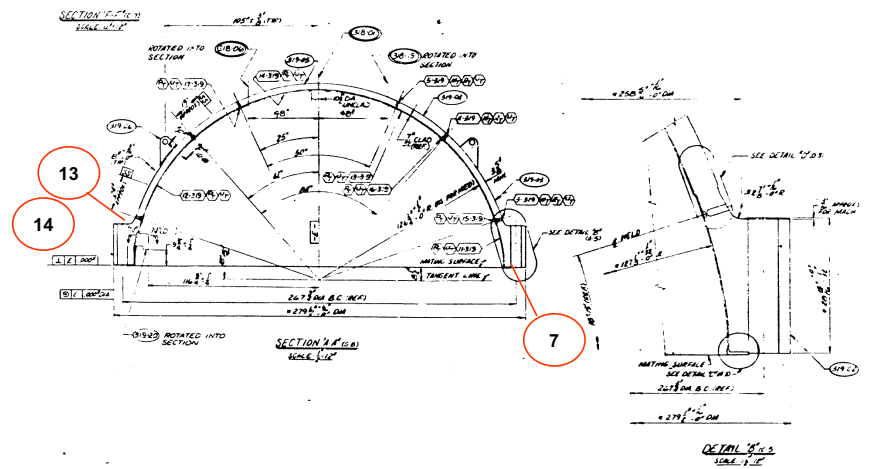
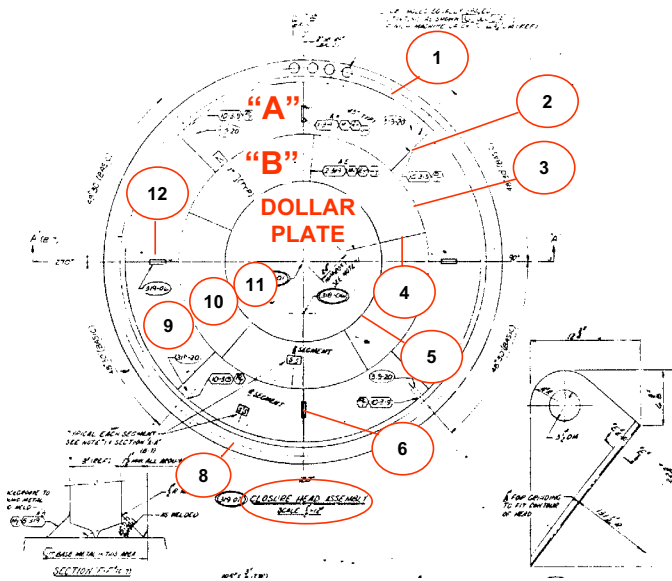
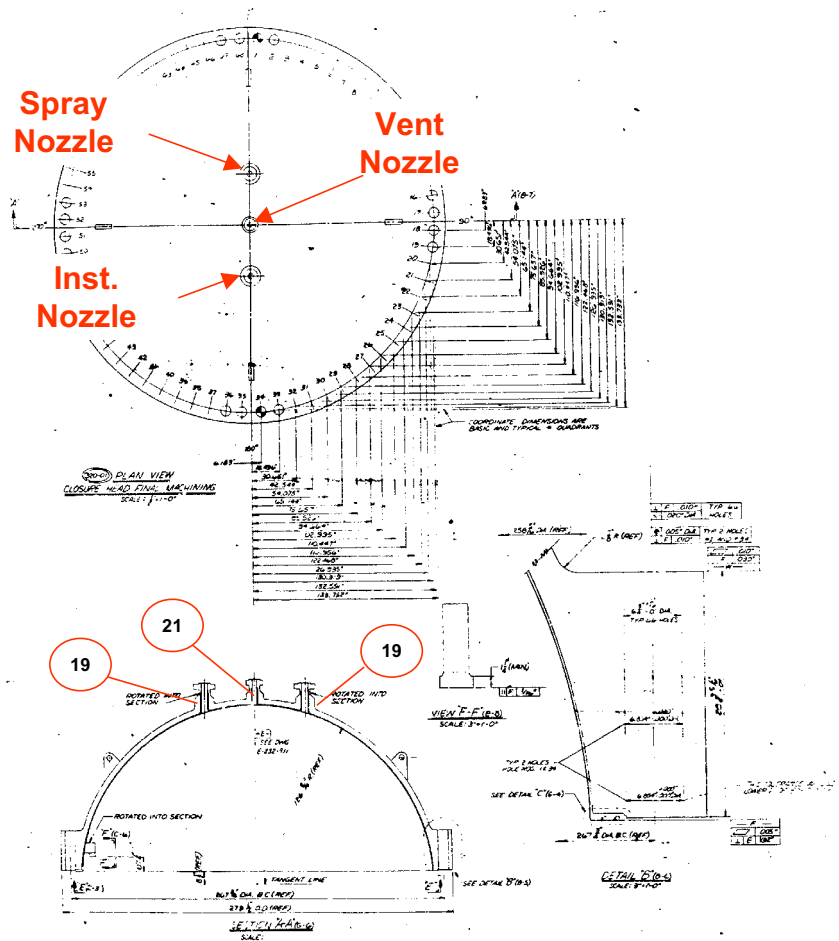


GROUP 1 – RPV CLOSURE HEAD (Sheet 1 of 4) (Covers Worksheets RCS-RPVCH – 1 thru 24)

1/179
App. F.2 - BWR Systems Drawings

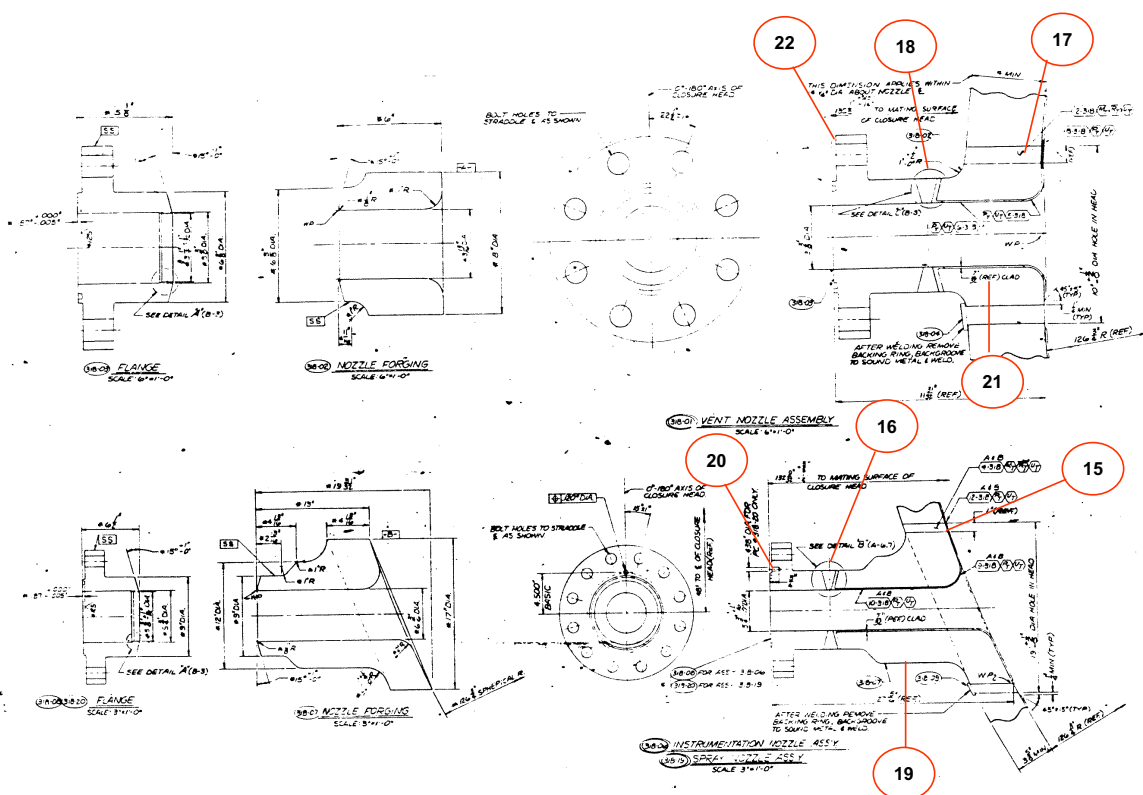


2/179
App. F.2 - BWR Systems Drawings



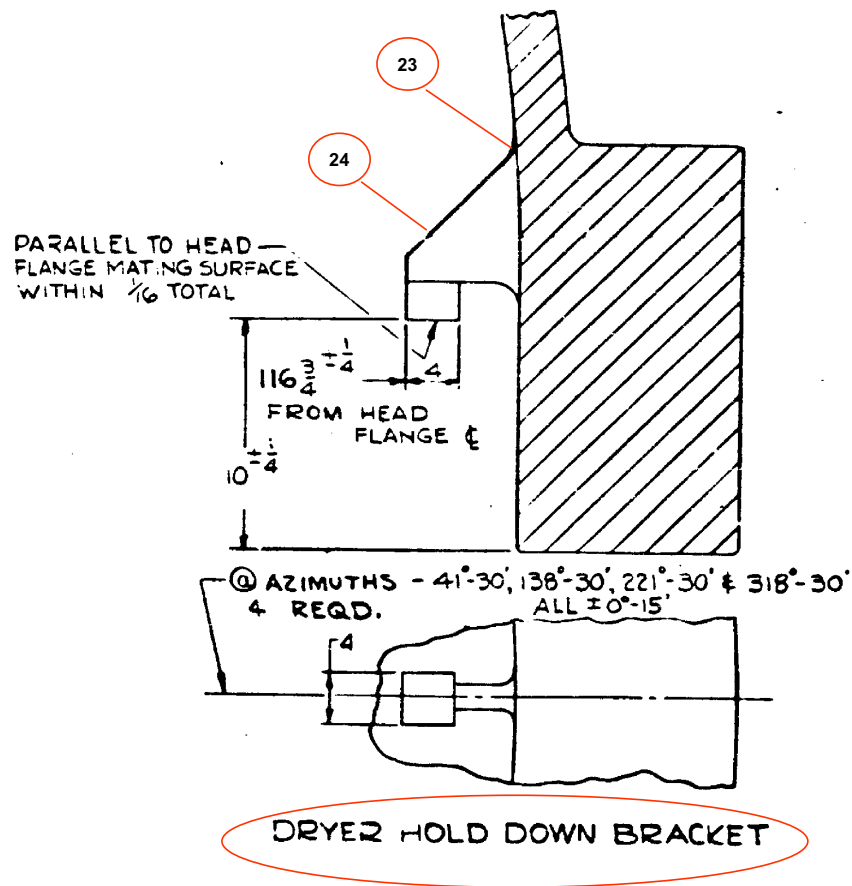
GROUP 1 – RPV CLOSURE HEAD (Sheet 3 of 4) **(Covers Worksheets RCS-RPVCH – 1 thru 24)**

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 App. F.2 - BWR Systems Drawings



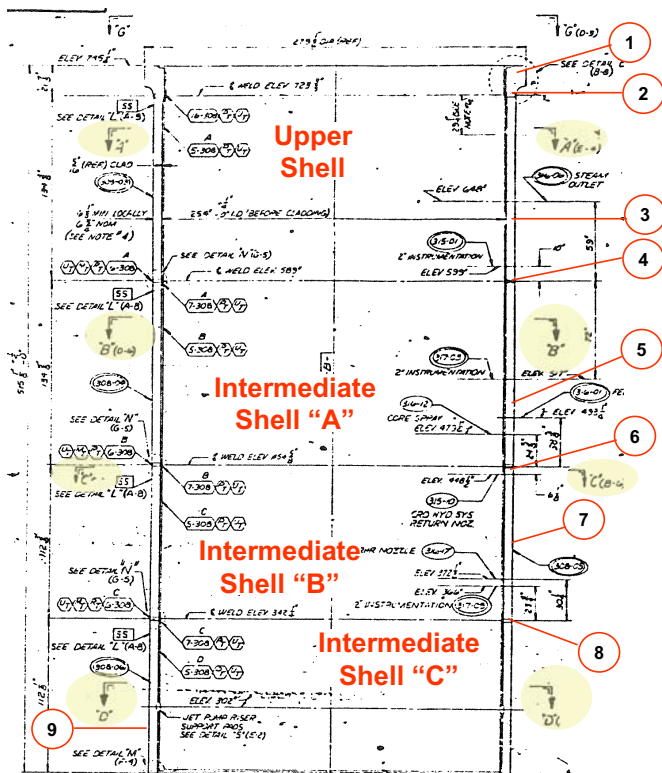
GROUP 1 – RPV CLOSURE HEAD (Sheet 4 of 4)
(Covers Worksheets RCS-RPVCH – 1 thru 24)

4/179
 App. F.2 - BWR Systems Drawings

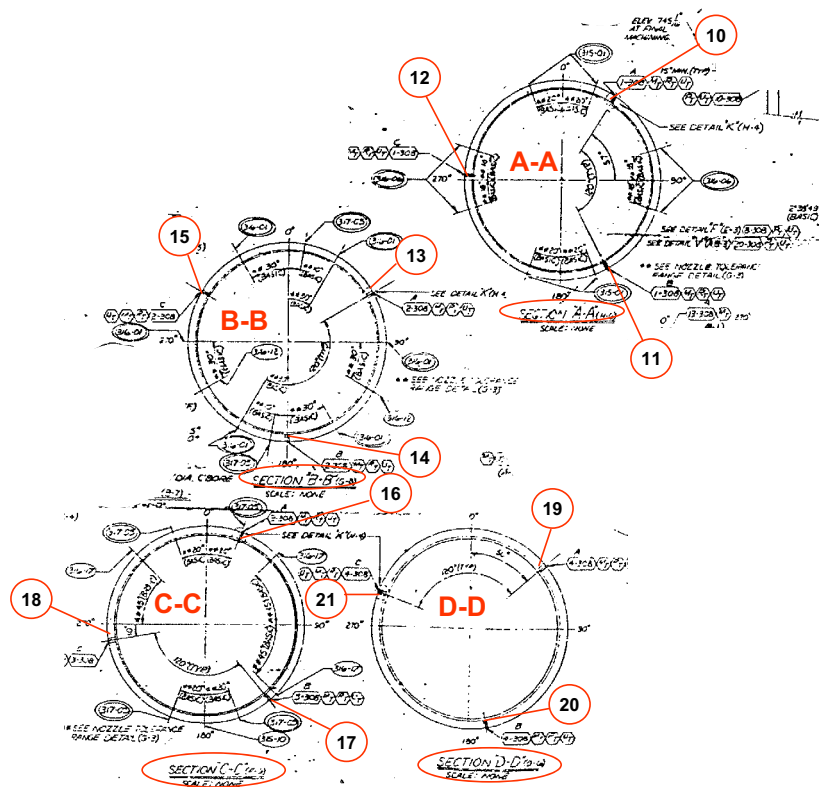


GROUP 2 – RPV SHELL (Sheet 1 of 7) **(Covers Worksheets RCS-RPVSHL – 1 thru 88)**

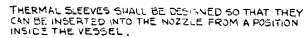
5/179
 App. F.2 - BWR Systems Drawings



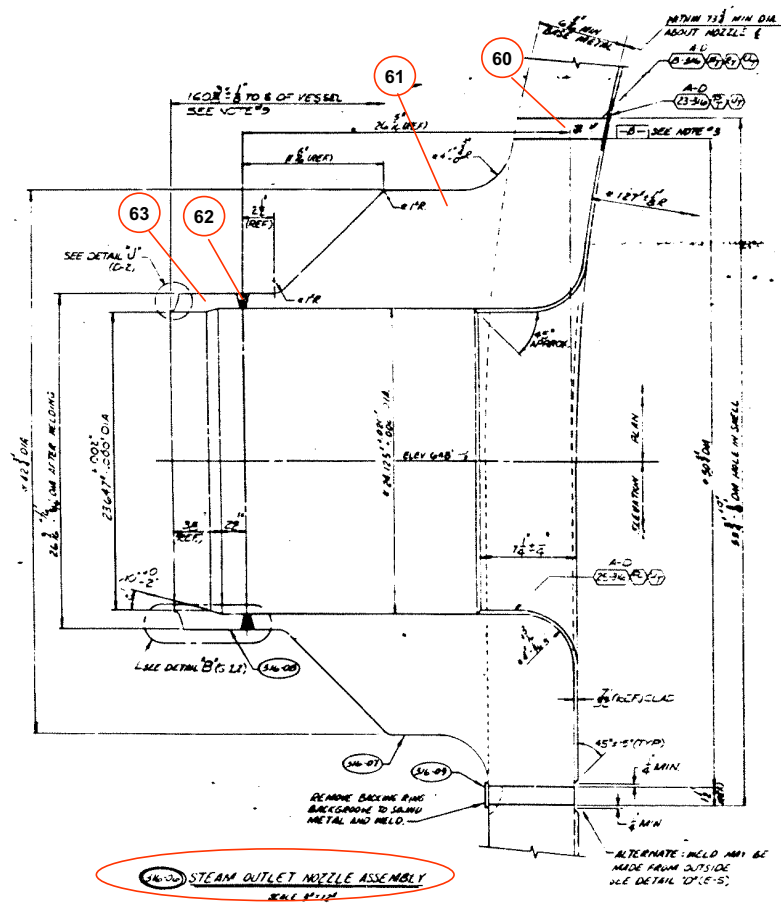
Upper Vessel Shell Assembly



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App. F.2 - BWR Systems Drawings

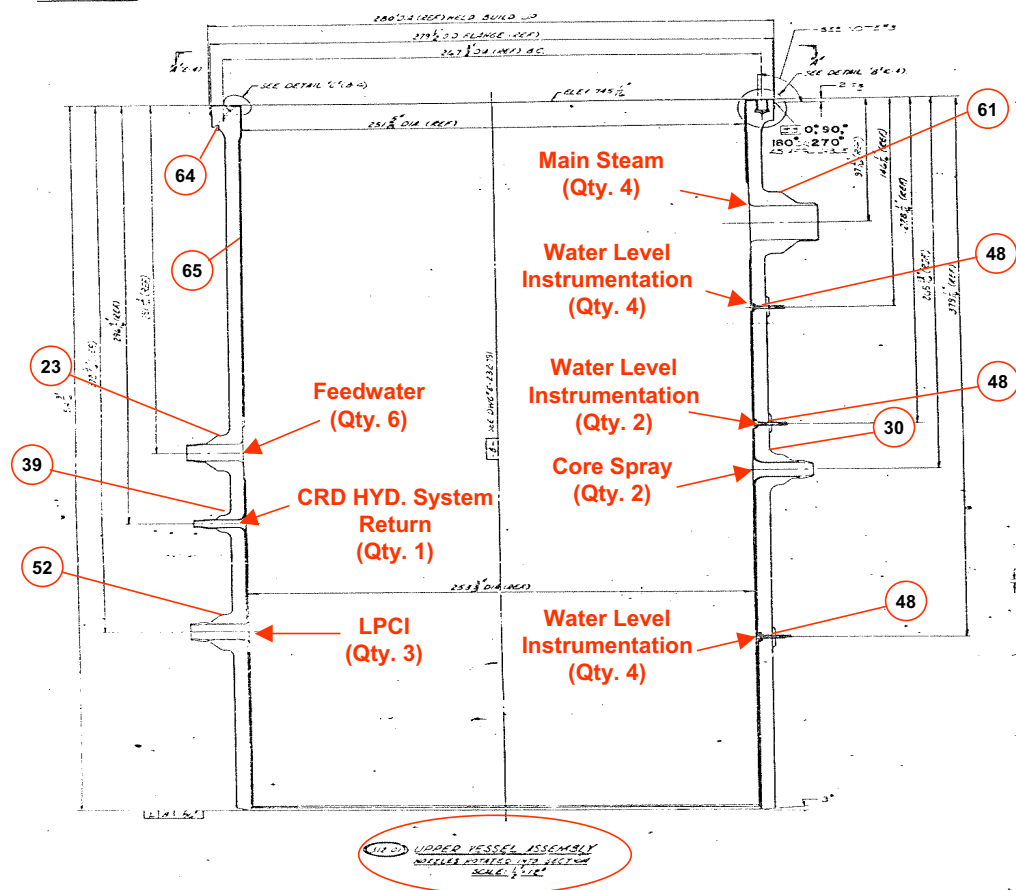


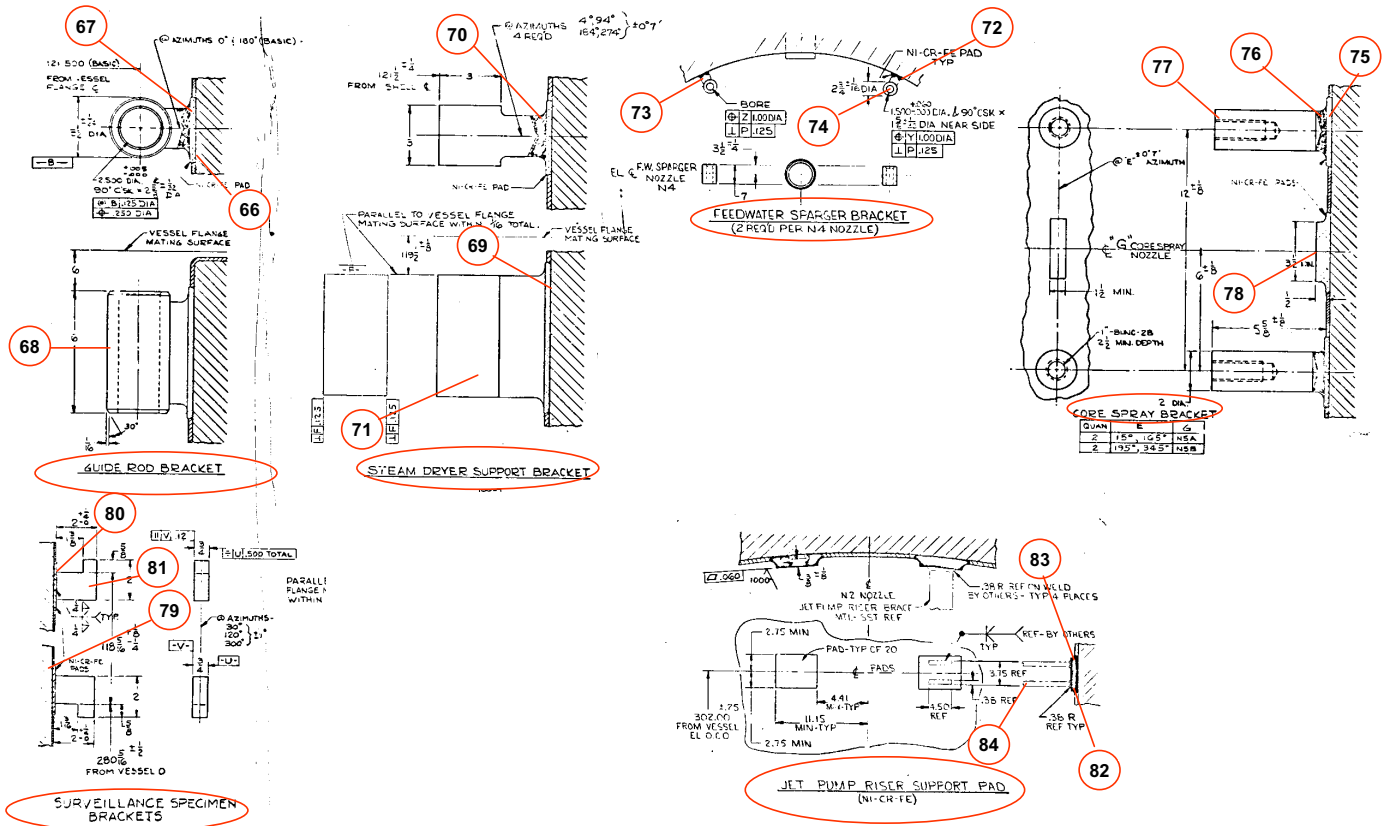
7/179
App. F.2 - BWR Systems Drawings



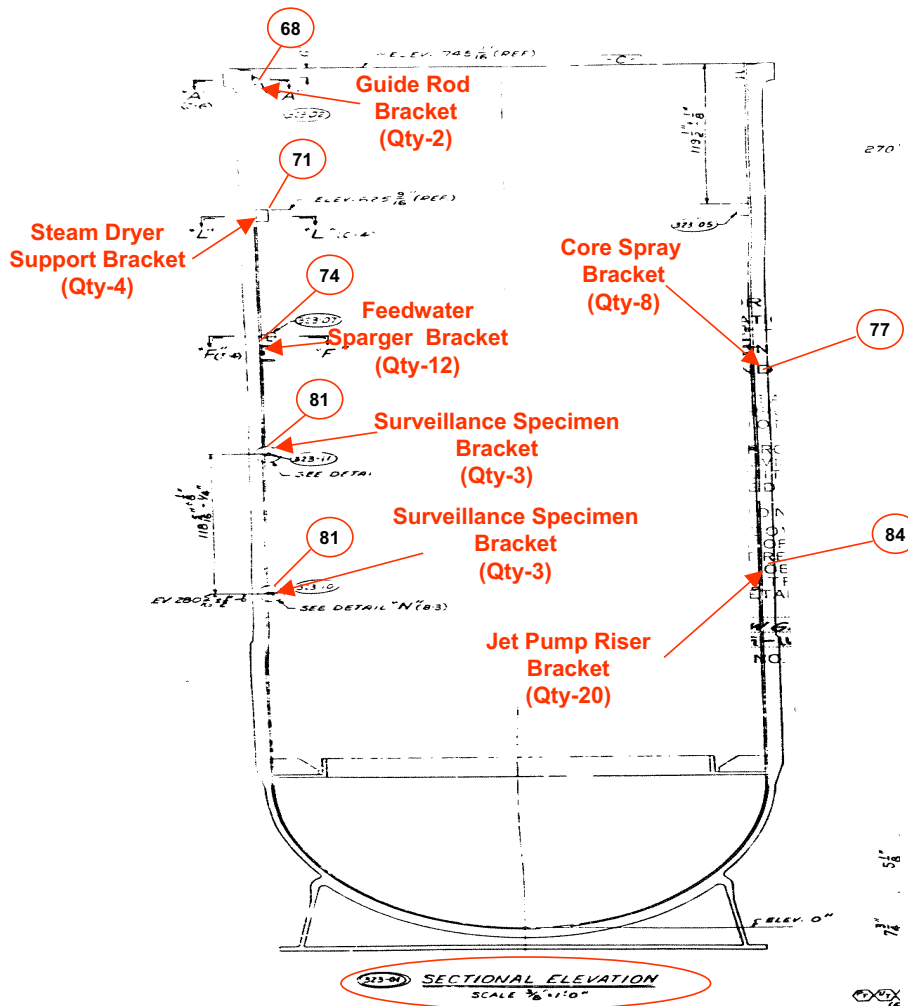
GROUP 2 – RPV SHELL (Sheet 4 of 7) **(Covers Worksheets RCS-RPVSHL – 1 thru 88)**

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 App. F.2 - BWR Systems Drawings

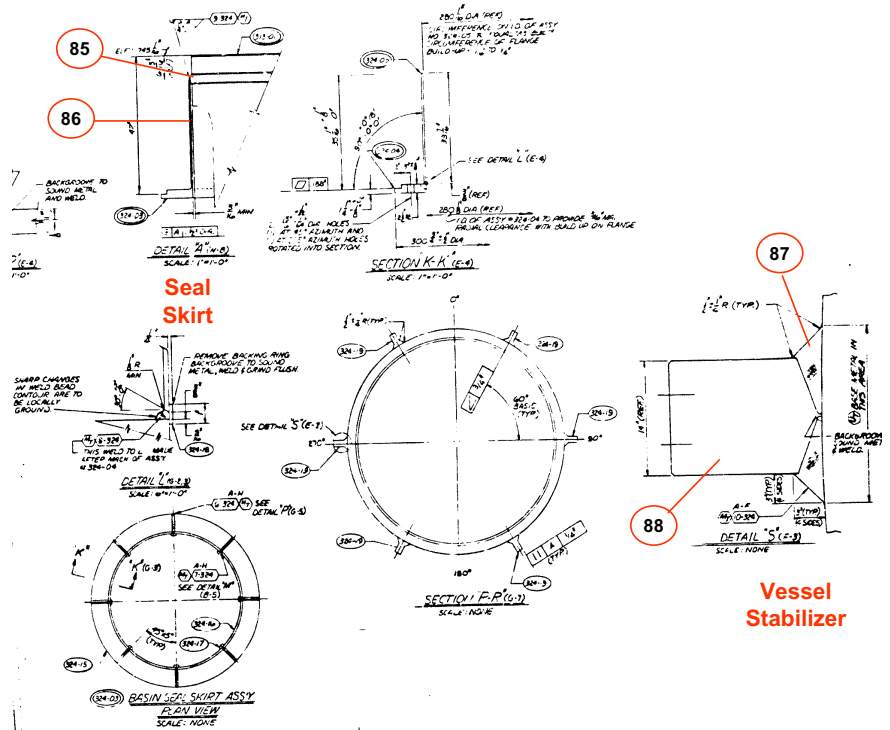




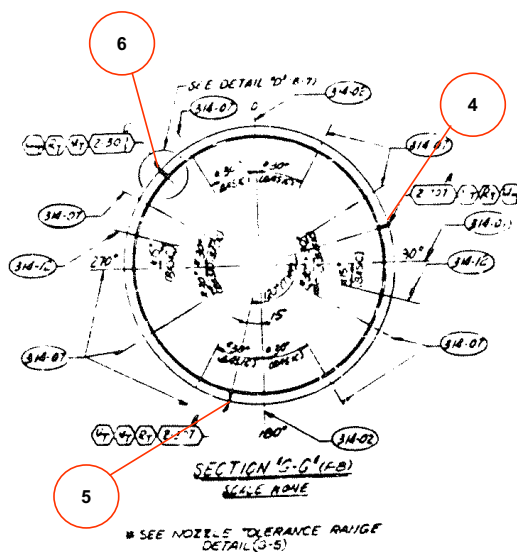
10/179
App. F.2 - BWR Systems Drawings



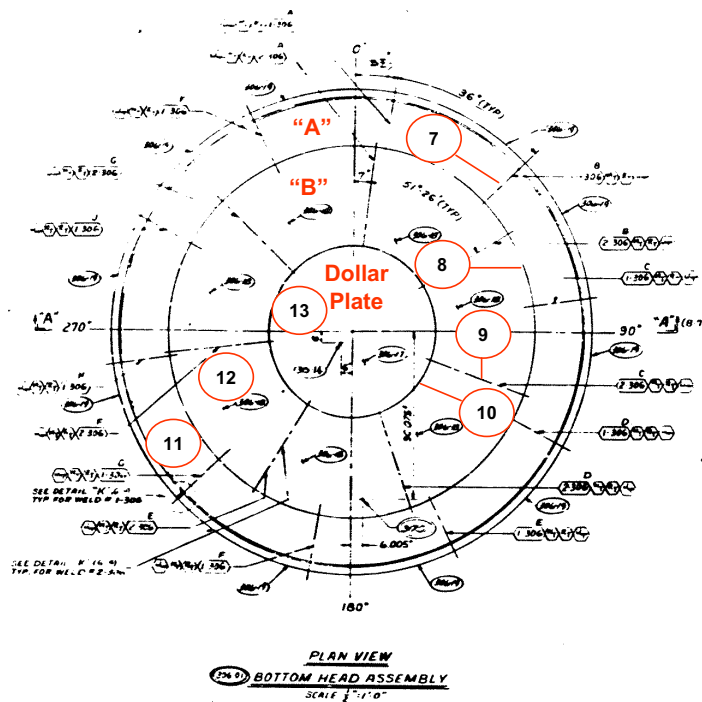
11/179
App. F.2 - BWR Systems Drawings



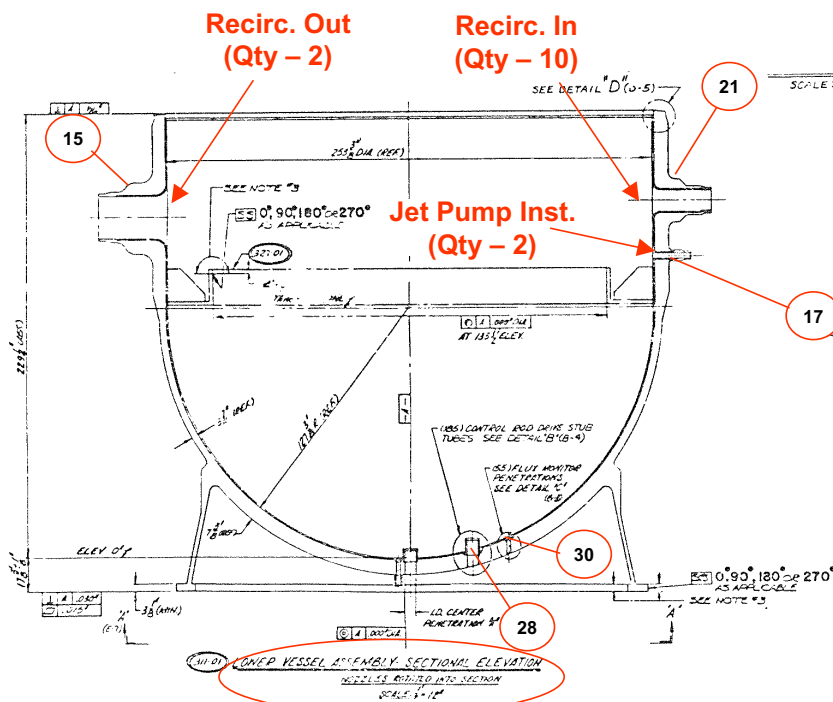
12/179
App. F.2 - BWR Systems Drawings



GROUP 3 – RPV BOTTOM HEAD (Sheet 2 of 8) **(Covers Worksheets RCS-RPVBH – 1 thru 55)**

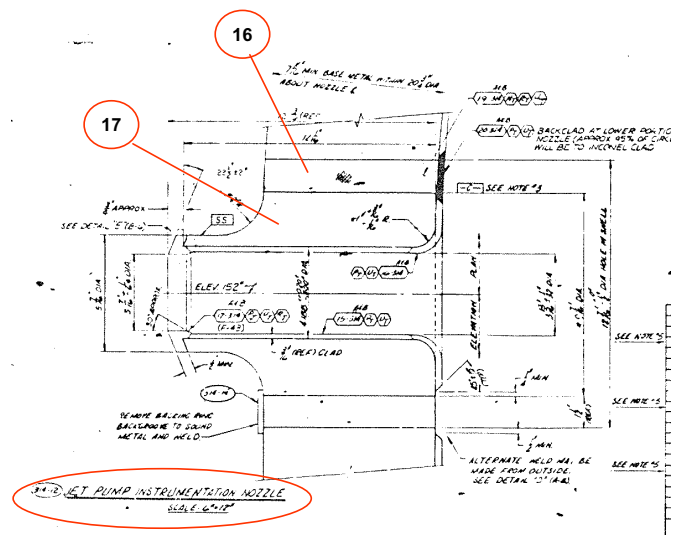
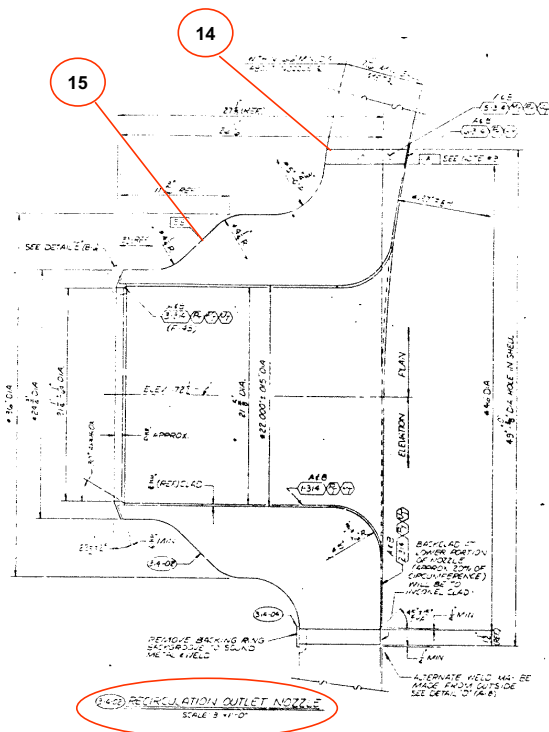


App. F.2 - BWR Systems Drawings

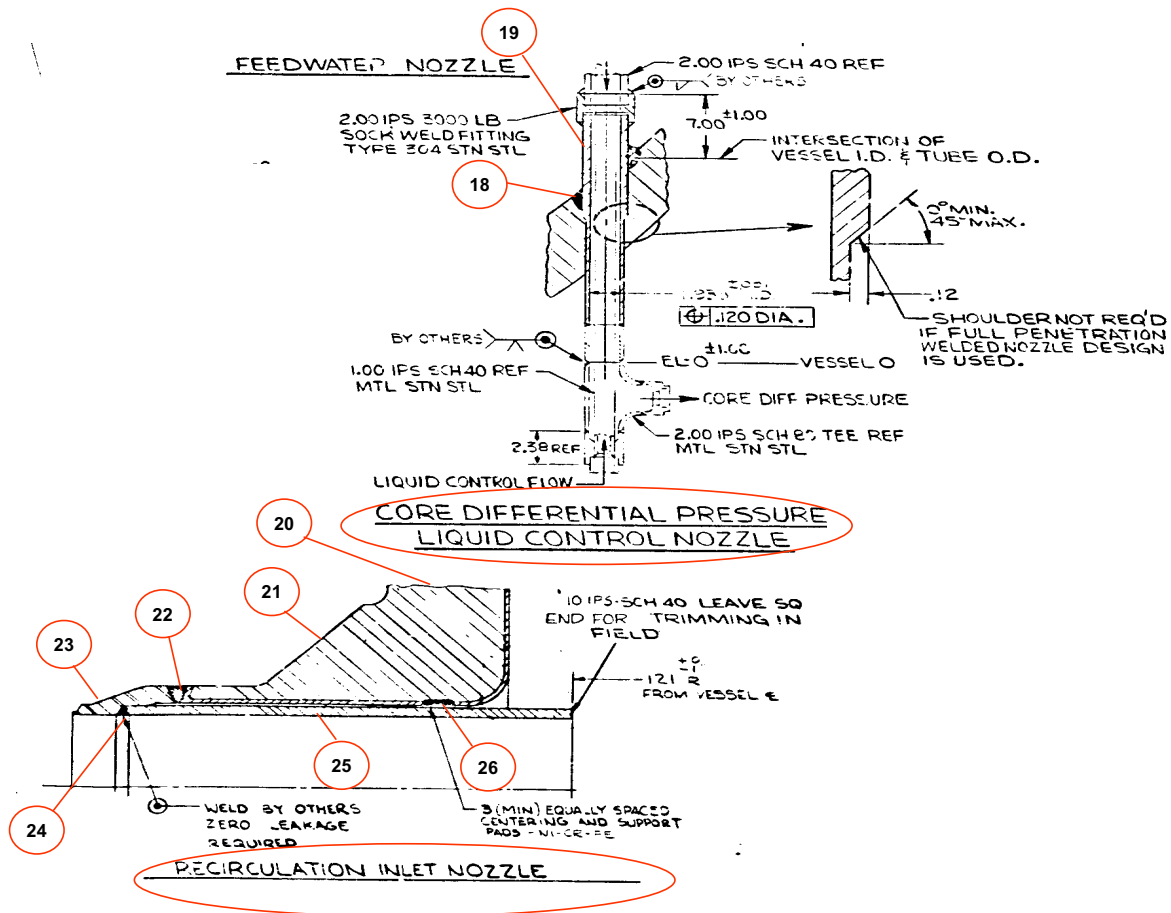


GROUP 3 – RPV BOTTOM HEAD (Sheet 4 of 8) **(Covers Worksheets RCS-RPVBH – 1 thru 55)**

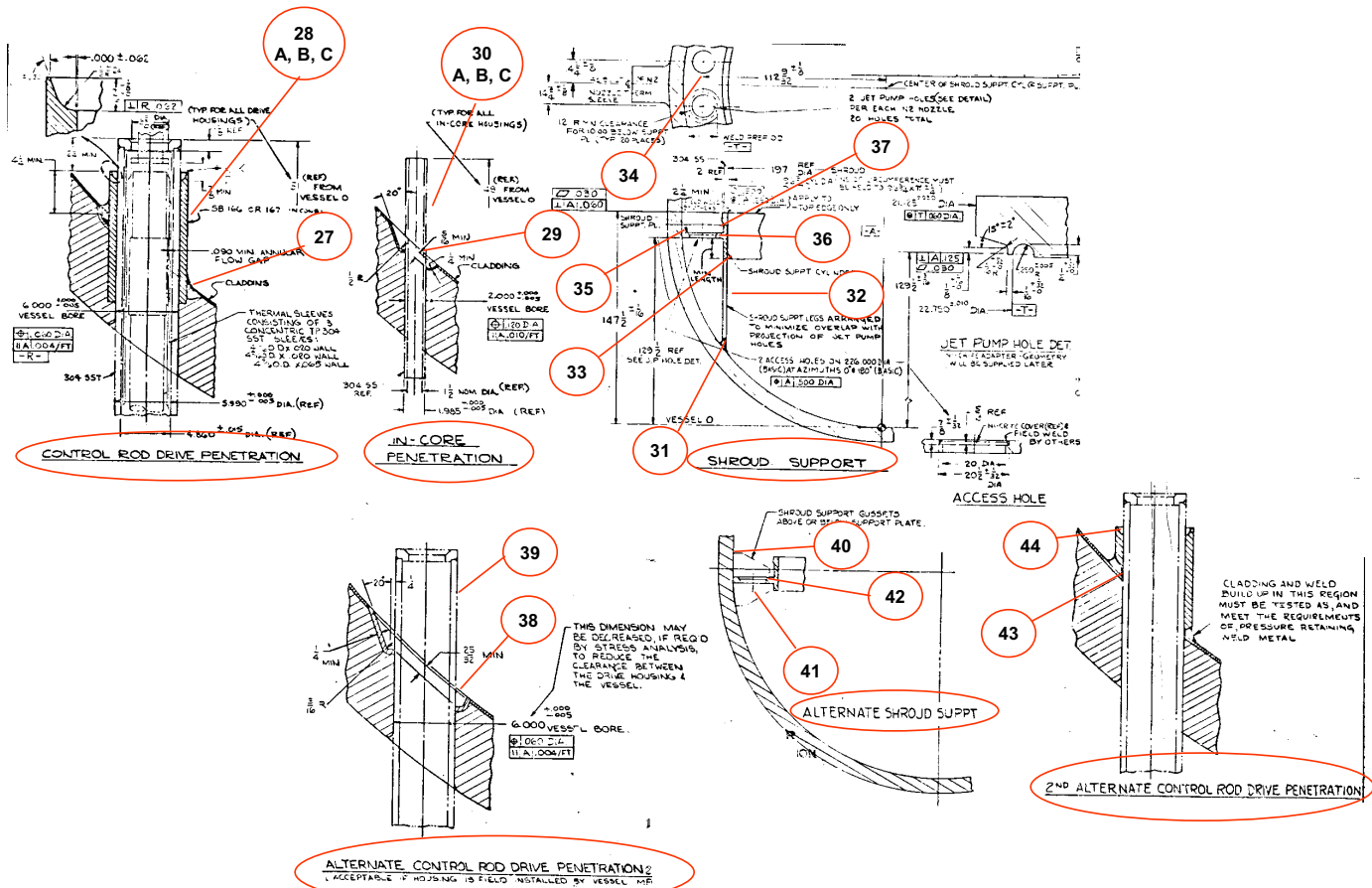
15/179
 App. F.2 - BWR Systems Drawings



GROUP 3 – RPV BOTTOM HEAD (Sheet 5 of 8) **(Covers Worksheets RCS-RPVBH – 1 thru 55)**

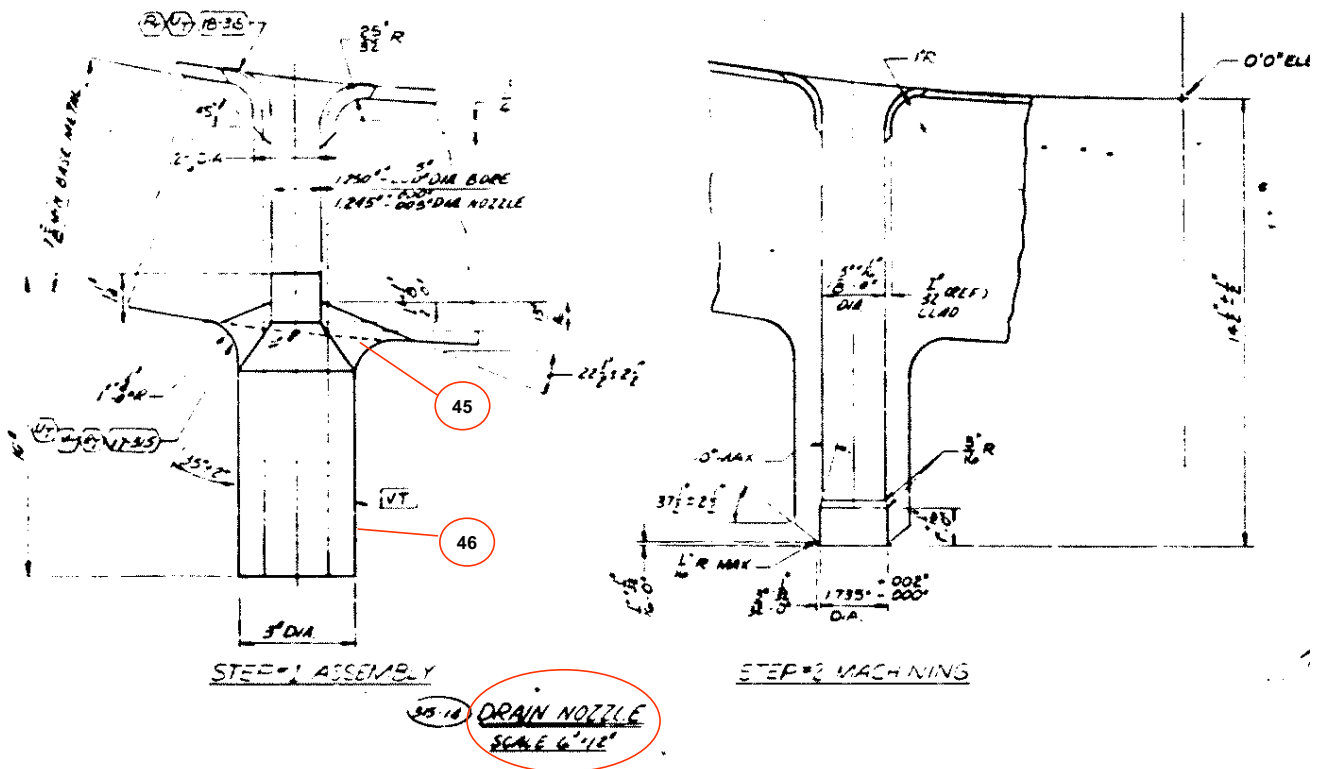


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App. F.2 - BWR Systems Drawings



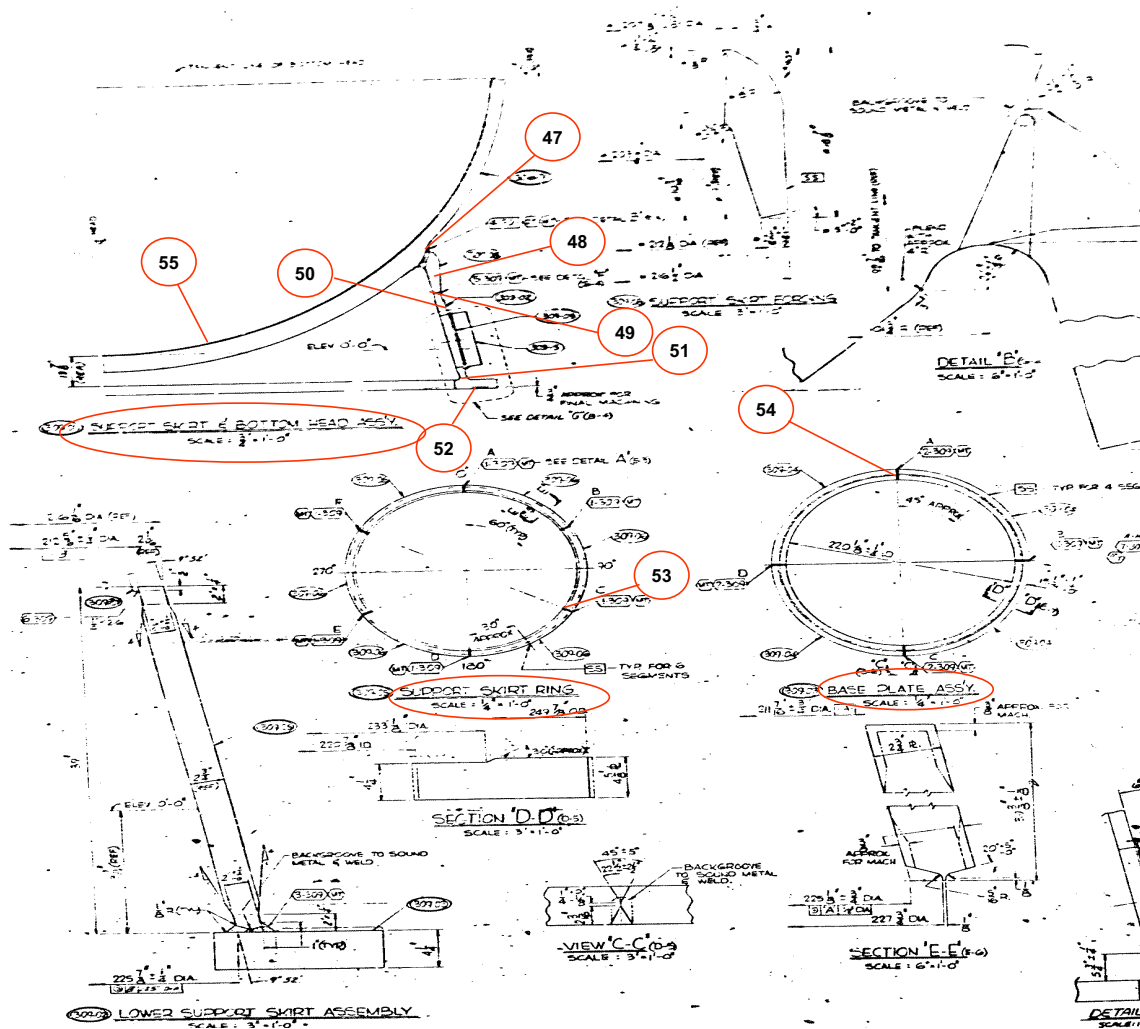
GROUP 3 – RPV BOTTOM HEAD (Sheet 7 of 8)
(Covers Worksheets RCS-RPVBH – 1 thru 55)

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 App. F.2 - BWR Systems Drawings



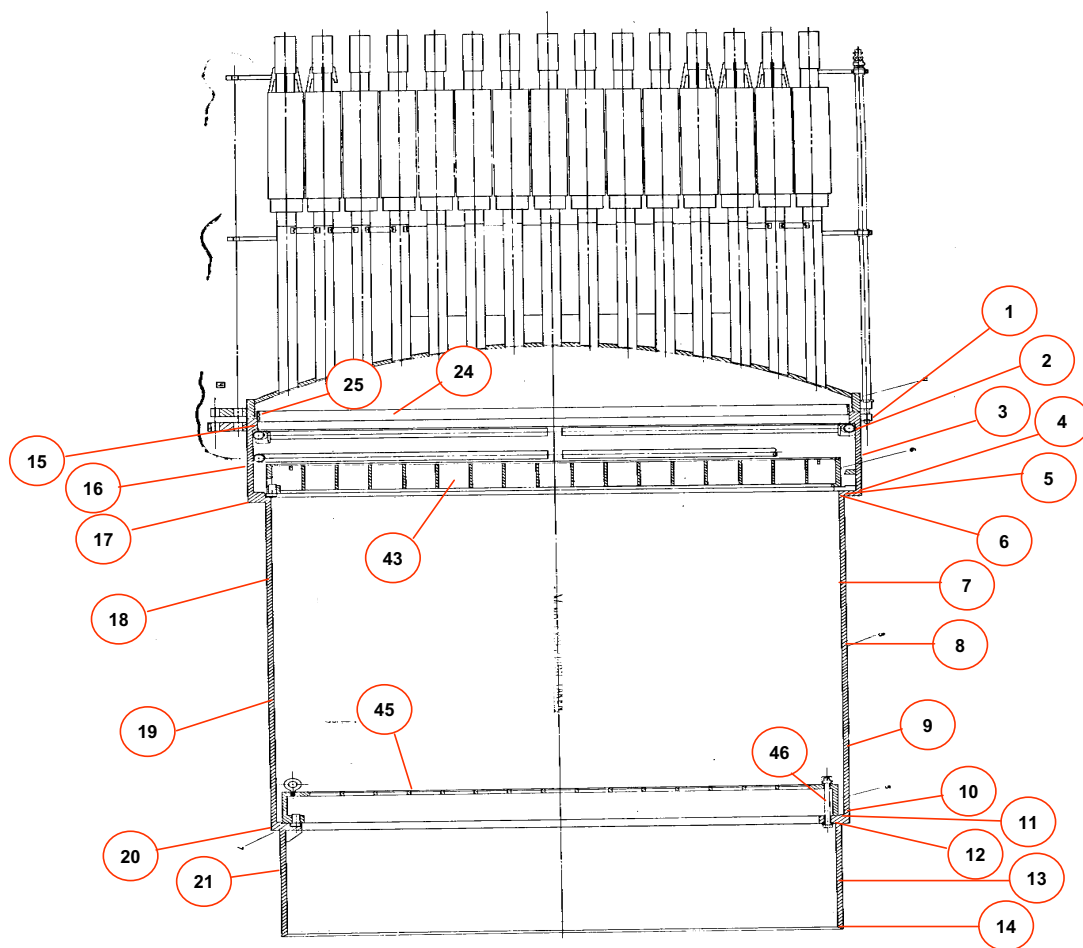
GROUP 3 – RPV BOTTOM HEAD (Sheet 8 of 8) **(Covers Worksheets RCS-RPVBH – 1 thru 55)**

19/179
 App. F.2 - BWR Systems Drawings



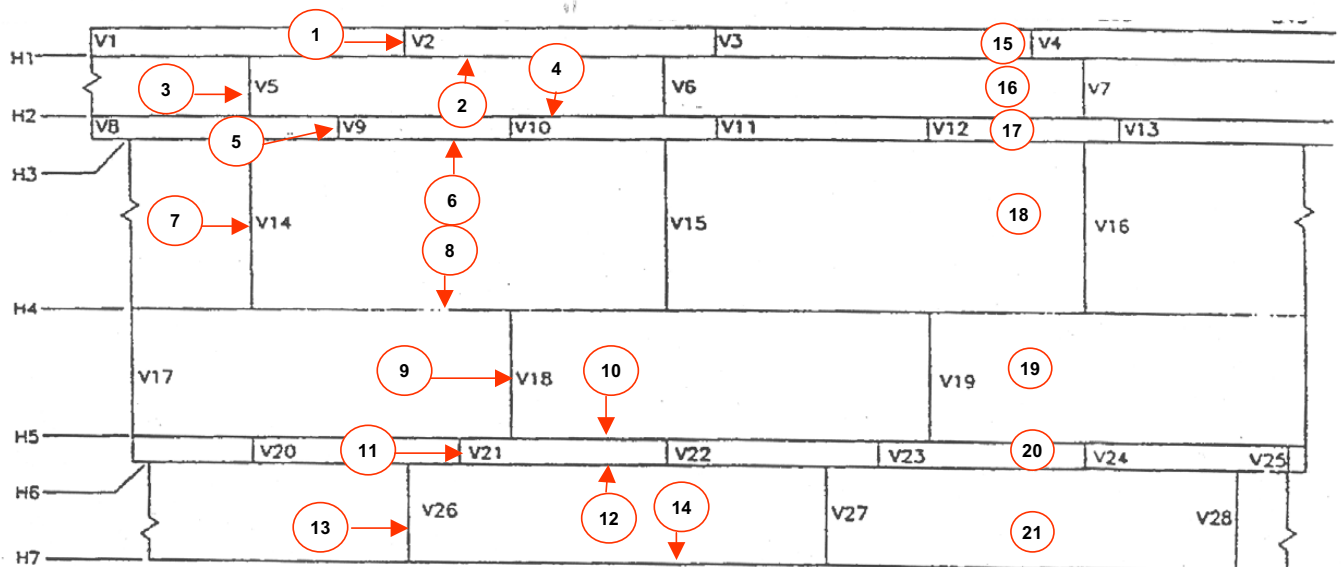
GROUP 4 – REACTOR VESSEL INTERNALS
SHROUD (Sheet 1 of 8)
(Covers Worksheets RCS-SHROUD – 1 thru 47)

20/179
App. F.2 - BWR Systems Drawings



GROUP 4 – REACTOR VESSEL INTERNALS
SHROUD (Sheet 2 of 8)
(Covers Worksheets RCS-SHROUD – 1 thru 47)

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App. F.2 - BWR Systems Drawings

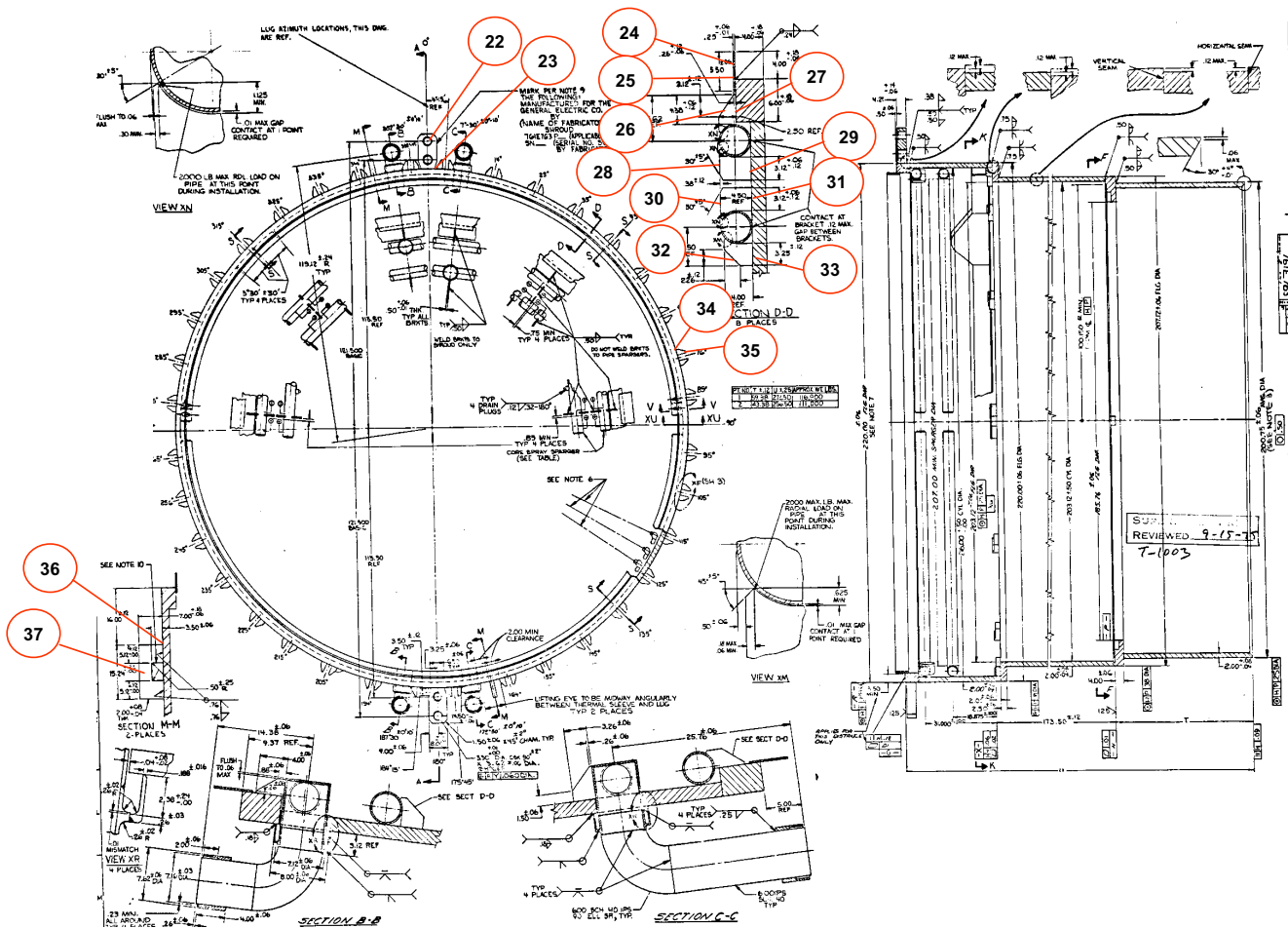


RPV SHROUD WELD/PLATE IDENTIFICATION

ELEVATION VIEW

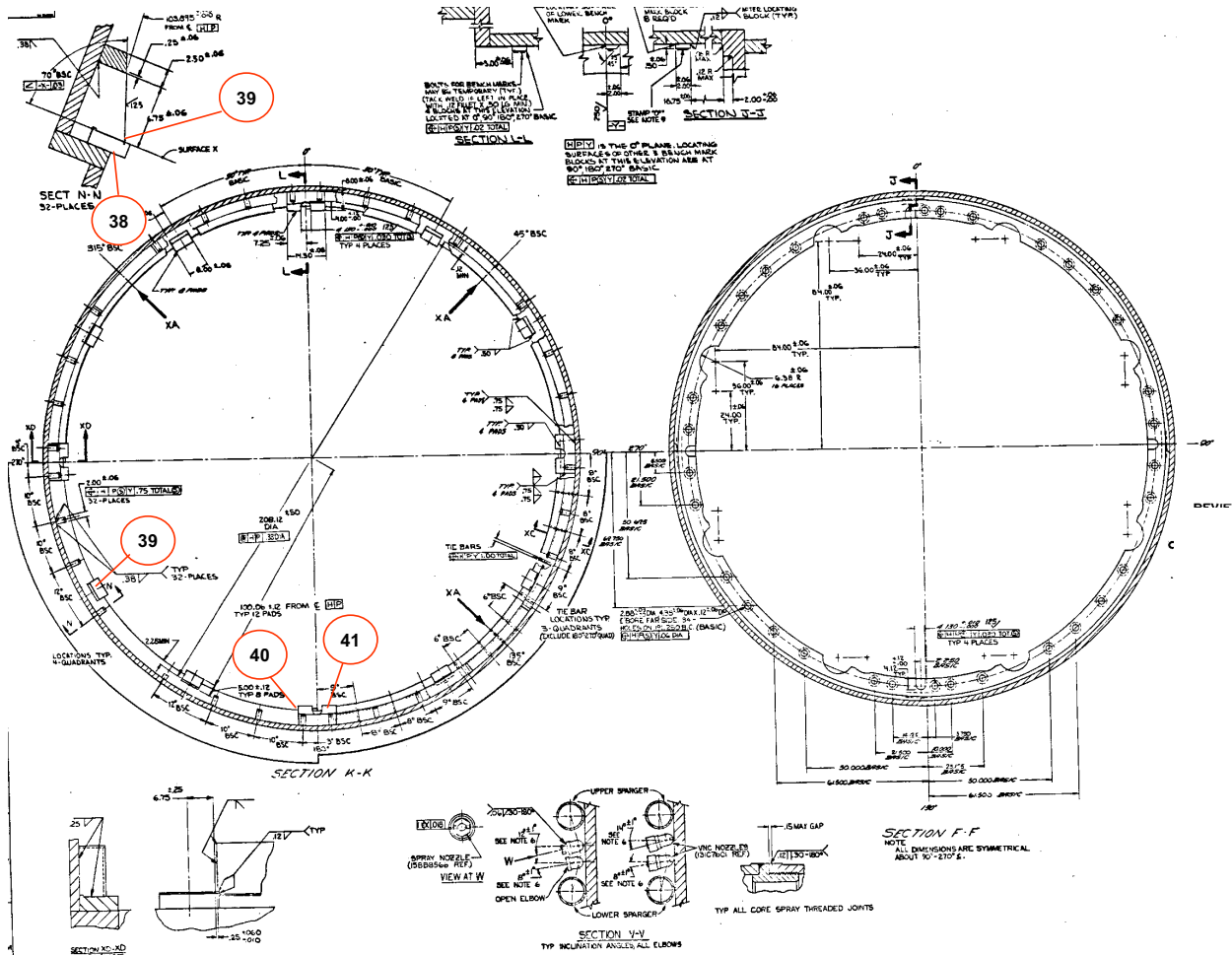
(Covers Worksheets RCS-SHROUD – 1 thru 47)

App. F.2 - BWR Systems Drawings



GROUP 4 – REACTOR VESSEL INTERNALS SHROUD (Sheet 4 of 8) (Covers Worksheets RCS-SHROUD – 1 thru 47)

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App. F.2 - BWR Systems Drawings

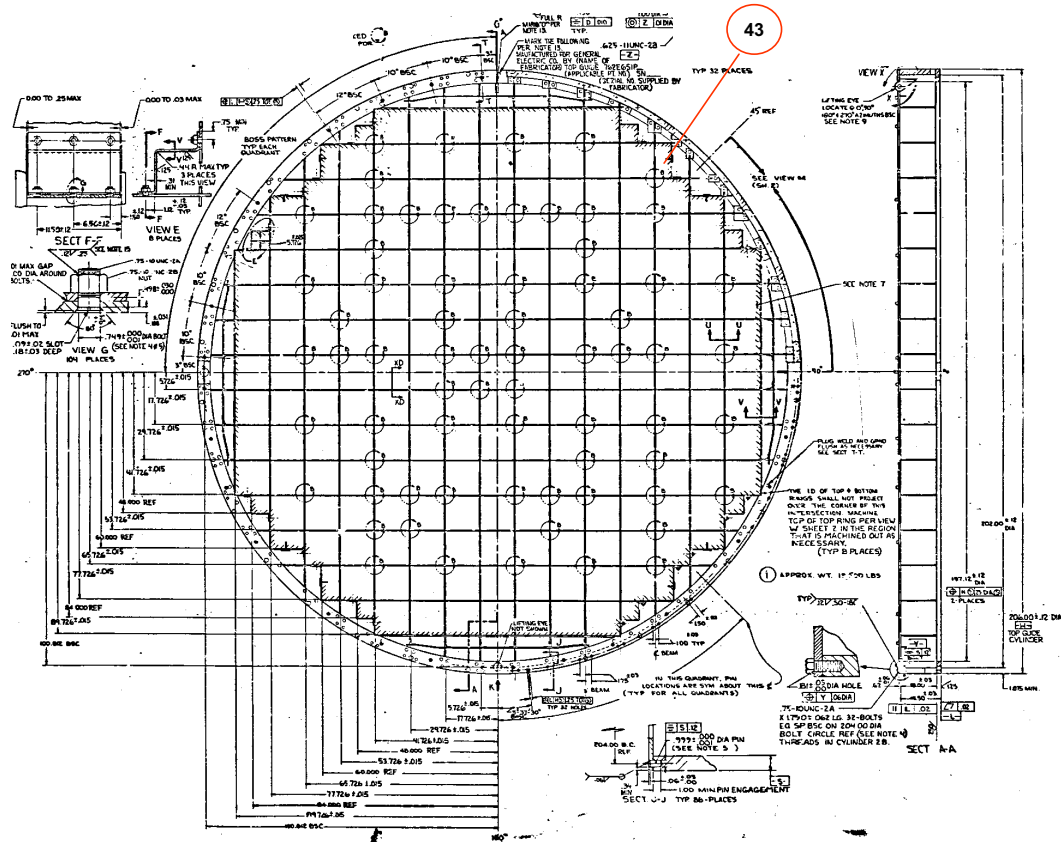


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App. F.2 - BWR Systems Drawings



GROUP 4 – REACTOR VESSEL INTERNALS SHROUD (Sheet 6 of 8) (Covers Worksheets RCS-SHROUD – 1 thru 47)

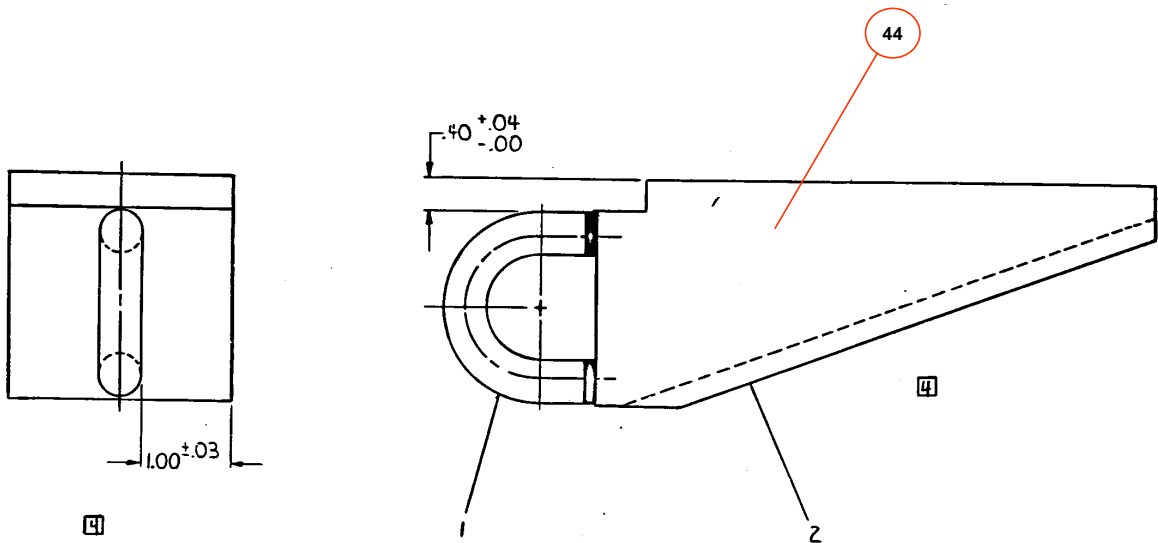
25/179
App. F.2 - BWR Systems Drawings



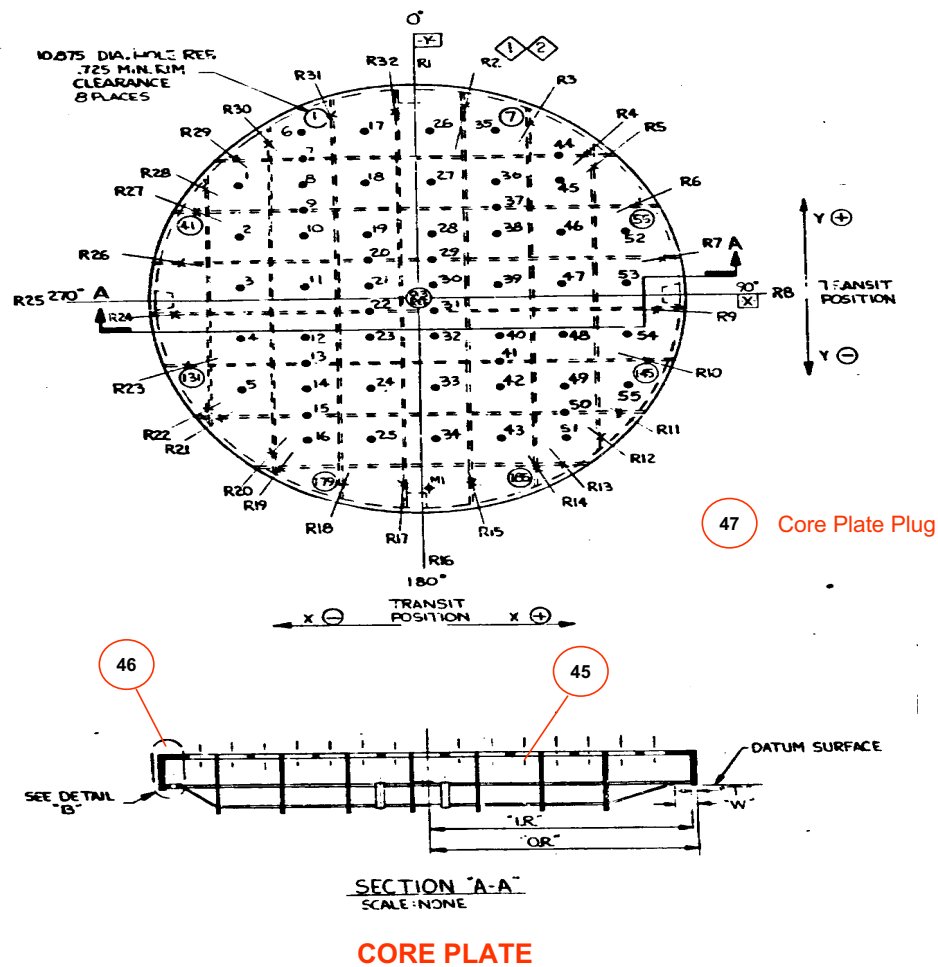
TOP GUIDE

GROUP 4 – REACTOR VESSEL INTERNALS
SHROUD (Sheet 7 of 8)
(Covers Worksheets RCS-SHROUD – 1 thru 47)

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App. F.2 - BWR Systems Drawings



GROUP 4 – REACTOR VESSEL INTERNALS
SHROUD (Sheet 8 of 8)
(Covers Worksheets RCS-SHROUD – 1 thru 47)

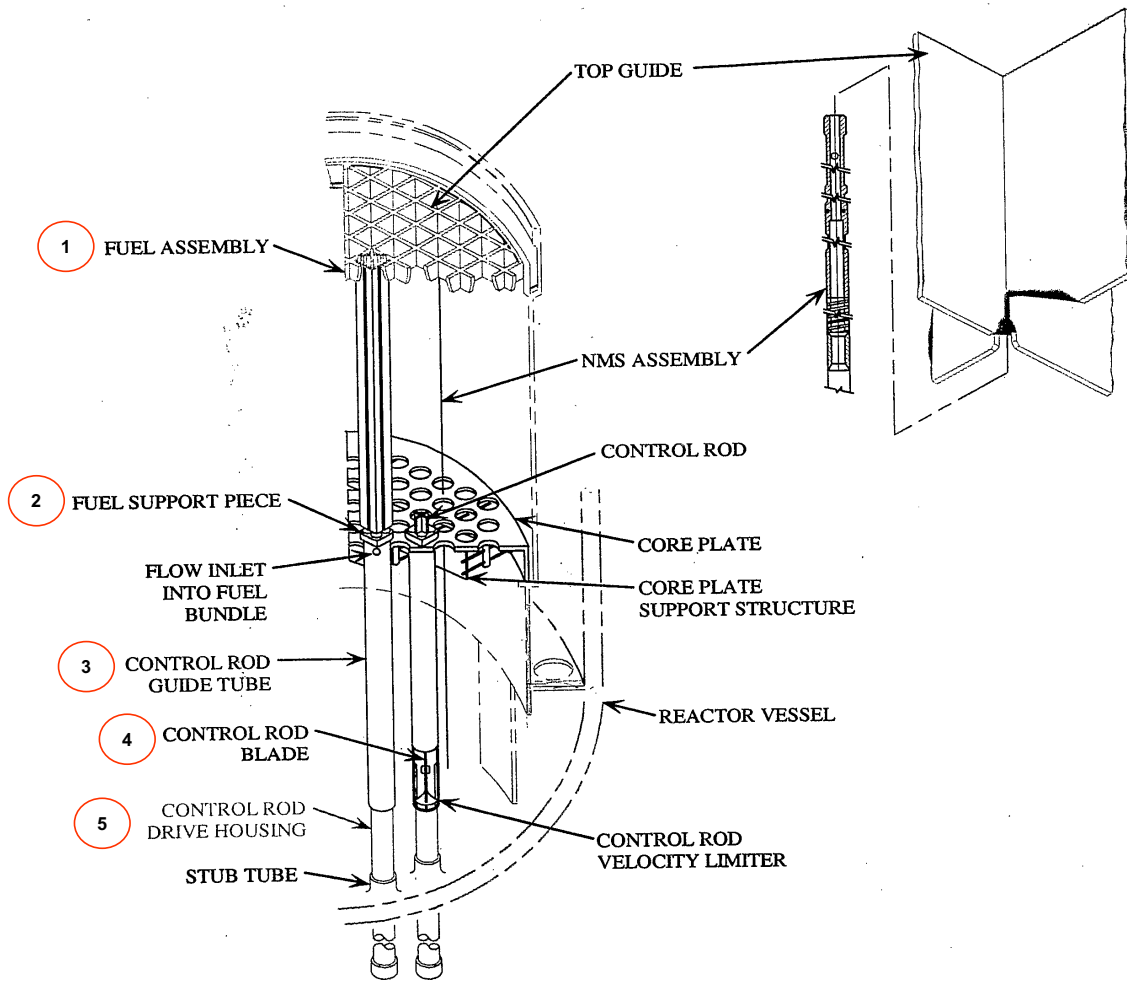






GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 1 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

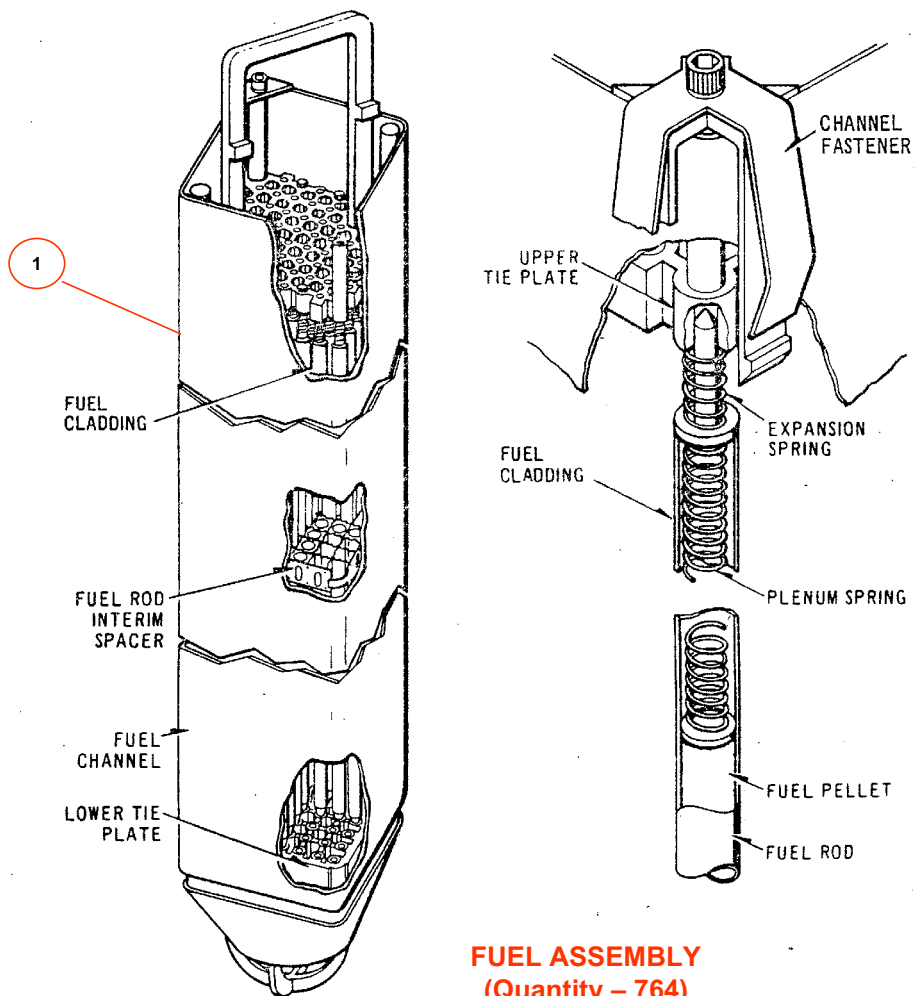
30/179
App. F.2 - BWR Systems Drawings



RPV CORE AREA INTERNALS

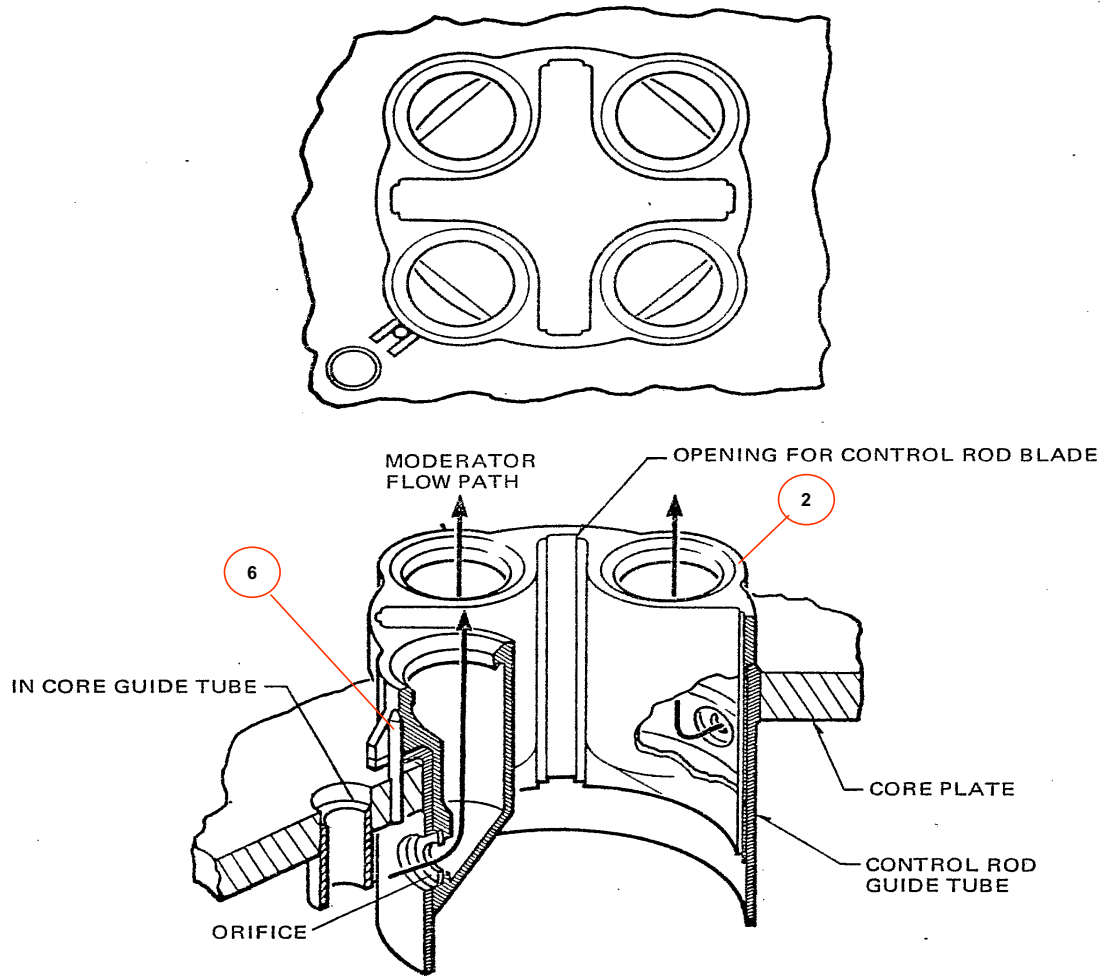
GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 2 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

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App. F.2 - BWR Systems Drawings



GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 3 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

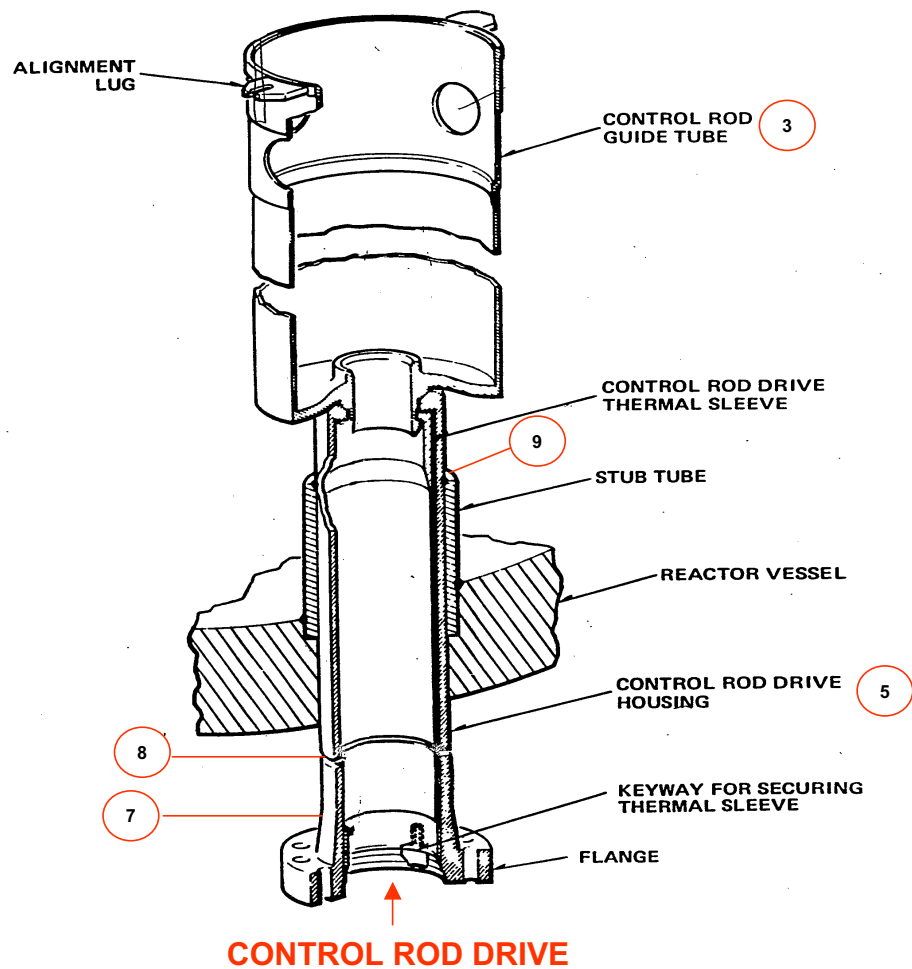
32/179
App. F.2 - BWR Systems Drawings



ORIFICED FUEL SUPPORT ASSEMBLY

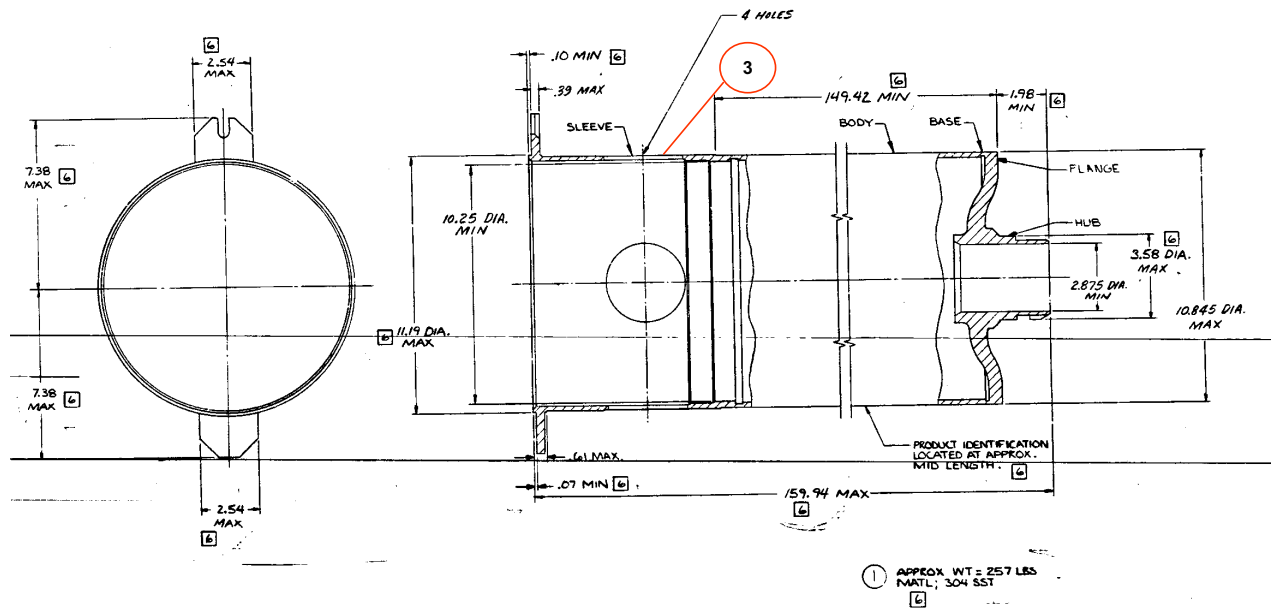
GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 4 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

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App. F.2 - BWR Systems Drawings



GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 5 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

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 App. F.2 - BWR Systems Drawings



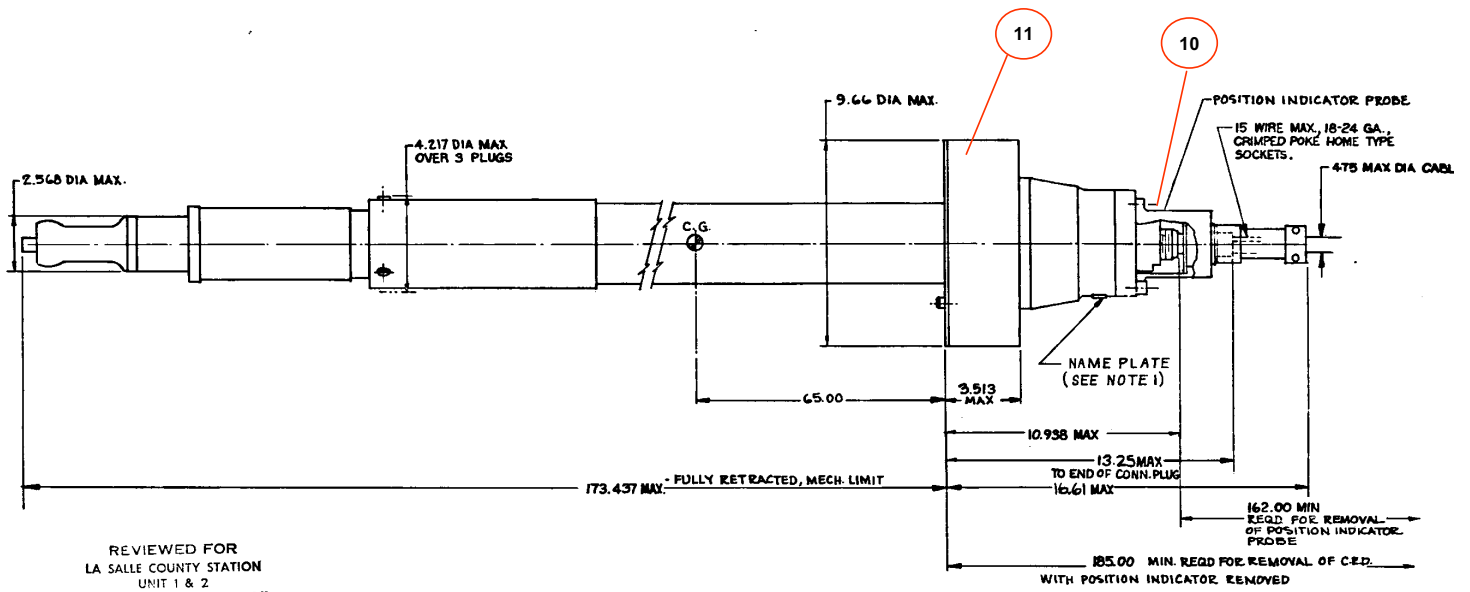
CONTROL ROD GUIDE TUBE

35/179
App. F.2 - BWR Systems Drawings



GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 7 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

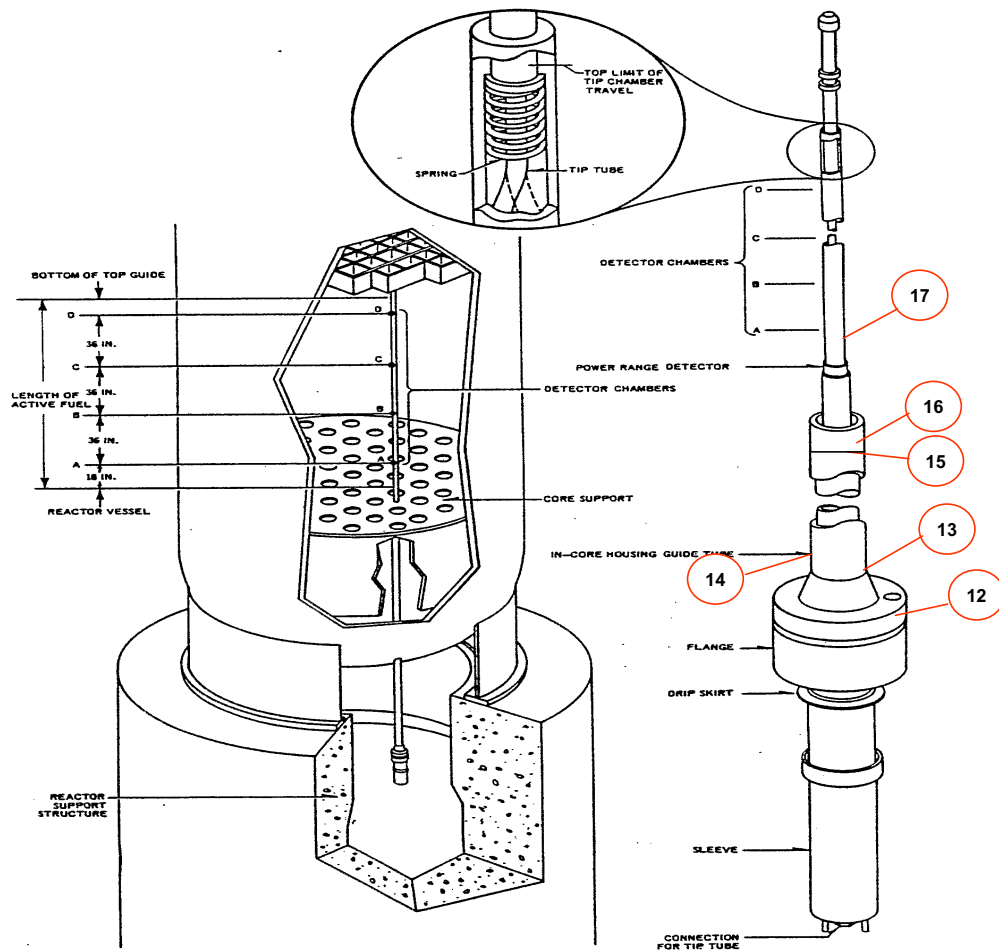
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 App. F.2 - BWR Systems Drawings



CONTROL ROD DRIVE

GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 8 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

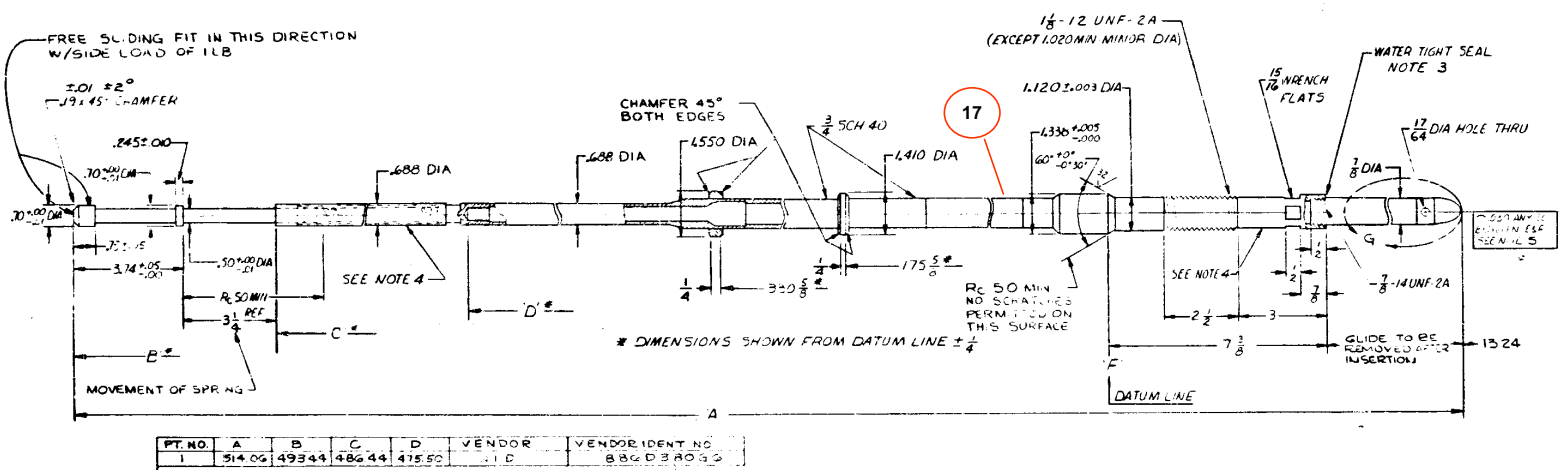
37/179
 App. F.2 - BWR Systems Drawings



NEUTRON MONITORING IN-CORE SYSTEM

GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 9 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

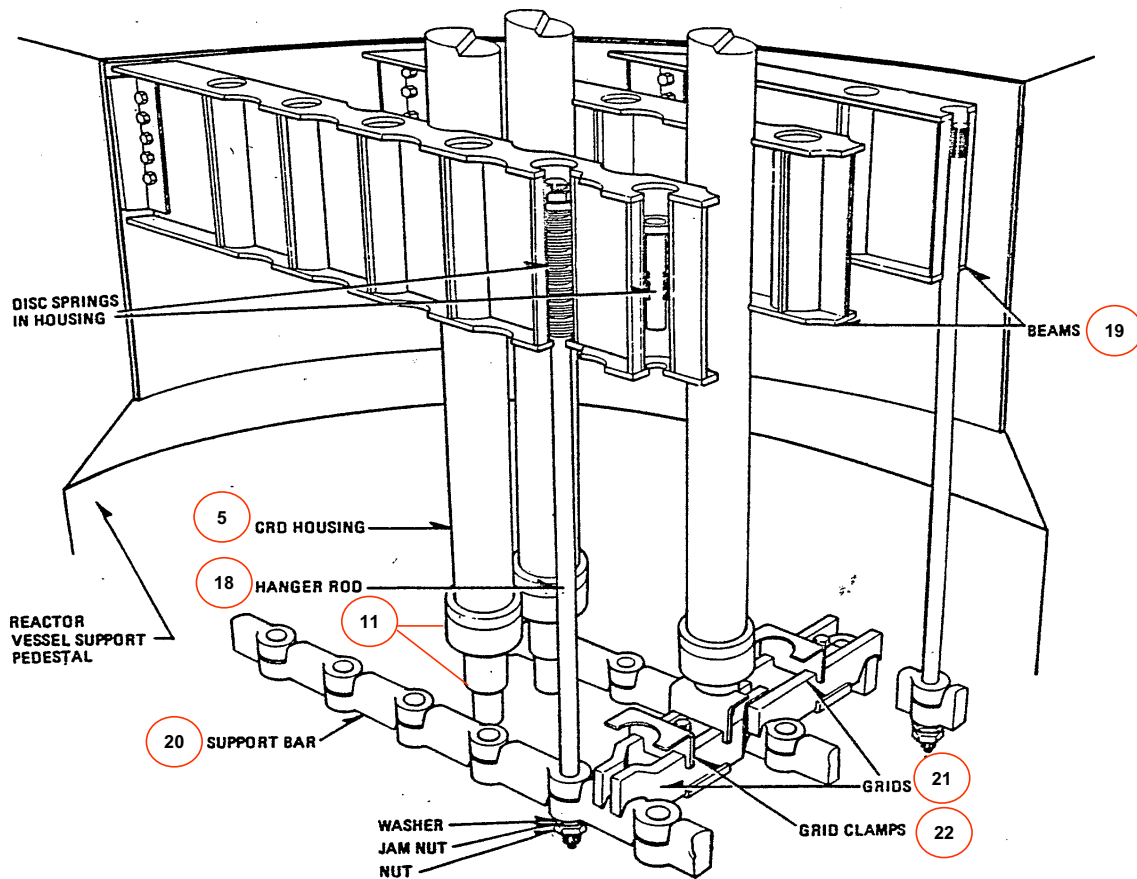
38/179
 App. F.2 - BWR Systems Drawings



DRY TUBE ASSEMBLY
NEUTRON MONITORING SYSTEM

GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 10 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

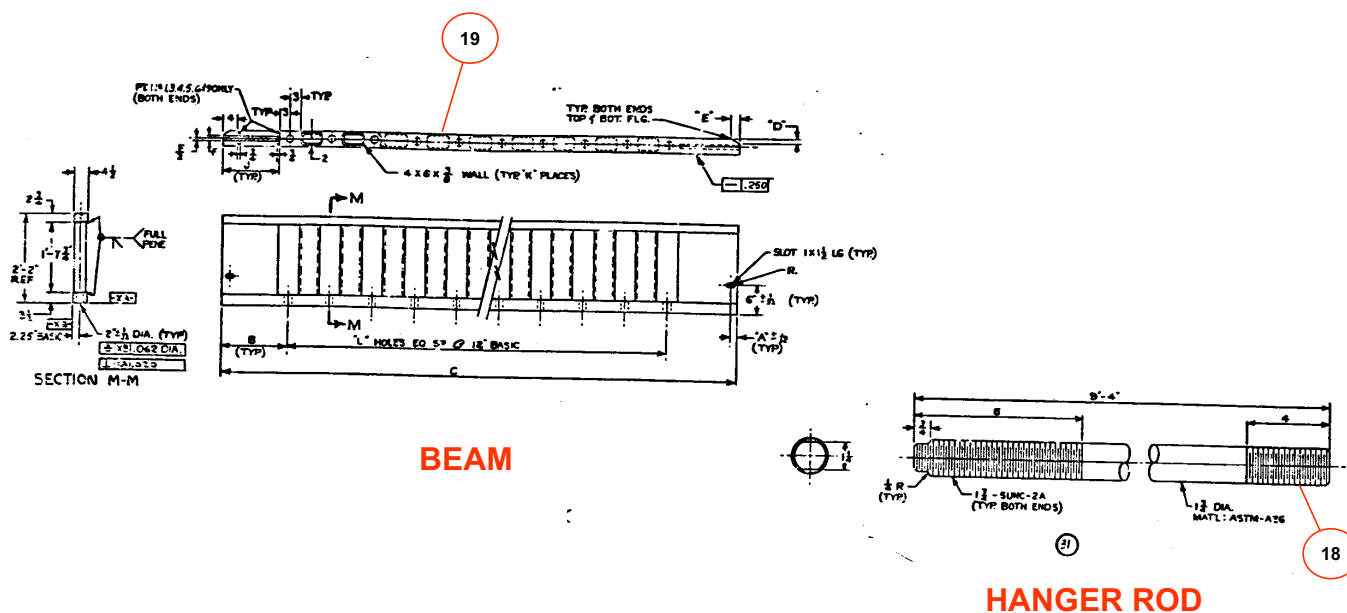
39/179
App. F.2 - BWR Systems Drawings



CONTROL ROD DRIVE HOUSING SUPPORT ASSEMBLY

GROUP 5 – REACTOR VESSEL INTERNALS **CORE CONTROLS (Sheet 11 of 15)** **(Covers Worksheets RCS-CORECTRL – 1 thru 42)**

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 App. F.2 - BWR Systems Drawings

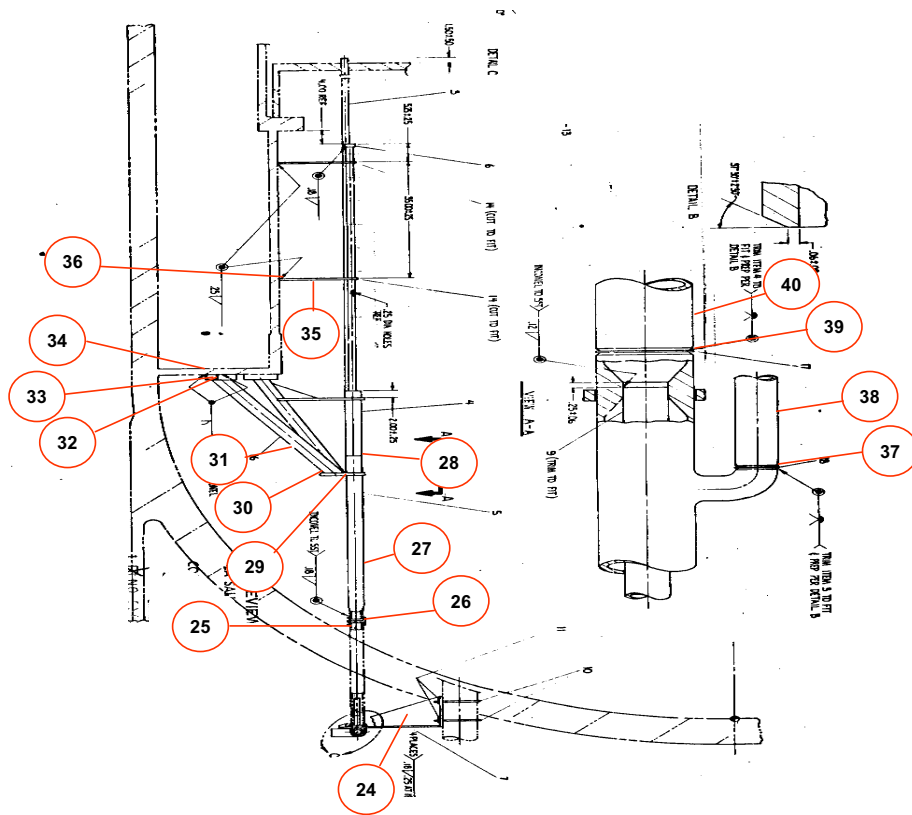


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App. F.2 - BWR Systems Drawings



GROUP 5 – REACTOR VESSEL INTERNALS **CORE CONTROLS (Sheet 14 of 15)** **(Covers Worksheets RCS-CORECTRL – 1 thru 42)**

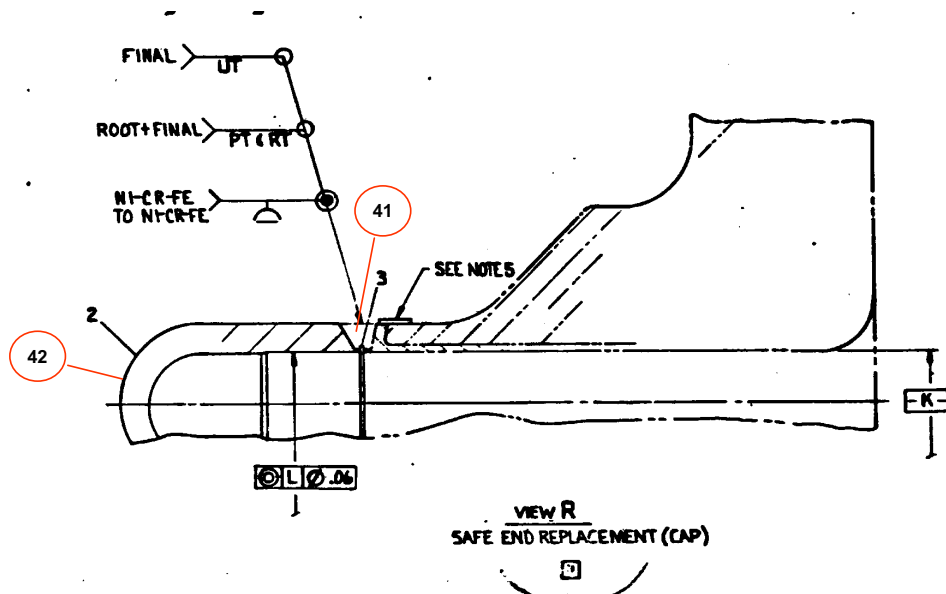
43/179
App. F.2 - BWR Systems Drawings



DIFFERENTIAL PRESURE AND LIQUID CONTROL LINE

GROUP 5 – REACTOR VESSEL INTERNALS
CORE CONTROLS (Sheet 15 of 15)
(Covers Worksheets RCS-CORECTRL – 1 thru 42)

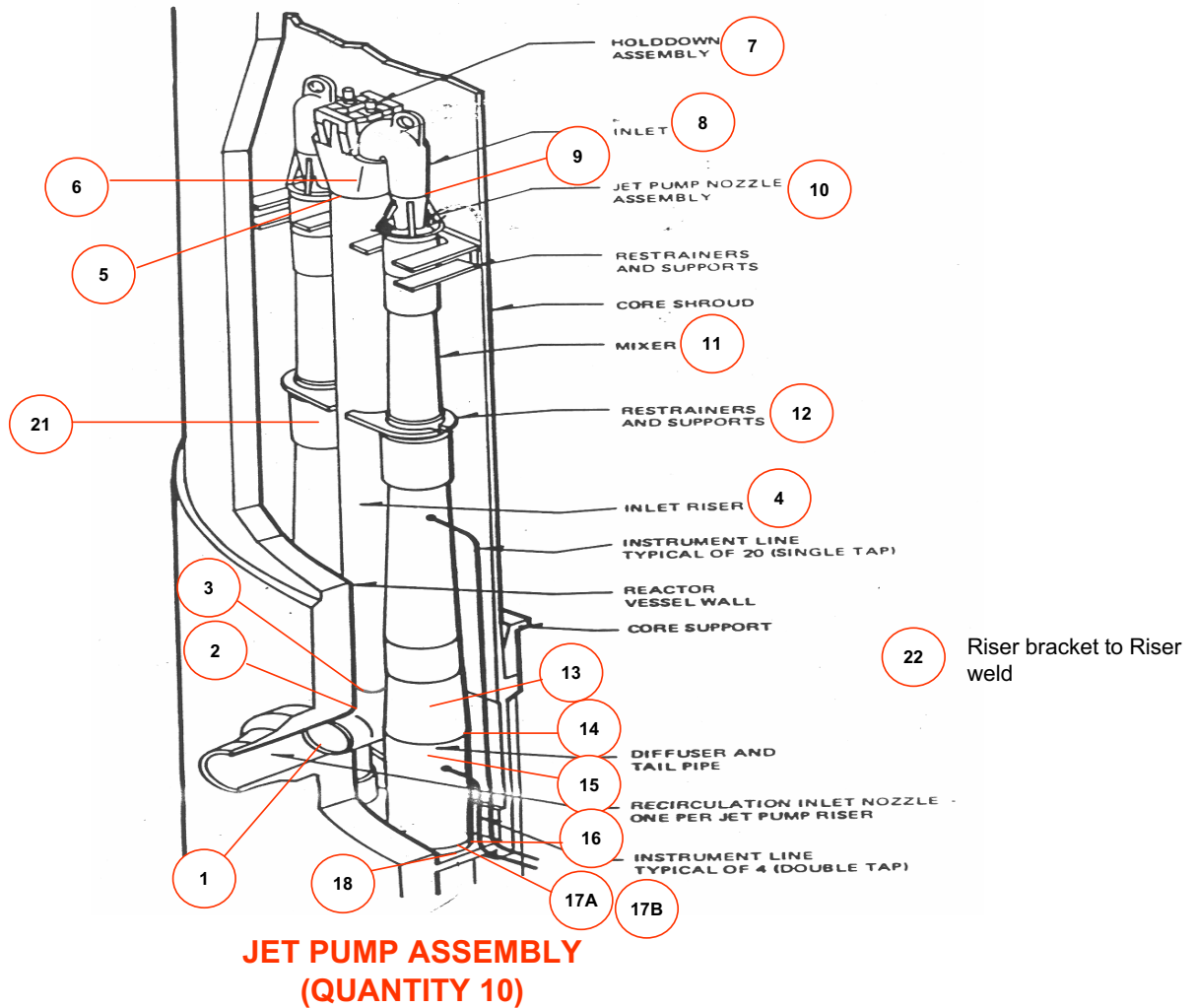
44/179
App. F.2 - BWR Systems Drawings



CRD HYDRAULIC SYSTEM RETURN
(CAPPED)

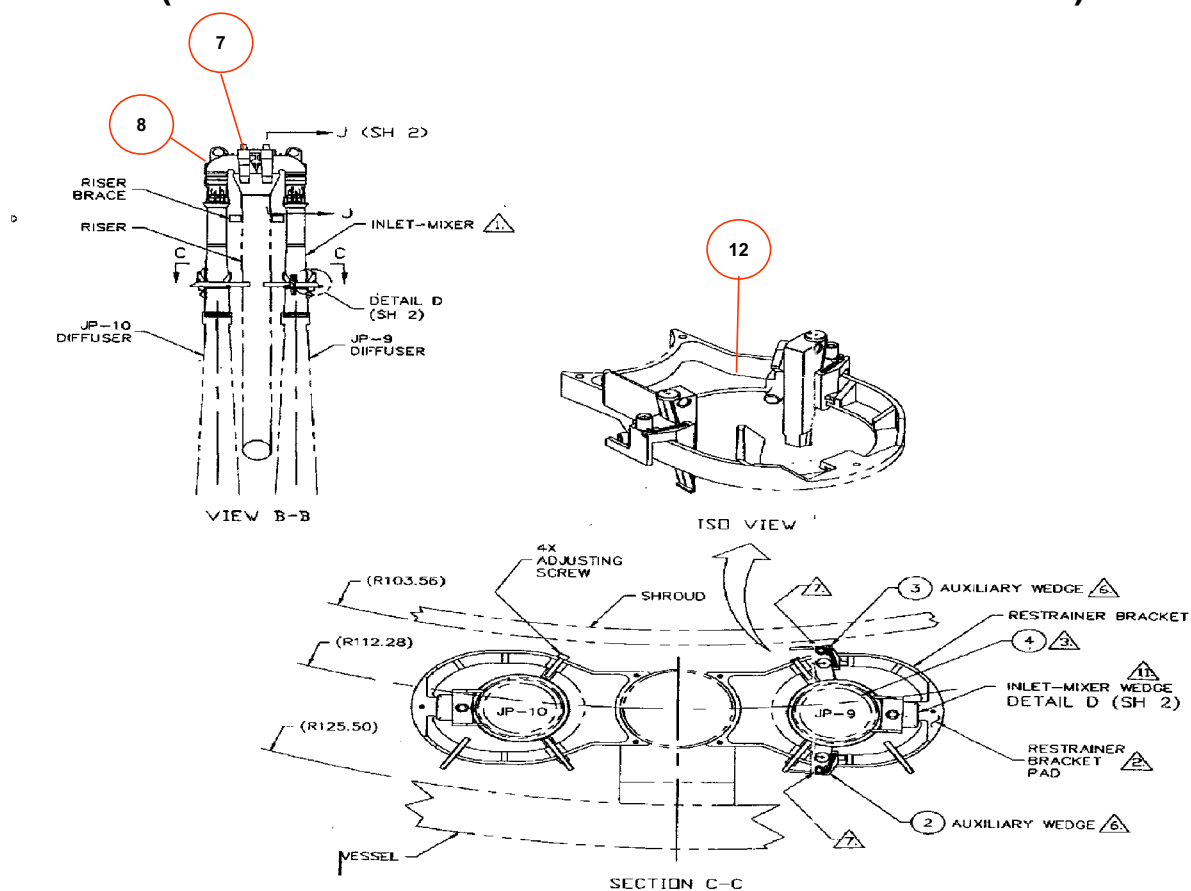
GROUP 6 – REACTOR VESSEL INTERNALS
JET PUMP ASSEMBLY (Sheet 1 of 6)
(Covers Worksheets RCS-JETPUMP – 1 thru 22)

45/179
 App. F.2 - BWR Systems Drawings



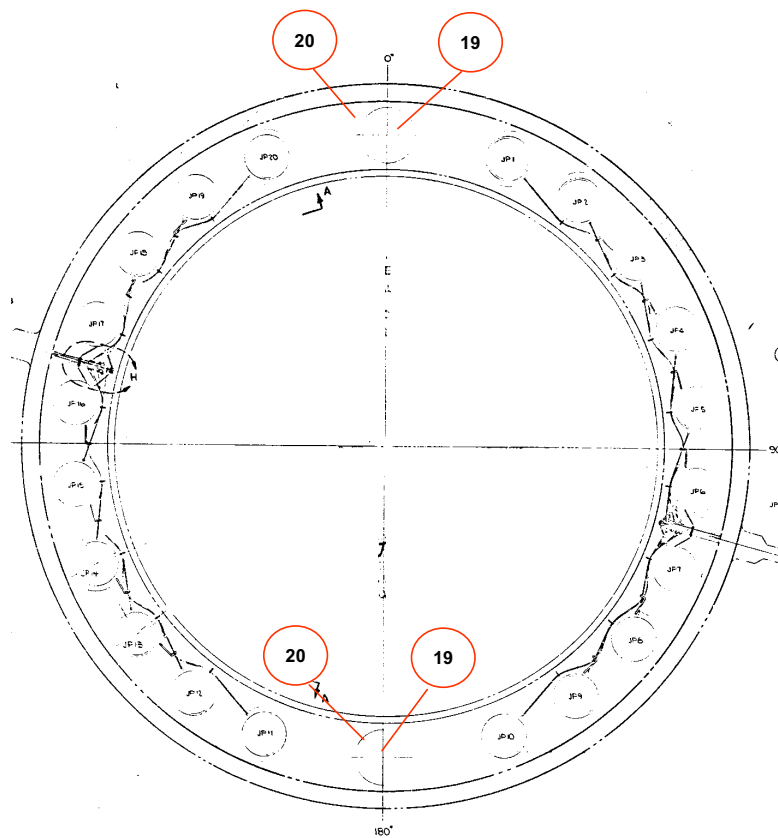
GROUP 6 – REACTOR VESSEL INTERNALS **JET PUMP ASSEMBLY (Sheet 2 of 6)** **(Covers Worksheets RCS-JETPUMP – 1 thru 22)**

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 App. F.2 - BWR Systems Drawings



GROUP 6 – REACTOR VESSEL INTERNALS
JET PUMP ASSEMBLY (Sheet 3 of 6)
(Covers Worksheets RCS-JETPUMP – 1 thru 22)

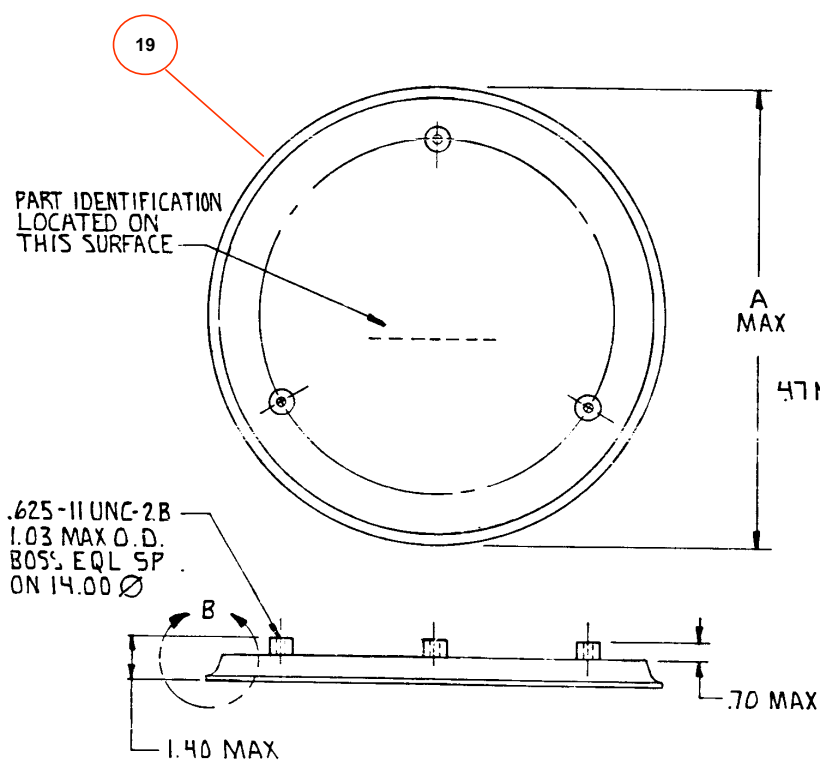
47/179
App. F.2 - BWR Systems Drawings



SHROUD SUPPORT PLATE
PLAN VIEW

GROUP 6 – REACTOR VESSEL INTERNALS
JET PUMP ASSEMBLY (Sheet 4 of 6)
(Covers Worksheets RCS-JETPUMP – 1 thru 22)

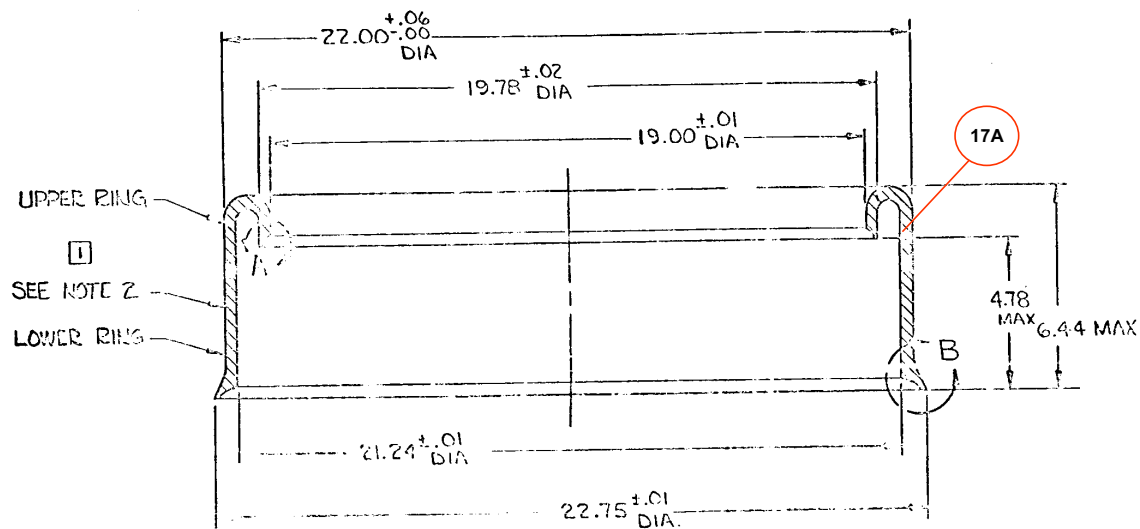
48/179
App. F.2 - BWR Systems Drawings



JET PUMP ACCESS HOLE COVER

GROUP 6 – REACTOR VESSEL INTERNALS
JET PUMP ASSEMBLY (Sheet 5 of 6)
(Covers Worksheets RCS-JETPUMP – 1 thru 22)

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 App. F.2 - BWR Systems Drawings

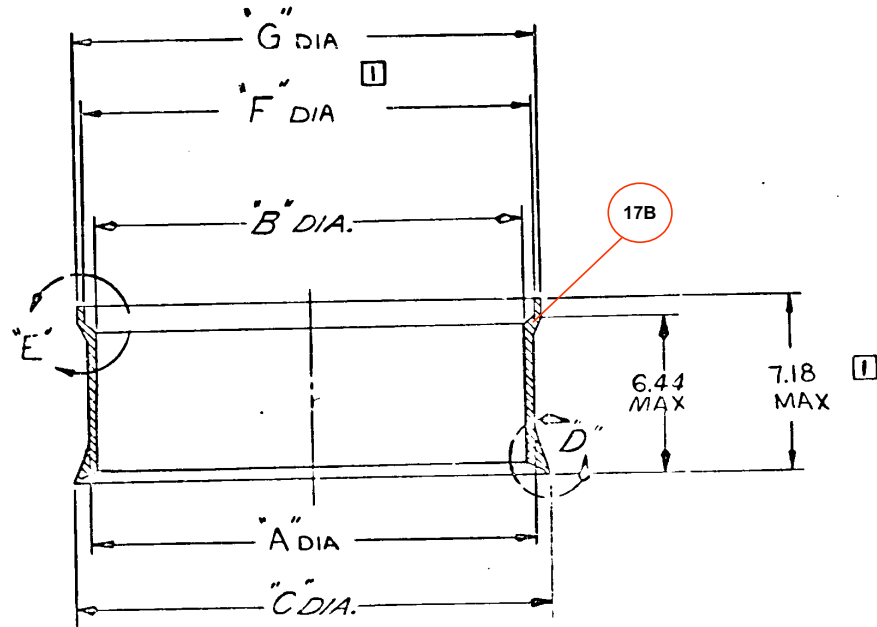


① APPROX WT 45 LBS

JET PUMP ADAPTER
(UNIT 1)

GROUP 6 – REACTOR VESSEL INTERNALS
JET PUMP ASSEMBLY (Sheet 6 of 6)
(Covers Worksheets RCS-JETPUMP – 1 thru 22)

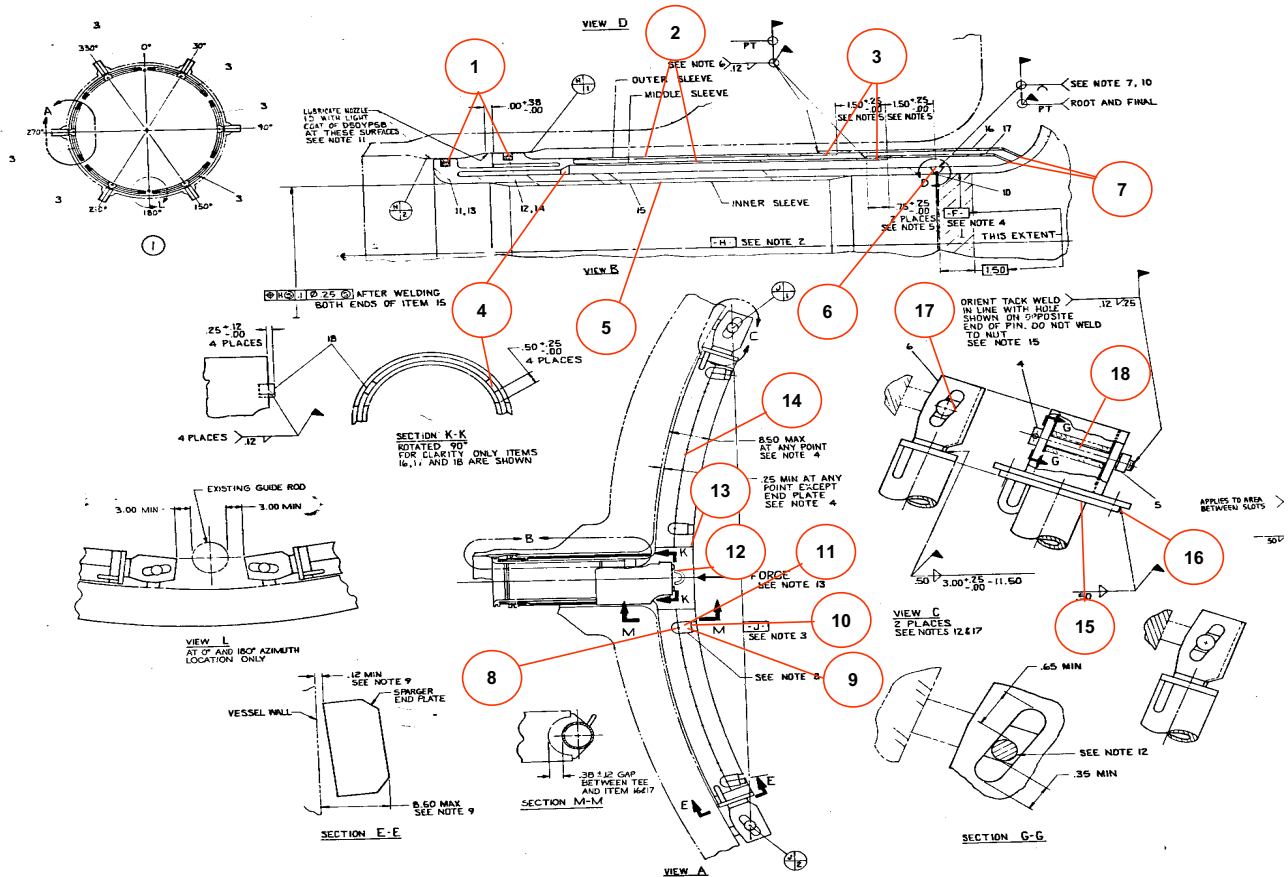
50/179
 App. F.2 - BWR Systems Drawings



JET PUMP ADAPTER
(UNIT 2)

GROUP 7 – REACTOR VESSEL INTERNALS **ECCS CONNECTIONS (Sheet 1 of 8)** **(Covers Worksheets RCS-ECCSCONN – 1 thru 50)**

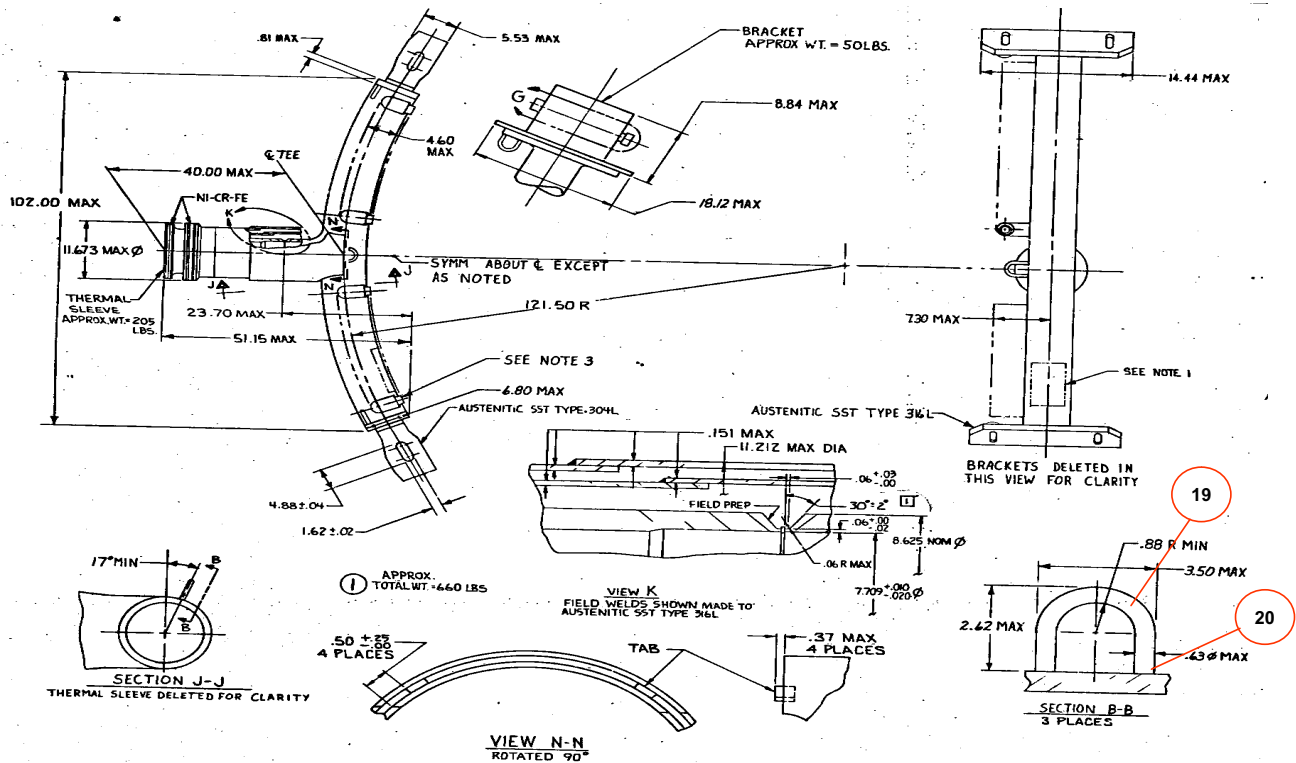
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 App. F.2 - BWR Systems Drawings



FEEDWATER SPARGER
(QUANTITY 6)

GROUP 7 – REACTOR VESSEL INTERNALS **ECCS CONNECTIONS (Sheet 2 of 8)** **(Covers Worksheets RCS-ECCSCONN – 1 thru 50)**

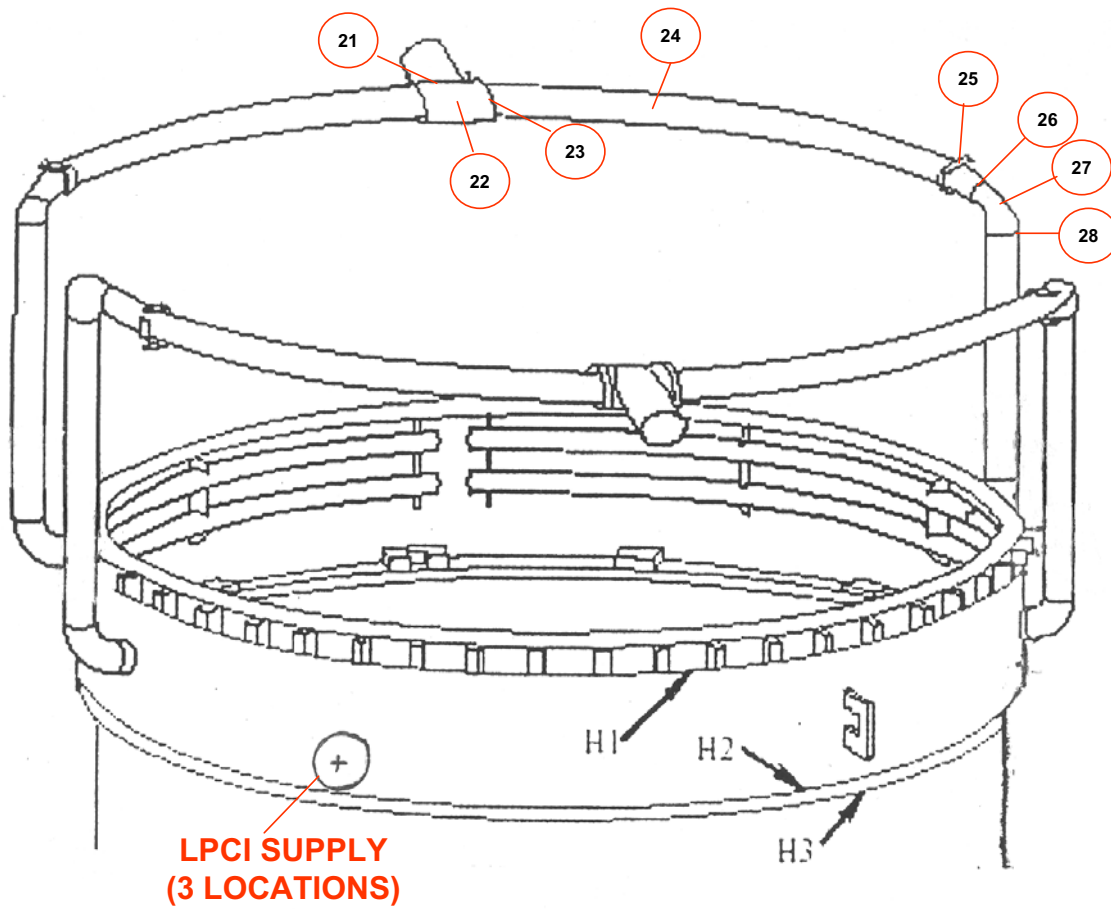
52/179
 App. F.2 - BWR Systems Drawings



FEEDWATER SPARGER

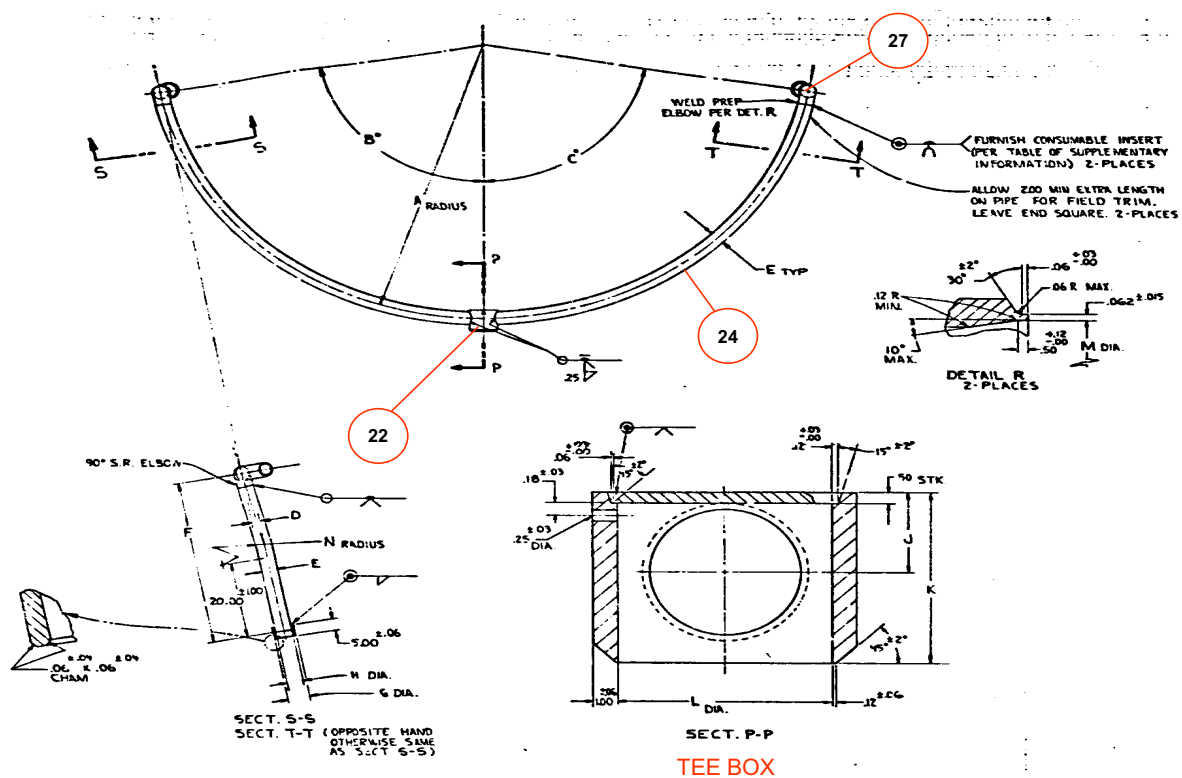
GROUP 7 – REACTOR VESSEL INTERNALS
ECCS CONNECTIONS (Sheet 3 of 8)
(Covers Worksheets RCS-ECCSCONN – 1 thru 50)

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App. F.2 - BWR Systems Drawings



CORE SPRAY PIPING INSIDE VESSEL

GROUP 7 – REACTOR VESSEL INTERNALS
ECCS CONNECTIONS (Sheet 4 of 8)
(Covers Worksheets RCS-ECCSCONN – 1 thru 50)



CORE SPRAY LINE
(Quantity 2)

SHROUD ASSEMBLY

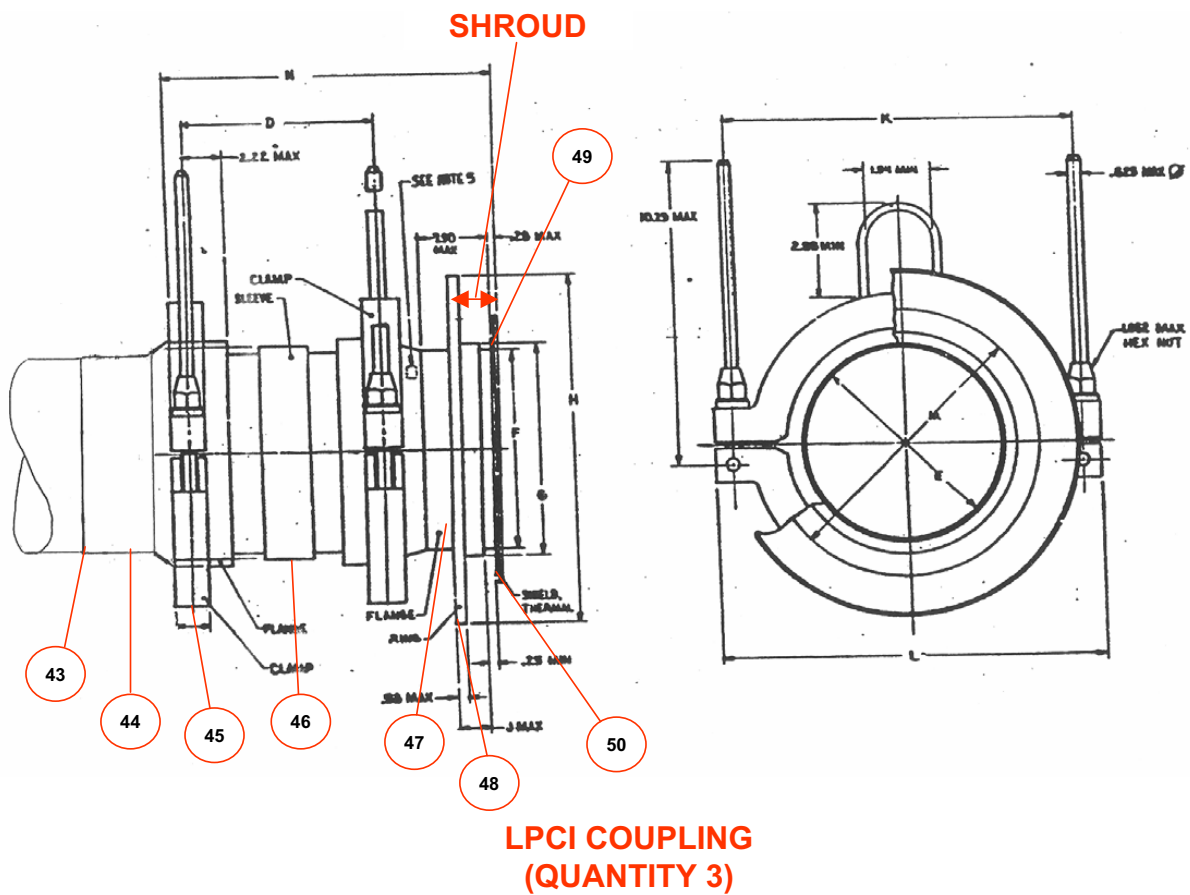
56/179
App. F.2 - BWR Systems Drawings



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App. F.2 - BWR Systems Drawings

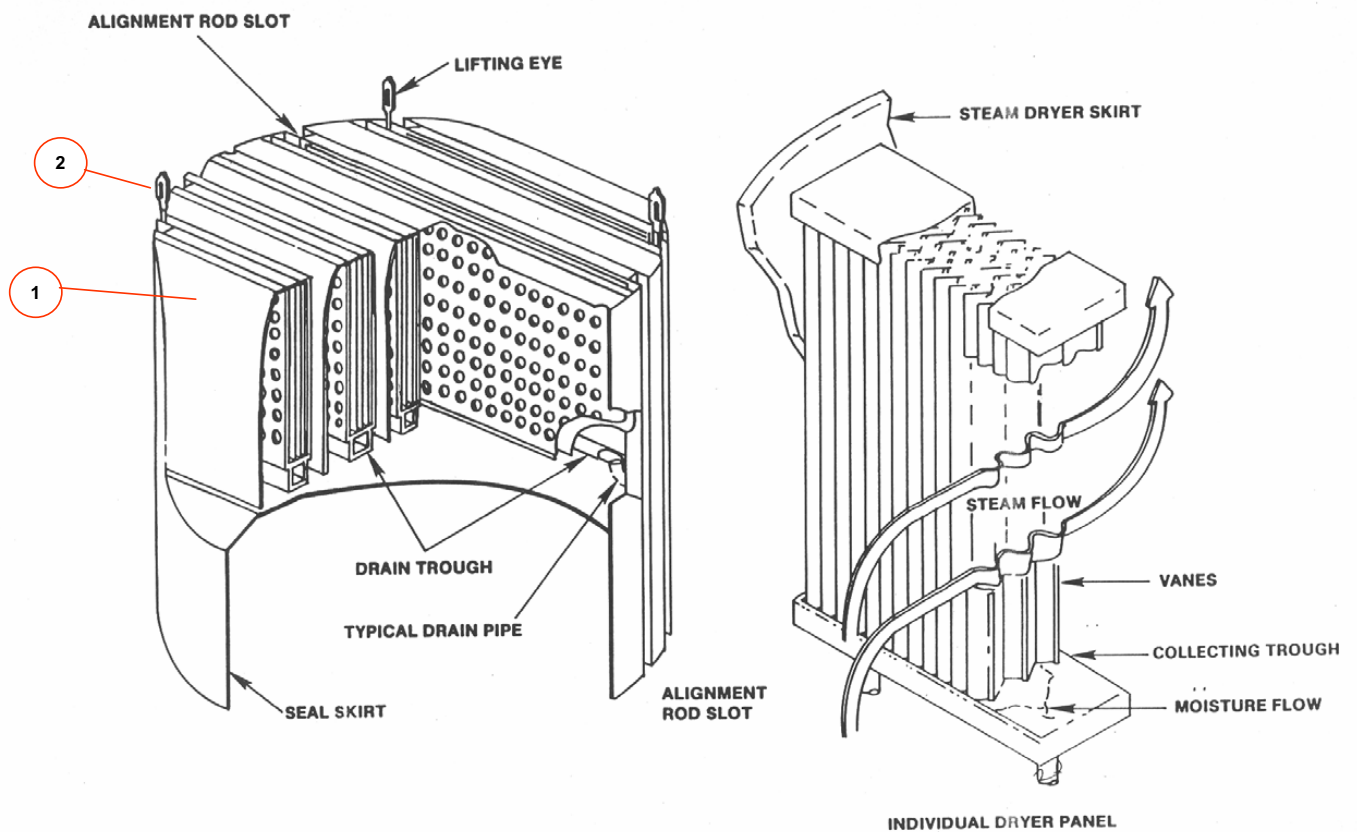


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App. F.2 - BWR Systems Drawings



GROUP 8 – REACTOR VESSEL INTERNALS **STEAM SEPARATOR AND STEAM DRYER (Sheet 1 of 7)** **(Covers Worksheets– RCS-STMSEP 1 thru 14)**

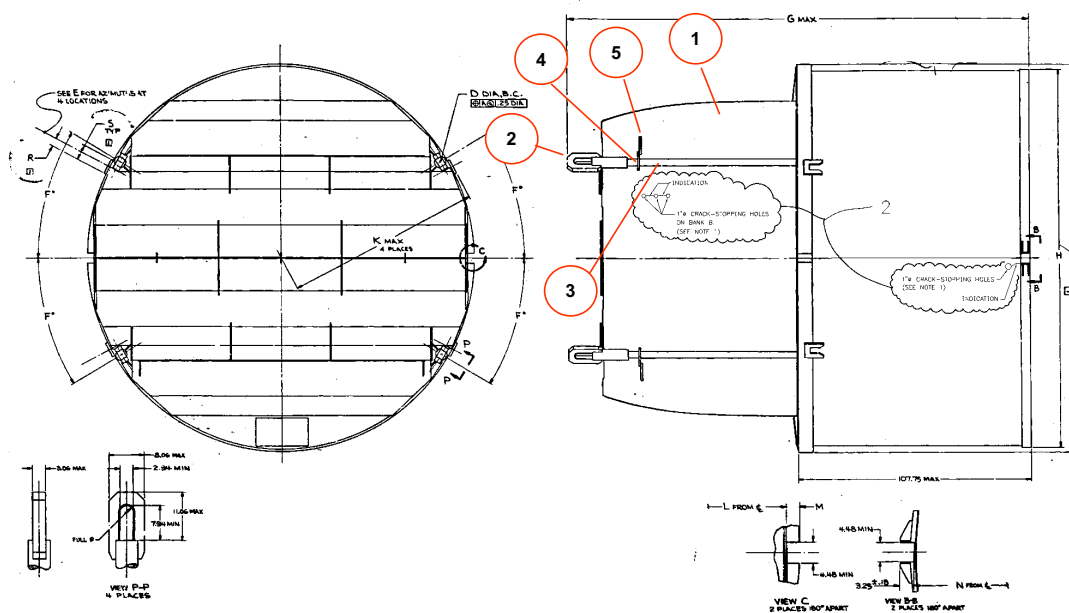
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 App. F.2 - BWR Systems Drawings



STEAM DRYER ASSEMBLY

GROUP 8 – REACTOR VESSEL INTERNALS **STEAM SEPARATOR AND STEAM DRYER (Sheet 2 of 7)** **(Covers Worksheets– RCS-STMSEP 1 thru 14)**

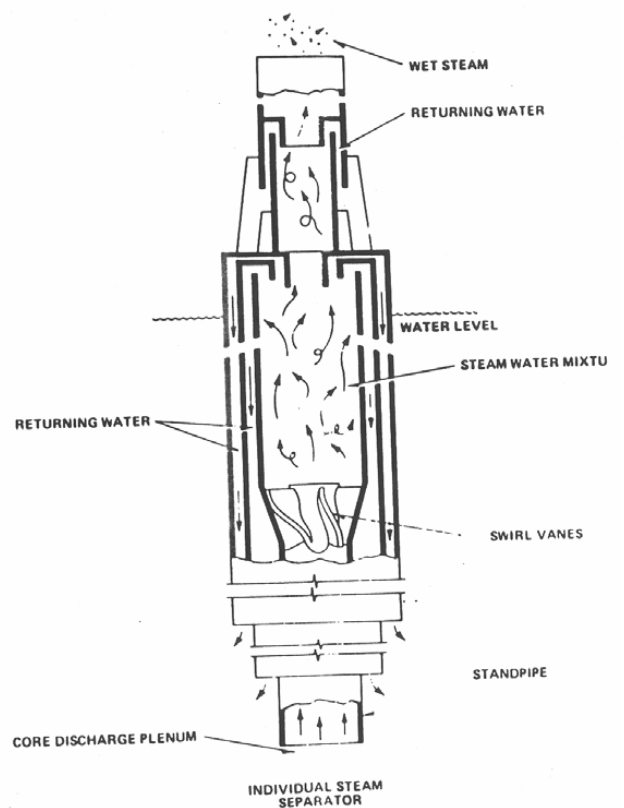
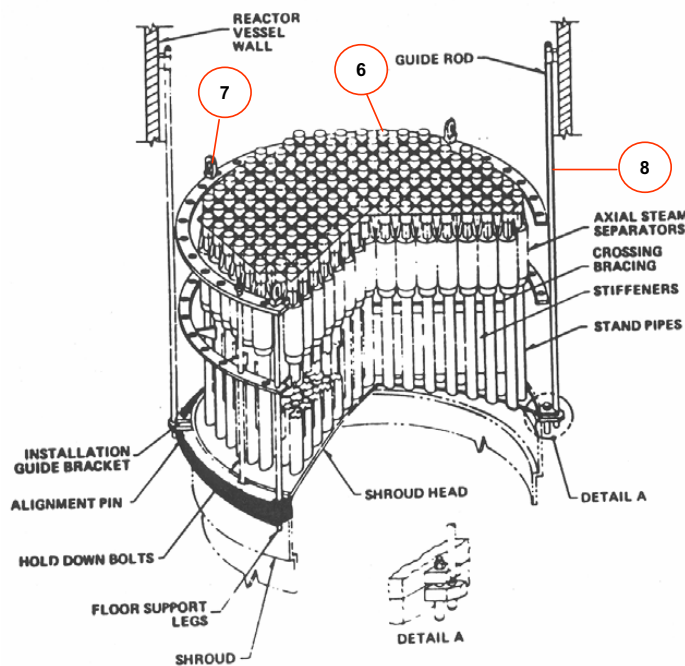
60/179
 App 2 - BWR Systems Drawings



STEAM DRYER ASSEMBLY

GROUP 8 – REACTOR VESSEL INTERNALS **STEAM SEPARATOR AND STEAM DRYER (Sheet 3 of 7)** **(Covers Worksheets– RCS-STMSEP 1 thru 14)**

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 App. E-2 - BWR Systems Drawings

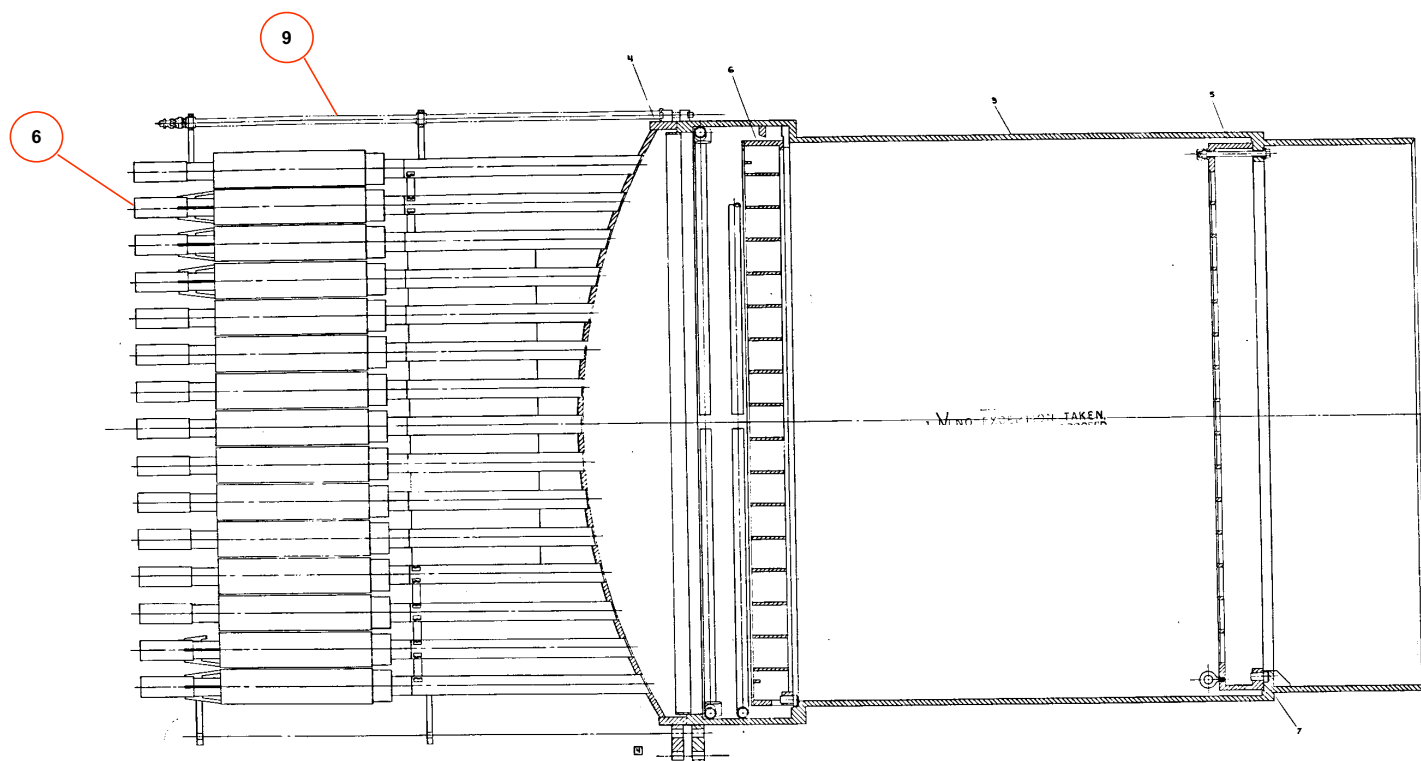


STEAM SEPARATOR ASSEMBLY

GROUP 8 – REACTOR VESSEL INTERNALS
STEAM SEPARATOR AND STEAM DRYER (Sheet 4 of 7)
(Covers Worksheets– RCS-STMSEP 1 thru 14)

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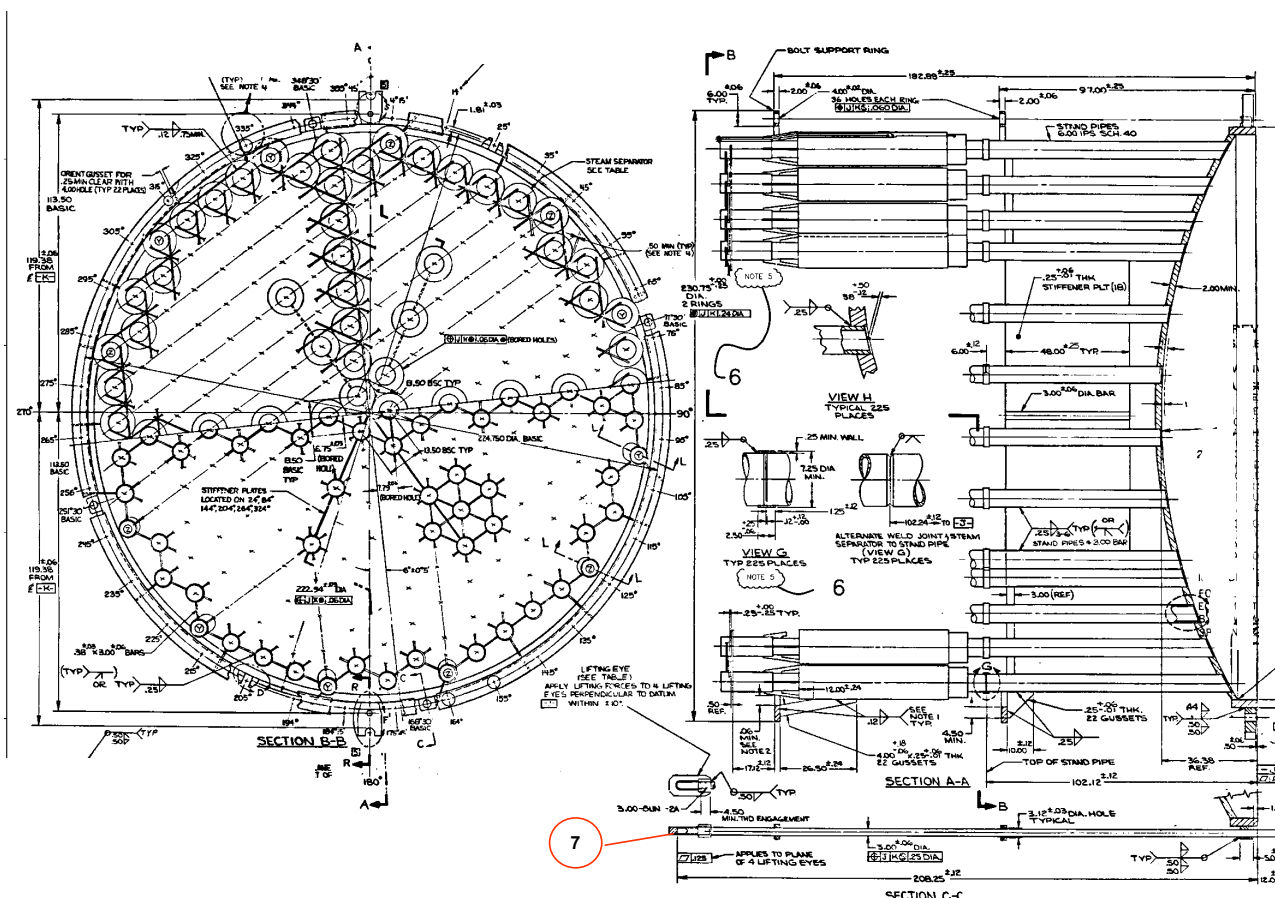
App 12 - BWR Systems Drawings



STEAM SEPARATOR AND SHROUD ASSEMBLY

GROUP 8 – REACTOR VESSEL INTERNALS **STEAM SEPARATOR AND STEAM DRYER (Sheet 5 of 7)** **(Covers Worksheets– RCS-STMSEP 1 thru 14)**

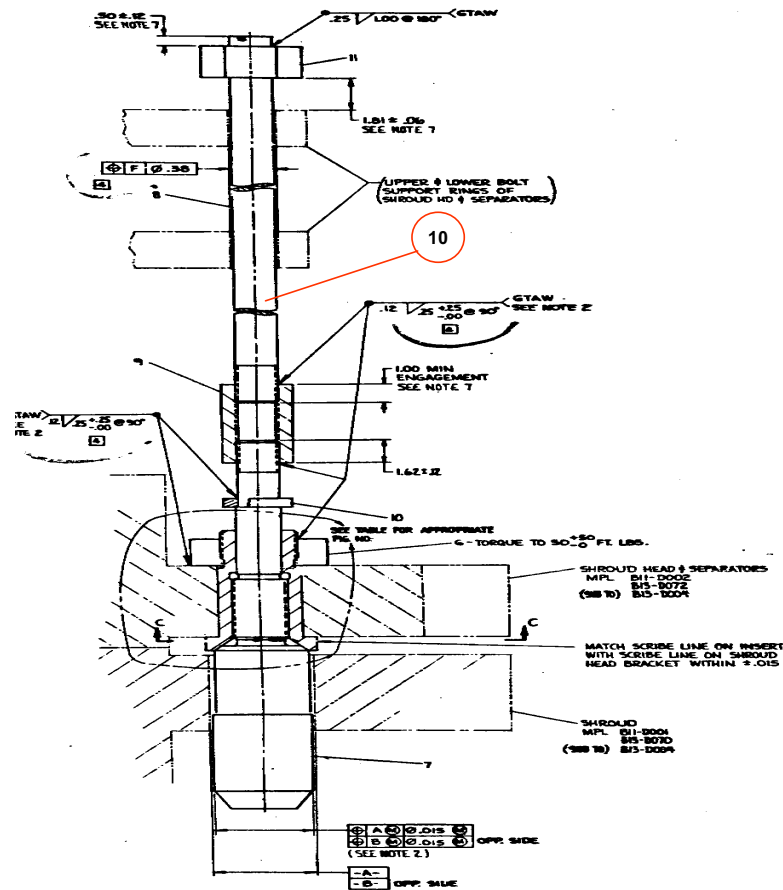
63/179
 App. F.2 - BWR Systems Drawings



STEAM SEPARATOR ASSEMBLY

GROUP 8 – REACTOR VESSEL INTERNALS **STEAM SEPARATOR AND STEAM DRYER (Sheet 6 of 7)** **(Covers Worksheets– RCS-STMSEP 1 thru 14)**

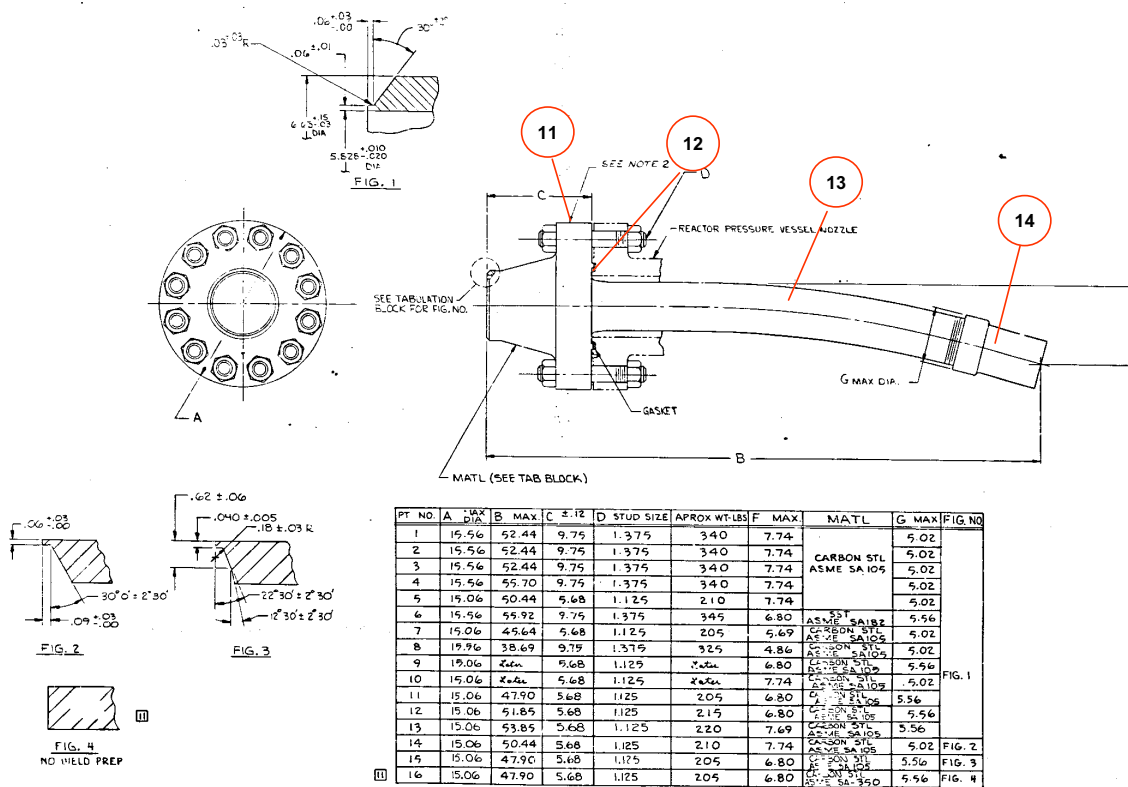
64/179
 App 2 - BWR Systems Drawings



STEAM SEPARATOR GUIDE PIN
(QUANTITY 2)

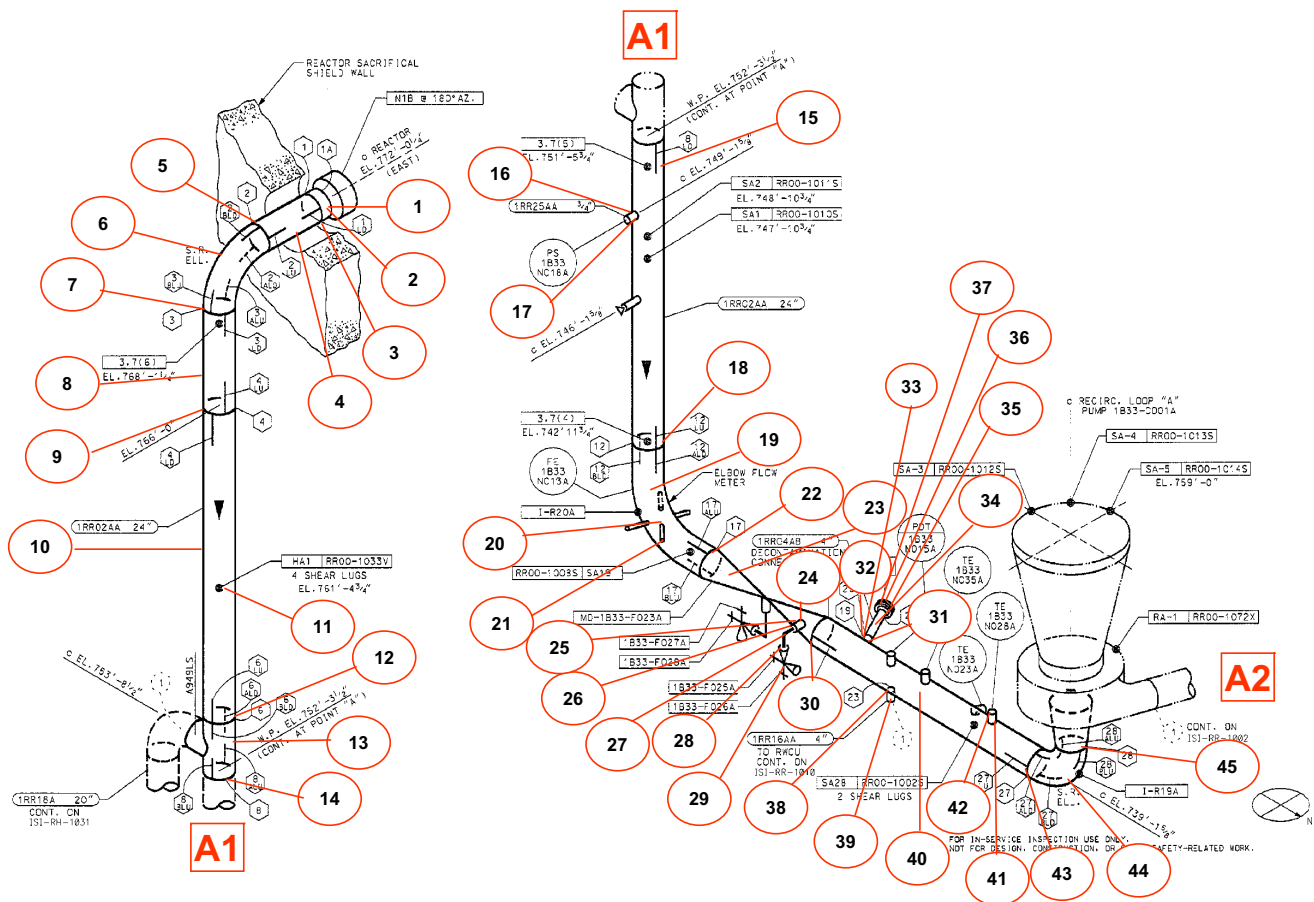
GROUP 8 – REACTOR VESSEL INTERNALS **STEAM SEPARATOR AND STEAM DRYER (Sheet 7 of 7)** **(Covers Worksheets– RCS-STMSEP 1 thru 14)**

65/179
 App. E.2 - BWR Systems Drawings

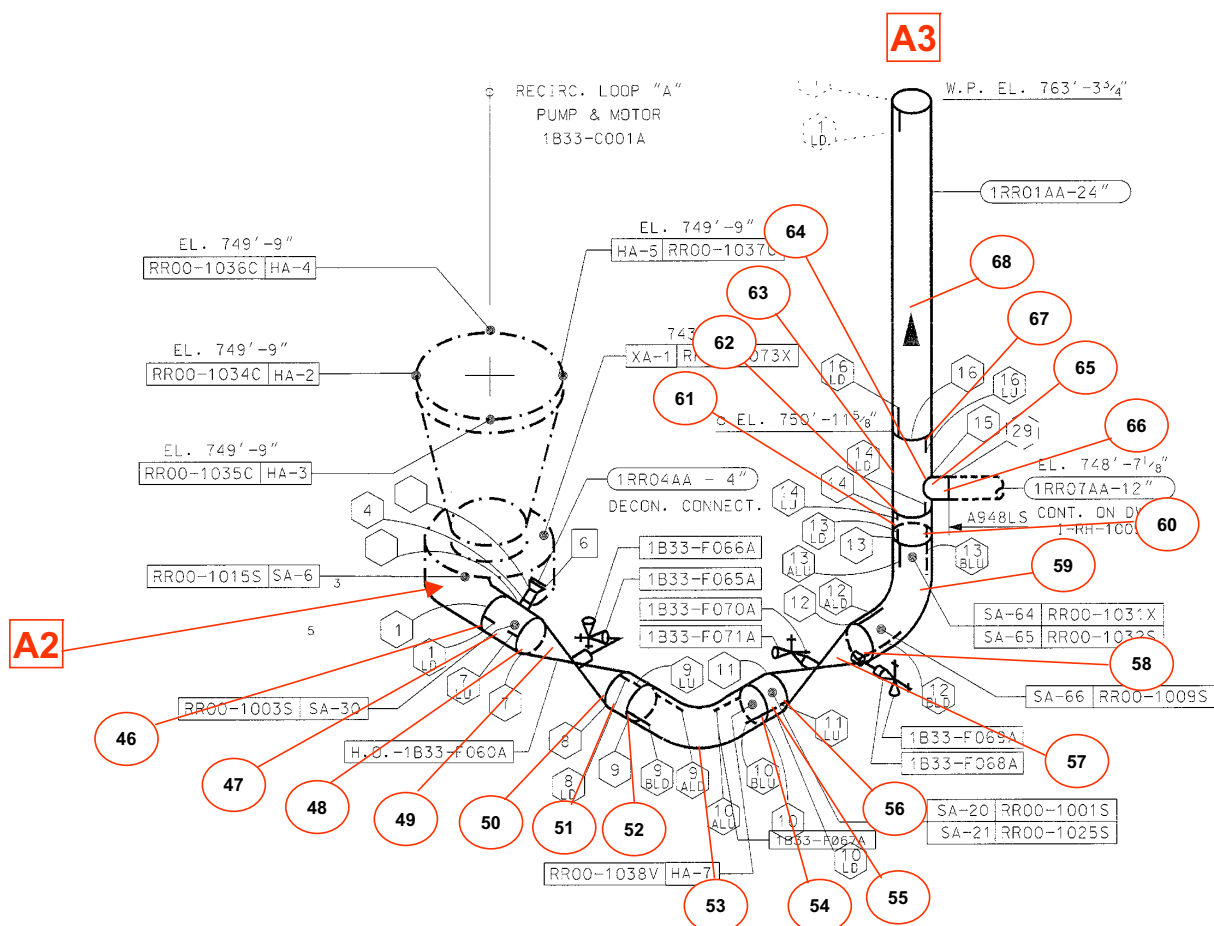


HEAD SPRAY NOZZLE

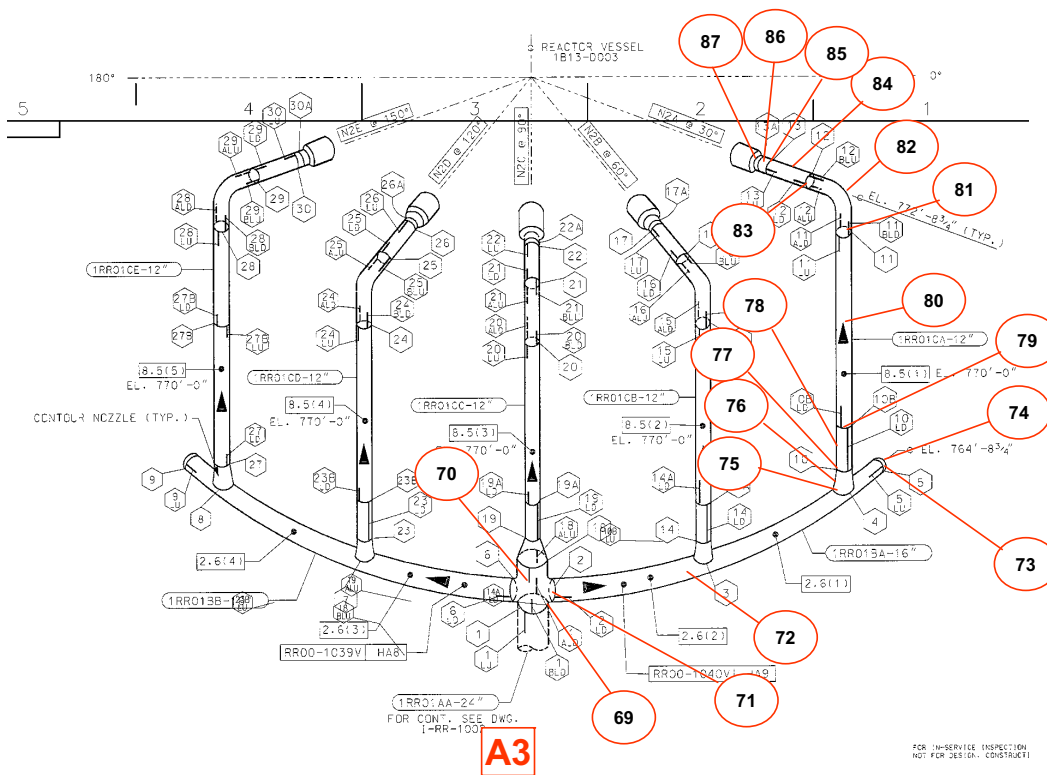
GROUP 9 – REACTOR COOLANT RECIRCULATION SYSTEM (Sheet 1 of 4)
(Covers Worksheets RCS-RECIRC – 1 thru 90)



GROUP 9 – REACTOR COOLANT RECIRCULATION SYSTEM (Sheet 2 of 4)



GROUP 9 – REACTOR COOLANT RECIRCULATION SYSTEM (Sheet 3 of 4) **(Covers Worksheets RCS-RECIRC – 1 thru 90)**

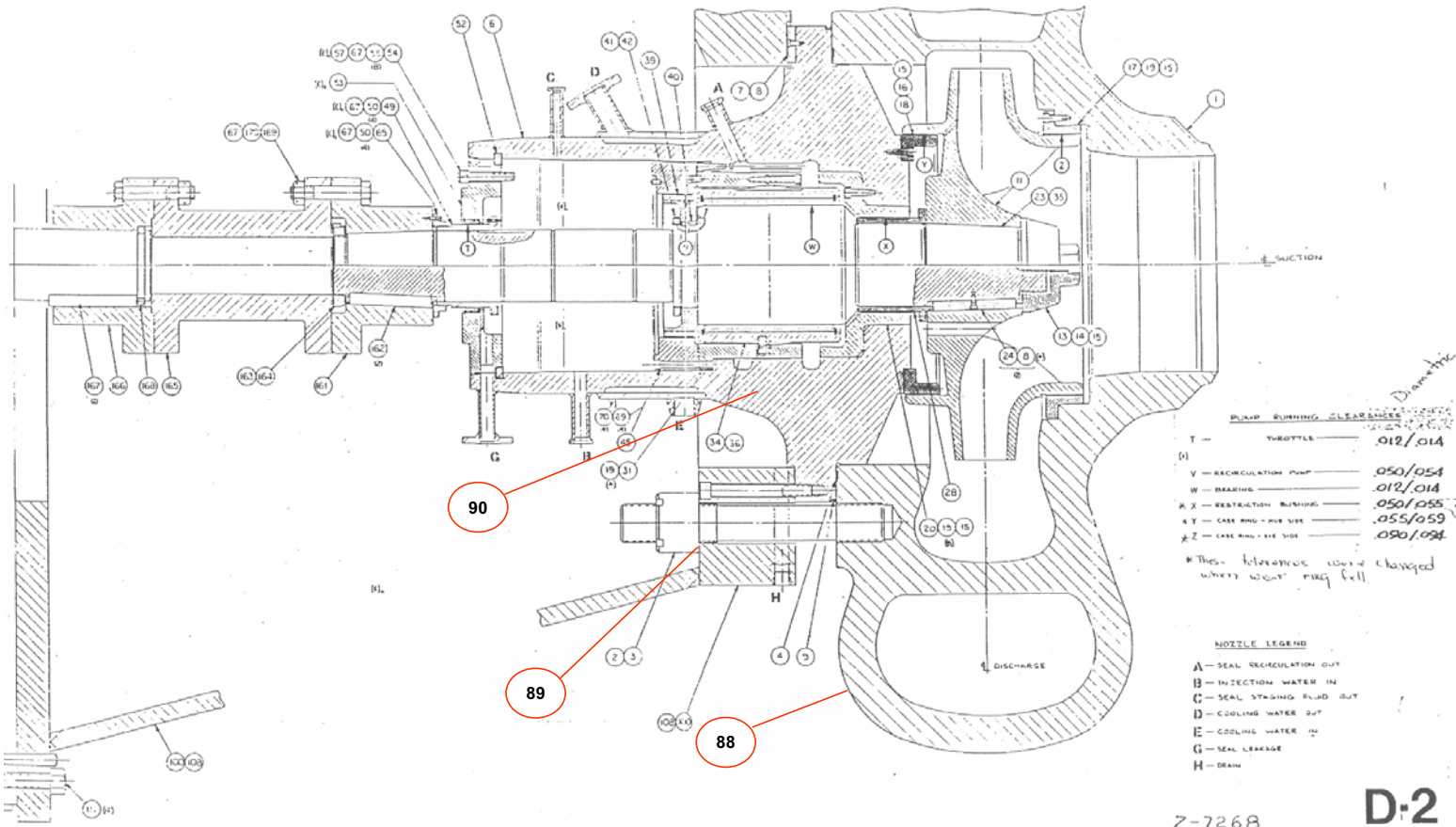


GROUP 9 – REACTOR COOLANT RECIRCULATION SYSTEM (Sheet 4 of 4)

(Covers Worksheets RCS-RECIRC – 1 thru 90)

9/179

App. F.2 - BWR Systems Drawings

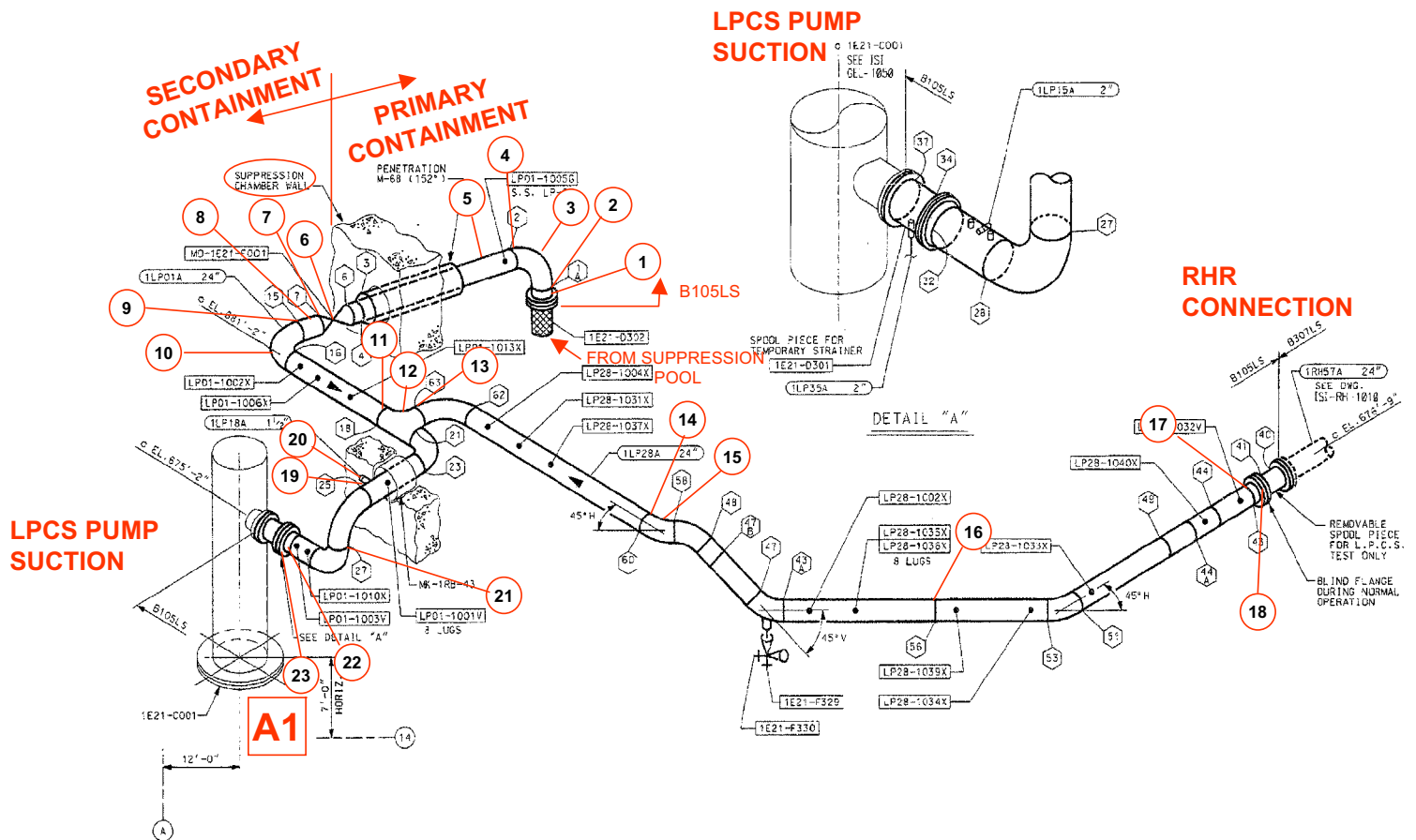


RR PUMP

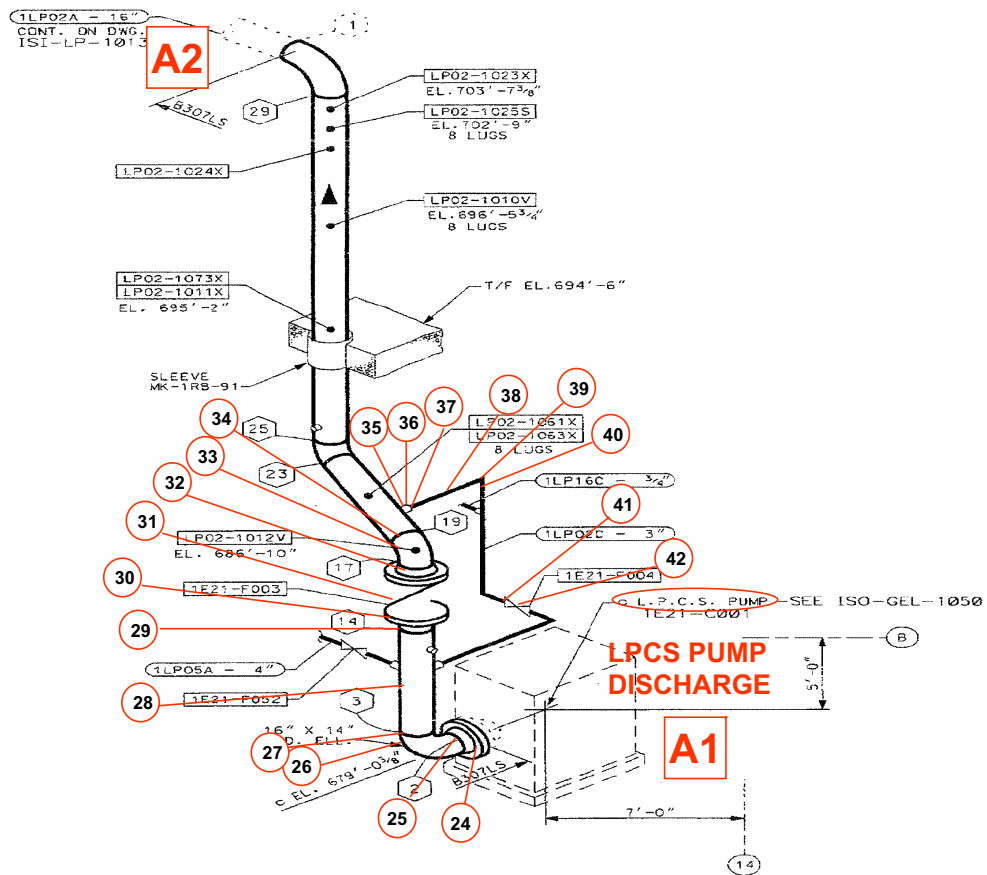
Z-726B

D-2

70/179
App. F.2 - BWR Systems Drawings

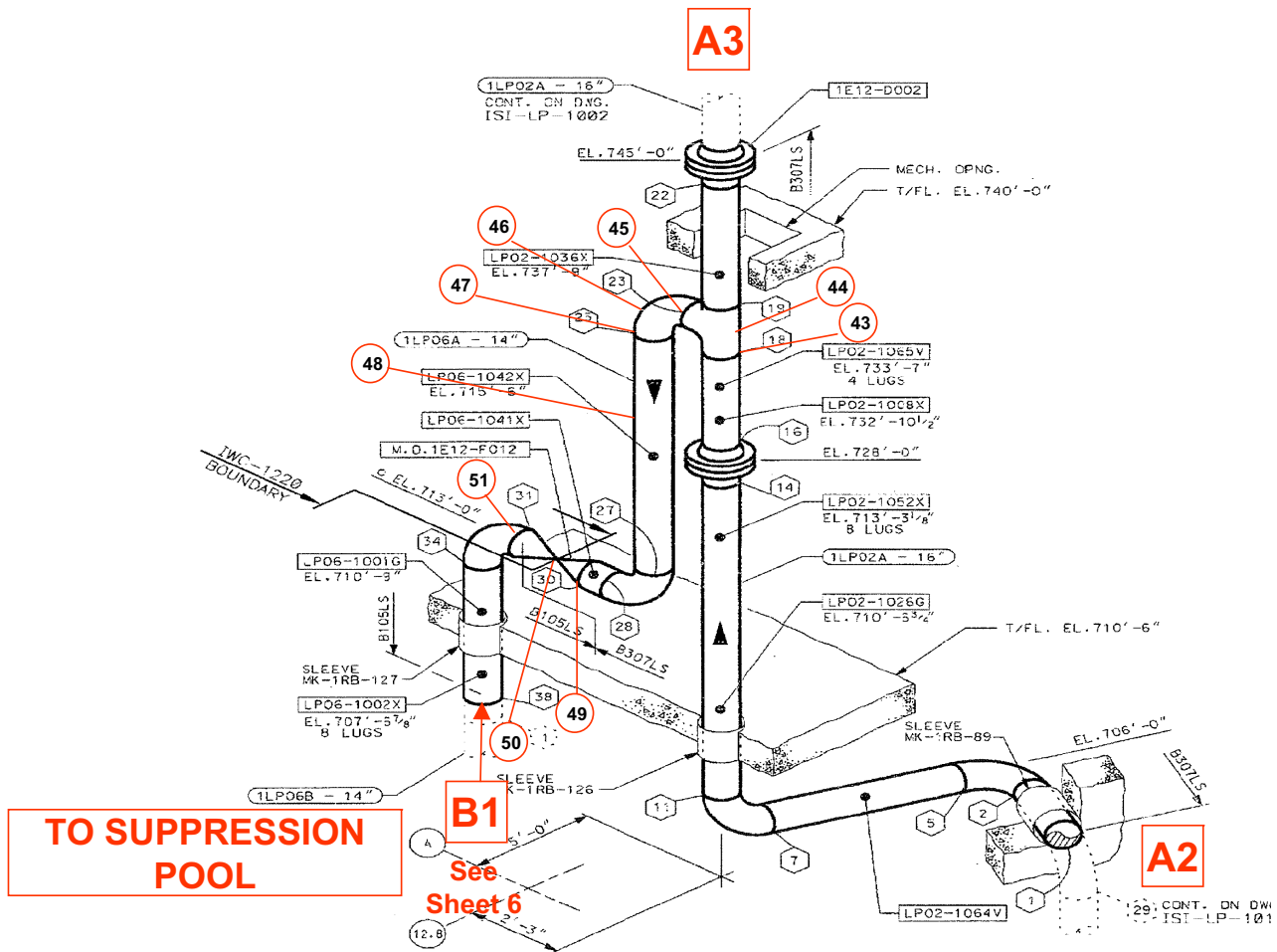


71/179
App. F.2 - BWR Systems Drawings



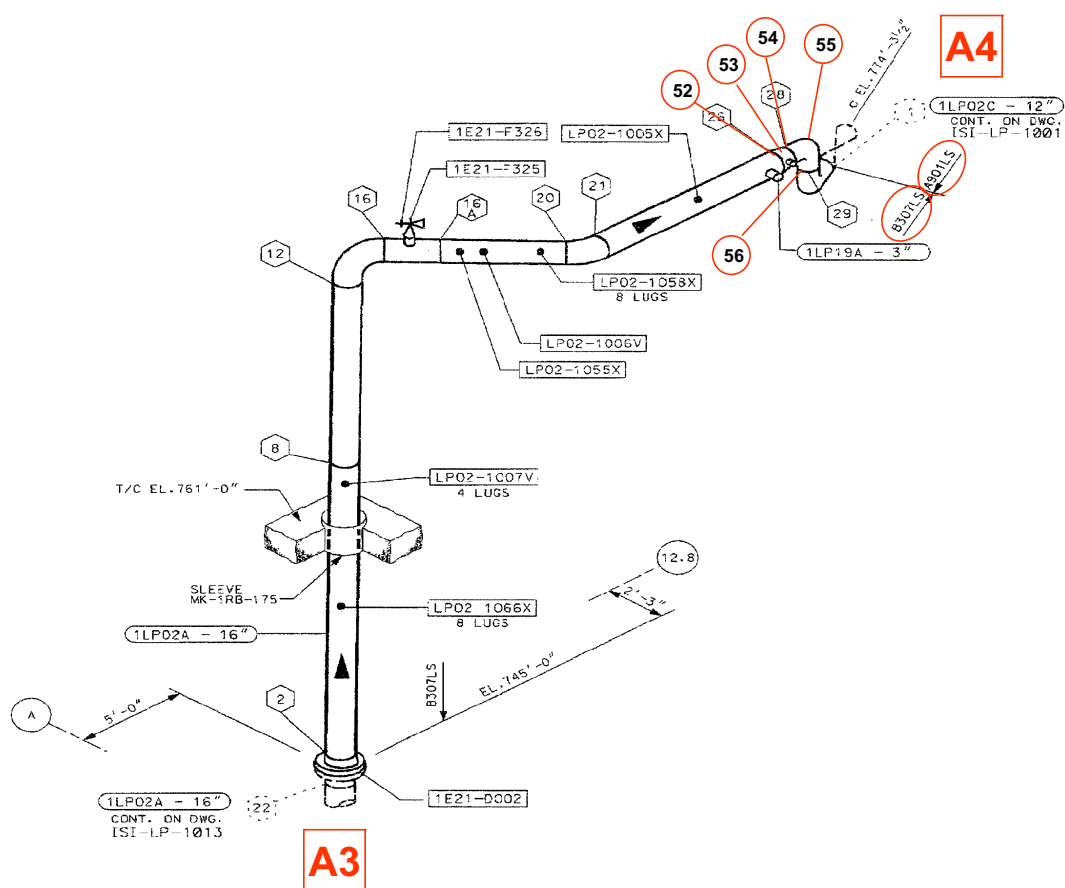
GROUP 10 – LOW PRESSURE CORE SPRAY (Sheet 3 of 10) **(Covers Worksheets ECCS-LPCS – 1 thru 96)**

72/179
 App. F.2 BWR Systems Drawings



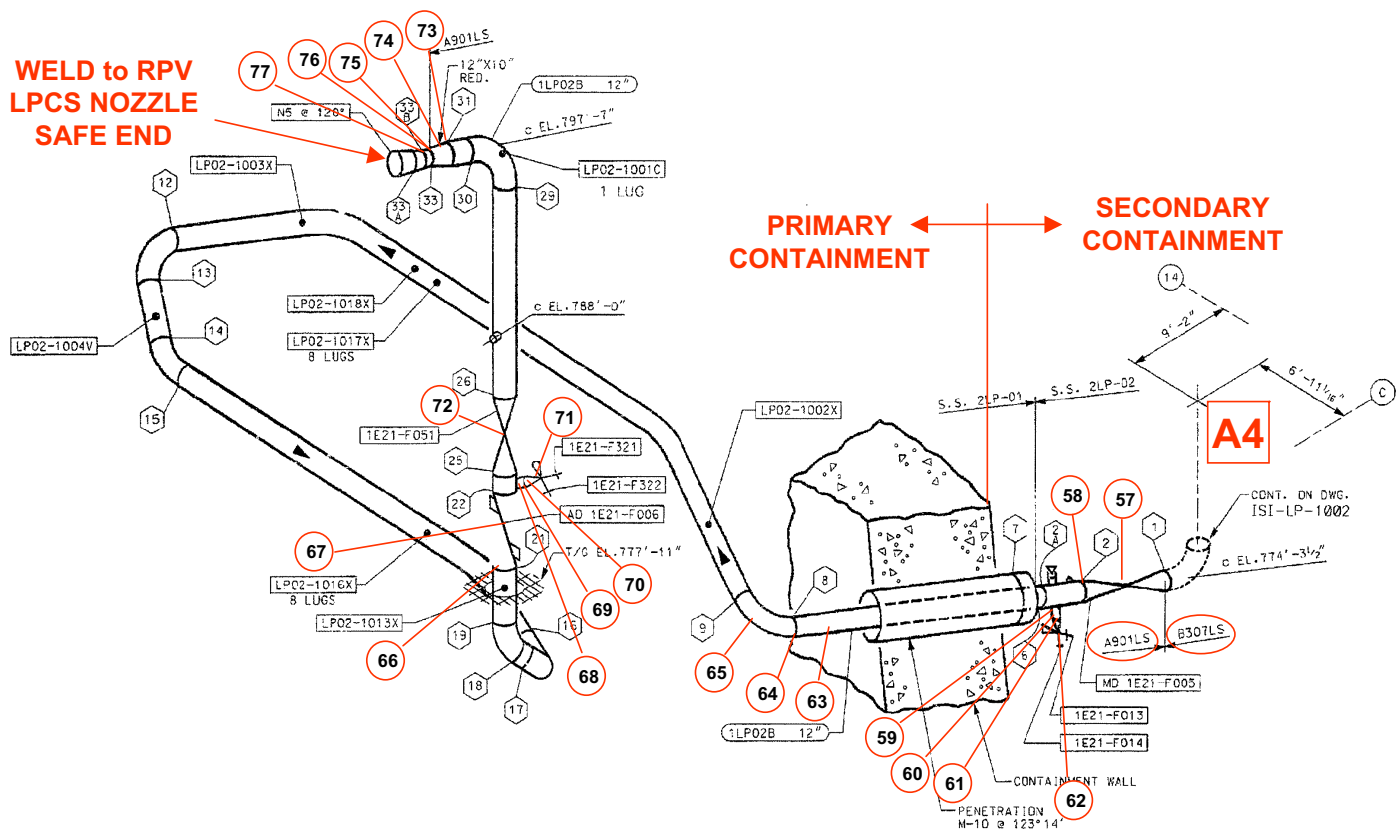
(Covers Worksheets ECCS-LPCS – 1 thru 96)

App. F.2 - BWR Systems Drawings



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App. F - BWR Systems Drawings

GROUP 10 – LOW PRESSURE CORE SPRAY (Sheet 5 of 10) (Covers Worksheets ECCS-LPCS – 1 thru 96)



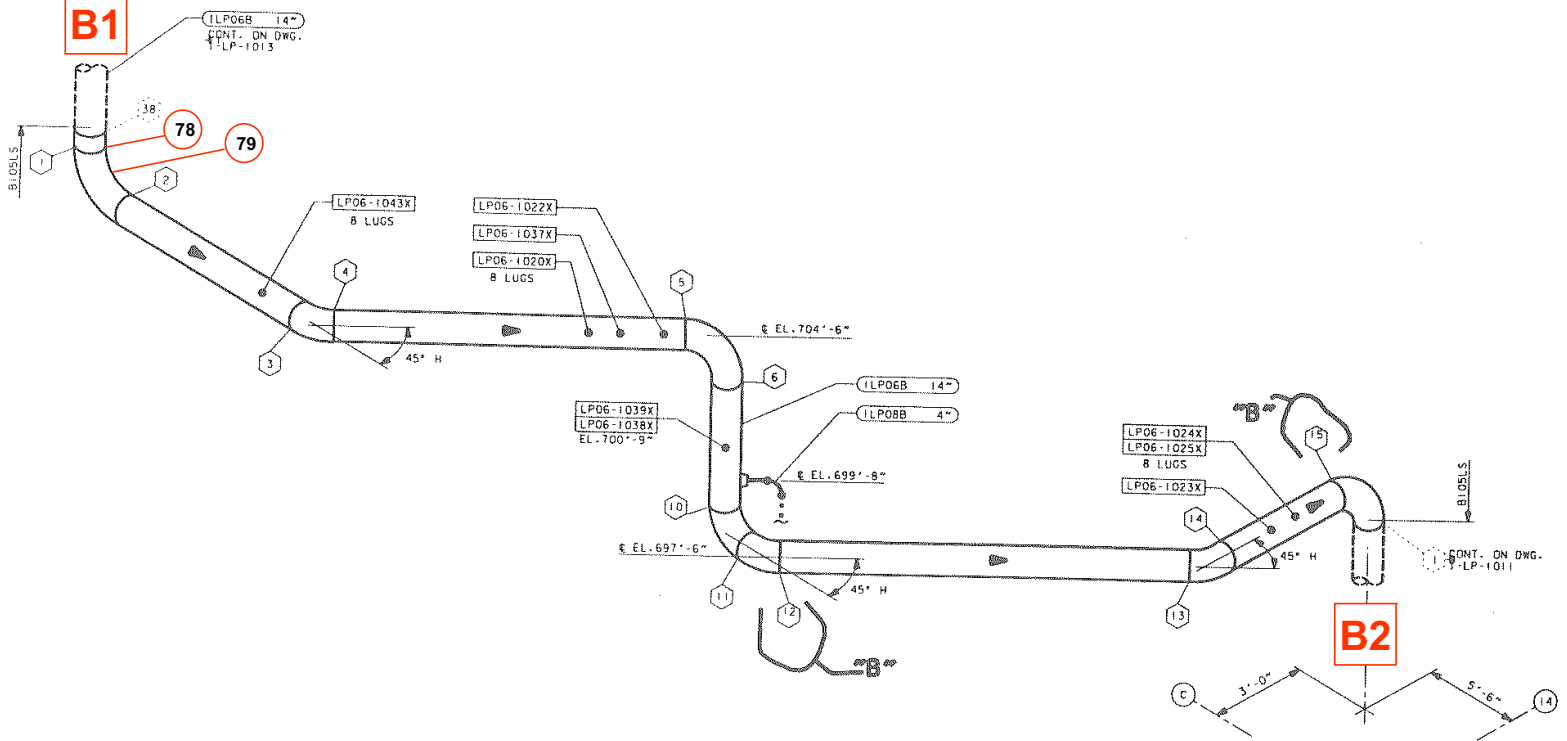
GROUP 10 – LOW PRESSURE CORE SPRAY (Sheet 6 of 10)

(Covers Worksheets ECCS-LPCS – 1 thru 96)

75/179
App. F.2 - BWR Systems Drawings

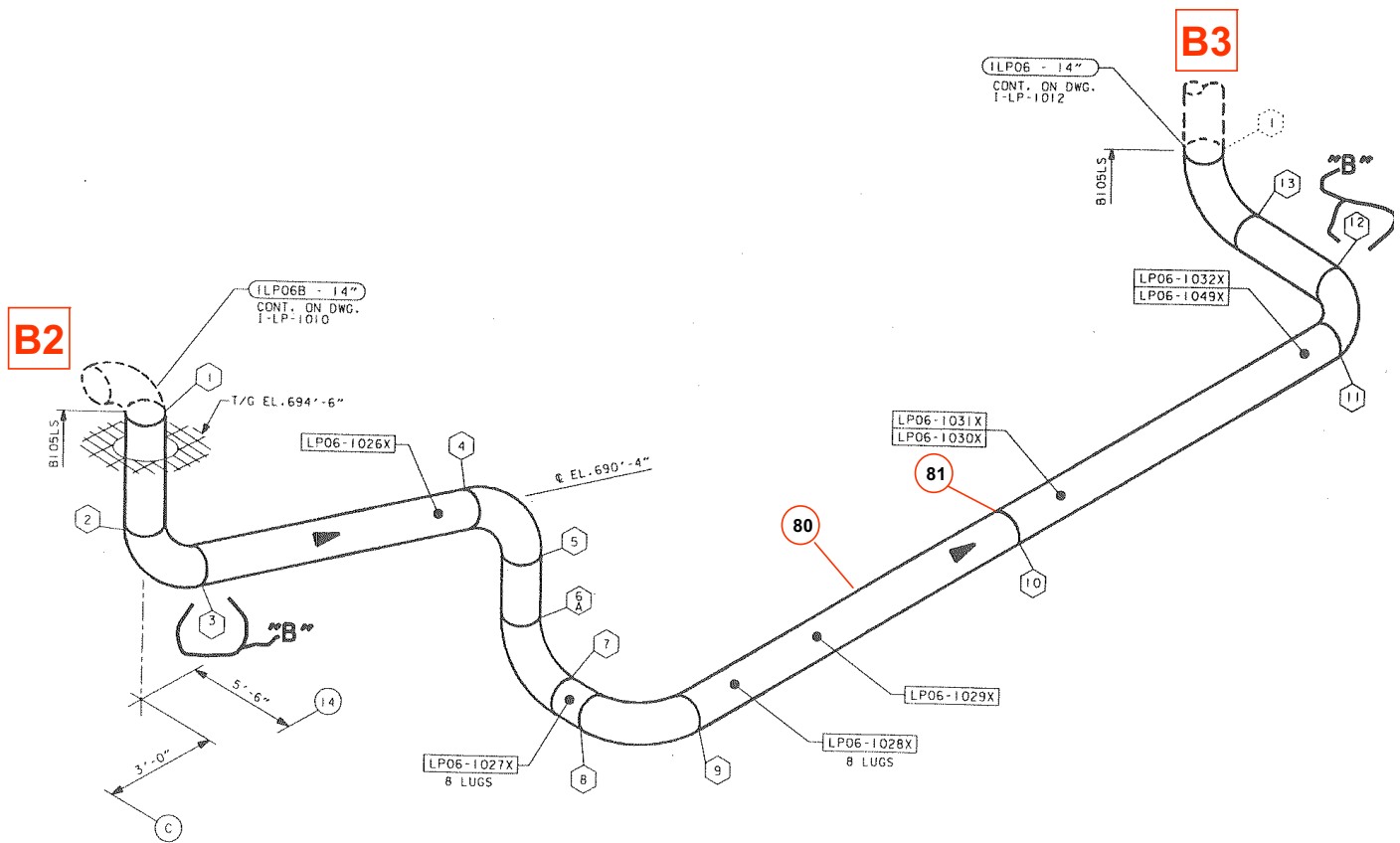
From
Sheet 3

B1



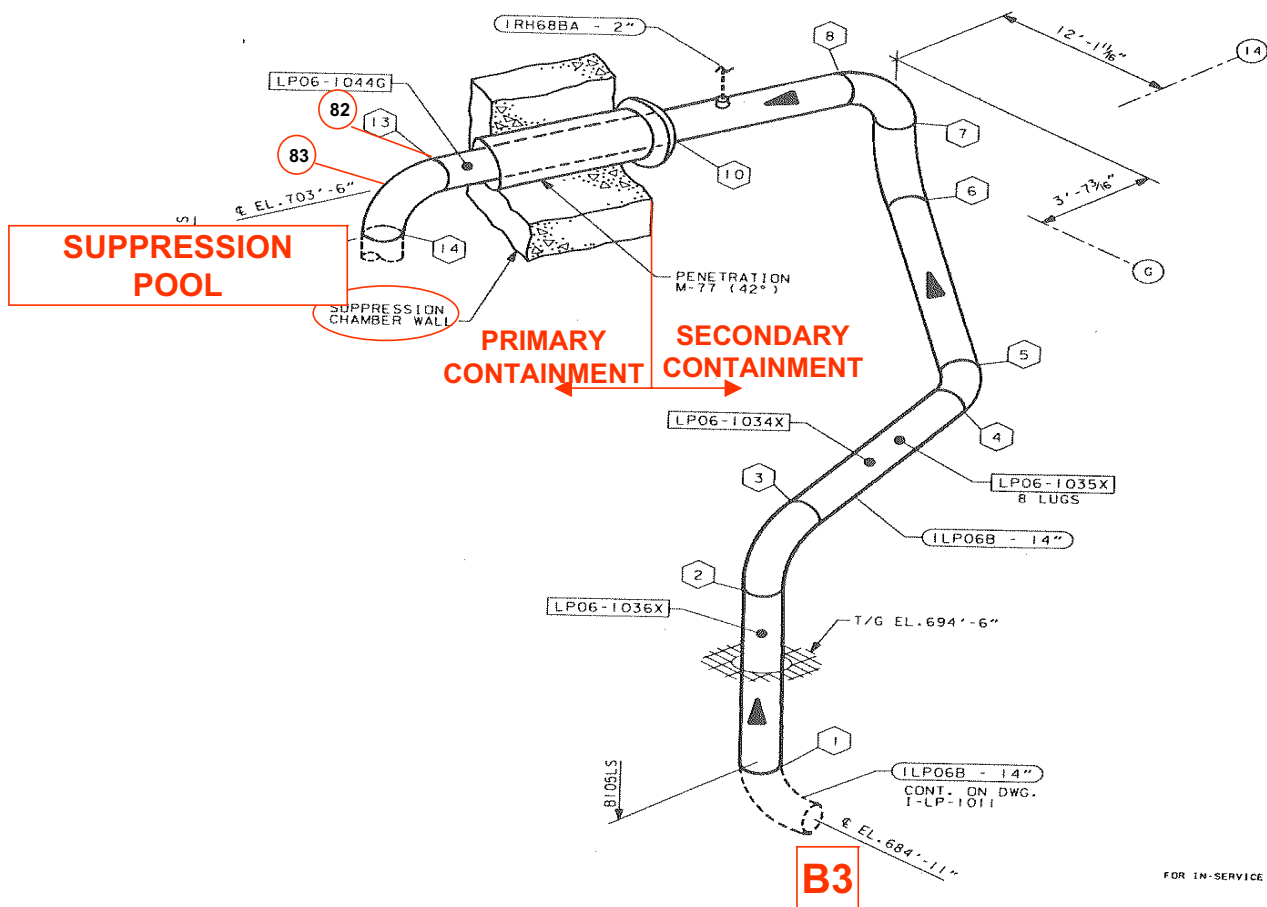
B2

of 10) 76/179
App. F.2 - BWR Systems Drawings



GROUP 10 – LOW PRESSURE CORE SPRAY (Sheet 8 of 10) **(Covers Worksheets ECCS-LPCS – 1 thru 96)**

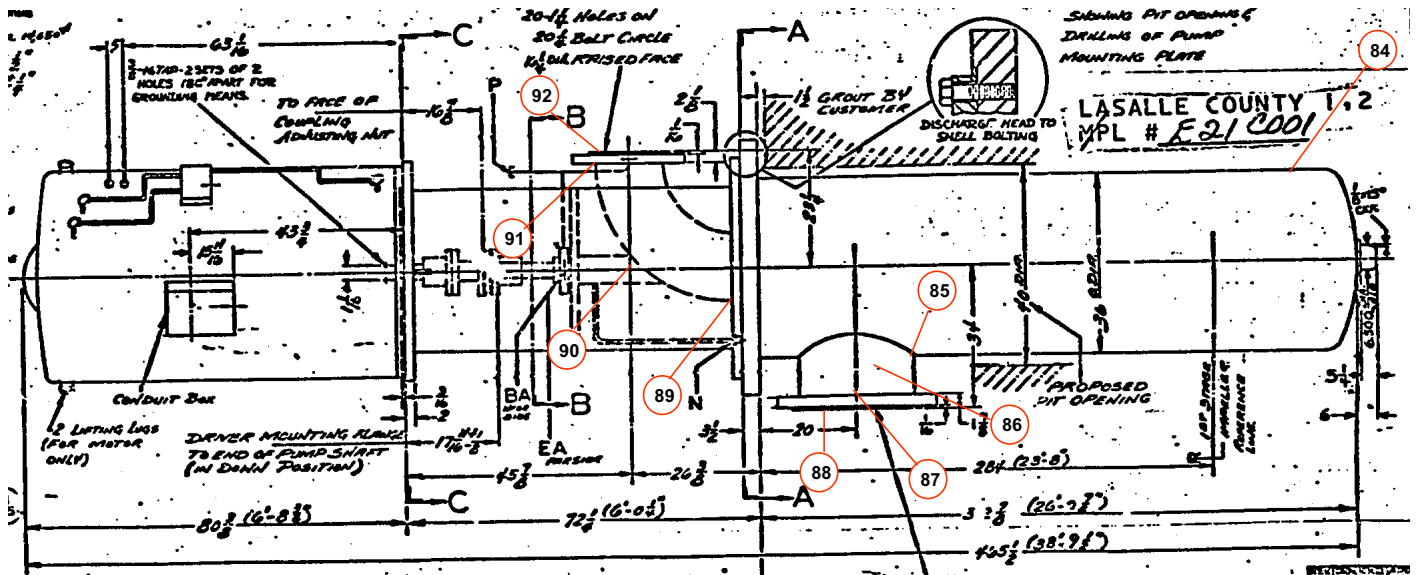
77/179
 App. F.2 - BWR Systems Drawings



FOR IN-SERVICE II

GROUP 10 – LOW PRESSURE CORE SPRAY (Sheet 9 of 10)
(Covers Worksheets ECCS-LPCS – 1 thru 96)

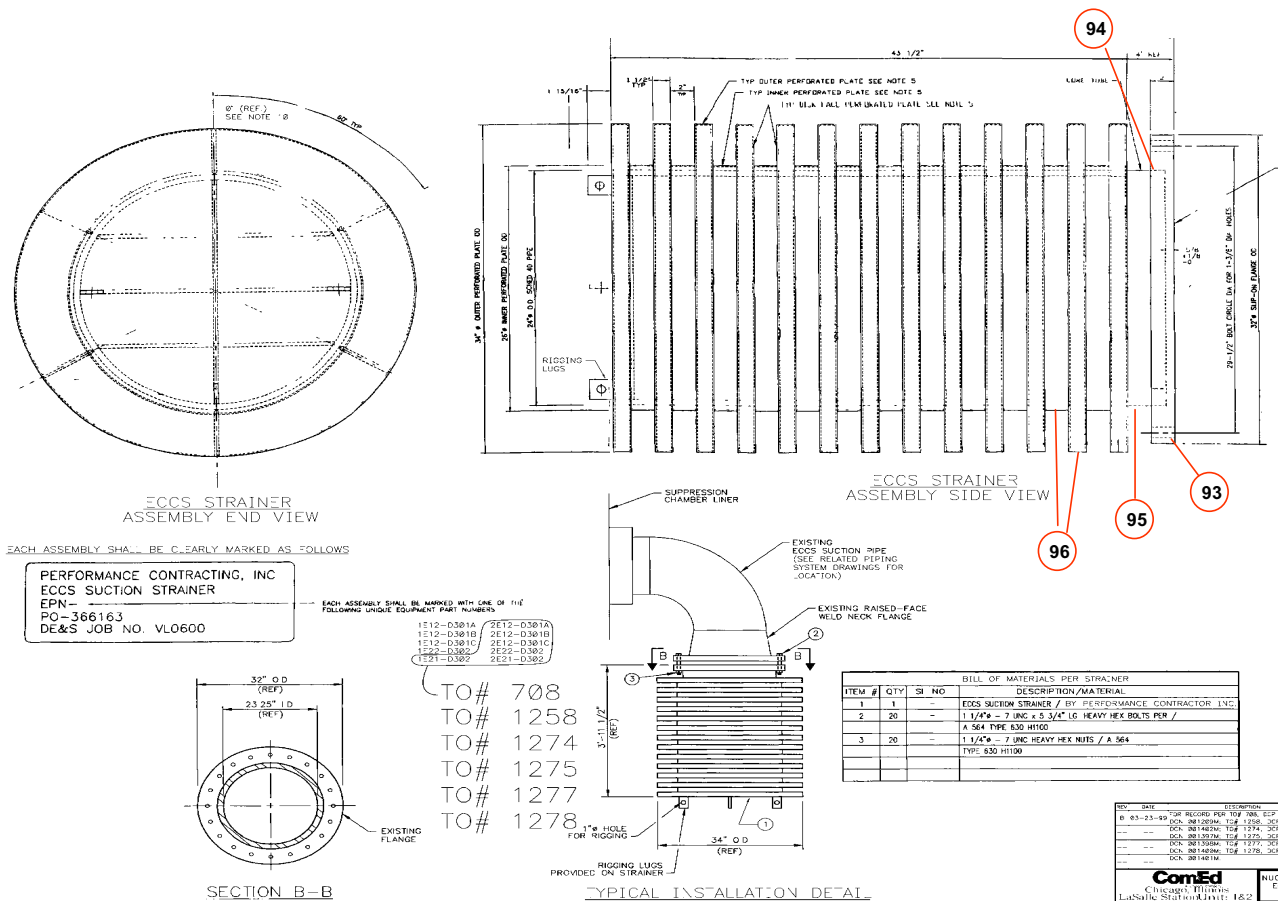
78/179
 App. F.2 - BWR Systems Drawings



LPCS PUMP E21 C001

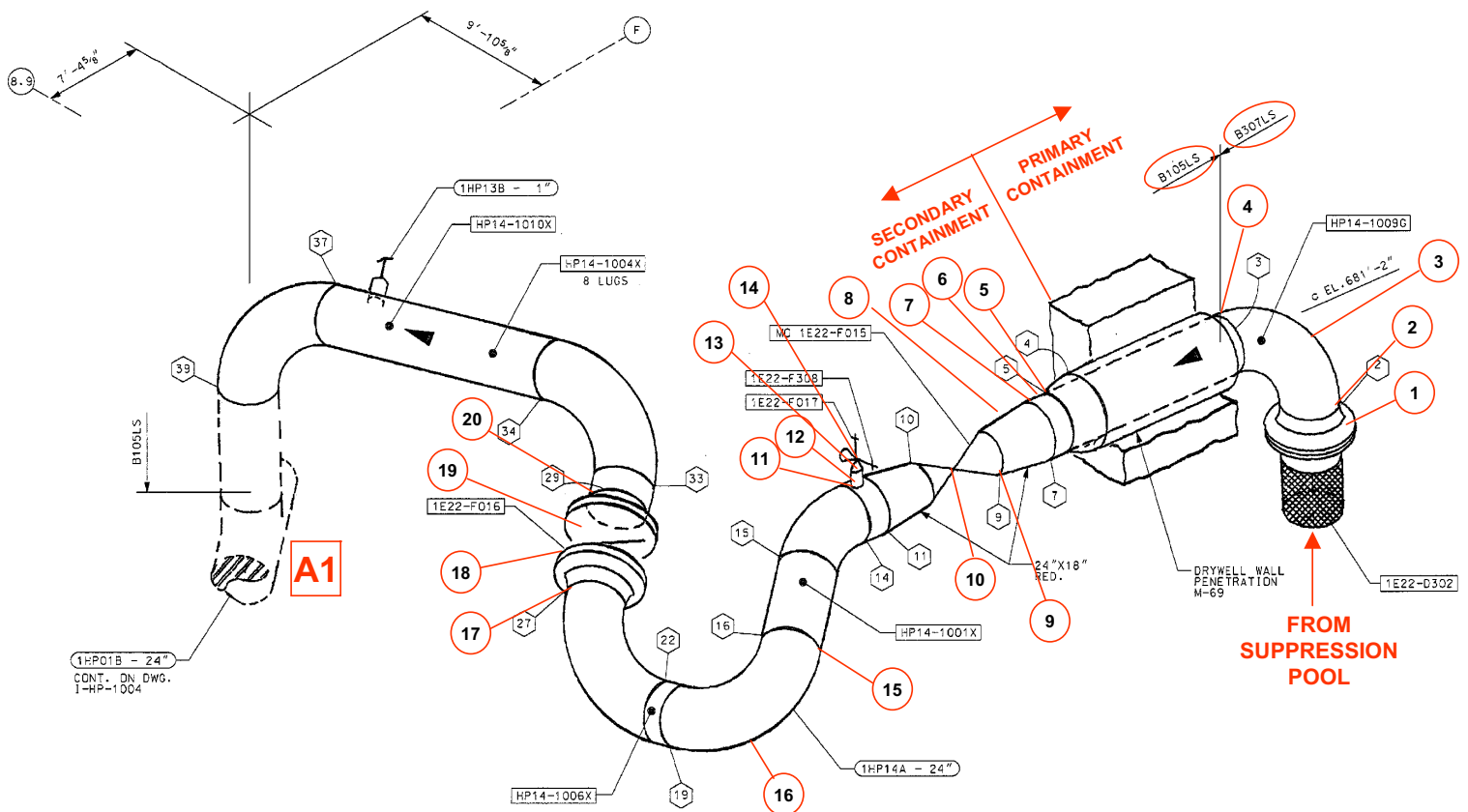
GROUP 10 – LOW PRESSURE CORE SPRAY (Sheet 10 of 10)
(Covers Worksheets ECCS-LPCS – 1 thru 96)

79/179
App. F.2 – BWR Systems Drawings

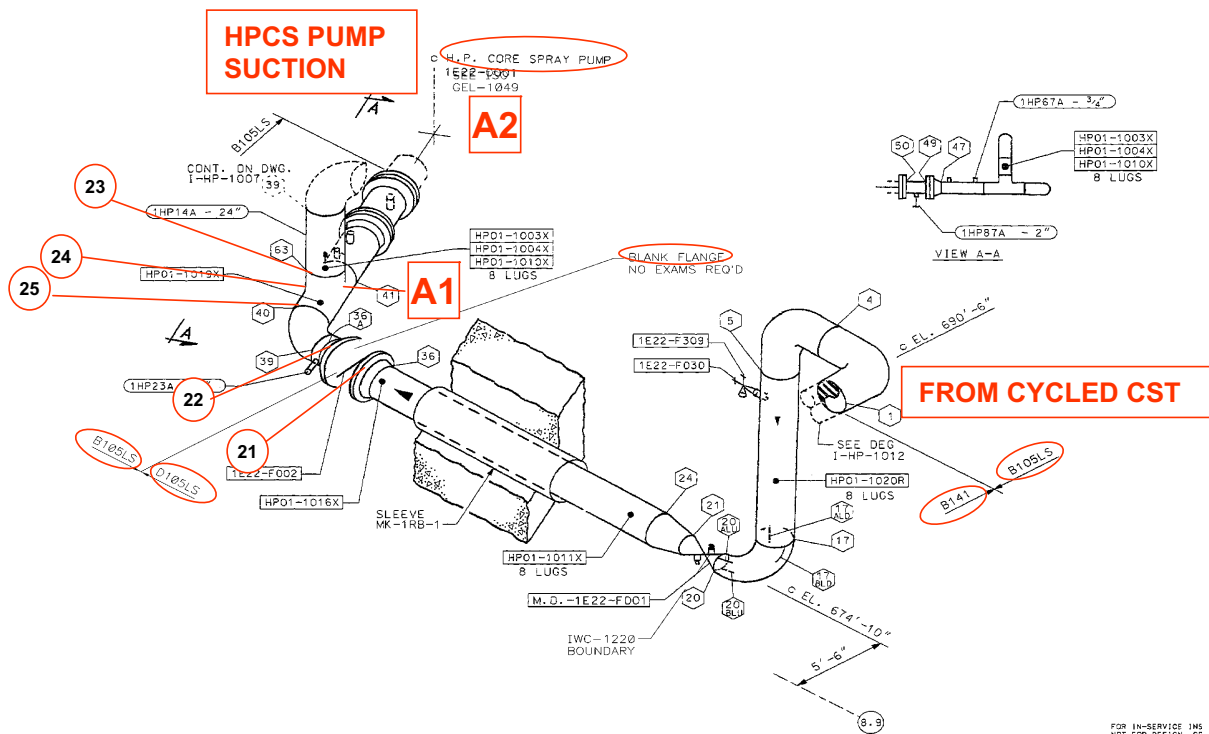


SUPPRESSION POOL SUCTION STRAINER
(LPCS, HPCS, AND RHR)

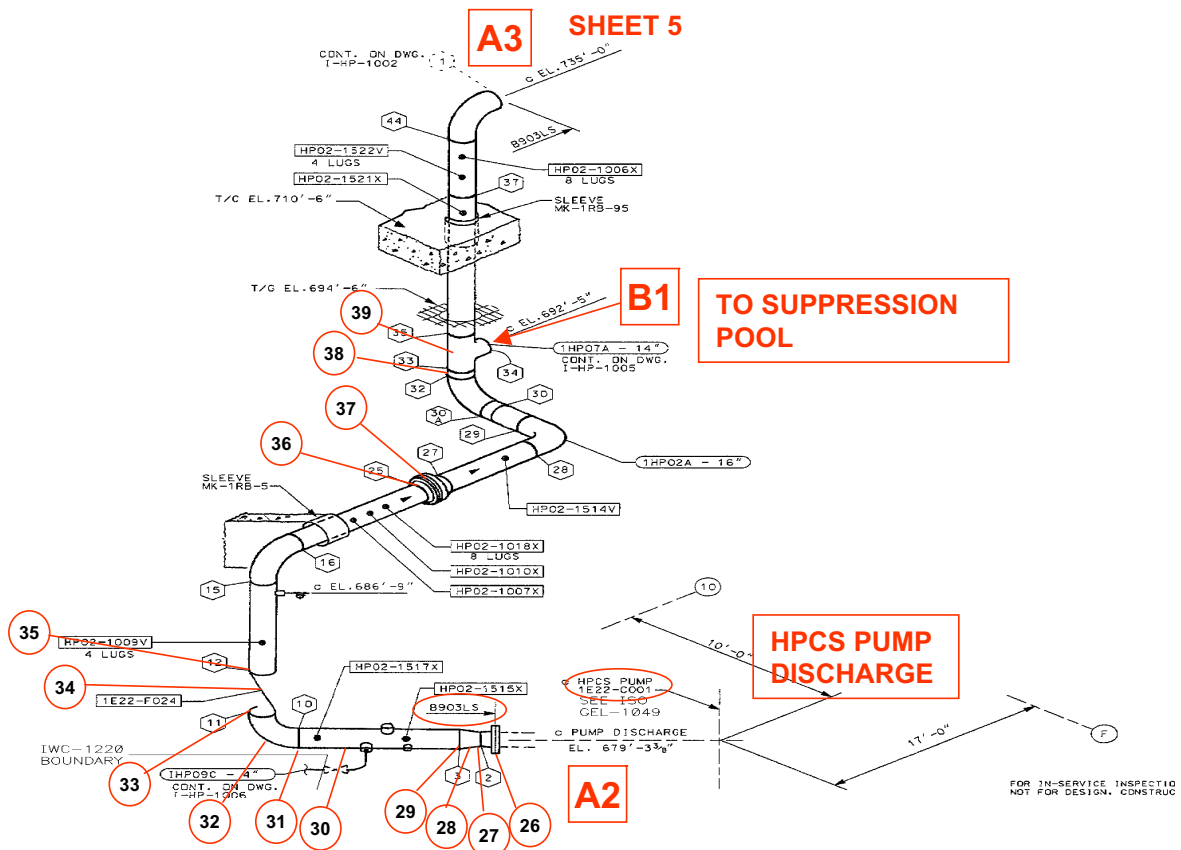
80/179
App. F.2 - BWR Systems Drawings



2 of 7) 81/179
App. F.2 - BWR Systems Drawings

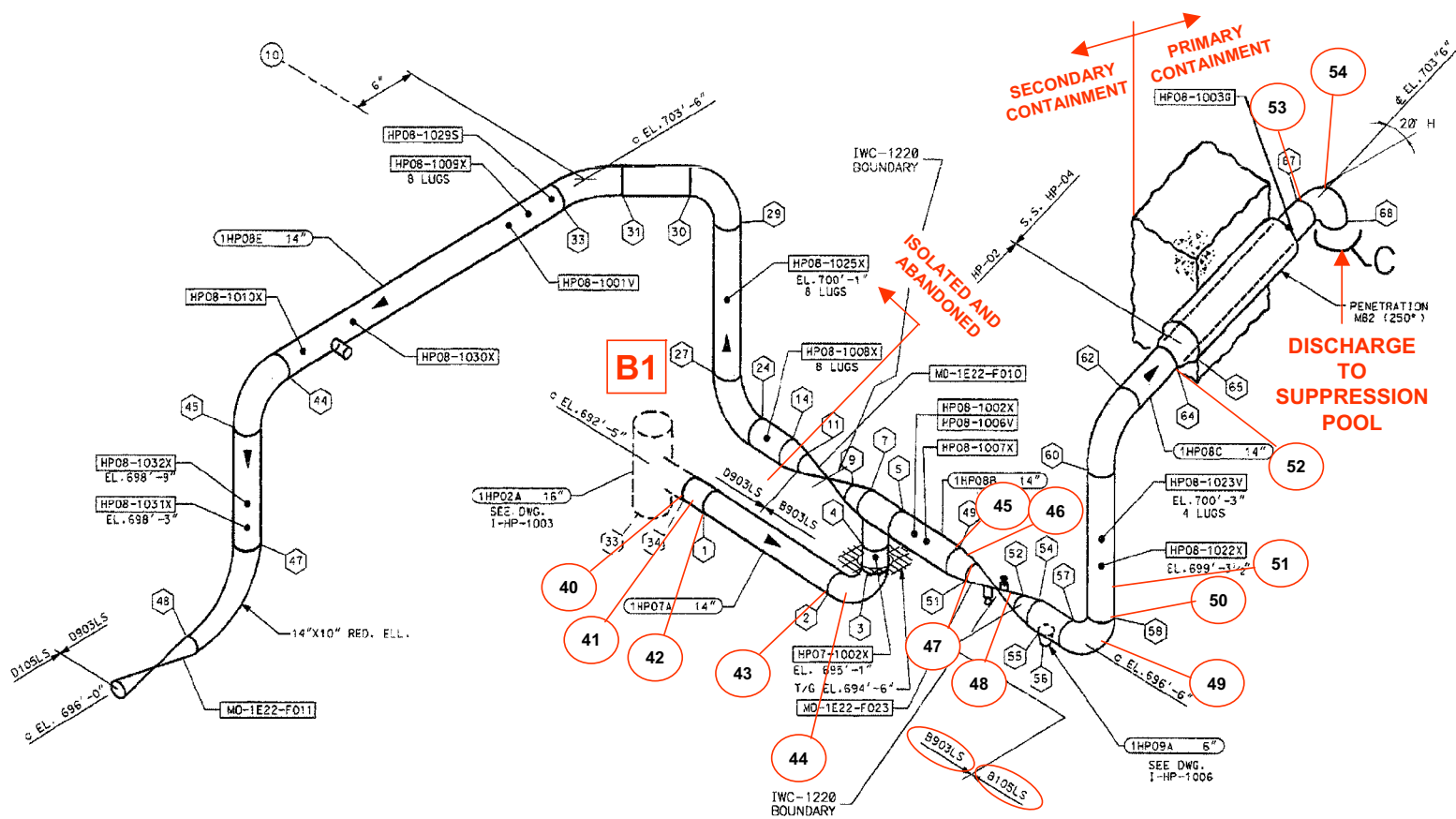


3 of 7) 82/179
App. F.2- BWR Systems Drawings



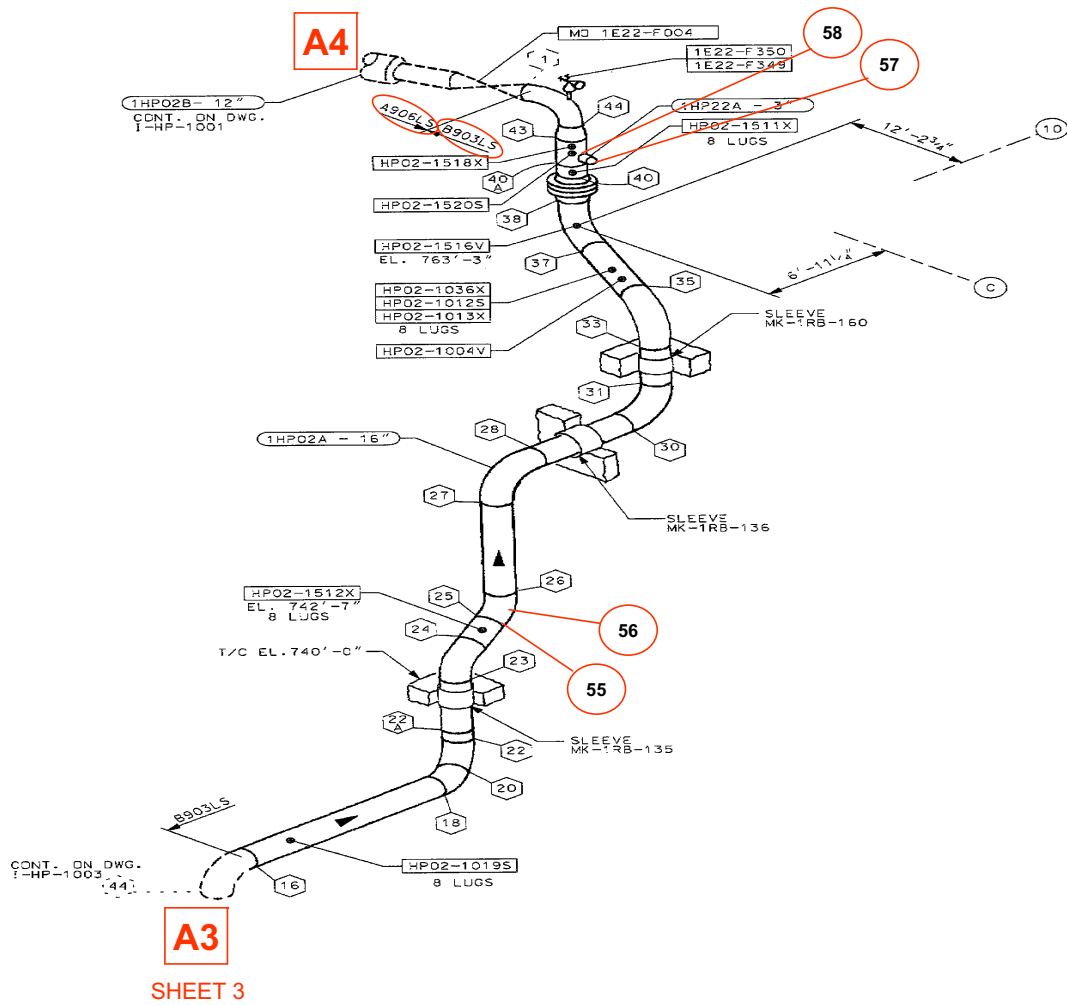
GROUP 11 – HIGH PRESSURE CORE SPRAY (Sheet 4 of 7)
(Covers Worksheets ECCS-HPCS – 1 thru 83)

83/179
App. 7.2 - BWR Systems Drawings



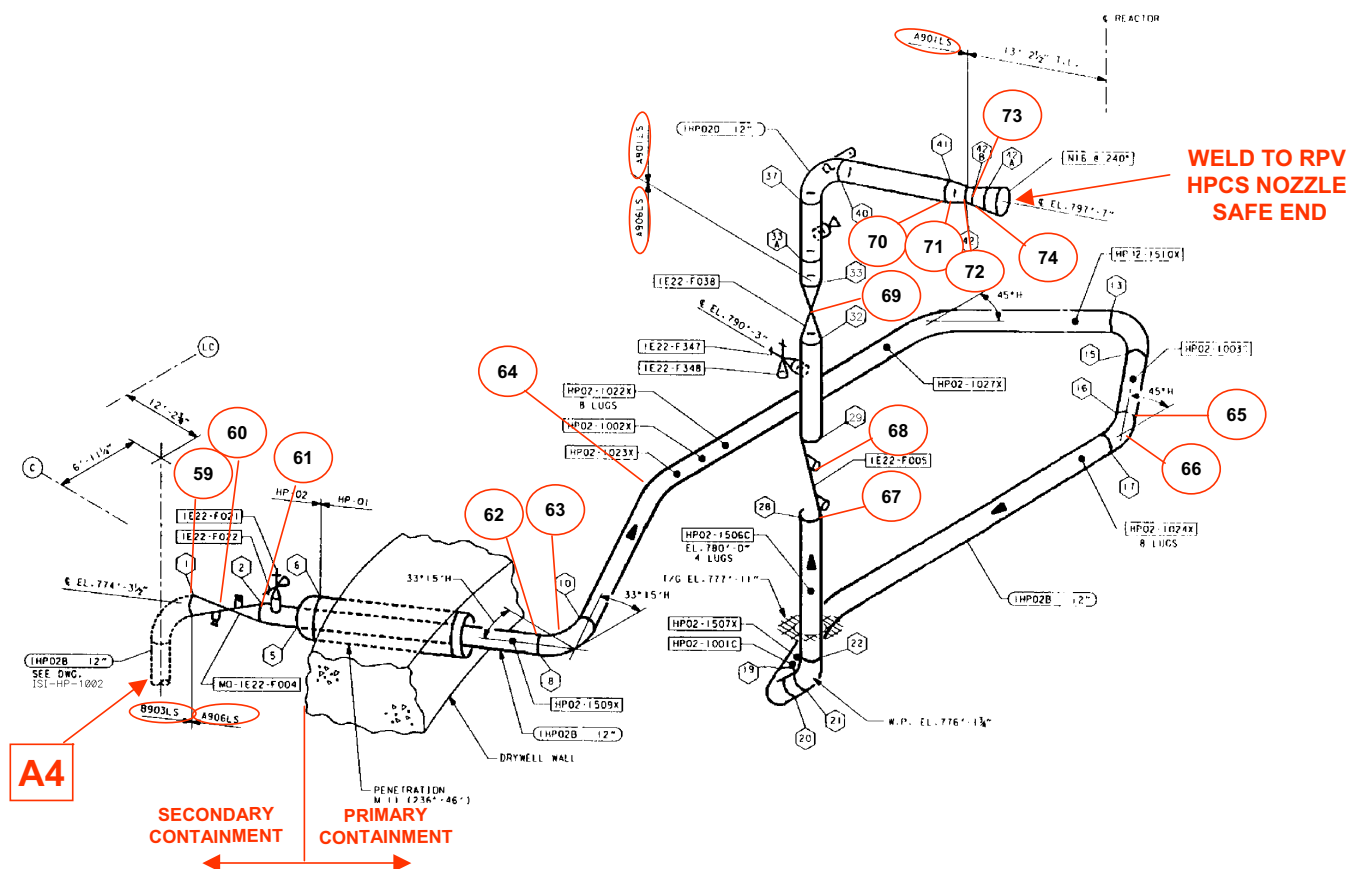
84/179
BWR Systems Drawings

GROUP 11 – HIGH PRESSURE CORE SPRAY (Sheet 5 of 7) (Covers Worksheets ECCS-HPCS – 1 thru 83)



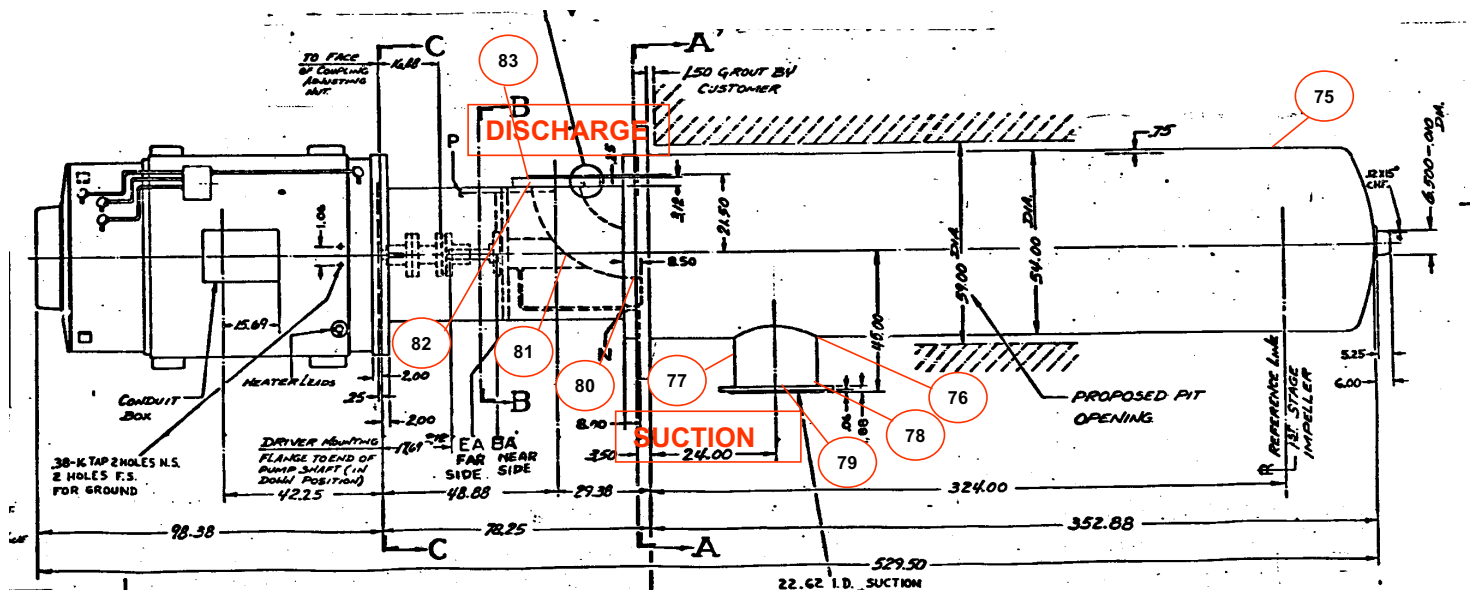
(Covers Worksheets ECCS-HPCS – 1 thru 83)

App. F.2 - BWR Systems Drawings



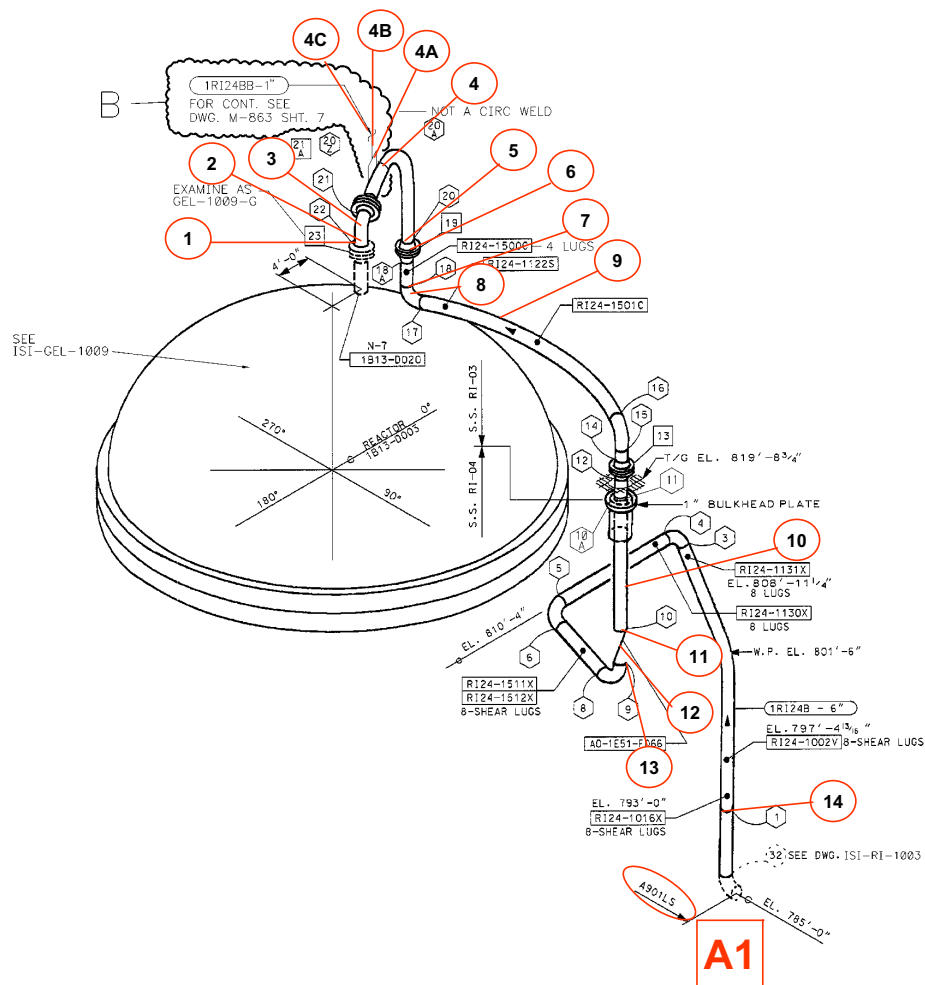
GROUP 11 – HIGH PRESSURE CORE SPRAY (Sheet 7 of 7) **(Covers Worksheets ECCS-HPCS – 1 thru 83)**

86/179
 App. F.2 - BWR Systems Drawings

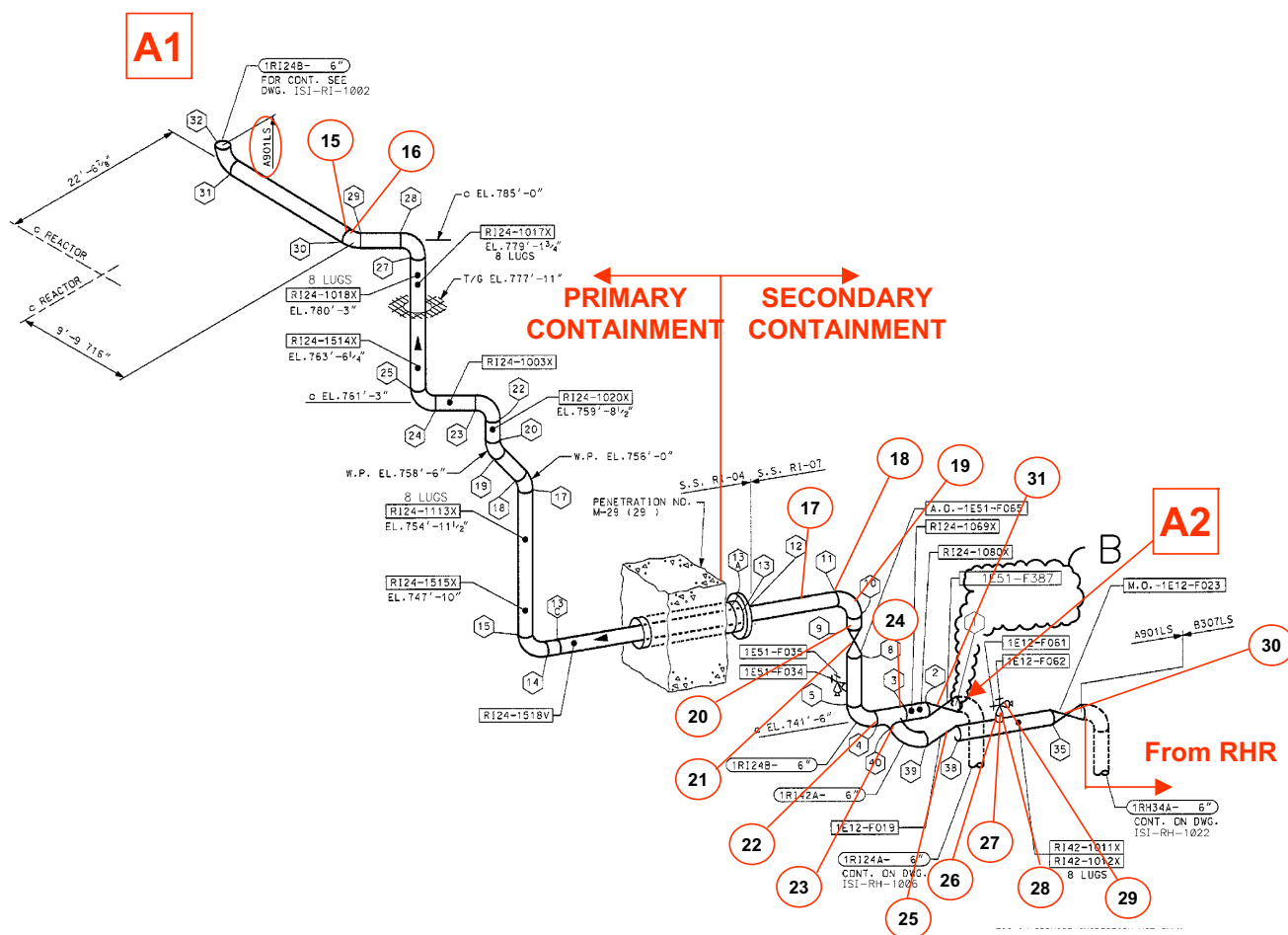


HPCS PUMP (IE22C001)

Sheet 1 of 7) 87/179
App. F.2 - BWR Systems Drawings

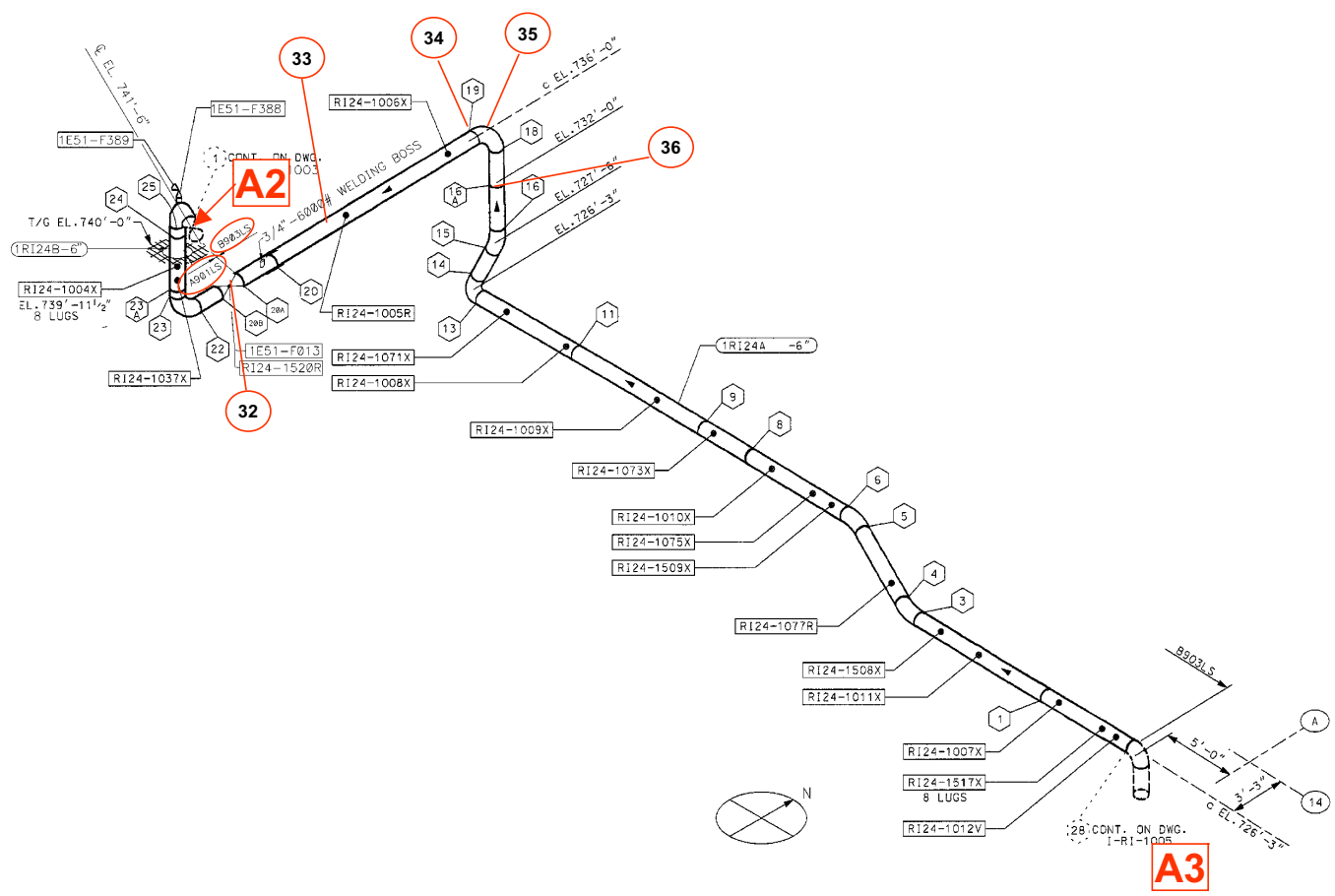


et 2 of 7) 88/179
App. F.2 - BWR Systems Drawings



GROUP 12 – REACTOR CORE ISOLOATION COOLING (Sheet 3 of 7)
(Covers Worksheets AS-RCIC – 1 thru 80)

89/179
App. F.2. BWR Systems Drawings

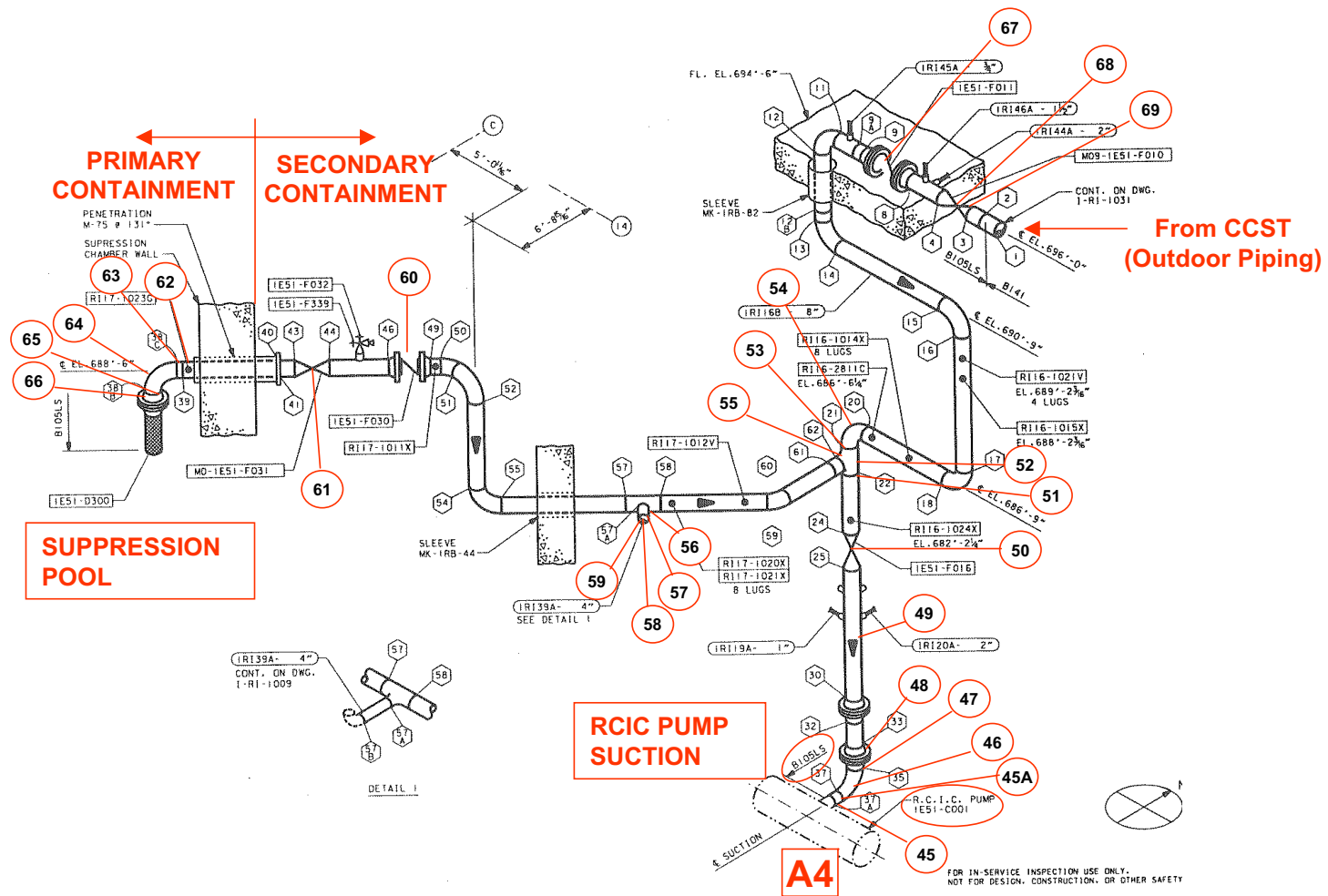


Sheet 4 of 7) 90/179
App. F.2 - BWR Systems Drawings

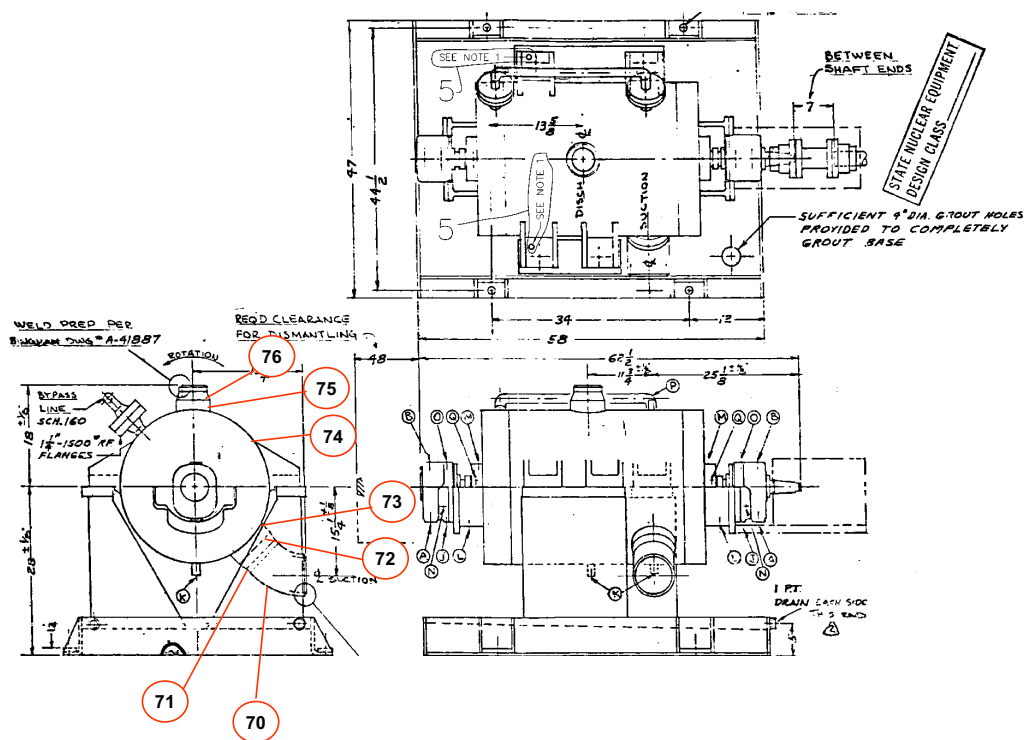


GROUP 12 – REACTOR CORE ISOLOATION COOLING (Sheet 5 of 7)

(Covers Worksheets AS-RCIC – 1 thru 80)

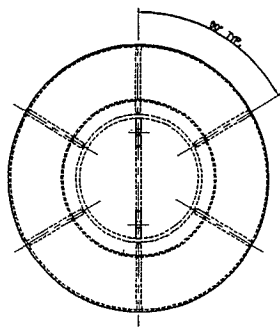


GROUP 12 – REACTOR CORE ISOLOATION COOLING (Sheet 6 of 7) 92/179 **(Covers Worksheets AS-RCIC – 1 thru 80)** App. F.2 - BWR Systems Drawings

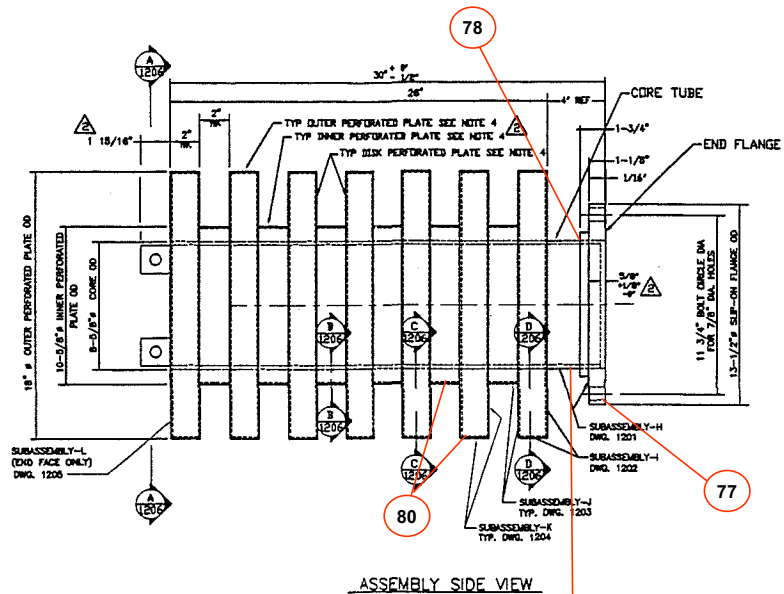


RCIC PUMP (E51-COO1)

GROUP 12 – REACTOR CORE ISOLATION COOLING (Sheet 7 of 7) 93/179
 (Covers Worksheets AS-RCIC – 1 thru 80)
 App. F.2 - BWR Systems Drawings



ASSEMBLY END VIEW A

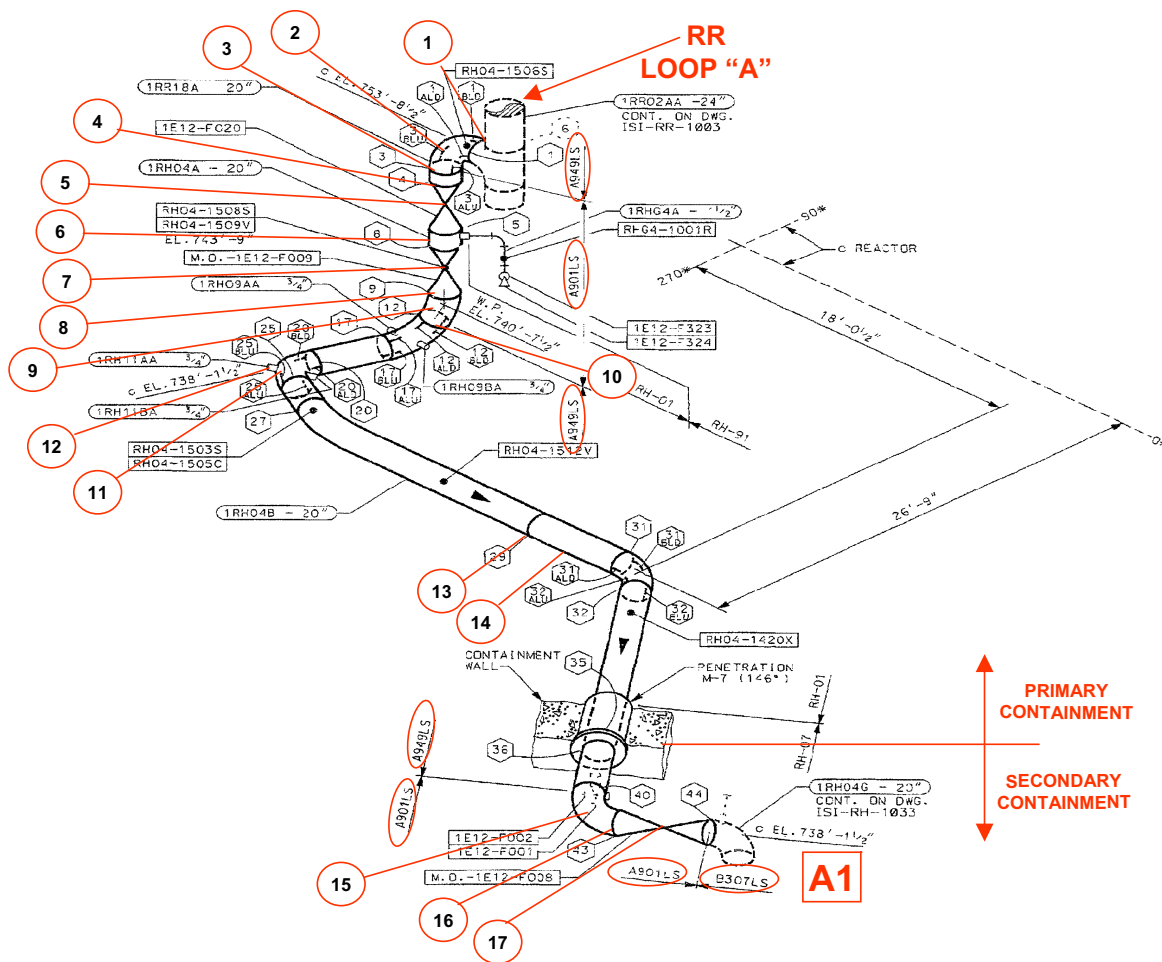


ASSEMBLY SIDE VIEW

**RCIC SUPPRESSION
 POOL STRAINER
 IE51-D300**

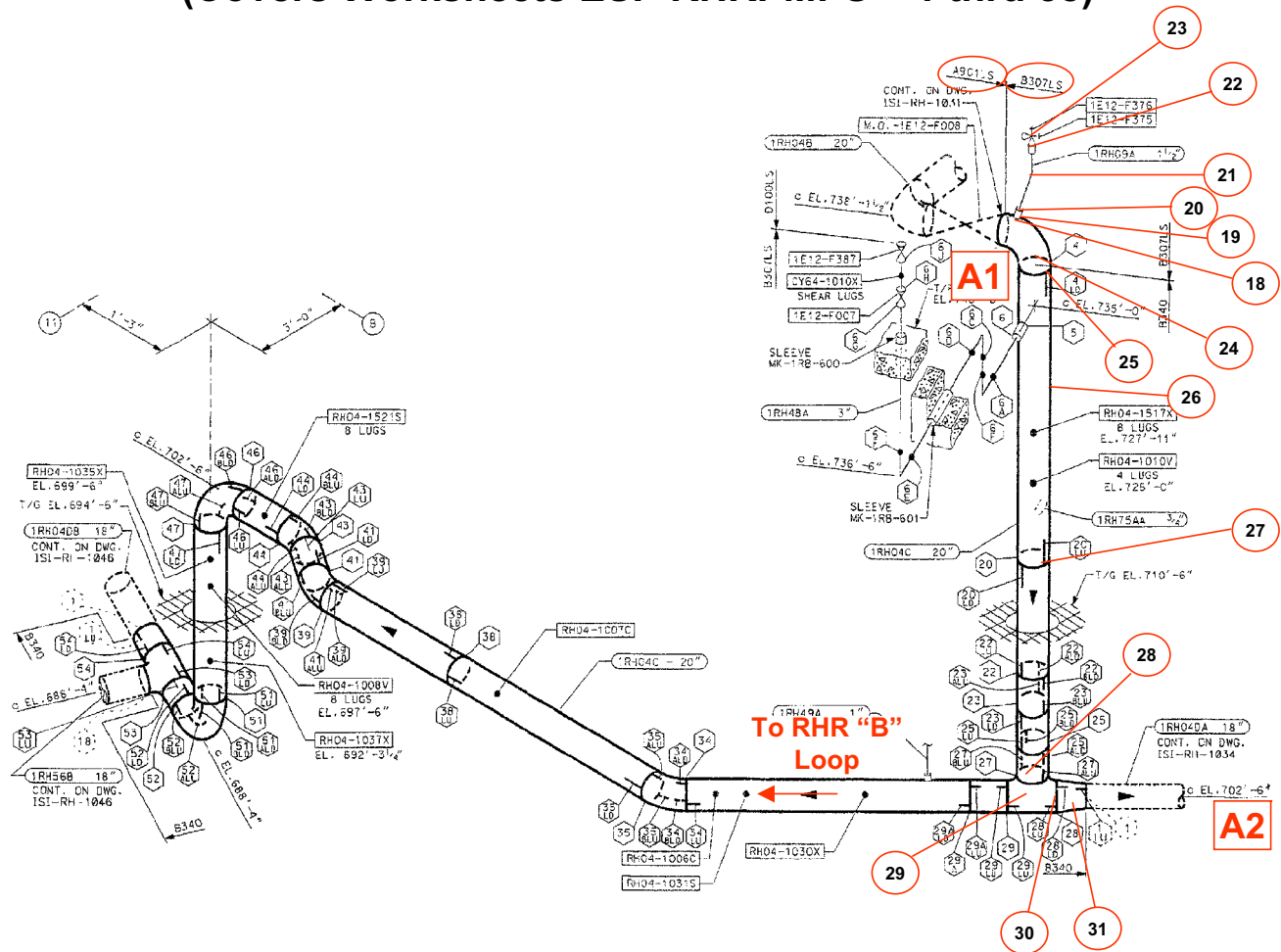
GROUP 13 – RESIDUAL HEAT REMOVAL **SUPPRESSION POOL PIPING TO RHR PUMP (Sheet 1 of 4)** **(Covers Worksheets ESF-RHRPMPs – 1 thru 58)**

94/179
 App. F.2 - BWR Systems Drawings



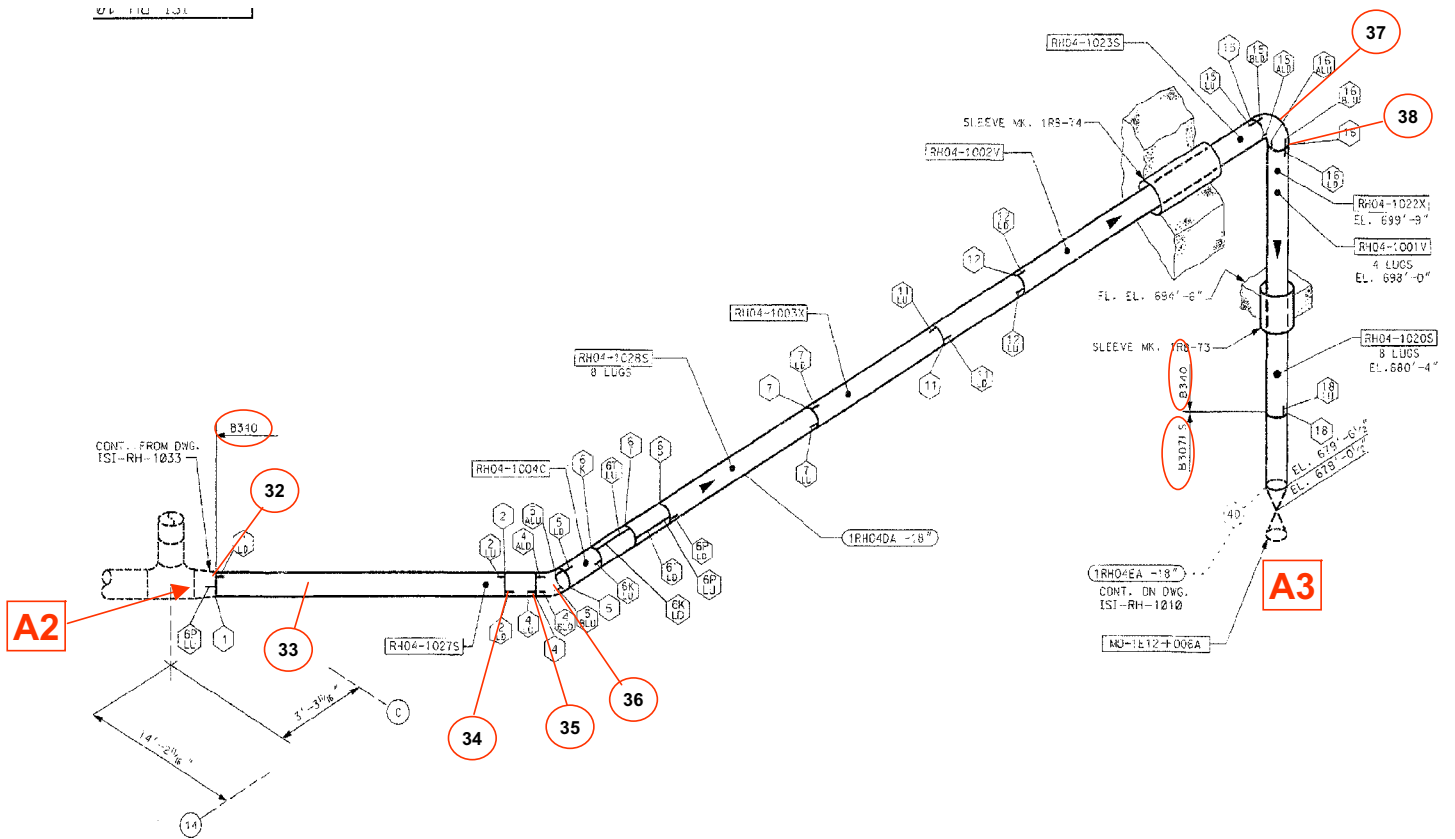
GROUP 13 – RESIDUAL HEAT REMOVAL **SUPPRESSION POOL PIPING TO RHR PUMP (Sheet 2 of 4)** **(Covers Worksheets ESF-RHRPMPs – 1 thru 58)**

95/179
 F.2 - BWR Systems Drawings



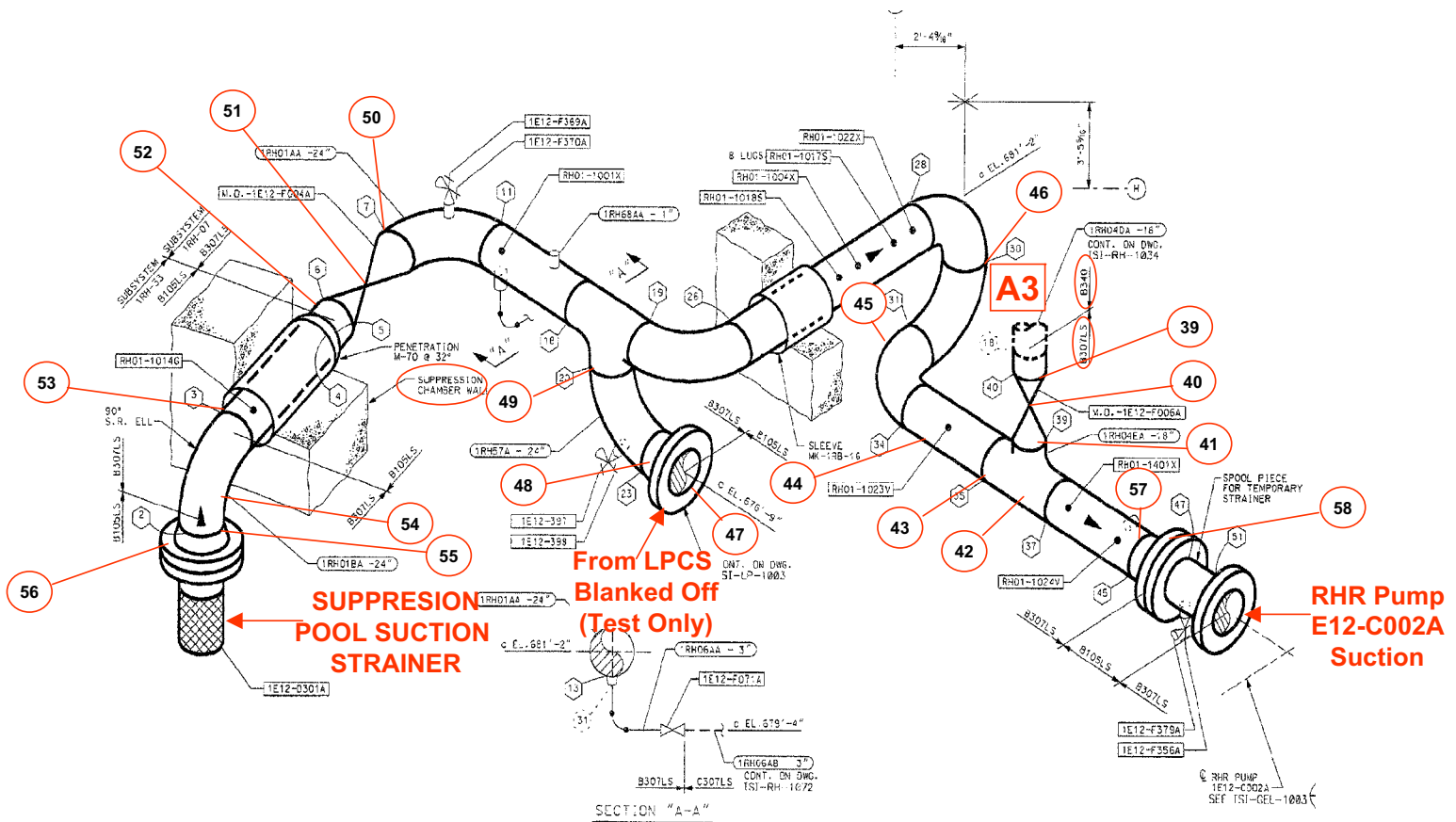
GROUP 13 – RESIDUAL HEAT REMOVAL **SUPPRESSION POOL PIPING TO RHR PUMP (Sheet 3 of 4)** **(Covers Worksheets ESF-RHRPMPs – 1 thru 58)**

96/179
 App. F.2 - BWR Systems Drawings



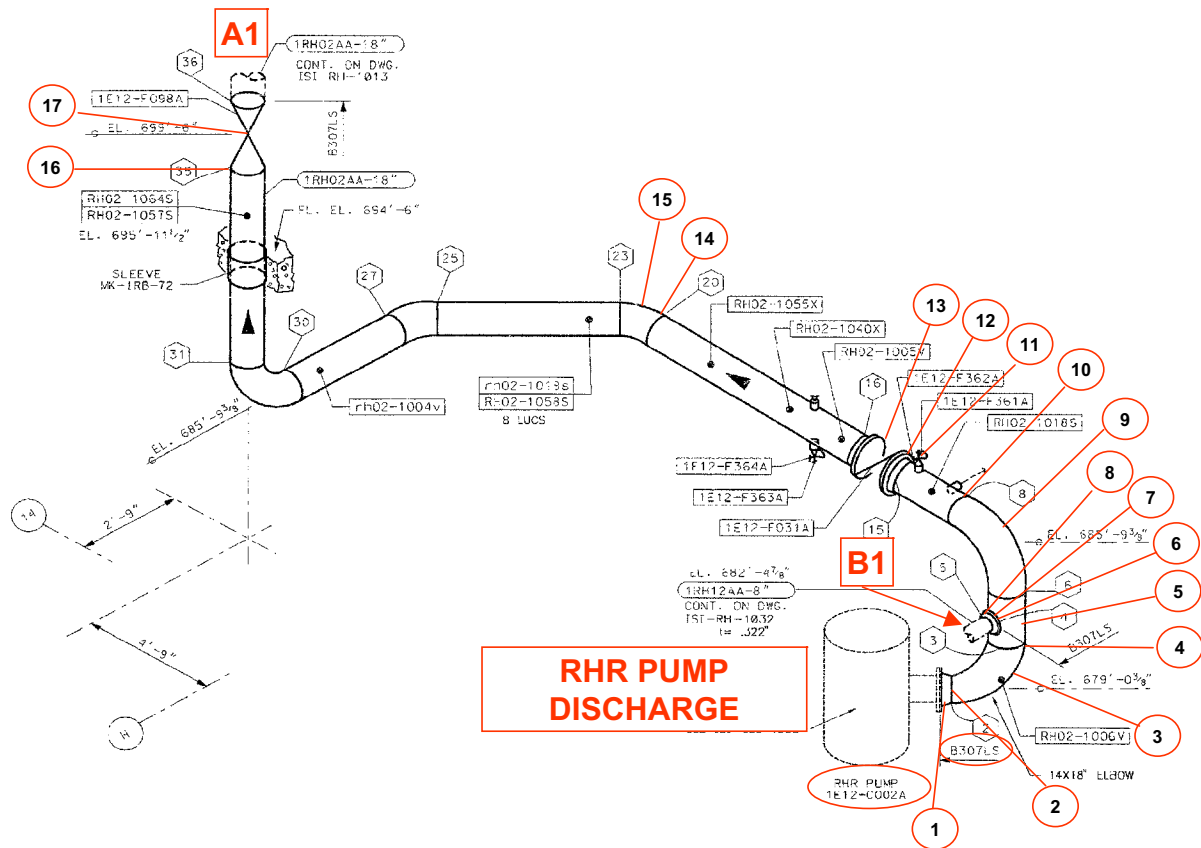
GROUP 13 – RESIDUAL HEAT REMOVAL **SUPPRESSION POOL PIPING TO RHR PUMP (Sheet 4 of 4)** **(Covers Worksheets ESF-RHRPMPs – 1 thru 58)**

97/179
 App. F.2 - BWR Systems Drawings

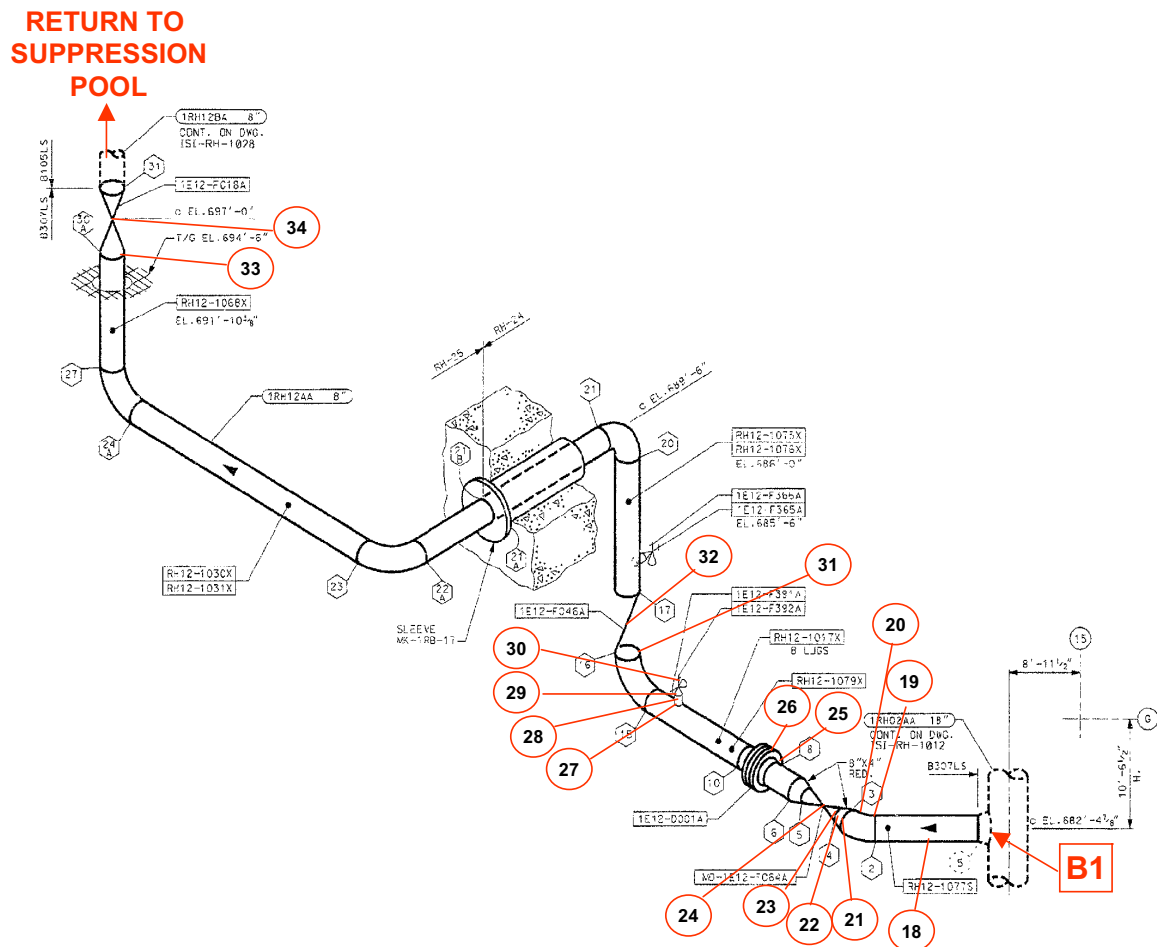


GROUP 14 – RESIDUAL HEAT REMOVAL **RHR PUMP To RHR HX (Sheet 1 of 6)** **(Covers Worksheets ESF-RHRPMPHX – 1 thru 78)**

98/179
 App. F.2 - BWR Systems Drawings

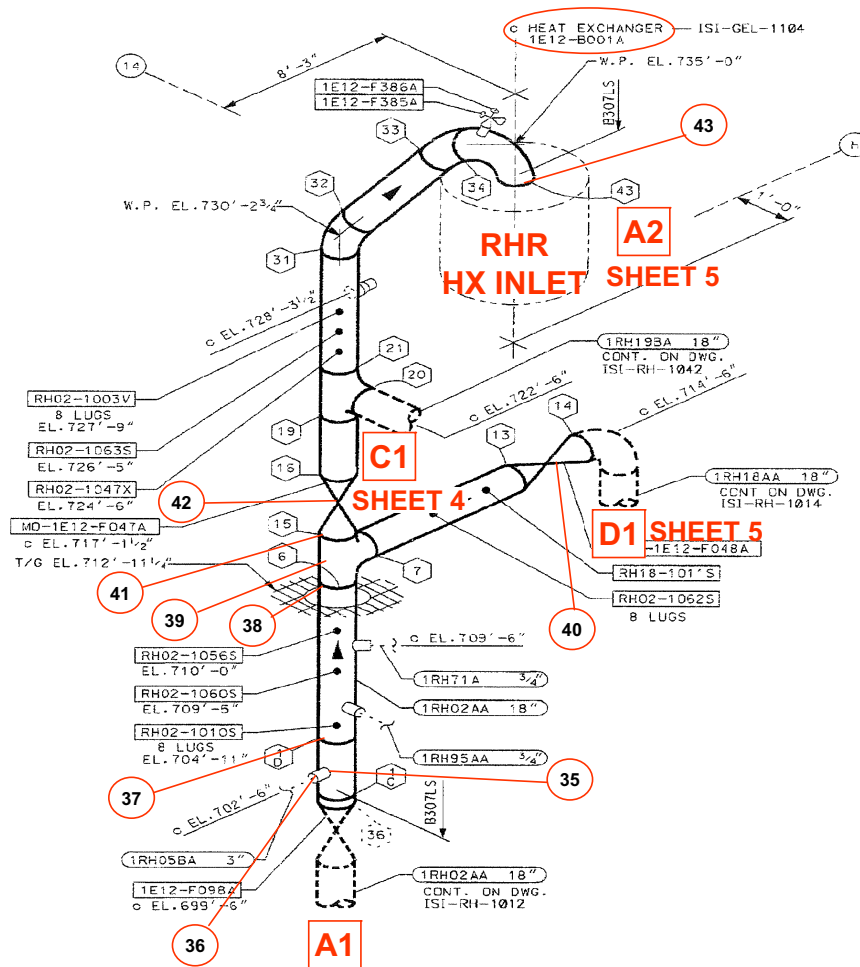


99/179
App. F.2 - BWR Systems Drawings



GROUP 14 – RESIDUAL HEAT REMOVAL **RHR PUMP To RHR HX (Sheet 3 of 6)** **(Covers Worksheets ESF-RHRPMPHX – 1 thru 78)**

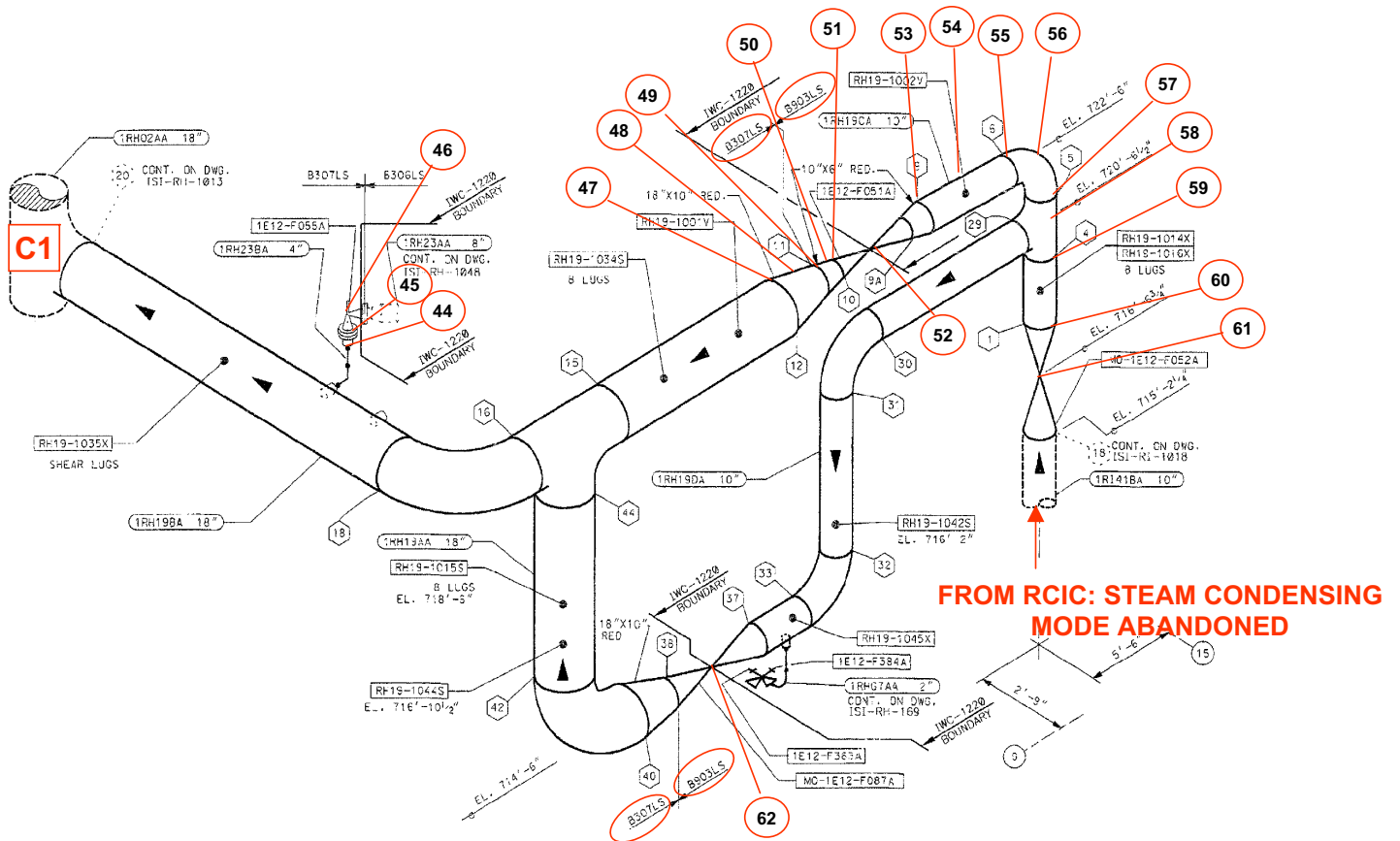
100/179
 App. F.2 - BWR Systems Drawings



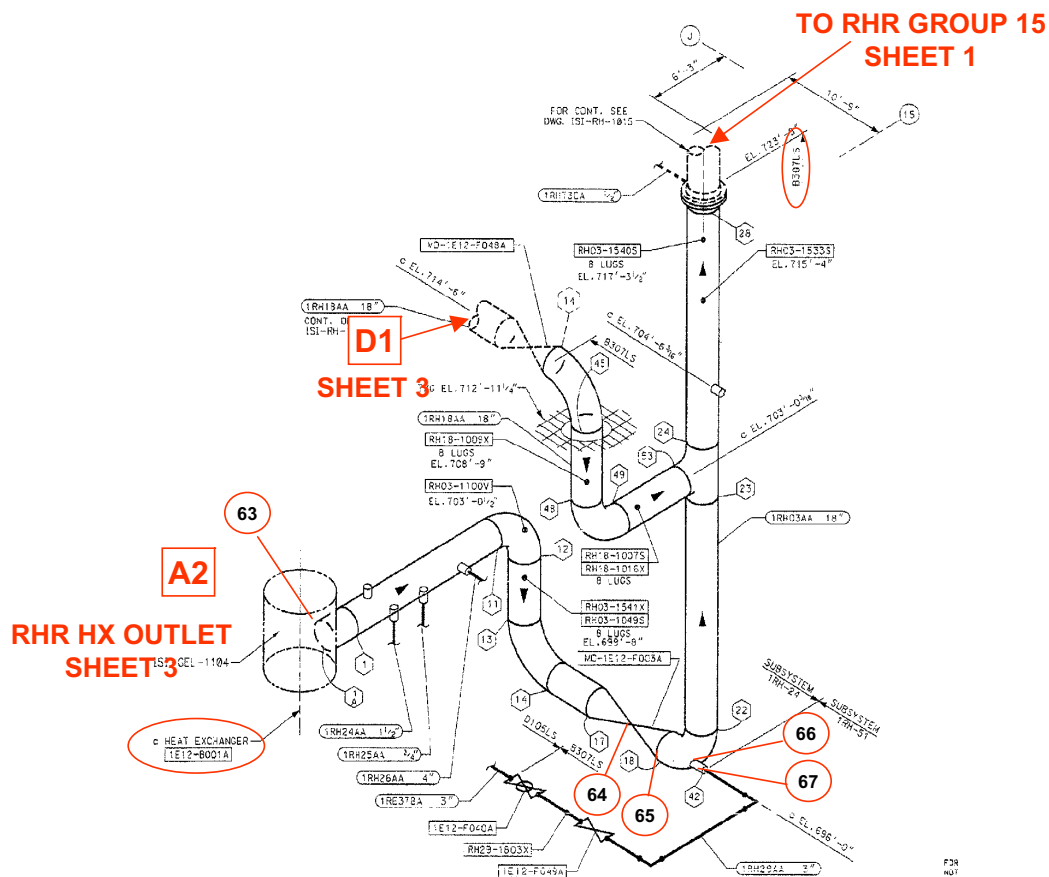
F01
 N01

GROUP 14 – RESIDUAL HEAT REMOVAL **RHR PUMP To RHR HX (Sheet 4 of 6)** **(Covers Worksheets ESF-RHRPMPHX – 1 thru 78)**

101/179
 App. F.2 - BWR Systems Drawings



102/179
App. F.2 - BWR Systems Drawings



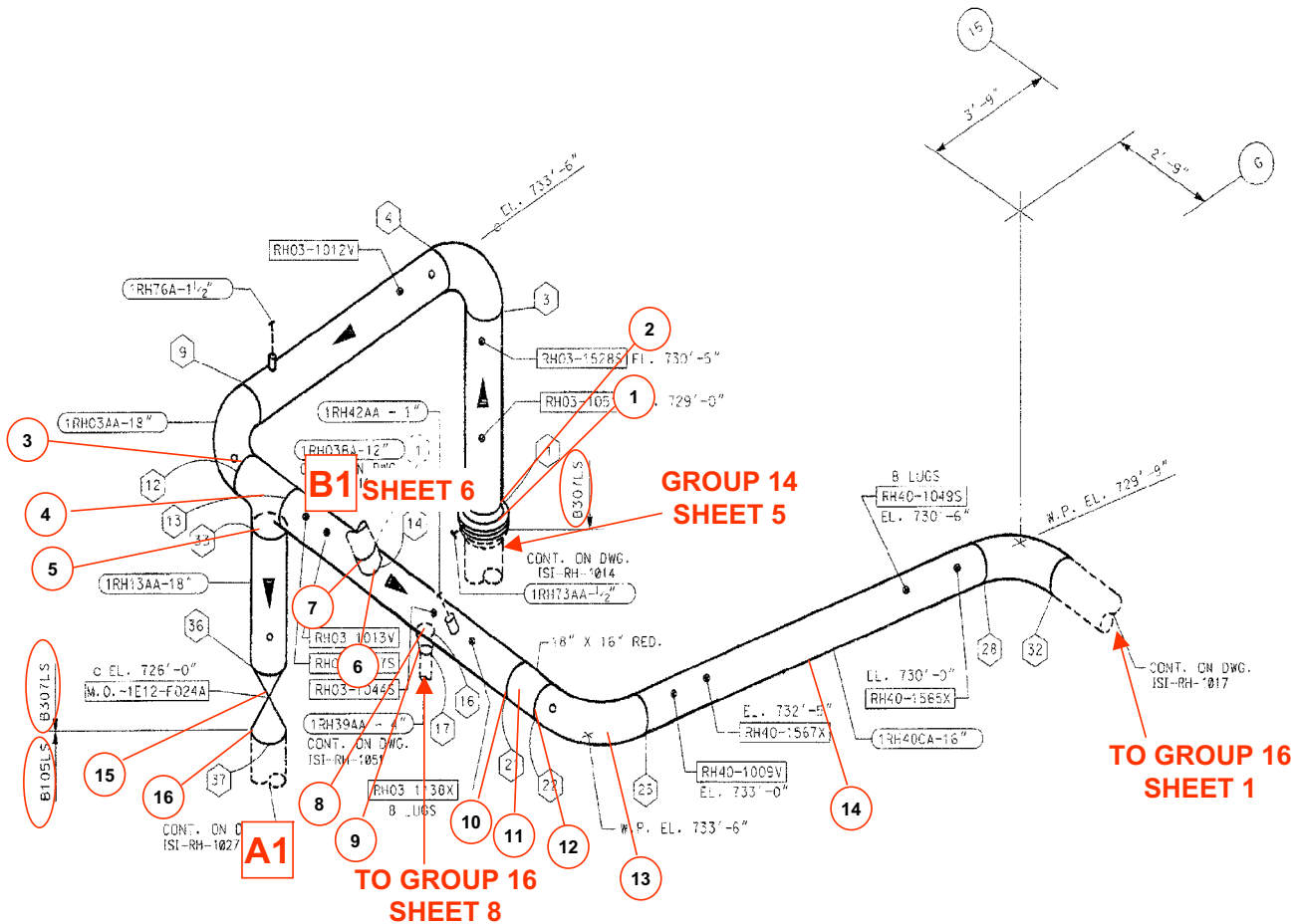
103/179
App. F.2 - BWR Systems Drawings



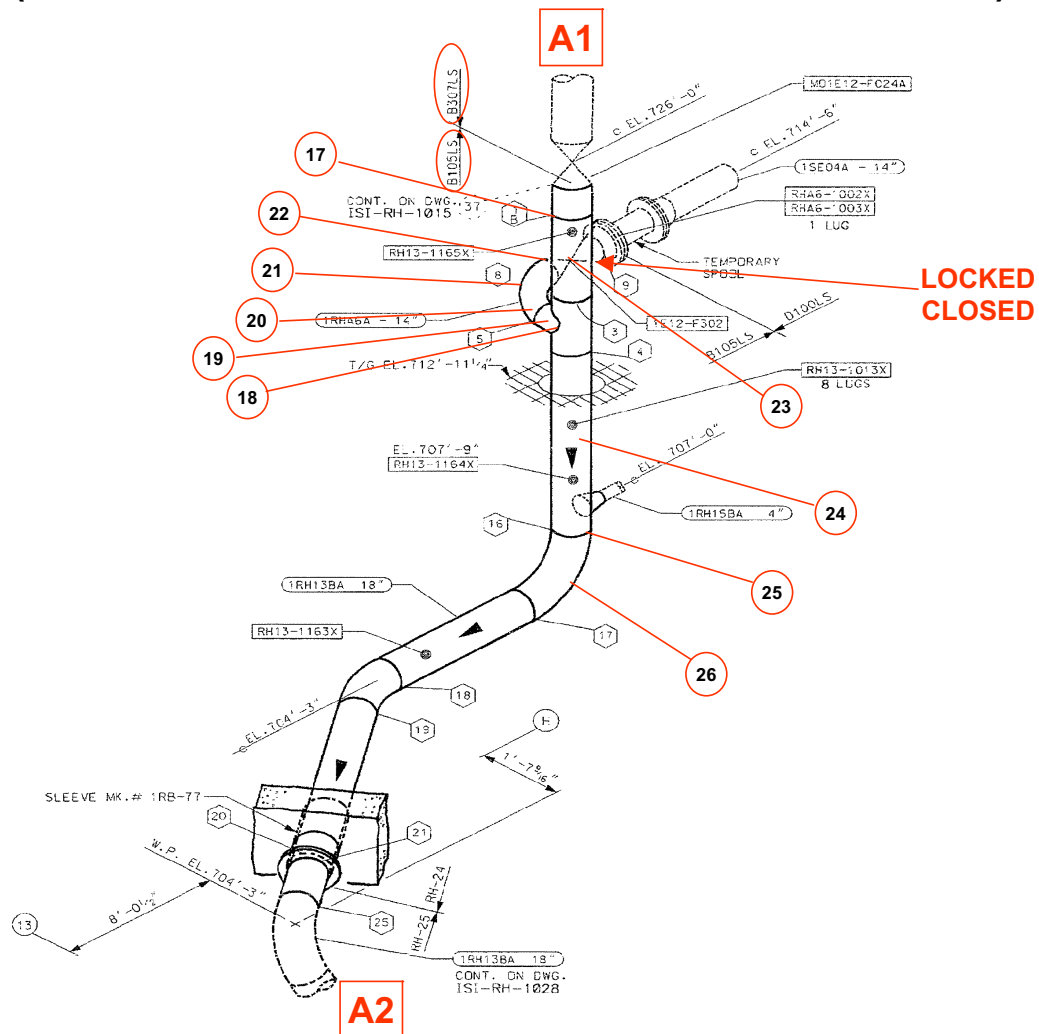
- 75 HX TUBES
- 76 TUBE SHEET
- 77 FITTINGS
- 78 SUPPORTS (OUTSIDE)

**GROUP 15 – RESIDUAL HEAT REMOVAL
NORMAL SHUTDOWN PIPING (Sheet 1 of 7)
(Covers Worksheets ESF-RHRSHTDWN – 1 thru 71)**

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App. F.2 - BWR Systems Drawings

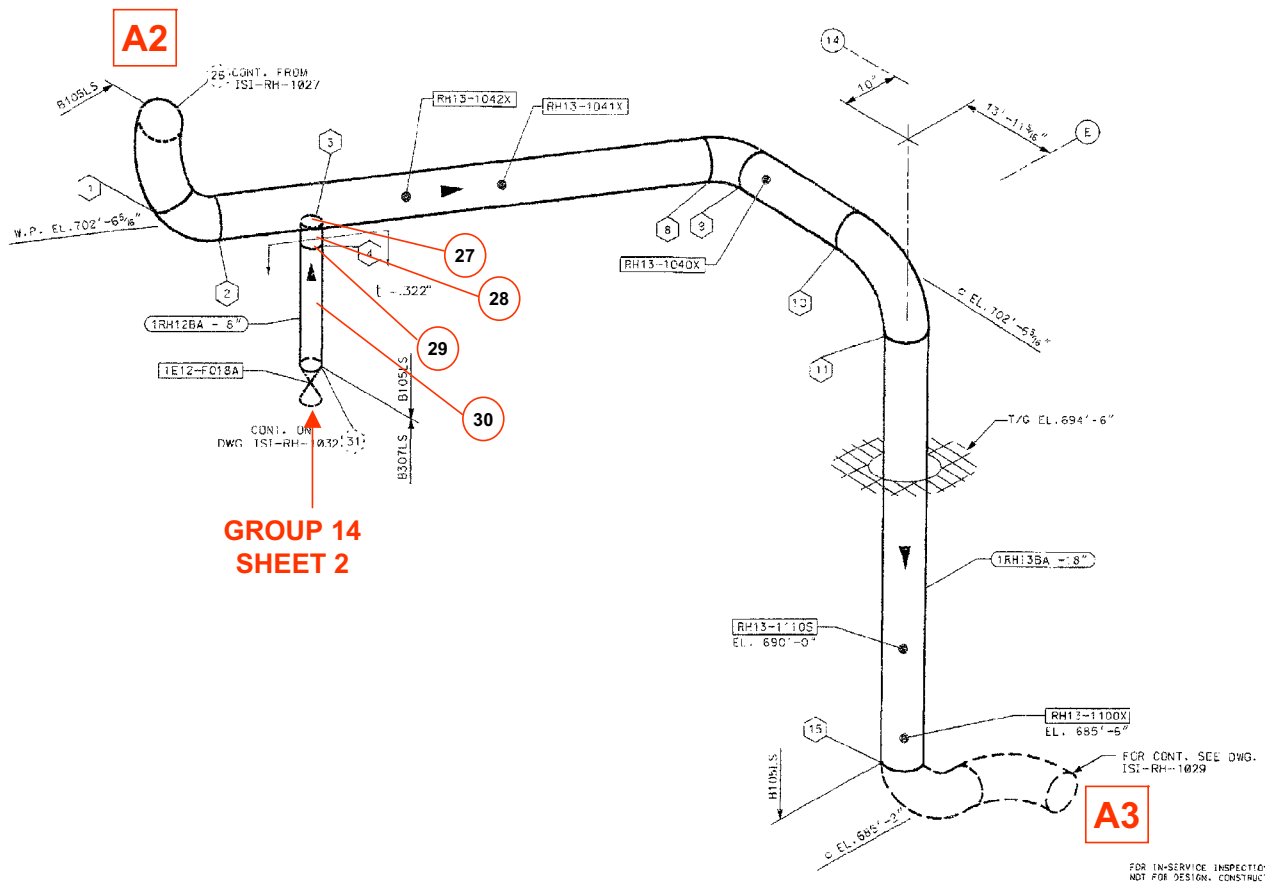


105/179
App. F.2 - BWR Systems Drawings



GROUP 15 – RESIDUAL HEAT REMOVAL NORMAL SHUTDOWN PIPING (Sheet 3 of 7) (Covers Worksheets ESF-RHRSHTDWN – 1 thru 71)

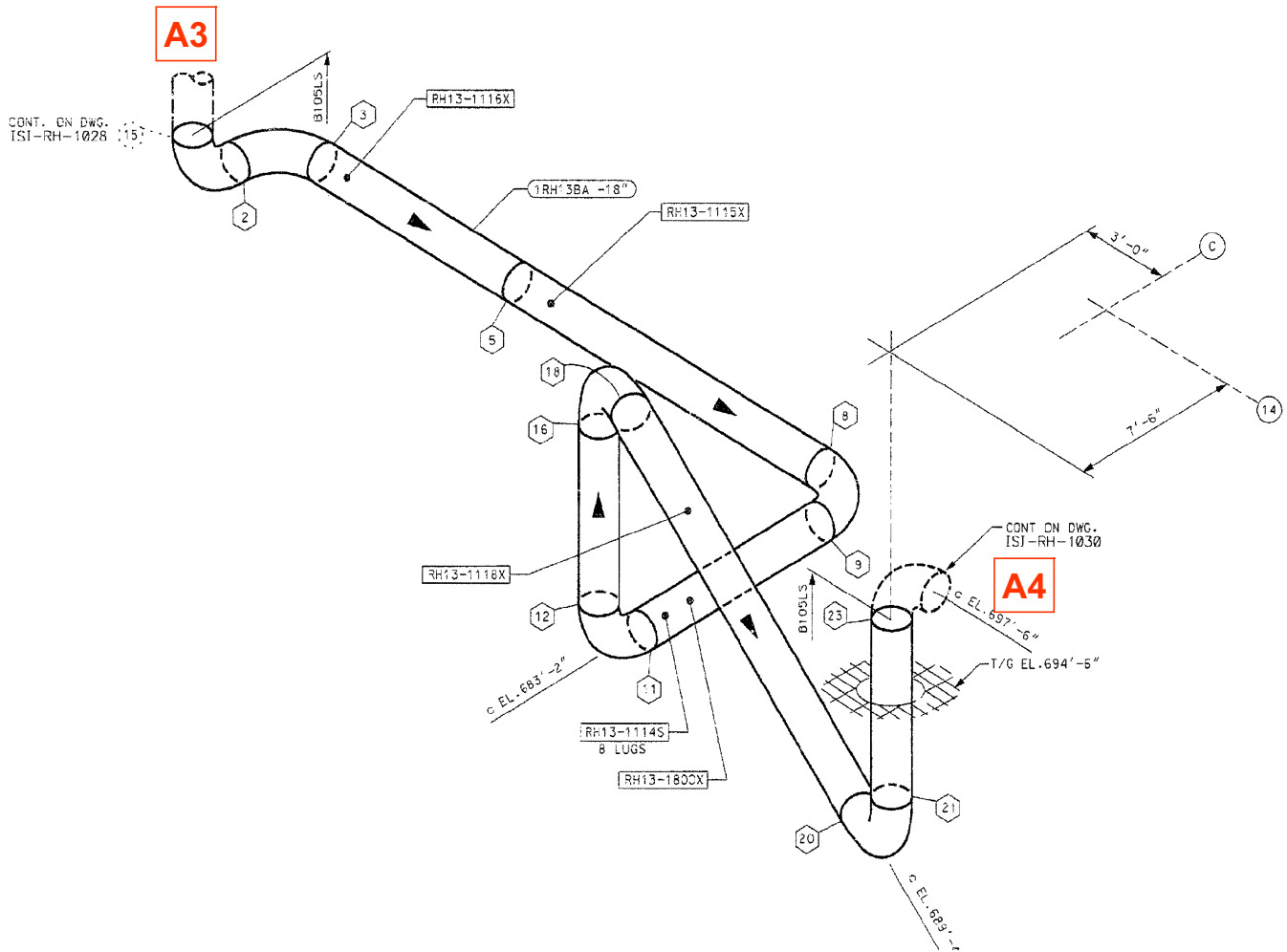
106/179
App. F.2 - BWR Systems Drawings



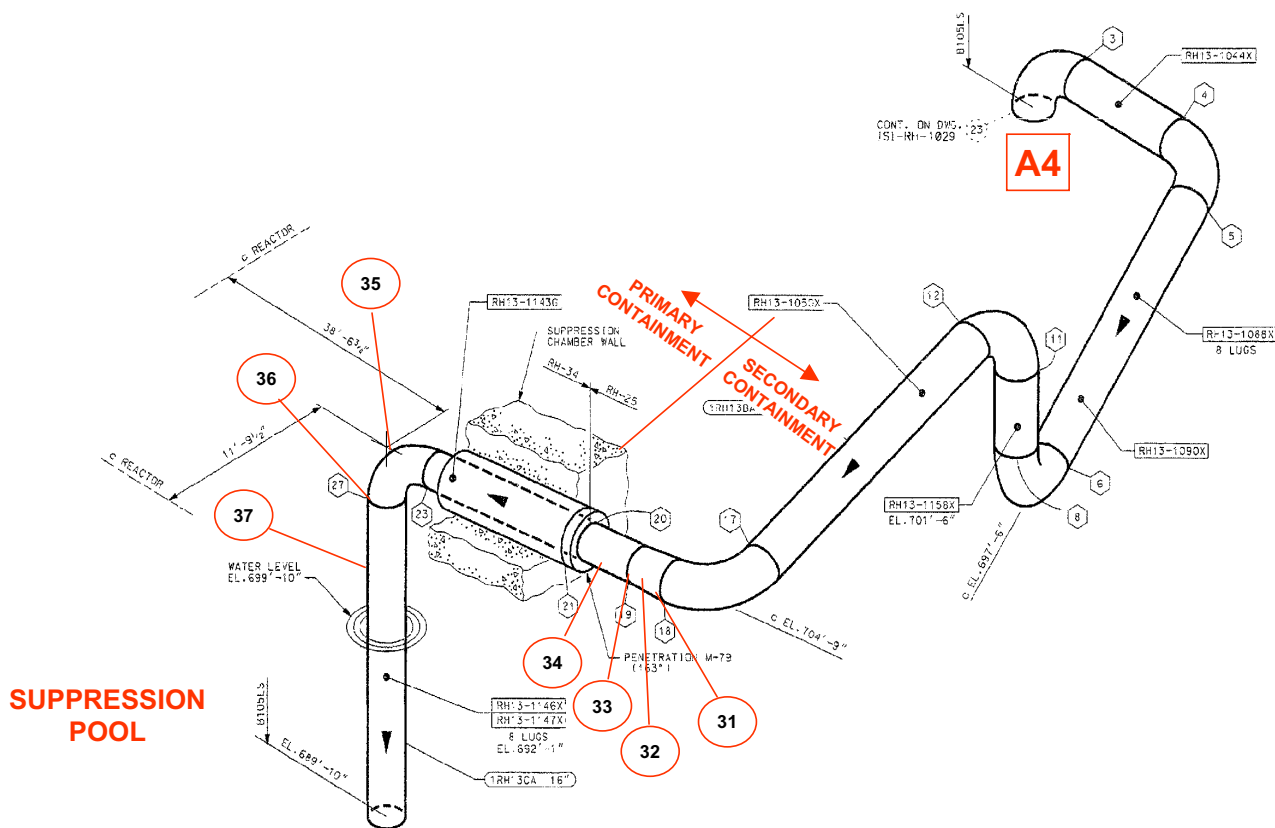
**GROUP 14
SHEET 2**

**GROUP 15 – RESIDUAL HEAT REMOVAL
NORMAL SHUTDOWN PIPING (Sheet 4 of 7)
(Covers Worksheets ESF-RHRSHTDWN – 1 thru 71)**

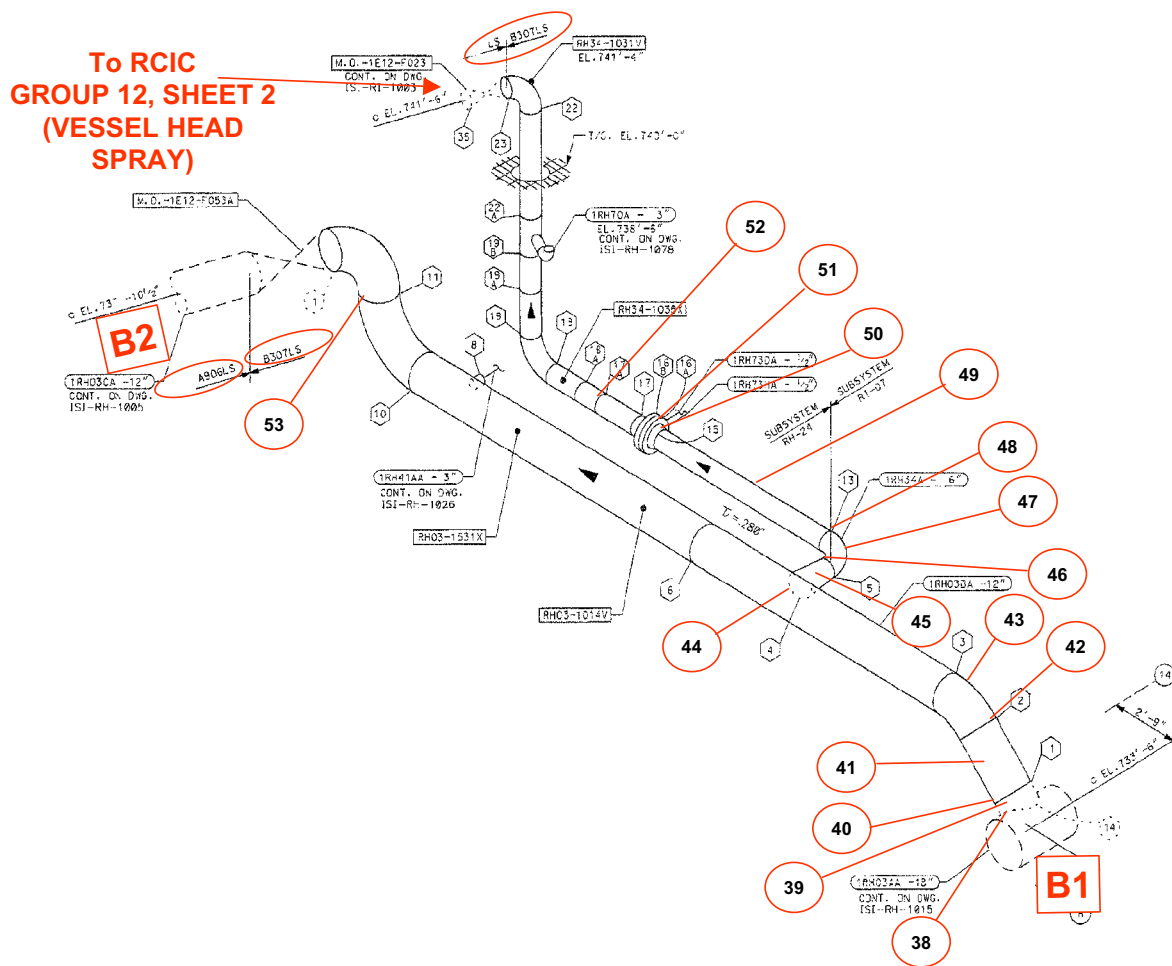
107/179
App. F.2 - BWR Systems Drawings



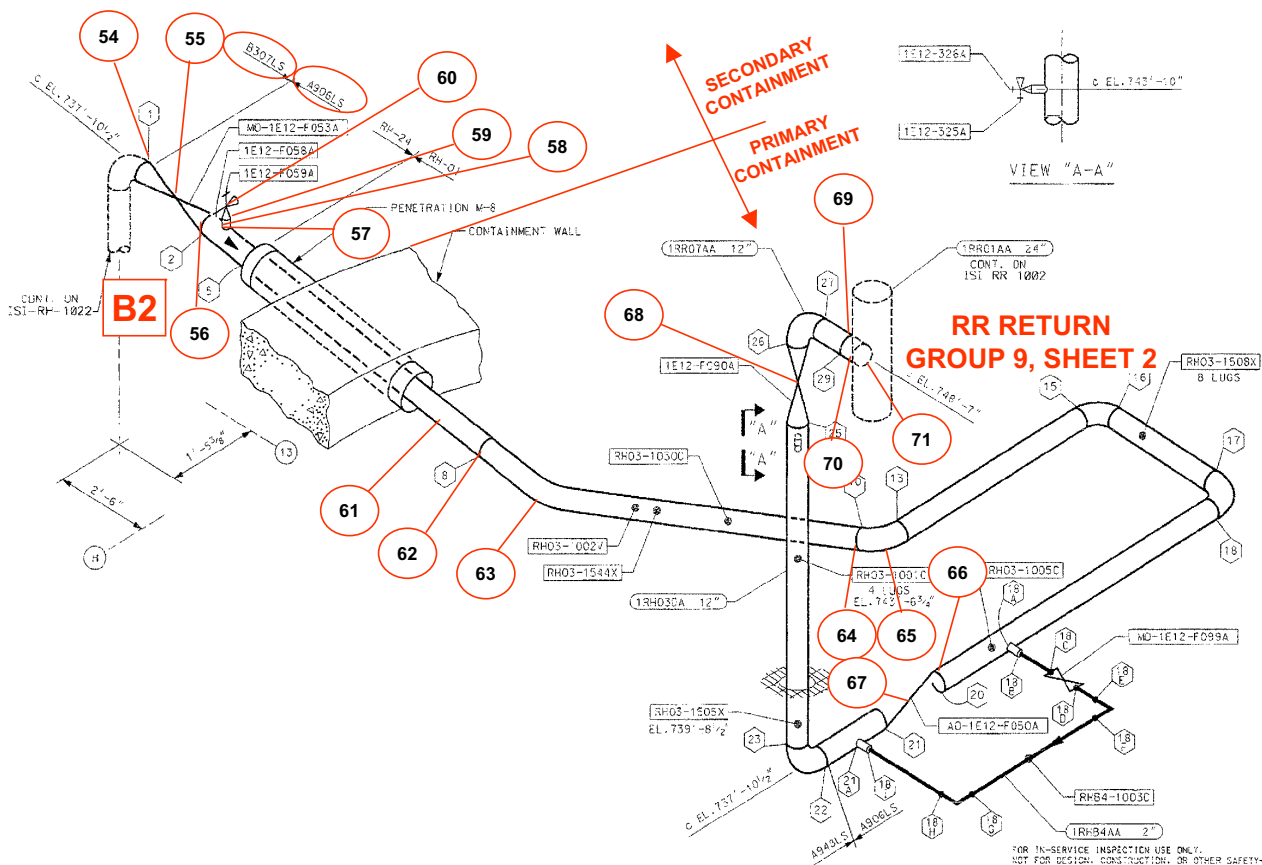
108/179
App. F.2 - BWR Systems Drawings



109/179
App. F.2 - BWR Systems Drawings



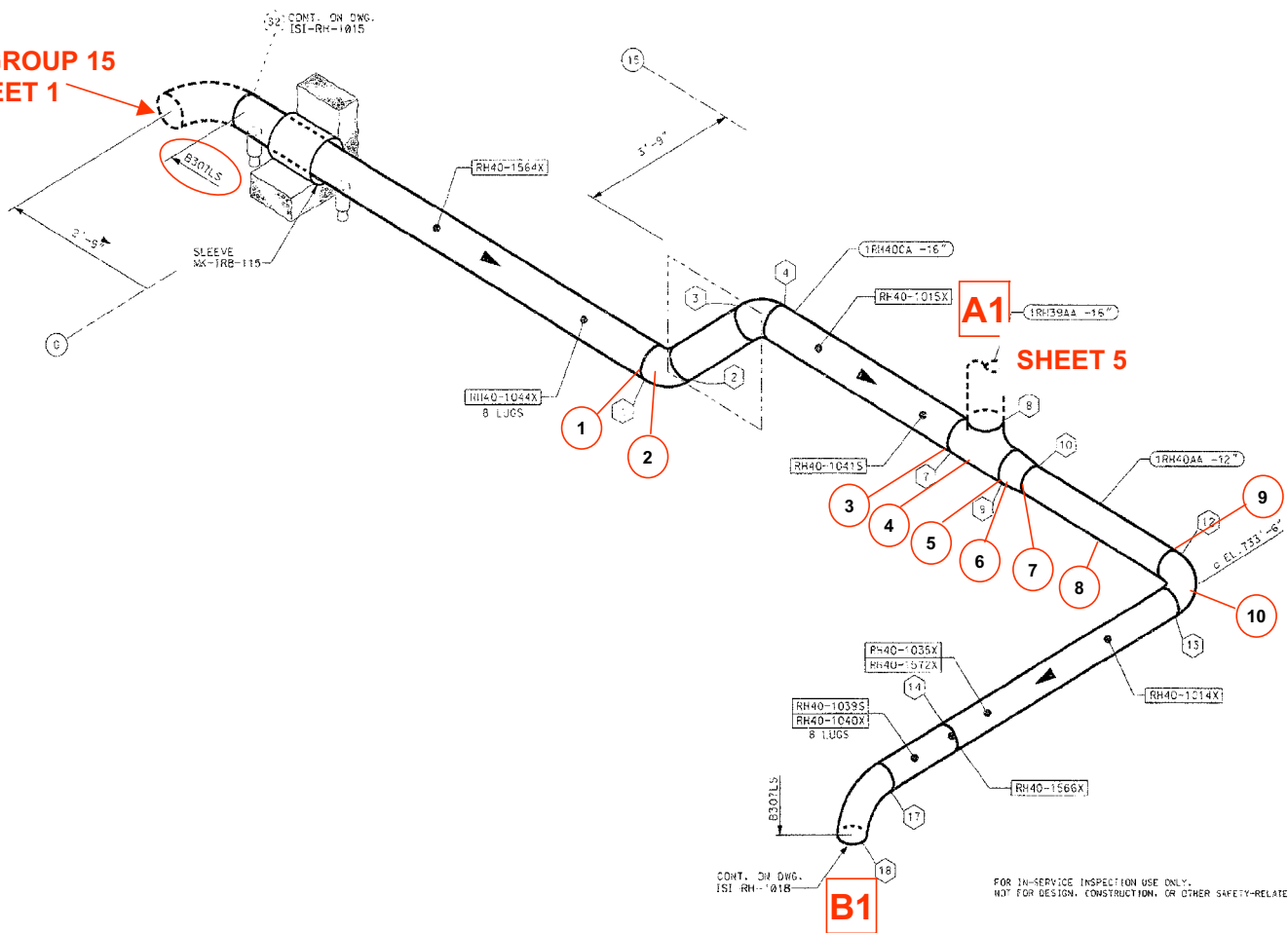
110/179
App. F.2 - BWR Systems Drawings



GROUP 16 – RESIDUAL HEAT REMOVAL SPRAY PIPING (Sheet 1 of 8) (Covers Worksheets ESF-RHRSPRAY – 1 thru 73)

111/179
 App. F.2 - BWR Systems Drawings

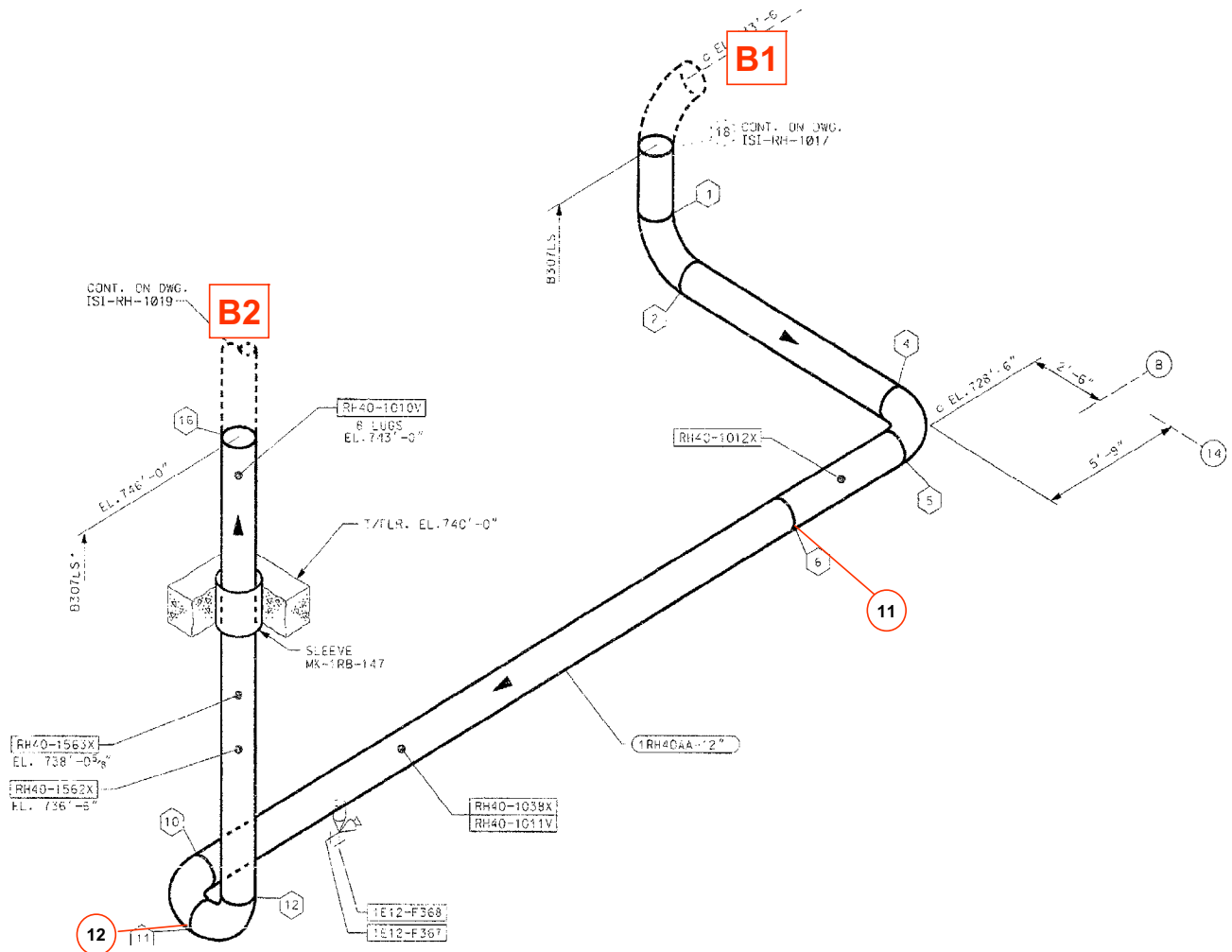
FROM GROUP 15
 SHEET 1



FOR IN-SERVICE INSPECTION USE ONLY.
 NOT FOR DESIGN, CONSTRUCTION, OR OTHER SAFETY-RELATED WORK

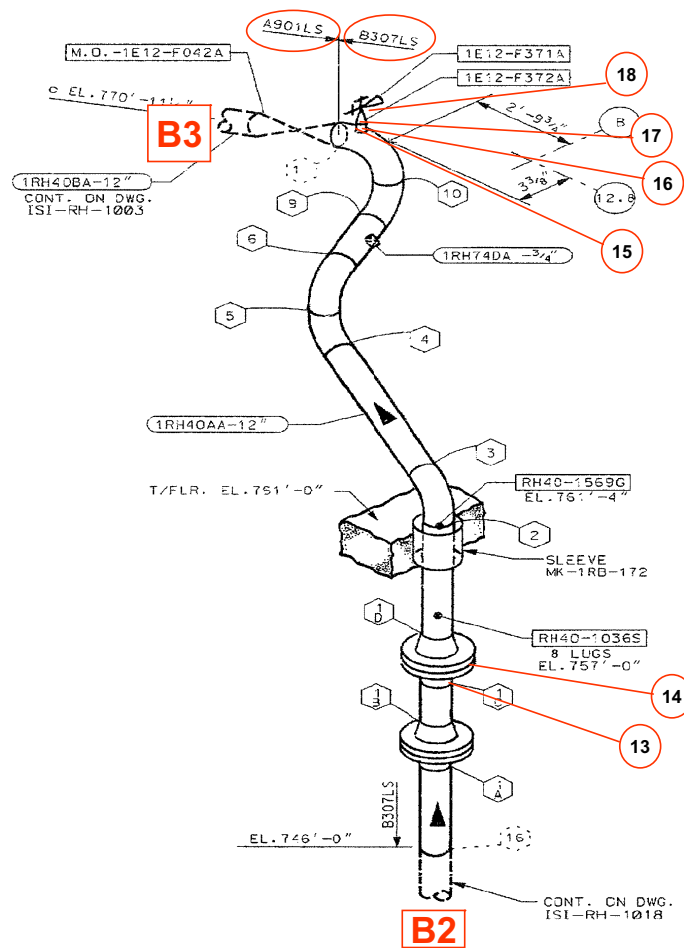
GROUP 16 – RESIDUAL HEAT REMOVAL SPRAY PIPING (Sheet 2 of 8) (Covers Worksheets ESF-RHRSPRAY – 1 thru 73)

112/179
 App. F.2 - BWR Systems Drawings



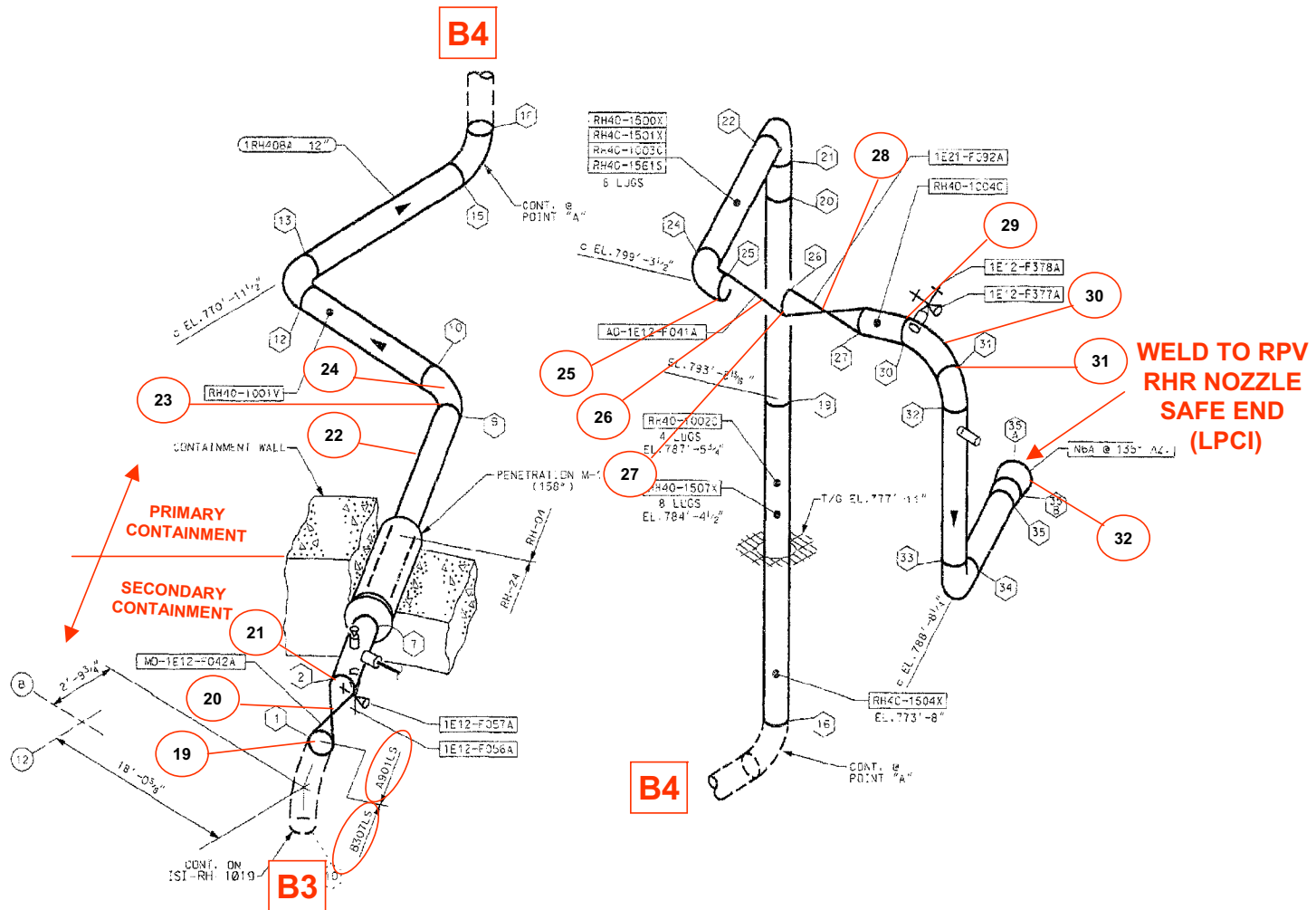
GROUP 16 – RESIDUAL HEAT REMOVAL SPRAY PIPING (Sheet 3 of 8) (Covers Worksheets ESF-RHRSPRAY – 1 thru 73)

113/179
 App. F.2 - BWR Systems Drawings

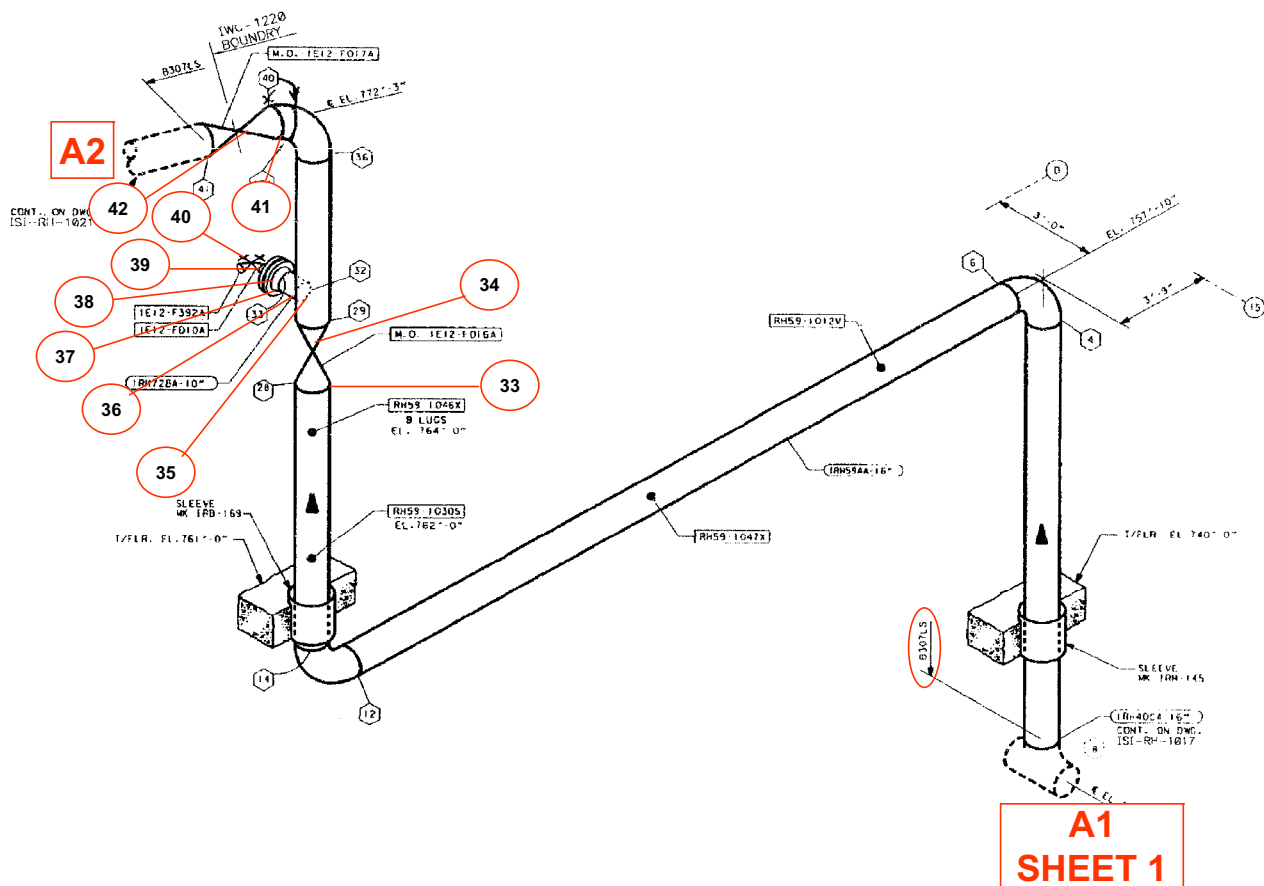


GROUP 16 – RESIDUAL HEAT REMOVAL SPRAY PIPING (Sheet 4 of 8) (Covers Worksheets ESF-RHRSPRAY – 1 thru 73)

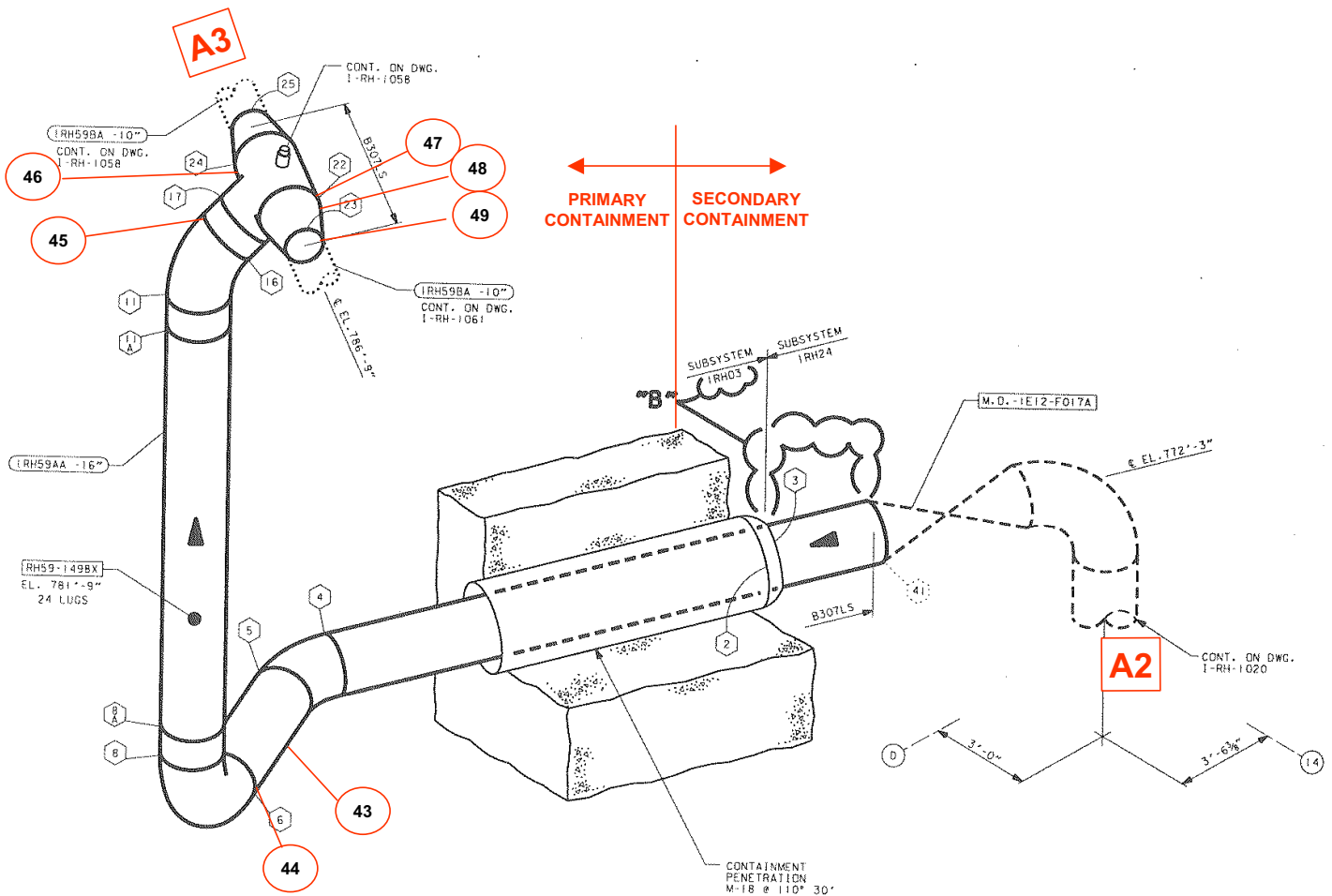
114/179
 App. F.2 - BWR Systems Drawings



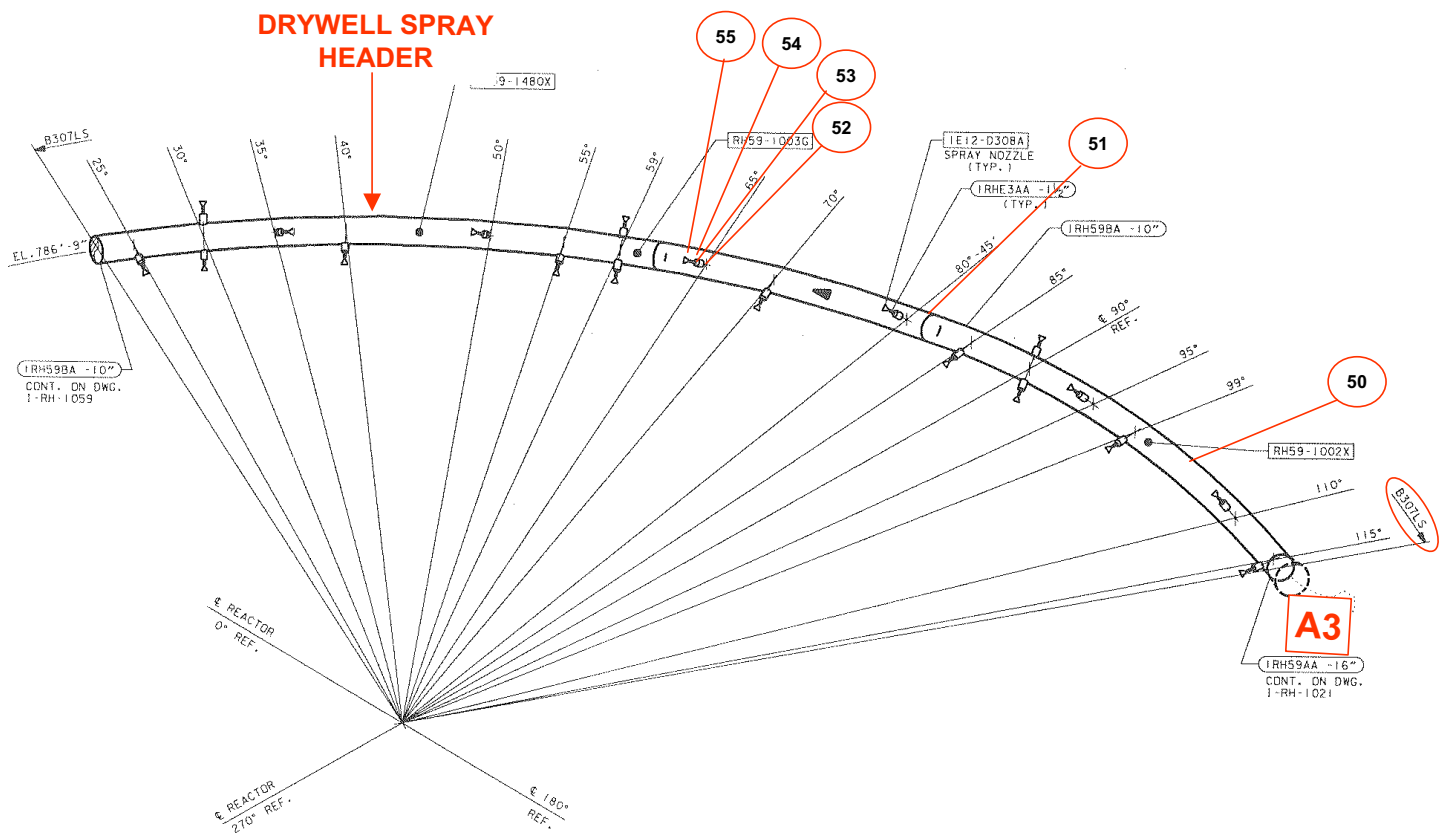
115/179
App. F.2 - BWR Systems Drawings



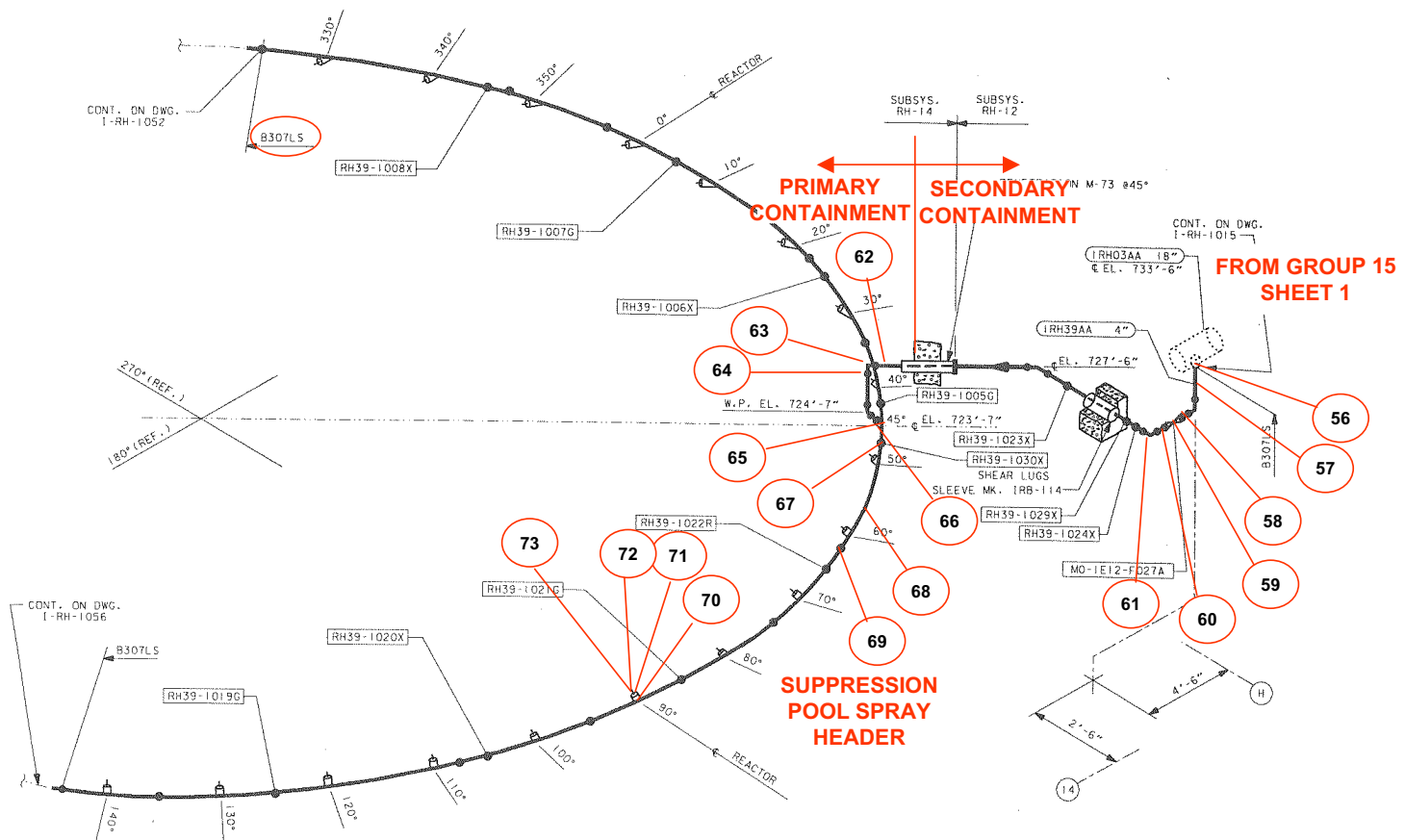
116/179
App. F.2 - BWR Systems Drawings



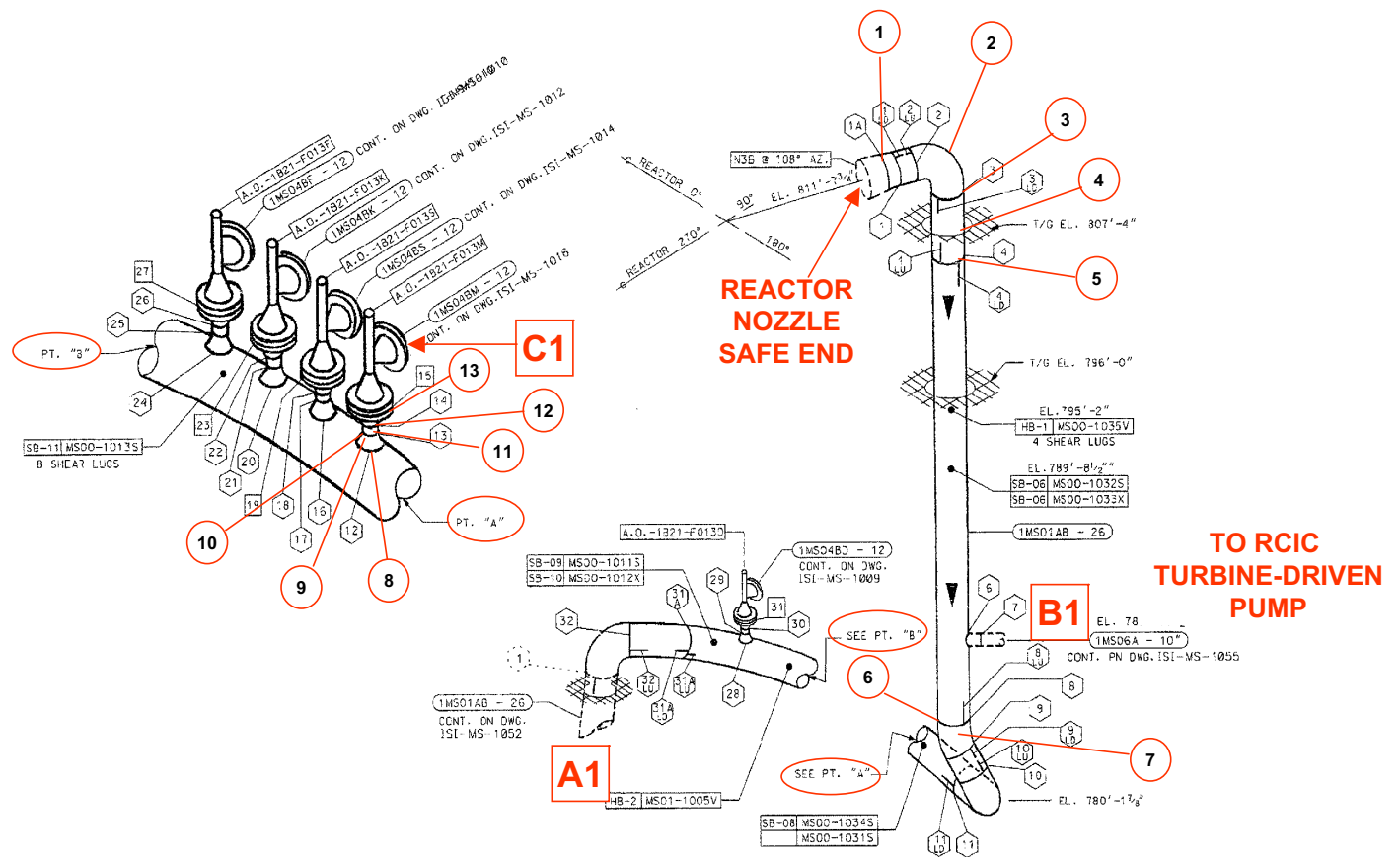
117/179
App. F.2 - BWR Systems Drawings



118/179
App. F.2 - BWR Systems Drawings

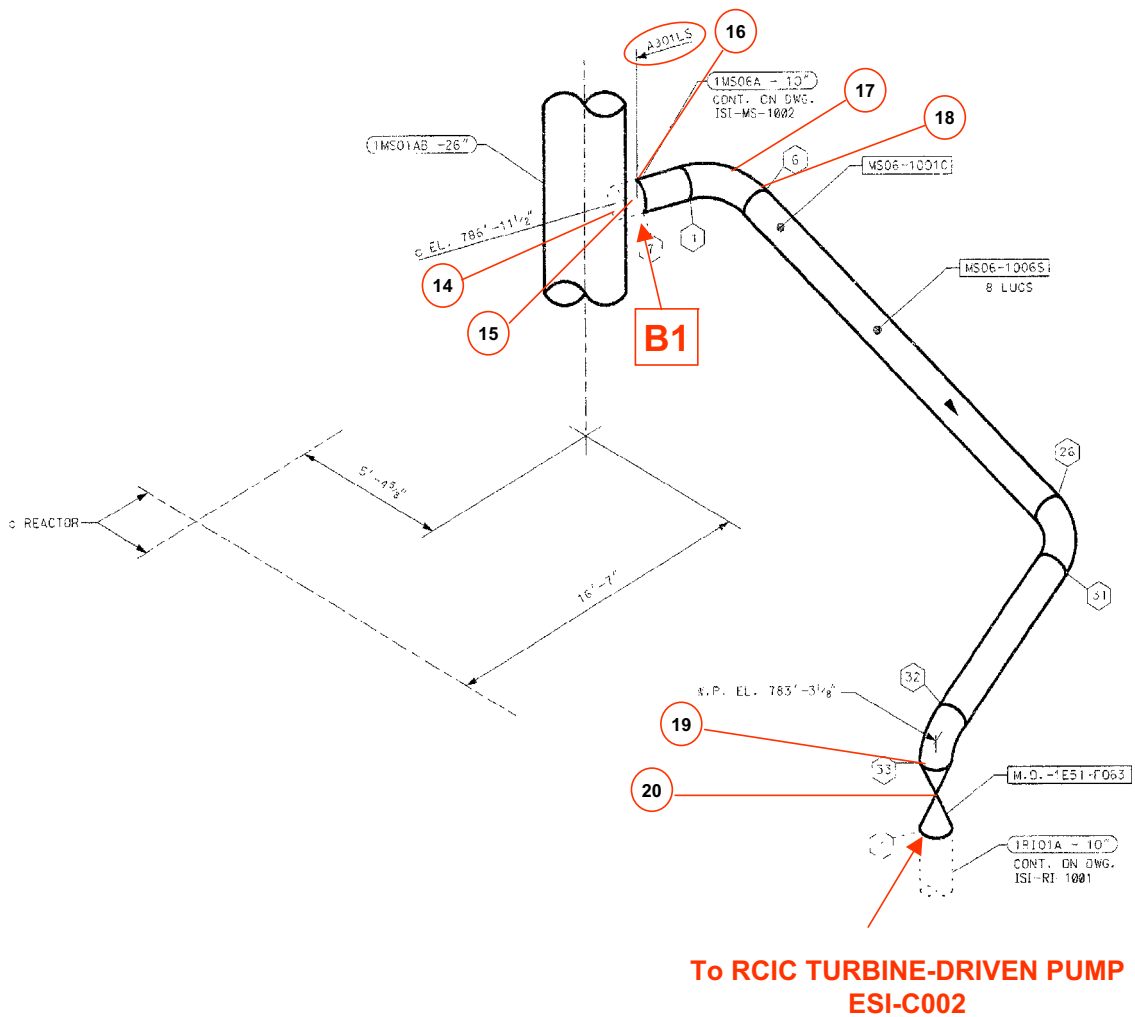


119/179
App. F.2 - BWR Systems Drawings

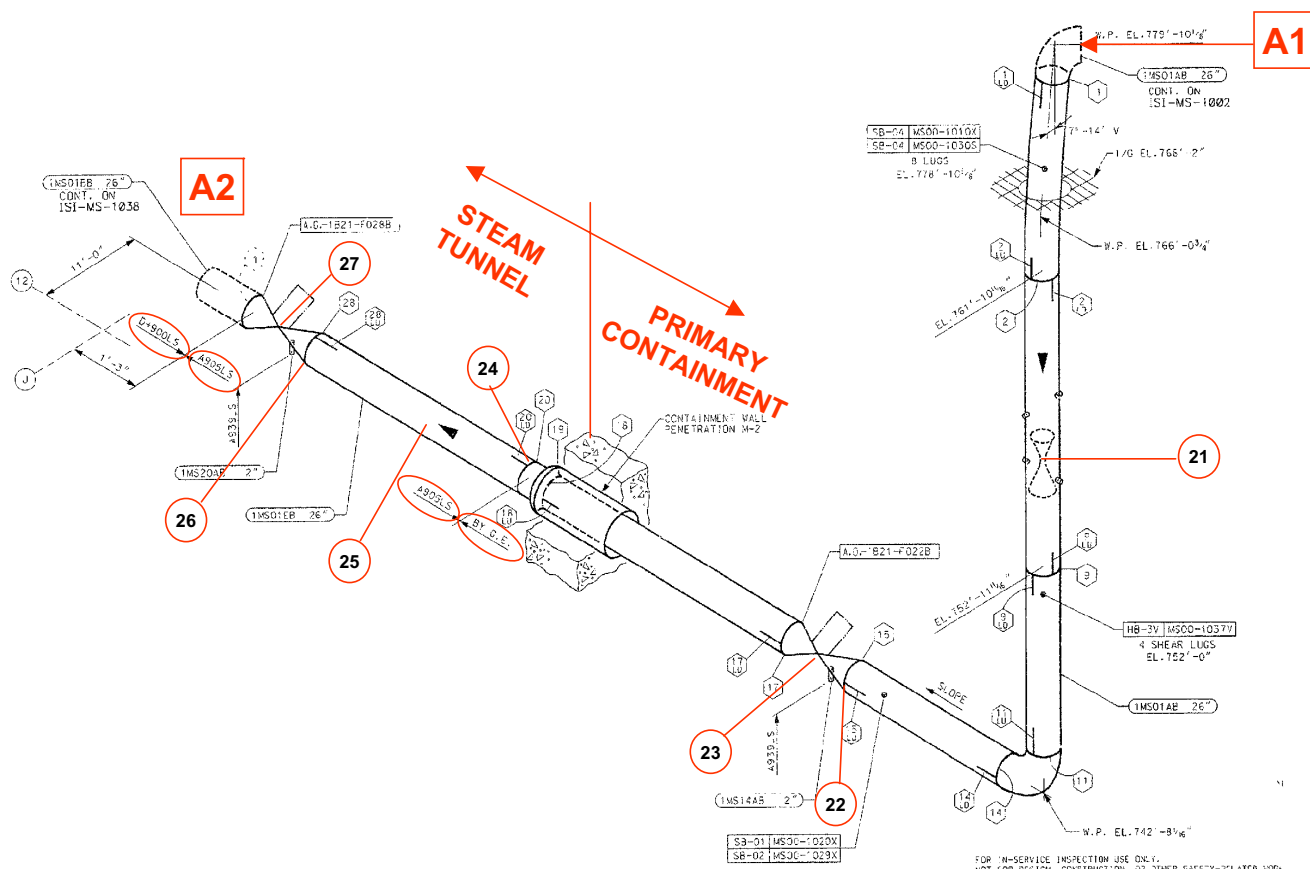


GROUP 17 – MAIN STEAM (Sheet 2 of 9) **(Covers Worksheets PCS-MS – 1 thru 75)**

120/179
 App. F.2 - BWR Systems Drawings

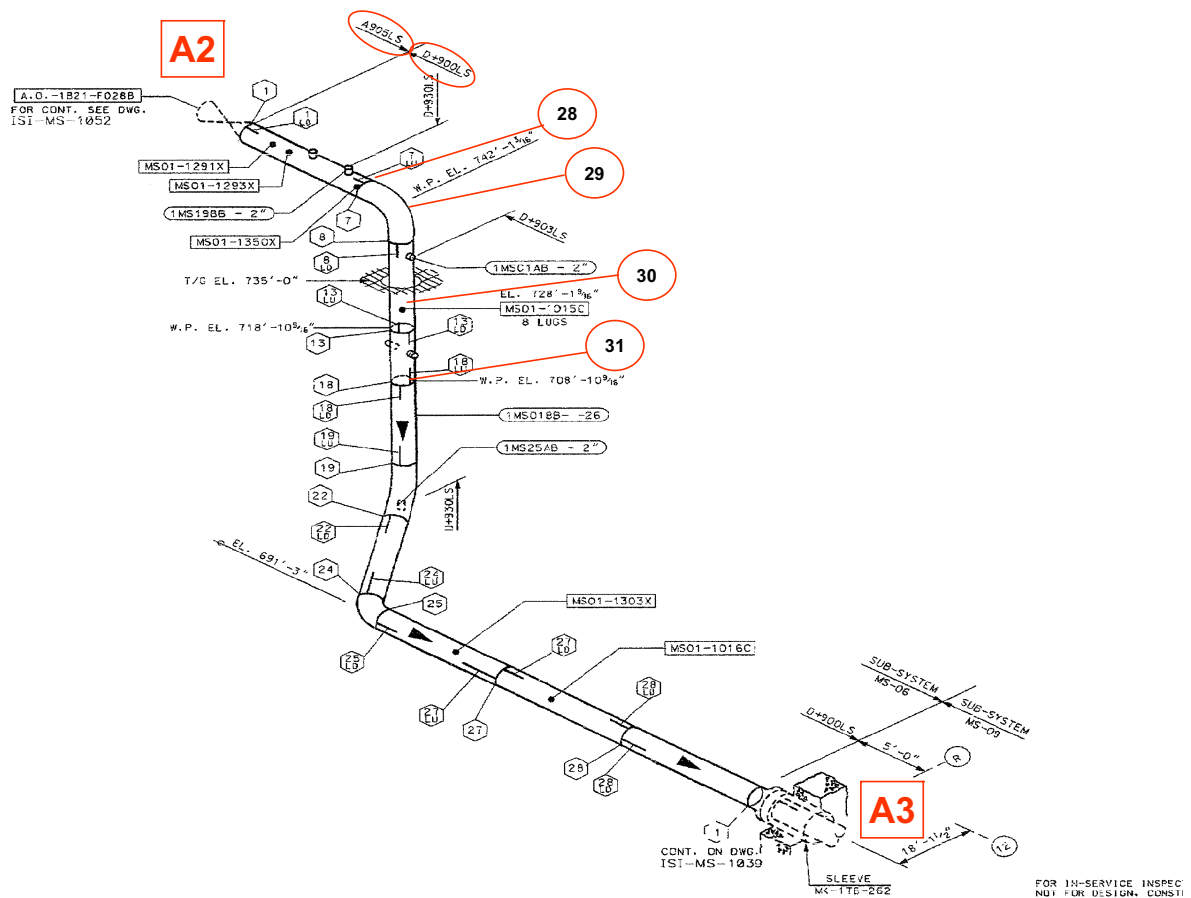


121/179
App. F.2 - BWR Systems Drawings



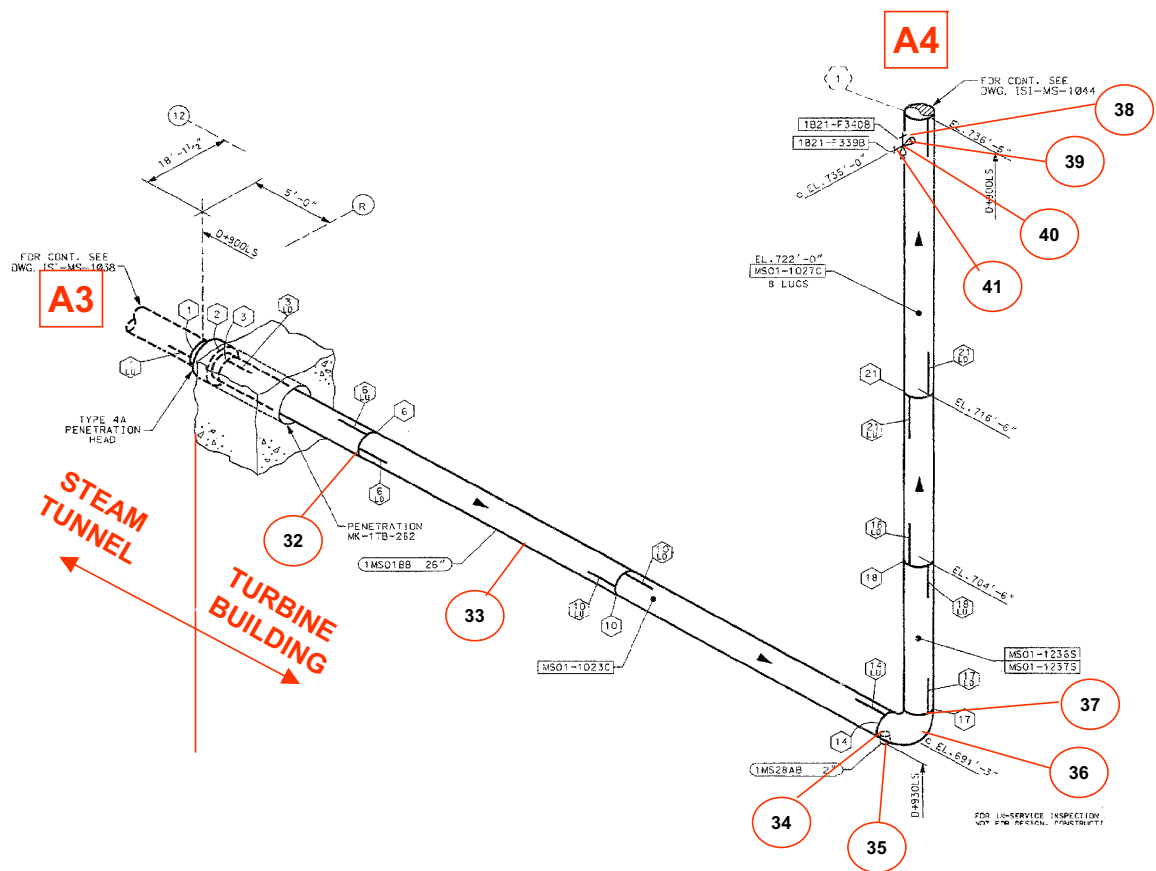
GROUP 17 – MAIN STEAM (Sheet 4 of 9) **(Covers Worksheets PCS-MS – 1 thru 75)**

122/179
 App. F.2 - BWR Systems Drawings



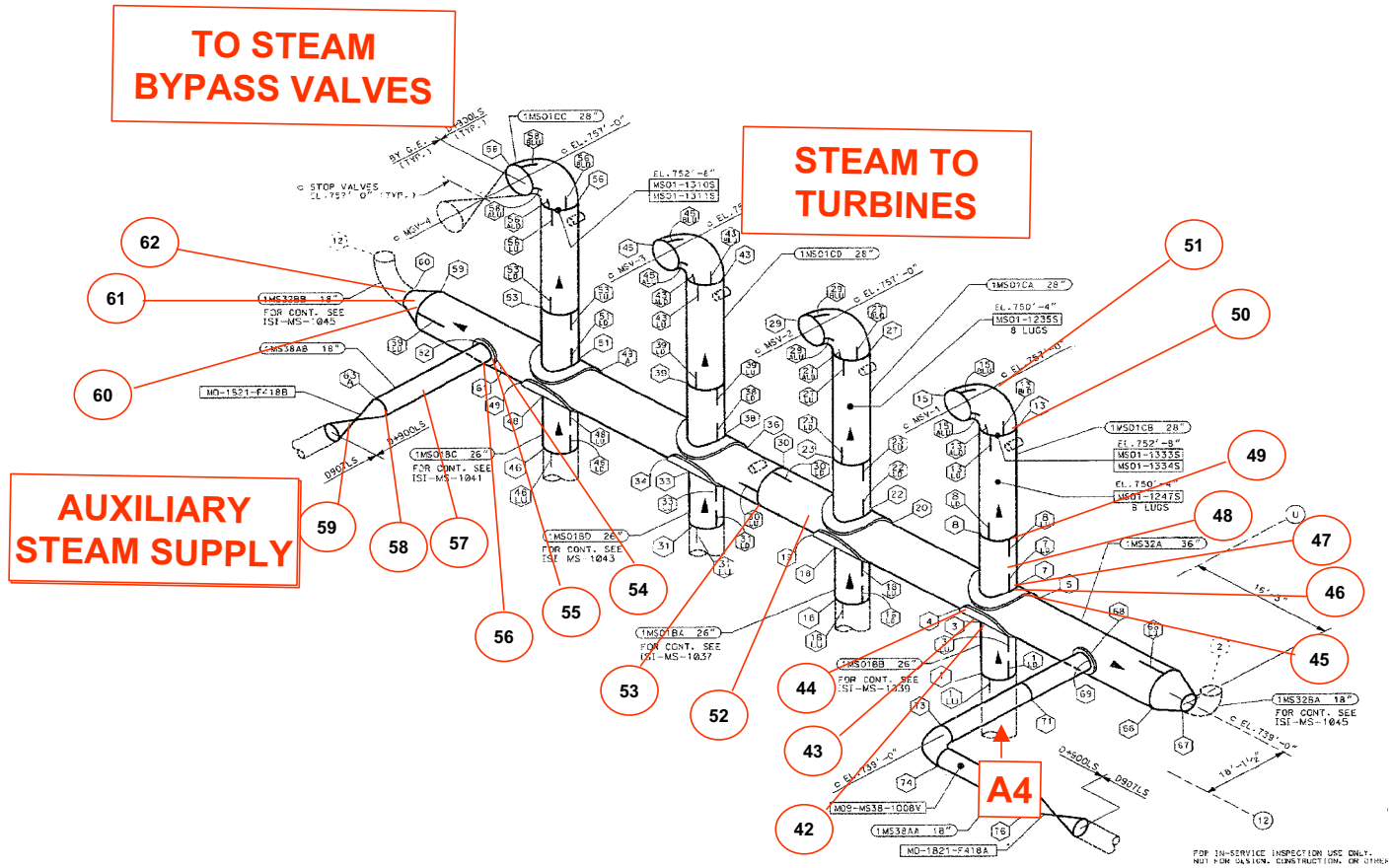
GROUP 17 – MAIN STEAM (Sheet 5 of 9) **(Covers Worksheets PCS-MS – 1 thru 75)**

123/179
 App. F.2 - BWR Systems Drawings

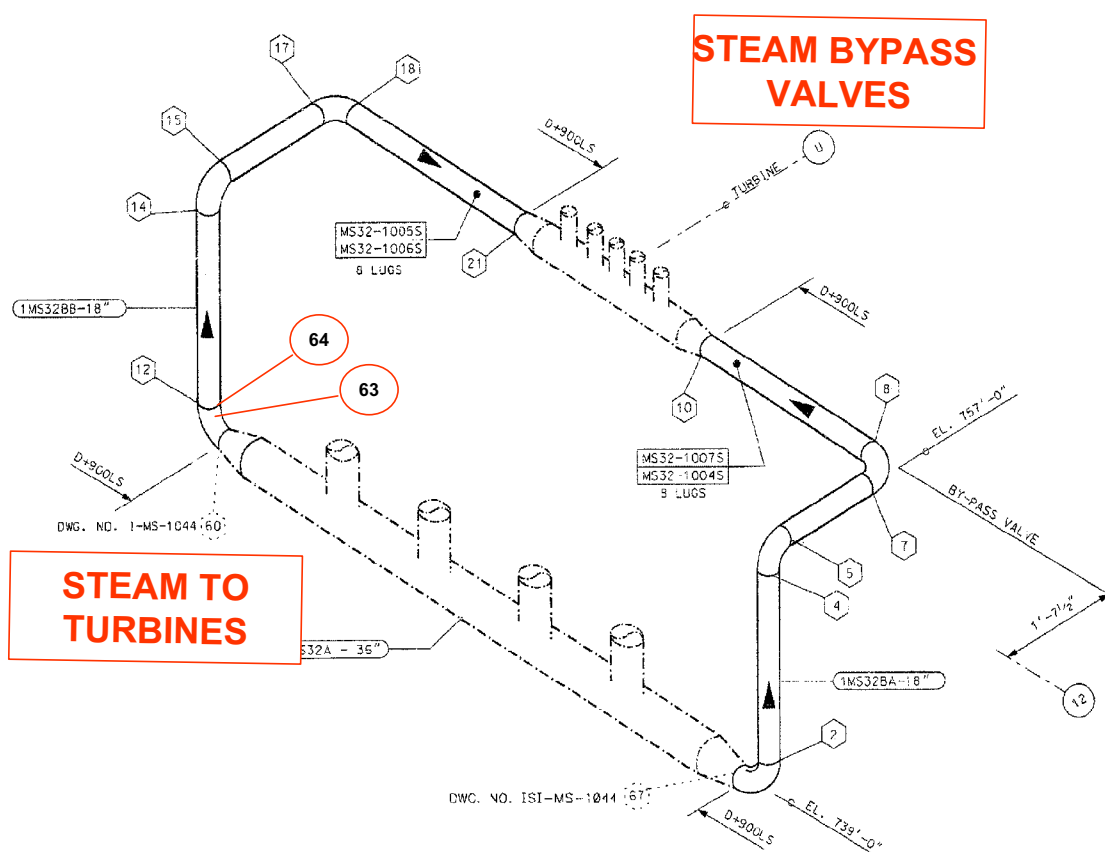


GROUP 17 – MAIN STEAM (Sheet 6 of 9) **(Covers Worksheets PCS-MS – 1 thru 75)**

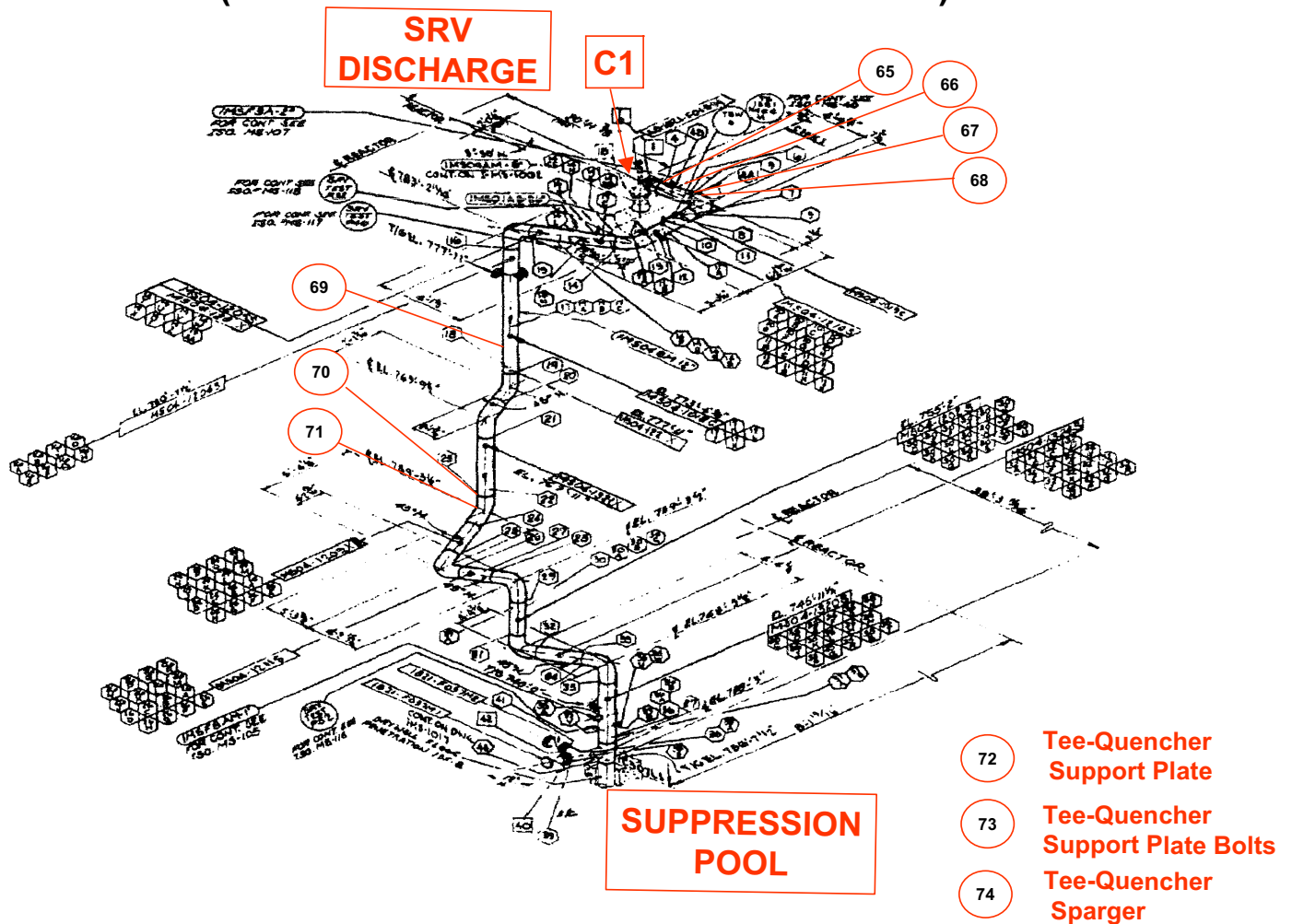
124/179
 App. F.2 - BWR Systems Drawings



GROUP 17 – MAIN STEAM (Sheet 7 of 9) **(Covers Worksheets PCS-MS – 1 thru 75)**

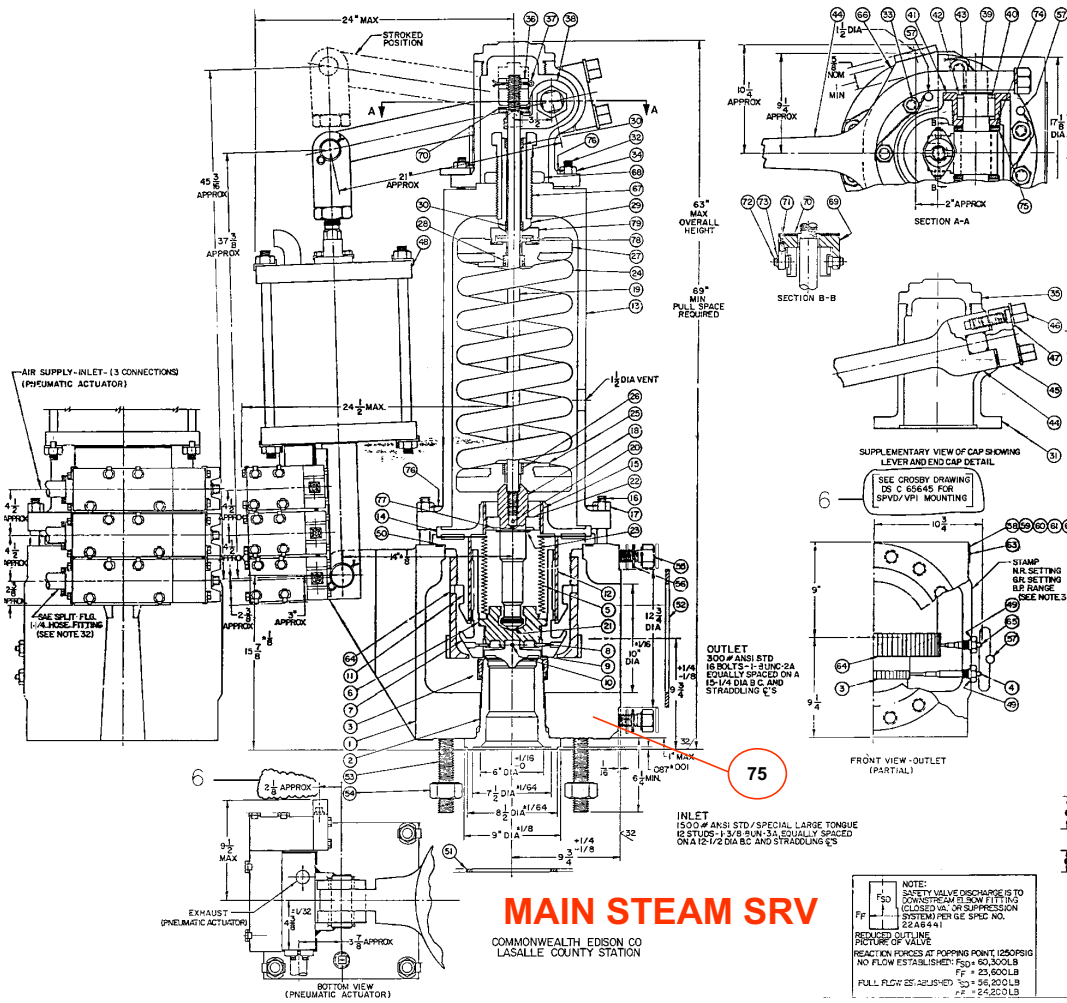


126/179
App. F.2 - BWR Systems Drawings



GROUP 17 – MAIN STEAM (Sheet 9 of 9) (Covers Worksheets PCS-MS – 1 thru 75)

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App. F.2 - BWR Systems Drawings



LIST OF MATERIALS				
PCNO	DESCRIPTION	QTY	MAT'L SPEC.	REMARKS
1	BODY	1	ASTM A105 GR. II	4.5, 6.7
2	NOZZLE	1	ASME SA 582 GR. F304	2.3, 5.15/8
3	RING	1	ACI-CF8M (316)	SOLUTION ANNEALED
4	SET SCREW	1	ASTM A562 TYPE 46 COND	2.33
5	BELLOWS	1	INCONEL 718	2.14
6	DISC HOLDER	1	AMS 5662B(INCONEL 718)	2.4, 5.6, 8
7	RING	1	ACI-CB7CU-117-4PH	2.9
8	PIN	2	SS1 304	12
9	DISC INSERT	1	ASME SA 537 GR. 718	2.3, 5.16/8
10	EDUCTOR	1	HAYNES ALLOY #28	2
11	PIN	1	ACI-CB7CU-117-4PH	9
12	SLEEVE	1	STELLITE 6	
13	ROCKET	1	ASTM A105 GR. II	4.5, 6.7
14	ADAPTER	1	ASTM A105 GR. II	
15	SLEEVE	1	STELLITE 6	
16	STUD	2	ASTM A193 GR. B7	4.5, 7
17	NUT	2	ASME SA 514 GR. 2H	4.5, 7.2
18	SPINDLE POINT	1	ASTM A 564 TYPE 630	4.5, 6.9/34
19	ROD	1	ASTM A 564 TYPE 630	9/34
20	PIN	1	SS1 316	12
21	BALL	1	STELLITE 6	4.5, 8/34
22	PISTON	1	ASTM A562 TYPE 46 COND	2
23	RETAINING RING	1	TRUARC 5100-255	2
24	SPRING	1	ASTM A304 GR. 4161 H	4.5, 6.8, 10.2
25	WASHER (KIT)	1	ASTM A105 GR. II	4.5, 6.8, 2.17/8
26	SLEEVE	1	ASTM A438 GR. I	BRONZE
27	WASHER (TOP)	1	ASTM A105 GR. II	4.5, 6.8, 2.17/8
28	SLEEVE	1	ASTM A438 GR. I	BRONZE
29	ADJ. BOLT BUTON	1	ASME A193 GR. B8 (410)	4.5, 6.8, 1/8
30	SLEEVE	2	ASTM A438 GR. I	BRONZE
31	CAP	1	ASTM A276 TYPE 440C	2
32	STUD (SHORT)	1	ASTM A276 TYPE 440C	2
33	NUT	3	ASTM A276 TYPE 440C	2
34	NUT	6	ASME SA 194 CL. 2H	2
35	TOP	1	ASTM A276 TYPE 440C	2
36	SPINDLE NUT	1	ASTM A276 TYPE 440C	2
37	COILER	1	STEEL COMMERCIAL	2
38	DOG	1	ASTM A448 GR. 20-25	9/31
39	SHAF	1	ASTM A502 TYPE 440C A	2
40	BEARING	2	TRUARC NO. 486025	21
41	RETAINER	2	ASTM A276 GR. WCB	
42	EVALUATOR	2	STEEL COMMERCIAL	
43	CYCLIC RING	2	TRUARC NO. 5100-237	2
44	LEVER	1	ASTM A448 GR. 20-25	
45	END CAP	2	CARBON STEEL 65-C	
46	CAP SCREW	4	STEEL COMMERCIAL	
47	LOCKWASHER	4		
48	ADJ. BOLT BUTON	1	ASTM A193 GR. B7	
49	GASKET-SET SCREW	2	STEEL AISI 1010-1030	2
50	EDUCTOR	1	ASTM A562 TYPE 46 COND	2.33
51	INLET	1	ASTM A562 TYPE 46 COND	2.33
52	OUTLET	1	ASTM A562 TYPE 46 COND	2.33
53	INLET STUD	12	ASTM A193 GR. B7	4.5, 7.2
54	NUT	12	ASTM A194 CL. 2H	4.5, 7.2
55	OUTLET BOLT	16	ASTM A193 GR. B7	4.5, 7.2
56	WASHER	33	COMMERCIAL CARBON STEEL	2
57	SEAL & WIRE	3	LEAD-STEEL	
58	NAME PLATE	1	SS1 304	
59	IDENTIFICATION PLATE	1		
60	INFORMATION PLATE	1		
61	NAME PLATE	1		
62	RESPONSE TIME LATE	1		
63	ADJUSTING RING	1	ACI-CF8M	SOLUTION ANNEALED
64	ADJUSTING BOLT	1	ASTM A562 TYPE 46 COND	2.33
65	LIFTING BRACKET	1	STEEL COMMERCIAL	
66	ADJUSTING BOLT	1	ASME A93 GR. B8 (410)	4.5, 5.6, 8
67	NUT	1	CARBON STEEL AISI 1018	
68	LOAD PLATE	1	ACI 6977 T. TYPE 440C	2
69	DU BEARING	2	ASME SA 514 GR. 2H	2.26
70	PIN	2	ASTM A562 TYPE 46 COND	2
71	RETAINING RING	2	ASTM A276 TYPE 410	2
72	DU SPACER	2	COMMERCIAL	2.26
73	BACKING PLATE	2	STEEL AISI 1215	2
74	LOOKING WIRE	1	TRUARC 5100-255	2
75	THRUST BEARING	1	ROLLWAY T-63 (QUV)	2.15
76	ADAPTER	1	ASTM A193 GR. B8	4.5, 5.6, 8/16

MAIN STEAM SRV

COMMONWEALTH EDISON CO
LASALLE COUNTY STATION

NOTE: SAFETY VALVE DISCHARGE IS TO DOWNSTREAM BLOW BY FITTING NO FLOW ESTABLISHED: FSD = 60,000 LB
FF = 25,000 LB
FULL FLOW ESTABLISHED: FSD = 96,000 LB
FF = 54,000 LB

SCALE: 1:4
DO NOT SCALE DRAWING

CROSBY CUST. EXELON
ORDER NO. 00024479
CROSBY P.O. INV000389
PREPARED BY: RMB 1/24/91
CHECKED BY: J. J. J. 1/24/91

WEIGHT 2800 LBS MAX (387)
SIZE 6 R 10 STYLE MB-85-BP
TYPE 2P ASSN NO 68390-5

ASME SECTION II CLASS I
CROSBY CROSBY VALVE & SEAT CO
WENTHAM MASS 02090

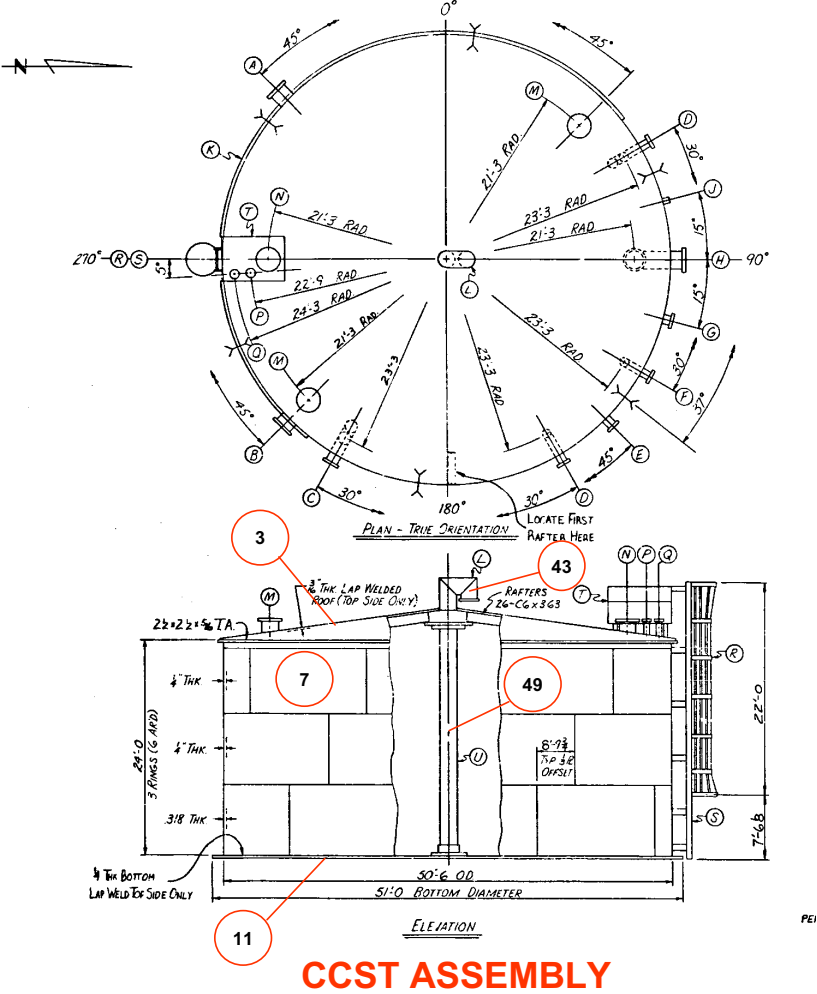
DRIVING SAFETY VALVE FOR
TITLE MAIN STEAM SERVICE
DRAWING DS-A-637905 REV
NO 5-11-10C S A

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 1 of 11)

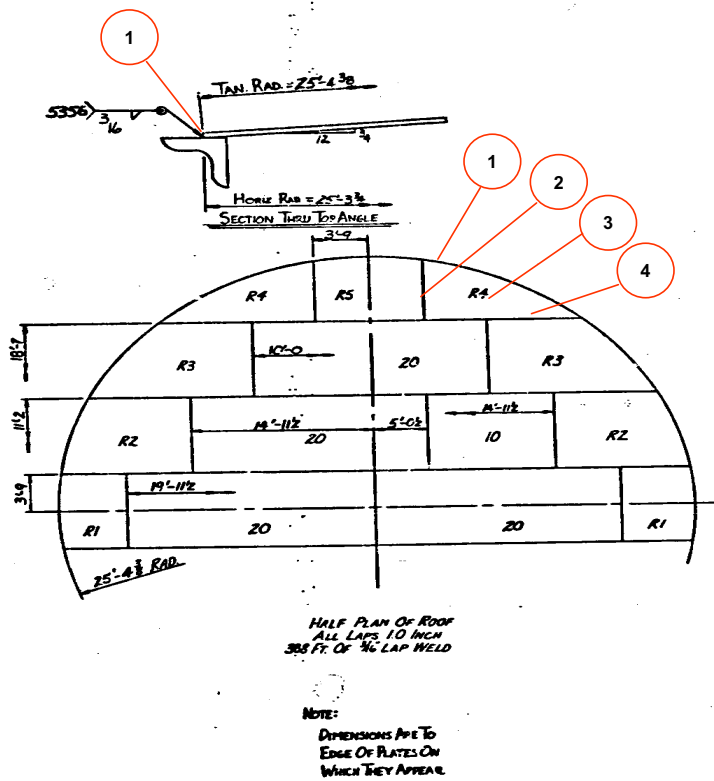
(Covers Worksheets ESF-CCST – 1 thru 58)

28/179

App. F.2 - BWR Systems Drawings

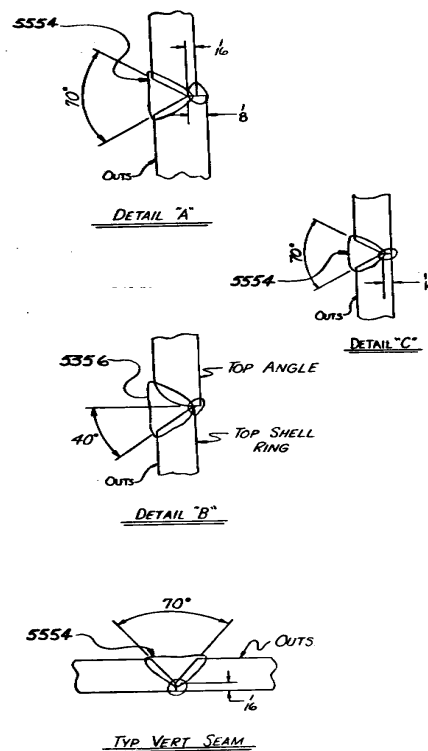
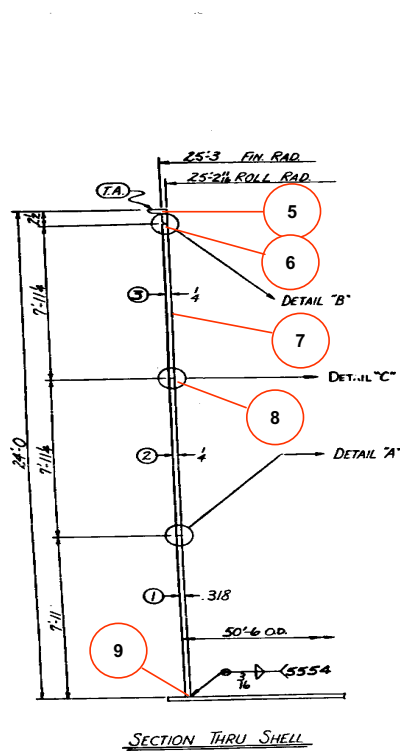


GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 2 of 11) 29/179
 (Covers Worksheets ESF-CCST – 1 thru 58) App. F.2 - BWR Systems Drawings



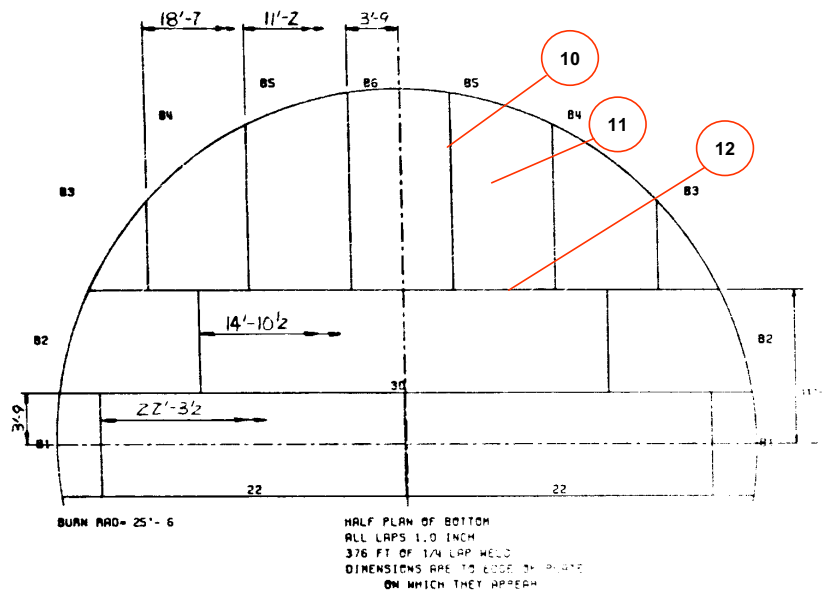
**CCST ROOF WELDMENT
 (PLAN VIEW)**

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 3 of 11) 130/179
App. F.2 BWR Systems Drawings
(Covers Worksheets ESF-CCST – 1 thru 58)



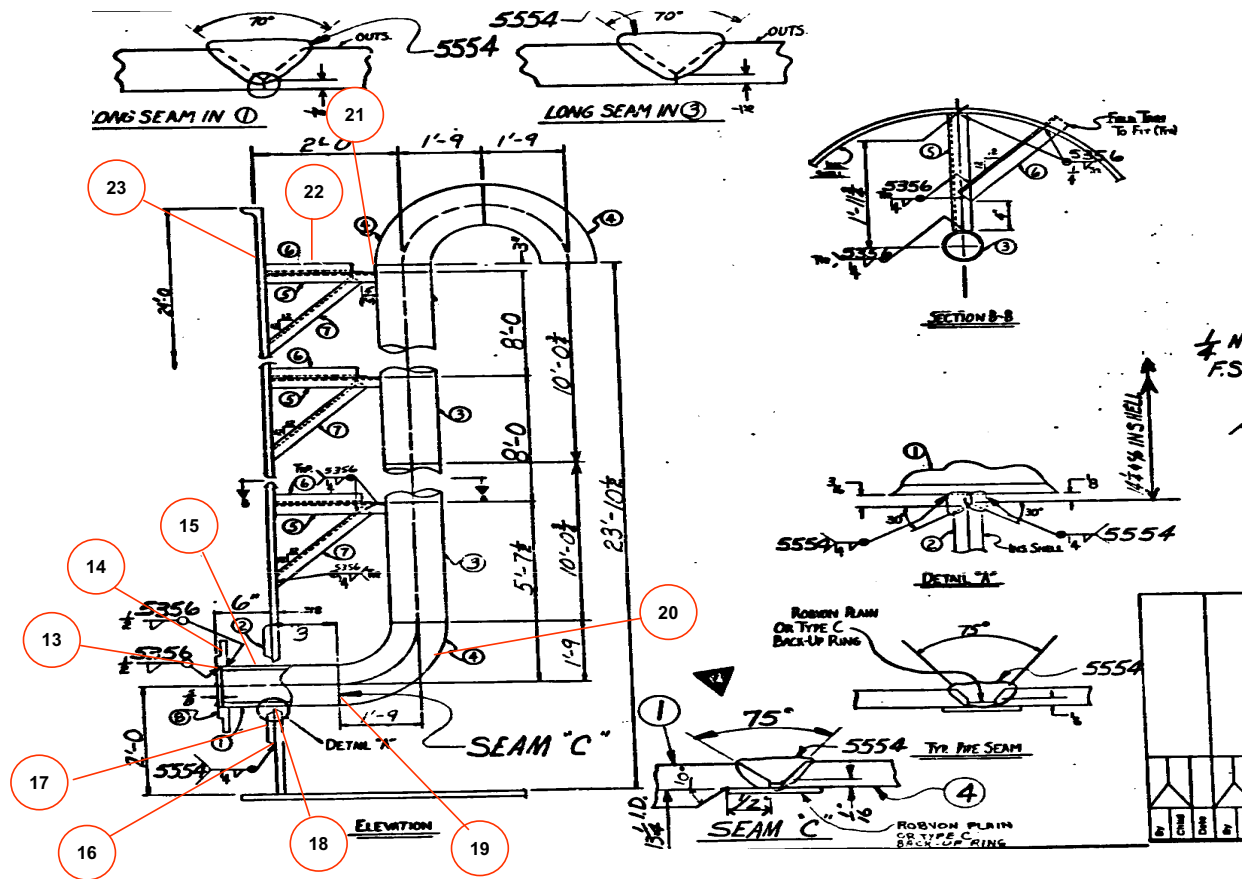
CCST ELEVATION VIEW

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 4 of 11) (Covers Worksheets ESF-CCST – 1 thru 58)



**CCST BOTTOM WELDMENT
(PLAN VIEW)**

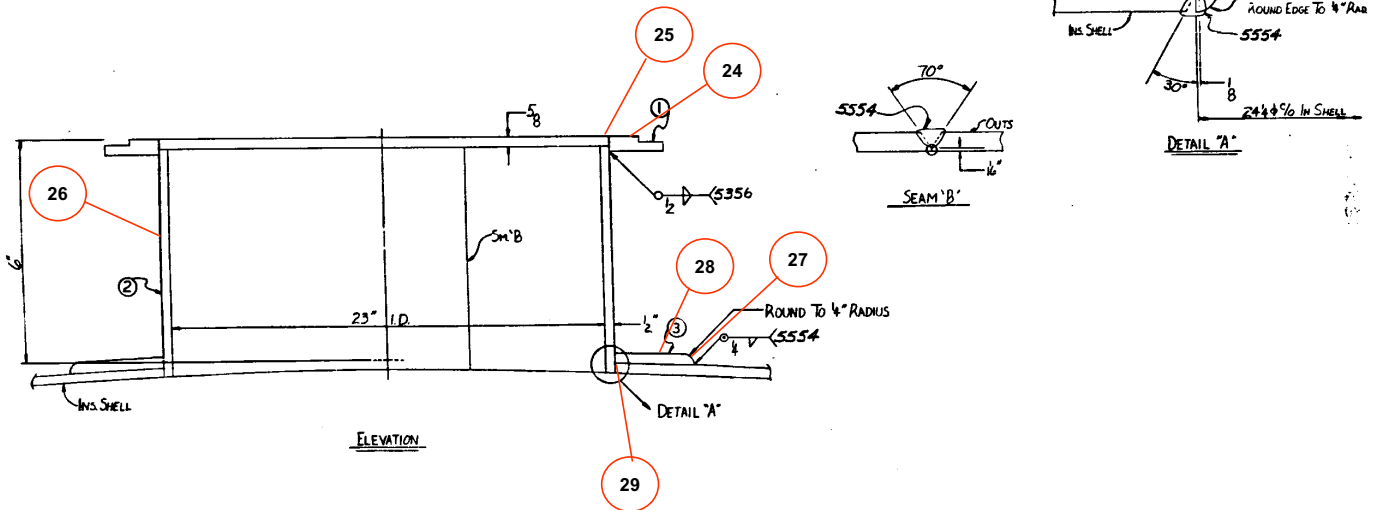
GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 5 of 11) 132/179
 (Covers Worksheets ESF-CCST – 1 thru 58) App. F.2 - BWR Systems Drawings



14" SHELL NOZZLE (C)

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 6 of 11)
(Covers Worksheets ESF-CCST – 1 thru 58)

133/179
 App. F.2 - BWR Systems Drawings



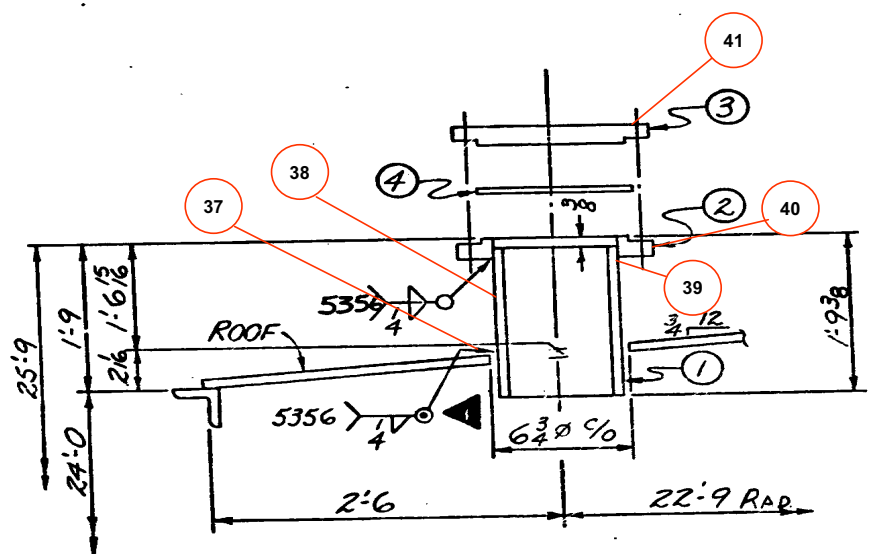
24" SHELL NOZZLE (B)

Sheet 7 of 11 134/179
App. F.2 - BWR Systems Drawings



GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 8 of 11)
(Covers Worksheets ESF-CCST – 1 thru 58)

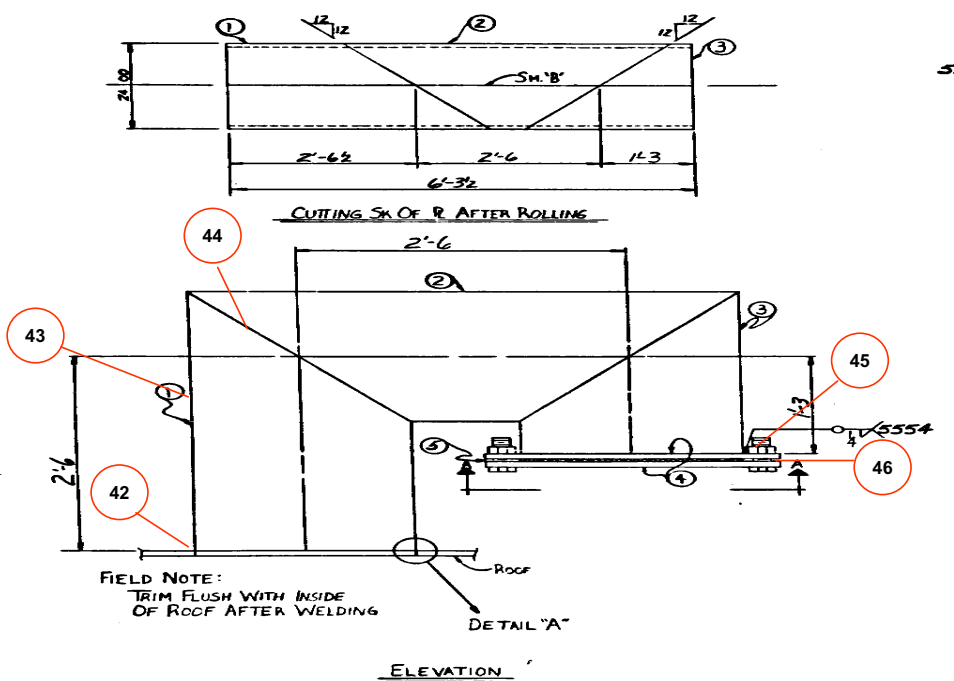
135/179
App. F.2 - BWR Systems Drawings



SECT. THRU NOZZLE

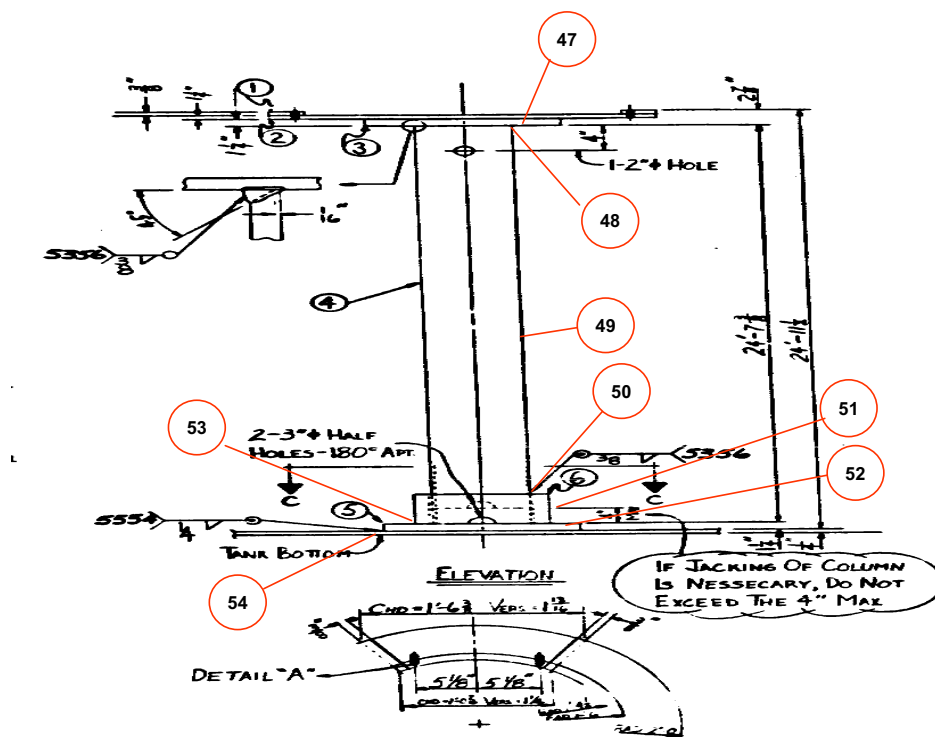
6" ROOF NOZZLE (P)

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 9 of 11) ^{136/179}
(Covers Worksheets ESF-CCST – 1 thru 58) App. F.2 - BWR Systems Drawings



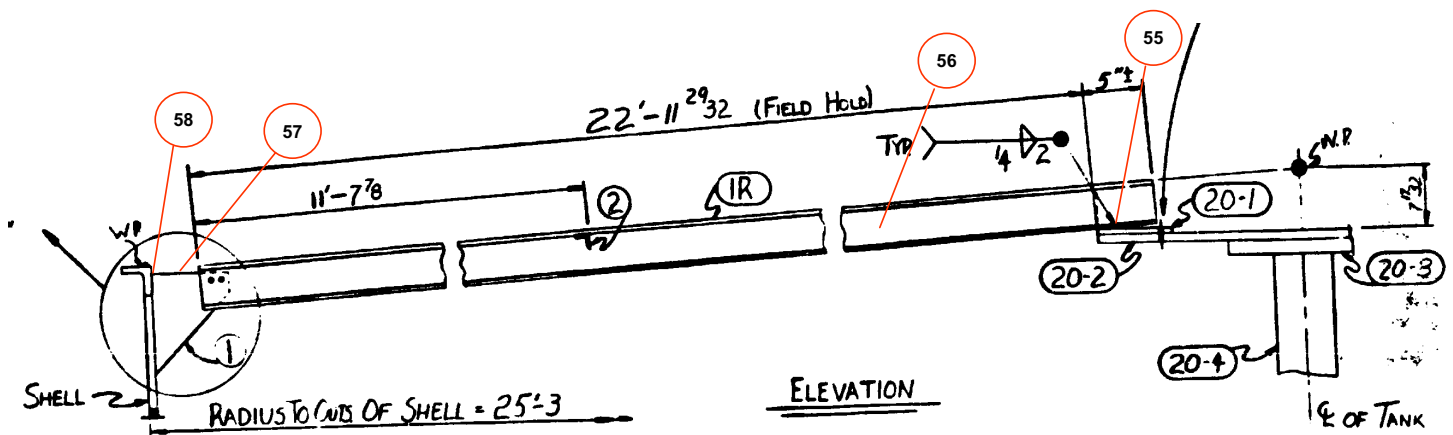
24" SCREENED VENT (L)

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 10 of 11)
(Covers Worksheets ESF-CCST – 1 thru 58)



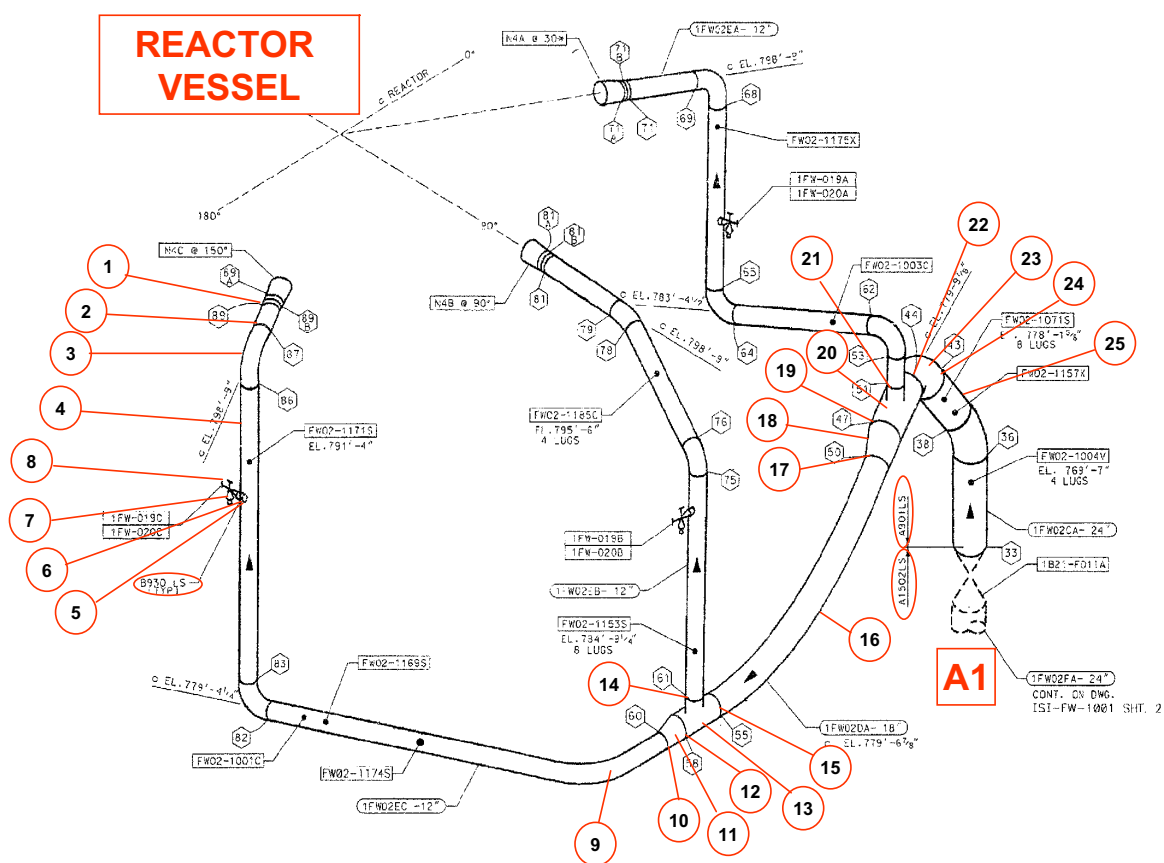
10" COLUMN SUPPORT (U)

GROUP 18 – CYCLED CONDENSATE STORAGE TANK (Sheet 11 of 11) (Covers Worksheets ESF-CCST – 1 thru 58)



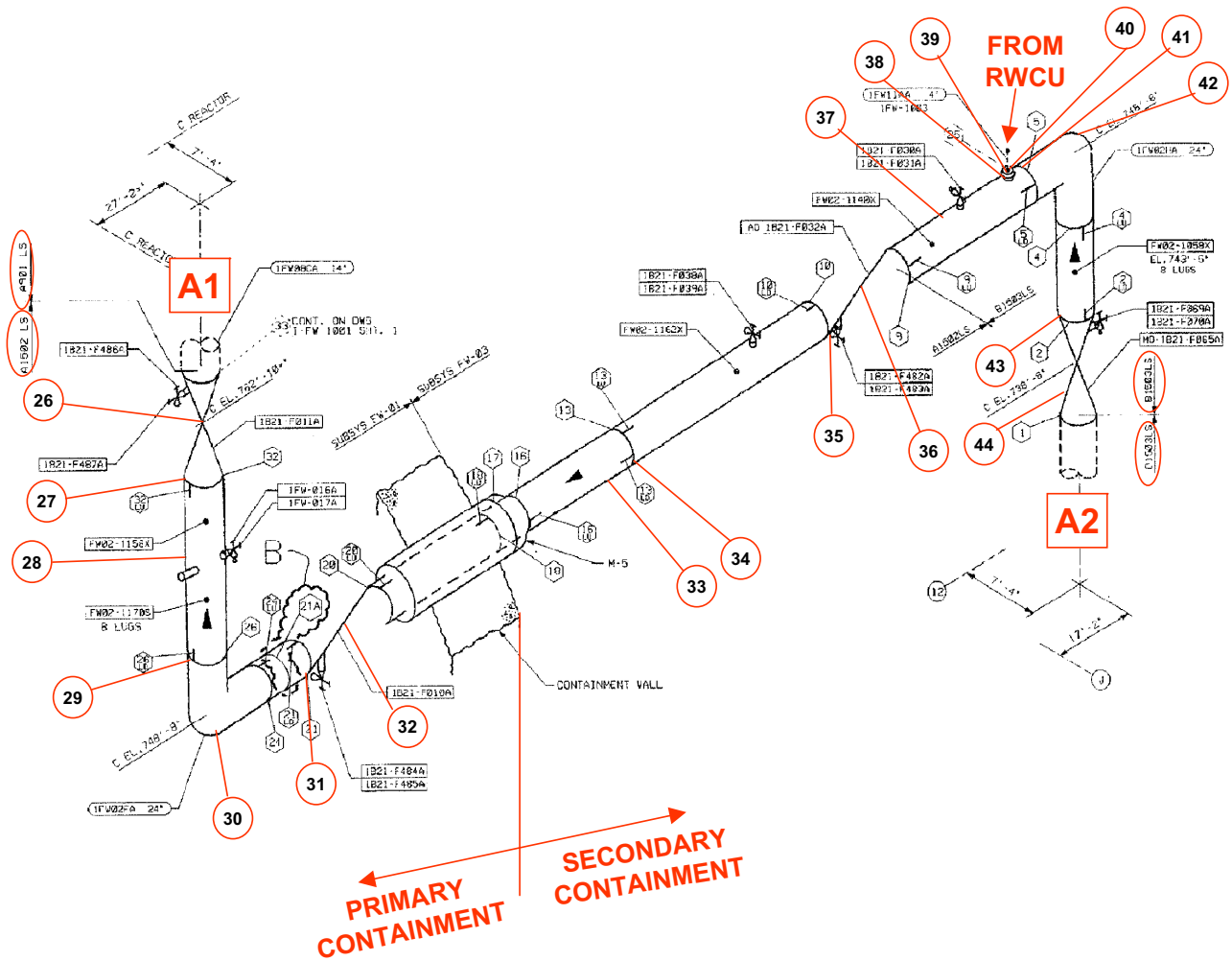
INTERNAL ROOF FRAMING

139/179
App. F.2 - BWR Systems Drawings



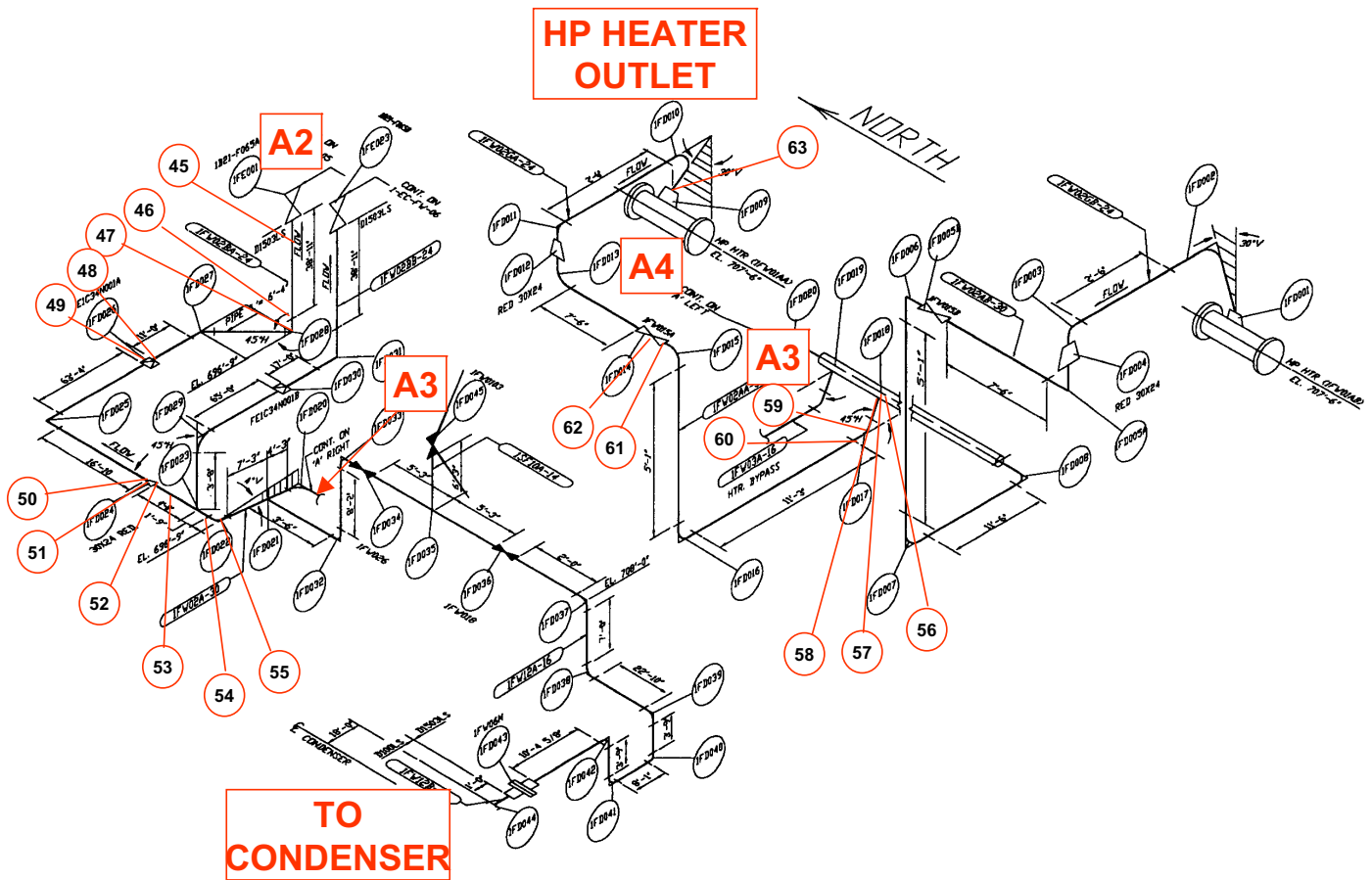
GROUP 19 – FEEDWATER (Sheet 2 of 6) **(Covers Worksheets PCS-FW – 1 thru 107)**

140/179
 App. F.2 - BWR Systems Drawings



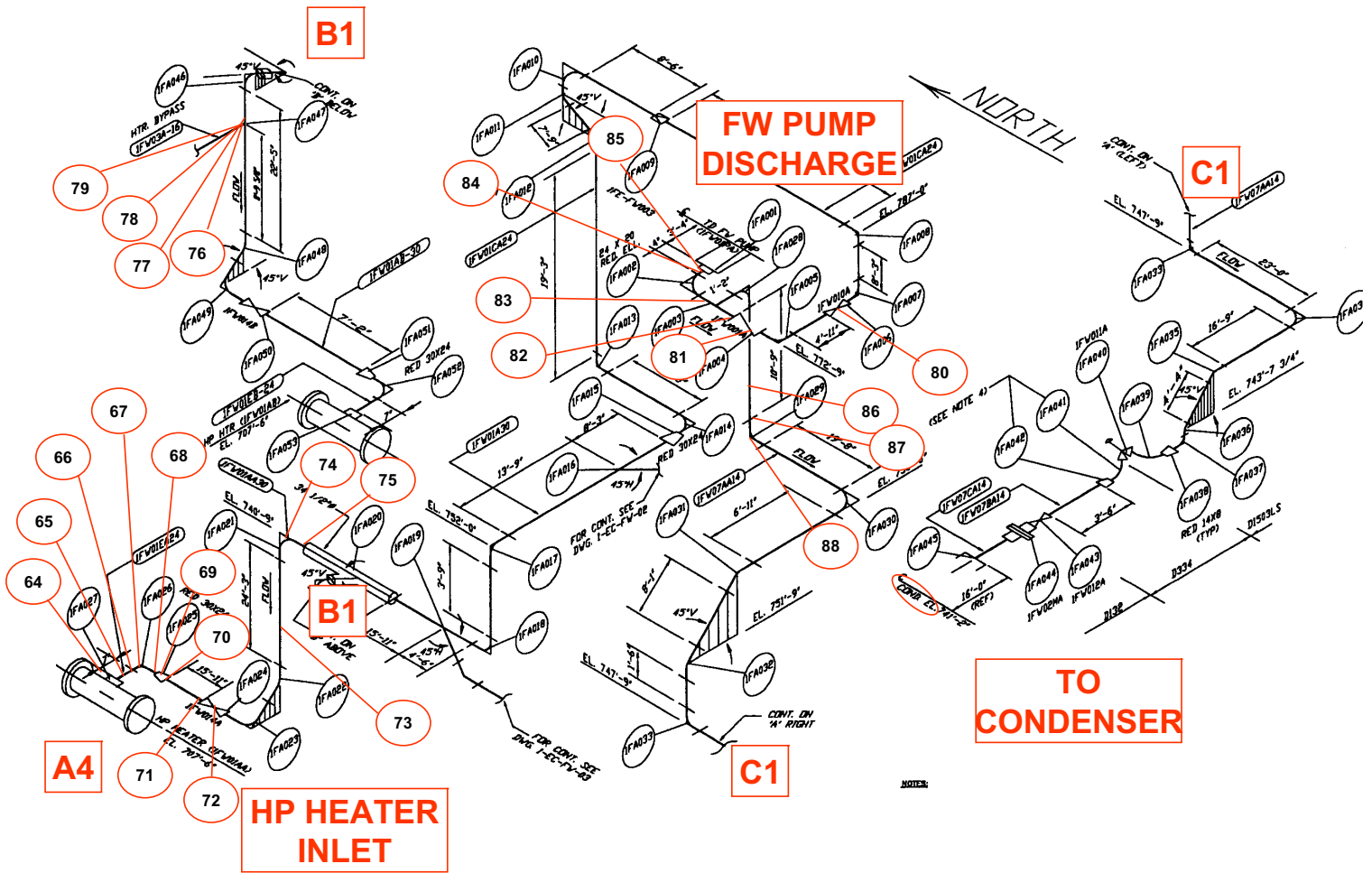
GROUP 19 – FEEDWATER (Sheet 3 of 6)
(Covers Worksheets PCS-FW – 1 thru 107)

141/179
App. F.2 - BWR Systems Drawings

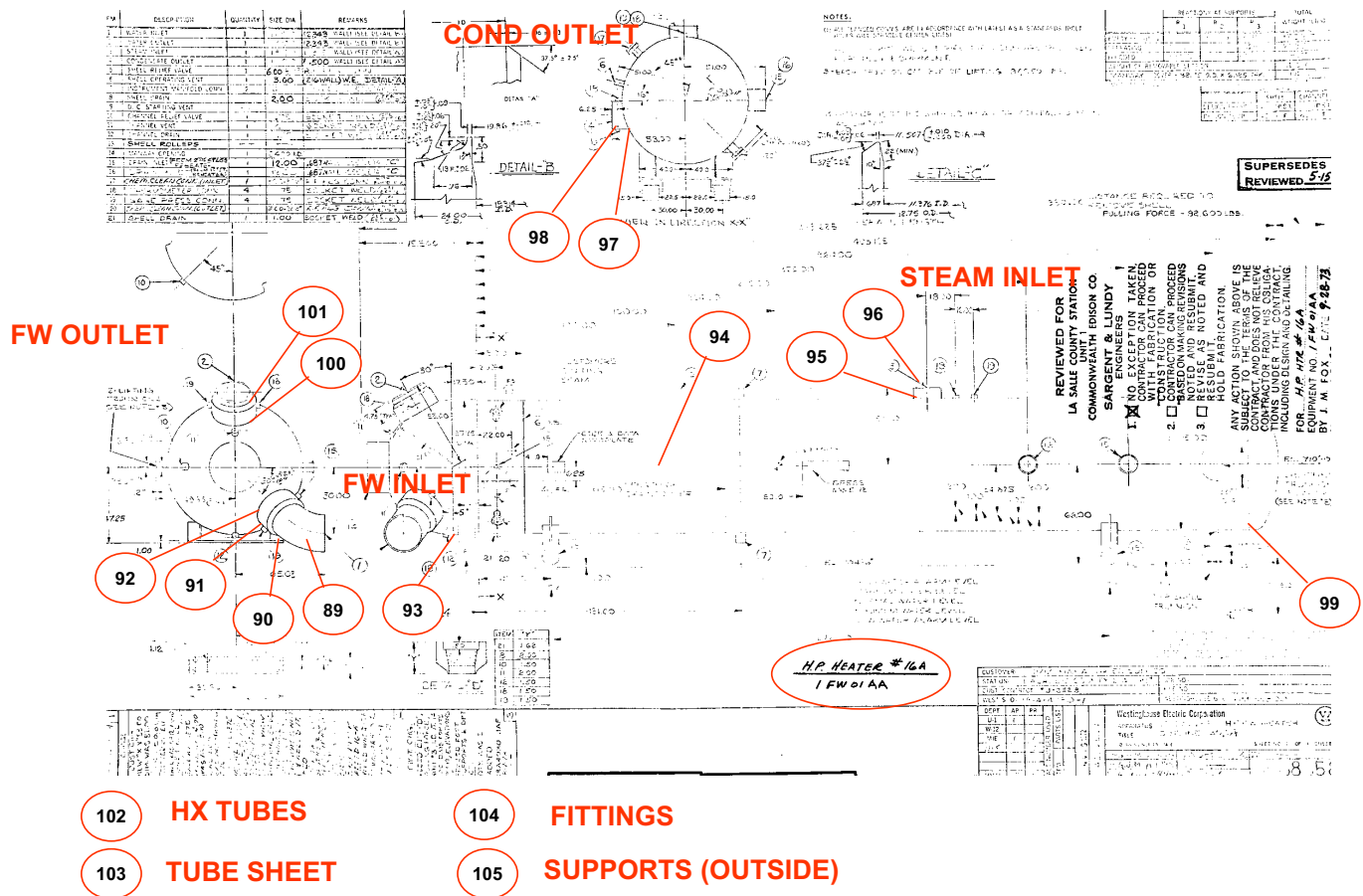


GROUP 19 – FEEDWATER (Sheet 4 of 6) **(Covers Worksheets PCS-FW – 1 thru 107)**

142/179
 App. F.2 - BWR Systems Drawings

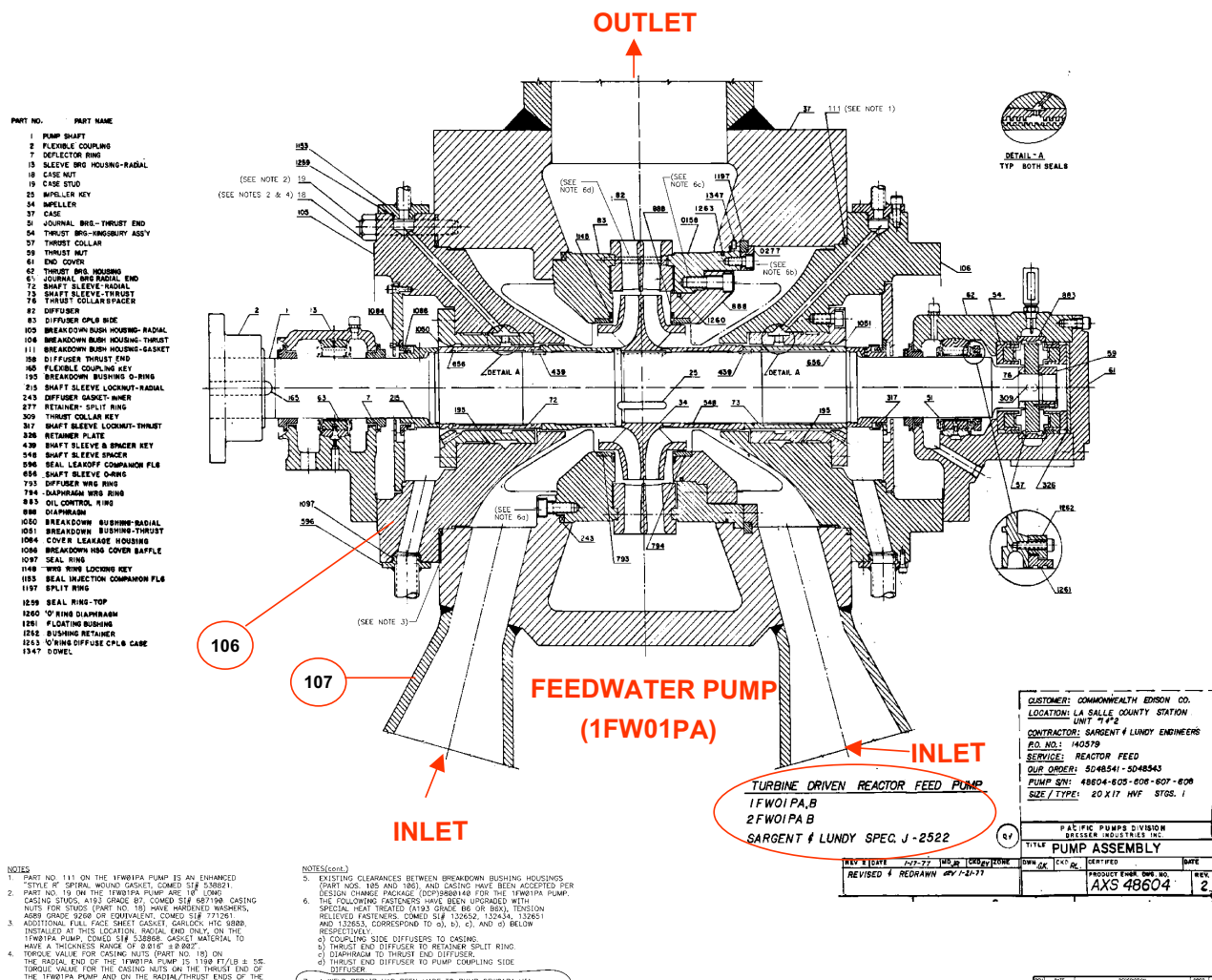


143/179
App. F.2 - BWR Systems Drawings

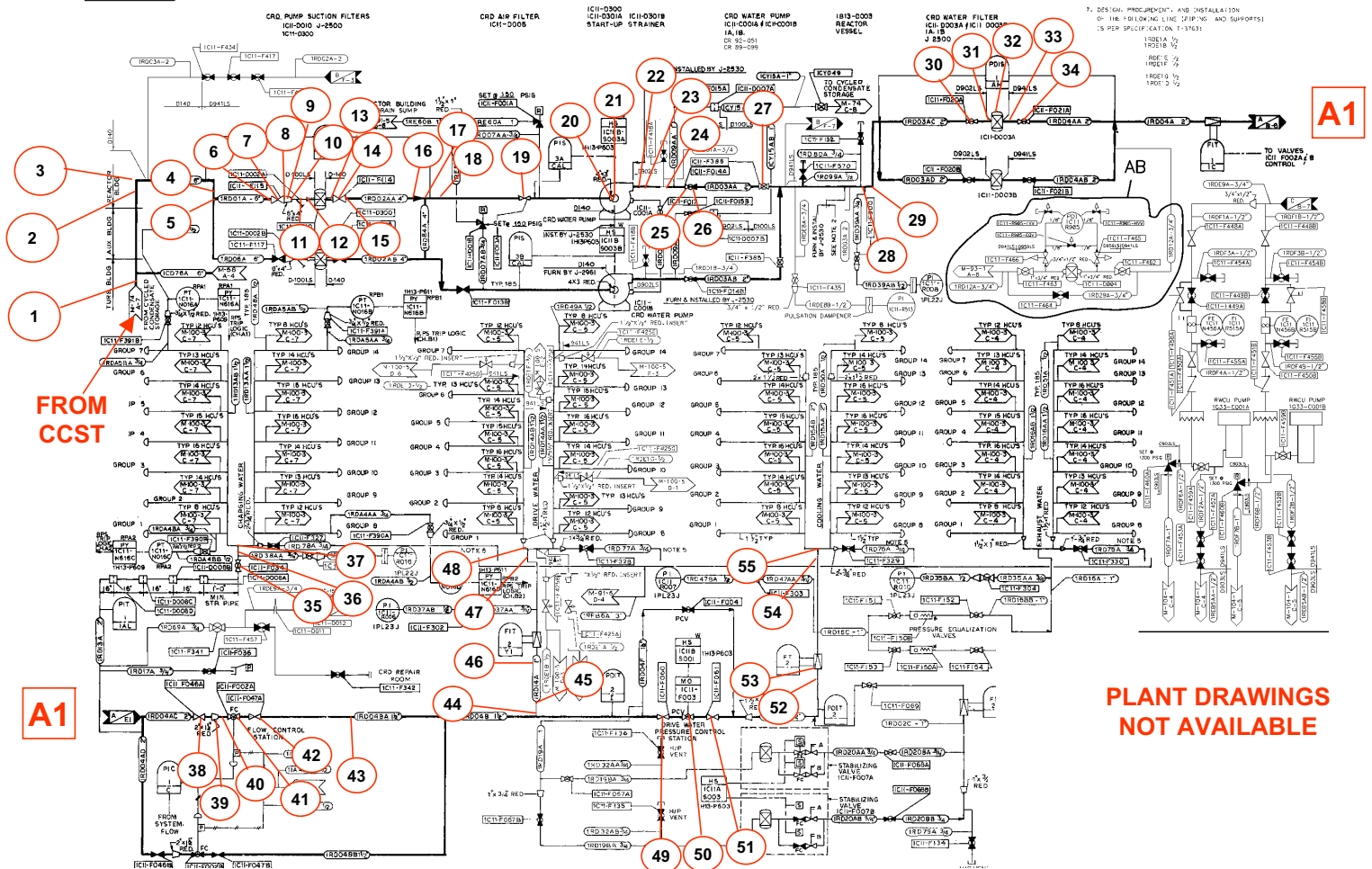


GROUP 19 – FEEDWATER (Sheet 6 of 6) (Covers Worksheets PCS-FW – 1 thru 107)

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App. F.2 - BWR Systems Drawings



145/179
App. F.2 - BWR Systems Drawings



146/179
App. F.2 - BWR Systems Drawings



(Covers Worksheets AS-CRD – 1 thru 62)

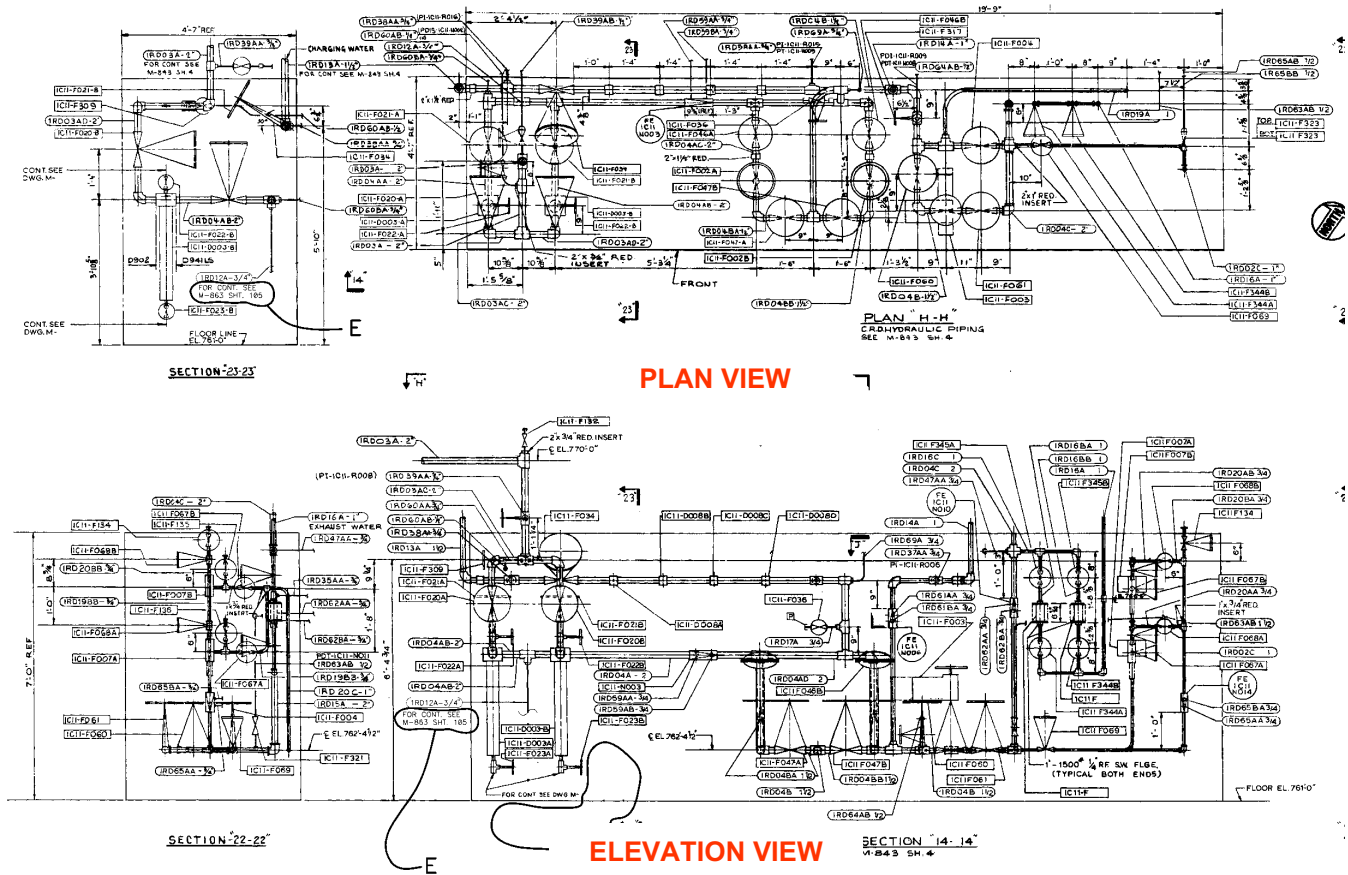
App. F.2 - BWR Systems Drawings



CRD PUMP (1C11-C001A)

GROUP 20 – CONTROL ROD DRIVE (Sheet 4 of 4) **(Covers Worksheets AS-CRD – 1 thru 62)**

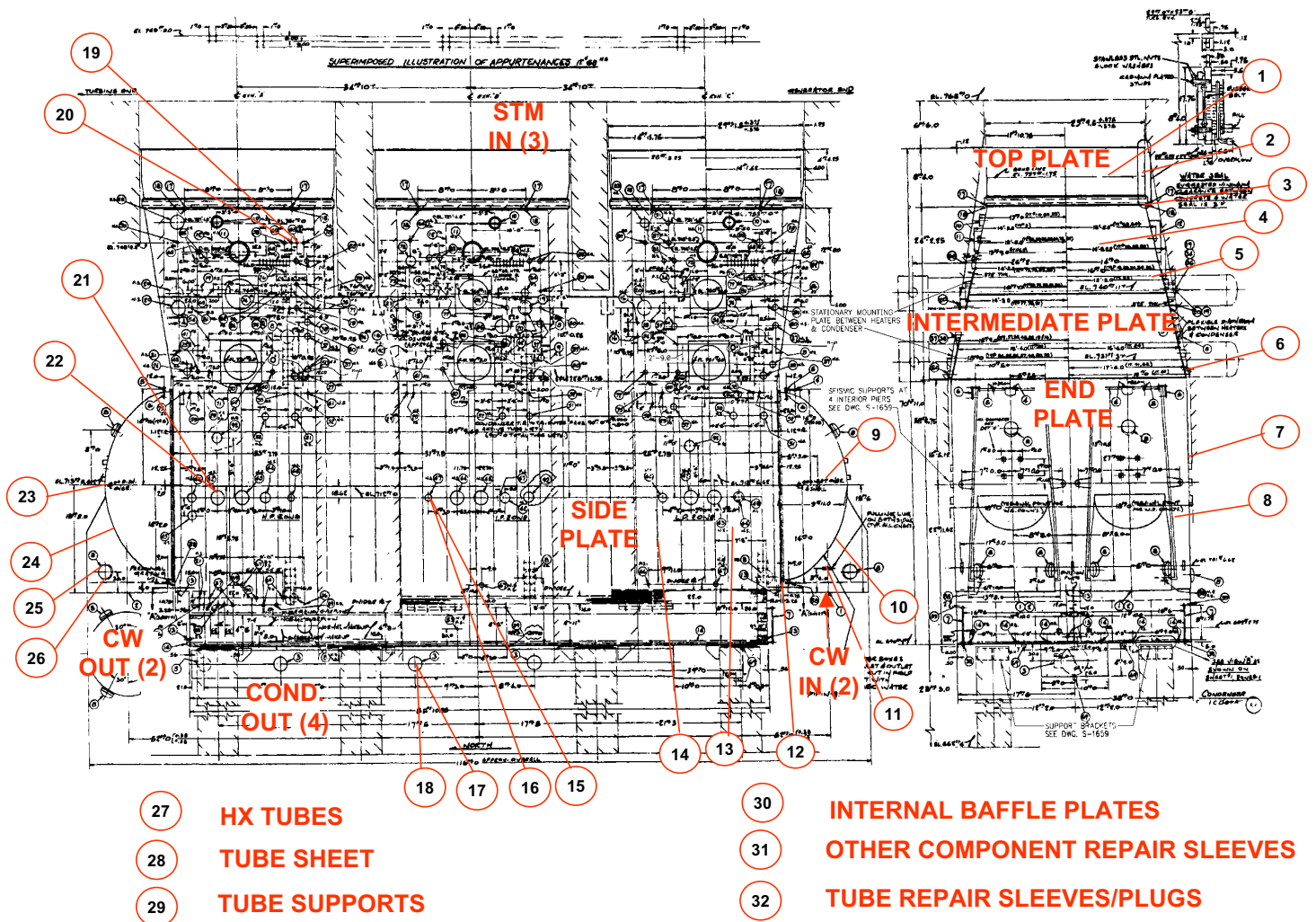
148/179
 App. F.2 - BWR Systems Drawings



**TYPICAL CRD HYDRAULIC PIPING
 (FOR REFERENCE ONLY)**

GROUP 21 – MAIN CONDENSER (Sheet 1 of 1) **(Covers Worksheets PCS-CONDNSR – 1 thru 32)**

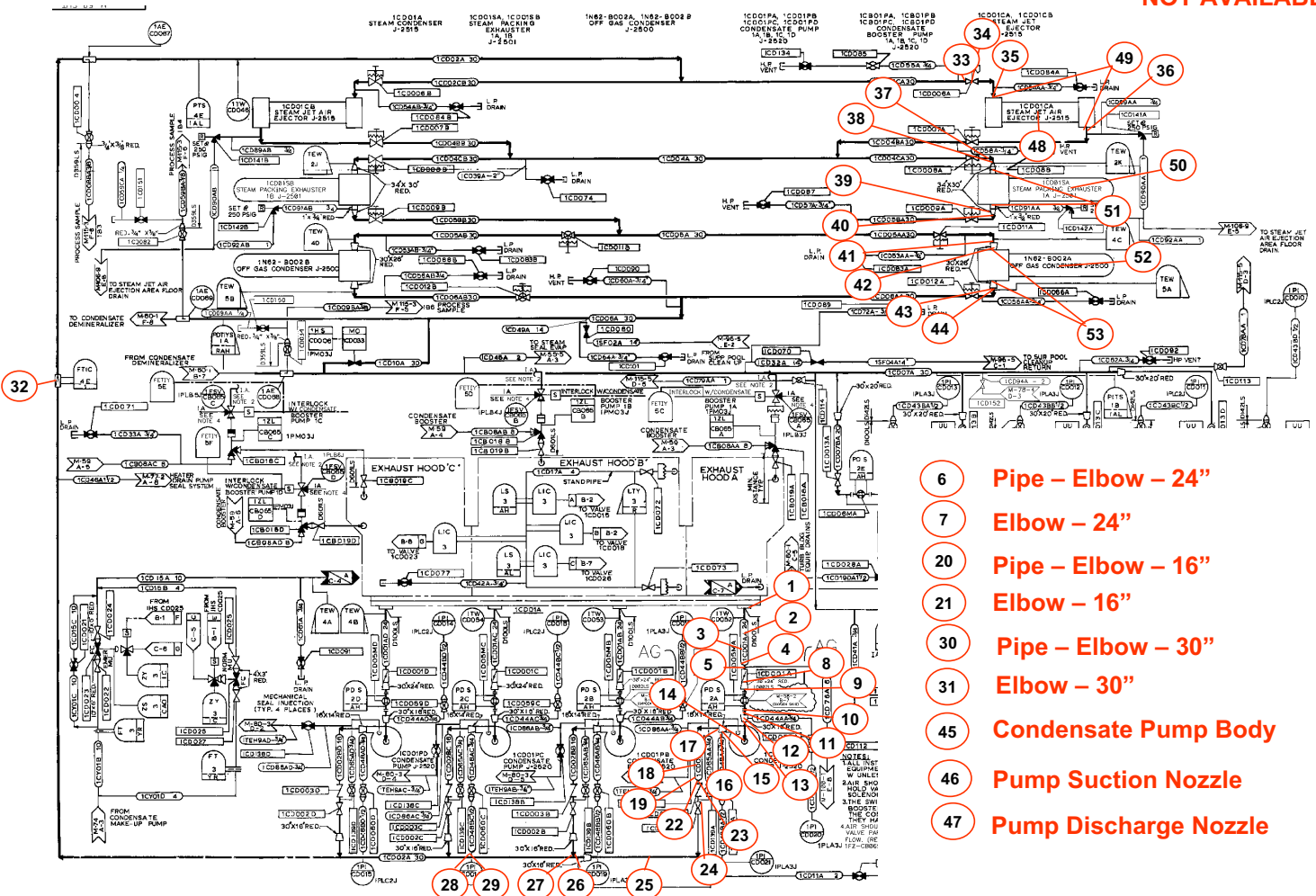
149/179
 App. F.2 - BWR Systems Drawings



GROUP 22 – CONDENSATE CONDENSER DISCHARGE PIPING (Sheet 1 of 4) (Covers Worksheets PCS-CONDISCH – 1 thru 53)

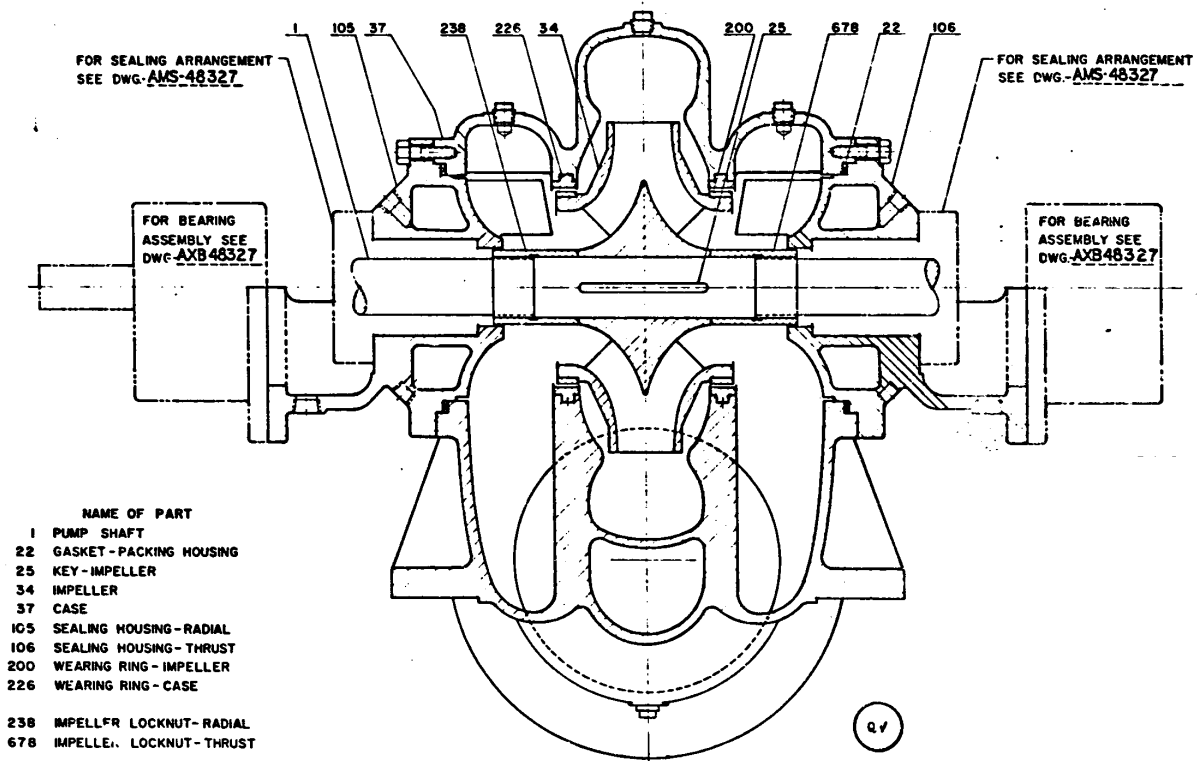
150/179
App. F.2 - BWR Systems Drawings

**PLANT DRAWINGS
NOT AVAILABLE**



GROUP 22 – CONDENSATE
CONDENSER DISCHARGE PIPING (Sheet 3 of 4)
(Covers Worksheets PCS-CONDISCH – 1 thru 53)

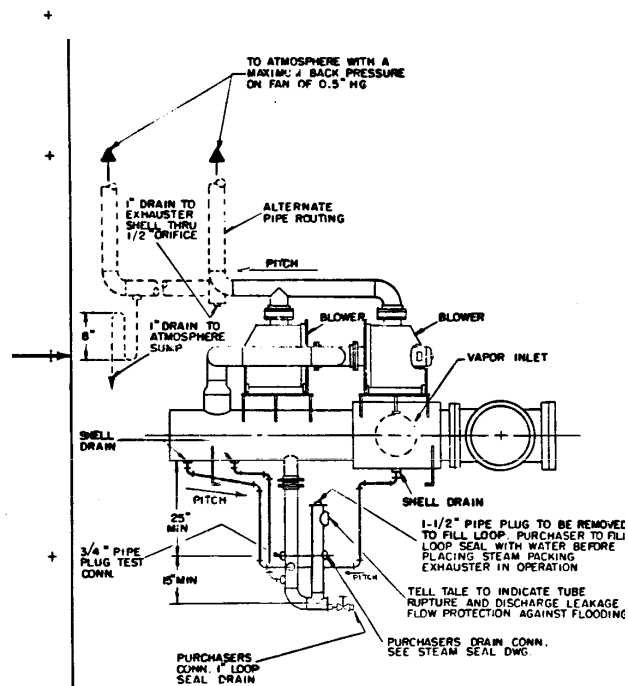
152/179
 App. F.2 - BWR Systems Drawings



CONDENSATE PUMP
(FOR REFERENCE ONLY)

GROUP 22 – CONDENSATE **CONDENSER DISCHARGE PIPING (Sheet 4 of 4)** **(Covers Worksheets PCS-CONDISCH – 1 thru 53)**

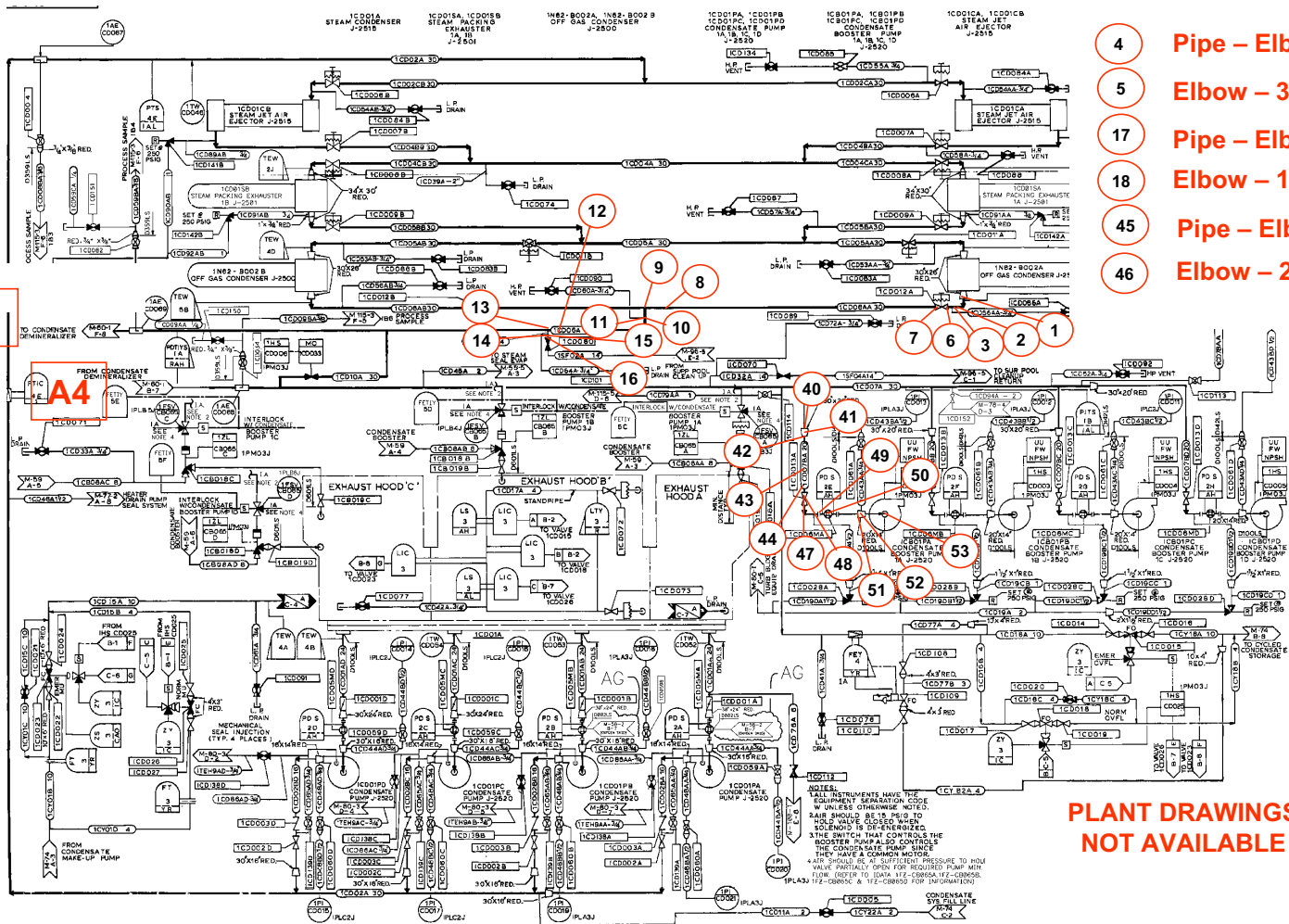
153/179
 App. F.2 - BWR Systems Drawings



**STEAM PACKING EXHAUSTER
 (FOR REFERENCE ONLY)**

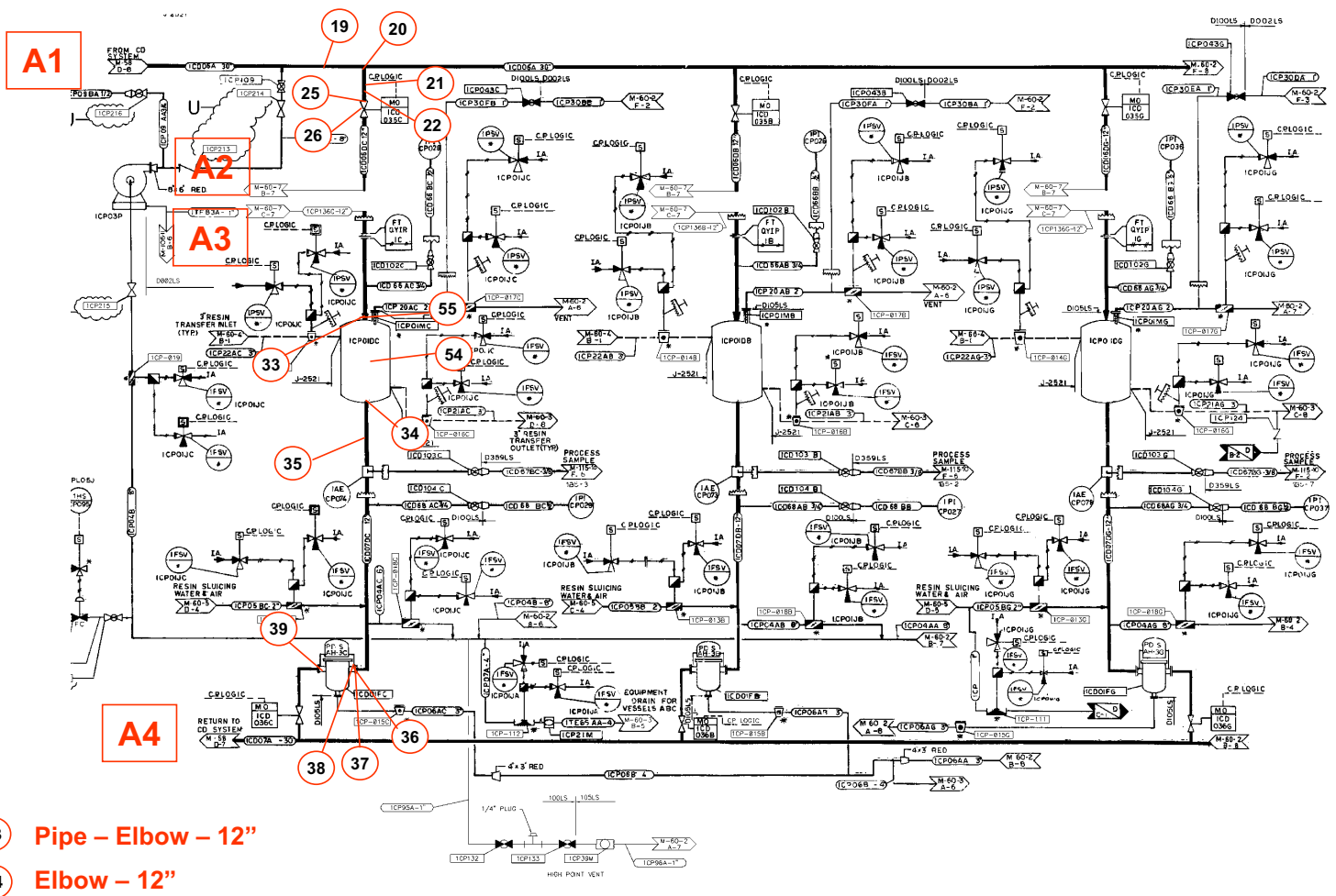
GROUP 23 – CONDENSATE **CONDENSATE PIPING TO BOOSTER PUMP (Sheet 1 of 3)** **(Covers Worksheets PCS-CONDBPMP – 1 thru 57)**

154/179
 App. 23 - BWR Systems Drawings



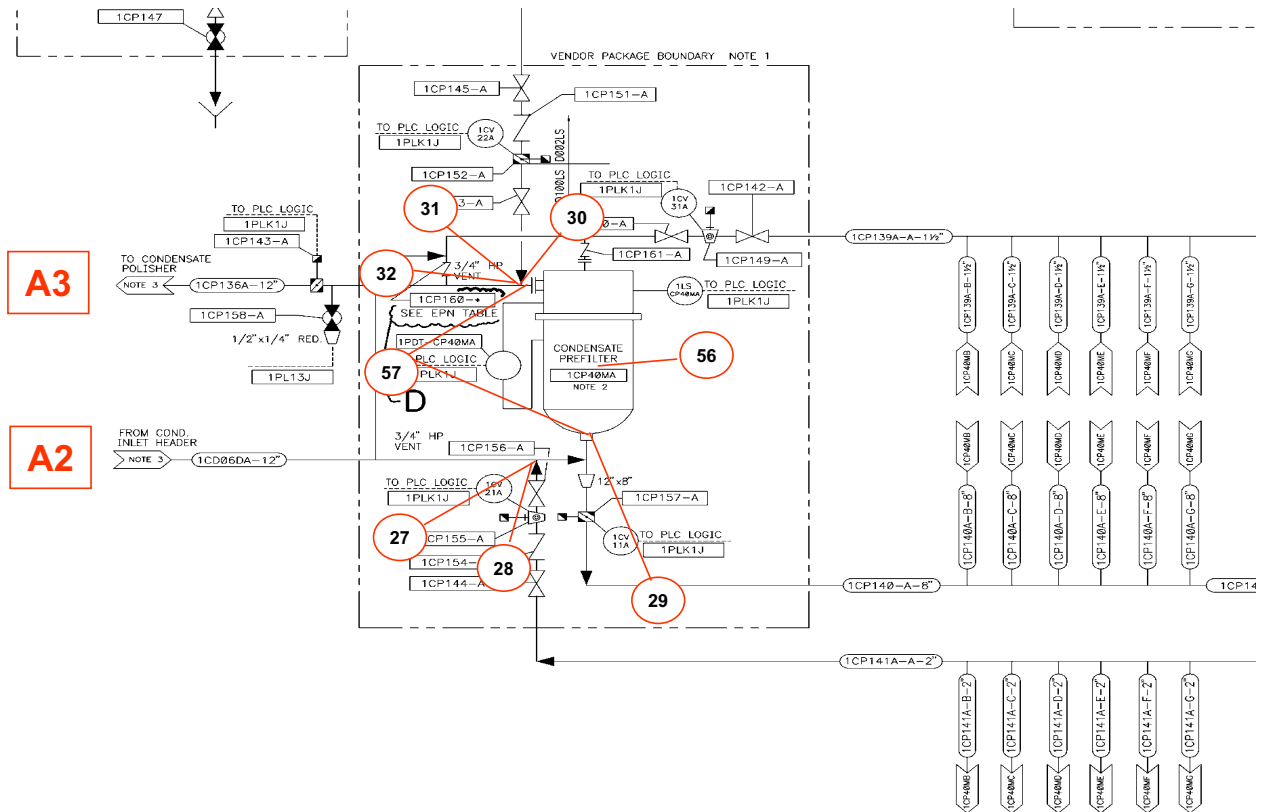
GROUP 23 – CONDENSATE **CONDENSATE PIPING TO BOOSTER PUMP (Sheet 2 of 3)** **(Covers Worksheets PCS-CONDBPMP – 1 thru 57)**

155/179
 App. F.2 - BWR Systems Drawings

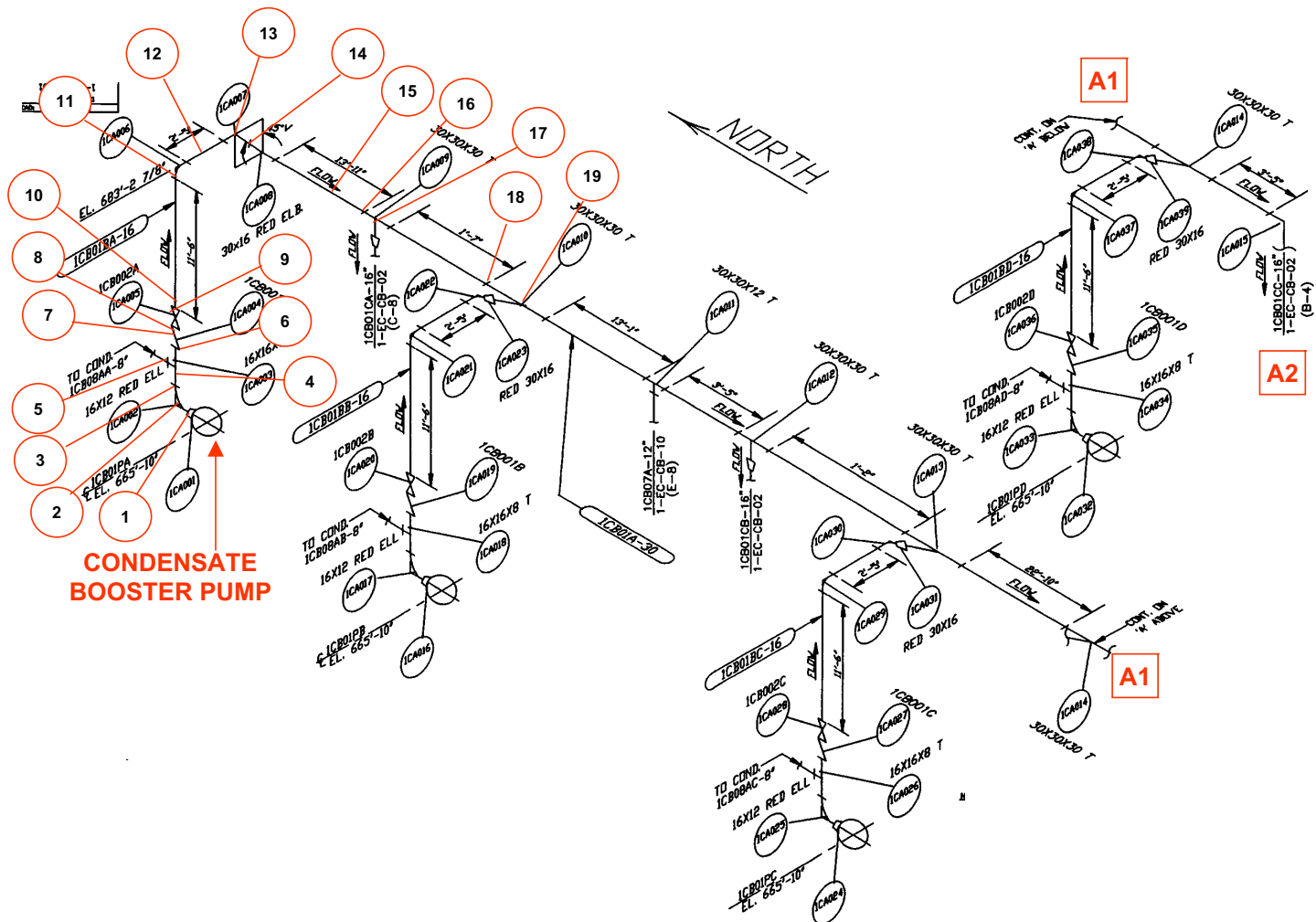


GROUP 23 – CONDENSATE **CONDENSATE PIPING TO BOOSTER PUMP (Sheet 3 of 3)** **(Covers Worksheets PCS-CONDBPMP – 1 thru 57)**

156/179
 App. 5.3 - BWR Systems Drawings

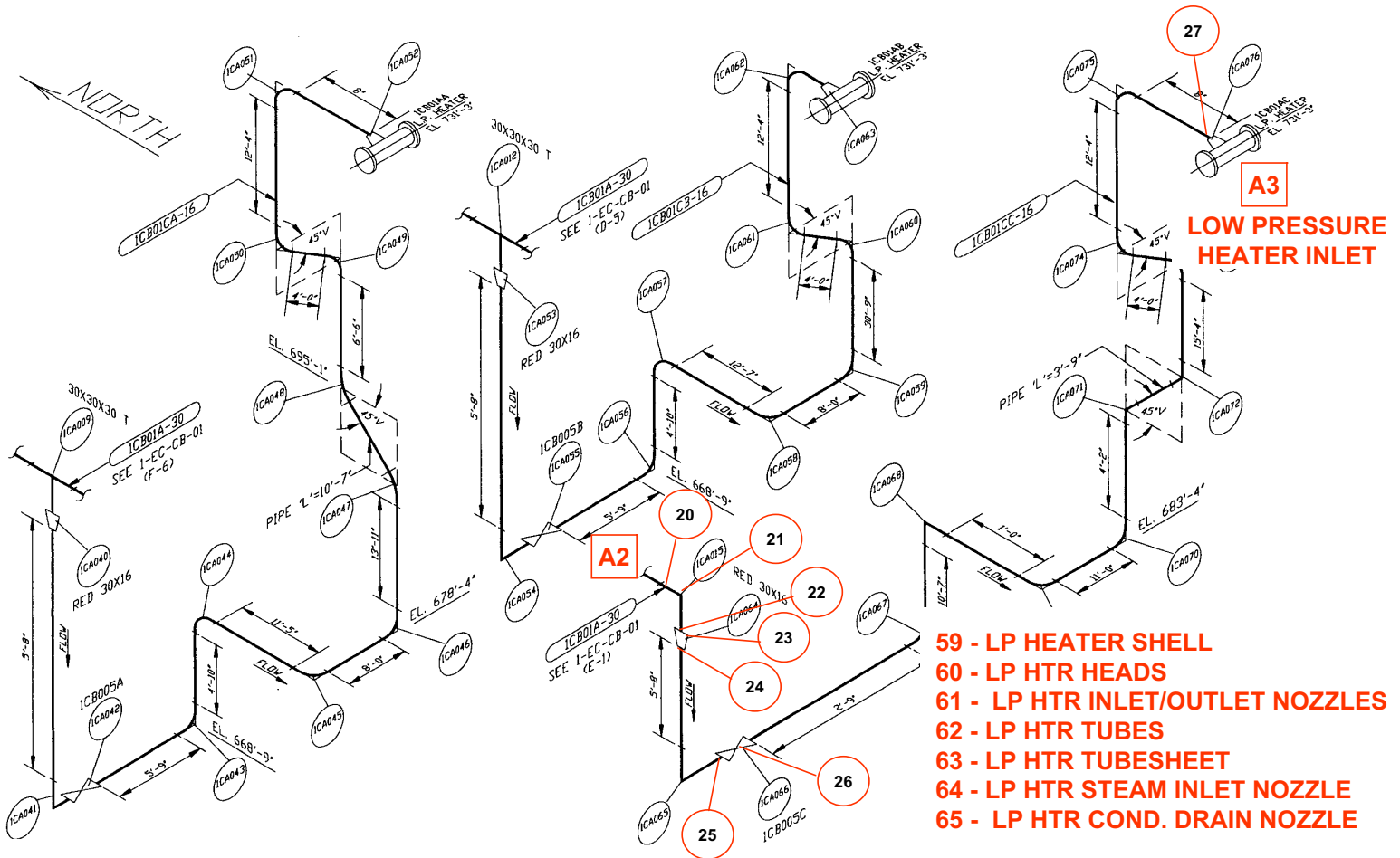


6) App. F.2 - BWR Systems Drawings

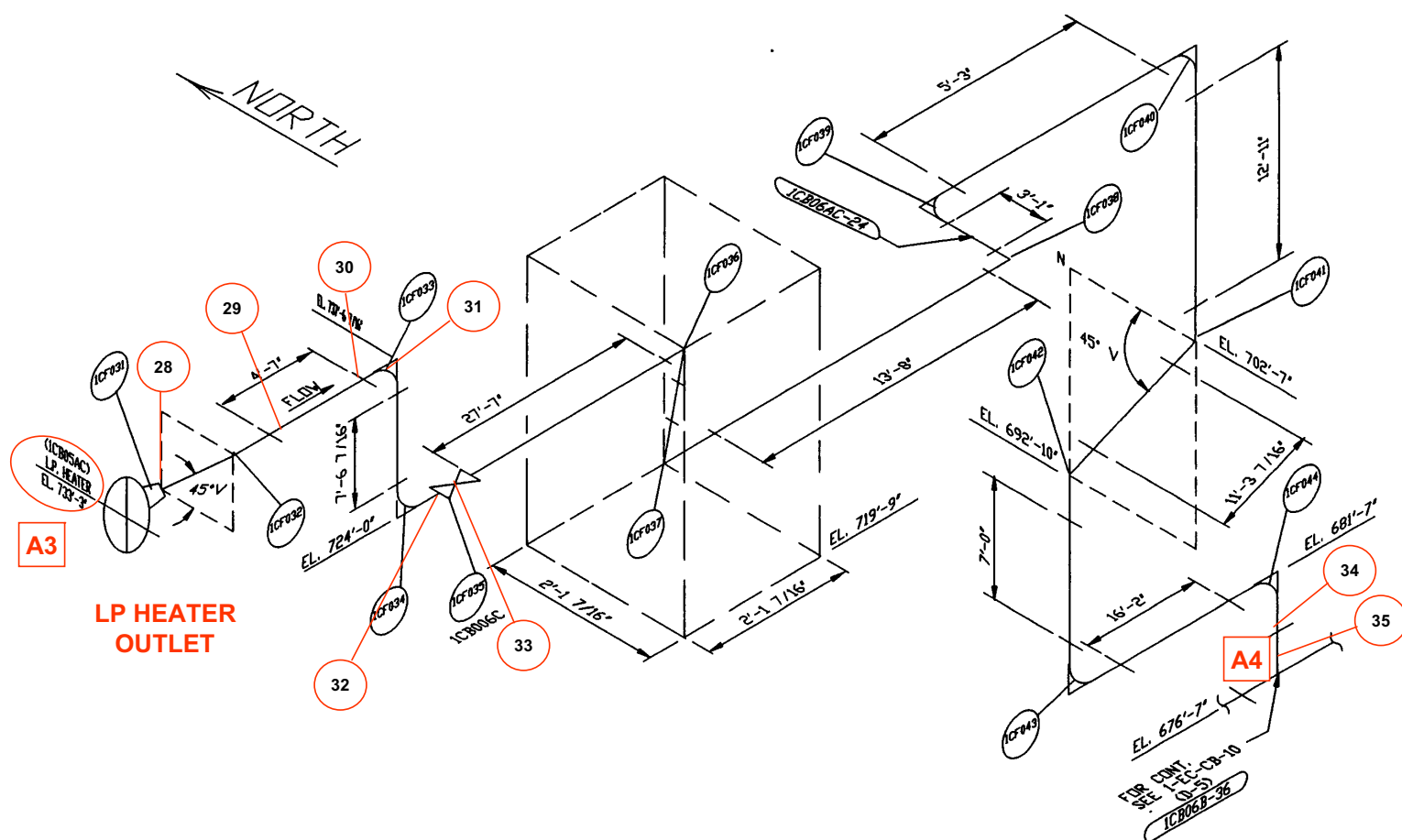


GROUP 24 – CONDENSATE BOOSTER PUMP PIPING TO FW PUMP (Sheet 2 of 6) (Covers Worksheets PCS-CONDFWPMP – 1 thru 65)

158/179
App. F.2 - BWR Systems Drawings

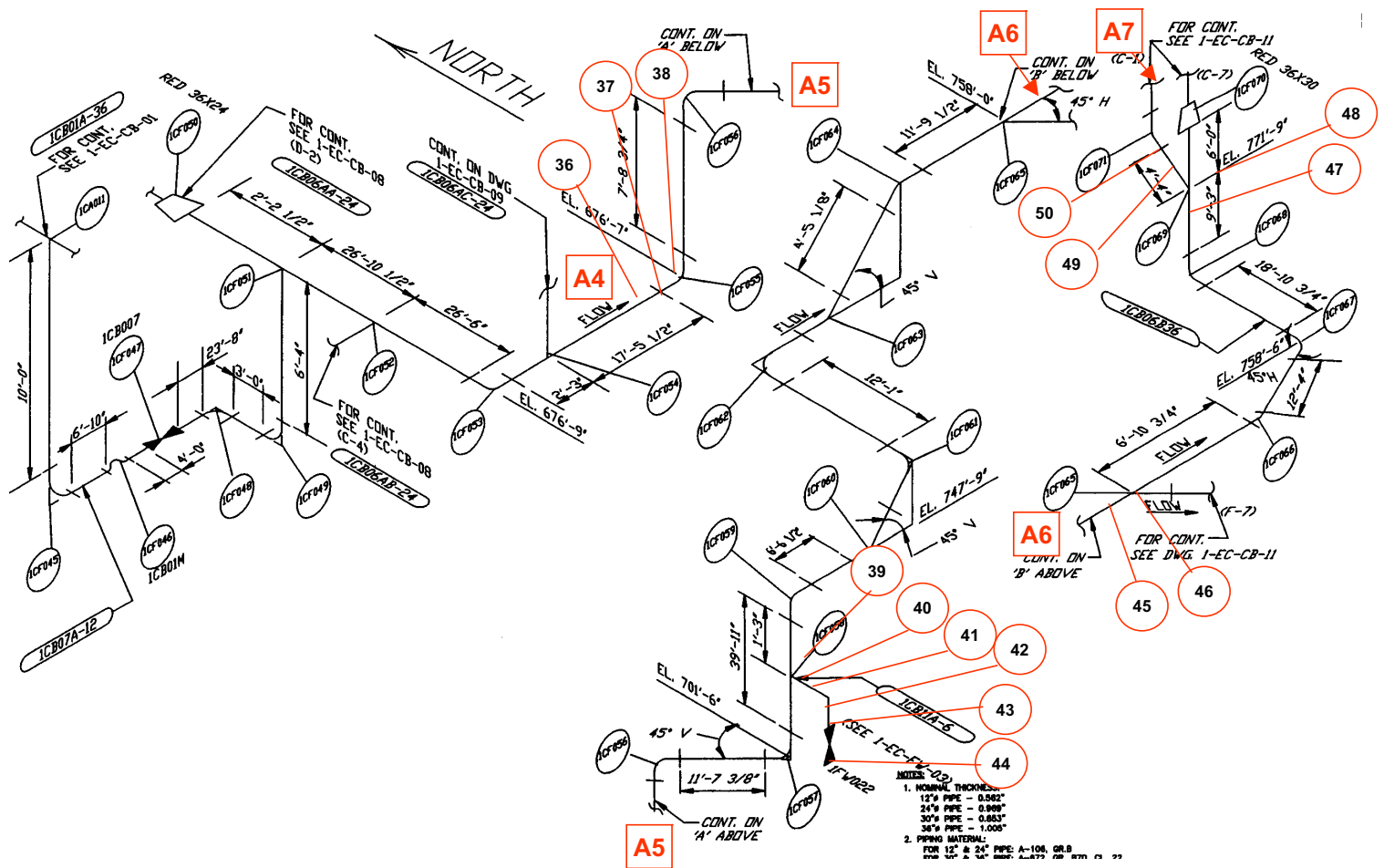


159/179
App. F.2 - BWR Systems Drawings



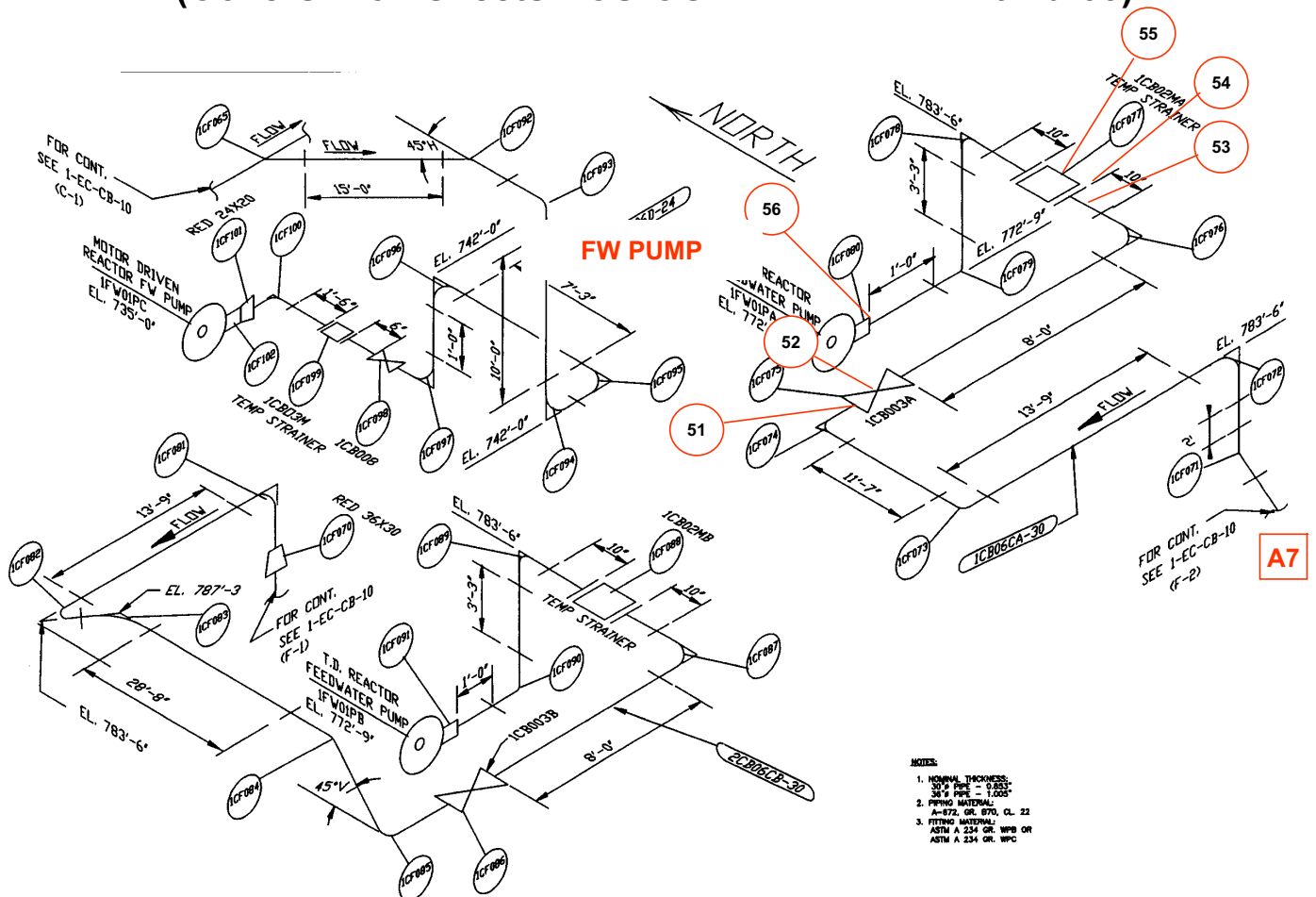
GROUP 24 – CONDENSATE BOOSTER PUMP PIPING TO FW PUMP (Sheet 4 of 6) (Covers Worksheets PCS-CONDFWPMP – 1 thru 65)

160/179
App. F.2 - BWR Systems Drawings



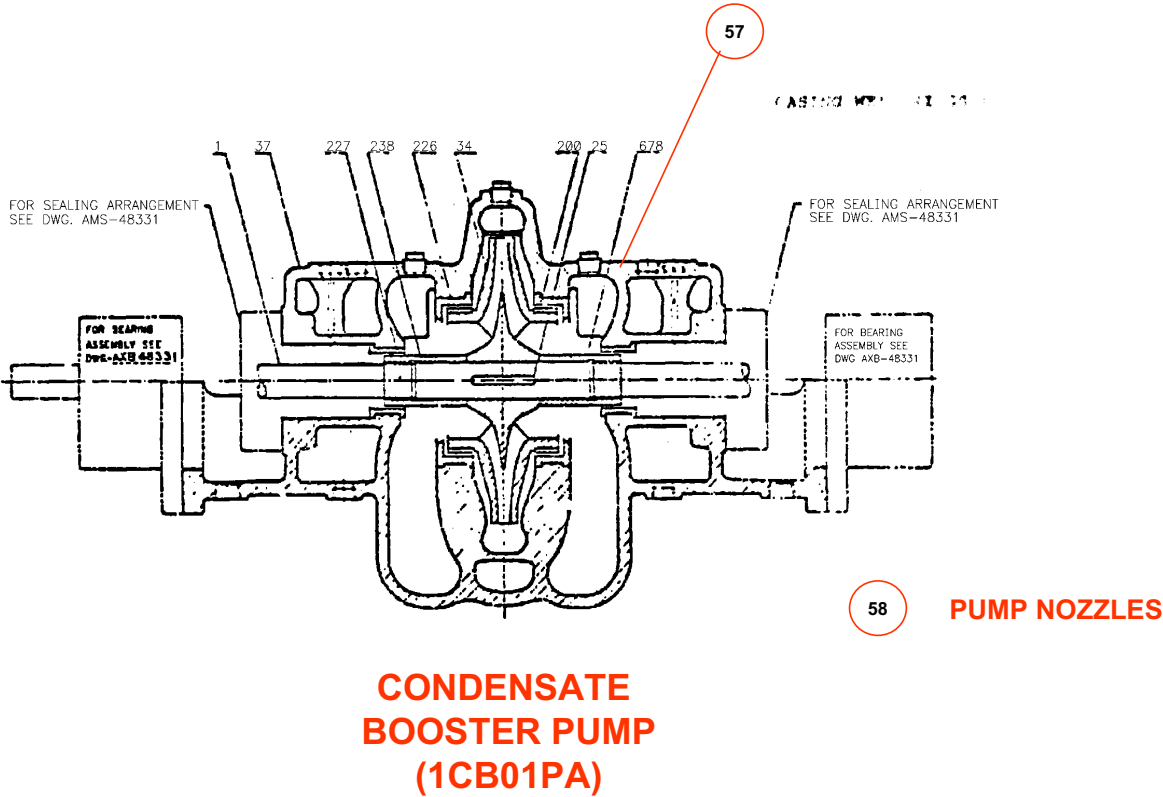
GROUP 24 – CONDENSATE BOOSTER PUMP PIPING TO FW PUMP (Sheet 5 of 6) (Covers Worksheets PCS-CONDFWPMP – 1 thru 65)

161/179
App. F.2 - BWR Systems Drawings

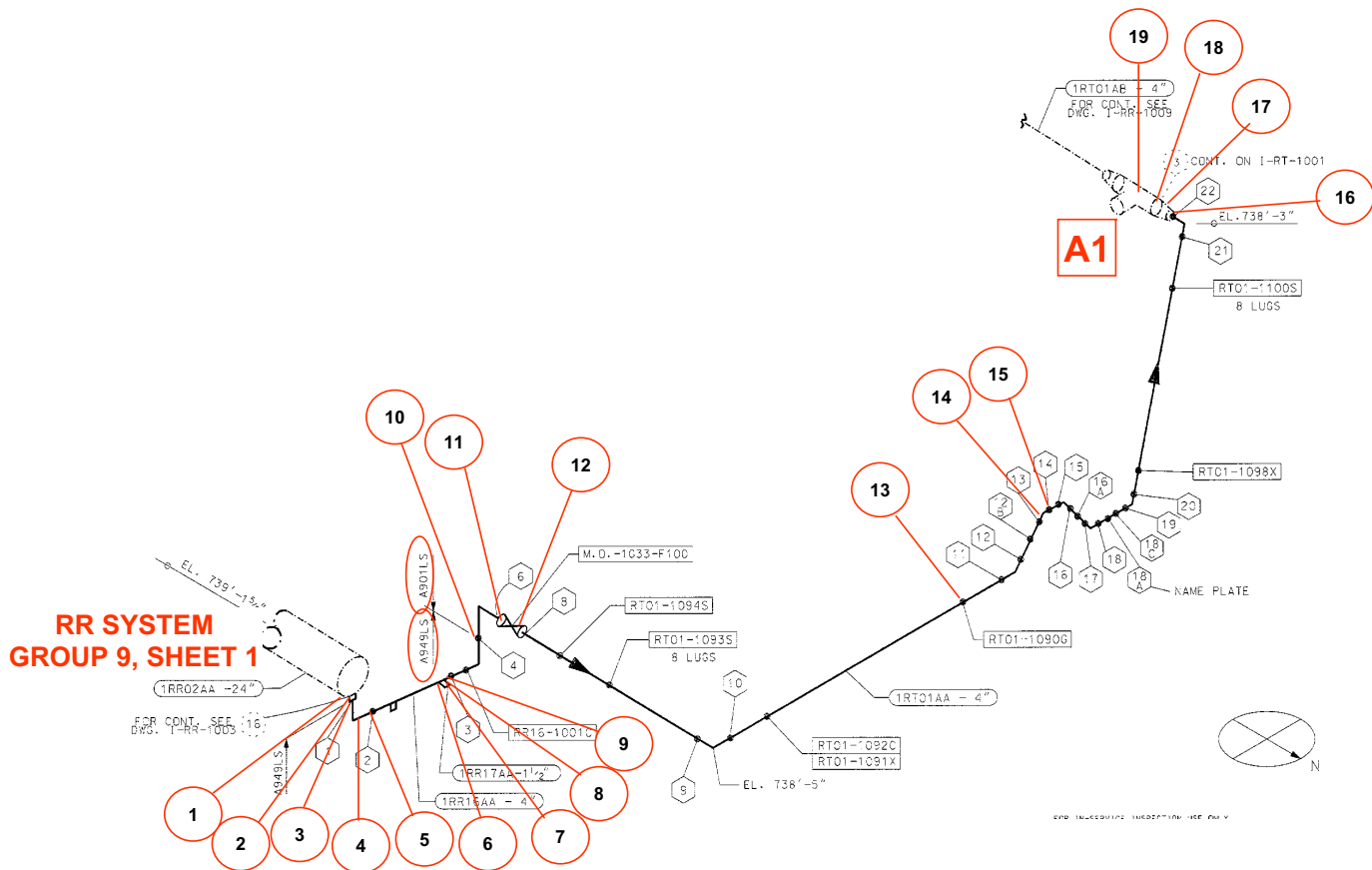


**GROUP 24 – CONDENSATE
BOOSTER PUMP PIPING TO FW PUMP (Sheet 6 of 6)
(Covers Worksheets PCS-CONDFWPMP – 1 thru 65)**

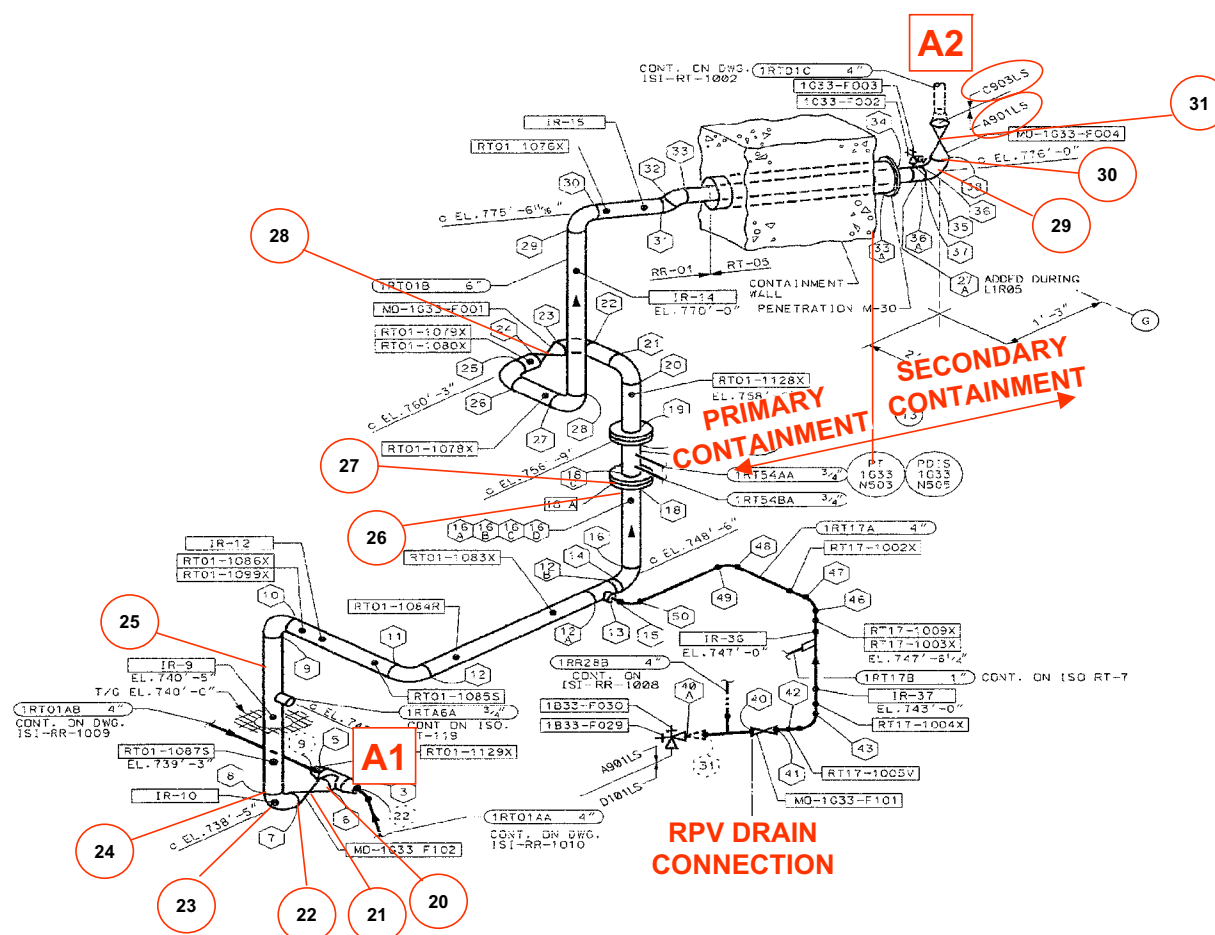
162/179
App. F.2 - BWR Systems Drawings



163/179
App. F.2 - BWR Systems Drawings

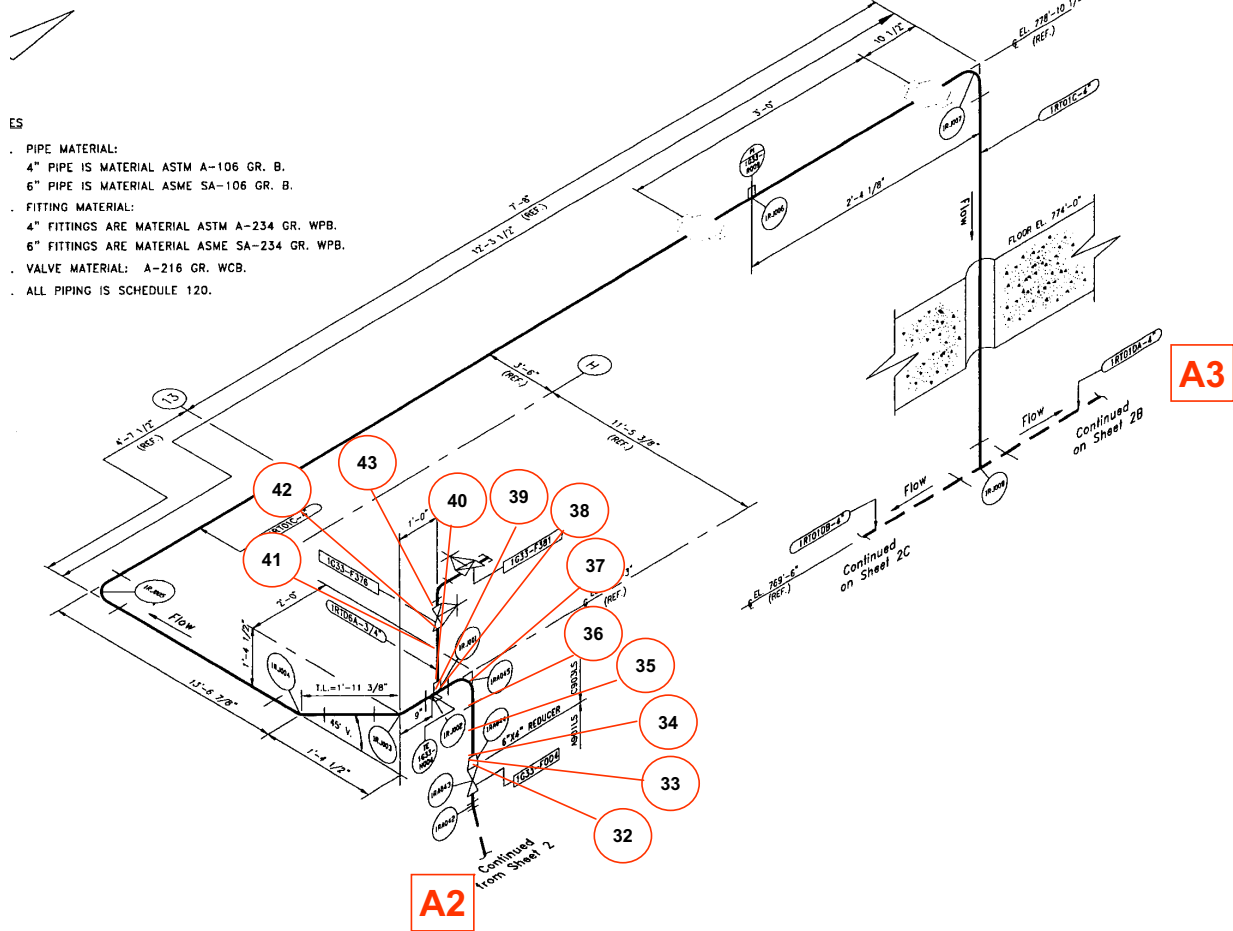


164/179
App. F.2 - BWR Systems Drawings



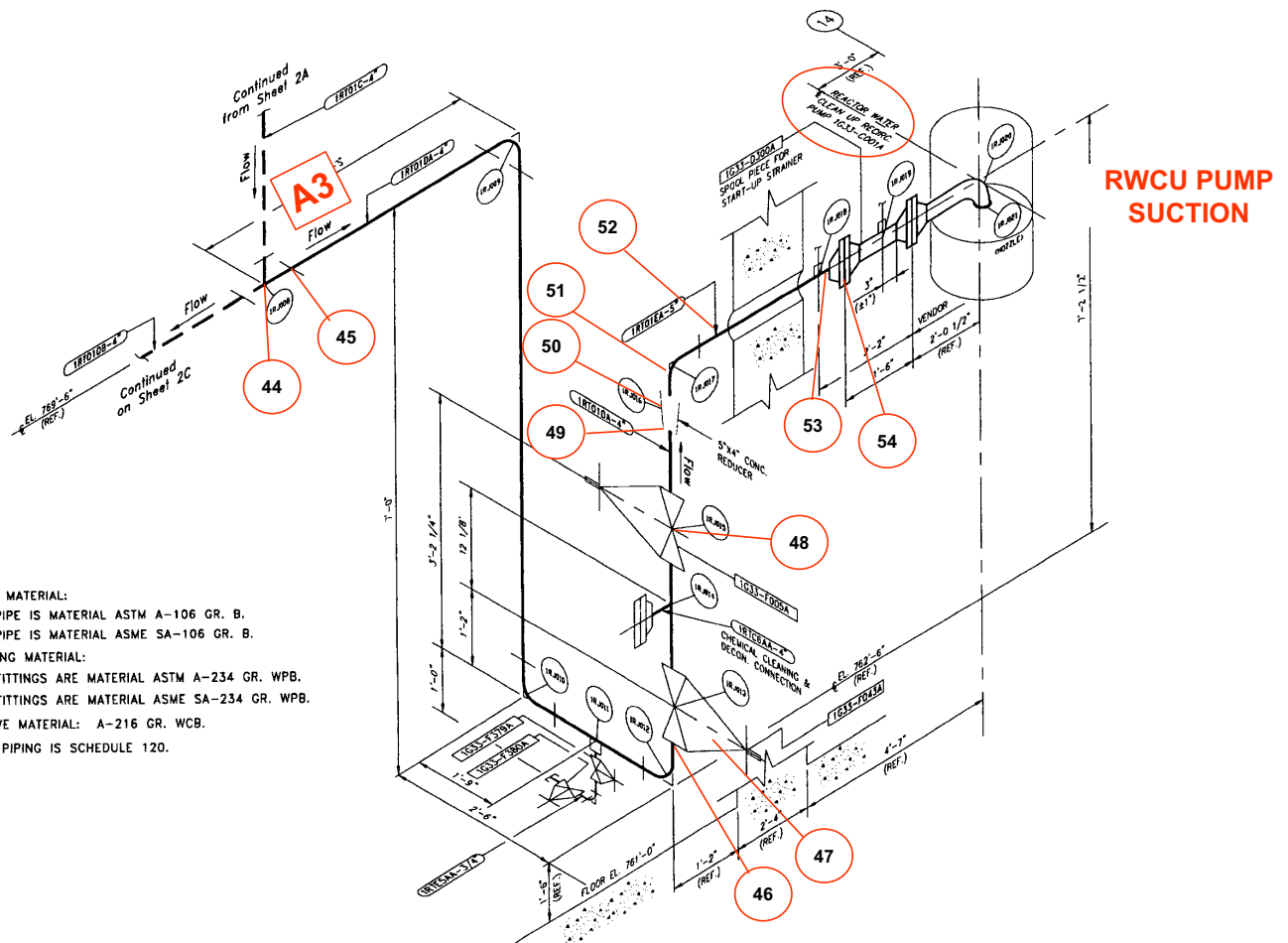
GROUP 25 – REACTOR WATER CLEANUP **RR PIPING to PUMPS (Sheet 3 of 5)** **(Covers Worksheets SS-RWCUPMPS – 1 thru 65)**

165/179
 App. F.2 - BWR Systems Drawings



GROUP 25 – REACTOR WATER CLEANUP **RR PIPING to PUMPS (Sheet 4 of 5)** **(Covers Worksheets SS-RWCUPMPS – 1 thru 65)**

166/179
 App. F.2 - BWR Systems Drawings

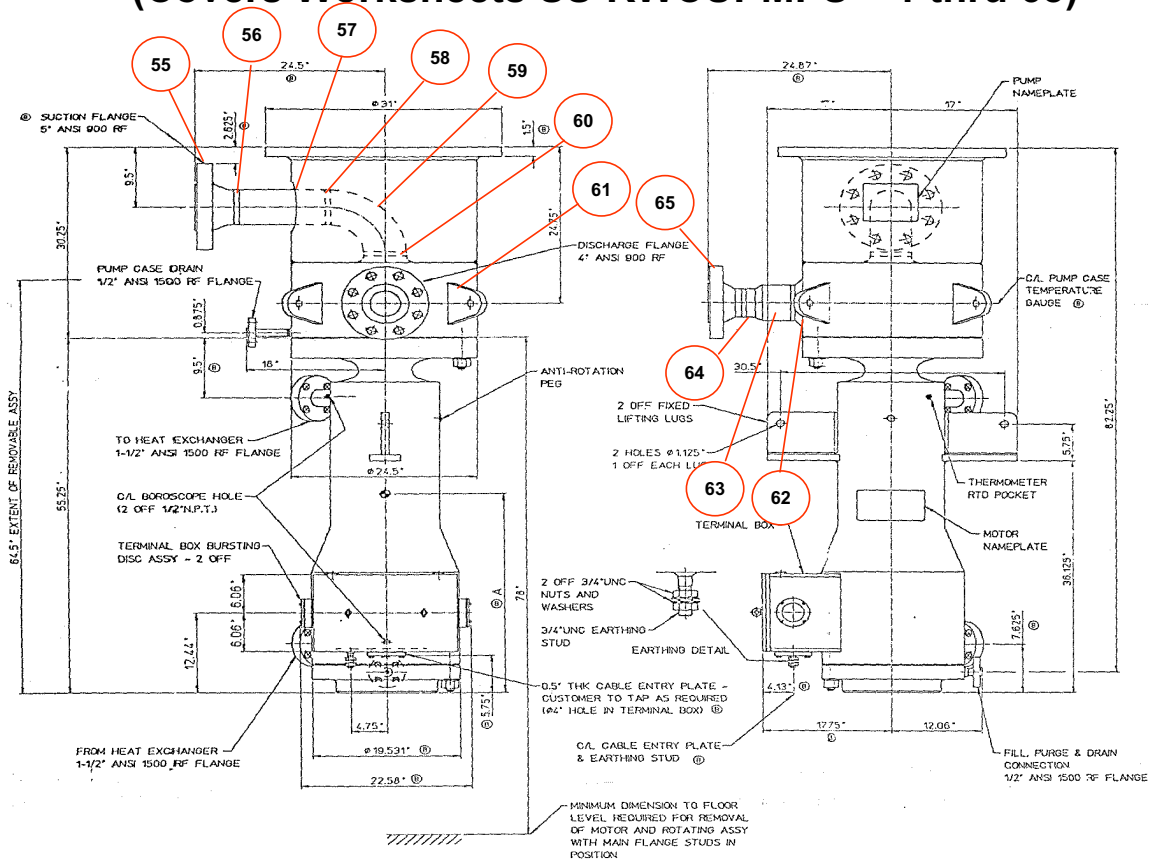


NOTES

1. PIPE MATERIAL:
 4" PIPE IS MATERIAL ASTM A-106 GR. B.
 6" PIPE IS MATERIAL ASME SA-106 GR. B.
2. FITTING MATERIAL:
 4" FITTINGS ARE MATERIAL ASTM A-234 GR. WPB.
 6" FITTINGS ARE MATERIAL ASME SA-234 GR. WPB.
3. VALVE MATERIAL: A-216 GR. WCB.
4. ALL PIPING IS SCHEDULE 120.

GROUP 25 – REACTOR WATER CLEANUP
RR PIPING to PUMPS (Sheet 5 of 5)
(Covers Worksheets SS-RWCUPMPS – 1 thru 65)

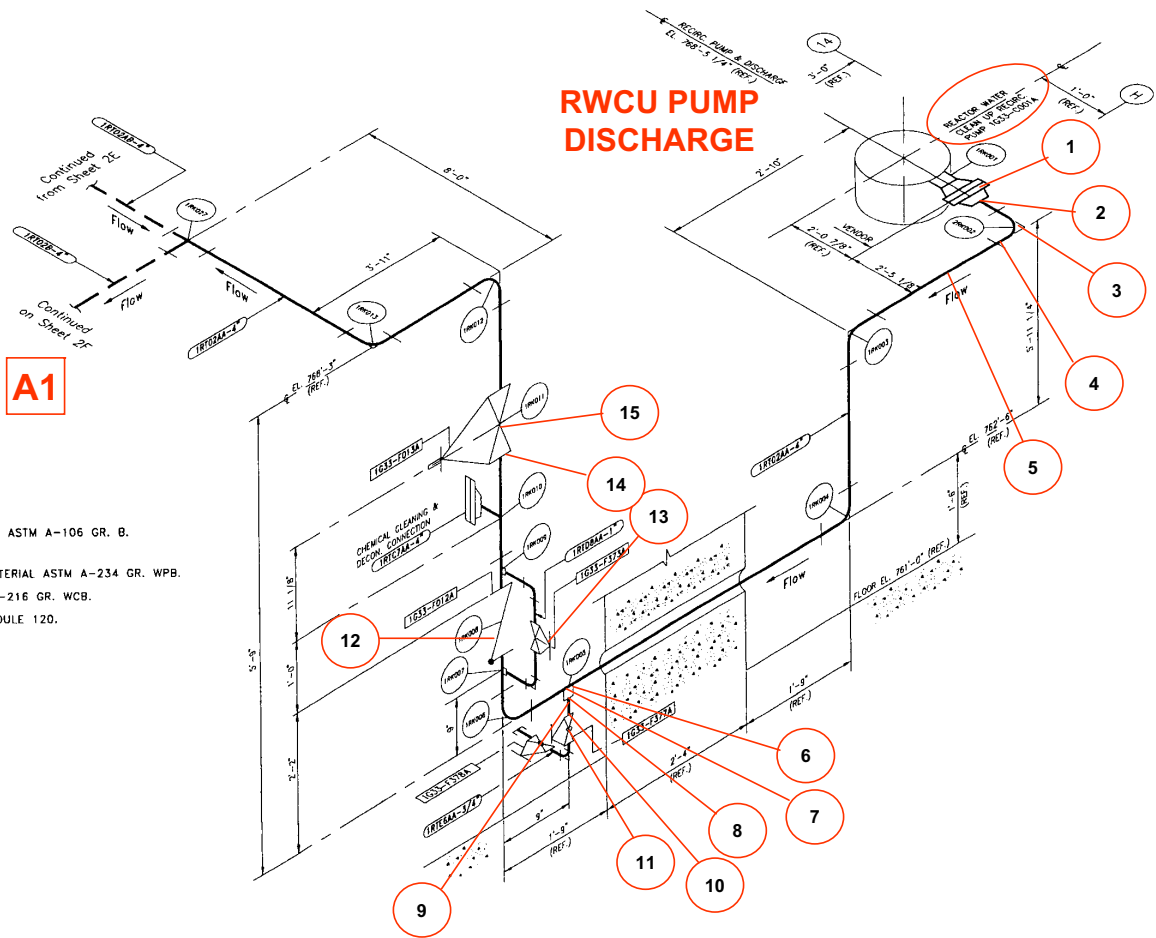
167/179
 App. F.2 - BWR Systems Drawings



RWCU PUMP (1G-33-C001A)

GROUP 26 – REACTOR WATER CLEANUP **RWCU PUMP PIPING to NRHX/RHX (Sheet 1 of 7)** **(Covers Worksheets SS-RWCUHX – 1 thru 49)**

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 App. F.2 - BWR Systems Drawings



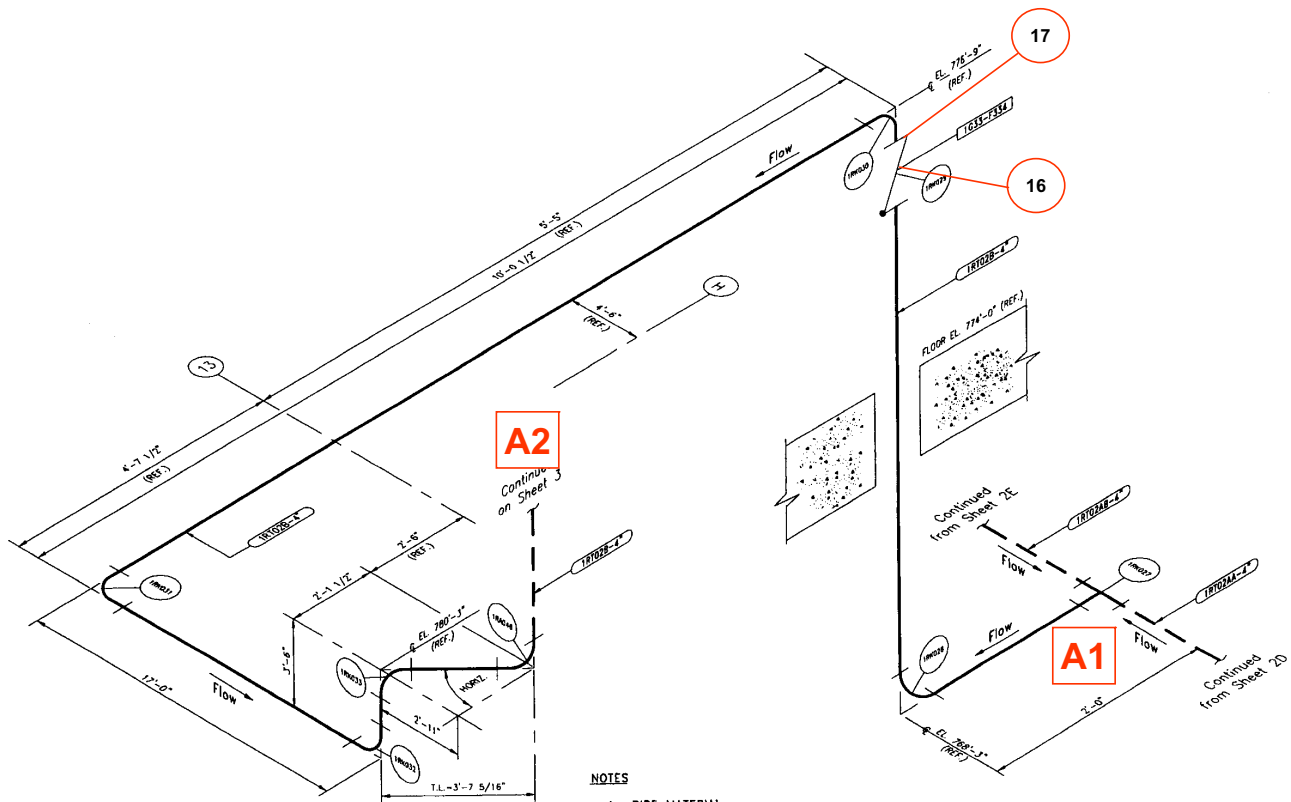
A1

NOTES

1. PIPE MATERIAL:
 4" PIPE IS MATERIAL ASTM A-106 GR. B.
 FITTING MATERIAL:
2. 4" FITTINGS ARE MATERIAL ASTM A-234 GR. WPB.
3. VALVE MATERIAL: A-216 GR. WCB.
4. ALL PIPING IS SCHEDULE 120.

GROUP 26 – REACTOR WATER CLEANUP **RWCU PUMP PIPING to NRHX/RHX (Sheet 2 of 7)** **(Covers Worksheets SS-RWCUHX – 1 thru 49)**

169/179
 App. F.2 - BWR Systems Drawings

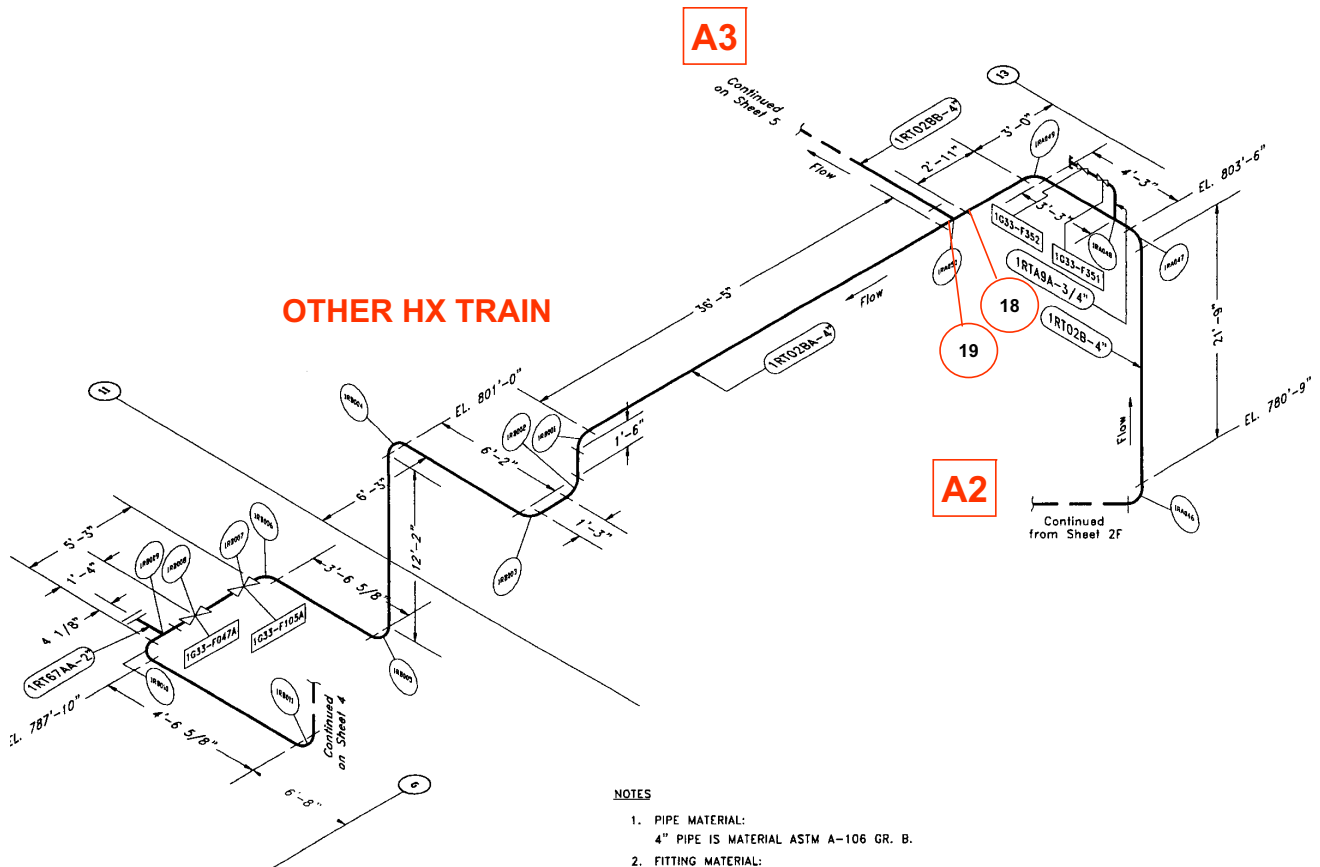


NOTES

1. PIPE MATERIAL:
 4" PIPE IS MATERIAL ASTM A-106 GR. B.
 FITTING MATERIAL:
2. 4" FITTINGS ARE MATERIAL ASTM A-234 GR. WPB.
3. VALVE MATERIAL: A-216 GR. WCB.
4. ALL PIPING IS SCHEDULE 120.

GROUP 26 – REACTOR WATER CLEANUP **RWCU PUMP PIPING to NRHX/RHX (Sheet 3 of 7)** **(Covers Worksheets SS-RWCUXH – 1 thru 49)**

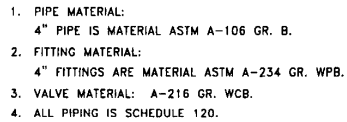
170/179
 App. F.2 - BWR Systems Drawings



NOTES

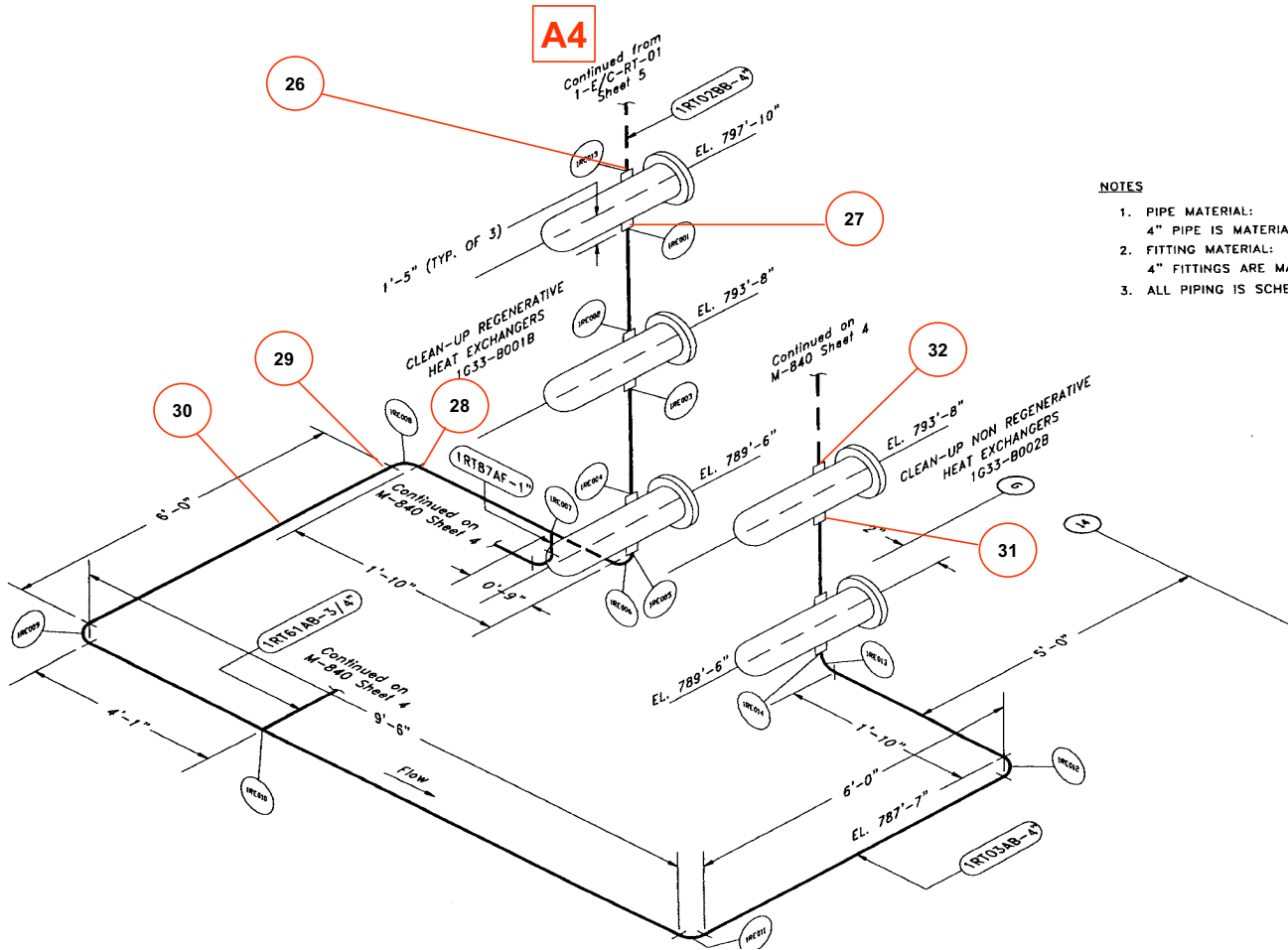
1. PIPE MATERIAL:
 4" PIPE IS MATERIAL ASTM A-106 GR. B.
2. FITTING MATERIAL:
 4" FITTINGS ARE MATERIAL ASTM A-234 GR. WPB.
3. VALVE MATERIAL: A-216 GR. WCB.
4. ALL PIPING IS SCHEDULE 120.

171/179
App. F.2 - BWR Systems Drawings



GROUP 26 – REACTOR WATER CLEANUP **RWCU PUMP PIPING to NRHX/RHX (Sheet 5 of 7)** **(Covers Worksheets SS-RWCUHX – 1 thru 49)**

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 App. F.2 - BWR Systems Drawings

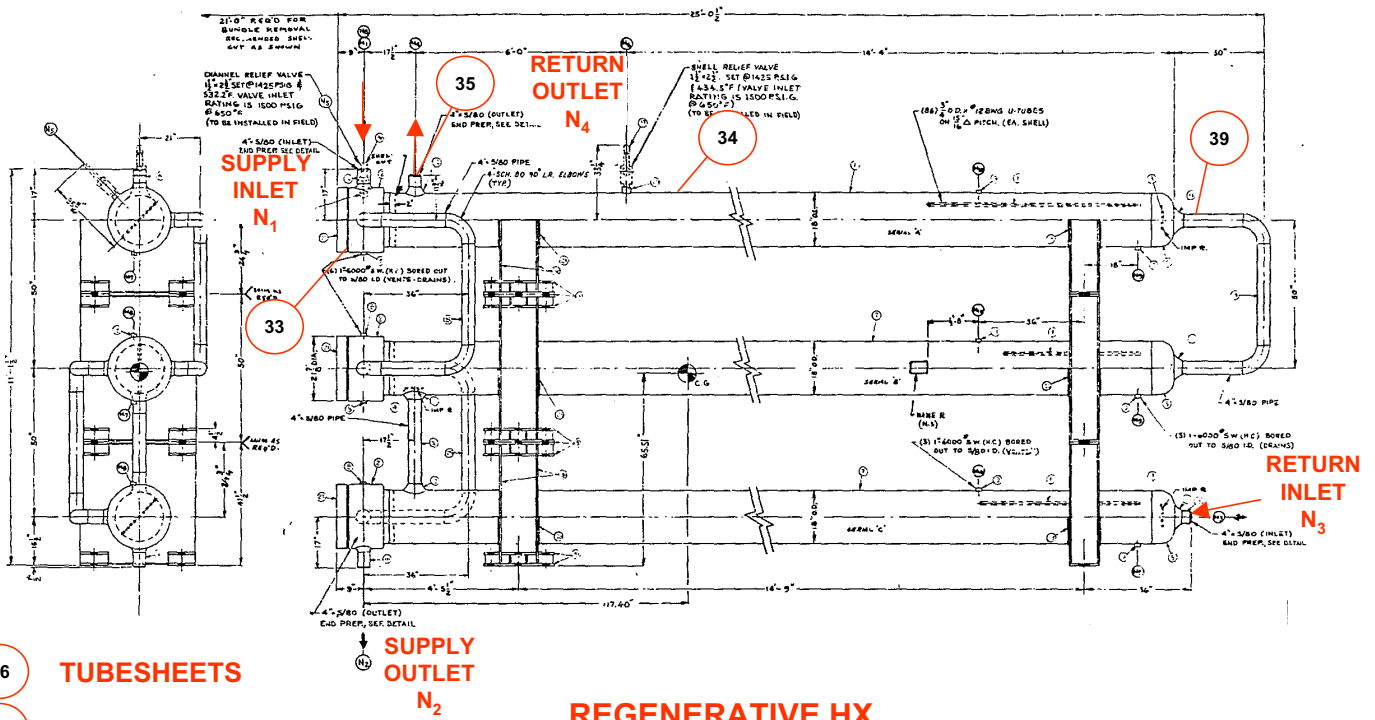


NOTES

1. PIPE MATERIAL:
4" PIPE IS MATERIAL ASTA
2. FITTING MATERIAL:
4" FITTINGS ARE MATERIAL
3. ALL PIPING IS SCHEDULE

GROUP 26 – REACTOR WATER CLEANUP **RWCU PUMP PIPING to NRHX/RHX (Sheet 6 of 7)** **(Covers Worksheets SS-RWCUHX – 1 thru 49)**

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 App. F.2 - BWR Systems Drawings

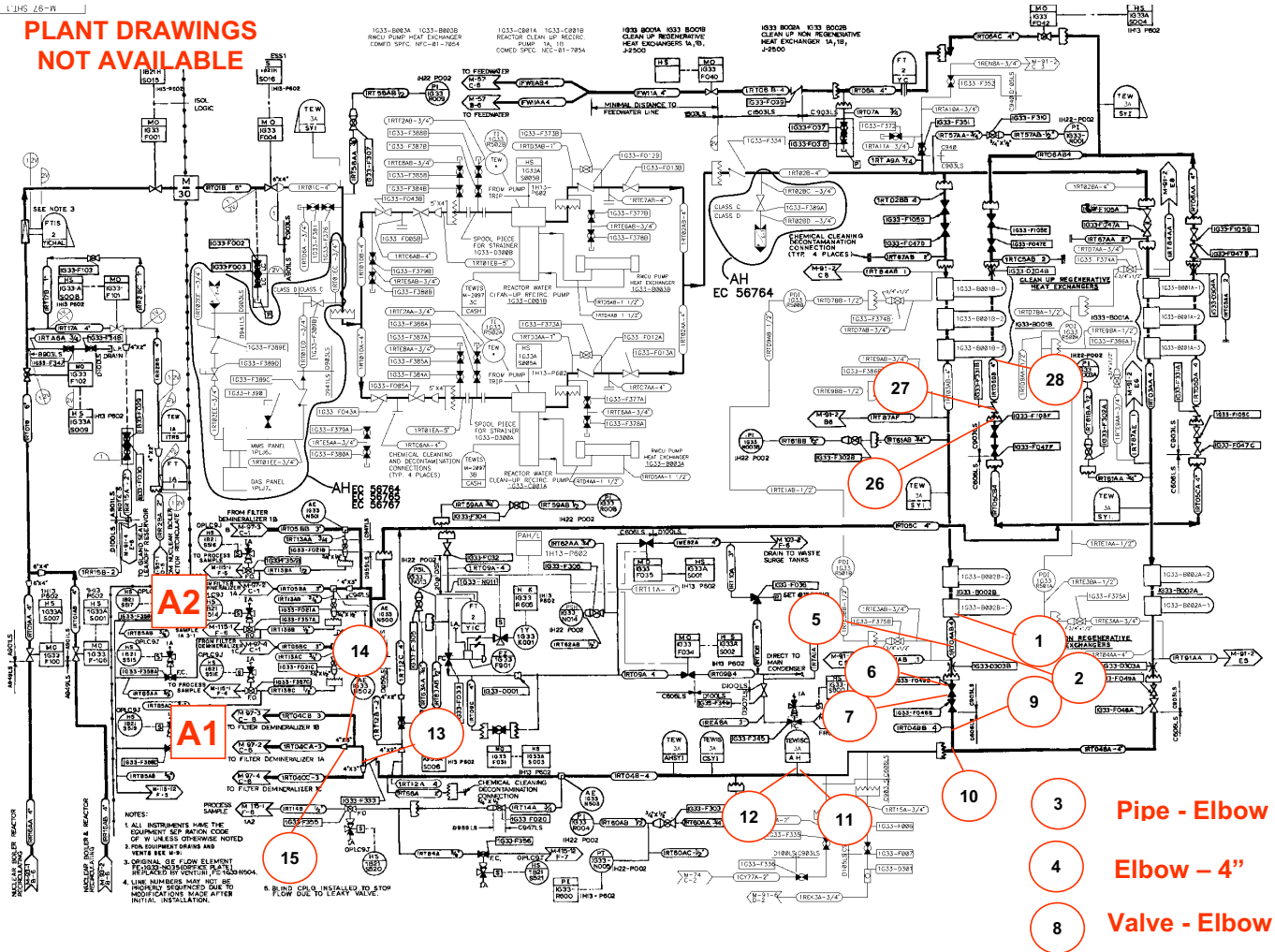


- 36 TUBESHEETS
- 37 TUBES
- 38 BAFFLES
- 40 FITTINGS

GROUP 27 – REACTOR WATER CLEANUP RWCU PIPING TO FILTERS (Sheet 1 of 2) (Covers Worksheets SS-RWCUFLTR – 1 thru 31)

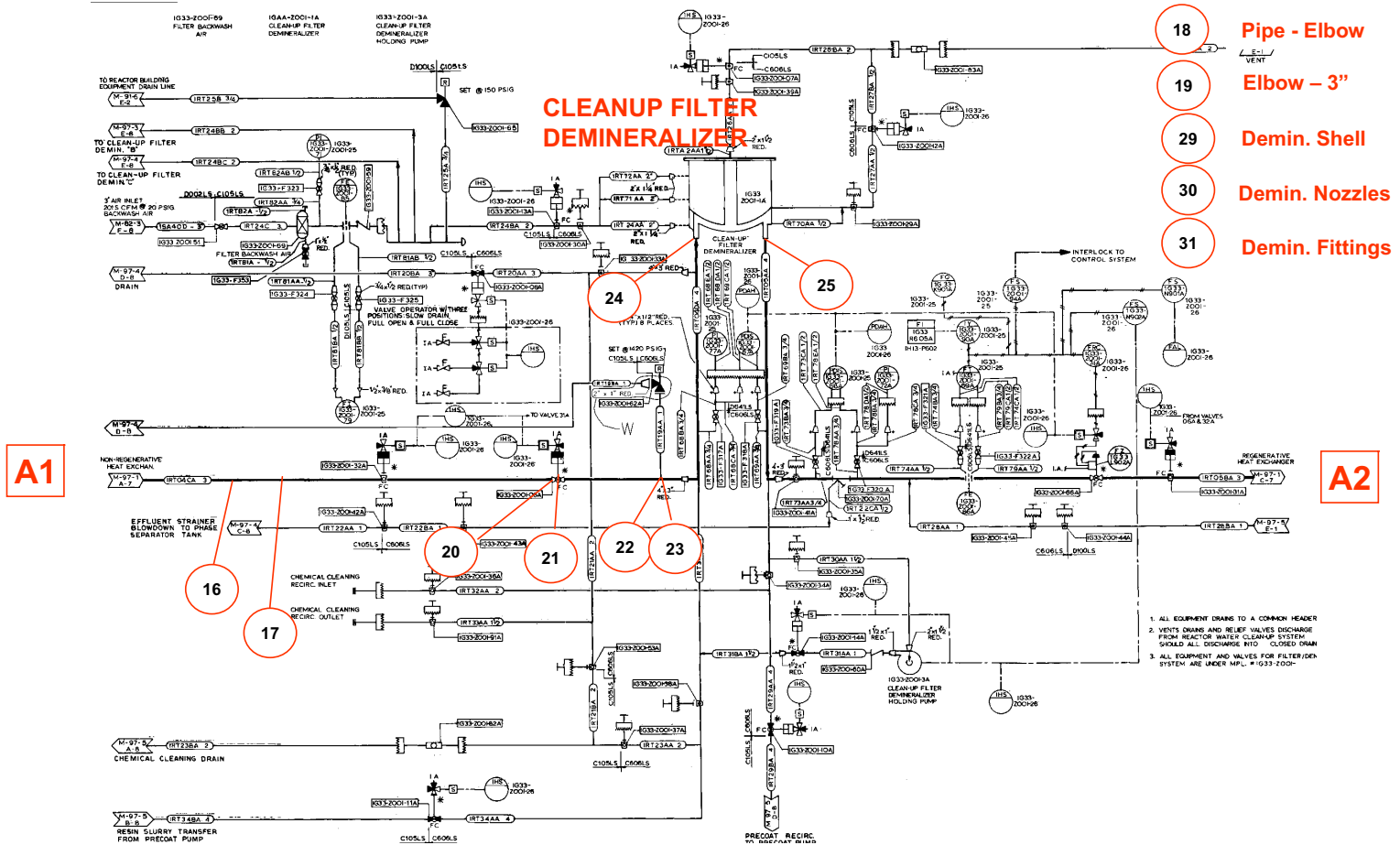
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**PLANT DRAWINGS
NOT AVAILABLE**



GROUP 27 – REACTOR WATER CLEANUP **RWCU PIPING TO FILTERS (Sheet 2 of 2)** **(Covers Worksheets SS-RWCUFLTR – 1 thru 31)**

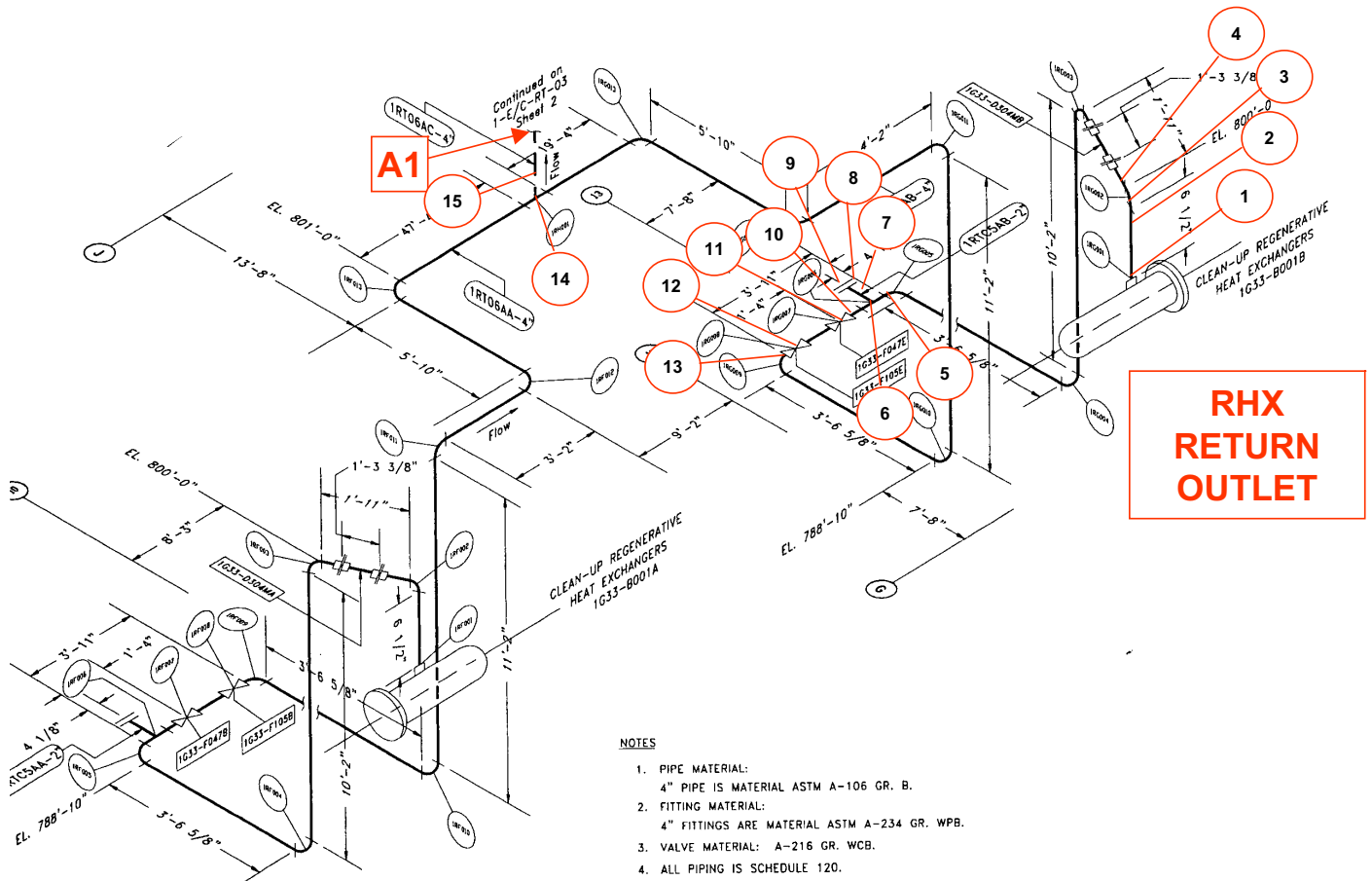
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 App. F.2 - BWR Systems Drawings



GROUP 28 – REACTOR WATER CLEANUP **HX OUTLET PIPING to FEEDWATER (Sheet 1 of 3)** **(Covers Worksheets SS-RWCUFW – 1 thru 26)**

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App. F.2 - BWR Systems Drawings

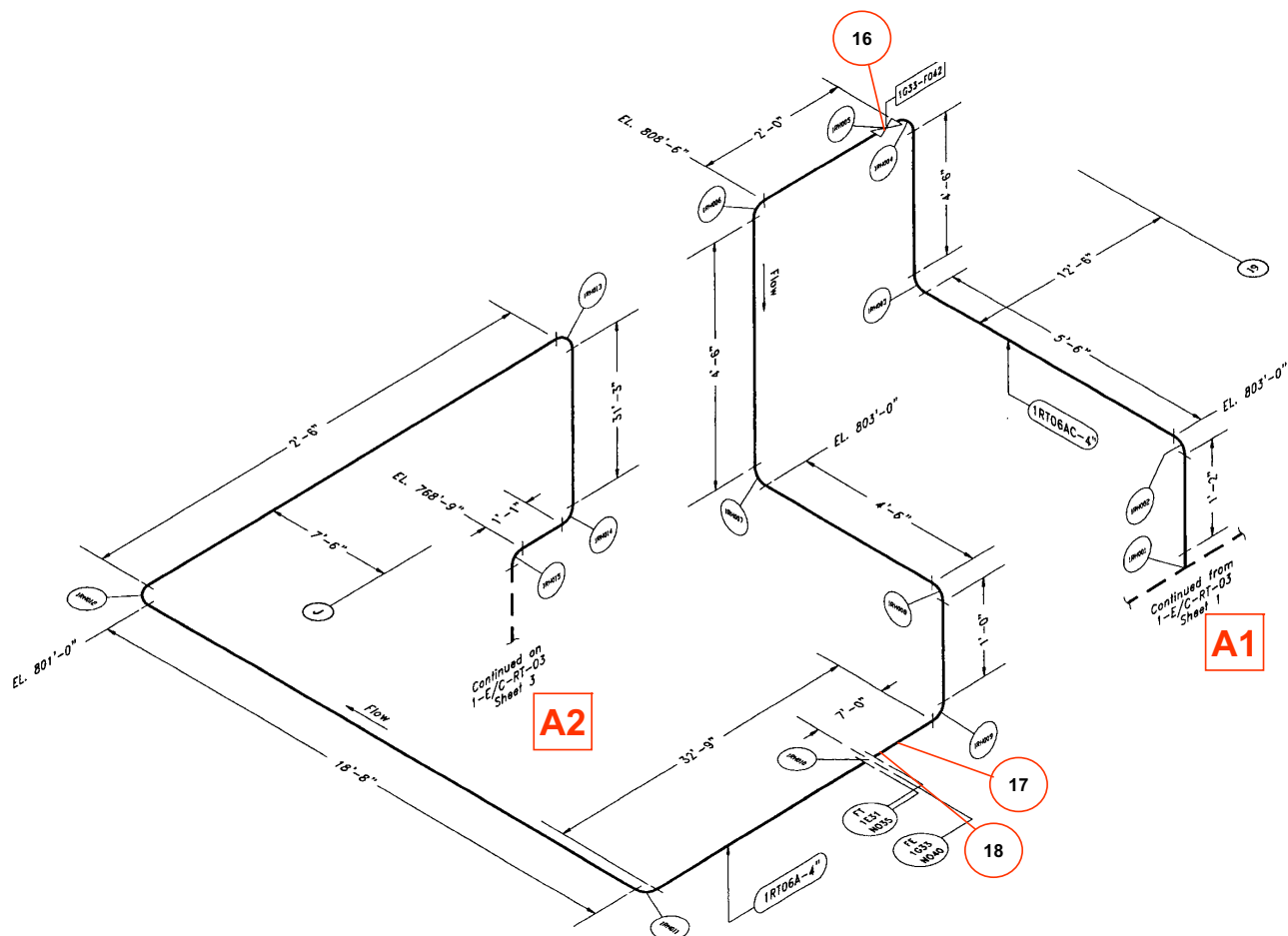


NOTES

1. PIPE MATERIAL:
4" PIPE IS MATERIAL ASTM A-106 GR. B.
2. FITTING MATERIAL:
4" FITTINGS ARE MATERIAL ASTM A-234 GR. WPB.
3. VALVE MATERIAL: A-216 GR. WCB.
4. ALL PIPING IS SCHEDULE 120.

GROUP 28 – REACTOR WATER CLEANUP **HX OUTLET PIPING to FEEDWATER (Sheet 2 of 3)** **(Covers Worksheets SS-RWCUFW – 1 thru 26)**

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 App. F.2 - BWR Systems Drawings



**GROUP 28 – REACTOR WATER CLEANUP
HX OUTLET PIPING to FEEDWATER (Sheet 3 of 3)
(Covers Worksheets SS-RWCUFW – 1 thru 26)**

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App. F.2 - BWR Systems Drawings

