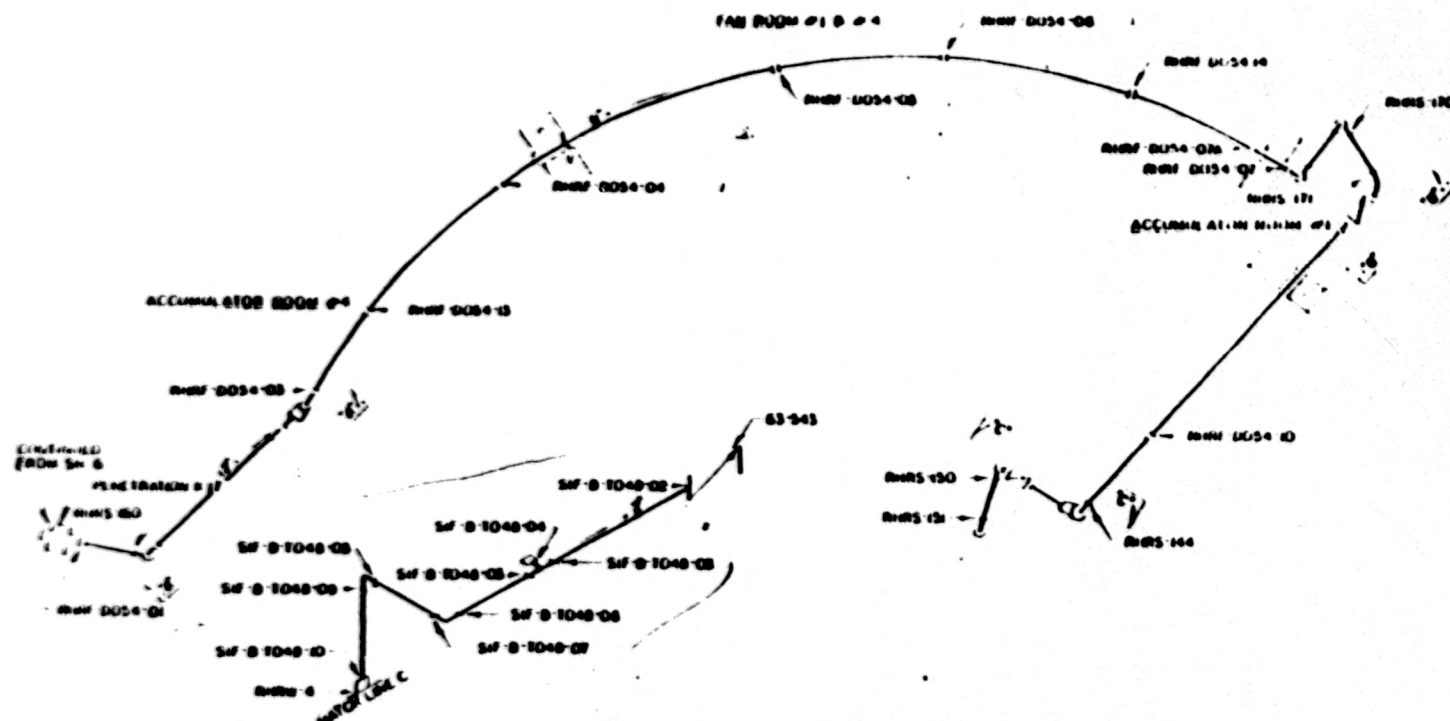
MBN
TI-50A
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NO.	DATE	DESCRIPTION	BY	CHKD
1	11/10/00	ISSUED FOR CONSTRUCTION		
2	11/10/00	ADD REV. DRAWING AND ADD		
3	11/10/00	ADD NUMBER		
4	11/10/00	ADD REV. DRAWING AND ADD		
5	11/10/00	ADD NUMBER		
6	11/10/00	ADD REV. DRAWING AND ADD		
7	11/10/00	ADD NUMBER		

WHYTS BAR 10" X 1/2" P-10432 C01
RESIDUAL HEAT EXCHANGER SYSTEM
WELD SPECIFICATIONS

11/10/00

ALL WELDS SHALL BE FULL PENETRATION WELDS WITH BEVELLED ENDS TO 30 DEGREES. ALL WELDS SHALL BE WELDED WITH FILED MATERIAL.



REFERENCE DRAWINGS

HW 4-2072 E-54
 HW 4-2072 E-54
MATERIAL SPECIFICATION

CLASS 1

PIPING
 SEAMLESS STAINLESS STEEL
 SA 312 TP 304 SA 312 TP 316
 6" SCH 160 6" SCH 160
 6" SCH 160 6" SCH 160
 6" SCH 160 6" SCH 160

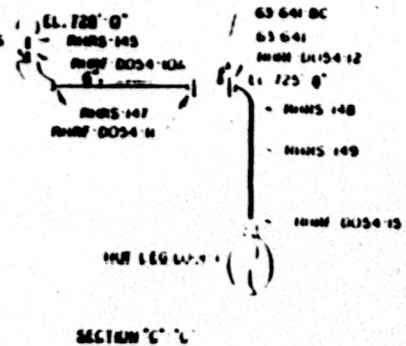
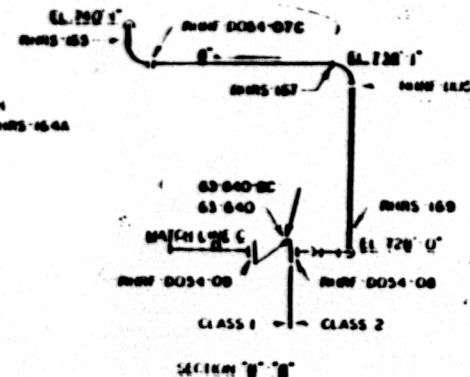
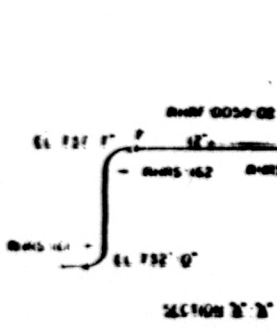
FITTINGS
 SEAMLESS STAINLESS STEEL
 SA 403 WP 304
 6" SCH 160 6" SCH 160
 6" SCH 160 6" SCH 160

SPRINGS STEEL
 SA 403 WP 304
 2" 6000# SW

CLASS 2

PIPING
 SEAMLESS STAINLESS STEEL
 SA 312 TP 304
 12" SCH 160 SA 312 TP 316
 SA 312 TP 304 SA 312 TP 316
 6" SCH 160 6" SCH 160

FITTINGS
 SEAMLESS STAINLESS STEEL
 SA 403 WP 304
 6" SCH 160 6" SCH 160
 SA 403 WP 304 6" SCH 160



MBM
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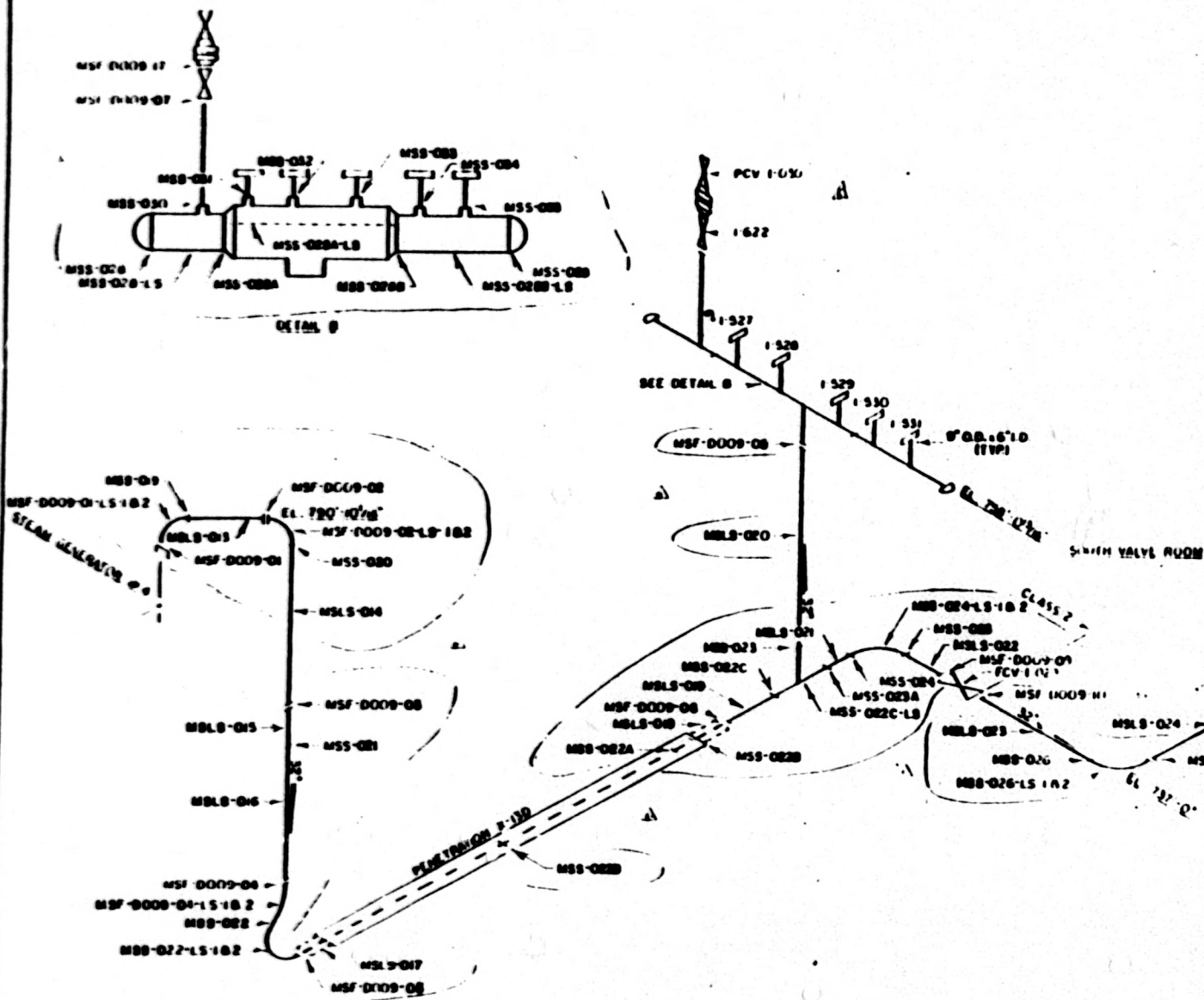
WATTS BAR NUCLEAR PLANT
 UNIT #1
 RESIDUAL HEAT RECOVERY SYSTEM
 WELD LOCATIONS

DATE: 11/11/83
 DRAWN BY: J. J. ...
 CHECKED BY: ...

REFERENCE DRAWINGS
 WMS-E-2070 IC 2
 WMS-E-2000 IC 214
 P1042-041
 MATERIAL SPECIFICATIONS
 CLASS 2
 PIPE
 SA-150 RCF TO CL 1
 32" O.D. x 1.125" M.W. - 6F7
 FITTINGS
 SA-234 WPB-W
 32" O.D. x 1.125" M.W.
 HEADER
 PIPE
 SA-106 GR. B
 6" NPS
 FITTINGS
 SA-234 WPR
 30" x 1.000" M.W. WELDED CAP
 FLANGES
 9" O.D. x 6" I.D. 1500#
 RELIEF VALVE MANIFOLD
 SA-234 WPR, 2 875" M.W.

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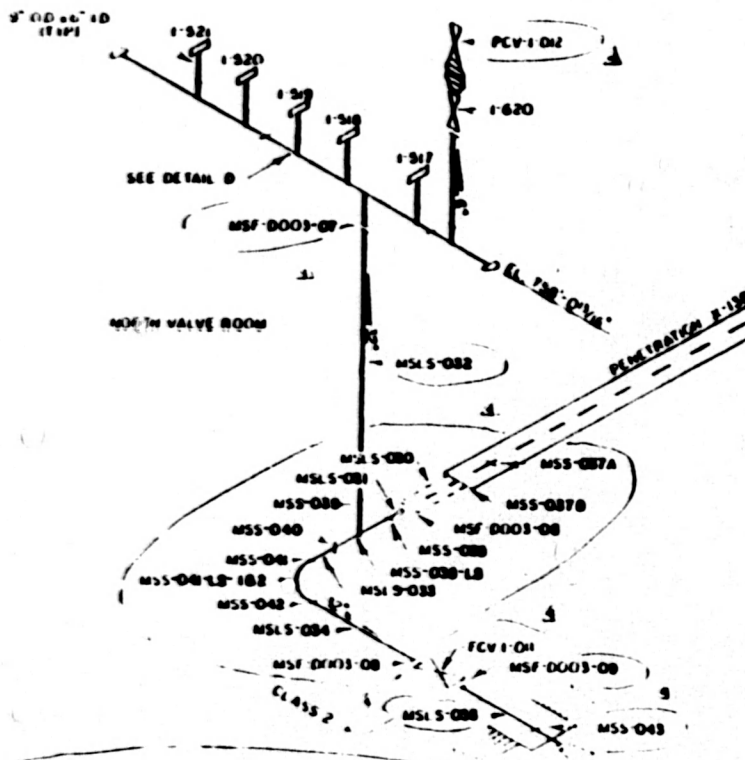
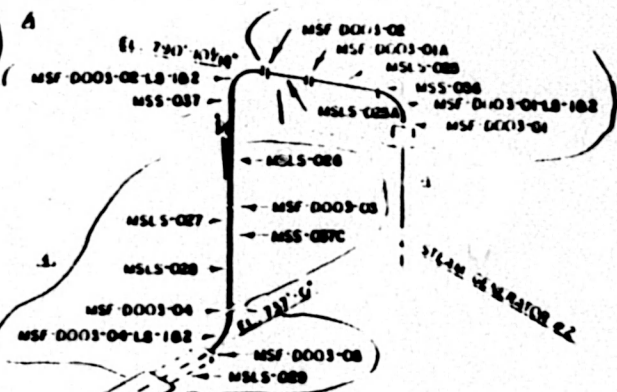
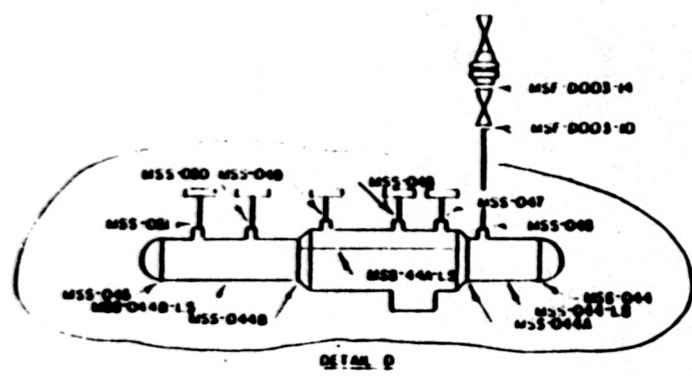
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 P1042-041

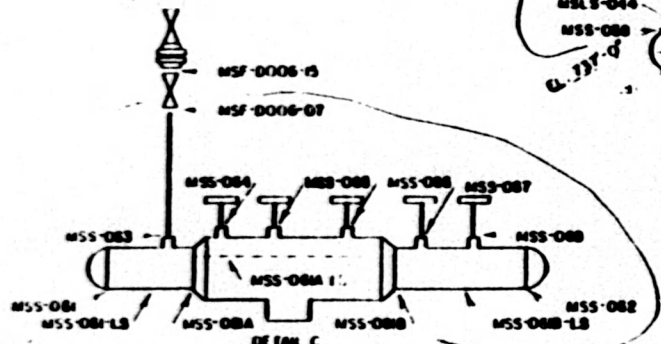
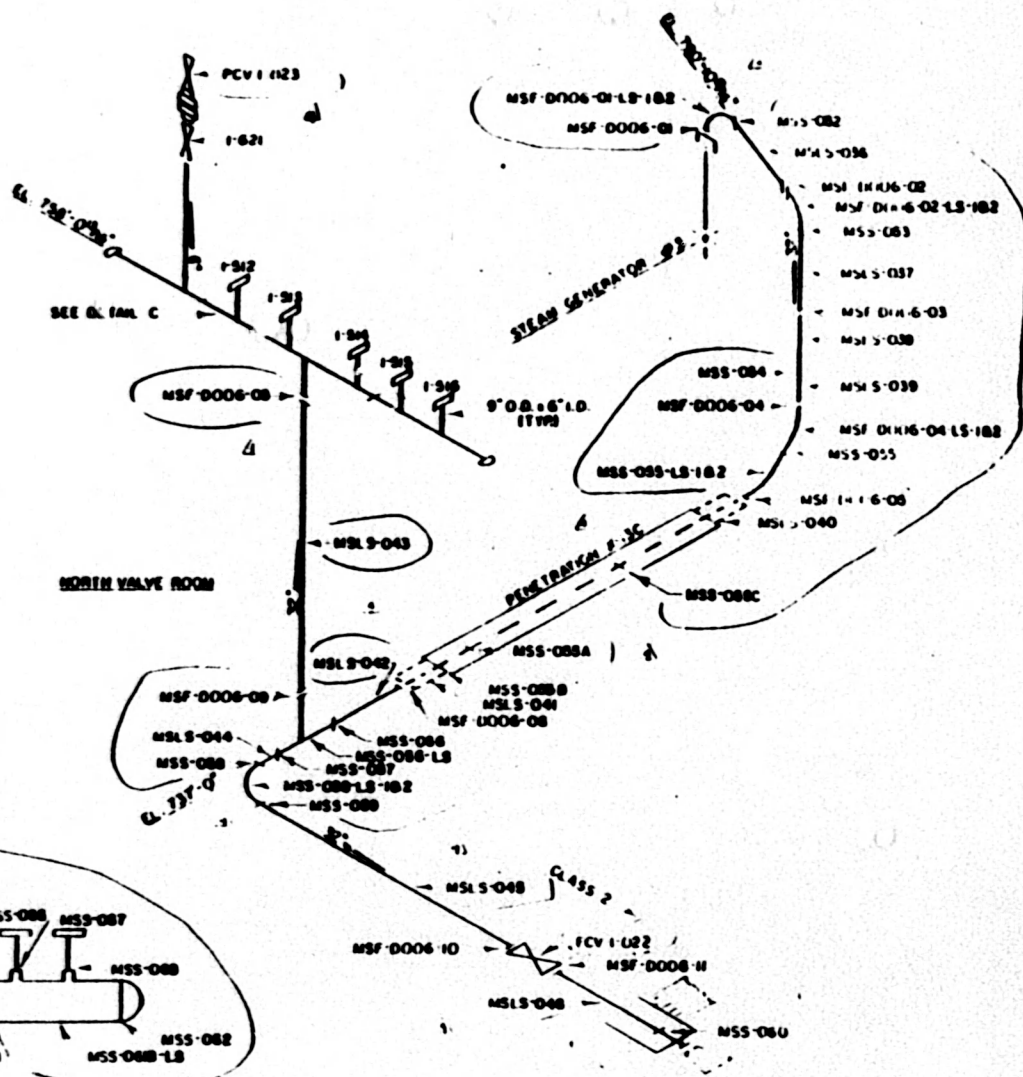
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- DSW-1-2070 K-3
- DSW-1-2000 K-2/15
- PTD-42-021
- MATERIAL SPECIFICATION
- CLASS 2
- PIPE
- SA-106 GR B
- 32" O.D. x 1.175" M.W.E.T.W.
- FITTINGS
- SA-234 WPB-W
- 32" O.D. x 1.175" M.W.
- WELDER
- PIPE
- SA-106 GR B
- 6" X 8
- FITTINGS
- SA-234 WPB
- 20" I.D. x 1.125" M.W. WELDED CAP
- FLANGES
- SA-106
- 6" O.D. x 6" L.D. ISLOW
- RELIEF VALVE MANIFOLD
- SA-234 WPB-W, 2.075" M.W.

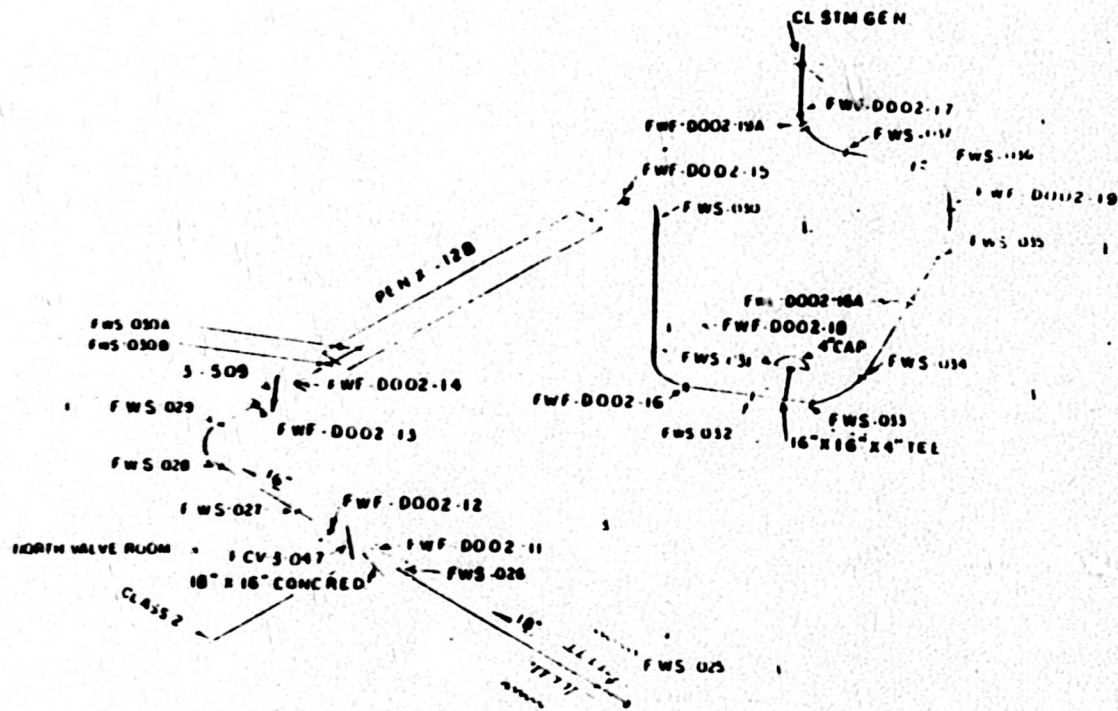


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- WMS-2080 IC 7/6
- PT0432-031
- MATERIAL SPECIFICATIONS
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- PIPE
- SA-106 GR B
- 32" O.D. 1.175 M.W. EFW
- FITTINGS
- SA-234 WPB W
- 32" O.D. 1.175 M.W
- HEADER
- PIPE
- SA-106 GR B
- 6" MSS
- FITTINGS
- SA-234 WPB
- 30" 1.100" M.W. WELDED CAP
- FLANGES
- SA-106
- 9" O.D. 6" I.D. 15(X)IP
- RELIEF VALVE MANIFOLD
- SA-234 WPB, 2.875" M.W



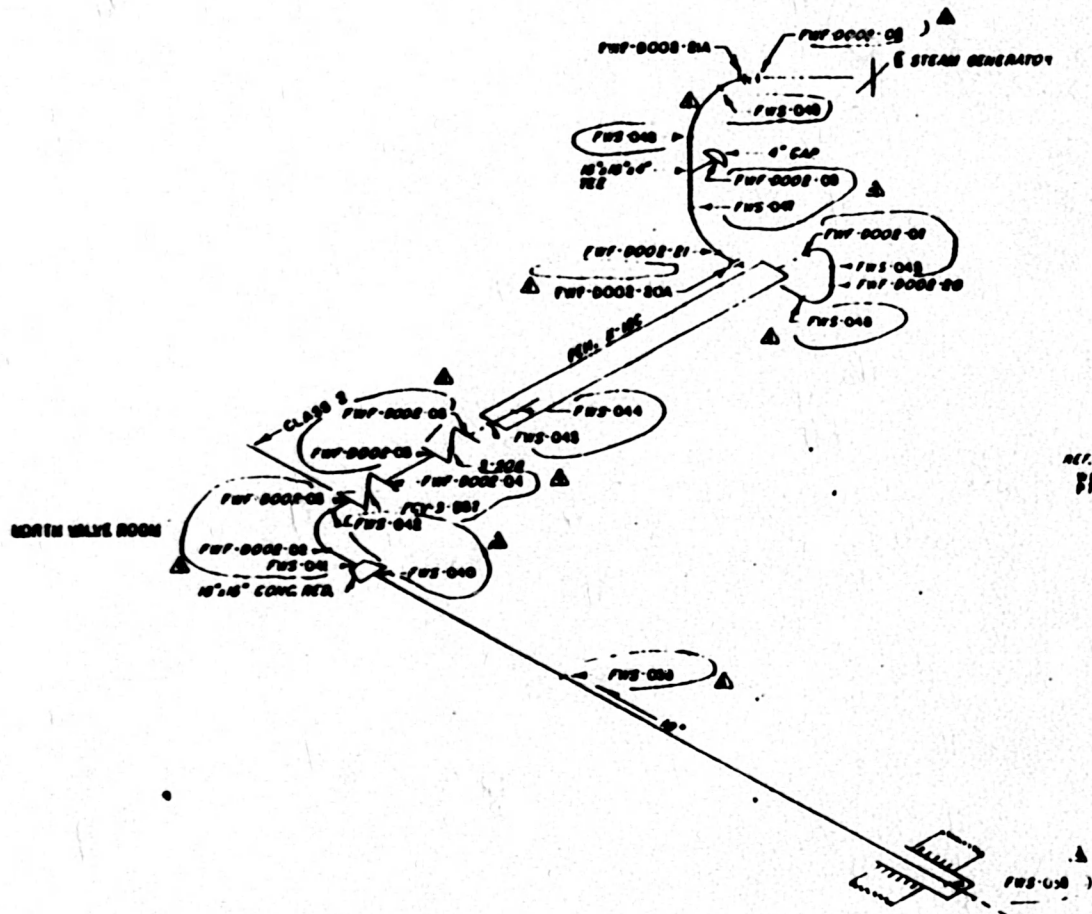
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REF DRAWINGS
 W-101-10/11-2
 P-432-1101
 SEE SHEET FOR MATL SPECS

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REF. DRAWING
 FIG. 4-2-671

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SEE SHEET 1 FOR MAILING INFO

TECHNOLOGICAL VALLEY APPLIED

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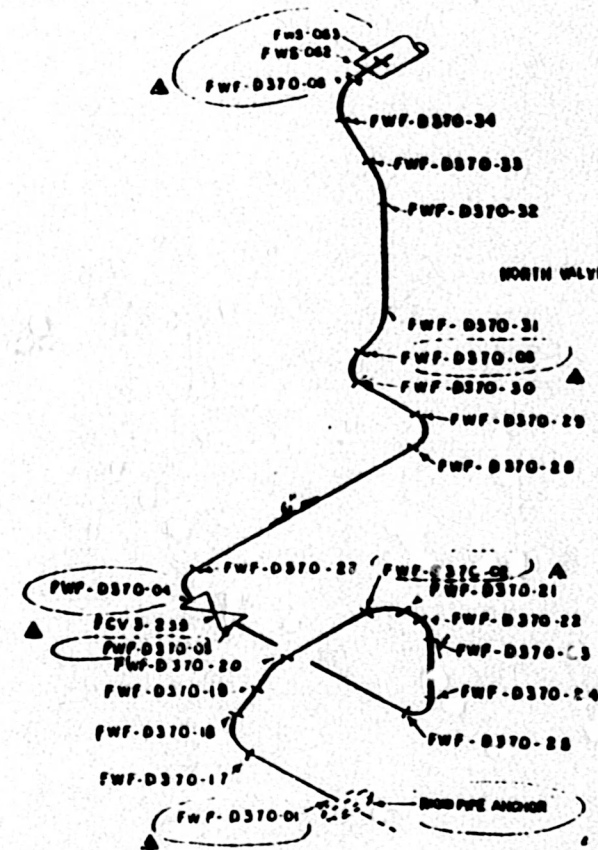
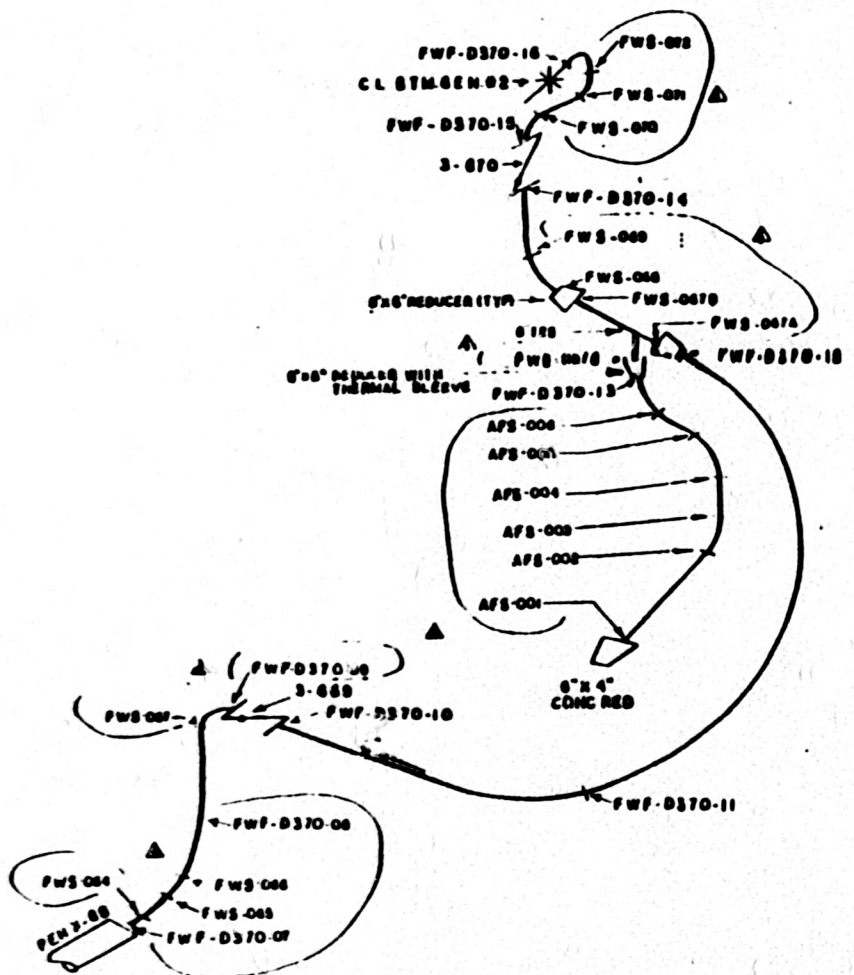
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W&S MAP LOOP 8

MBN

4-178

ENR 287-C

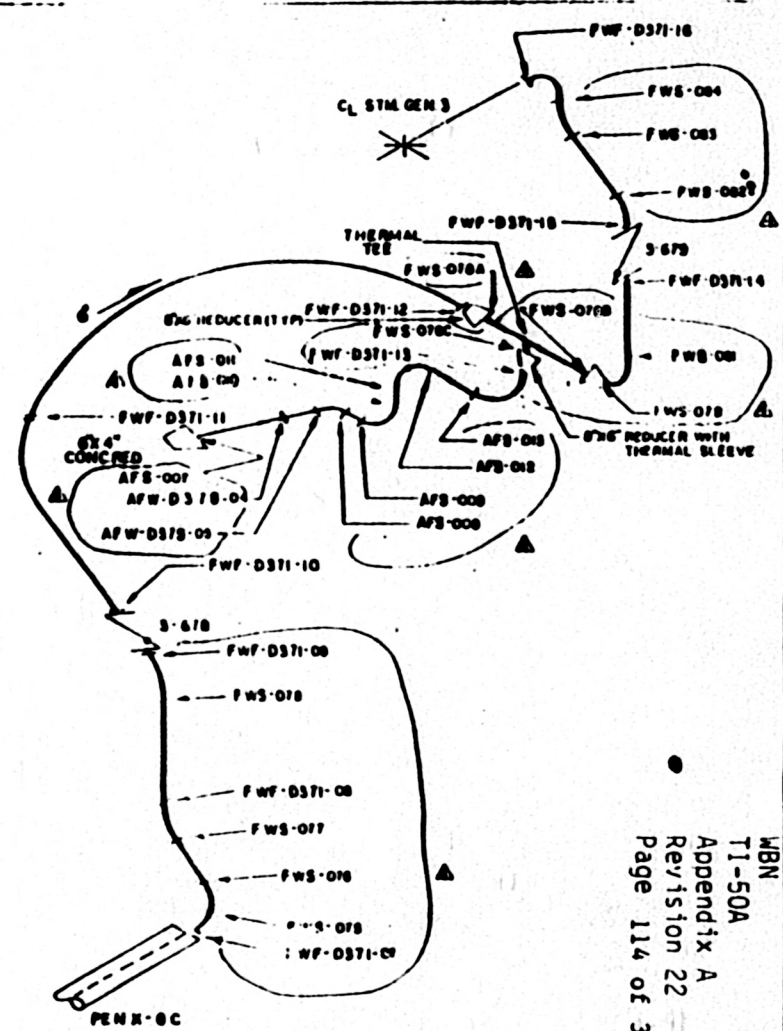
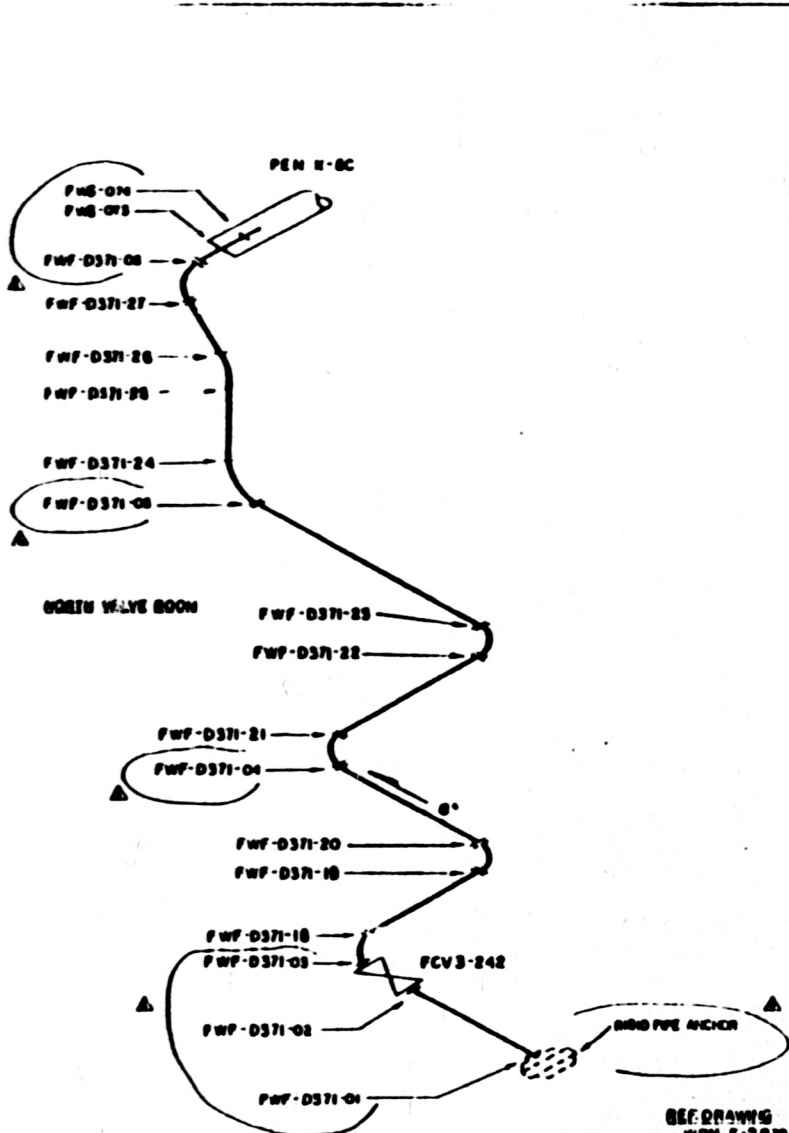


WBN
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 SEE SHEETS FOR MAT'L

REF DRAWING
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 070432-0102.1
 16-819

COMMERCIAL VALVE MANUFACTURING COMPANY OF MASSACHUSETTS	
WBNP 6" FEEDWATER WELD MAP UNIT 1 LUOP 2	
DATE: 11/12/81 DRAWN BY: [Signature]	CHECKED BY: [Signature]

NO.	REV.	DATE	BY	CHKD.	DESCRIPTION
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SEE DRAWING
 WDM 6-2070 IC-371, IC-372
 770400-0100.1

NO	REV	DATE	BY	CHKD	DESCRIPTION
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2	2	11/15/73
3	3	11/15/73

SEE SHEETS FOR MAIL SIZES

WDMP
 6 FEEDWATER WELD MAP
 UNIT 1 LOOP 3

DATE: 11/15/73
 BY: [Signature]

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MBN 6-2079 IC 71
MBN 6-2079 IC 72

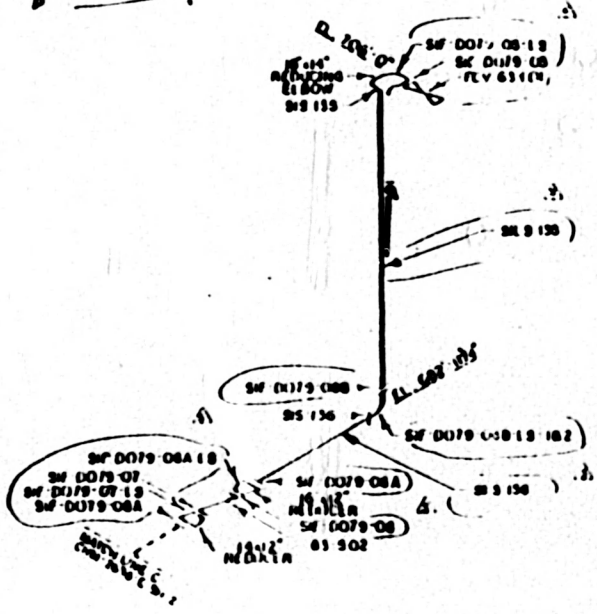
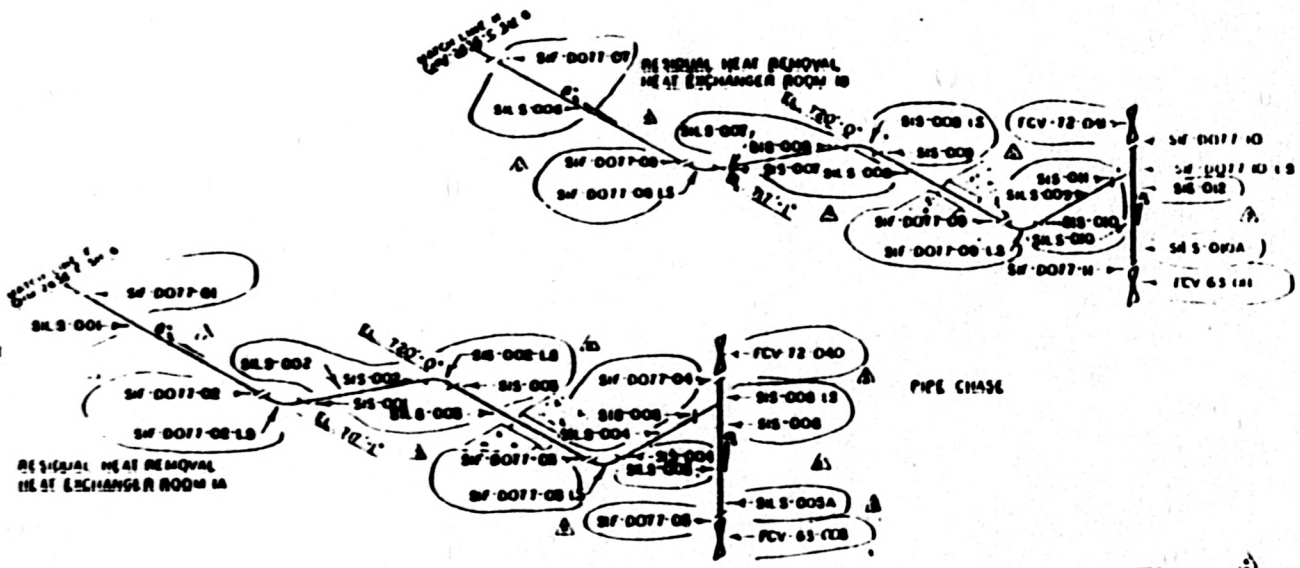
MATERIAL SPECIFICATIONS

CLASS 2

- PIPE
- SA-190 CL 1 IP-304
- 16" HS
- SA-312 IP-304W
- 8" SCH 40S
- FITTINGS
- SA-403 WP-316 (SEE NOTE 1)
- 16" HS
- SA-312 IP-304 40
- SA-312 IP-304 40
- SA-312 IP-304 40
- 8" SCH 40S

NOTES

1 THE FOLLOWING LONG SEAM WELDS
WELDED WITH FULL METAL
SF 0079 OB-1S AND SF 0079 ISA-1S



WELDS SLS 0079-08-1S, SLS 0079-08-1S, SLS 0079-08-1S
LONG SEAM WELDS SLS 0079-08-1S, SLS 0079-08-1S, SLS 0079-08-1S

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DESIGNED BY: MBN
CHECKED BY: MBN
DATE: 11/15/01
PROJECT: SAFETY HAZARDOUS SYSTEM

