

**WASTE TREATMENT AND IMMOBILIZATION PLANT
CHAPTER 4A
FIGURES AND DRAWINGS
CHANGE CONTROL LOG**

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have its own change control log with a modification history table. The “**Modification Number**” represents Ecology’s method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Modification History Table

Modification Date	Modification Number
02/06/2026	8C.2025.3F
12/04/2023	24590-WTP-PCN-ENV-23-001 (8C.2023.Q4)
09/05/2017	8C.2017.6F
08/2012	

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WASTE TREATMENT AND IMMOBILIZATION PLANT
CHAPTER 4A
FIGURES AND DRAWINGS

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3 **CHAPTER 4A**
4 **FIGURES AND DRAWINGS**
5

6 The figures listed below are included in this chapter, and are to be used in conjunction with the text in the
7 Dangerous Waste Permit (DWP) Chapter 4.
8

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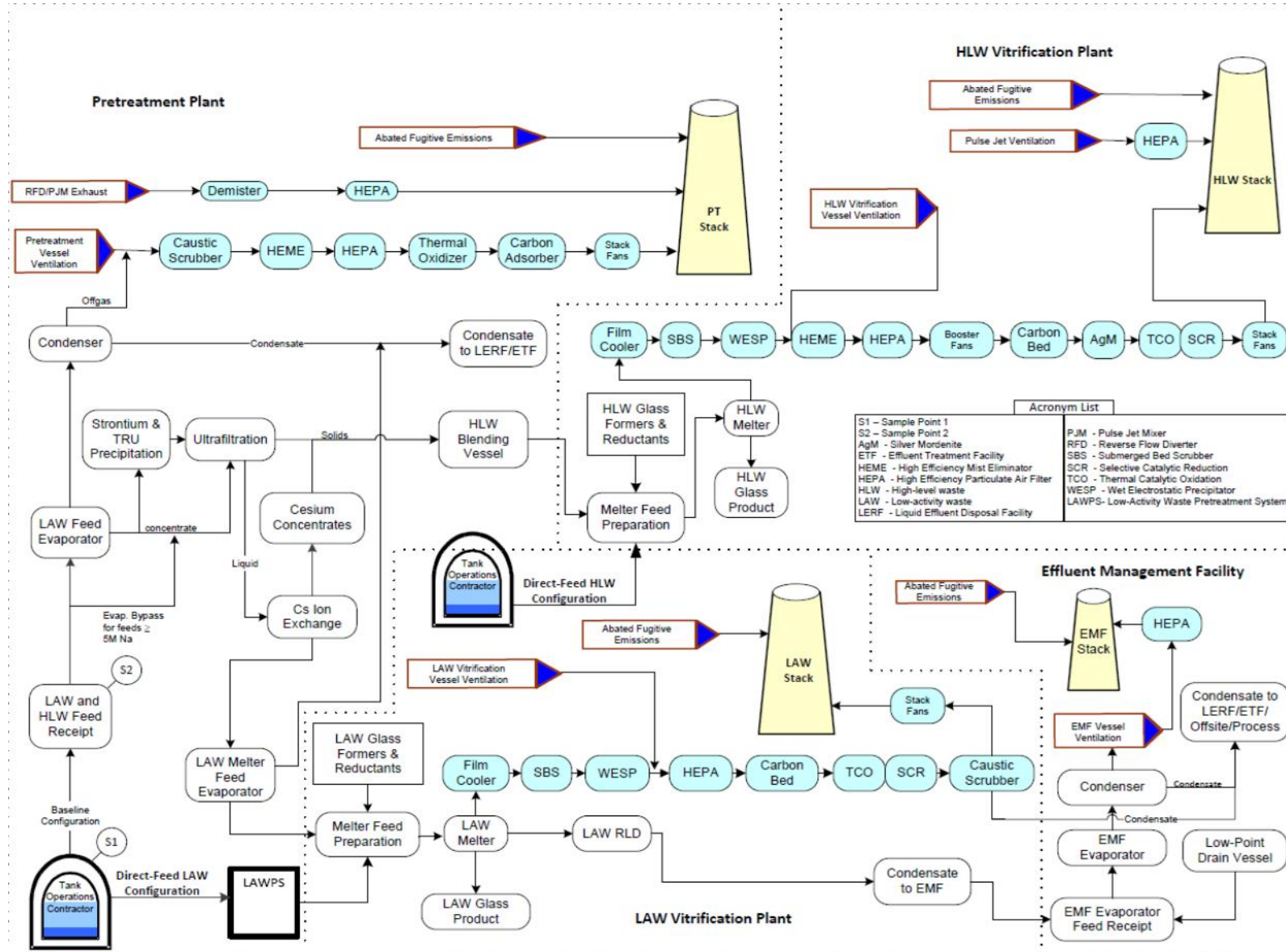


Figure 4A-1 WTP Simplified Flow Diagram

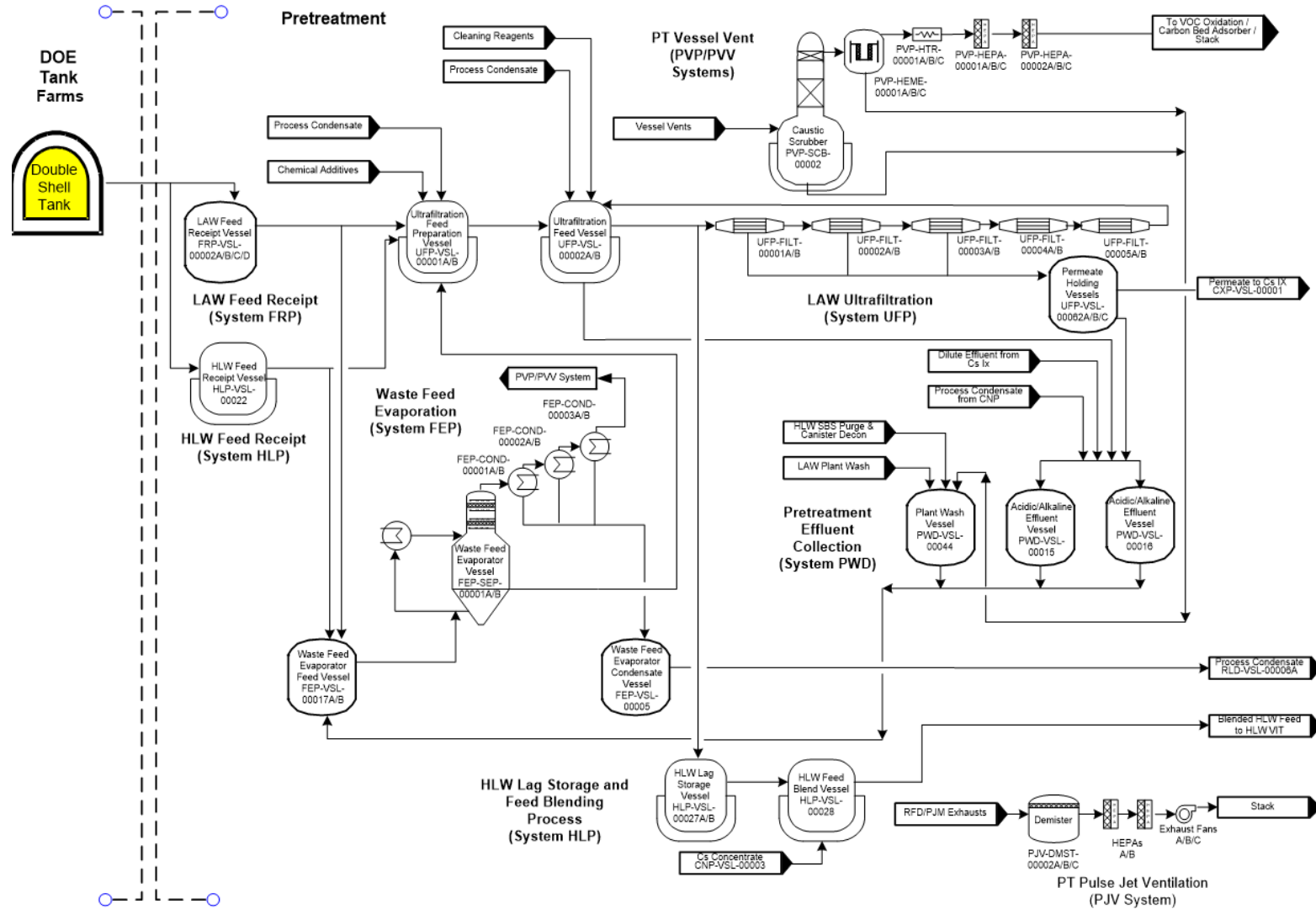
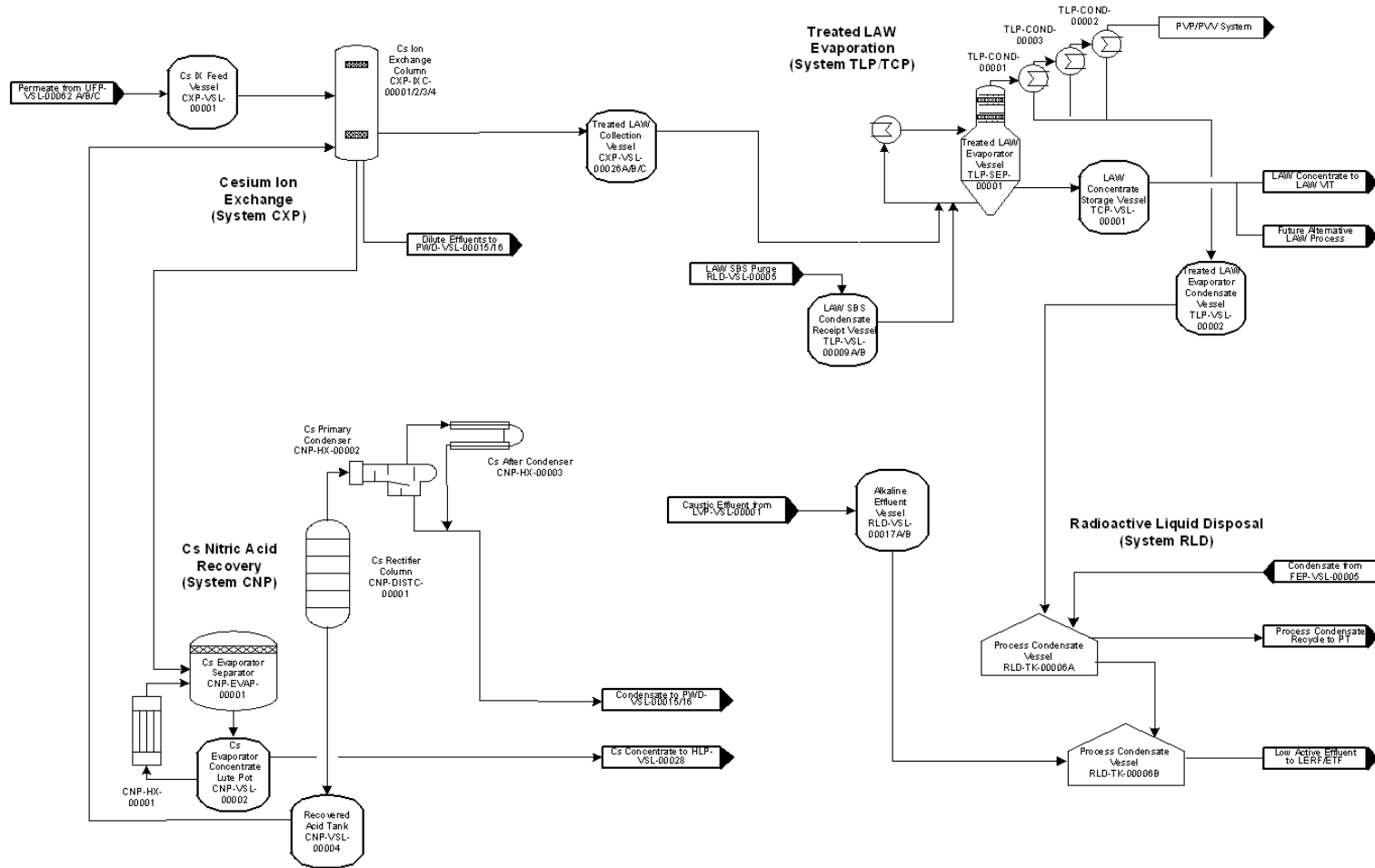
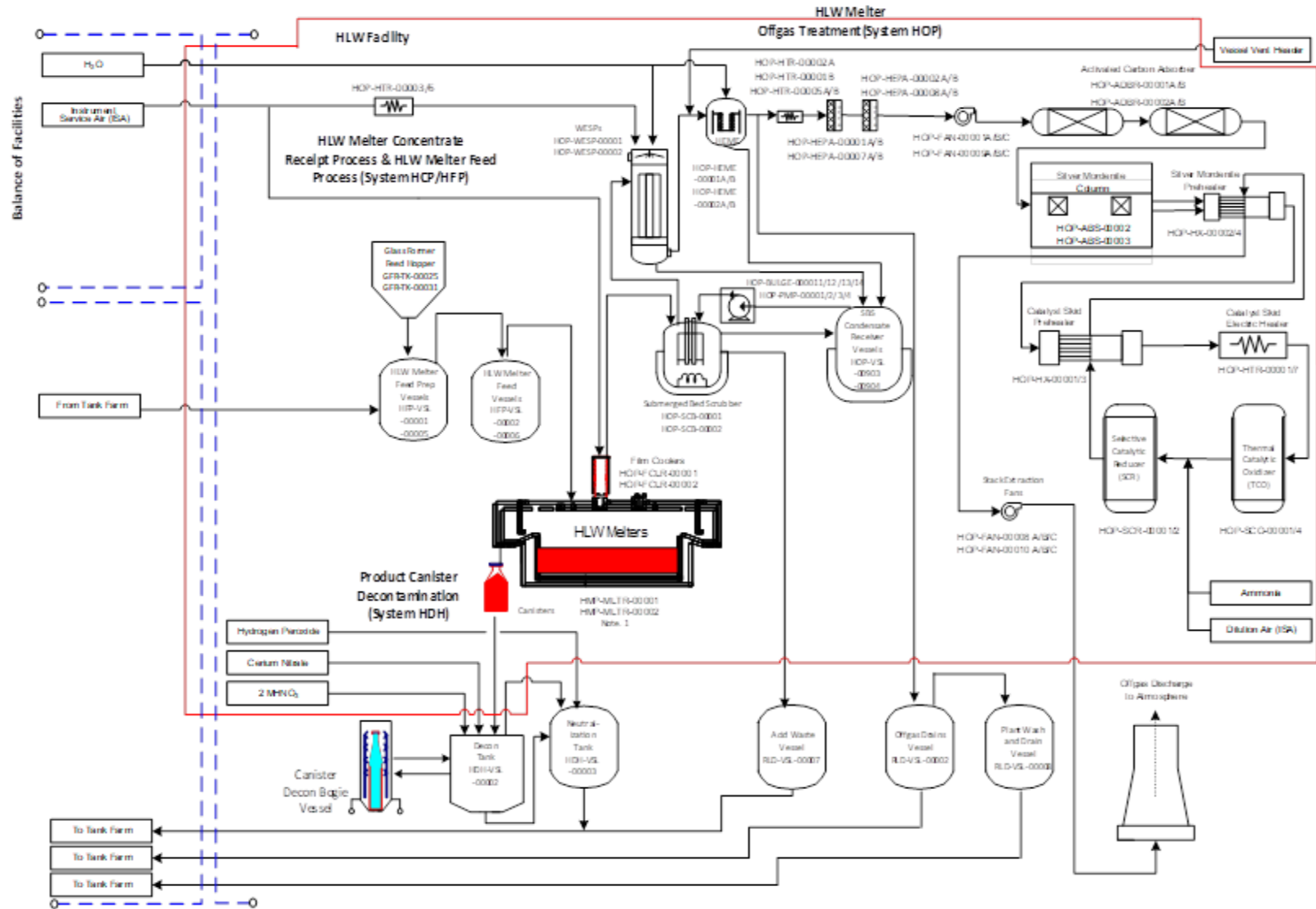


Figure 4A-2 Primary Pretreatment Process Systems



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Figure 4A-2A Primary Pretreatment Process Systems (Continued)



Notes:
1. For this diagram one melter system is shown but assumes a total of two HLW melter systems of identical capacity

Figure 4A-4 Primary HLW Vitrification Systems

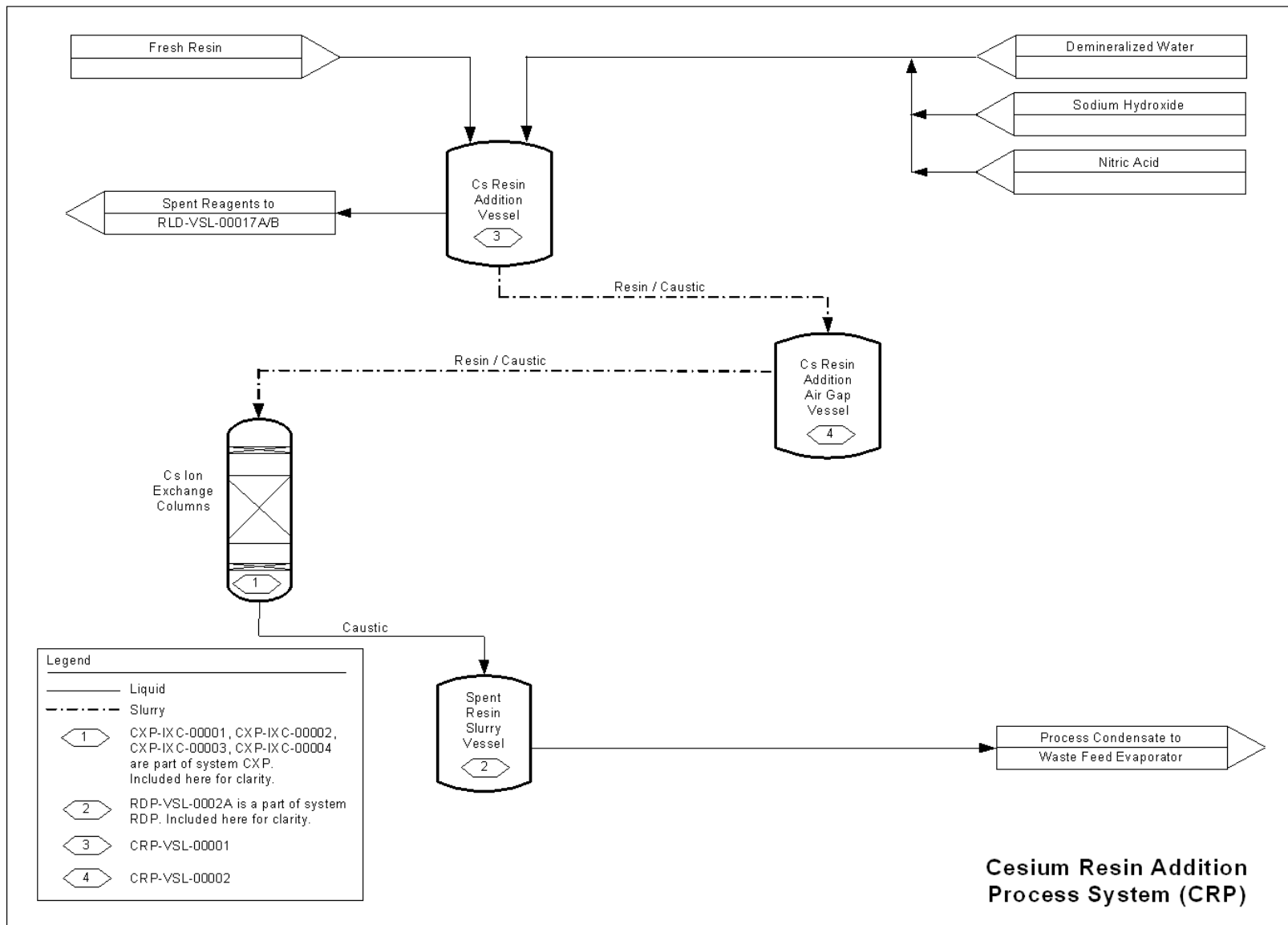
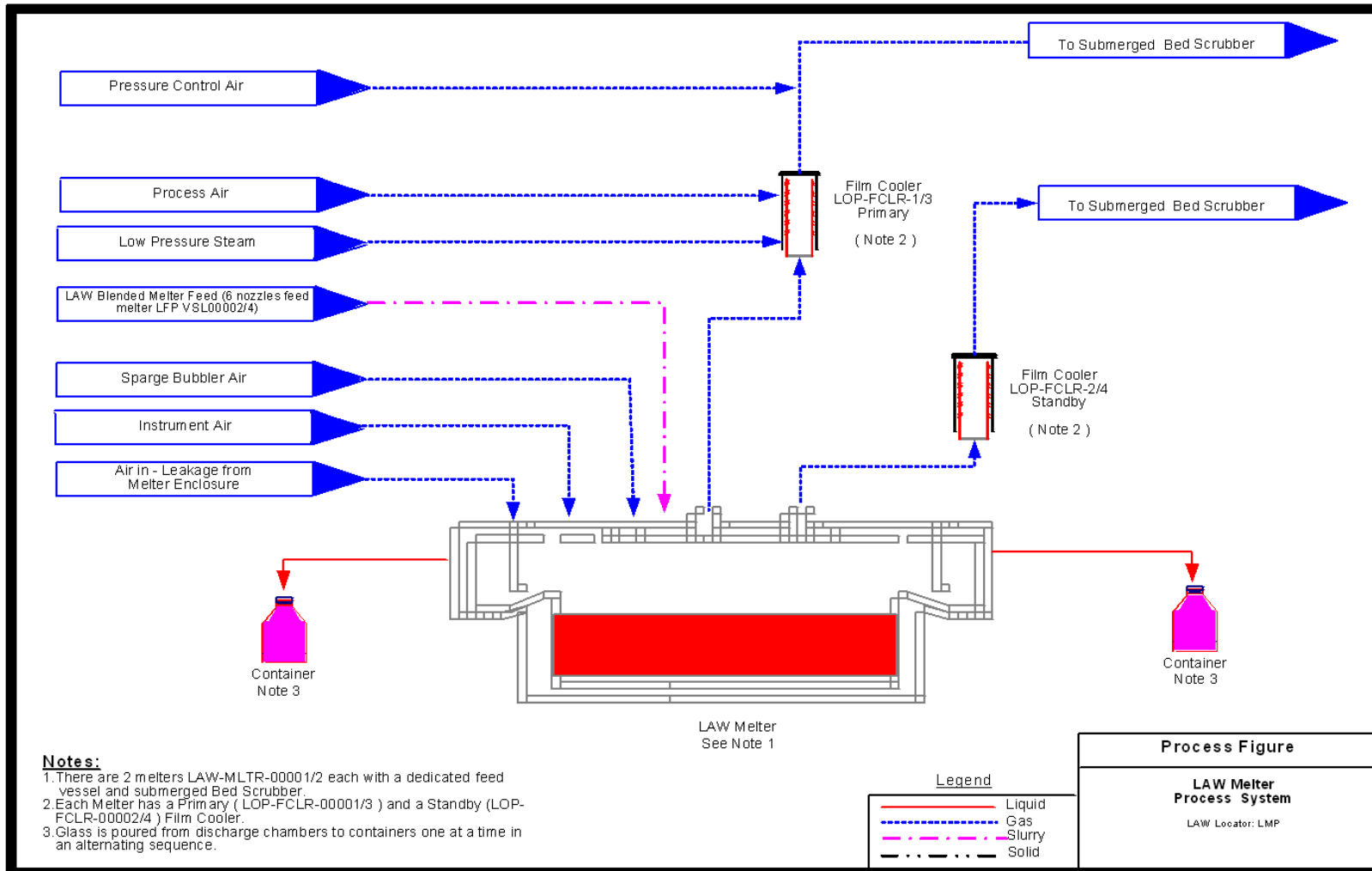
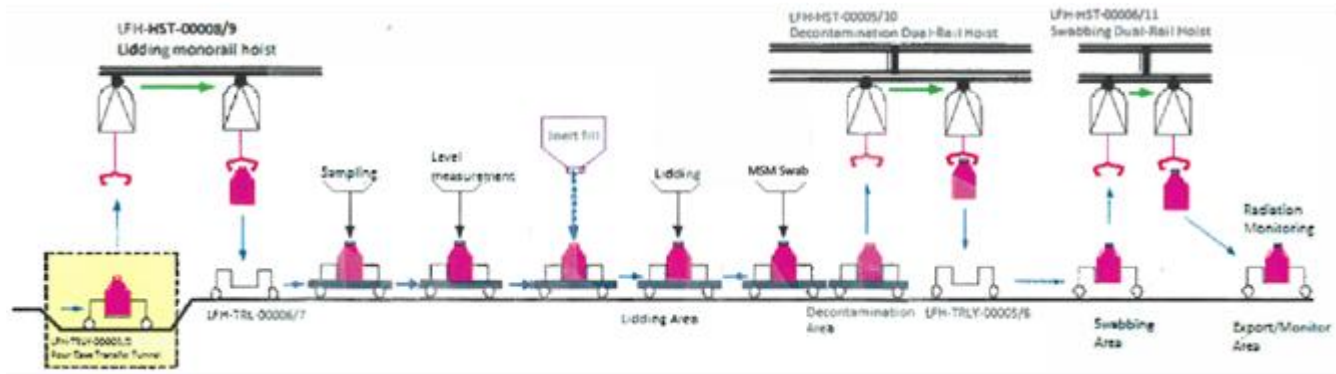


Figure 4A-11 Cesium Resin Addition Process System (CRP)



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Figure 4A-21 LAW Melter Process System (LMP)



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Figure 4A-24 LAW Container Finishing Handling System (LFH)

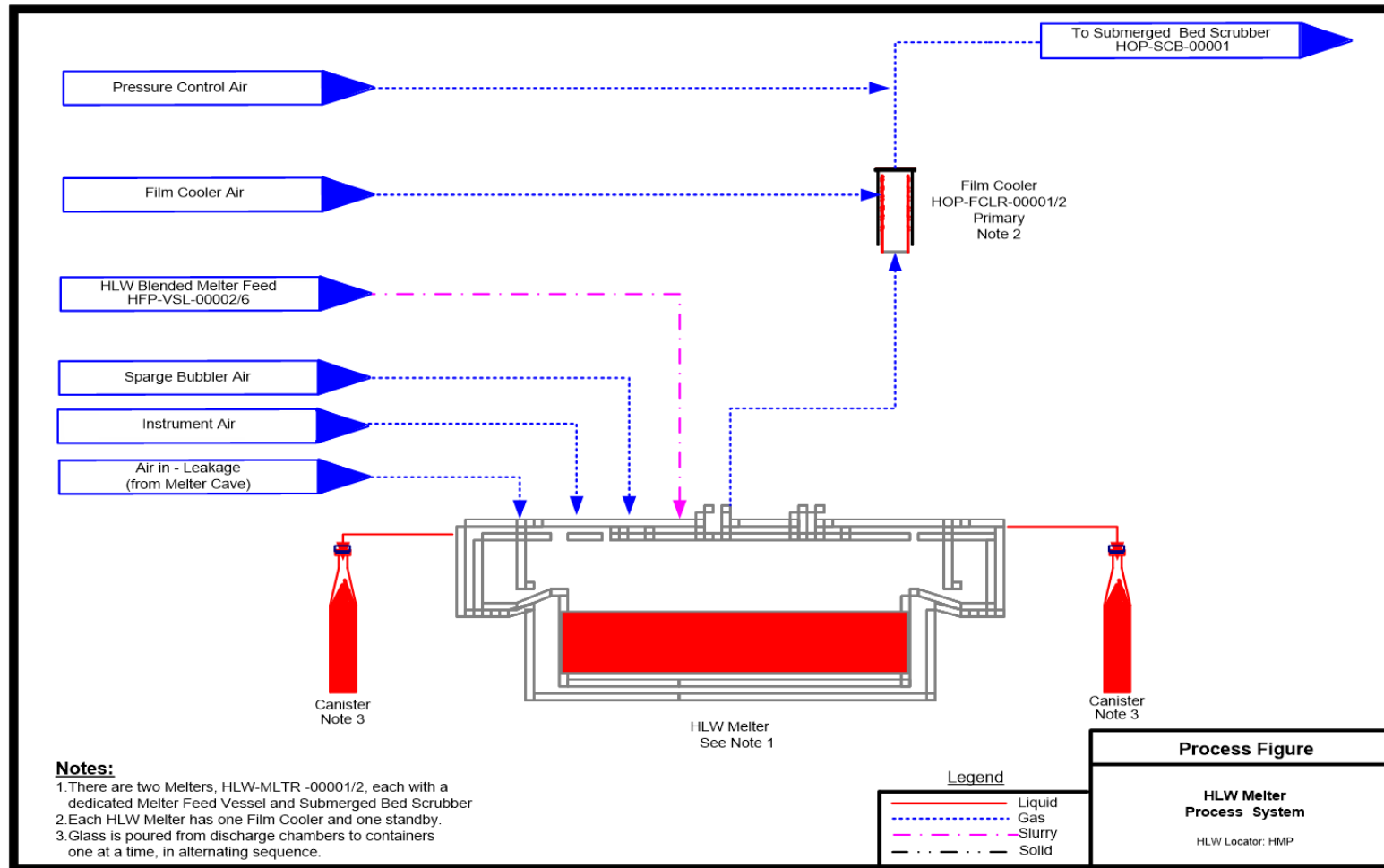
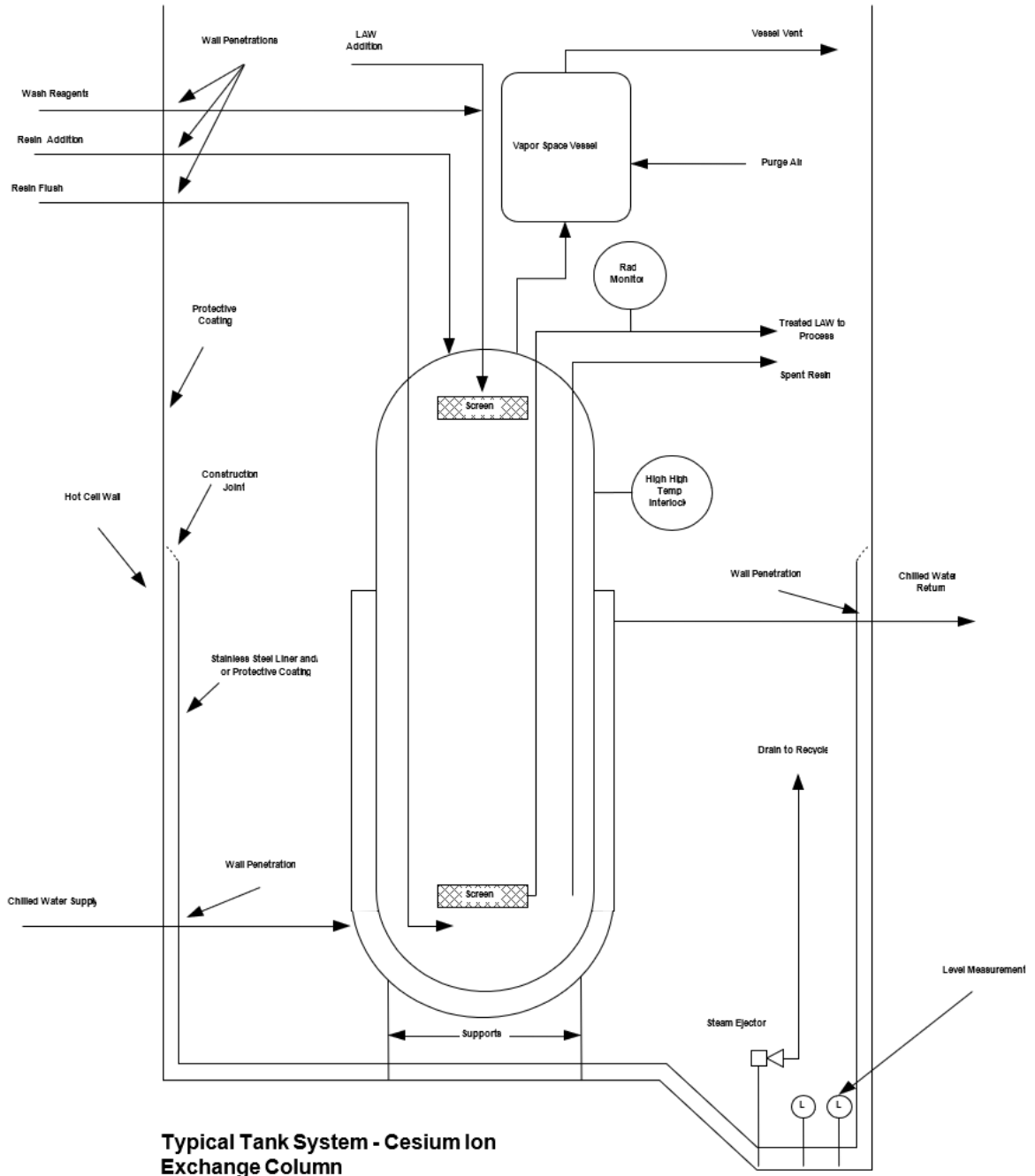


Figure 4A-27 HLW Melter Process System (HMP)

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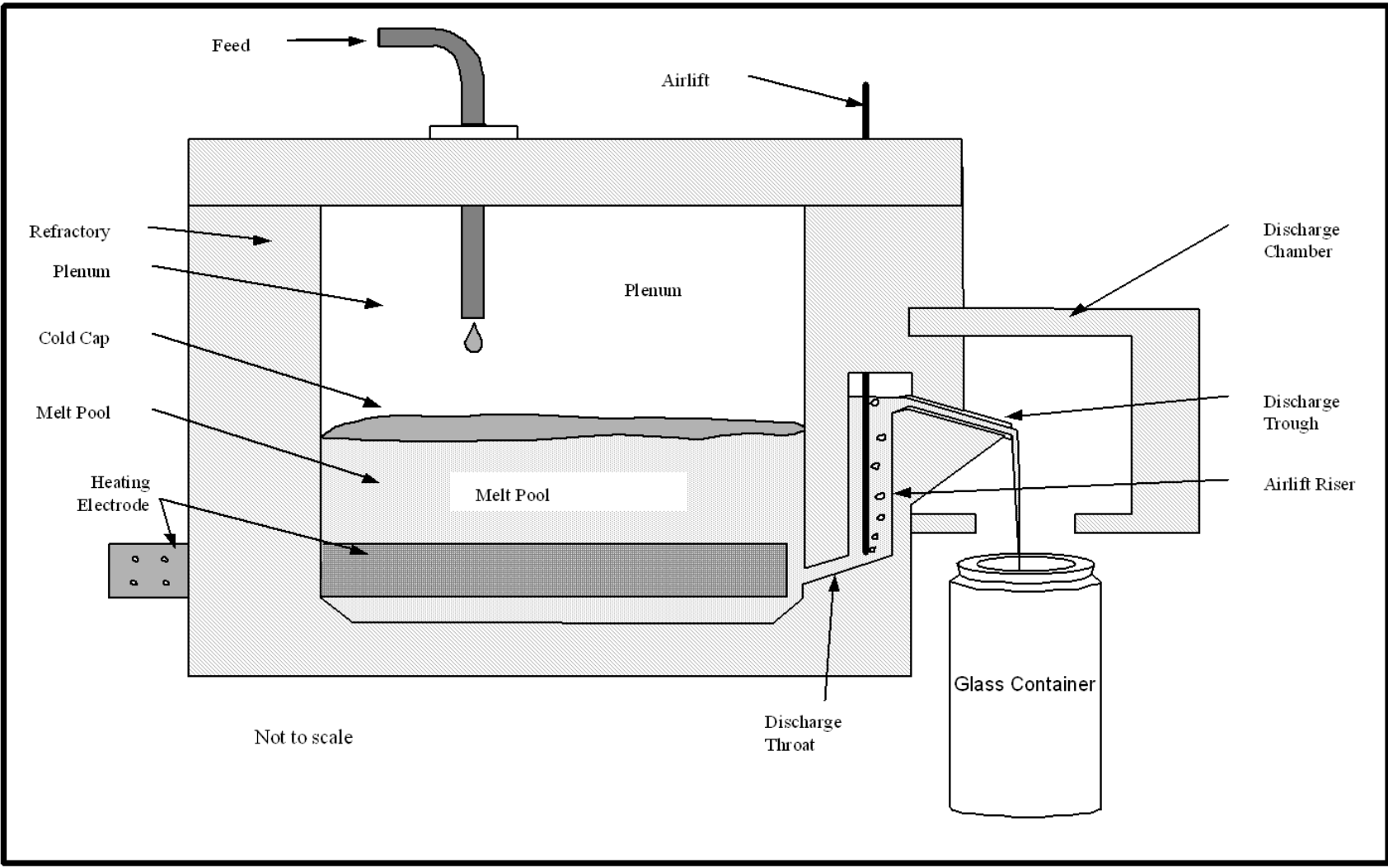


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Figure 4A-38 Typical Tank System – Cesium Ion Exchange Column

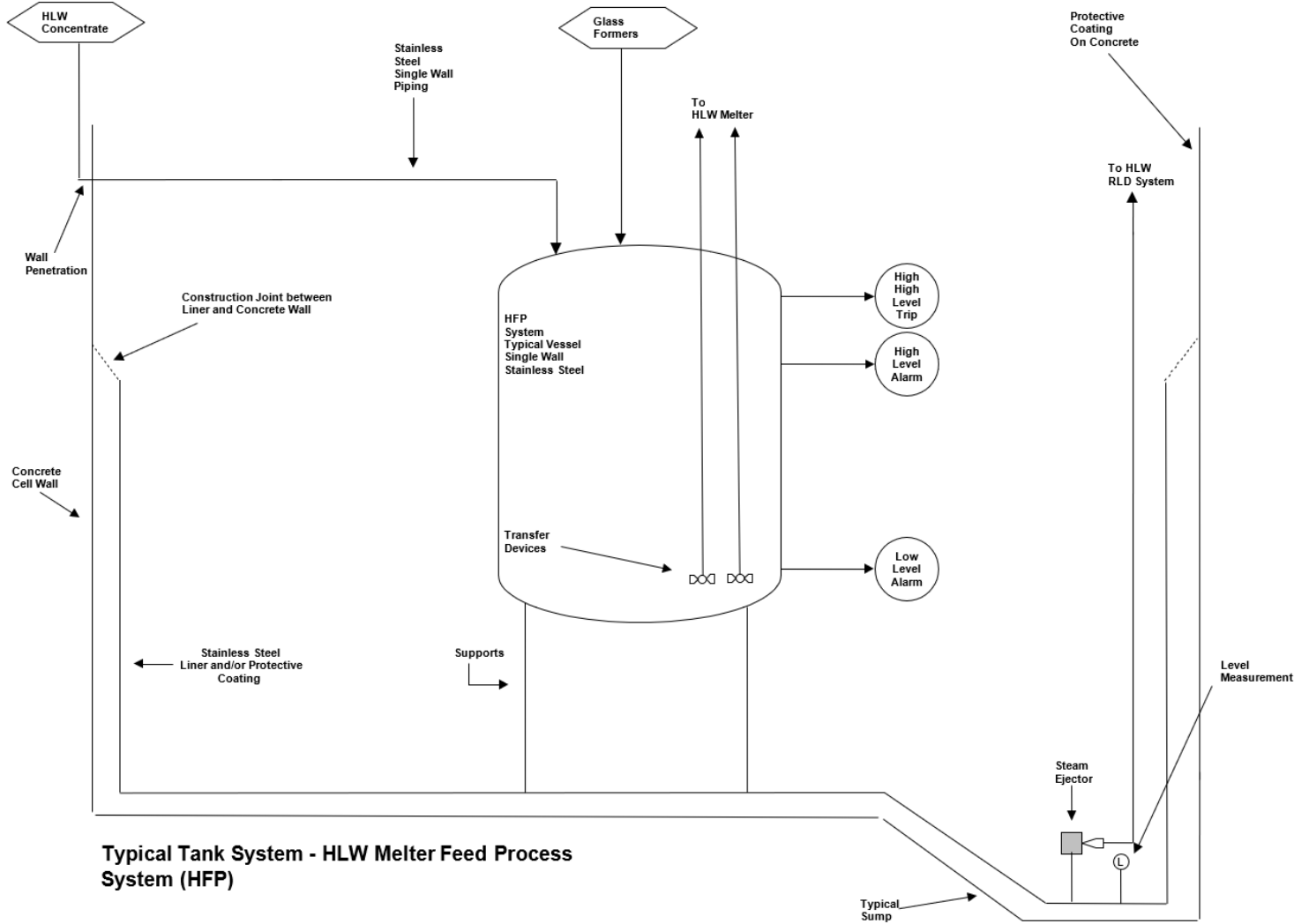
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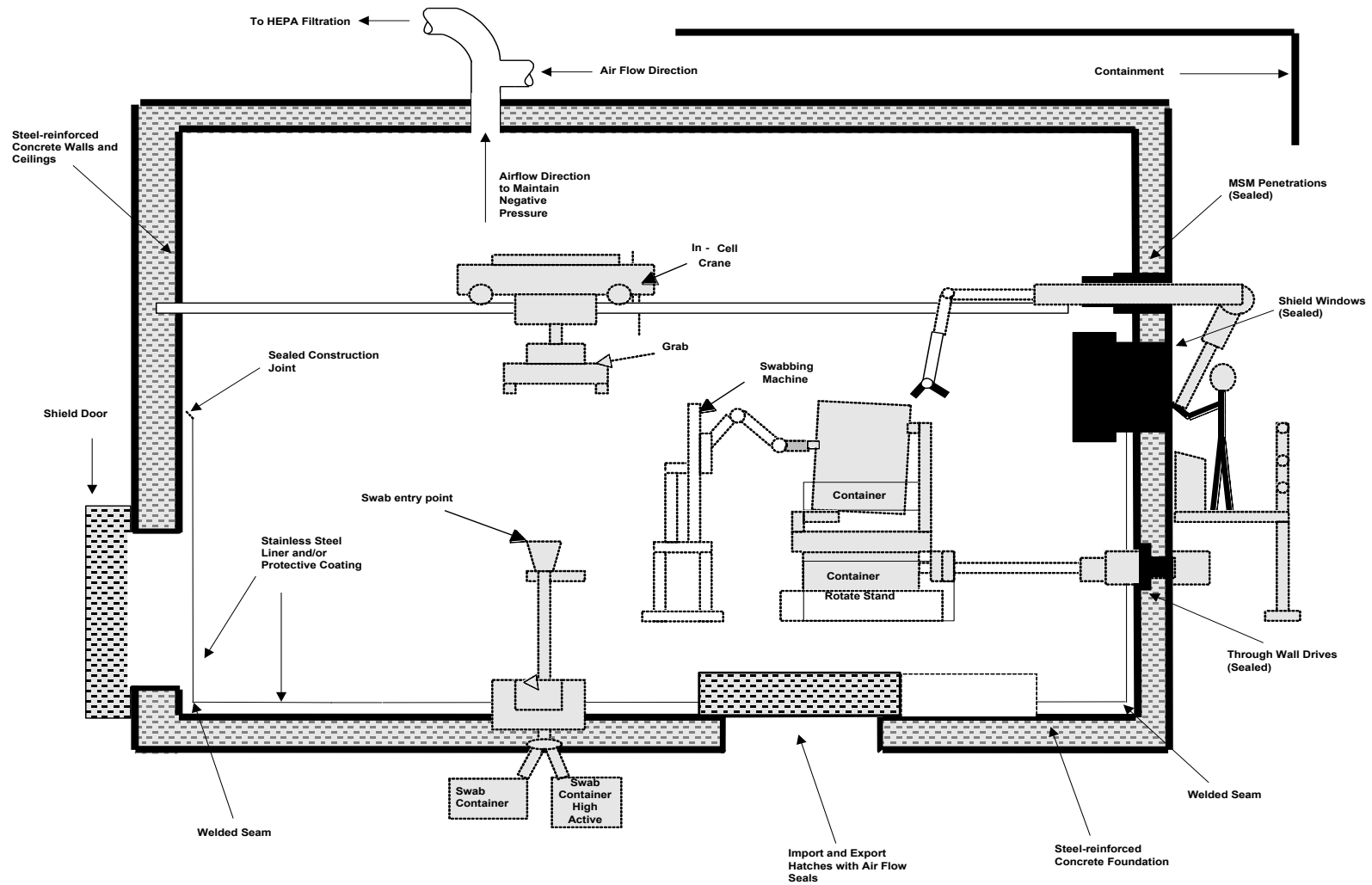
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Figure 4A-48 Typical System - LAW Melter Process System (LMP)



Typical Tank System - HLW Melter Feed Process System (HFP)

Figure 4A-53 Typical Tank System – HLW Melter Feed Process System (HFP)



Typical System - Containment Building

Figure 4A-59 Typical System - Containment Building (Sheet 1)

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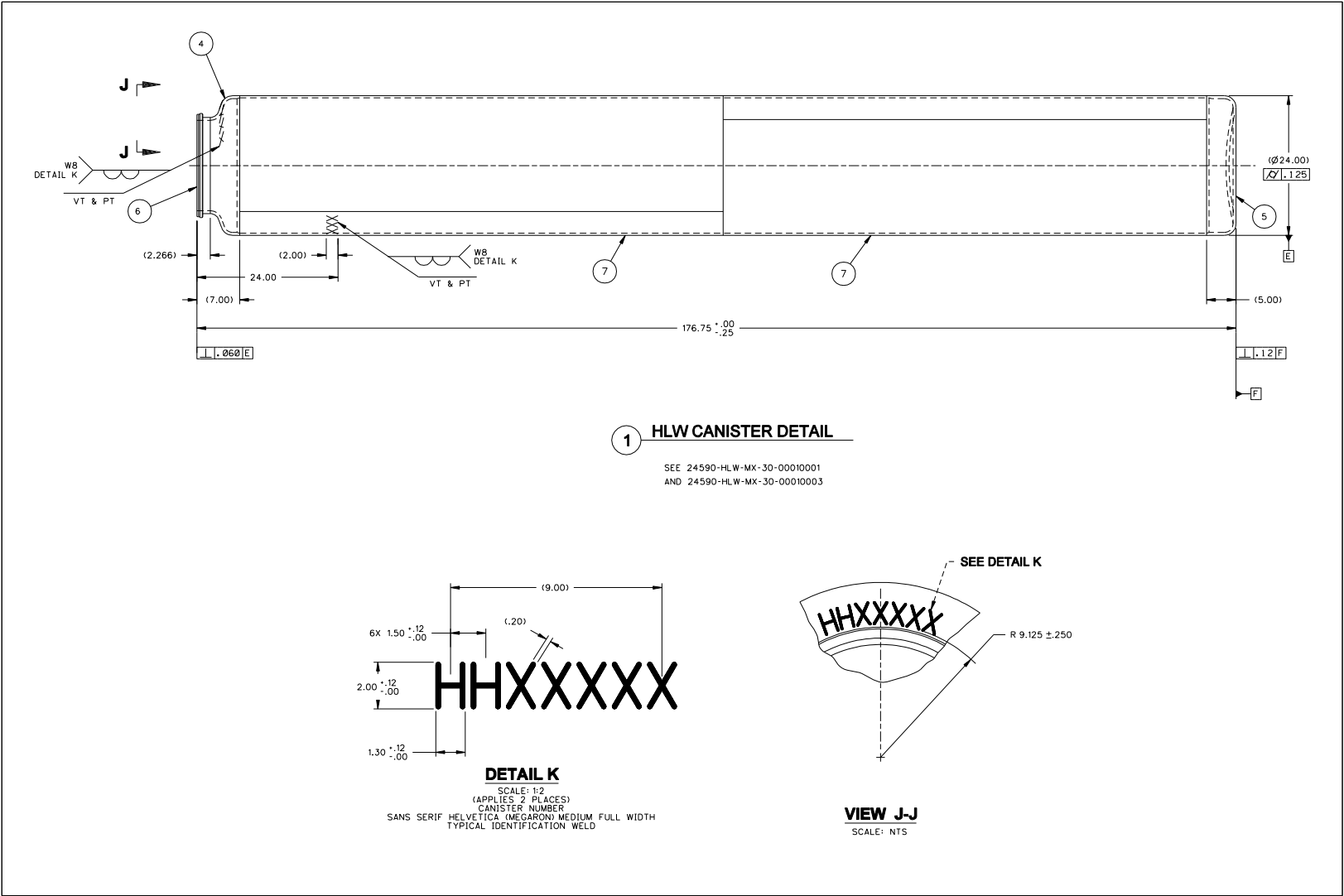
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Waste Treatment and Immobilization Plant

	Negative Cell Air Pressure	Air Flow to HEPA Filters	SS Liner With Welded Seams	Import / Export Hatch - (Controlled Air Gap)	Shield Windows - (Sealed)	Steel Reinforced Concrete Floor/Foundation	Steel Reinforced Concrete Walls & Ceilings	Through Wall MSMs - (Sealed)	In - Cell Bridge Crane / Monorail	Horiz./Vertical Shield Doors - (Controlled Air Gap)	Miscellaneous In-cell Room Equipment
Containment Building											
Pretreatment Plant											
Pretreatment Hot Cell Containment Building (P-0123)	X	X	X	X	X	X	X	X	X	X	X
Pretreatment Maintenance Containment Building											
PM0124 Hot Cell Crane Maintenance Mezzanine	X				X	X	X		X		X
P-0121A Spent Resin Dewatering	X	X		X	X	X	X				X
P-0122A Waste Packaging Area	X	X		X	X	X	X				X
P-0123A Remote Decontamination Maintenance Cave	X	X	X	X	X	X	X		X		X
P-0124 C3 Workshop	X	X		X	X	X	X		X		X
P-012C1 C3 Workshop	X	X		X	X	X	X		X		X
P-0125 Cask Lidding Airlock	X	X		X	X	X	X			X	X
P-0125A Cask Lidding Room	X	X		X	X	X	X		X		X
P-0128A MSM Repair Area	X	X		X	X	X	X				X
P-0128 Temporary Storage Room	X				X	X	X				X
Pretreatment Spent Filter Drum Handling Area Containment Building (P-0223)	X	X				X	X			X	X
Pretreatment Filter Cave Room-Containment Building (P-0335)	X	X	X			X	X			X	X
Pretreatment PJV Secondary HEPA Filter Room Containment Building (P-0431A)	X	X				X	X				

	Negative Cell Air Pressure	Air Flow to HEPA Filters	SS Liner With Welded Seams	Import / Export Hatch - (Controlled Air Gap)	Shield Windows - (Sealed)	Steel Reinforced Concrete Floor/Foundation	Steel Reinforced Concrete Walls & Ceilings	Through Wall MSMs - (Sealed)	In - Cell Bridge Crane / Monorail	Horiz./Vertical Shield Doors - (Controlled Air Gap)	Miscellaneous In-cell Room Equipment
Containment Building											
HLW Vitrification Plant											
HLW Melter Cave 1 Containment Building:	X	X	X	X	X	X	X	X	X	X	X
H-0117 Melter Cave 1	X	X	X	X	X	X	X	X	X	X	X
H-0116B Melter Cave 1 - C2/C3 Airlock	X	X				X	X			X	
H-0310A Melter Cave 1 Equipment Decon Pit	X	X	X	X	X	X	X	X	X	X	
HLW Melter Cave2 Containment Building:	X	X	X	X	X	X	X	X	X	X	X
H-0106 Melter Cave 2	X	X	X	X	X	X	X	X	X	X	X
H-0105B Melter Cave 2 - C2/C3/ Airlock	X	X				X	X		X	X	
1 H-0304A Melter Cave 2 Equipment Decontamination Area	X	X	X	X	X	X	X	X	X	X	
IHLW Canister Handling Cave Containment Building (H-0136)	X	X	X	X	X	X	X	X	X	X	X
IHLW Canister Swab and Monitoring Cave Containment Building (H-0133)	X	X		X	X	X	X	X	X	X	
C3 Workshop Containment Building:	X	X				X	X				X
C3 Workshop (H-0311A)	X	X				X	X				X
C3 MSM Maintenance Workshop (H-0311B)	X	X				X	X				
HLW Filter Cave Containment Building (H-0104)	X	X		X	X	X	X	X	X	X	X
HLW Pour Tunnel 1 Containment Building (H-B032)	X	X	X	X		X	X		X		
HLW Pour Tunnel 2 Containment Building (H-B005A)	X	X	X	X		X	X		X		
HLW Drum Swabbing and Monitoring Area Containment Building:	X	X				X	X		X		
H-0126A Crane Maintenance Room	X	X				X	X				
H-0126B Swabbing and Monitoring Room	X	X				X	X				
H-B028 Cask Import/Export Room	X	X				X	X		X		

1 **Figure 4A-59 Typical System - Containment Building Typical Design Features Crosswalk**
 2 **(Sheet 2)**

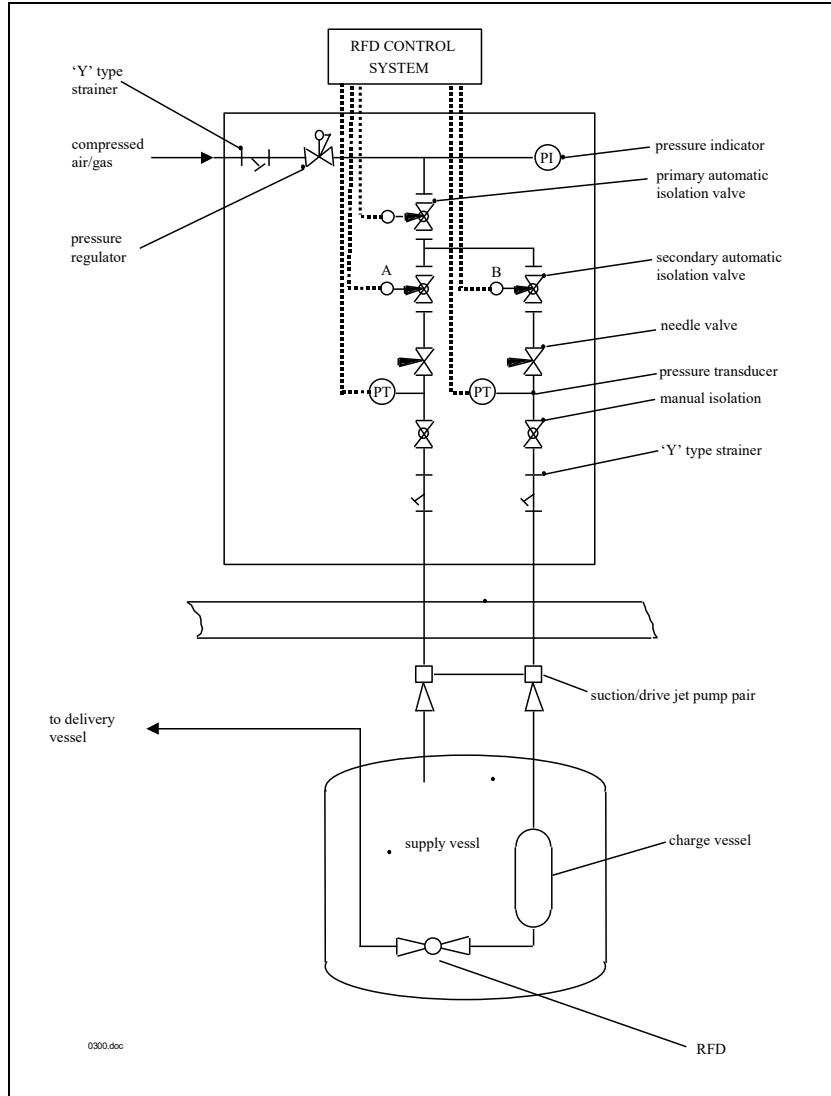


1 **Figure 4A-118 Schematic of an Example IHLW Container and Label**

2 Some information, on this page, may appear to be illegible; however, the information necessary for assuring adequate design is legible.

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Figure 4A-120 Typical Arrangement of a Reverse Flow Diverter

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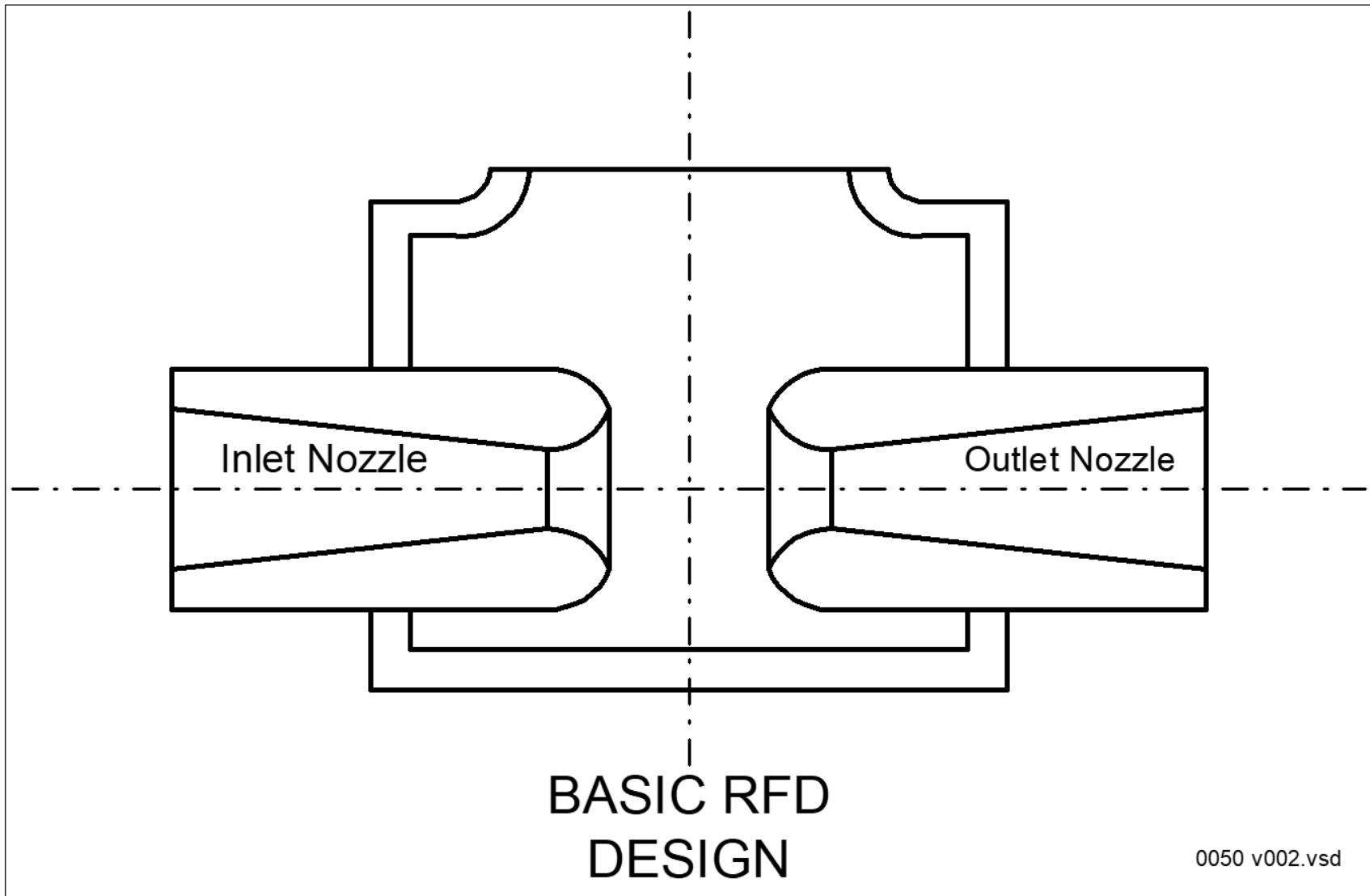
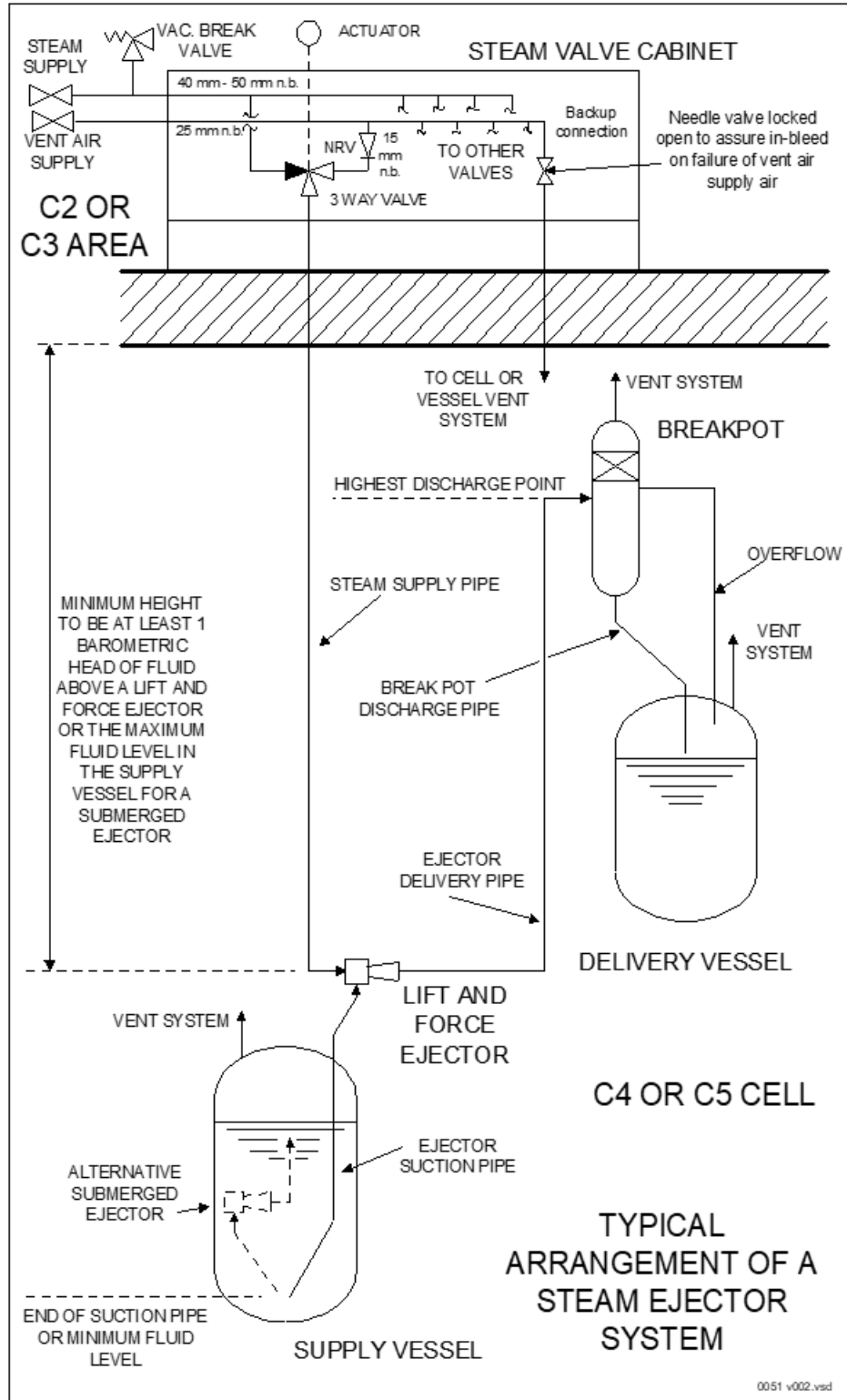


Figure 4A-121 Basic Reverse Flow Diverter Design

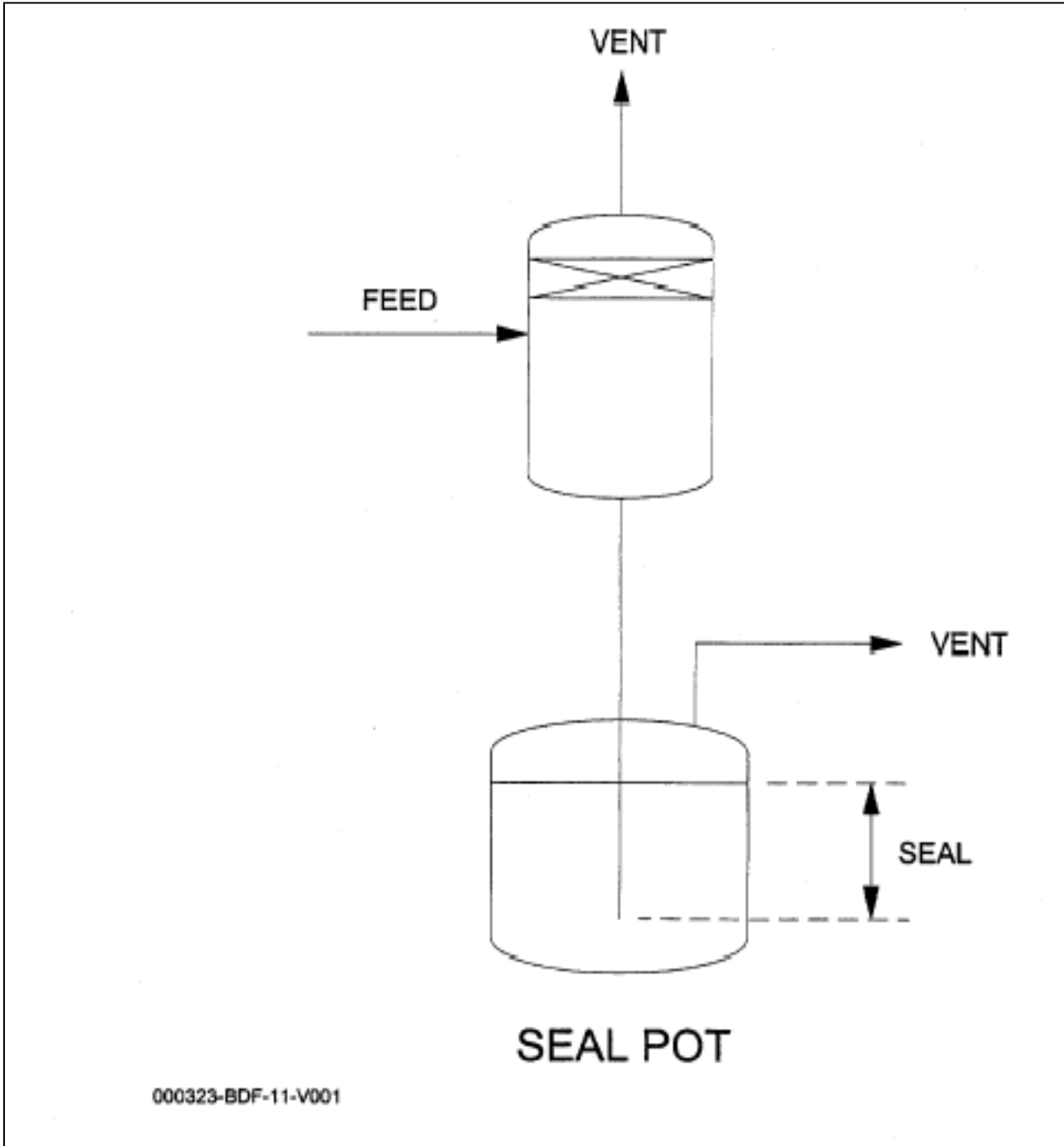
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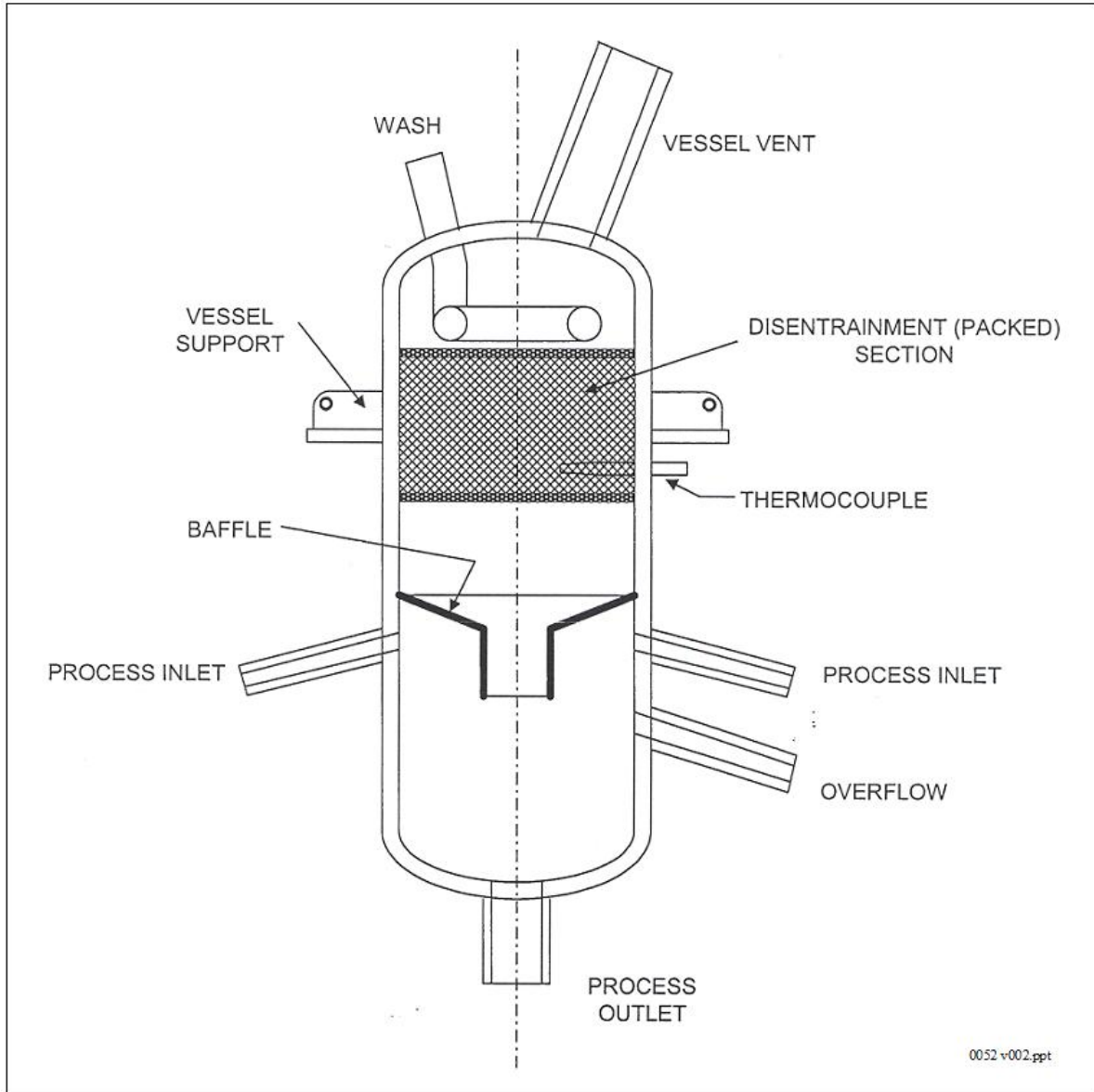
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Figure 4A-122 Typical Arrangement of a Steam Ejector System



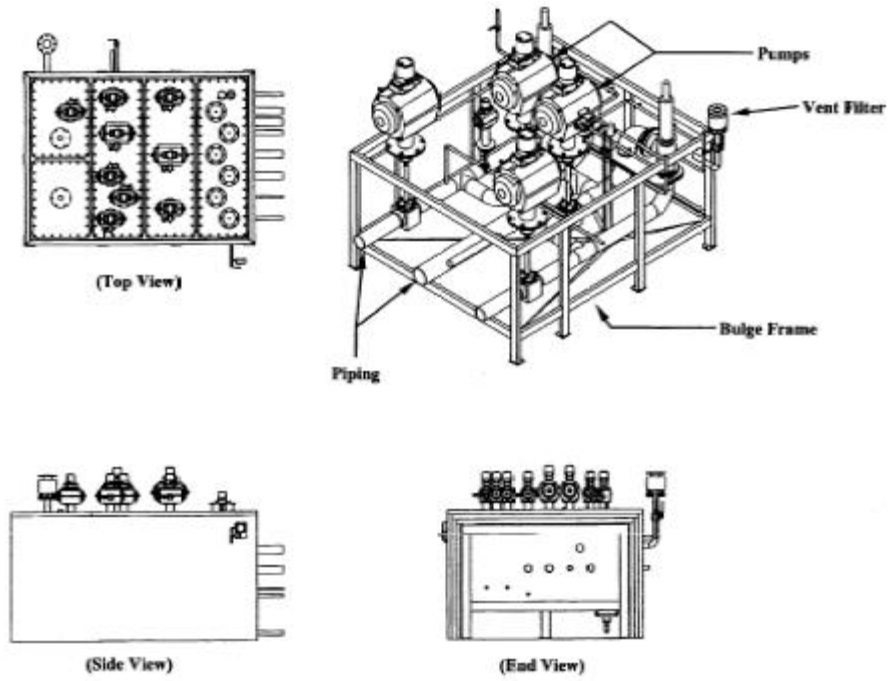
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Figure 4A-123 Typical Seal Pot Arrangement



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Figure 4A-124 Typical Breakpot Arrangement



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Figure 4A-127 Typical Bulge Configuration

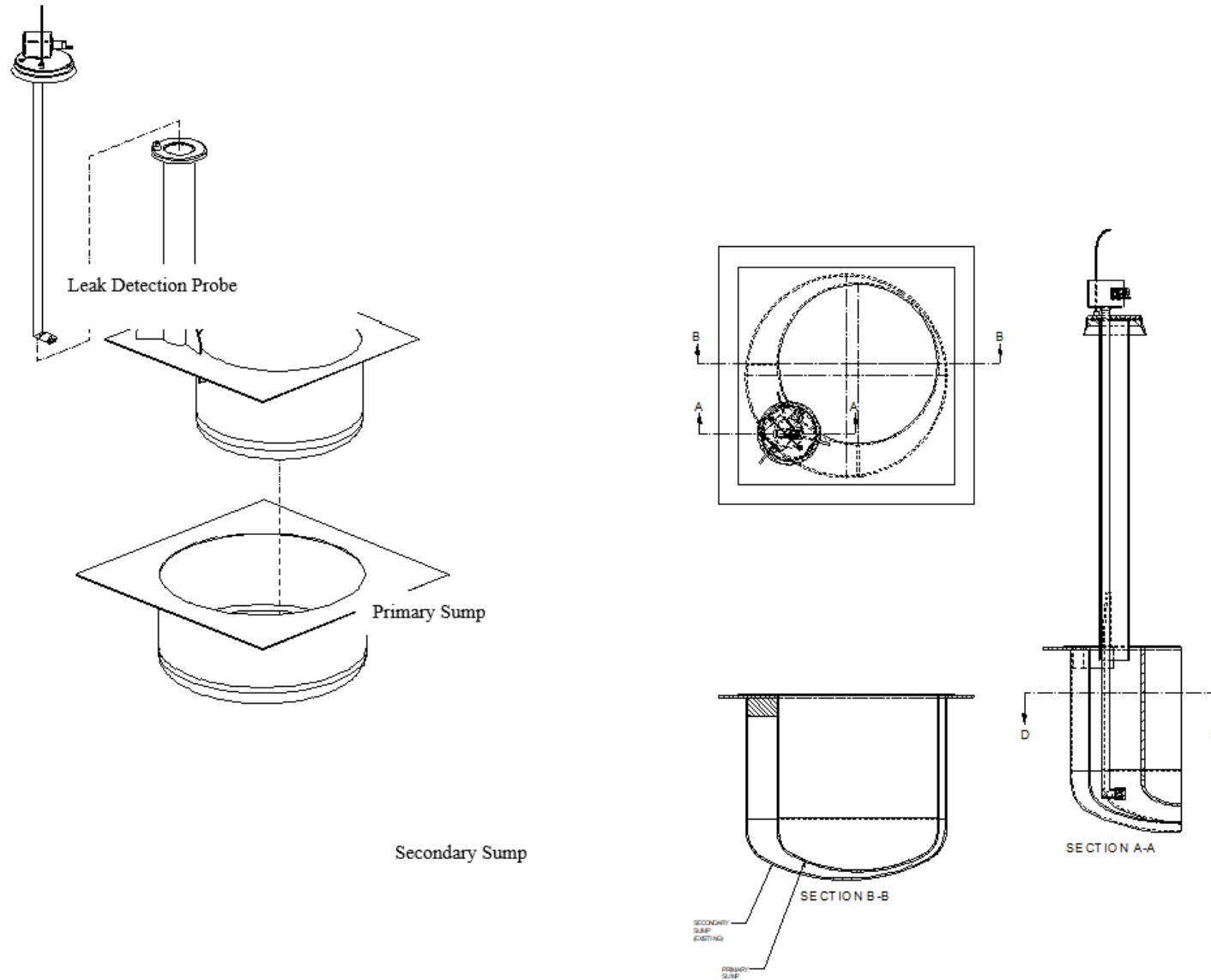


Figure 4A-128 Typical Primary Containment Sump Conceptual Design

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