

LEGEND

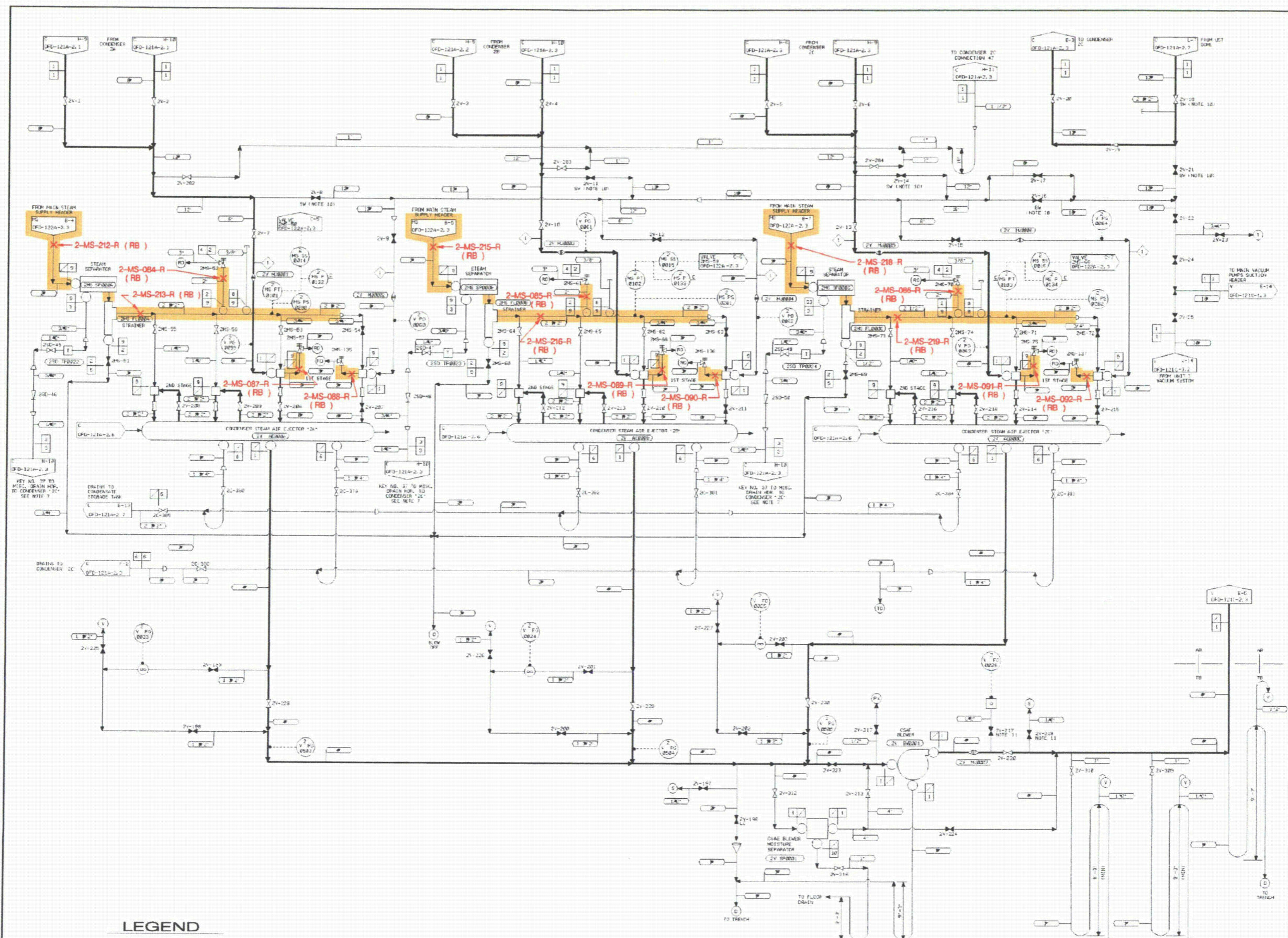
- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- ▬ Running Break Boundary

**FIGURE 5.1-8
MAIN STEAM SYSTEM**

High Energy Lines, Piping Configurations,
Boundaries, Break Locations and Numbers
(Sheet 1 of 11)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
BREAK PURPOSES ONLY.
REFERENCE FLOW DIAGRAM OFD-121C-2.1 FOR
COMPLETE SYSTEM DESIGN INFORMATION.

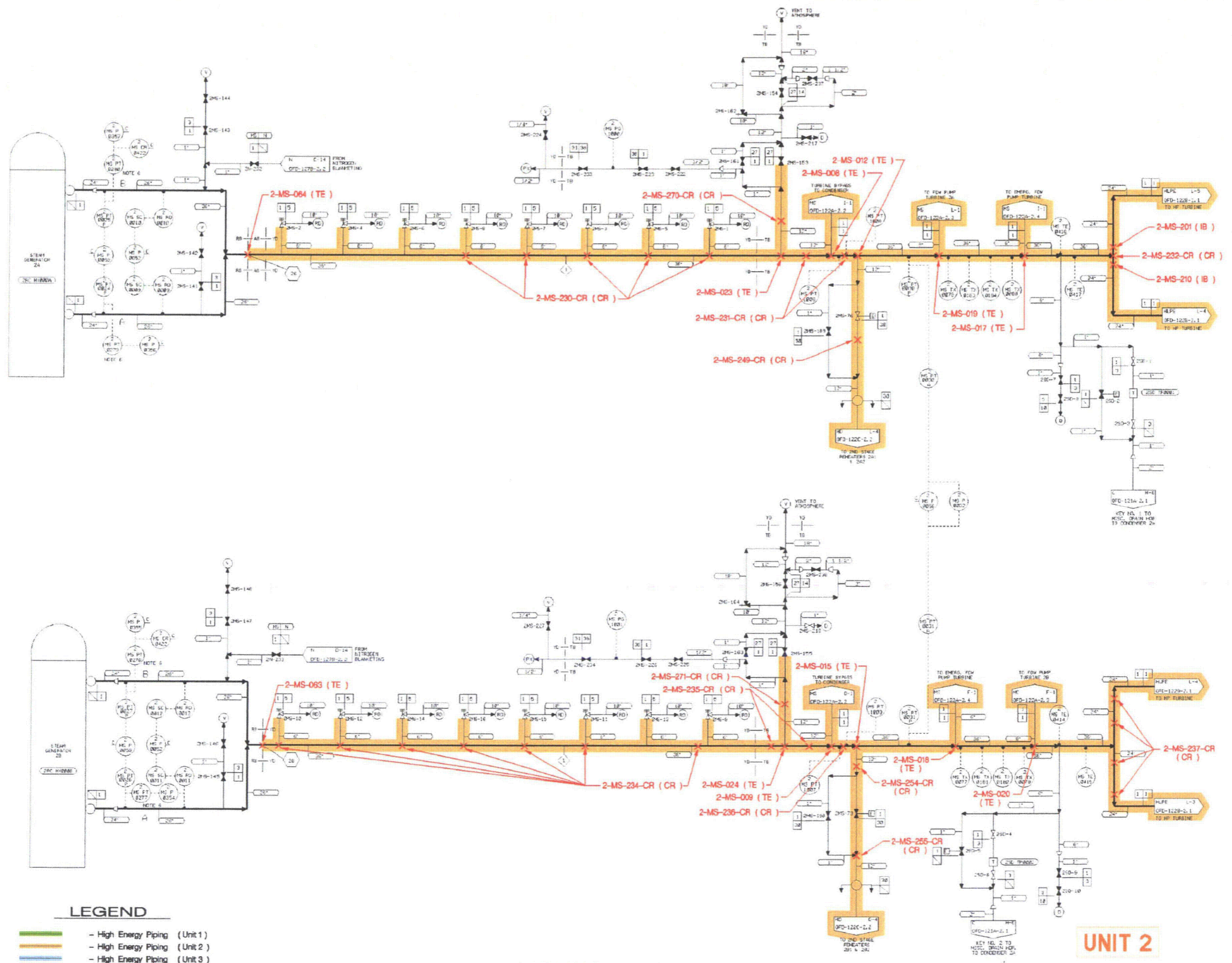


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

FIGURE 5.1-8
MAIN STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 11)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-121C-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

UNIT 2
 HELB-121C-02-02

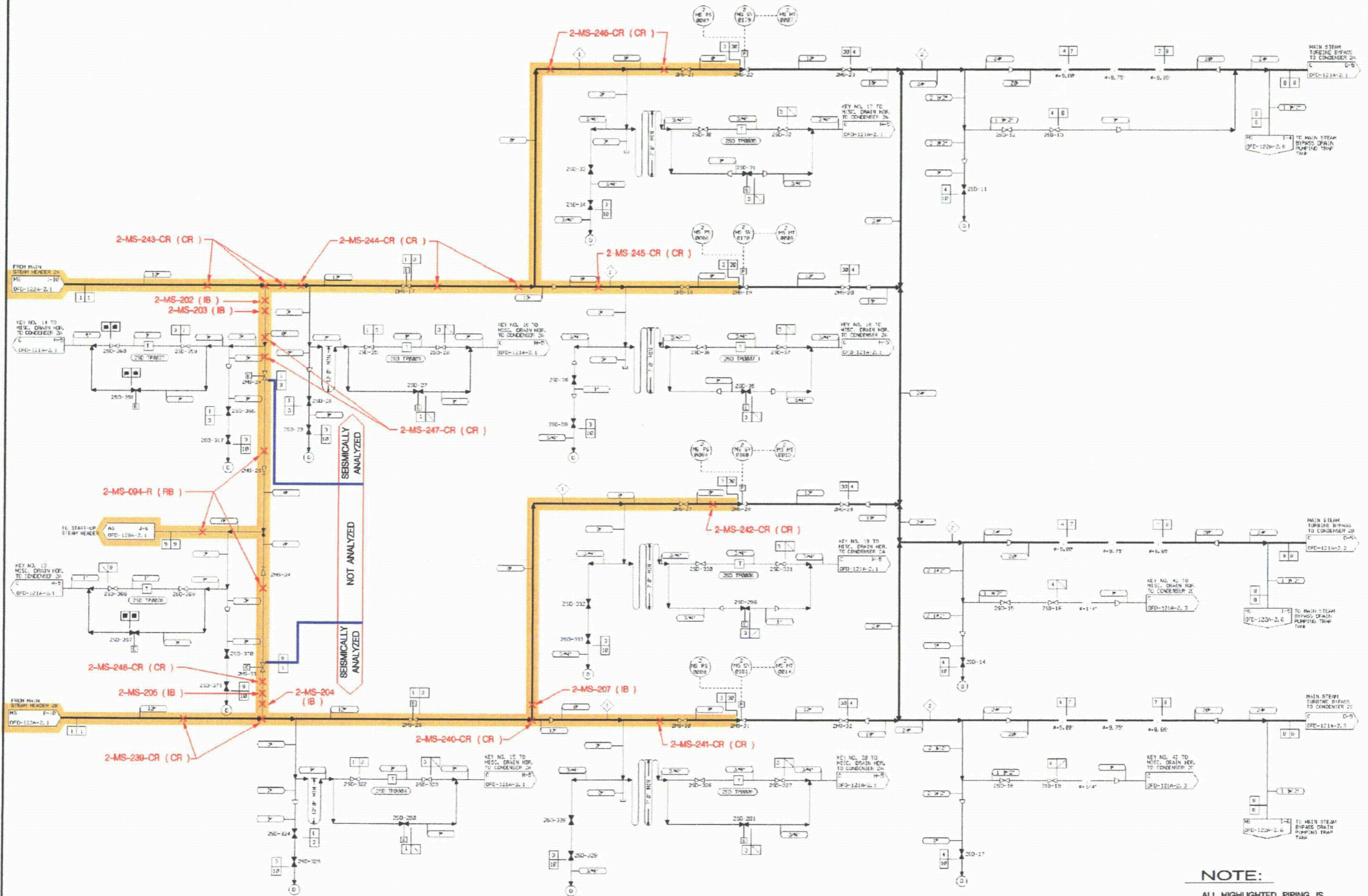


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

UNIT 2

FIGURE 5.1-8
MAIN STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 11)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



LEGEND

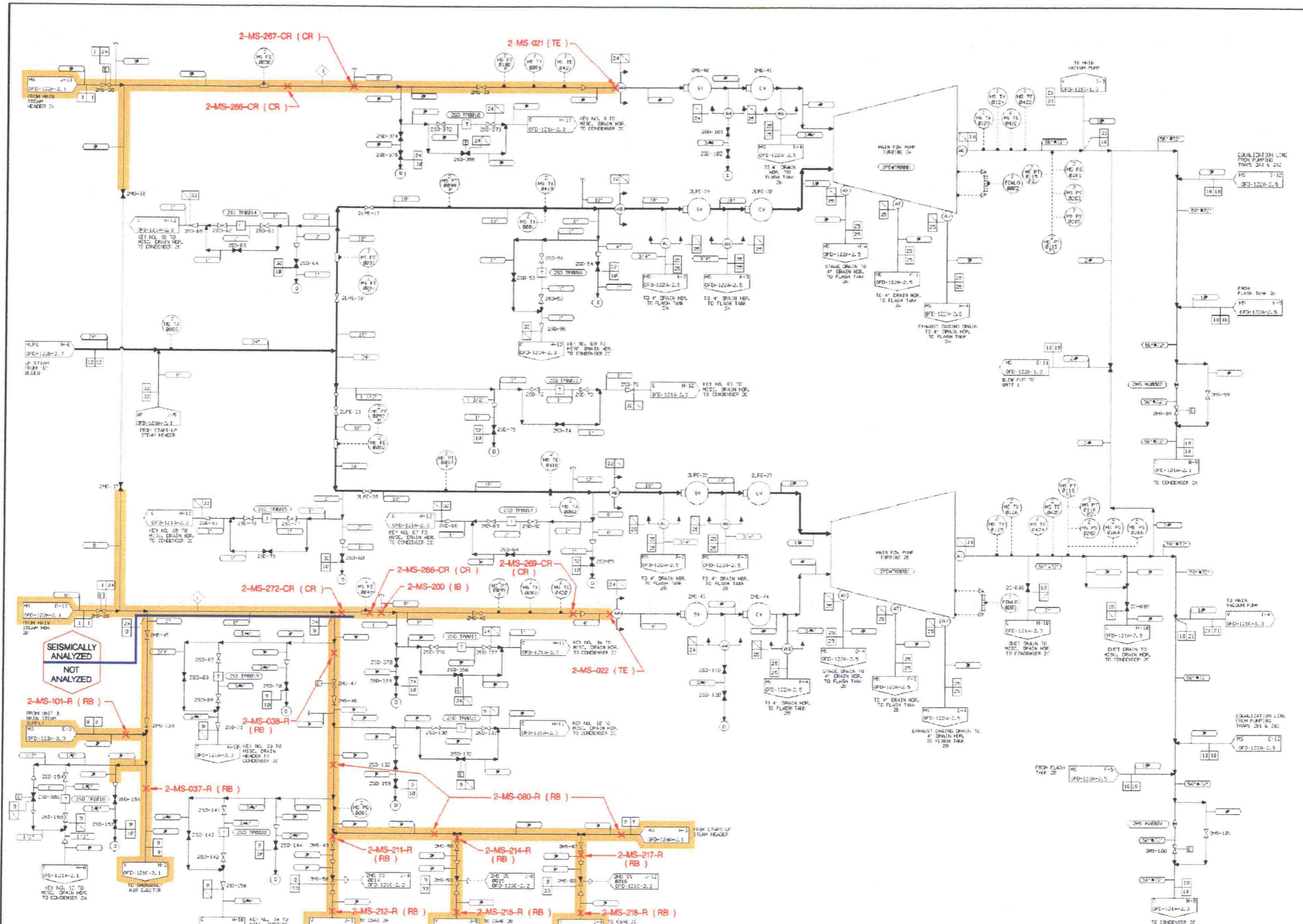
- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- P - Running Break Boundary

NOTE:
ALL HIGHLIGHTED PIPING IS ANALYZED EXCEPT AS NOTED.

UNIT 2

FIGURE 5.1-8
MAIN STEAM SYSTEM
High Energy Lines, Piping Configurations, Boundaries, Break Locations and Numbers
(Sheet 4 of 11)

THIS DIAGRAM IS FOR HIGH ENERGY LINE BREAK PURPOSES ONLY. REFERENCE FLOW DIAGRAM OFD-122A-2.2 FOR COMPLETE SYSTEM DESIGN INFORMATION.



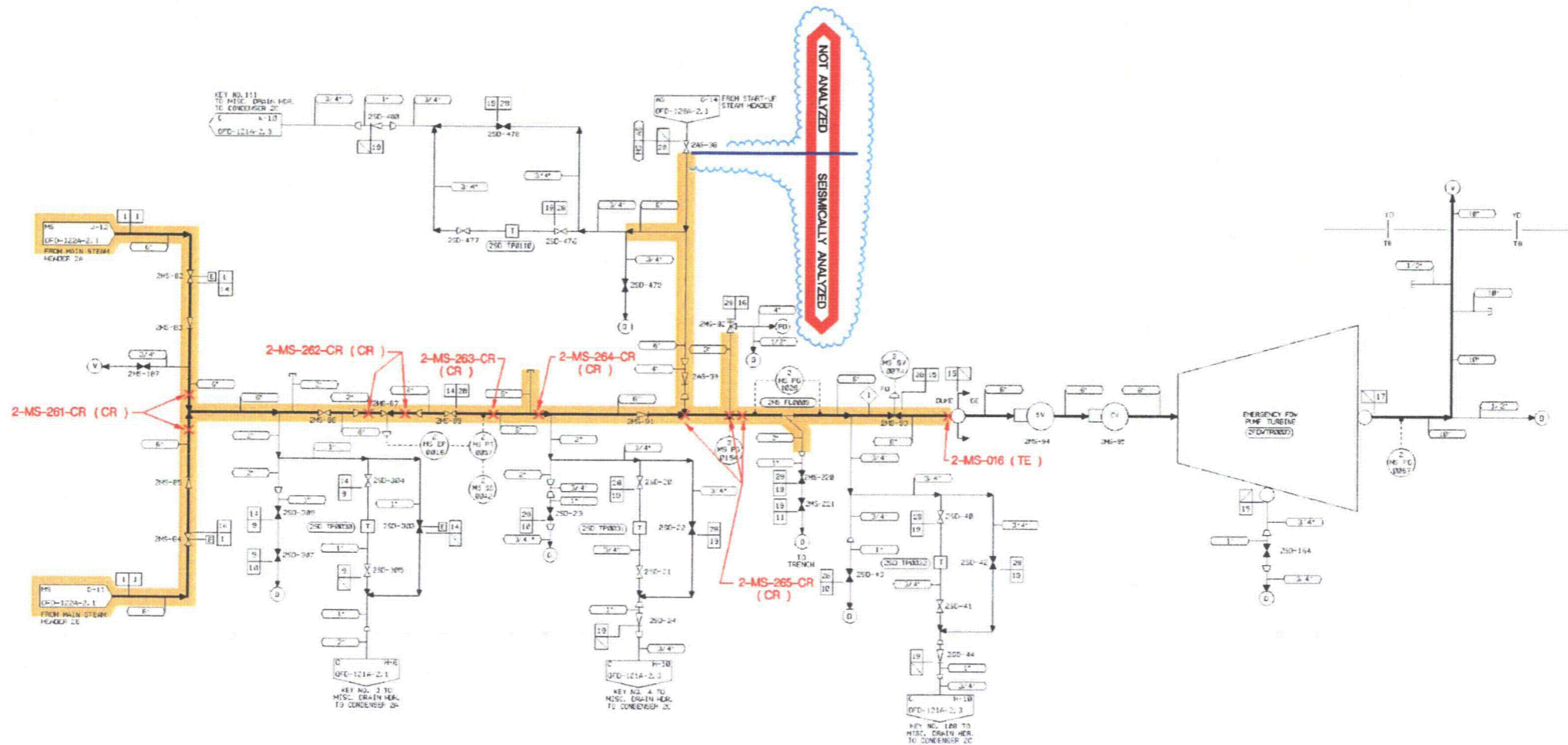
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ▶ - Running Break Boundary

NOTE:
ALL HIGHLIGHTED PIPING IS ANALYZED EXCEPT AS NOTED.

UNIT 2

FIGURE 5.1-8
MAIN STEAM SYSTEM
High Energy Lines, Piping Configurations,
Boundaries, Break Locations and Numbers
(Sheet 5 of 11)

THIS DIAGRAM IS FOR HIGH ENERGY LINE BREAK PURPOSES ONLY. REFERENCE FLOW DIAGRAM OFD-122A-2.3 FOR COMPLETE SYSTEM DESIGN INFORMATION.



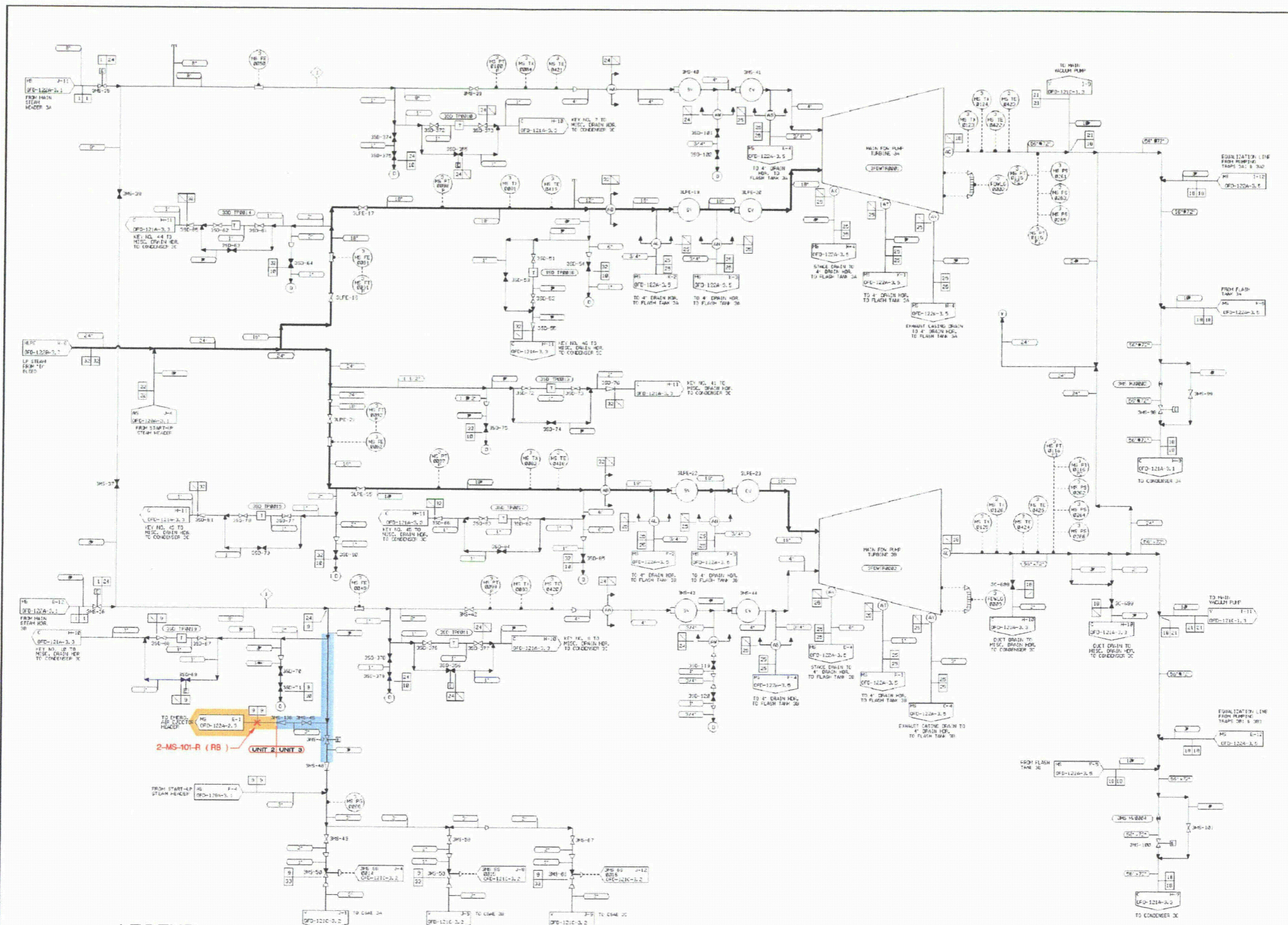
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - |— - Running Break Boundary

FIGURE 5.1-8
MAIN STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 6 of 11)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-2.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HEI B-122A-02-04



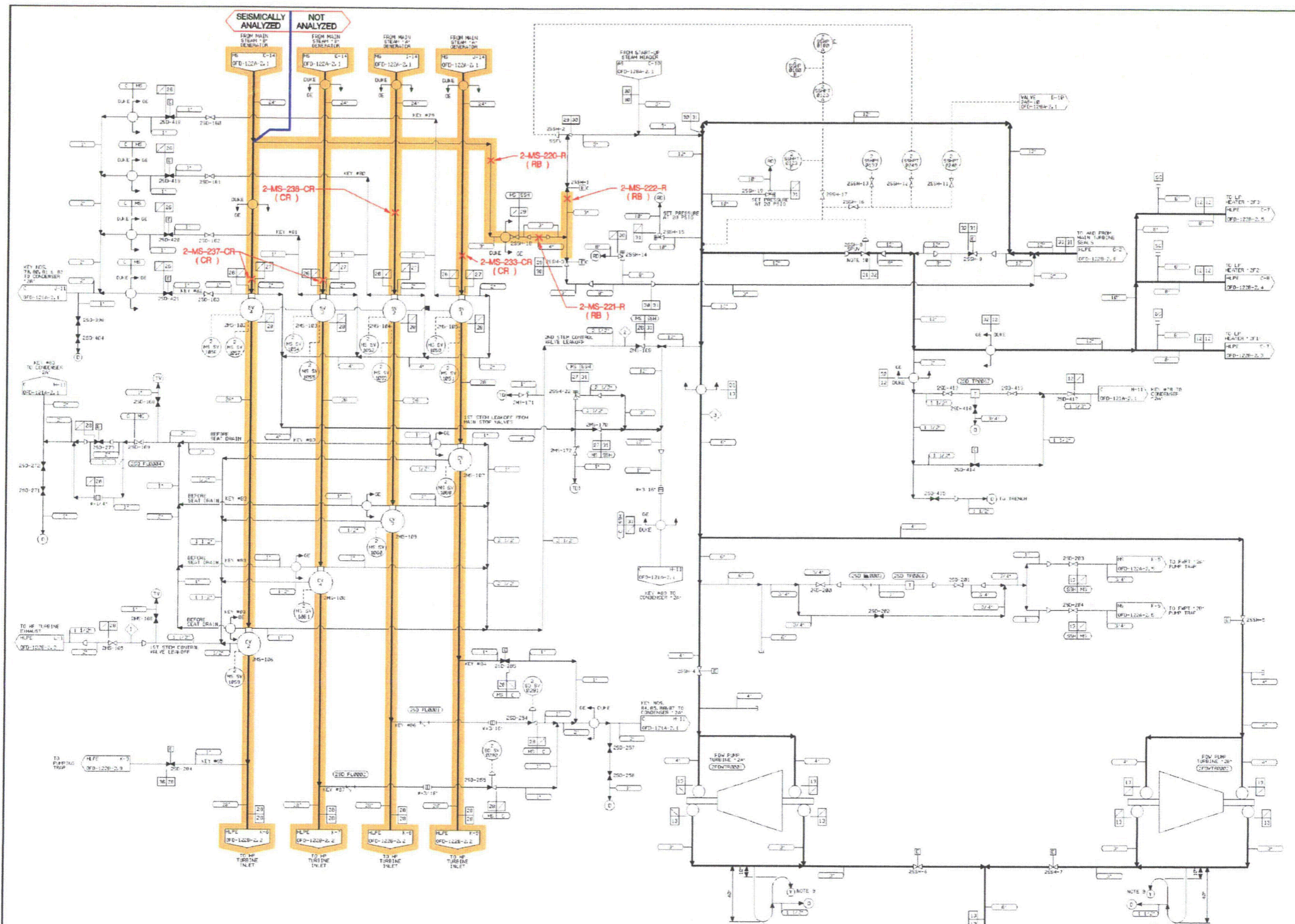
LEGEND

- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- ▶ Running Break Boundary

UNIT 2

FIGURE 5.1-8
MAIN STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 7 of 11)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-3.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



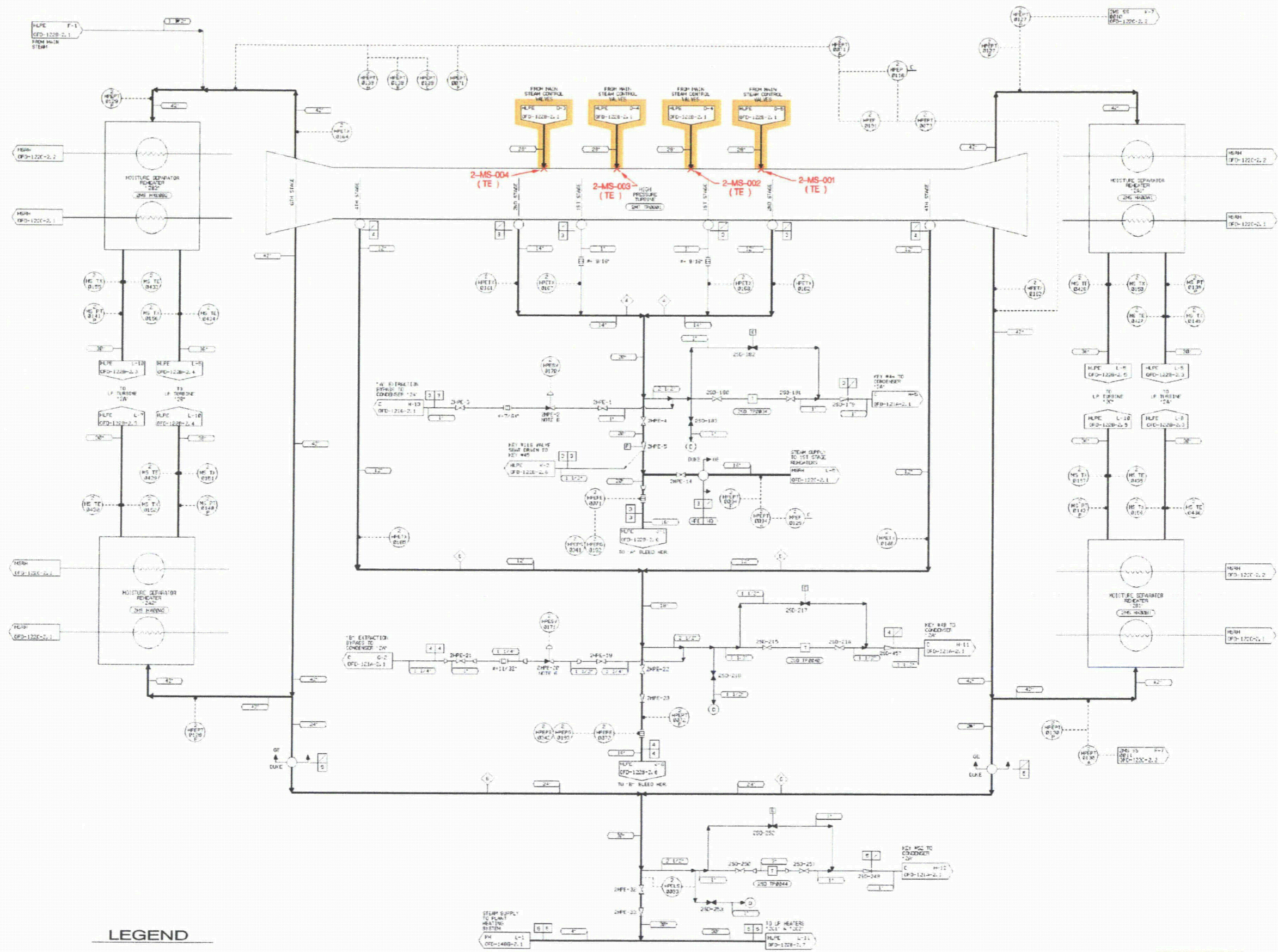
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ▶ - Running Break Boundary

High Energy Lines, Piping Configurations, Boundaries, Break Locations and Numbers (Sheet 8 of 11)

NOTE:
ALL HIGHLIGHTED PIPING IS ANALYZED EXCEPT AS NOTED.

THIS DIAGRAM IS FOR HIGH ENERGY LINE BREAK PURPOSES ONLY. REFERENCE FLOW DIAGRAM OFD-122B-2.1 FOR COMPLETE SYSTEM DESIGN INFORMATION.

UNIT 2



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- P - Running Break Boundary

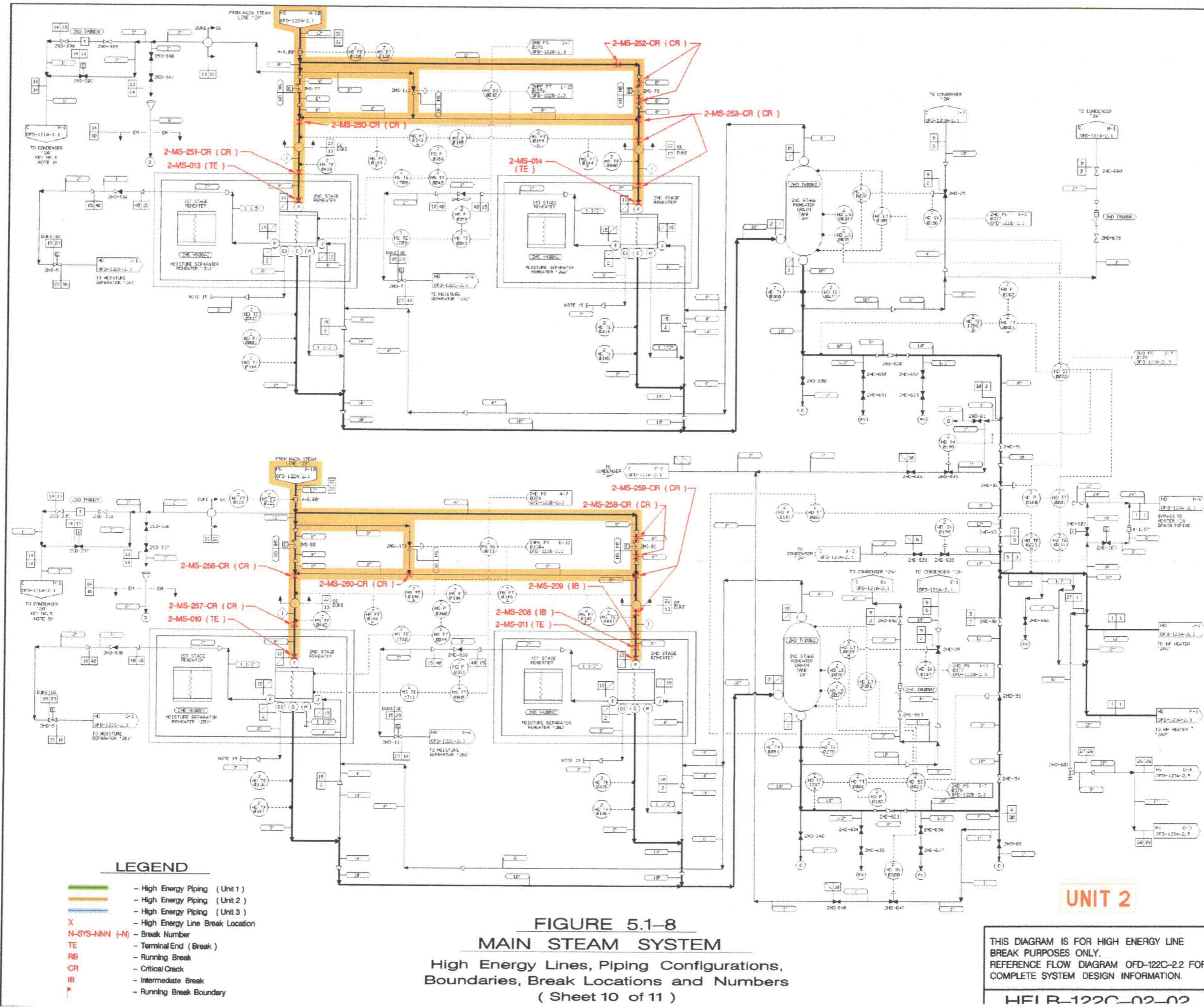
FIGURE 5.1-8

MAIN STEAM SYSTEM

High Energy Lines, Piping Configurations, Boundaries, Break Locations and Numbers (Sheet 9 of 11)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE BREAK PURPOSES ONLY. REFERENCE FLOW DIAGRAM OFD-122B-2.2 FOR COMPLETE SYSTEM DESIGN INFORMATION.



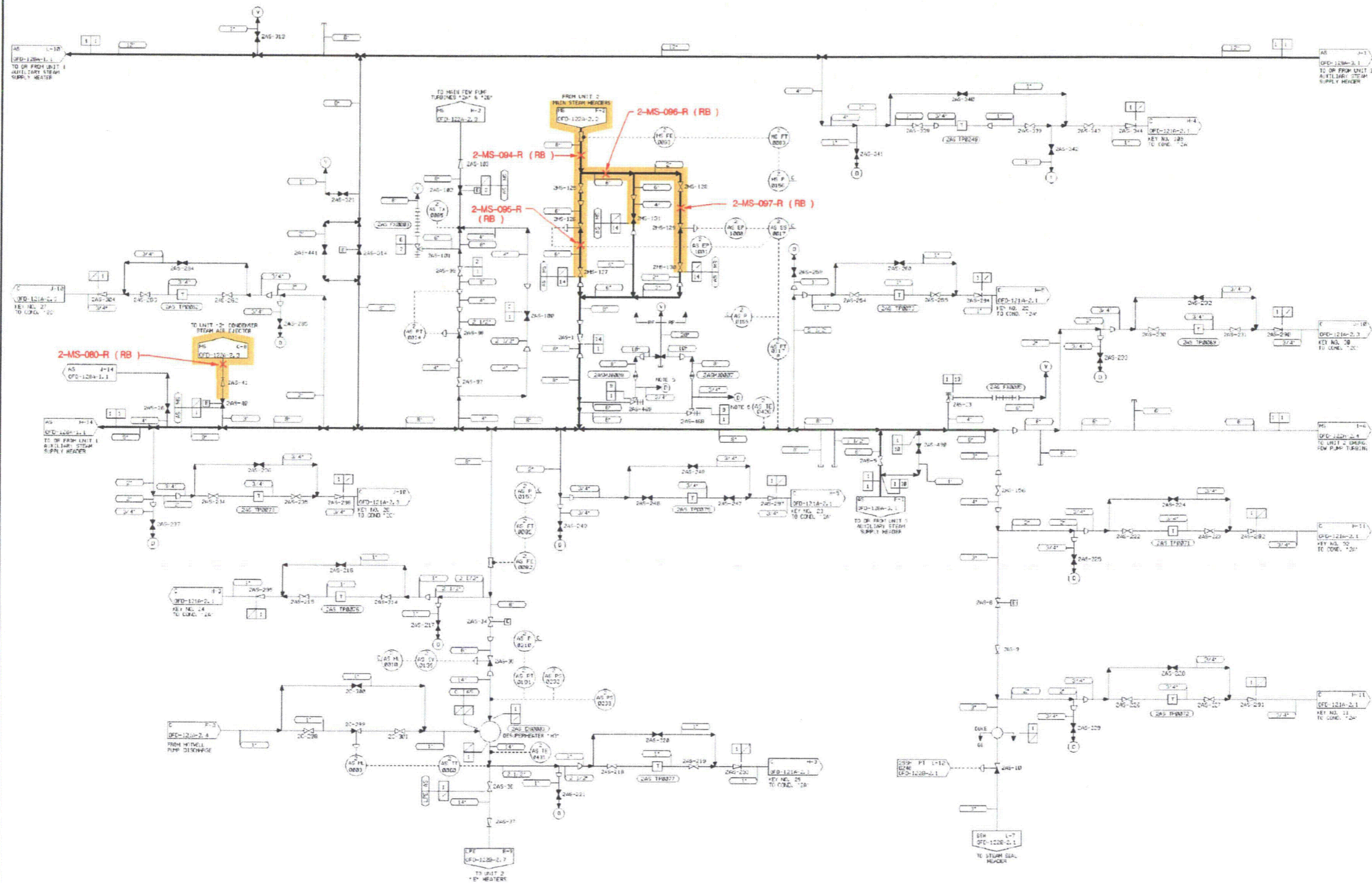
LEGEND

- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- Running Break Boundary

UNIT 2

FIGURE 5.1-8
MAIN STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 10 of 11)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ↑ - Running Break Boundary

FIGURE 5.1-8
MAIN STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 11 of 11)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-128A-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HFI R-128A-02-01

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-001-R01	122C-2.1	RB	8.625	0.322	TB	1410V	775'-0"	H-J	40-41	460	460
2-MSRD-001-R02	122C-2.1	RB	8.625	0.322	TB	1410H, 1410U	796'-6"	H-J	40-42	460	460
2-MSRD-002-R01	122C-2.1	RB	1.900	0.145	TB	1410V	775'-0"	H-J	40-41	460	460
2-MSRD-002-R02	122C-2.1	RB	1.900	0.145	TB	1410H	796'-6"	H-J	40-41	460	460
2-MSRD-003-R01	122C-2.1	RB	4.500	0.237	TB	1410V	775'-0"	H-J	40-41	460	460
2-MSRD-003-R02	122C-2.1	RB	4.500	0.237	TB	1410H, 1410U	796'-6"	H-J	40-42	460	460
2-MSRD-004-R01	122C-2.1	RB	8.625	0.322	TB	1410V	775'-0"	H-J	40-41	460	460
2-MSRD-004-R02	122C-2.1	RB	8.625	0.322	TB	1410H, 1410U	796'-6"	G-J	40-42	460	460
2-MSRD-005-R01	122C-2.1	RB	1.900	0.145	TB	1410V	775'-0"	G-H	40-41	460	460
2-MSRD-005-R02	122C-2.1	RB	1.900	0.145	TB	1410H	796'-6"	G-H	40-41	460	460
2-MSRD-006-R01	122C-2.1	RB	4.500	0.237	TB	1410V	775'-0"	H-J	40-41	460	460
2-MSRD-006-R02	122C-2.1	RB	4.500	0.237	TB	1410H, 1410U	796'-6"	G-J	40-42	460	460
2-MSRD-007-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410R 1410S	782'-0"	F-J	38-41	460	460
2-MSRD-008-R01	122C-2.1	RB	6.625	0.280	TB	1410N, 1410V 1410S	775'-0"	F-J	38-41	460	460
2-MSRD-008-R02	122C-2.1	RB	6.625	0.280	TB	1410H, 1410U	811'-0"	G-J	40-42	460	460
2-MSRD-009-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410Q 1410R	786'-0"	E-G	38-39	460	460
2-MSRD-010-R01	122C-2.1	RB	8.625	0.322	TB	1410V	775'-0"	B-C	40-42	460	460
2-MSRD-010-R02	122C-2.1	RB	8.625	0.322	TB	1410U	798'-0"	B-C	40-42	460	460
2-MSRD-011-R01	122C-2.1	RB	1.900	0.145	TB	1410V	775'-0"	B-C	40-41	460	460
2-MSRD-011-R02	122C-2.1	RB	1.900	0.145	TB	1410U	796'-6"	B-C	40-41	460	460
2-MSRD-012-R01	122C-2.1	RB	4.500	0.237	TB	1410V	775'-0"	B-C	40-42	460	460
2-MSRD-012-R02	122C-2.1	RB	4.500	0.237	TB	1410U	796'-6"	B-C	40-41	460	460
2-MSRD-013-R01	122C-2.1	RB	8.625	0.322	TB	1410V	775'-0"	B-C	40-41	460	460
2-MSRD-013-R02	122C-2.1	RB	8.625	0.322	TB	1410U	796'-6"	B-D	40-42	460	460
2-MSRD-014-R01	122C-2.1	RB	1.900	0.145	TB	1410V	775'-0"	B-C	40-42	460	460
2-MSRD-014-R02	122C-2.1	RB	1.900	0.145	TB	1410U	796'-6"	C-D	40-41	460	460
2-MSRD-015-R01	122C-2.1	RB	4.500	0.237	TB	1410V	775'-0"	B-D	40-42	460	460
2-MSRD-015-R02	122C-2.1	RB	4.500	0.237	TB	1410U	796'-6"	B-D	40-42	460	460
2-MSRD-016-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410V 1410T	775'-0"	B-E	38-41	460	460

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-017-R01	122C-2.1	RB	6.625	0.280	TB	1410N, 1410S 1410V	775'-0"	B-E	38-41	460	460
2-MSRD-017-R02	122C-2.1	RB	6.625	0.280	TB	1410U	796'-6"	B-D	40-42	460	460
2-MSRD-018-R	122C-2.1	RB	8.625	0.322	TB	1410S, 1410N 1410T	775'-0"	D-E	38-39	460	460
2-MSRD-019-R	122C-2.2	RB	6.625	0.280	TB	1410H	796'-6"	K-L	35	470	460
2-MSRD-020-R01	122C-2.2	RB	18.00	0.375	TB	1410N, 1410R	775'-0"	F-J	38-39	470	460
2-MSRD-020-R02	122C-2.2	RB	18.00	0.375	TB	1410H, 1410I	796'-6"	H-M	34-39	470	460
2-MSRD-021-R01	122C-2.3	RB	6.625	0.280	TB	1410N, 1410S	775'-0"	F-H	38-40	160	380
2-MSRD-021-R02	122C-2.3	RB	6.625	0.280	TB	1410H, 1410U	796'-6"	G-J	39-41	160	380
2-MSRD-022-R	122C-2.2	RB	6.625	0.432	TB	1410H	796'-6"	L-M	34-35	470	460
2-MSRD-023-R01	122C-2.2	RB	8.625	0.322	TB	1410V	775'-0"	H-J	40-41	900	540
2-MSRD-023-R02	122C-2.2	RB	8.625	0.322	TB	1410U	796'-6"	H-J	40-42	900	540
2-MSRD-024-R01	122C-2.2	RB	1.900	0.145	TB	1410V	775'-0"	H-J	40-41	900	540
2-MSRD-024-R02	122C-2.2	RB	1.900	0.145	TB	1410U	796'-6"	H-J	40-41	900	540
2-MSRD-025-R	122C-2.4	RB	3.500	0.216	TB	1410N, 1410R	775'-0"	D-F	40-41	200	380
2-MSRD-026-R01	122C-2.2	RB	8.625	0.322	TB	1410V	775'-0"	H-J	40-41	900	540
2-MSRD-026-R02	122C-2.2	RB	8.625	0.322	TB	1410U	796'-6"	G-J	40-42	900	540
2-MSRD-027-R01	122C-2.2	RB	1.900	0.145	TB	1410V	775'-0"	G-H	40-41	900	540
2-MSRD-027-R02	122C-2.2	RB	1.900	0.145	TB	1410U	796'-6"	G-H	40-41	900	540
2-MSRD-028-R	122C-2.2	RB	6.625	0.280	TB	1410U	796'-6"	G-H	40-42	900	540
2-MSRD-029-R	122C-2.2	RB	10.75	0.365	TB	1410N, 1410R 1410S	775'-0"	G-J	38-41	900	540
2-MSRD-030-R01	122C-2.2	RB	6.625	0.280	TB	1410N, 1410S	775'-0"	G-H	38-39	900	540
2-MSRD-030-R02	122C-2.2	RB	6.625	0.280	TB	1410H, 1410U	796'-6"	G-J	38-41	900	540
2-MSRD-031-R	122C-2.2	RB	10.75	0.365	TB	1410N, 1410R 1410S	785'-6"	E-H	38-40	900	540
2-MSRD-032-R01	122C-2.2	RB	8.625	0.322	TB	1410V	775'-0"	B-C	40-41	900	540
2-MSRD-032-R02	122C-2.2	RB	8.625	0.322	TB	1410U	796'-6"	B-C	40-42	900	540
2-MSRD-033-R01	122C-2.2	RB	1.900	0.145	TB	1410V	775'-0"	B-C	40-41	900	540
2-MSRD-033-R02	122C-2.2	RB	1.900	0.145	TB	1410U	775'-0"	B-C	40-41	900	540
2-MSRD-034-R	122C-2.3 122C-2.4	RB	2.375	0.154	TB	1410N, 1410R	784'-0"	D-E	39-41	200	380
2-MSRD-035-R01	122C-2.2	RB	8.625	0.322	TB	1410V	775'-0"	B-C	40-41	900	540
2-MSRD-035-R02	122C-2.2	RB	8.625	0.322	TB	1410U	796'-6"	B-D	40-42	900	540

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-036-R01	122C-2.2	RB	1.900	0.145	TB	1410V	775'-0"	B-C	40-41	900	540
2-MSRD-036-R02	122C-2.2	RB	1.900	0.145	TB	1410U	796'-6"	C-D	40-41	900	540
2-MSRD-037-R	122C-2.2	RB	6.625	0.280	TB	1410U	796'-6"	B-D	40-41	900	540
2-MSRD-038-R	122C-2.2	RB	10.75	0.365	TB	1410N, 1410T 1410V	775'-0"	B-D	38-41	900	540
2-MSRD-039-R	122C-2.2	RB	8.625	0.322	TB	1410N	775'-0"	E-F	38-39	900	540
2-MSRD-040-R	122C-2.2	RB	10.75	0.365	TB	1410S, 1410N 1410T	775'-0"	C-F	38-40	900	540
2-MSRD-041-R01	122C-2.2	RB	4.500	0.237	TB	1410V	775'-0"	G-J	40-41	900	540
2-MSRD-041-R02	122C-2.2	RB	4.500	0.237	TB	1410U	796'-6"	H-J	40-41	900	540
2-MSRD-042-R01	122C-2.2	RB	4.500	0.237	TB	1410V	775'-0"	G-J	40-41	900	540
2-MSRD-042-R02	122C-2.2	RB	4.500	0.237	TB	1410U	796'-6"	G-J	40-42	900	540
2-MSRD-043-R01	122C-2.2	RB	4.500	0.237	TB	1410V	775'-0"	B-C	40-41	900	540
2-MSRD-043-R02	122C-2.2	RB	4.500	0.237	TB	1410U	796'-6"	B-C	40-41	900	540
2-MSRD-044-R01	122C-2.2	RB	4.500	0.237	TB	1410V	775'-0"	B-C	40-41	900	540
2-MSRD-044-R02	122C-2.2	RB	4.500	0.237	TB	1410U	796'-6"	C-D	40-41	900	540
2-MSRD-045-R	122C-2.2	RB	12.75	0.375	TB	1410N, 1410Q	775'-0"	F-G	38-39	900	540
2-MSRD-046-R	122C-2.2 123A-2.1	RB	12.75	0.375	TB	1410H	796'-6"	K-M	34-35	470	460
2-MSRD-047-R	122C-2.2 123A-2.1	RB	12.75	0.375	TB	1410H	796'-6"	J-L	34-35	470	460
2-MSRD-048-R	122C-2.1	RB	2.375	0.154	TB	1410H	796'-6"	H-J	40-41	460	480
2-MSRD-049-R	122C-2.1	RB	2.375	0.154	TB	1410H	796'-6"	G-H	40-41	460	480
2-MSRD-050-R	122C-2.1	RB	2.375	0.154	TB	1410U	796'-6"	B-C	40-41	460	480
2-MSRD-051-R	122C-2.1	RB	2.375	0.154	TB	1410U	796'-6"	C-D	40-41	460	480
2-MSRD-052-R	122C-2.1 122C-2.3	RB	2.375	0.154	TB	1410H	796'-6"	H-J	40-41	170	480
2-MSRD-053-R	122C-2.1 122C-2.3	RB	2.375	0.154	TB	1410H	796'-6"	G-H	40-41	170	480
2-MSRD-054-R	122C-2.1 122C-2.3	RB	2.375	0.154	TB	1410U	796'-6"	B-C	40-41	170	480
2-MSRD-055-R	122C-2.1 122C-2.3	RB	2.375	0.154	TB	1410U	796'-6"	C-D	40-41	170	480
2-MSRD-056-R	122C-2.2	RB	2.375	0.154	TB	1410U	796'-6"	H-J	40-41	900	595
2-MSRD-057-R	122C-2.2	RB	2.375	0.154	TB	1410U	796'-6"	G-H	40-41	900	595
2-MSRD-058-R	122C-2.2	RB	2.375	0.154	TB	1410U	796'-6"	B-C	40-41	900	595

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-059-R	122C-2.2	RB	2.375	0.154	TB	1410U	796'-6"	C-D	40-41	900	595
2-MSRD-060-R	122C-2.2 122C-2.3	RB	2.375	0.218	TB	1410U	796'-6"	H-J	40-41	170	595
2-MSRD-061-R	122C-2.2 122C-2.3	RB	2.375	0.218	TB	1410U	796'-6"	G-H	40-41	170	595
2-MSRD-062-R	122C-2.2 122C-2.3	RB	2.375	0.218	TB	1410U	796'-6"	B-C	40-41	170	595
2-MSRD-063-R	122C-2.2 122C-2.3	RB	2.375	0.218	TB	1410U	796'-6"	C-D	40-41	170	595
2-MSRD-066-R	122C-2.3	RB	4.500	0.237	TB	1410A, 1410E	775'-0"	H-J	41-42	160	365
2-MSRD-067-R	122C-2.3	RB	4.500	0.237	TB	1410A, 1410C	775'-0"	L-M	41-42	200	380
2-MSRD-068-R	122C-2.3 123A-2.2	RB	6.625	0.280	TB	1410A, 1410C 1410G	775'-0"	L-M	40-42	200	380
2-MSRD-069-R01	122C-2.3	RB	6.625	0.280	TB	1410N, 1410S	775'-0"	C-E	38-40	160	380
2-MSRD-069-R02	122C-2.3	RB	6.625	0.280	TB	1410U	796'-6"	B-D	39-41	160	380
2-MSRD-070-R01	122C-2.3	RB	20.00	0.375	TB	1410U	796'-6"	B-C	40-41	160	380
2-MSRD-070-R02	122C-2.3	RB	20.00	0.375	TB	1410N, 1410T	775'-0"	B-D	39-41	160	380
2-MSRD-071-R	122C-2.3	RB	12.75	0.375	TB	1410N, 1410T	775'-0"	C-D	39-40	160	380
2-MSRD-072-R	122C-2.3	RB	6.625	0.280	TB	1410S	775'-0"	C-D	39-40	160	380
2-MSRD-073-R	122C-2.3	RB	12.75	0.375	TB	1410N, 1410T	775'-0"	C-D	39-40	160	380
2-MSRD-074-R01	122C-2.3	RB	20.00	0.375	TB	1410U	796'-6"	C-D	40-41	160	380
2-MSRD-074-R02	122C-2.3	RB	20.00	0.375	TB	1410N, 1410T	775'-0"	C-D	39-41	160	380
2-MSRD-075-R	122C-2.3	RB	6.625	0.280	TB	1410S	775'-0"	C-D	39-40	160	380
2-MSRD-076-R	122C-2.3	RB	8.625	0.322	TB	1410N, 1410S	775'-0"	C-E	38-40	160	380
2-MSRD-077-R01	122C-2.3	RB	20.00	0.375	TB	1410U	796'-6"	H-J	40-41	160	380
2-MSRD-077-R02	122C-2.3	RB	20.00	0.375	TB	1410N	775'-0"	H-J	39-41	160	380
2-MSRD-078-R	122C-2.3	RB	12.75	0.375	TB	1410N	775'-0"	H-J	39-40	160	380
2-MSRD-079-R	122C-2.3	RB	6.625	0.280	TB	1410S	775'-0"	G-H	39-40	160	380
2-MSRD-080-R01	122C-2.3	RB	20.00	0.375	TB	1410U	796'-6"	G-H	40-41	160	380
2-MSRD-080-R02	122C-2.3	RB	20.00	0.375	TB	1410N	775'-0"	G-H	39-41	160	380
2-MSRD-081-R	122C-2.3	RB	12.750	0.375	TB	1410N	775'-0"	G-H	39-40	160	380
2-MSRD-082-R	122C-2.3	RB	6.625	0.280	TB	1410S	775'-0"	G-H	39-40	160	380
2-MSRD-083-R	122C-2.3	RB	8.625	0.322	TB	1410N, 1410S	775'-0"	F-H	38-40	160	380
2-MSRD-084-R	122C-2.3	RB	2.375	0.154	TB	1403B	775'-0"	F-G	38-40	160	380
2-MSRD-085-R01	122C-2.3	RB	1.900	0.145	TB	1410U	796'-6"	B-C	40-41	160	380

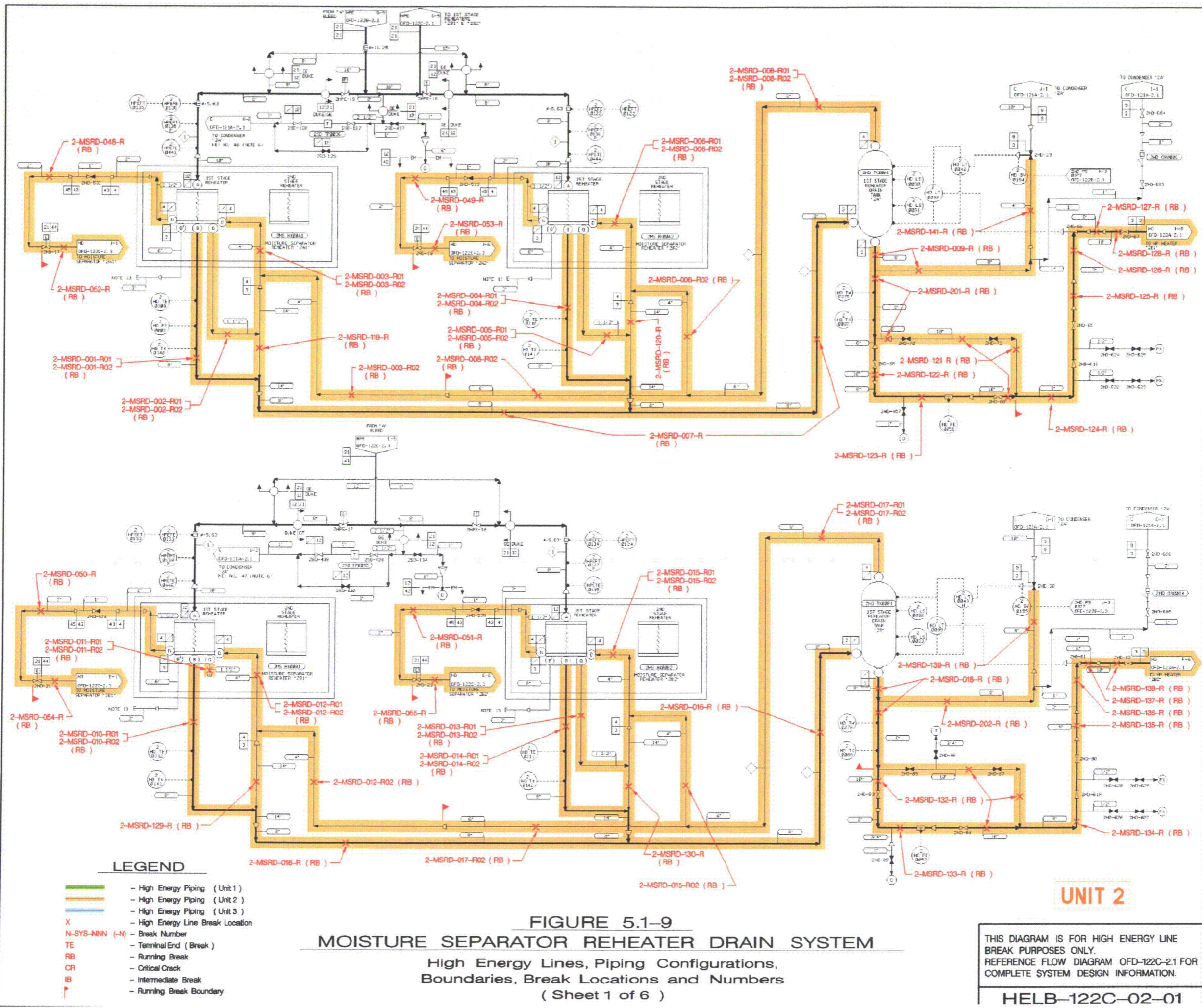
Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-085-R02	122C-2.3	RB	1.900	0.145	TB	1410N	775'-0"	B-E	38-41	160	380
2-MSRD-086-R	122C-2.3	RB	2.375	0.154	TB	1410N	775'-0"	D-E	38-39	160	380
2-MSRD-087-R01	122C-2.3	RB	1.900	0.145	TB	1410U	796'-6"	C-D	40-41	160	380
2-MSRD-087-R02	122C-2.3	RB	1.900	0.145	TB	1410N	775'-0"	C-E	38-41	160	380
2-MSRD-088-R	122C-2.3	RB	2.375	0.154	TB	1410N	775'-0"	D-E	38-39	160	380
2-MSRD-089-R01	122C-2.3	RB	1.900	0.145	TB	1410U	796'-6"	H-J	40-41	160	380
2-MSRD-089-R02	122C-2.3	RB	1.900	0.145	TB	1410N	775'-0"	E-J	38-41	160	380
2-MSRD-090-R	122C-2.3	RB	2.375	0.154	TB	1410N	775'-0"	E-F	38-39	160	380
2-MSRD-091-R	122C-2.3	RB	2.375	0.154	TB	1410N	775'-0"	E-F	38-39	160	380
2-MSRD-092-R01	122C-2.3	RB	1.900	0.145	TB	1410U	796'-6"	G-H	40-41	160	380
2-MSRD-092-R02	122C-2.3	RB	1.900	0.145	TB	1410N	775'-0"	E-H	38-41	160	380
2-MSRD-093-R	122C-2.3	RB	2.375	0.154	TB	1403B	775'-0"	D-E	38-40	160	380
2-MSRD-094-R	122C-2.3	RB	2.375	0.154	TB	1403B	775'-0"	D-E	39-40	200	380
2-MSRD-095-R	122C-2.3	RB	6.625	0.280	TB	1410A, 1410N 1410T	775'-0"	D-M	39-42	200	380
2-MSRD-096-R	122C-2.3	RB	6.625	0.280	TB	1410N, 1410T	775'-0"	D-E	39-40	160	380
2-MSRD-097-R	123A-2.2	RB	6.625	0.280	TB	1410E	775'-0"	J-K	39-40	45	290
2-MSRD-098-R	122C-2.3	RB	2.375	0.154	TB	1403B	775'-0"	F-G	39-40	200	380
2-MSRD-099-R	122C-2.3	RB	6.625	0.280	TB	1410A, 1410N	775'-0"	F-J	39-42	200	380
2-MSRD-100-R	122C-2.3 123A-2.2	RB	6.625	0.280	TB	1410A, 1410E	790'-0"	H-K	39-42	160	370
2-MSRD-101-R	122C-2.3	RB	6.625	0.280	TB	1410N, 1410Q	775'-0"	F-G	39-40	160	380
2-MSRD-102-R	122C-2.3	RB	6.625	0.280	TB	1410N	775'-0"	E-G	37-39	160	380
2-MSRD-103-R	122C-2.3	RB	8.625	0.322	TB	1410Q, 1410N 1410S	775'-0"	F-G	38-40	160	380
2-MSRD-104-R	122C-2.3	RB	6.625	0.280	TB	1410N	775'-0"	D-F	37-39	160	380
2-MSRD-105-R	122C-2.3	RB	8.625	0.322	TB	1410N, 1410S	775'-0"	D-E	38-40	160	380
2-MSRD-106-R	122C-2.4	RB	2.375	0.154	TB	1410R	775'-0"	E-F	40-41	200	380
2-MSRD-119-R	122C-2.1	RB	14.00	0.375	TB	1410R, 1410V	775'-0"	H-J	40-41	460	460
2-MSRD-120-R	122C-2.1	RB	14.00	0.375	TB	1410R, 1410V	775'-0"	H-J	40-41	460	460
2-MSRD-121-R	122C-2.1	RB	10.75	0.365	TB	1410A, 1410C	775'-0"	G-J	37-38	460	460
2-MSRD-122-R	122C-2.1	RB	10.75	0.365	TB	1410A	775'-0"	G-J	38-39	460	460
2-MSRD-123-R	122C-2.1	RB	8.625	0.322	TB	1410A	775'-0"	H-J	37-39	460	460
2-MSRD-124-R	122C-2.1	RB	8.625	0.322	TB	1410A, 1410C	775'-0"	G-K	36-37	460	460

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-125-R	122C-2.1	RB	6.625	0.280	TB	1410C	775'-0"	J-K	36-37	460	460
2-MSRD-126-R	122C-2.1	RB	3.500	0.216	TB	1410C	775'-0"	J-K	36-37	460	460
2-MSRD-127-R	122C-2.1	RB	6.625	0.280	TB	1410A, 1410C	775'-0"	J-K	36-37	280	415
2-MSRD-128-R	122C-2.1 123A-2.1	RB	10.75	0.365	TB	1410A, 1410C	775'-0" 796'-6"	J-K	36-37	280	415
2-MSRD-129-R	122C-2.1	RB	14.00	0.750	TB	1410V	775'-0"	B-C	41-42	460	460
2-MSRD-130-R	122C-2.1	RB	14.00	0.750	TB	1410V	775'-0"	B-C	41-42	460	460
2-MSRD-131-R	122C-2.2	RB	12.75	0.687	TB	1410Q	775'-0"	F-G	38-39	460	460
2-MSRD-132-R	122C-2.1	RB	10.75	0.365	TB	1410N, 1410R 1410S	775'-0"	D-F	38-39	460	460
2-MSRD-133-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410R	775'-0"	D-F	38-39	460	460
2-MSRD-134-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410A 1410S	775'-0"	E-K	36-39	460	460
2-MSRD-135-R	122C-2.1	RB	6.625	0.280	TB	1410C	775'-0"	J-K	36-37	460	460
2-MSRD-136-R	122C-2.1	RB	3.500	0.216	TB	1410C	775'-0"	J-K	36-37	460	460
2-MSRD-137-R	122C-2.1	RB	6.625	0.280	TB	1410C	775'-0"	J-K	36-37	280	415
2-MSRD-138-R	122C-2.1 123A-2.1	RB	10.75	0.365	TB	1410A, 1410C	775'-0" 796'-0"	J-L	36-37	280	415
2-MSRD-139-R	122C-2.1	RB	4.5	0.237	TB	1410N	775'-0"	E-F	38-39	460	460
2-MSRD-141-R	122C-2.1	RB	4.5	0.237	TB	1410N	775'-0"	E-F	38-39	460	460
2-MSRD-143-R	122C-2.2	RB	14.00	0.500	TB	1410V	775'-0"	H-J	40-41	900	540
2-MSRD-144-R	122C-2.2	RB	14.00	0.500	TB	1410V	775'-0"	H-J	40-41	900	540
2-MSRD-145-R	122C-2.2	RB	8.625	0.322	TB	1410N	775'-0"	E-F	38-39	900	540
2-MSRD-146-R	122C-2.2	RB	4.500	0.237	TB	1410N	775'-0"	E-F	38-39	900	540
2-MSRD-148-R	122C-2.2	RB	8.625	0.322	TB	1410N, 1410S	775'-0"	E-F	39-40	900	540
2-MSRD-149-R	122C-2.2	RB	10.75	0.365	TB	1410N, 1410S	775'-0"	D-F	38-40	900	540
2-MSRD-150-R	122C-2.2	RB	3.500	0.216	TB	1410Q	775'-0"	D-E	38-39	900	540
2-MSRD-151-R	122C-2.2	RB	3.500	0.300	TB	1410Q	775'-0"	D-E	38-39	470	460
2-MSRD-152-R	122C-2.2	RB	12.75	0.687	TB	1410Q	775'-0"	D-E	38-39	470	460
2-MSRD-153-R	122C-2.2	RB	12.75	0.375	TB	1410 N, 1410Q 1410R	775'-0"	D-F	38-39	470	460
2-MSRD-154-R	122C-2.2	RB	18.00	0.375	TB	1410N, 1410R	775'-0"	E-G	38-39	470	460
2-MSRD-155-R	122C-2.2	RB	14.00	0.500	TB	1410R, 1410V	775'-0"	B-C	41-42	900	540
2-MSRD-156-R	122C-2.2	RB	14.00	0.500	TB	1410R, 1410V	775'-0"	B-C	41-42	900	540
2-MSRD-157-R	122C-2.2	RB	4.500	0.237	TB	1410N	775'-0"	E-F	38-39	900	540

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-MSRD-159-R	122C-2.2	RB	8.625	0.322	TB	1410N, 1410S	775'-0"	E-F	38-39	900	540
2-MSRD-160-R	122C-2.2	RB	10.75	0.365	TB	1410N, 1410S 1410Q	775'-0"	E-G	38-39	900	540
2-MSRD-161-R	122C-2.2	RB	3.500	0.300	TB	1410N, 1410Q	775'-0"	F-G	38-39	900	540
2-MSRD-201-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410A 1410Q	775'-0"	F-H	38-39	460	460
2-MSRD-202-R	122C-2.1	RB	8.625	0.322	TB	1410N, 1410R 1410T	775'-0"	D-F	38-39	460	460
2-MSRD-204-R01	122C-2.2	RB	6.625	0.280	TB	1410N, 1410S 1410T	775'-0"	C-E	38-40	900	540
2-MSRD-204-R02	122C-2.2	RB	6.625	0.280	TB	1410U	796' - 6"	B-D	39-41	900	540

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break, CR – Critical Cracks
3. Building: TB – Turbine Building, AB – Auxiliary Building, EPR – East Penetration Room, Yard.
4. Each running break may contain one or more sub-breaks. For the Unit 2 Moisture Separator Reheater Drain System 187 Running Breaks were considered; the 185 non-excluded, Running Breaks are listed in this table.
5. Cl indicates Centerline of Turbine/Generator
6. For Terminal End and Intermediate Break locations the elevation of the break location is given. For Running Breaks with a single elevation the elevation of the RB is given, and for Running Breaks with multiple elevations the elevation of the floor or room containing the RB is given.
7. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



LEGEND

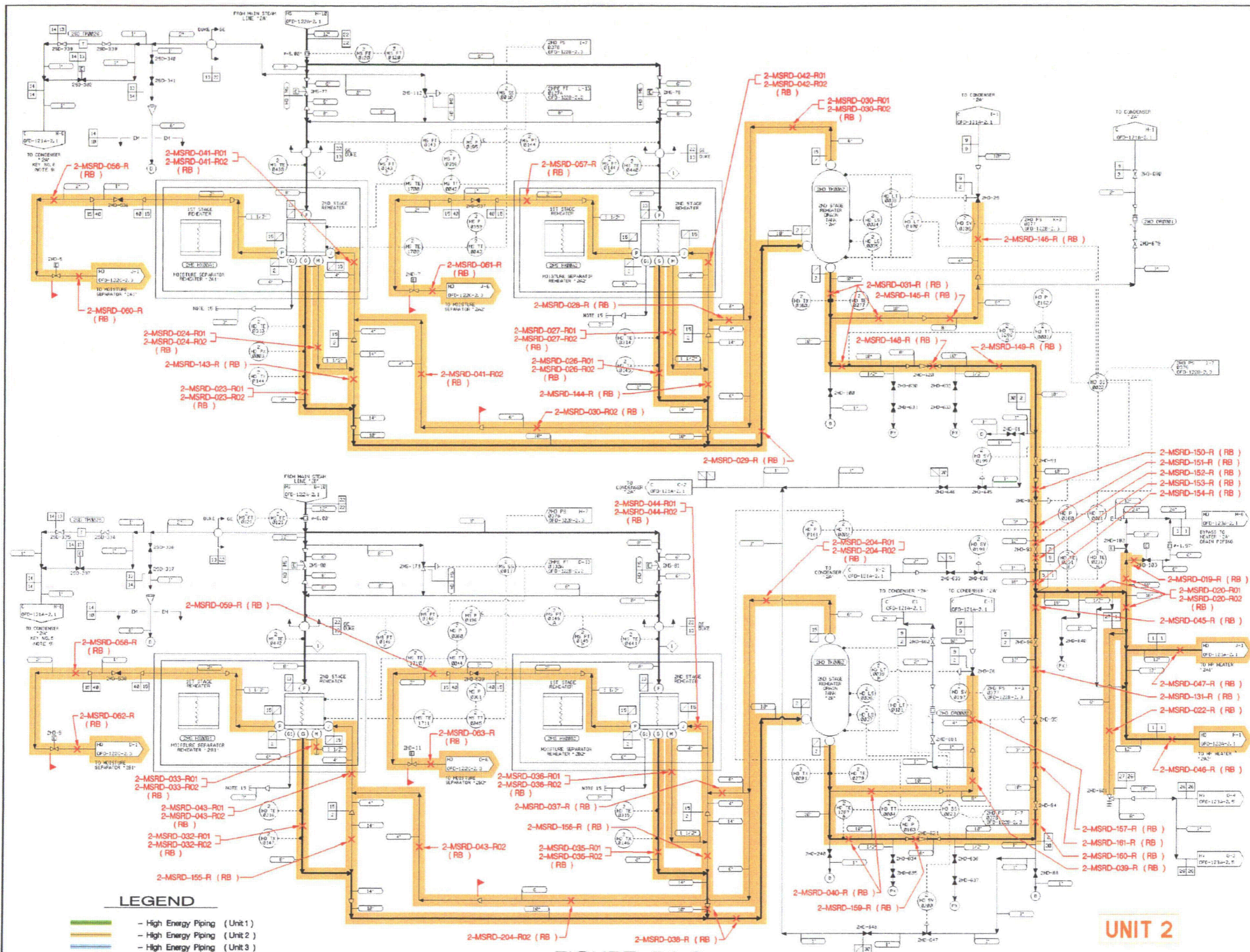
- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- ▶ Running Break Boundary

FIGURE 5.1-9
MOISTURE SEPARATOR REHEATER DRAIN SYSTEM

High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 1 of 6)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

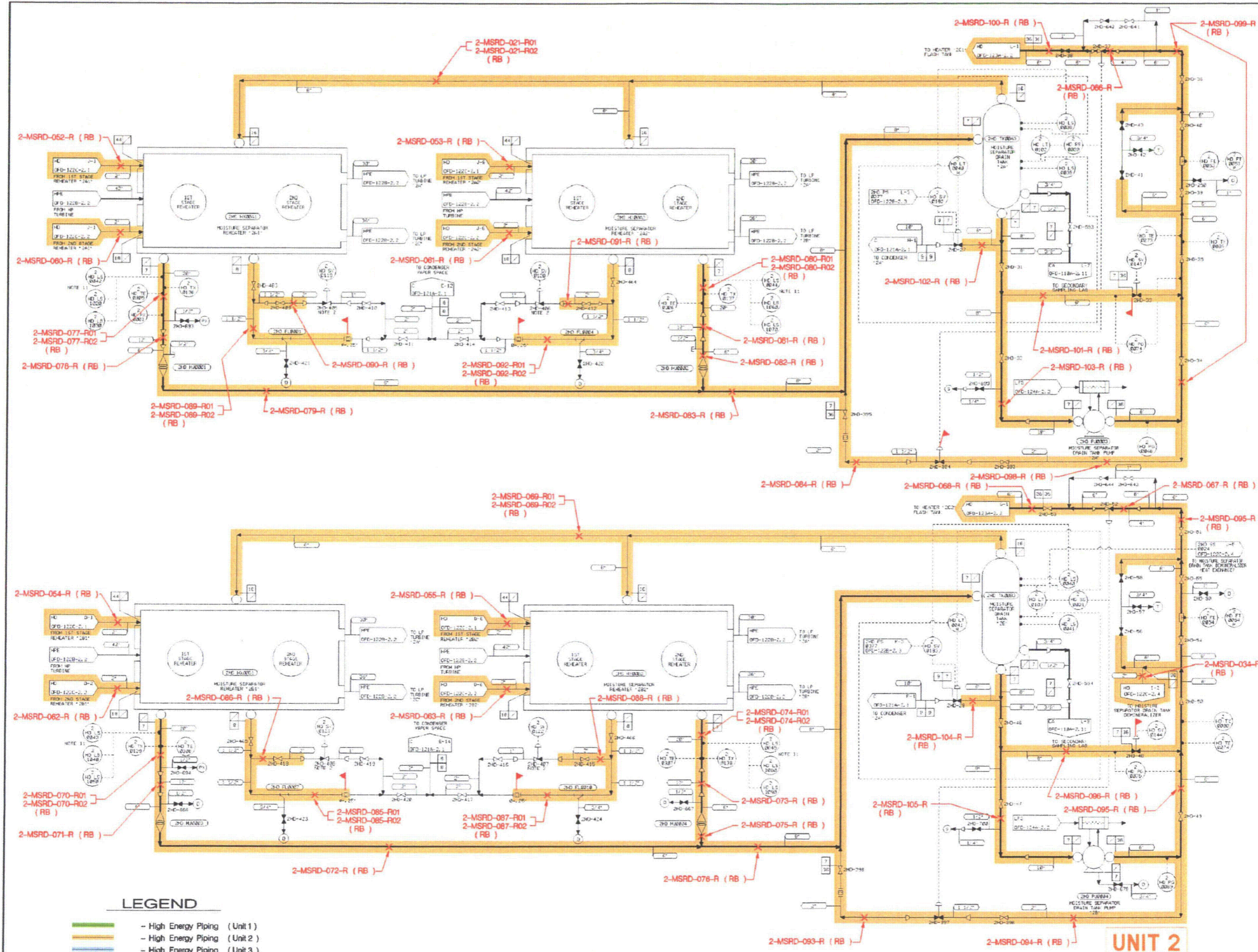


- LEGEND**
- High Energy Piping (Unit 1)
 - High Energy Piping (Unit 2)
 - High Energy Piping (Unit 3)
 - X High Energy Line Break Location
 - N-SYS-NNN (-N) Break Number
 - TE Terminal End (Break)
 - RB Running Break
 - CR Critical Crack
 - IB Intermediate Break
 - Running Break Boundary

FIGURE 5.1-9
MOISTURE SEPARATOR REHEATER DRAIN SYSTEM

High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 6)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

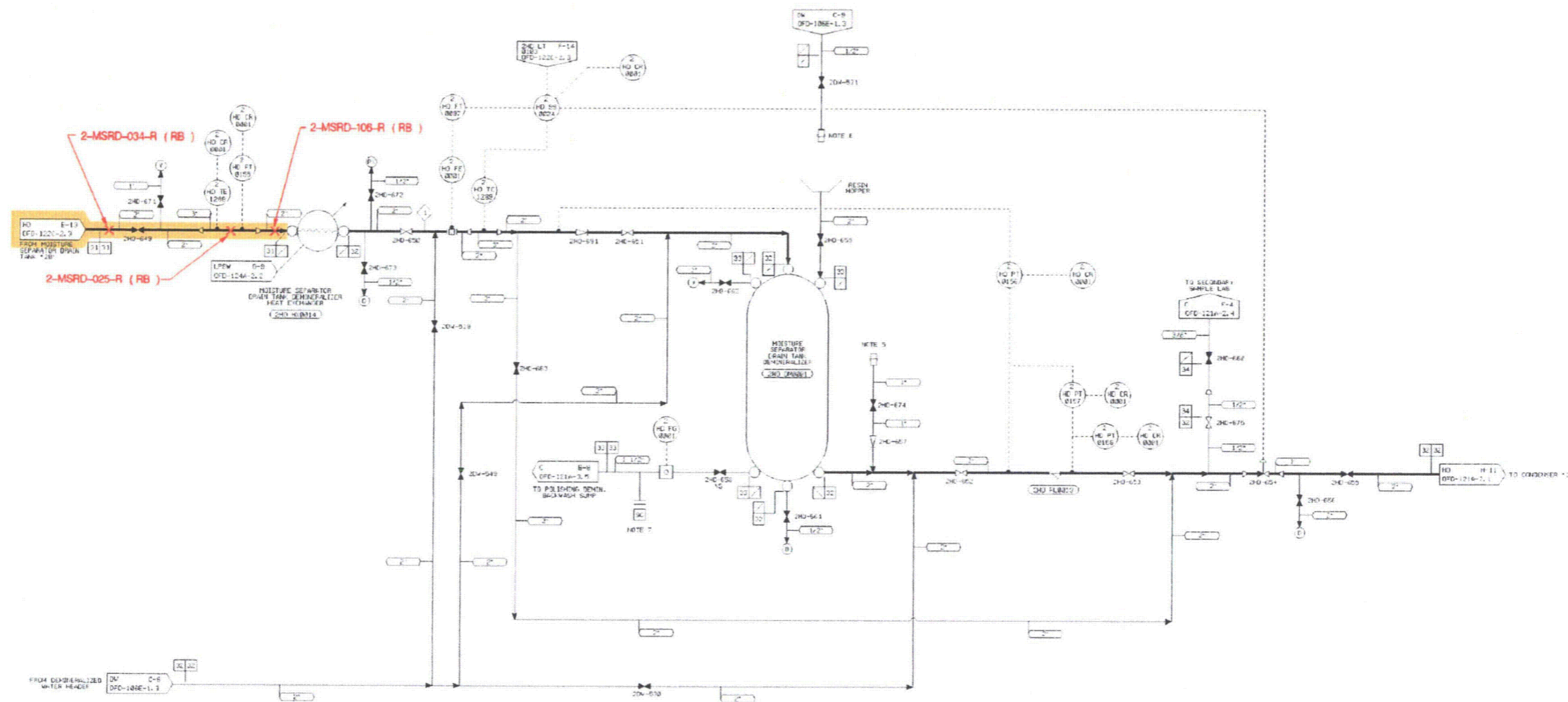


LEGEND

- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- RB Running Break Boundary

FIGURE 5.1-9
MOISTURE SEPARATOR REHEATER DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 6)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

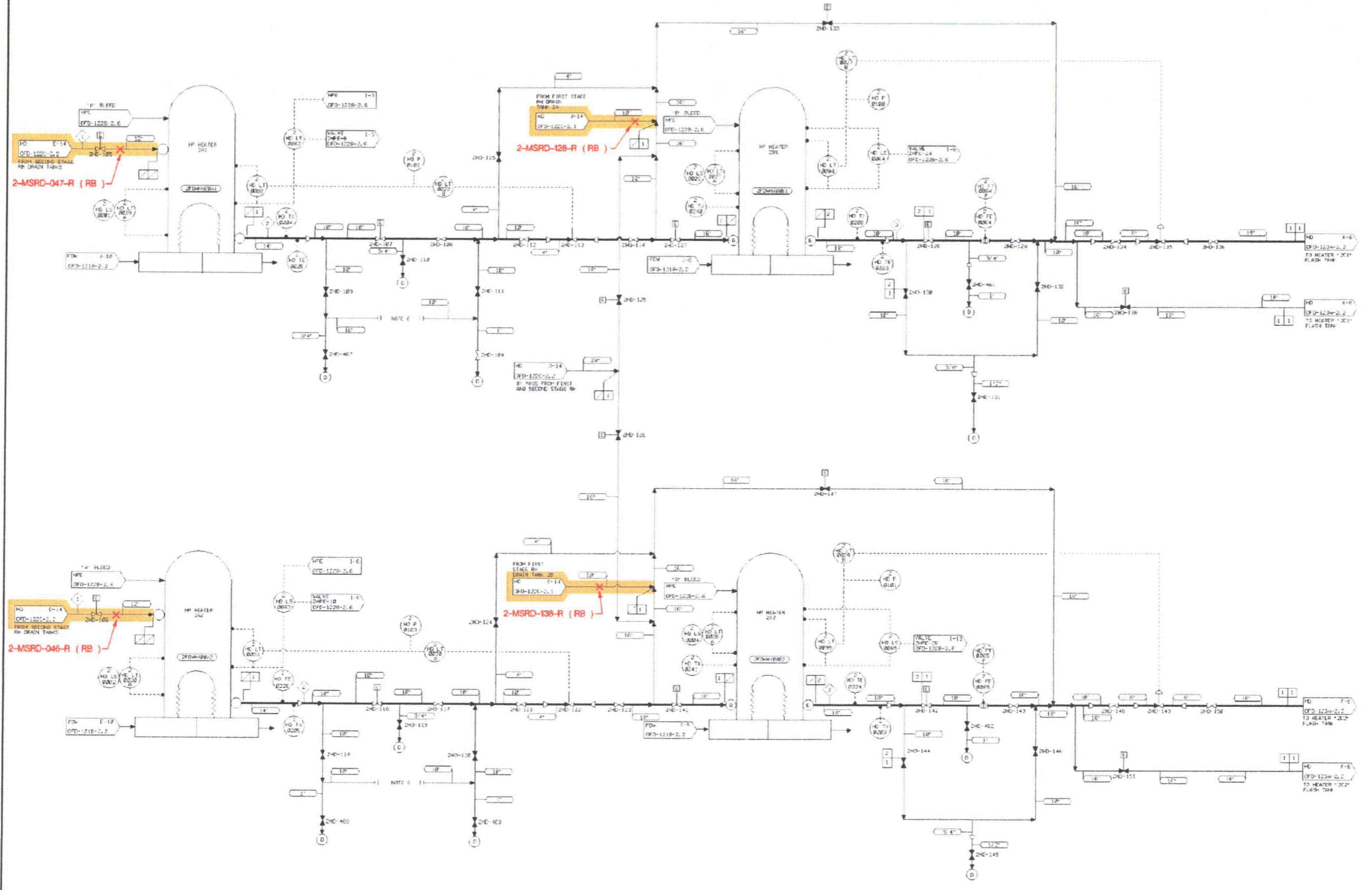
FIGURE 5.1-9
MOISTURE SEPARATOR REHEATER DRAIN SYSTEM

High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 4 of 6)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122C-02-04



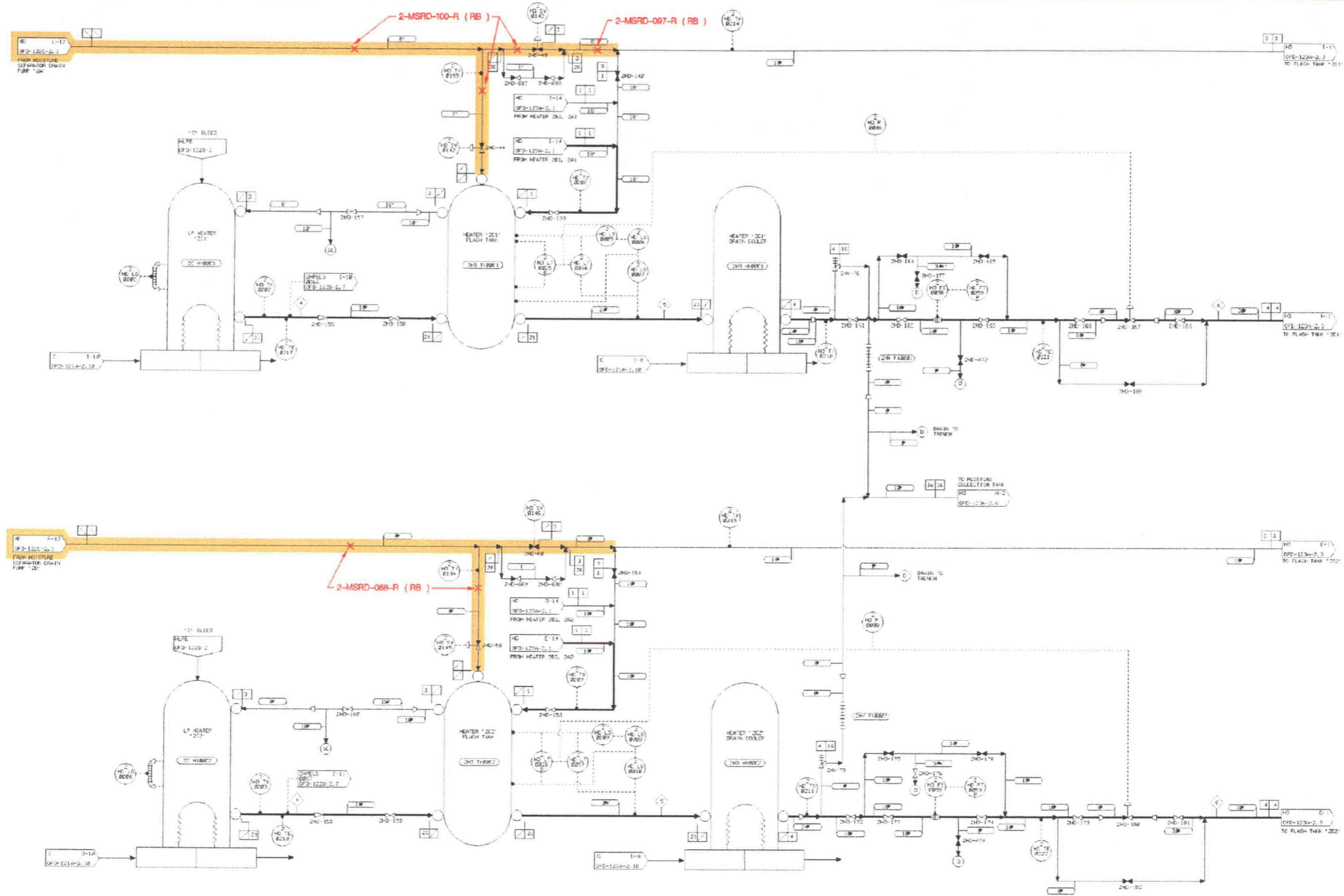
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

FIGURE 5.1-9
MOISTURE SEPARATOR REHEATER DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 5 of 6)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-123A-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HEI R-123A-02-01



- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

FIGURE 5.1-9
MOISTURE SEPARATOR REHEATER DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 6 of 6)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-123A-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

Table 5.1-10
 Plant Heating System – High Energy Line Data – Unit 2

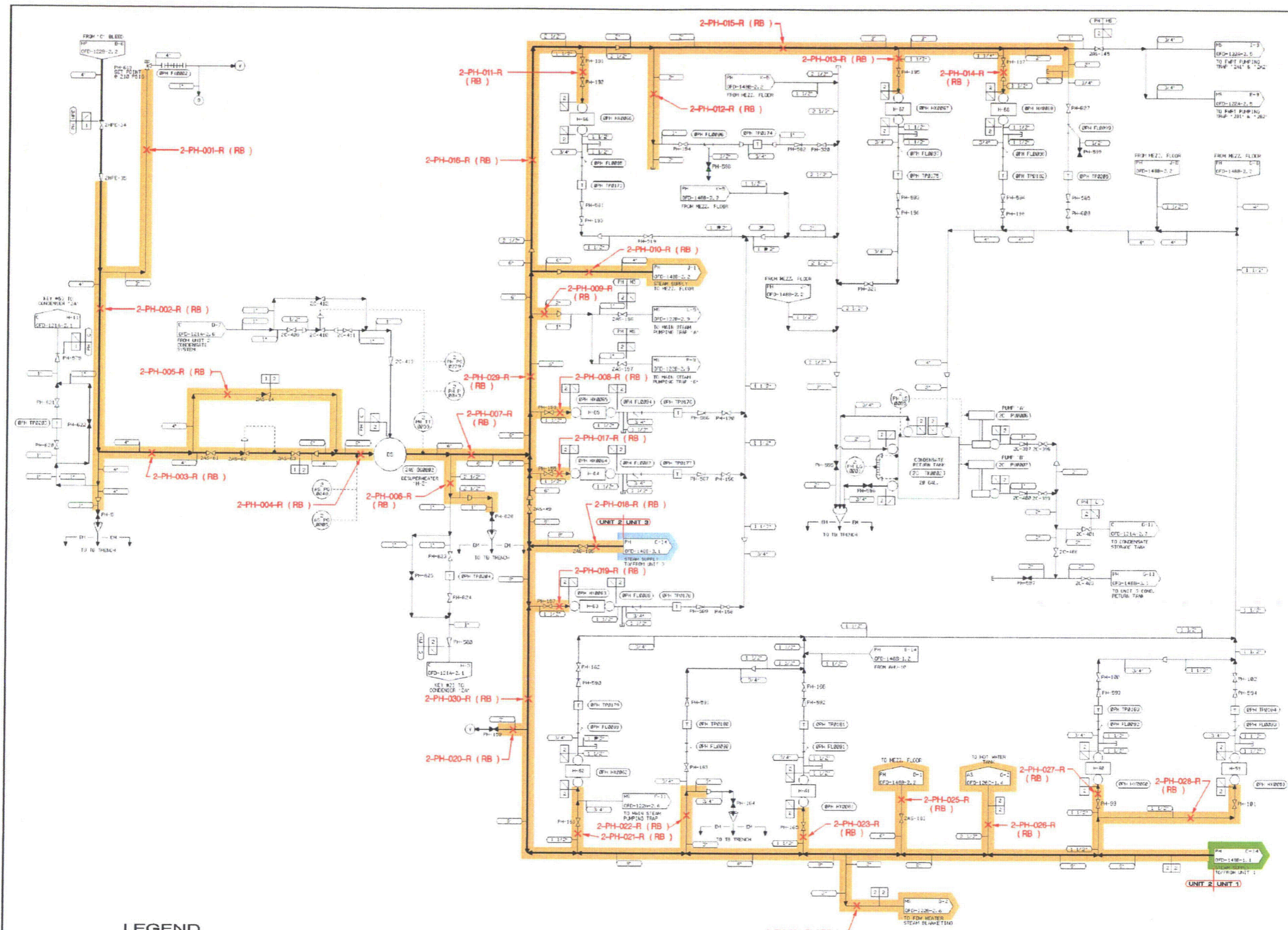
Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-PH-001-R	148B-2.1	RB	3.500	0.216	TB	1403J	796'-6"	F-G	40-41	27	267
2-PH-002-R	148B-2.1	RB	4.500	0.237	TB	1403D 1403J	775'-0" 796'-6"	F-G	40-41	27	267
2-PH-003-R	148B-2.1	RB	4.500	0.237	TB	1403B	775'-0"	F-G	40-41	27	267
2-PH-004-R	148B-2.1	RB	6.625	0.280	TB	1403B	775'-0"	F-G	40-41	27	267
2-PH-005-R	148B-2.1	RB	4.500	0.237	TB	1403B	775'-0"	F-G	40-41	27	267
2-PH-006-R	148B-2.1	RB	2.875	0.203	TB	1403B	775'-0"	G-H	40-41	27	267
2-PH-007-R	148B-2.1	RB	6.625	0.280	TB	1403B	775'-0"	F-H	40-42	27	267
2-PH-008-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	F-G	41-42	27	267
2-PH-009-R	148B-2.1	RB	2.375	0.218	TB	1510A	775'-0"	E-F	40-42	27	267
2-PH-010-R	148B-2.1 148B-2.2	RB	4.500	0.237	TB	1510A 1510B	775'-0" 796'-0"	E-F	41-42	27	267
2-PH-011-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	B-D	41-43	27	267
2-PH-012-R	148B-2.1	RB	2.375	0.218	TB	1510A	775'-0"	B-D	40-42	27	267
2-PH-013-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	B-C	37-38	27	267
2-PH-014-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	B-C	32-33	27	267
2-PH-015-R	148B-2.1	RB	2.375	0.218	TB	1510A	775'-0"	B-D	32-42	27	267
2-PH-016-R	148B-2.1	RB	2.875	0.203	TB	1510A	775'-0"	C-F	41-42	27	267
2-PH-017-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	J-K	41-42	27	267
2-PH-018-R	148B-2.1	RB	8.625	0.322	TB	1510A	775'-0"	L-M	41-43	27	267
2-PH-019-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	L-M	39-40	27	267
2-PH-020-R	148B-2.1	RB	2.375	0.218	TB	1510A	775'-0"	L-M	36	27	267
2-PH-021-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	J-M	34-35	27	267
2-PH-022-R	148B-2.1	RB	3.500	0.216	TB	1510A	775'-0"	L-M	34-35	27	267
2-PH-023-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	K-M	33-34	27	267
2-PH-024-R	122B-2.6 148B-2.1	RB	2.375	0.218	TB	1403A 1510A	775'-0"	K-M	33-34	27	267
2-PH-025-R	148B-2.1 148B-2.2	RB	6.625	0.280	TB	510C, 1510A 1510B	775'-0" 796'-6"	L-M	30-32	27	267
2-PH-026-R	126C-1.4 148B-2.1	RB	2.875	0.203	TB	510C, 1510A 1510B	775'-0" 796'-0"	L-M	31-34	27	267
2-PH-027-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	L-M	28-29	27	267
2-PH-028-R	148B-2.1	RB	1.900	0.200	TB	1510A	775'-0"	H-M	28-29	27	267
2-PH-029-R	148B-2.1	RB	6.625	0.280	TB	1510A	775'-0"	E-M	41-42	27	267
2-PH-030-R	148B-2.1	RB	8.625	0.322	TB	1510A	775'-0"	L-M	28-43	27	267
2-PH-031-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	B-C	30-31	27	267
2-PH-032-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	B-C	33-34	27	267
2-PH-033-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	B-C	37-38	27	267

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-PH-034-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	B-D	41-43	27	267
2-PH-035-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	E-F	41-42	27	267
2-PH-036-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	G	41-42	27	267
2-PH-037-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	K	41-42	27	267
2-PH-038-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	L-M	38-40	27	267
2-PH-039-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	L-M	35-36	27	267
2-PH-040-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	L-M	30-31	27	267
2-PH-041-R	148B-2.2	RB	1.900	0.200	TB	510B	796'-6"	K-M	26-27	27	267
2-PH-042-R	148B-2.2	RB	1.900	0.200	TB	1510B	796'-6"	B-C	30-33	27	267
2-PH-043-R	148B-2.2	RB	2.375	0.218	TB	1510B	796'-6"	B-D	32-42	27	267
2-PH-044-R	148B-2.2	RB	2.875	0.203	TB	1510B	796'-6"	C-F	41-42	27	267
2-PH-045-R	148B-2.2	RB	3.500	0.216	TB	1510B	796'-6"	E-G	41-42	27	267
2-PH-046-R	148B-2.2	RB	2.875	0.203	TB	1510B	796'-6"	G-M	38-42	27	267
2-PH-047-R	148B-2.2	RB	2.375	0.218	TB	1510B	796'-6"	L-M	30-39	27	267
2-PH-048-R	148B-2.2	RB	1.900	0.200	TB	510B 1510B	796'-6"	L-M	26-31	27	267
2-PH-049-R	148B-2.2	RB	6.625	0.280	TB	1402A 1402B	822'-0" 838'-0"	L-M	28-35	27	267
2-PH-050-R	148B-2.2	RB	2.875	0.203	TB	1402A	822'-0"	L-M	31-33	27	267
2-PH-051-R	148B-2.2	RB	3.500	0.216	TB	1402A	822'-0"	L-M	34-35	27	267
2-PH-052-R	148B-2.2	RB	3.500	0.216	AB	510N	822'-0"	520		27	267
2-PH-053-R	148B-2.2	RB	3.500	0.216	AB	510N	822'-0"	520		27	267
2-PH-054-R	148B-2.2	RB	3.500	0.216	AB	510N	822'-0"	520		27	267
2-PH-055-R	148B-2.2	RB	2.875	0.203	AB	510N	822'-0"	520		27	267
2-PH-056-R	148B-2.2	RB	2.875	0.203	AB	510N	822'-0"	520		27	267
2-PH-057-R	148B-2.2	RB	2.875	0.203	AB	510N	822'-0"	520		27	267
2-PH-058-R	148B-2.2	RB	4.500	0.237	TB	1510B	796'-6"	L-M	29-31	27	267
2-PH-059-R	148B-2.2	RB	4.500	0.237	TB	1510B	796'-6"	L-N	31-32	27	267
2-PH-060-R	148B-2.2	RB	4.500	0.237	AB	510M	809'-3"	406A		27	267
2-PH-062-R	148B-2.2	RB	4.500	0.237	AB	510M	809'-3"	406		27	267
2-PH-063-R	148B-2.2	RB	4.500	0.237	AB	510M	809'-3"	407		27	267
2-PH-064-R	148B-2.2	RB	4.500	0.237	AB	510M	809'-3"	410		27	267
2-PH-065-R	148B-2.2	RB	4.500	0.237	AB	510Q 510R	838'-0"	621		27	267
2-PH-066-R	148B-2.2	RB	3.500	0.216	AB	510R 510Q	838'-0"	621		27	267
2-PH-067-R	148B-2.2	RB	3.500	0.216	AB	510R 510Q	838'-0"	621		27	267
2-PH-068-R	148B-2.2	RB	3.500	0.216	AB	510R 510Q	838'-0"	621		27	267

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)	Op Pres. (psig)	Op Temp. (°F)
2-PH-069-R	126C-1.4	RB	2.875	0.203	AB	510L	809'-3"	408B	27	267
2-PH-070-R	126C-1.4	RB	2.375	0.218	AB	510L	809'-3"	408B	27	267

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break
3. Building: TB – Turbine Building, AB – Auxiliary Building.
4. Each running break may contain one or more sub-breaks. For the Unit 2 Plant Heating System 70 Running Breaks were considered; 69 non-excluded, Running Breaks are listed in this table.
5. For each Running Break the elevation of the floor or room that contains the Running Break is given.
6. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



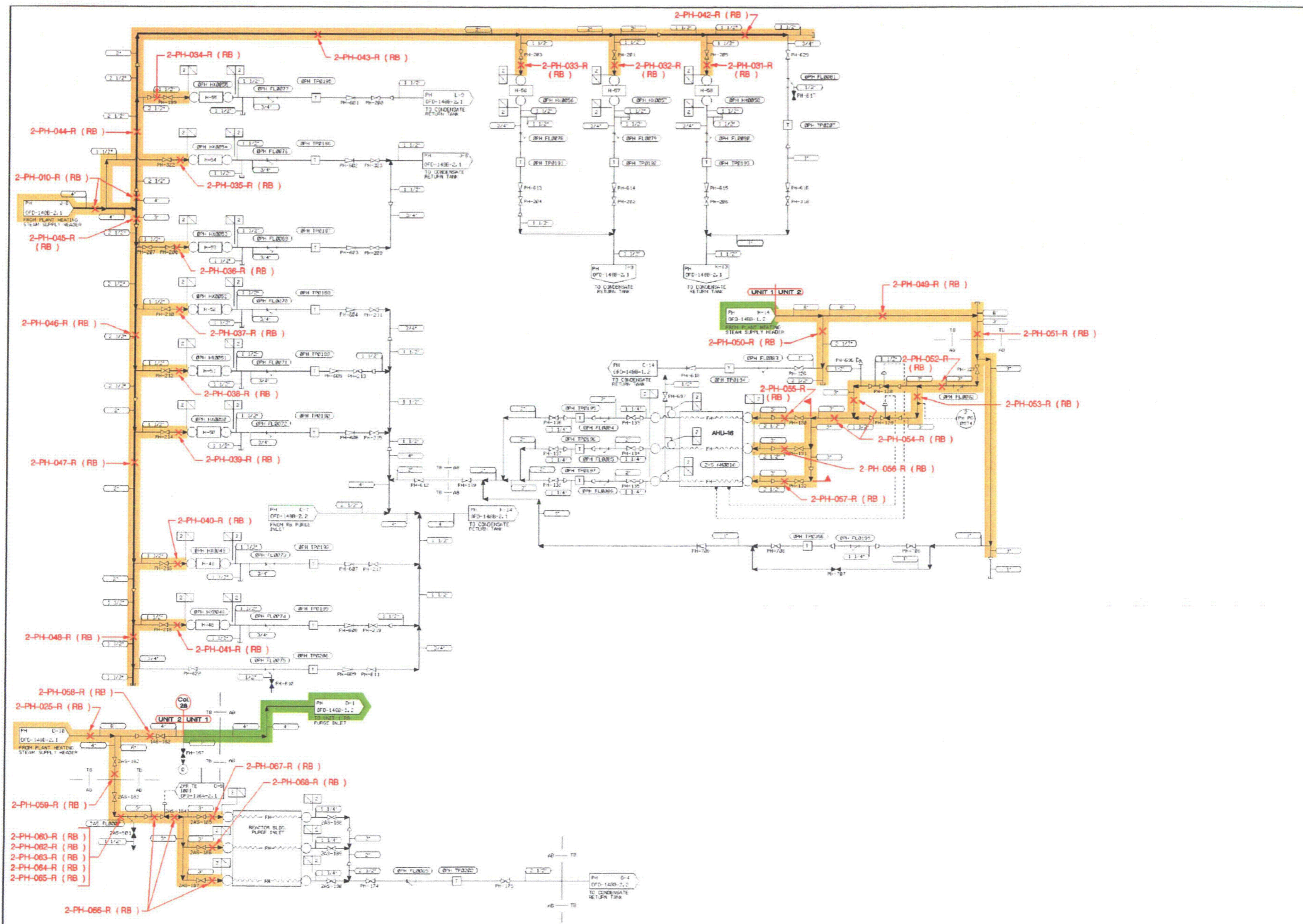
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ↑ - Running Break Boundary

FIGURE 5.1-10
PLANT HEATING SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 1 of 4)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-148B-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



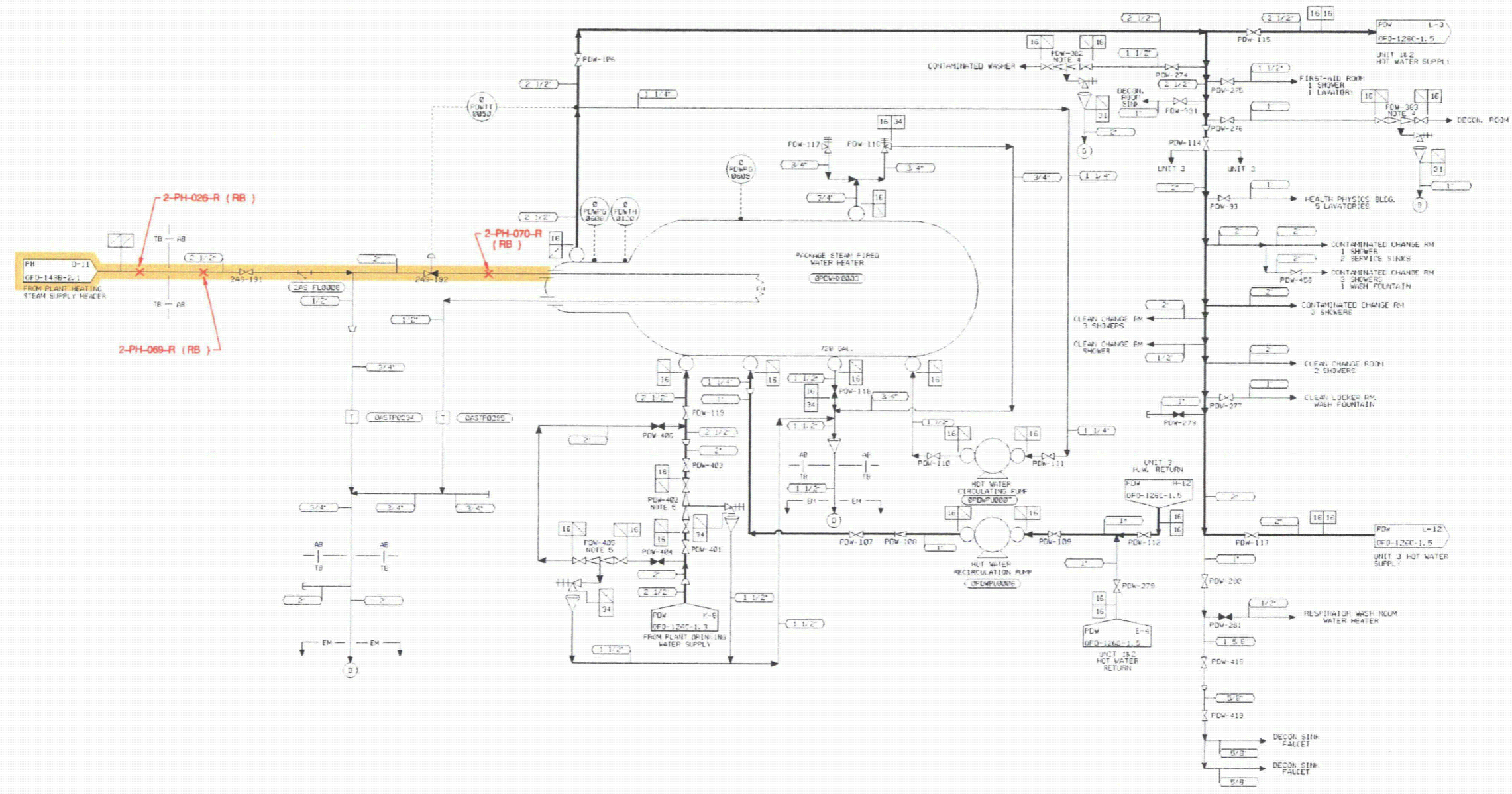
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

FIGURE 5.1-10
PLANT HEATING SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 4)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-148B-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



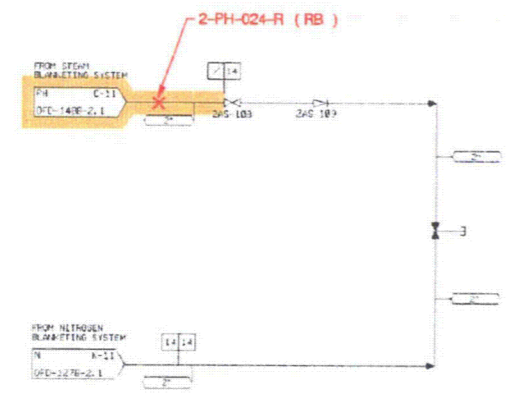
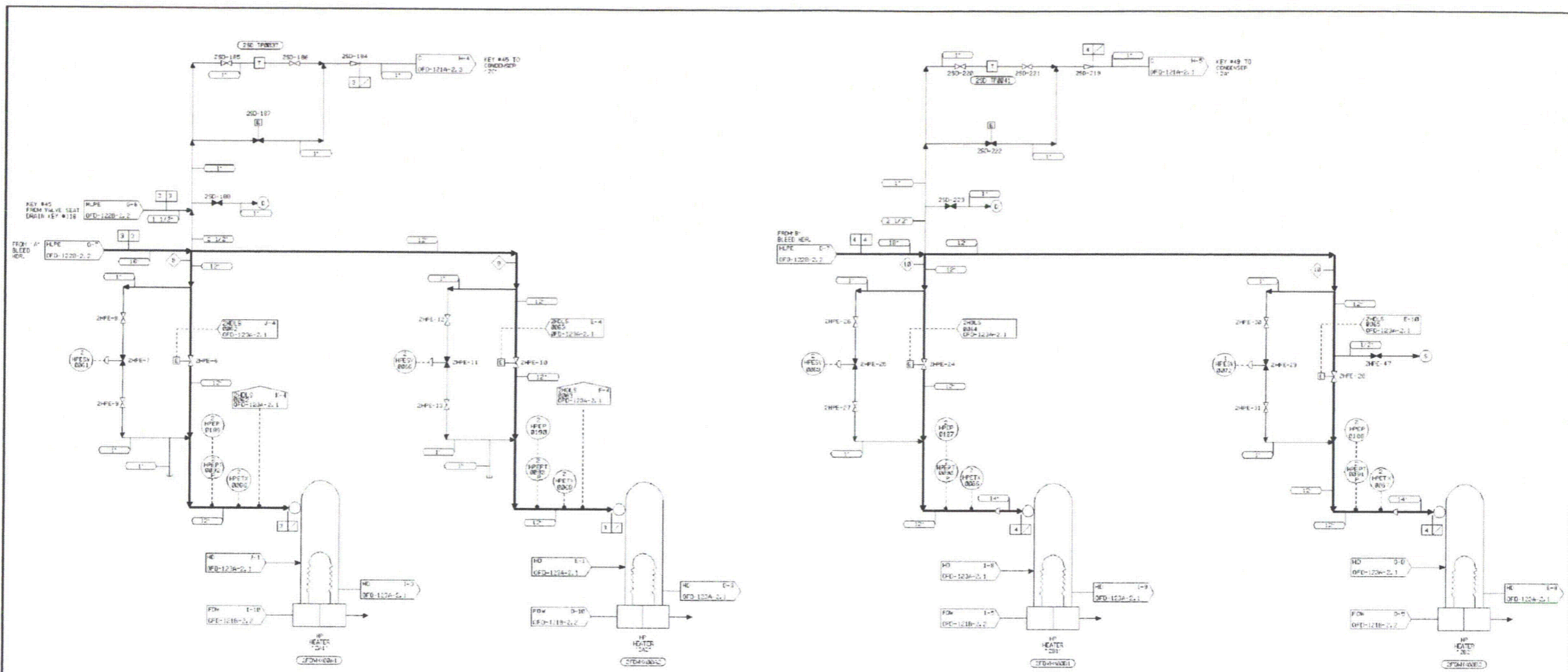
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

FIGURE 5.1-10
PLANT HEATING SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 4)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-126C-1.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ▶ - Running Break Boundary

FIGURE 5.1-10
PLANT HEATING SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 4 of 4)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.6 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

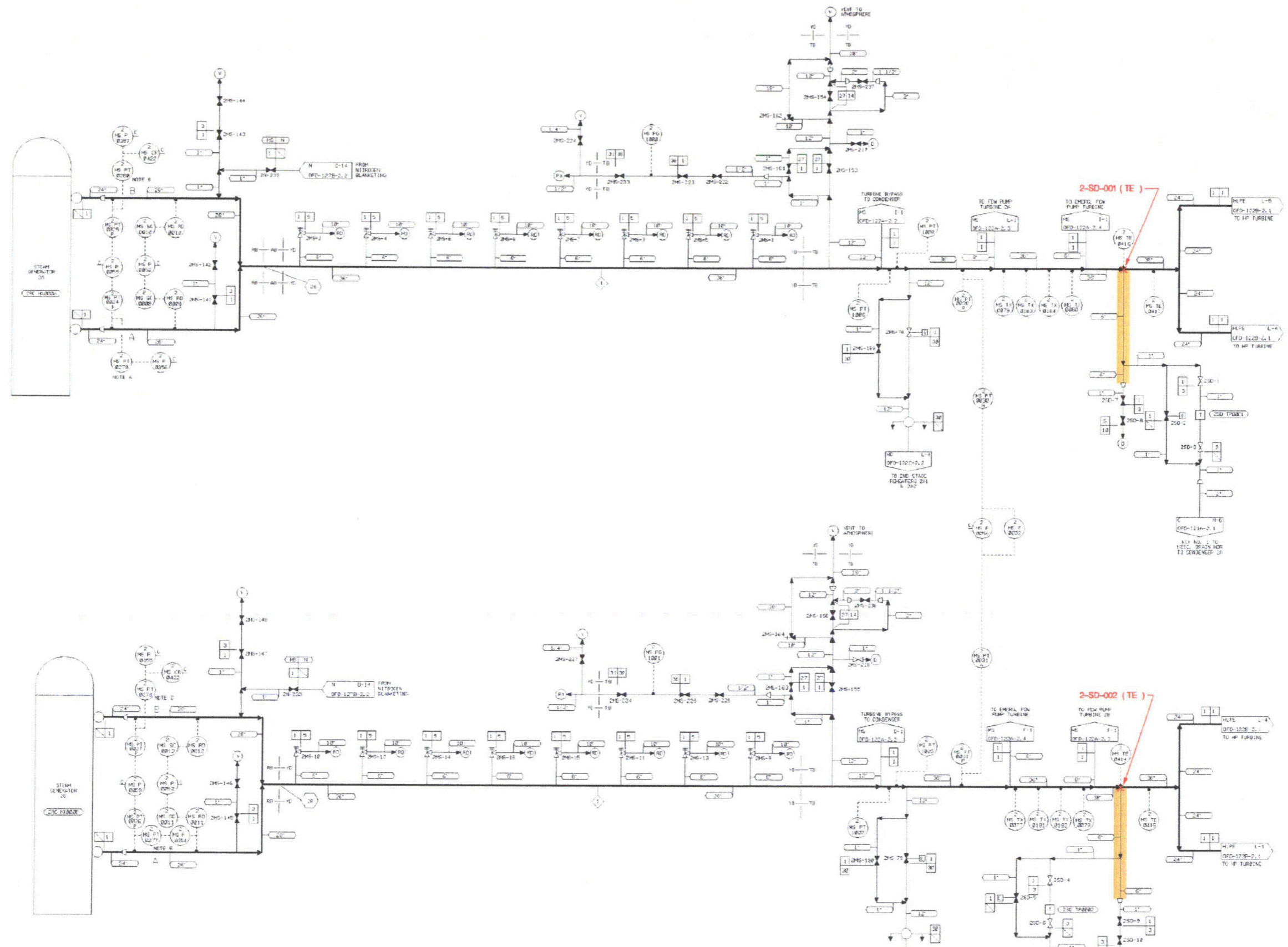
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Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. Or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-SD-001	122A-2.1	TE	6.625	0.432	TB	1401B	796'-6"	E-F	41-42	900	595
2-SD-002	122A-2.1	TE	6.625	0.432	TB	1401B	796'-6"	E-F	41-42	900	595
2-SD-003	122A-2.2	TE	2.375	0.218	TB	1401B	796'-6"	L-M	38-39	900	595
2-SD-004	122A-2.2	TE	2.375	0.218	TB	1403D	796'-6"	L-M	37-38	900	595
2-SD-005	122A-2.2	TE	2.375	0.218	TB	1401B	796'-6"	L-M	36-37	900	595
2-SD-006	122A-2.4	TE	2.375	0.218	TB	1401B	796'-6"	B-C	37-38	900	595
2-SD-007	122A-2.4	TE	2.375	0.154	TB	1403A, 1411B	775'-0"	C-D	35-36	310	507
2-SD-009-R	122A-2.2	RB	2.375	0.218	TB	1403D, 1411B	796'-6"	L-M	38-39	900	595
2-SD-010-R	122A-2.2	RB	2.375	0.218	TB	1401C, 1411D	796'-6"	L-M	36-37	900	595
2-SD-011-R	122A-2.2	RB	2.375	0.218	TB	1401C, 1411D	796'-6"	L-M	36-37	900	595
2-SD-012-R	122A-2.2	RB	2.375	0.218	TB	1401D, 1411D	796'-6"	L-M	35-36	900	595
2-SD-013-R	122A-2.2	RB	2.375	0.218	TB	1401D, 1411D	796'-6"	L-M	35-36	900	595
2-SD-023-R	122A-2.3	RB	2.375	0.154	TB	1401A, 1411A	796'-6"	D-E	31-32	300	505
2-SD-024-R	122A-2.3	RB	2.375	0.154	TB	1401A, 1411A	796'-6"	D-E	31-32	300	505
2-SD-025-R	122A-2.3	RB	1.900	0.145	TB	1401A, 1401K 1411B	796'-6"	G-H	31-32	300	505
2-SD-026-R	122A-2.3	RB	6.625	0.280	TB	1400A	775'-0"	C-D	31-32	300	505
2-SD-027-R	122A-2.3	RB	6.625	0.280	TB	1400A	775'-0"	C-D	29-30	300	505
2-SD-028-R	122A-2.3	RB	2.375	0.218	TB	1403B, 1411B	775'-0"	D-E	37-38	900	595
2-SD-029-R	122A-2.3	RB	2.375	0.218	TB	1403G, 1411B	796'-6"	B-C	30-31	900	595
2-SD-030-R	122A-2.3	RB	3.500	0.300	TB	1403K, 1411B	796'-6"	B-C	31-32	900	595
2-SD-031-R	122A-2.3	RB	3.500	0.300	TB	1403G, 1411B	796'-6"	F-G	29-30	900	595
2-SD-033-R	122B-2.2	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	J-K	38-39	455	465
2-SD-034-R	122B-2.2	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	F-G	38-39	275	420
2-SD-035-R	122B-2.2	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	F-G	38-39	275	420
2-SD-036-R	122B-2.2	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	F-G	38-39	275	420
2-SD-037-R	122B-2.2	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	F-G	38-39	275	420
2-SD-038-R	122B-2.2	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	F-G	39-40	165	375
2-SD-039-R	122B-2.3	RB	2.375	0.154	TB	1401B, 1411B	796'-6"	G-H	37-38	45	295
2-SD-040-R	122B-2.3	RB	2.375	0.154	TB	1401B, 1411B	796'-6"	G-H	36-37	45	295
2-SD-041-R	122B-2.3	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	G-H	37-38	45	295
2-SD-042-R	122B-2.3	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	G-H	36-37	45	295
2-SD-046-R	122B-2.4	RB	2.375	0.154	TB	1401A, 1411B	796'-6"	G-H	35-36	45	295
2-SD-047-R	122B-2.4	RB	2.375	0.154	TB	1401A, 1411B	796'-6"	G-H	34-35	45	295
2-SD-048-R	122B-2.4	RB	1.900	0.145	TB	1401A, 1411B	796'-6"	G-H	35-36	45	295
2-SD-049-R	122B-2.4	RB	1.900	0.145	TB	1401A, 1411B	796'-6"	G-H	34-35	45	295

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. Or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-SD-053-R	122B-2.5	RB	2.375	0.154	TB	1401A, 1411B	796'-6"	G-H	33-34	45	295
2-SD-054-R	122B-2.5	RB	2.375	0.154	TB	1401A, 1411B	796'-6"	G-H	32-33	45	295
2-SD-055-R	122B-2.5	RB	1.900	0.145	TB	1401A, 1411B	796'-6"	G-H	33-34	45	295
2-SD-056-R	122B-2.5	RB	1.900	0.145	TB	1401A, 1411B	796'-6"	G-H	32-33	45	295
2-SD-061-R	122B-2.6	RB	2.875	0.203	TB	1401A, 1411B	796'-6"	K-L	35-36	275	420
2-SD-065-R	122B-2.7	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	J-K	39-40	165	375
2-SD-066-R	122B-2.7	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	K-L	39-40	45	295
2-SD-067-R	122B-2.7	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	K-L	39-40	45	295
2-SD-068-R	122B-2.7	RB	1.900	0.145	TB	1401B, 1411B	796'-6"	K-L	39-40	45	295
2-SD-072-R	122B-2.7	RB	2.875	0.203	TB	1401A, 1411B	796'-6"	J-K	34-35	45	295
2-SD-086-R	122C-2.1	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	C-D	41-42	460	480
2-SD-087-R	122C-2.1	RB	2.875	0.203	TB	1401B, 1411B	796'-6"	G-H	41-42	460	480
2-SD-088-R	122C-2.2	RB	2.375	0.218	TB	1401B, 1411B	796'-6"	G-H	41-42	900	595
2-SD-089-R	122C-2.2	RB	2.375	0.218	TB	1401B, 1411B	796'-6"	C-D	41-42	900	595

Notes:

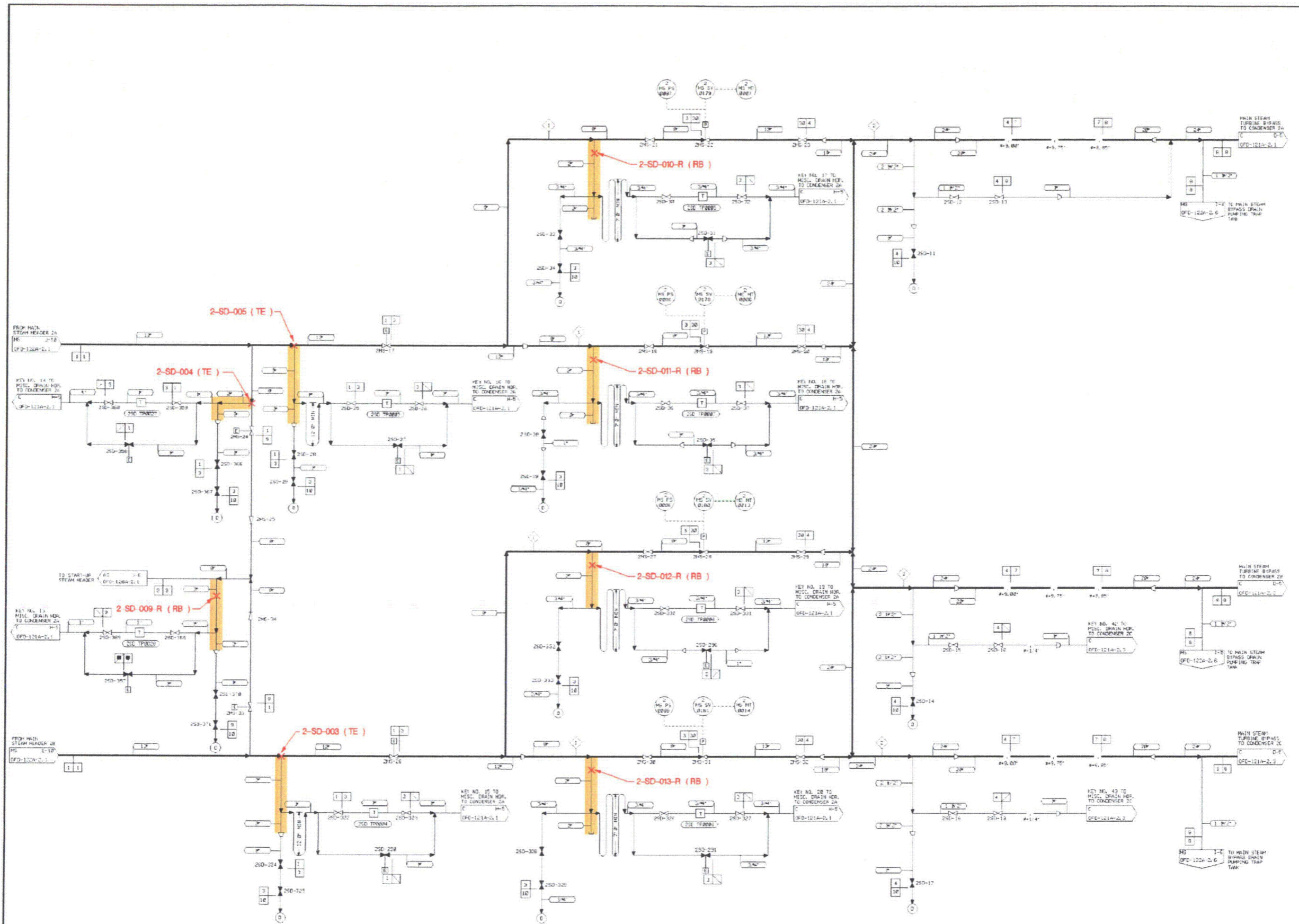
1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break
3. Building: TB – Turbine Building, AB – Auxiliary Building.
4. Each running break may contain one or more sub-breaks.
5. For the Unit 2 Steam Drain System seven (7) Terminal End Breaks and 74 Running Breaks were considered; the non-excluded breaks listed in this table include seven (7) Terminal End Breaks and 42 Running Breaks.
6. For each Terminal End Break and each Running Break the elevation of the floor or room that contains the break is given.
7. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ▶ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 1 of 12)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



LEGEND

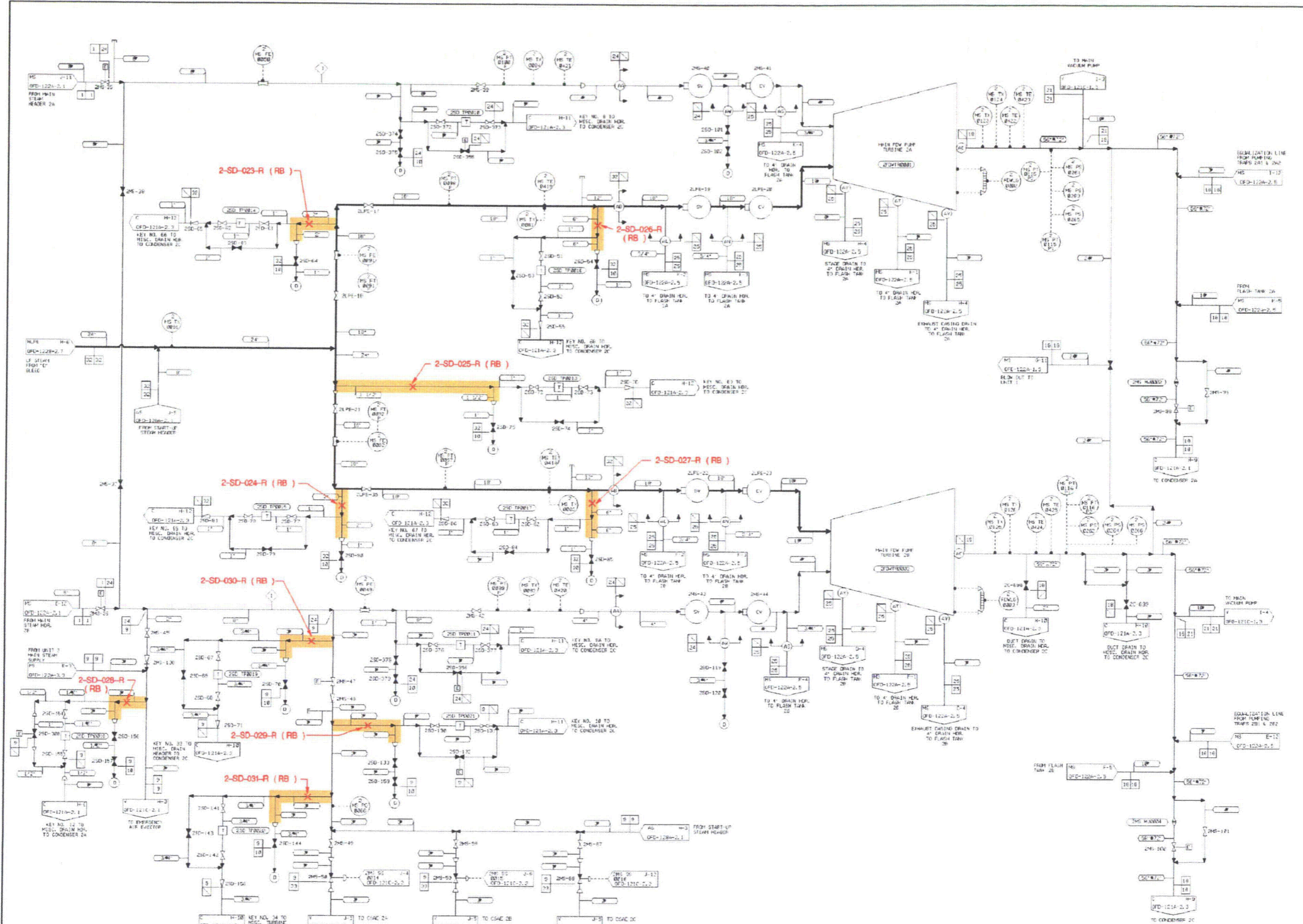
- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- |— - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HFI R-122A-02-02



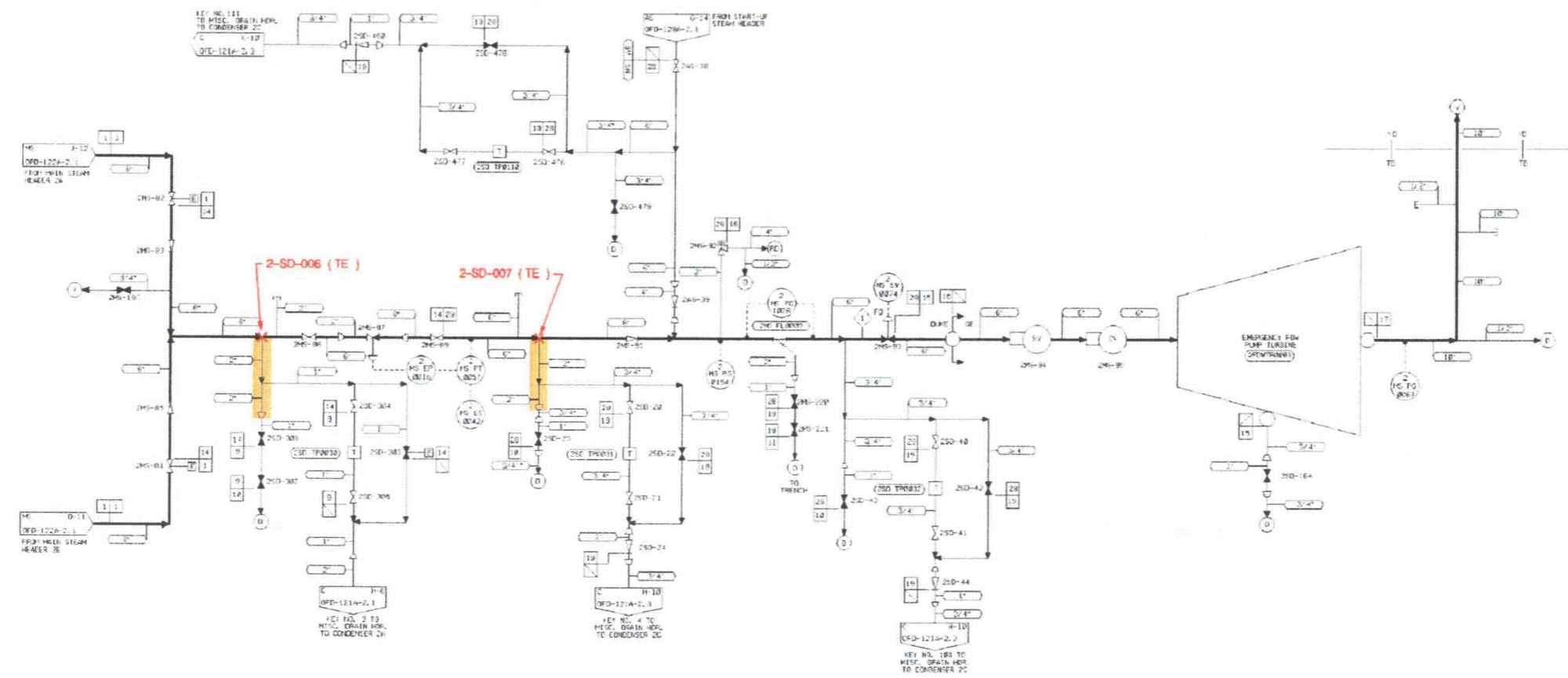
LEGEND

- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- ▶ Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-2.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



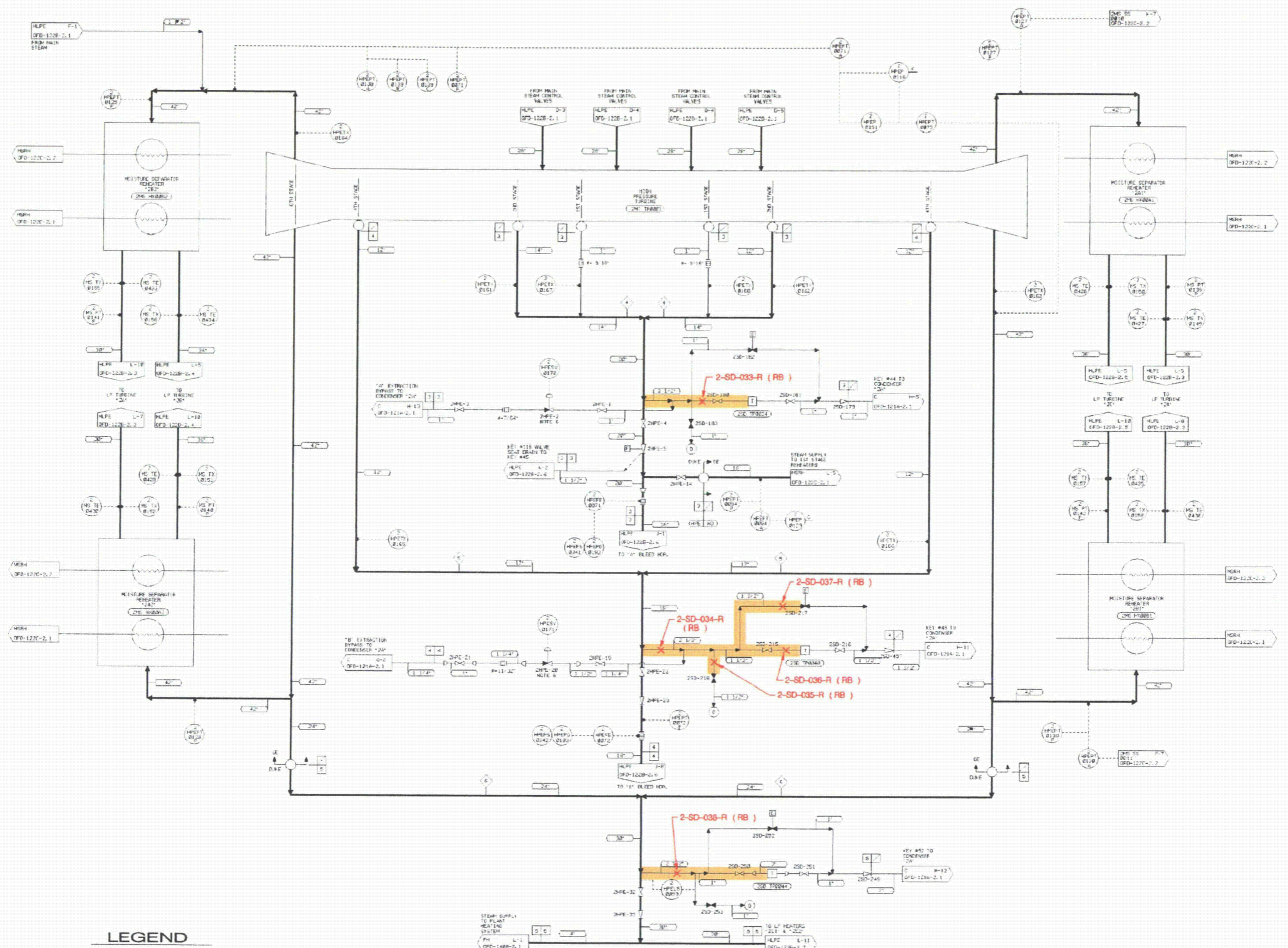
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 4 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-2.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HFI R-122A-02-04

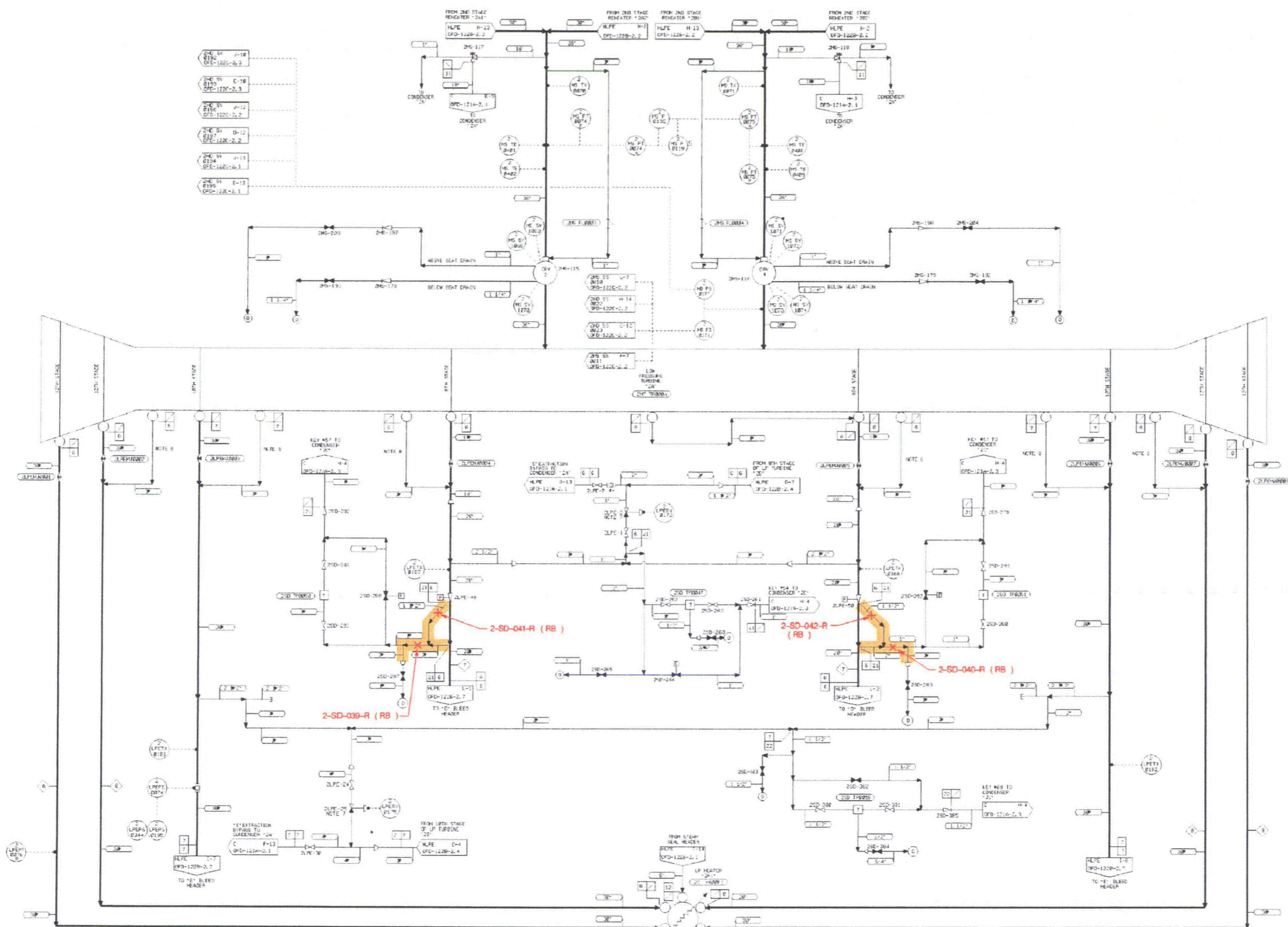


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ▶ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 5 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

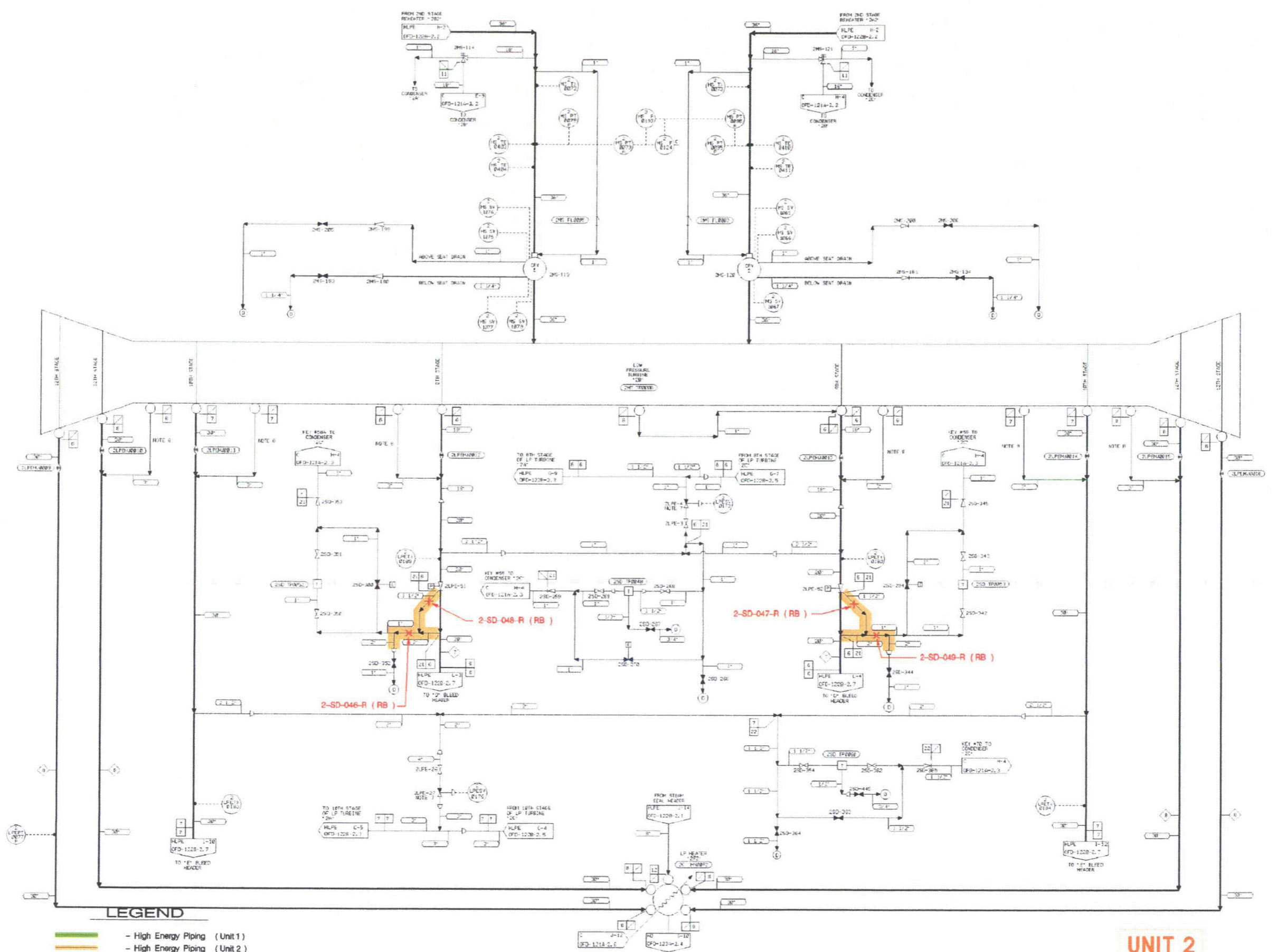


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 6 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

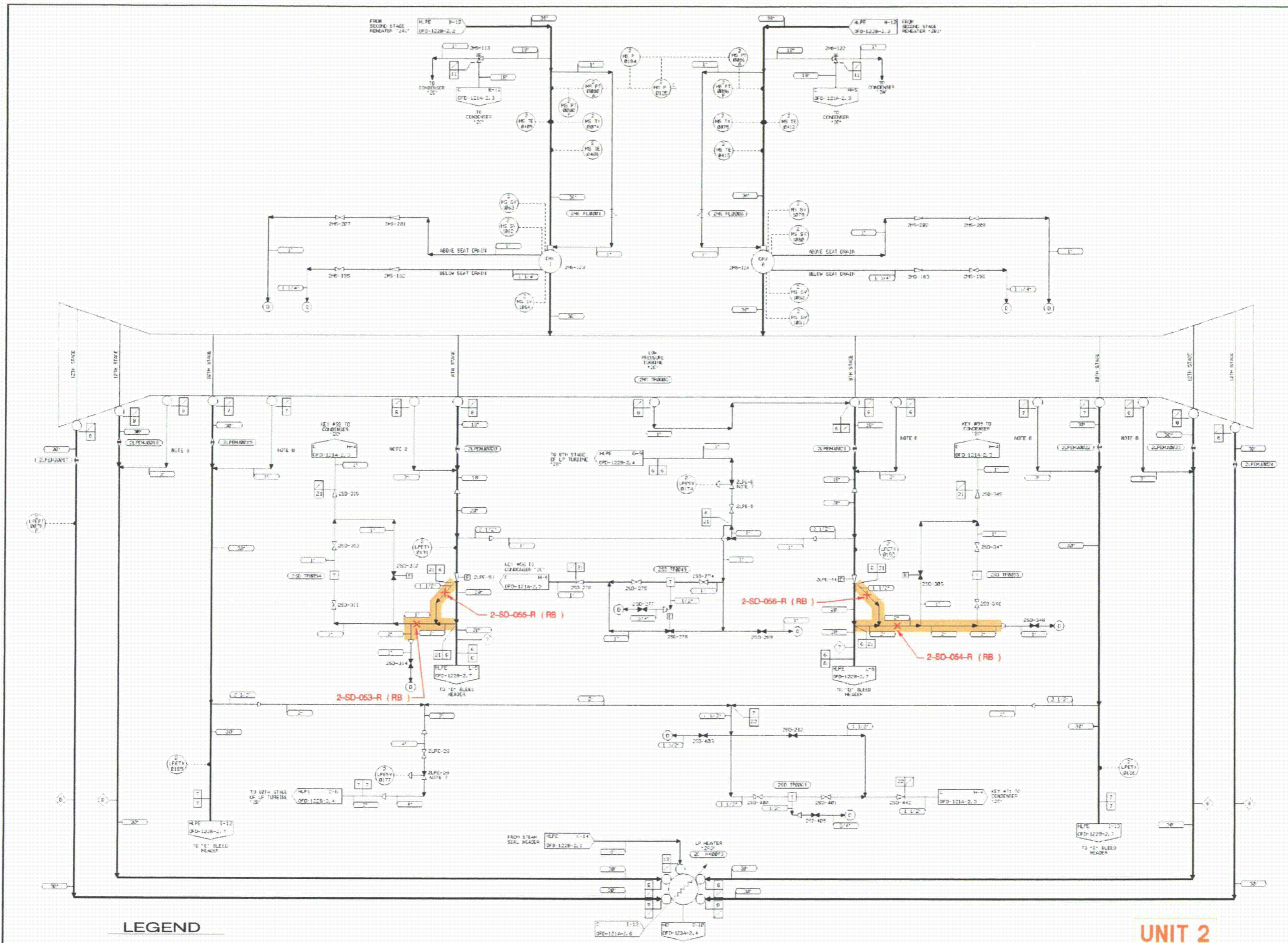


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ↑ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 7 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

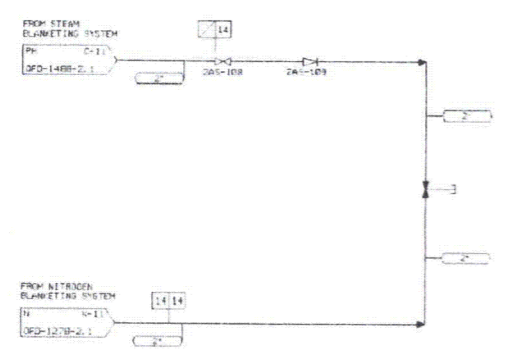
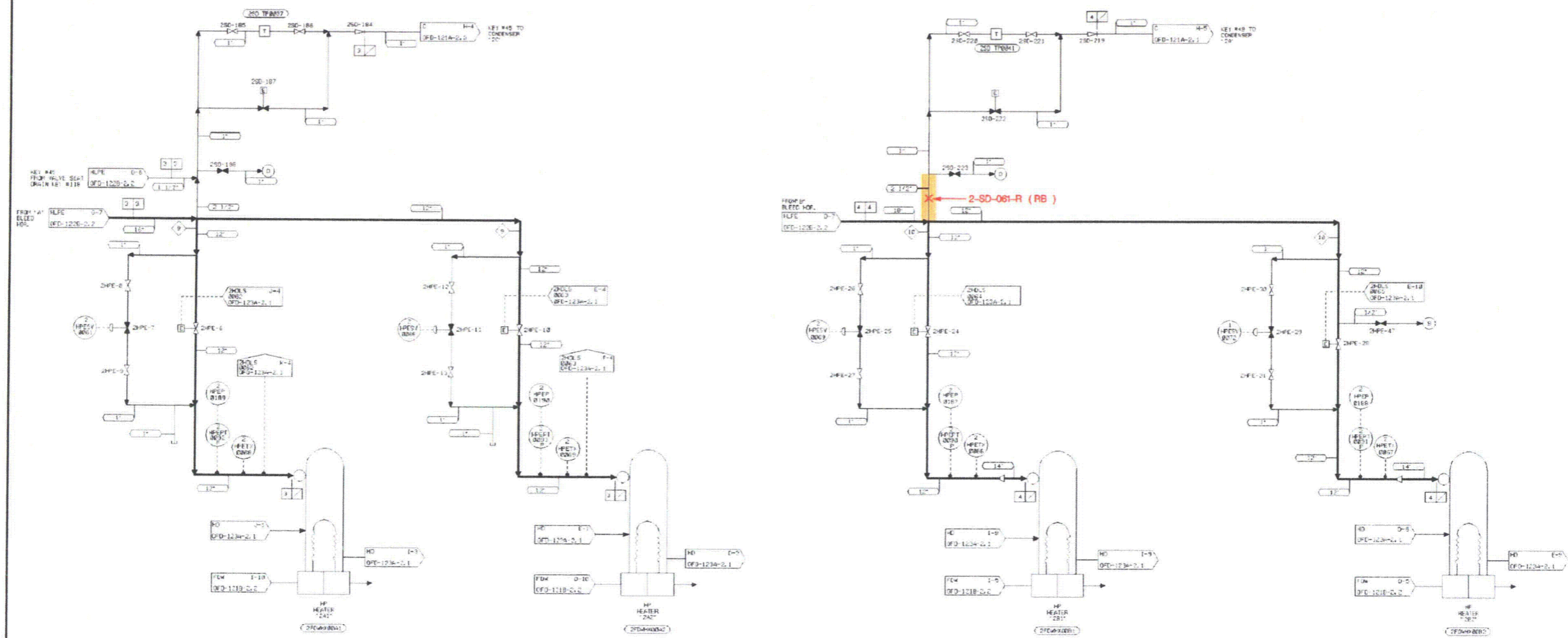


LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 8 of 12)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.5 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



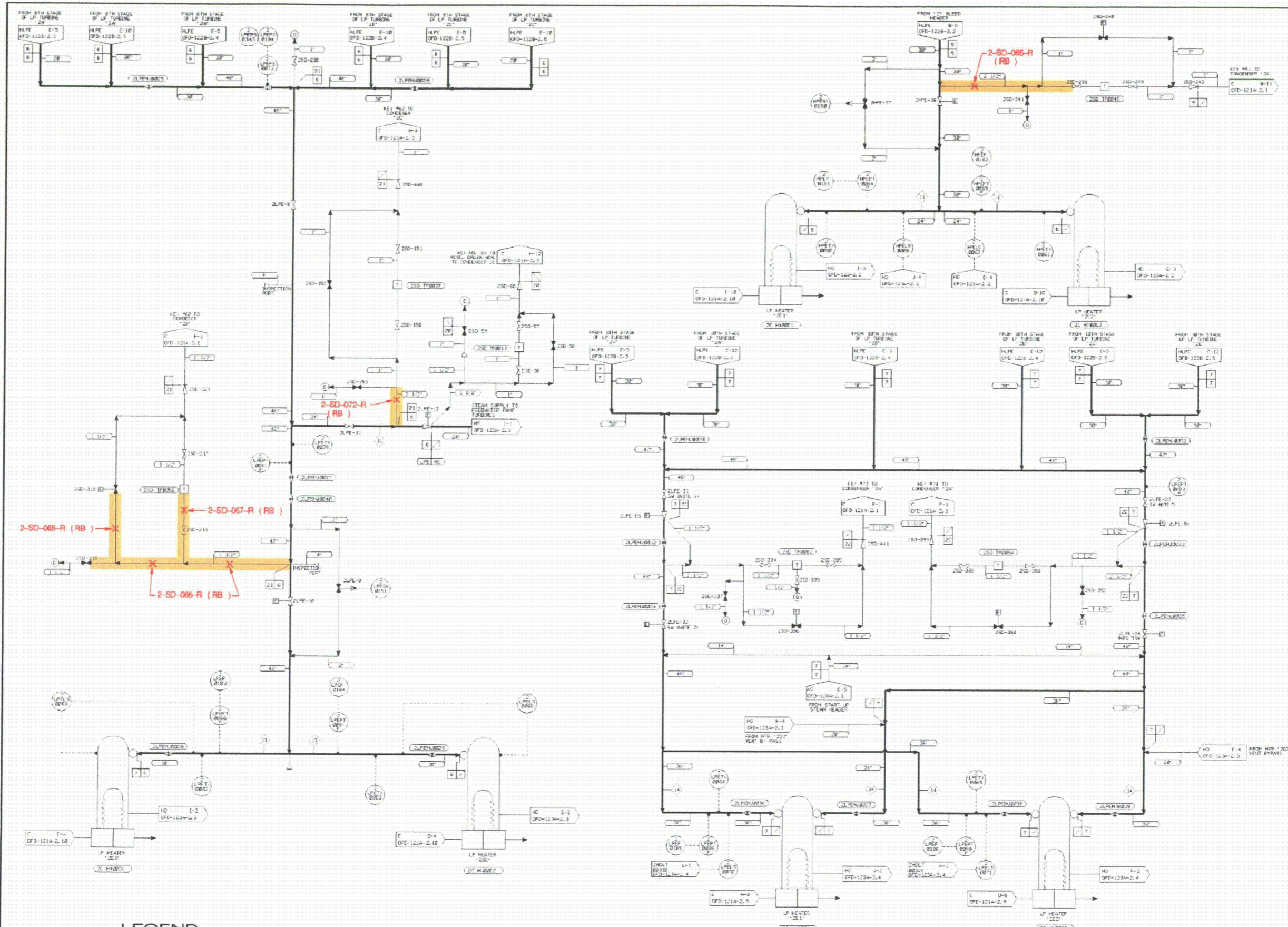
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ↑ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 9 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.6 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

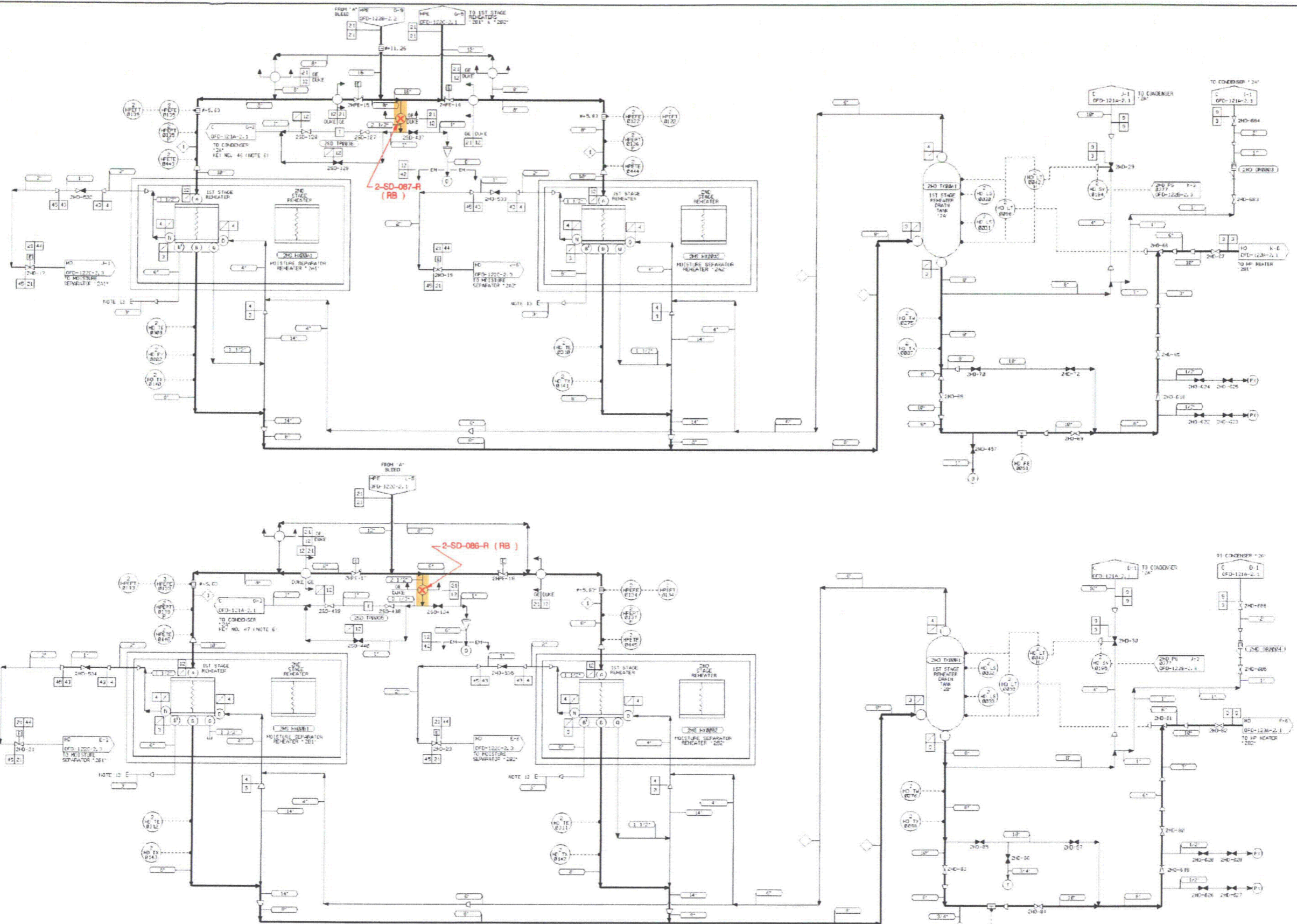


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - P - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 10 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.7 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



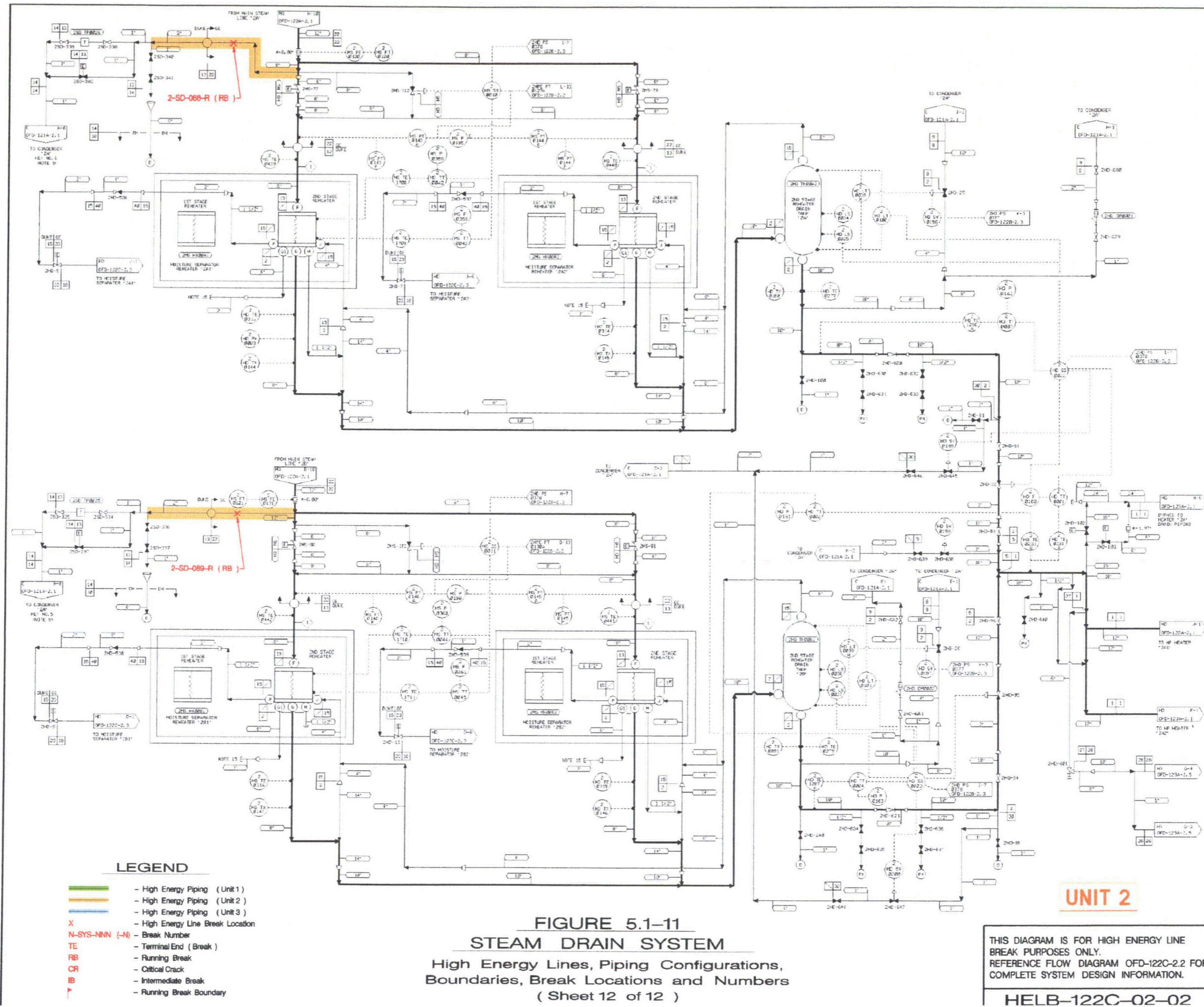
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NINN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 11 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- |— - Running Break Boundary

FIGURE 5.1-11
STEAM DRAIN SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 12 of 12)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-2.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

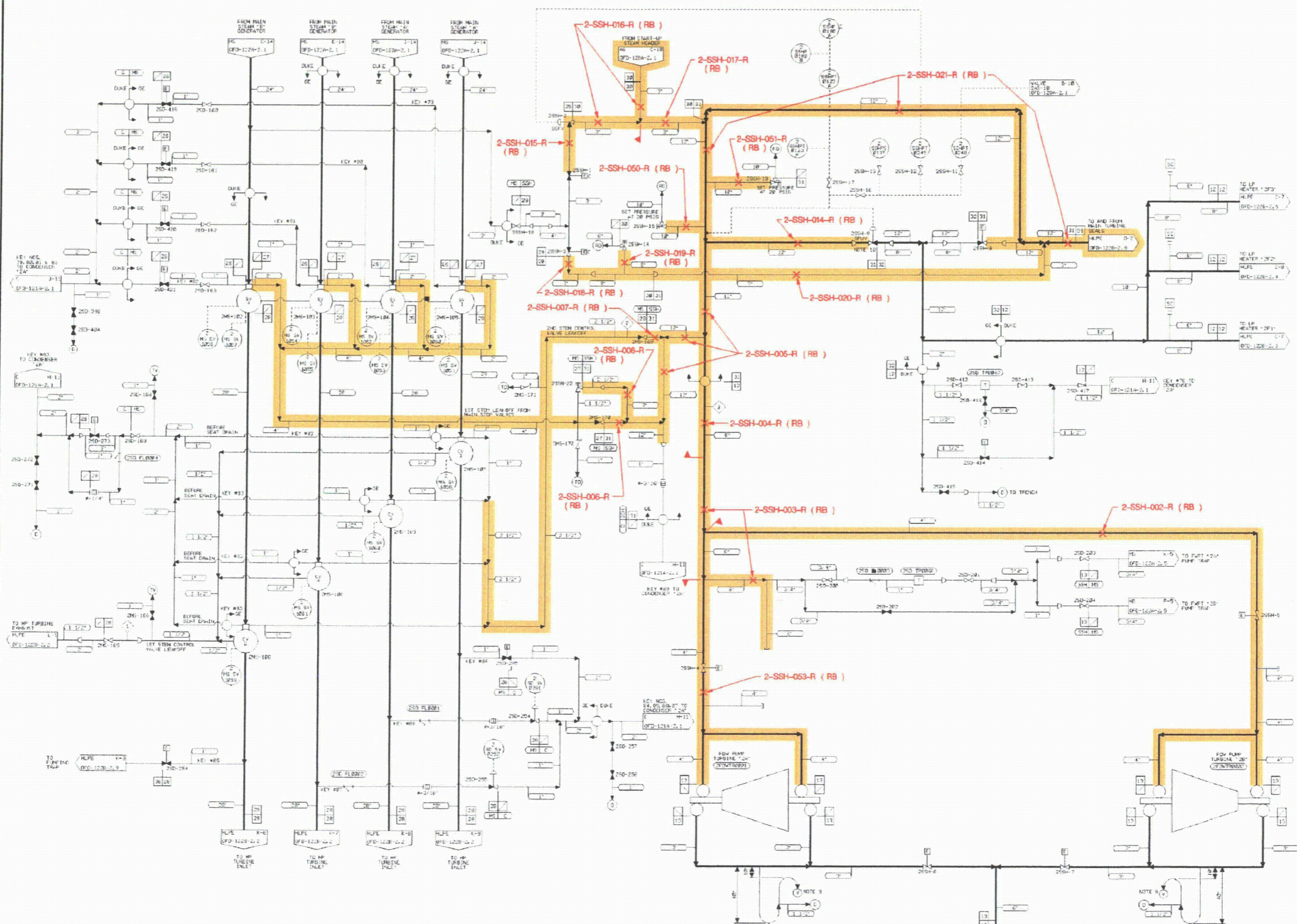
Table 5.1-12
 Steam Seals System – High Energy Line Data – Unit 2

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-) See Note 5	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-SSH-002-R	122B-2.1	RB	4.500	0.237	TB	1403A 1403H	775'-0"	B-C	29-32	10	440
2-SSH-003-R	122B-2.1	RB	6.625	0.280	TB	1403A 1403H	775'-0"	B-C	32	10	440
2-SSH-004-R	122B-2.1	RB	6.625	0.280	TB	1403C 1403D	796'-6"	B-E	32-40	10	440
2-SSH-005-R	122B-2.1	RB	12.750	0.406	TB	OM-1200-36, OM-1200-86	796'-6"	D-E	39-40	10	440
2-SSH-006-R	122B-2.1	RB	4.500	0.237	TB	OM-1200-36, OM-1200-86	796'-6"	D-E	39-41	10	440
2-SSH-007-R	122B-2.1	RB	2.875	0.203	TB	OM-1200-36, OM-1200-86	796'-6"	D-F	39-40	10	440
2-SSH-008-R	122B-2.1	RB	3.500	0.216	TB	OM-1200-36, OM-1200-86	796'-6"	D-E	39-40	10	440
2-SSH-014-R	122B-2.1	RB	12.750	0.406	TB	OM-1200-36	796'-6"	D-E	39-40	10	440
2-SSH-015-R	122B-2.1	RB	3.500	0.300	TB	OM-1200-36	796'-6"	D-F	39-41	10	440
2-SSH-016-R	122B-2.1 128A-2.1	RB	3.500	0.300	TB	OM-1200-36	796'-6"	D-E	39-40	10	440
2-SSH-017-R	122B-2.1	RB	3.500	0.300	TB	OM-1200-36	796'-6"	D-E	39-40	10	440
2-SSH-018-R	122B-2.1	RB	3.500	0.300	TB	OM-1200-36	796'-6"	D-E	39-40	10	440
2-SSH-019-R	122B-2.1	RB	8.625	0.500	TB	OM-1200-36	796'-6"	D-E	39-40	10	440
2-SSH-020-R	122B-2.1	RB	3.500	0.216	TB	OM-1200-36	796'-6"	C-E	39-40	10	440
2-SSH-021-R	122B-2.1 122B-2.8	RB	12.750	0.406	TB	OM-1200-36	796'-6"	D-E	36-40	10	440
2-SSH-022-R	122B-2.8	RB	10.750	0.365	TB	OM-1200-36	796'-6"	D-E	34-37	10	440
2-SSH-023-R	122B-2.8	RB	5.563	0.258	TB	OM-1200-36	796'-6"	D-F	32-35	10	440
2-SSH-024-R	122B-2.8	RB	8.625	0.322	TB	OM-1200-36	796'-6"	D-F	38-40	10	440
2-SSH-025-R	122B-2.8	RB	8.625	0.322	TB	OM-1200-36	796'-6"	D-F	38-39	10	440
2-SSH-026-R	122B-2.8	RB	5.563	0.258	TB	OM-1200-36	796'-6"	D-F	37-38	10	440
2-SSH-027-R	122B-2.8	RB	8.625	0.322	TB	OM-1200-36	796'-6"	D-E	36-37	10	440
2-SSH-028-R	122B-2.8	RB	8.625	0.322	TB	OM-1200-36	796'-6"	D-E	34-35	10	440
2-SSH-029-R	122B-2.8	RB	5.563	0.258	TB	OM-1200-36	796'-6"	E-F	36-37	10	440
2-SSH-030-R	122B-2.8	RB	5.563	0.258	TB	OM-1200-36	796'-6"	E-F	35-36	10	440
2-SSH-031-R	122B-2.8	RB	5.563	0.258	TB	OM-1200-36	796'-6"	E-F	34-35	10	440
2-SSH-032-R	122B-2.8	RB	5.563	0.258	TB	OM-1200-36	796'-6"	E-F	33-34	10	440
2-SSH-050-R	122B-2.1	RB	10.750	0.365	TB	OM-1200-36	796'-6"	D-E	39-40	10	440

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-) See Note 5	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
2-SSH-051-R	122B-2.1	RB	10.750	0.365	TB	OM-1200-36	796'-6"	D-E	39-40	10	440
2-SSH-053-R	122B-2.1	RB	4.500	0.237	TB	1403A 1403H	775'-0"	B-C	31-33	10	440

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break
3. Building: TB – Turbine Building, AB – Auxiliary Building.
4. Each running break may contain one or more sub-breaks. For the Unit 2 Steam Seals System 53 Running Breaks were considered; 29 non-excluded, Running Breaks are listed in this table.
5. Layout of piping system may be shown on vendor supplied drawings (OM-).
6. For each Running Break the elevation of the floor or room that contains the Running Break is given.
7. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



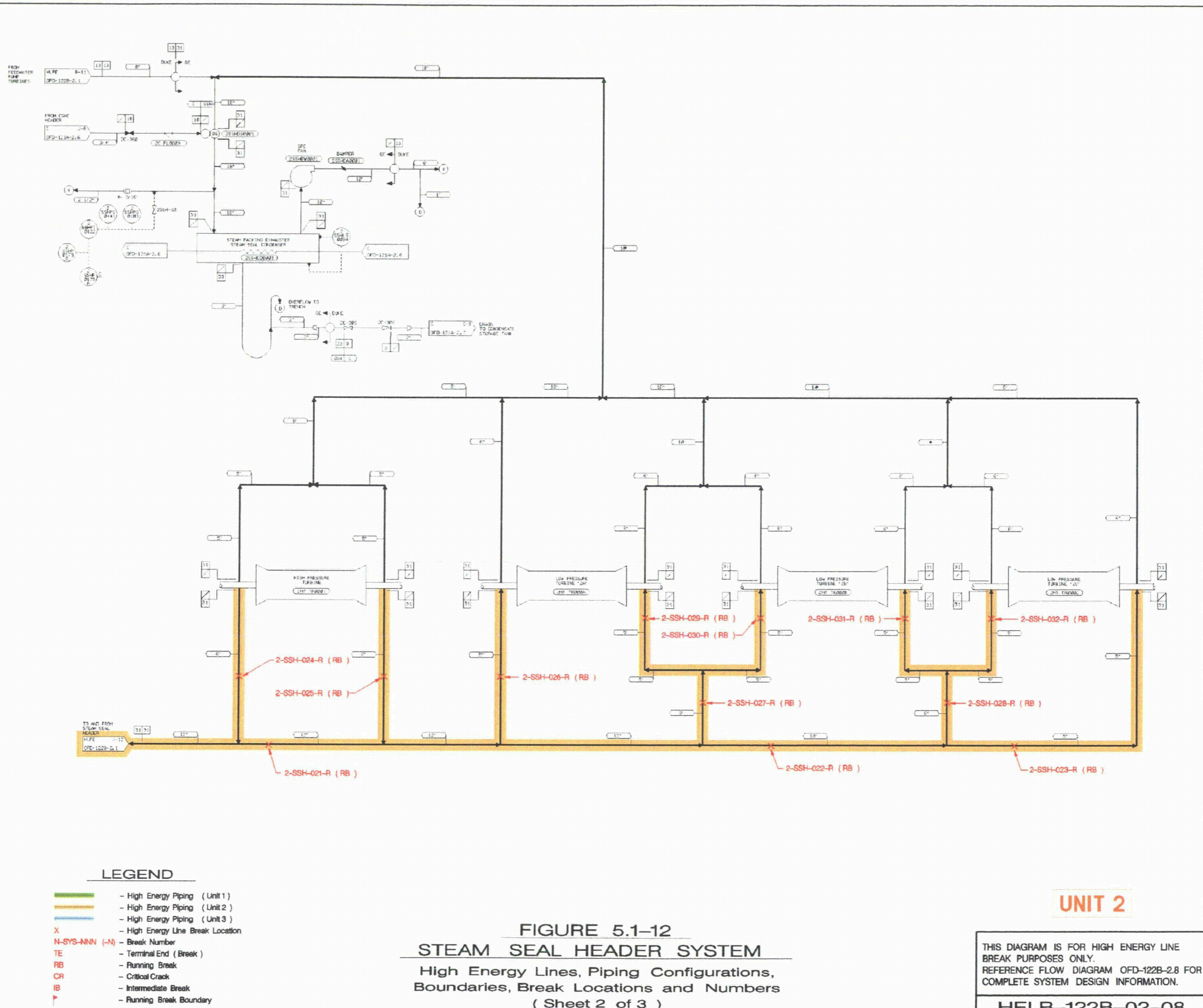
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- (with red line) - Running Break Boundary

**High Energy Lines, Piping Configurations,
Boundaries, Break Locations and Numbers
(Sheet 1 of 3)**

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
BREAK PURPOSES ONLY.
REFERENCE FLOW DIAGRAM OFD-122B-2.1 FOR
COMPLETE SYSTEM DESIGN INFORMATION.



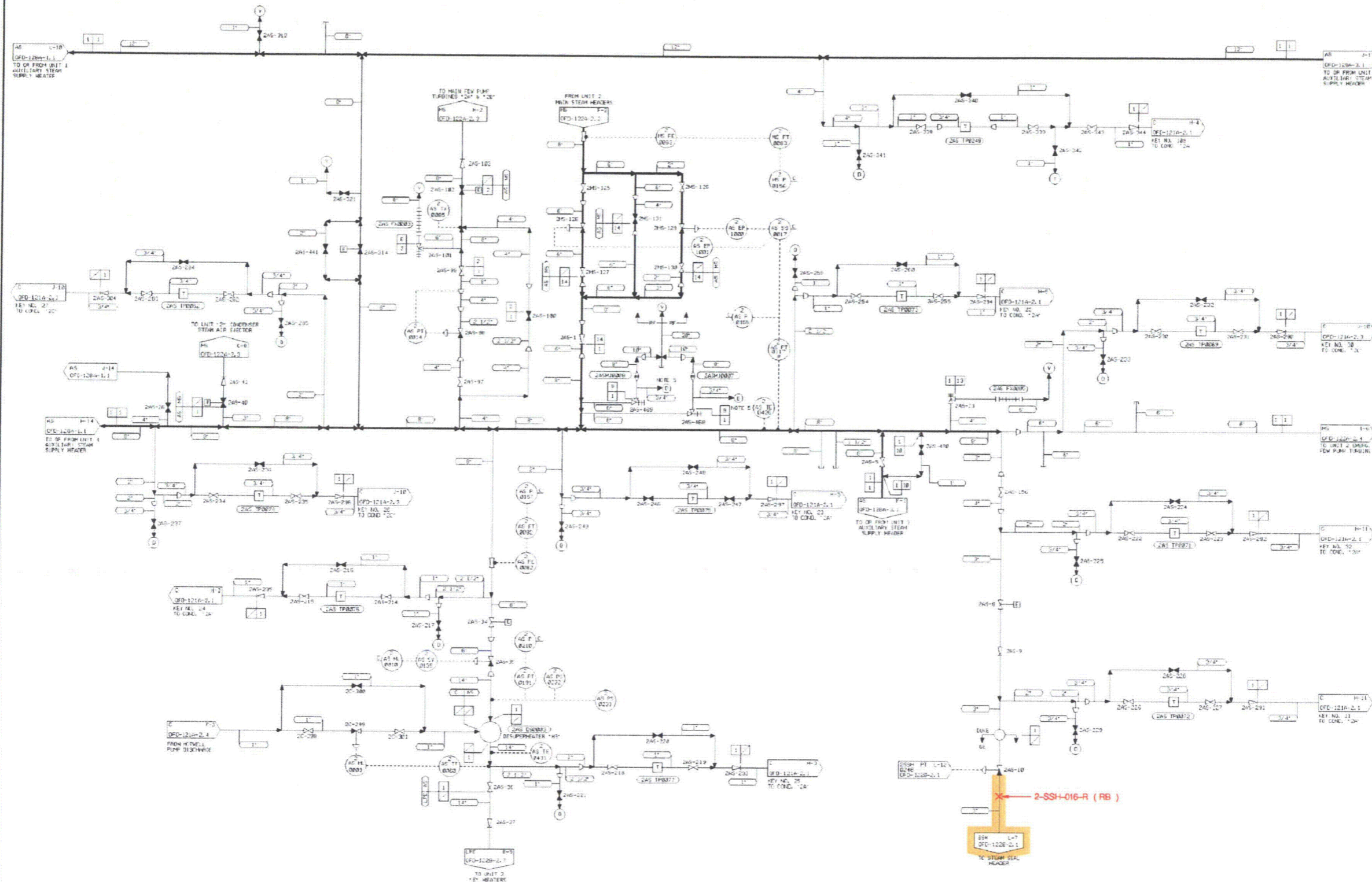
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

FIGURE 5.1-12
STEAM SEAL HEADER SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 3)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-2.8 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ↑ - Running Break Boundary

FIGURE 5.1-12
STEAM SEAL HEADER SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 3)

UNIT 2

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-128A-2.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

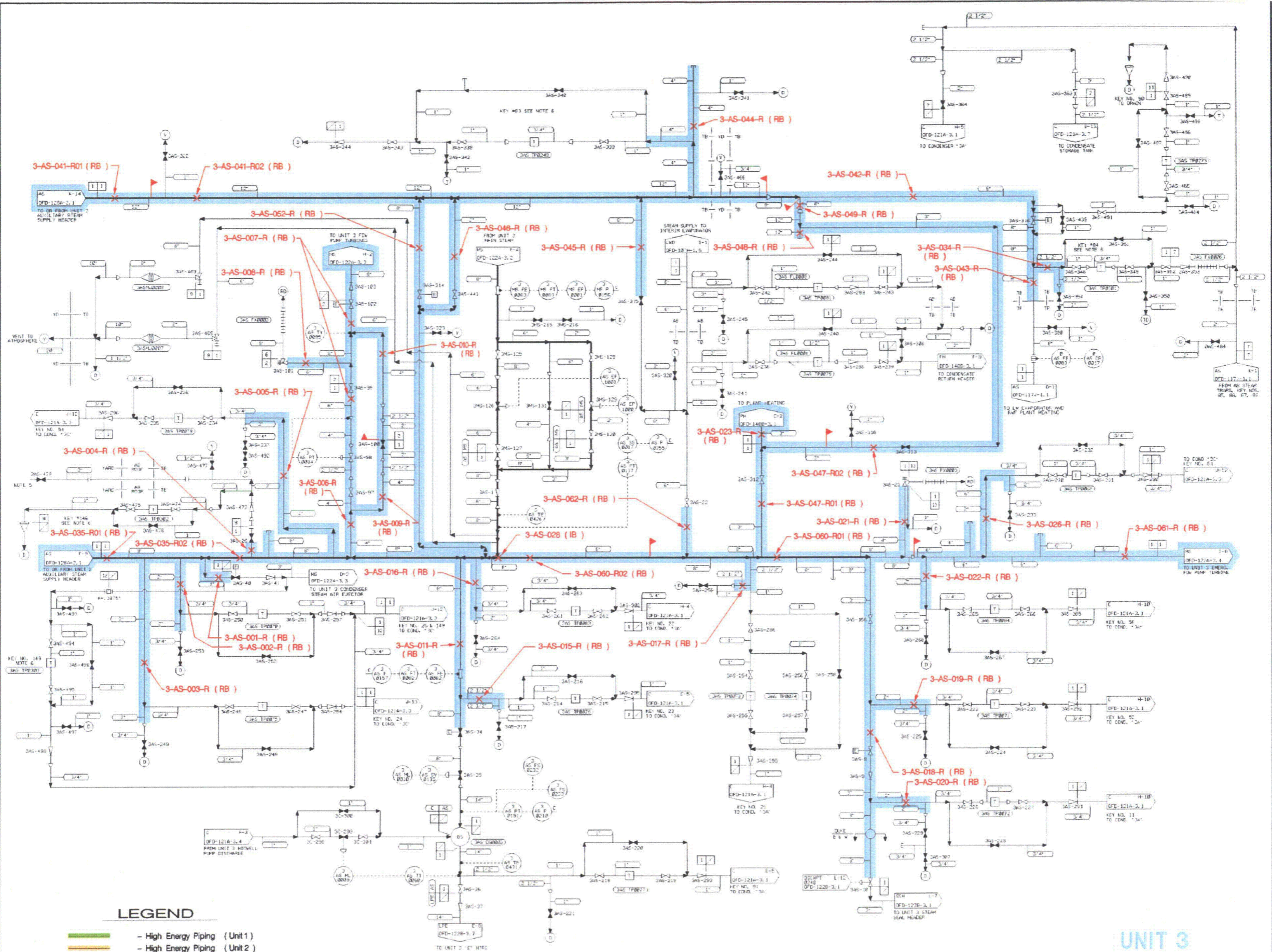
Table 6.1-1
 Auxiliary Steam System – High Energy Line Data – Unit 3

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in.)	Pipe Thickness (in.)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-AS-001-R	128A-3.1	RB	3.500	0.216	TB	2403C	796'-6"	F-G	43-44	300	500
3-AS-002-R	128A-3.1	RB	2.375	0.154	TB	2403C, 2411B	796'-6"	F-G	43-44	300	500
3-AS-003-R	128A-3.1	RB	2.375	0.154	TB	2403A, 2411B	775'-0"	E-F	43-44	300	500
3-AS-004-R	128A-3.1	RB	4.500	0.237	TB	2403C	796'-6"	G-H	44-45	300	500
3-AS-005-R	128A-3.1	RB	2.375	0.154	TB	2403C, 2411C	796'-6"	K-L	45-46	300	500
3-AS-006-R	128A-3.1	RB	4.500	0.237	TB	2403C, 2403F	796'-6"	J-M	48-50	300	500
3-AS-007-R	122A-3.3 128A-3.1	RB	8.625	0.322	TB	2403C, 2403F	796'-6"	J-K	47-49	39	450
3-AS-008-R	128A-3.1	RB	6.625	0.280	TB	2403C, 2403F	796'-6"	J-K	48-49	39	450
3-AS-009-R	128A-3.1	RB	4.500	0.237	TB	2403C, 2403F	796'-6"	J-K	48-49	300	500
3-AS-010-R	128A-3.1	RB	4.500	0.237	TB	2403C, 2403F	796'-6"	J-K	48-49	39	450
3-AS-011-R	128A-3.1	RB	8.625	0.322	TB	2403D	796'-6"	K-M	50-51	300	500
3-AS-015-R	128A-3.1	RB	2.875	0.203	TP	2403D, 2411B	796'-6"	K-L	50-51	300	500
3-AS-016-R	128A-3.1	RB	2.375	0.154	TB	2403D, 2411B	796'-6"	L-M	51-52	300	500
3-AS-017-R	128A-3.1	RB	2.875	0.203	TB	2403B, 2411B	775'-0"	J-K	55-56	300	500
3-AS-018-R	128A-3.1	RB	3.500	0.216	TB	2403B, 2403D	775'-0", 796'-6"	D-E	53-54	300	500
3-AS-019-R	128A-3.1	RB	2.375	0.154	TB	2403B, 2411C	775'-0"	D-E	53-54	300	500
3-AS-020-R	128A-3.1	RB	2.375	0.154	TB	2403D, 2411B	796'-6"	D-E	53-54	300	500
3-AS-021-R	128A-3.1	RB	4.500	0.237	TB	2403B, 2403F	775'-0"	D-E	54-55	300	500
3-AS-022-R	128A-3.1	RB	2.375	0.154	TB	2403B, 2411C	775'-0"	D-E	54-55	300	500
3-AS-023-R	128A-3.1 148B.3.1	RB	3.500	0.216	TB	2403B, 2403E	775'-0"	F-G	54-56	300	500
3-AS-024-R	148B.3.1	RB	4.500	0.237	TB	2403B, 2403E	775'-0"	F-G	54-55	120	470
3-AS-025-R	148B.3.1	RB	2.375	0.154	TB	2403B, 2403E	775'-0"	F-G	54-55	300	500
3-AS-026-R	128A-3.1	RB	2.375	0.154	TB	2403B	775'-0"	C-D	50-51	300	500
3-AS-028	128A-3.1	IB	8.625	0.322	TB	2403M	796'-6"	J-K	54-55	300	500
3-AS-034-R	128A-3.1	RB	2.875	0.203	TB	2403B, 2403F	775'-0"	E-F	55-56	300	500
3-AS-035-R01	128A-3.1	RB	8.625	0.322	TB	2403A	775'-0"	D-F	42-44	300	500
3-AS-035-R02	128A-3.1	RB	8.625	0.322	TB	2403C, 2403D	796'-6"	E-M	43-55	300	500
3-AS-041-R01	128A-2.1 128A-3.1	RB	12.750	0.375	TB	2403A	775'-0"	L-M	43-48	300	500

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in.)	Pipe Thickness (in.)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-AS-041-R02	128A-3.1	RB	12.750	0.375	TB, Yard	2403C, 2403D	796'-6"	Fa-M	47-56	300	500
3-AS-042-R	128A-3.1	RB	8.625	0.322	TB	2403D	796'-6"	E-G	54-56	300	500
3-AS-043-R	128A-3.1	RB	8.625	0.322	TB	2403B, 2403F	775'-0"	E-F	55-56	300	500
3-AS-044-R	128A-3.1	RB	4.500	0.237	TB	2403D, 2403J	796'-6"	J-K	55-56	300	500
3-AS-045-R	128A-3.1	RB	6.625	0.28	TB	2403D	796'-6"	K-L	55-56	300	500
3-AS-046-R	128A-3.1	RB	2.375	0.154	TB	2403D	796'-6"	K-L	55-56	300	500
3-AS-047-R01	128A-3.1	RB	3.500	0.216	TB	2403B	775'-0"	F-H	55-56	300	500
3-AS-047-R02	128A-3.1	RB	3.500	0.216	TB	2403D	796'-6"	G-H	55-56	300	500
3-AS-048-R	128A-3.1	RB	12.750	0.375	TB	2403D	796'-6"	G-H	55-56	300	500
3-AS-049-R	128A-3.1	RB	8.625	0.322	TB	2403D	796'-6"	Fa-H	55-56	300	500
3-AS-052-R	128A-3.1	RB	8.625	0.322	TB	2403D, 2403J	796'-6"	K-L	55-56	300	500
3-AS-060-R01	128A-3.1	RB	8.625	0.322	TB	2403B	775'-0"	K-D	54-56	300	500
3-AS-060-R02	128A-3.1	RB	8.625	0.322	TB	2403D, 2403J	796'-6"	M-J	54-56	300	500
3-AS-061-R	122A-3.4 128A-3.1	RB	6.625	0.280	TB	2403B, 2403A	775'-0"	E-C	48-55	300	500
3-AS-062-R	128A-3.1	RB	6.625	0.280	TB	2403B	775'-0"	J-K	55-56	300	500

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break
3. Building: TB – Turbine Building, AB – Auxiliary Building.
4. Each running break may contain one or more sub-breaks.
5. For the Unit 3 Auxiliary Steam System 51 Running Breaks and 1 Intermediate Break were considered; the non-excluded breaks listed in this table include 42 Running Breaks and 1 Intermediate Break.
6. For each Running Break and the Intermediate Break the elevation of the floor or room that contains the break is given.
7. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



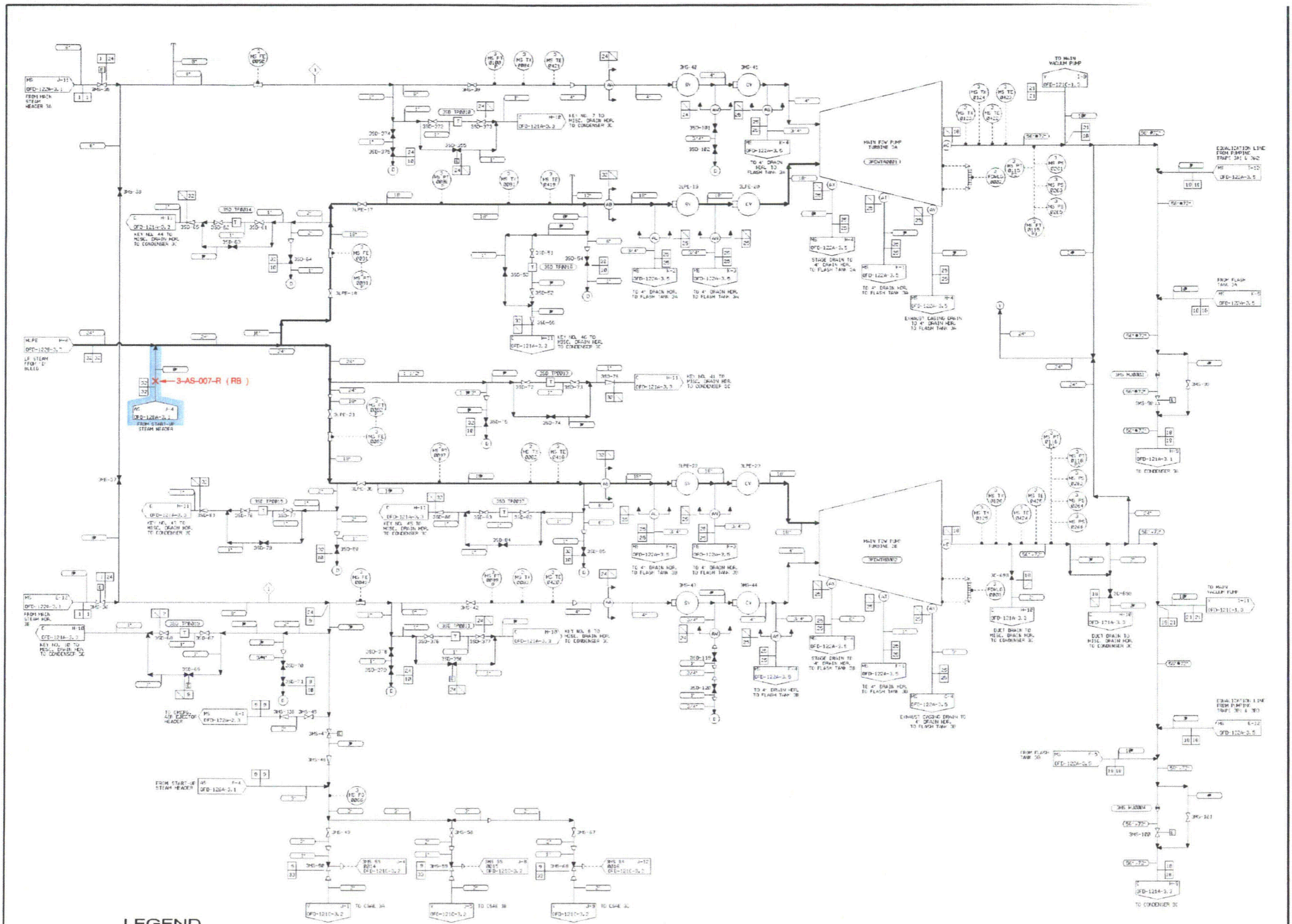
- LEGEND**
- High Energy Piping (Unit 1)
 - High Energy Piping (Unit 2)
 - High Energy Piping (Unit 3)
 - X Break Number
 - TE Terminal End (Break)
 - RB Running Break
 - CR Critical Crack
 - IB Intermediate Break
 - Running Break Boundary

FIGURE 6.1-1
AUXILIARY STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 1 of 4)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-128A-3.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-128A-03-01



LEGEND

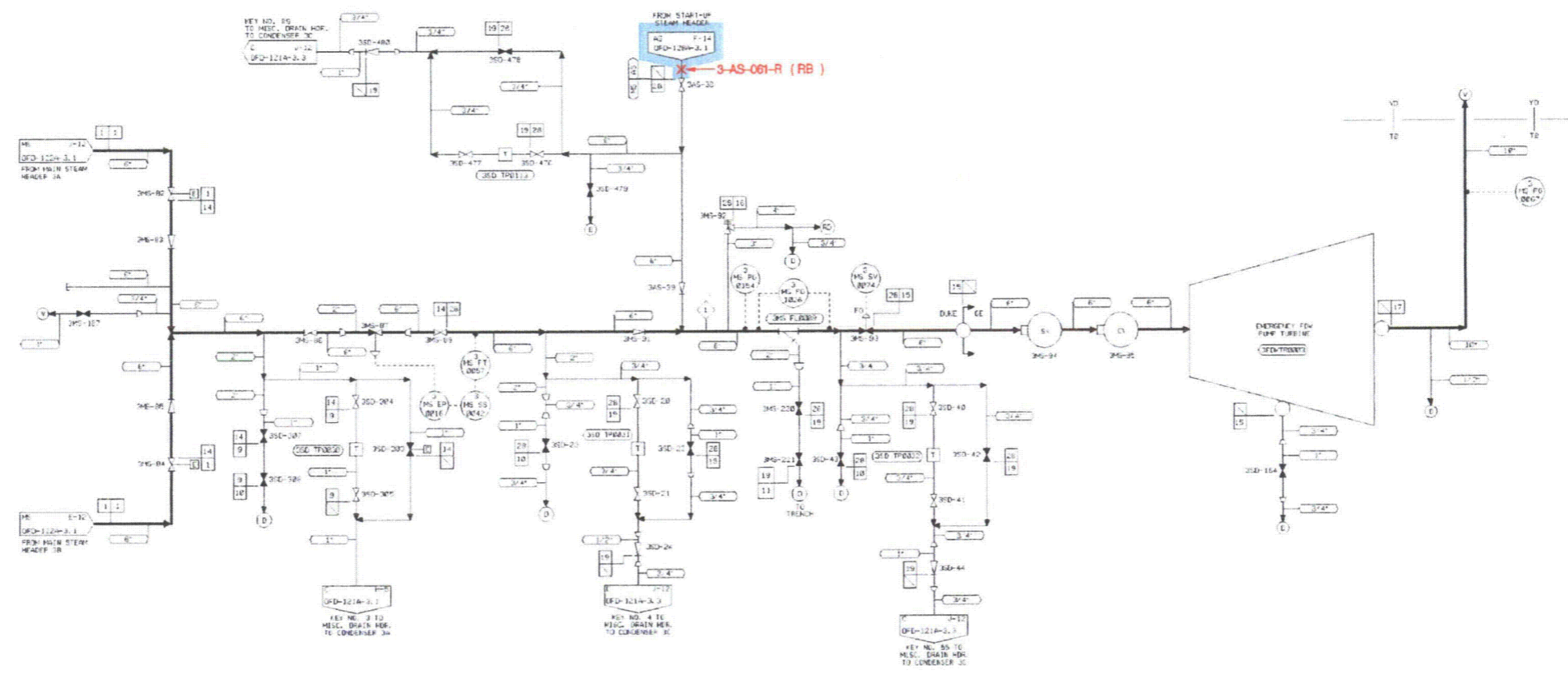
- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

FIGURE 6.1-1
AUXILIARY STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 4)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-3.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122A-03-03



LEGEND

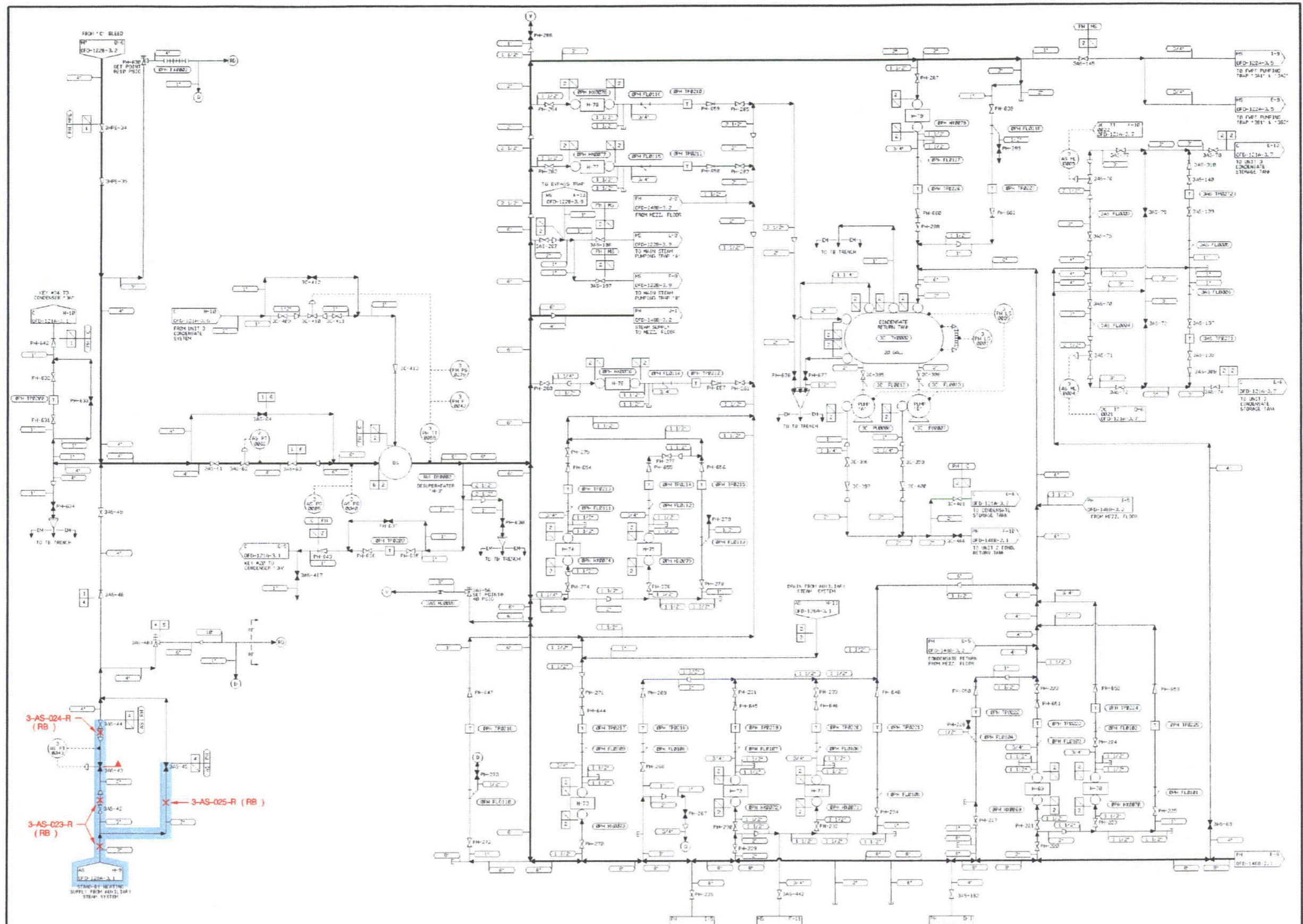
- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- P - Running Break Boundary

FIGURE 6.1-1
AUXILIARY STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 4)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-3.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122A-03-04



- LEGEND**
- High Energy Piping (Unit 1)
 - High Energy Piping (Unit 2)
 - High Energy Piping (Unit 3)
 - X High Energy Line Break Location
 - N-SYS-NNN (-N) Break Number
 - TE Terminal End (Break)
 - RB Running Break
 - CR Critical Crack
 - IB Intermediate Break
 - ▶ Running Break Boundary

FIGURE 6.1-1
AUXILIARY STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 4 of 4)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-148B-3.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-148B-03-01

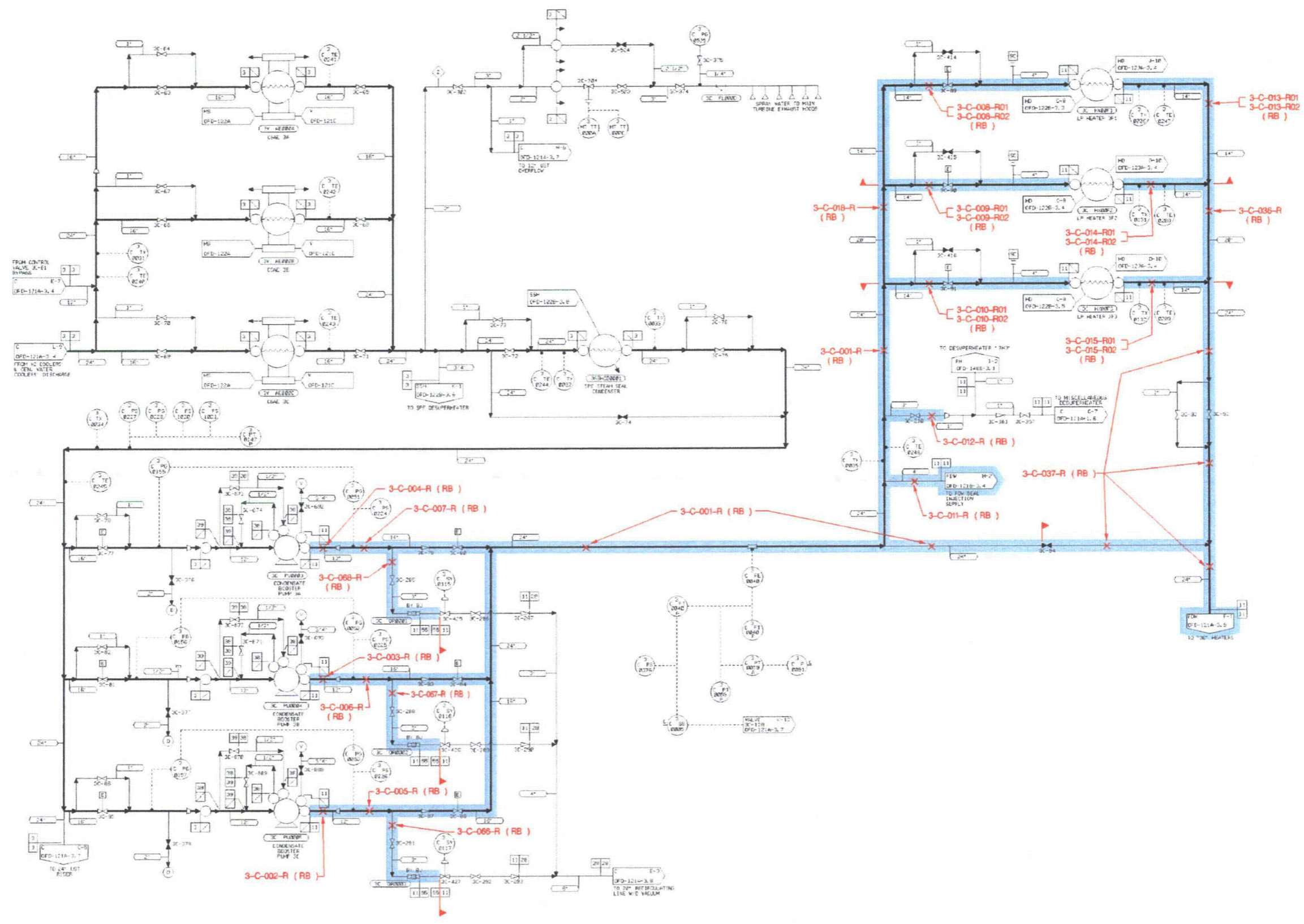
Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-C-001-R	121A-3.6	RB	24.000	0.688	TB	2400A, 2400D	775'-0"	F-J	46-50	520	120
3-C-002-R	121A-3.6	RB	12.750	0.375	TB	2400D	775'-0"	G-J	46-47	520	120
3-C-003-R	121A-3.6	RB	12.750	0.375	TB	2400D	775'-0"	G-J	47-48	520	120
3-C-004-R	121A-3.6	RB	12.750	0.375	TB	2400D	775'-0"	G-J	48-49	520	120
3-C-005-R	121A-3.6	RB	16.000	0.500	TB	2400A, 2400D	775'-0"	G-J	46-48	520	120
3-C-006-R	121A-3.6	RB	16.000	0.500	TB	2400A, 2400D	775'-0"	G-J	47-48	520	120
3-C-007-R	121A-3.6	RB	16.000	0.500	TB	2400A, 2400D	775'-0"	G-J	48-49	520	120
3-C-008-R01	121A-3.6	RB	14.000	0.375	TB	2400A, 2400B	775'-0"	F-G	49-51	520	120
3-C-008-R02	121A-3.6	RB	14.000	0.375	TB	2401H	796'-6"	F-G	51	520	120
3-C-009-R01	121A-3.6	RB	14.000	0.375	TB	2400A	775'-0"	F-G	49	520	120
3-C-009-R02	121A-3.6	RB	14.000	0.375	TB	2401H	796'-6"	F-G	49	520	120
3-C-010-R01	121A-3.6	RB	14.000	0.375	TB	2400A	775'-0"	F-G	47	520	120
3-C-010-R02	121A-3.6	RB	14.000	0.375	TB	2401H	796'-6"	F-G	47	520	120
3-C-011-R	121A-3.6 121B-3.4	RB	4.500	0.237	TB	2407A, 2407H	775'-0"	C-H	45-47	520	120
3-C-012-R	121A-3.6	RB	3.500	0.216	TB	2403A	775'-0"	F-G	46-47	520	120
3-C-013-R01	121A-3.6	RB	14.000	0.375	TB	2400A, 2400B	775'-0"	F-H	48-51	520	155
3-C-013-R02	121A-3.6	RB	14.000	0.375	TB	2401B	796'-6"	F-G	50-51	520	155
3-C-014-R01	121A-3.6	RB	14.000	0.375	TB	2400A	775'-0"	F-H	48-49	520	155
3-C-014-R02	121A-3.6	RB	14.000	0.375	TB	2401A	796'-6"	F-G	48-49	520	155
3-C-015-R01	121A-3.6	RB	14.000	0.375	TB	2400A	775'-0"	F-H	46-47	520	155
3-C-015-R02	121A-3.6	RB	14.000	0.375	TB	2401A	796'-6"	F-G	46-47	520	155
3-C-016-R	121A-3.9	RB	16.000	0.500	TB	2400B	775'-0"	J-L	50-52	520	155
3-C-017-R	121A-3.9	RB	16.000	0.500	TB	2400B	775'-0"	K-L	50-52	520	155
3-C-018-R	121A-3.6	RB	20.000	0.500	TB	2400A	775'-0"	F-G	47-50	520	120
3-C-019-R	121A-3.9	RB	24.000	0.688	TB	2400B	775'-0"	K-L	50-52	520	155
3-C-020-R	121A-3.9	RB	24.000	0.688	TB	2400B	775'-0"	K-L	51-52	520	215
3-C-021-R	121A-3.10	RB	18.000	0.500	TB	2400B	775'-0"	J-L	52-53	520	215
3-C-022-R	121A-3.10	RB	18.000	0.500	TB	2400B	775'-0"	K-L	52-53	520	215
3-C-023-R	121A-3.10	RB	18.000	0.500	TB	2400B	775'-0"	J-L	52-54	520	290
3-C-024-R	121A-3.10	RB	18.000	0.500	TB	2400B	775'-0"	K-L	52-54	520	290
3-C-025-R01	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	J-L	53-54	520	290
3-C-025-R02	121A-3.10	RB	24.000	0.688	TB	2401B	796'-6"	J-K	53-55	520	290
3-C-026-R01	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	53-54	520	290
3-C-026-R02	121A-3.10	RB	24.000	0.688	TB	2401B	796'-6"	K-L	53-55	520	290
3-C-027-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	J-K	54-55	520	370
3-C-028-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	54-55	520	370
3-C-029-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	53-54	520	290
3-C-030-R	121A-3.10	RB	30.000	0.689	TB	2400B	775'-0"	K-L	53-55	520	290
3-C-031-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	J-L	54-56	520	370

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-C-032-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	54-56	520	370
3-C-033-R01	121A-3.10 121B-3.1	RB	30.000	0.689	TB	2400B	775'-0"	E-L	54-56	520	370
3-C-033-R02	121A-3.10 121B-3.1	RB	30.000	0.689	TB	2401B	796'-6"	B-F	51-56	520	370
3-C-036-R	121A-3.6	RB	20.000	0.500	TB	2400A	775'-0"	G-H	46-49	520	155
3-C-037-R	121A-3.6 121A-3.9	RB	24.000	0.688	TB	2400A 2400B	775'-0"	G-L	46-52	520	155
3-C-039-R	121A-3.9	RB	16.000	0.500	TB	2400B	775'-0"	J-L	51-52	520	215
3-C-040-R	121A-3.9	RB	16.000	0.500	TB	2400B	775'-0"	K-L	51-52	520	215
3-C-041-R	121A-3.9 121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	51-53	520	215
3-C-042-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	52-53	520	215
3-C-043-R	121A-3.10	RB	24.000	0.688	TB	2400B	775'-0"	K-L	52-54	520	290
3-C-044-R	121A-3.10	RB	30.000	0.689	TB	2400B	775'-0"	K-L	54-55	520	290
3-C-045-R	121A-3.10	RB	30.000	0.689	TB	2400B	775'-0"	K-L	54-56	520	370
3-C-046-R	121A-3.10	RB	30.000	0.689	TB	2400G	775'-0"	J-K	55-56	520	370
3-C-047-R	121A-3.10	RB	30.000	0.689	TB	2400G	775'-0"	F-G	55-56	520	370
3-C-052-R	121B-3.4	RB	2.375	0.154	TB	2407H	775'-0"	C-D	45-46	520	120
3-C-053-R	121B-3.4	RB	2.375	0.154	TB	2407H	775'-0"	C-D	45-46	520	120
3-C-058-R	121B-3.4	RB	2.375	0.154	TB	2407H	775'-0"	C-D	43-44	520	120
3-C-059-R	121B-3.4	RB	2.375	0.154	TB	2407H	775'-0"	C-D	43-44	520	120
3-C-065-R01	121A-3.10	RB	18.000	0.500	TB	2400B	775'-0"	J-K	54-56	520	370
3-C-065-R02	121A-3.10	RB	18.000	0.500	TB	2401B	796'-6"	J-K	54-55	520	370
3-C-066-R	121A-3.6	RB	3.500	0.216	TB	2407G	775'-0"	G-H	46-47	520	120
3-C-067-R	121A-3.6	RB	3.500	0.216	TB	2407G	775'-0"	G-H	47-48	520	120
3-C-068-R	121A-3.6	RB	3.500	0.216	TB	2407G	775'-0"	G-H	48-49	520	120
3-C-069-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	45-46	520	120
3-C-070-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	44-46	520	120
3-C-071-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	44-46	520	120
3-C-072-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	44-46	520	120
3-C-073-R	121B-3.4	RB	4.500	0.237	TB	2407H	775'-0"	C-D	44-45	520	120
3-C-074-R	121B-3.4	RB	4.500	0.237	TB	2407H	775'-0"	C-D	44-45	520	120
3-C-075-R	121B-3.4	RB	4.500	0.237	TB	2407H	775'-0"	C-D	44-45	520	120
3-C-076-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	44-46	520	120
3-C-077-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	43-45	520	120
3-C-078-R	121B-3.4	RB	3.500	0.216	TB	2407H	775'-0"	C-D	44-45	520	120
3-C-079-R	121B-3.4	RB	3.500	0.216	TB	2407H	775'-0"	C-D	44-45	520	120

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-C-080-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	44-46	520	120
3-C-081-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	43-45	520	120
3-C-082-R	121B-3.4	RB	1.900	0.145	TB	2407H	775'-0"	C-D	45-46	520	120
3-C-083-R	121B-3.4	RB	1.900	0.145	TB	2407H	775'-0"	C-D	45-46	520	120
3-C-084-R	121B-3.4	RB	1.900	0.145	TB	2407H	775'-0"	C-D	43-45	520	120
3-C-085-R	121B-3.4	RB	1.900	0.145	TB	2407H	775'-0"	C-D	43-45	520	120
3-C-086-R	121B-3.4	RB	2.875	0.203	TB	2407H	775'-0"	C-D	44-45	520	120
3-C-087-R01	121B-3.1	RB	24.000	0.688	TB	2400A	775'-0"	B-D	44-46	520	370
3-C-087-R02	121B-3.1	RB	24.000	0.688	TB	2401A, 2401B	796'-6"	B-C	45-52	520	370
3-C-088-R01	121B-3.1	RB	24.000	0.688	TB	2400A	775'-0"	B-E	43-46	520	370
3-C-088-R02	121B-3.1	RB	24.000	0.688	TB	2401A, 2401B	796'-6"	B-C	45-52	520	370
3-C-089-R	121B-3.1	RB	20.000	0.500	TB	2400C	775'-0"	C-D	45-46	520	370
3-C-090-R	121B-3.1	RB	20.000	0.500	TB	2400C	775'-0"	C-D	43-44	520	370
3-C-091-R	121B-3.4	RB	4.500	0.237	TB	2407H	775'-0"	C-D	44-46	520	120
3-C-092	121B-3.1	TE	1.900	0.145	TB	2407G	775'-0"	C-D	45-46	520	370
3-C-093-R	121B-3.1	RB	1.900	0.145	TB	2407G	775'-0"	C-D	43-44	520	370
3-C-094-R	121B-3.1	RB	2.375	0.154	TB	2400C	775'-0"	C-D	45-46	520	370
3-C-095-R	121B-3.1	RB	2.375	0.154	TB	2400C	775'-0"	D	43-44	520	370
3-C-096-R	121B-3.1	RB	1.900	0.145	TB	2407G	775'-0"	C-D	45-46	520	370

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break
3. Building: TB – Turbine Building, AB – Auxiliary Building.
4. Each running break may contain one or more sub-breaks.
5. For the Unit 3 Condensate System 107 Running Breaks and 1 Terminal End Break were considered; the non-excluded breaks listed in this table include 91 Running Breaks and 1 Terminal End Break.
6. For each Running Break and the Terminal End Break the elevation of the floor or room that contains the break is given.
7. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



LEGEND

- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- ▬ Running Break Boundary

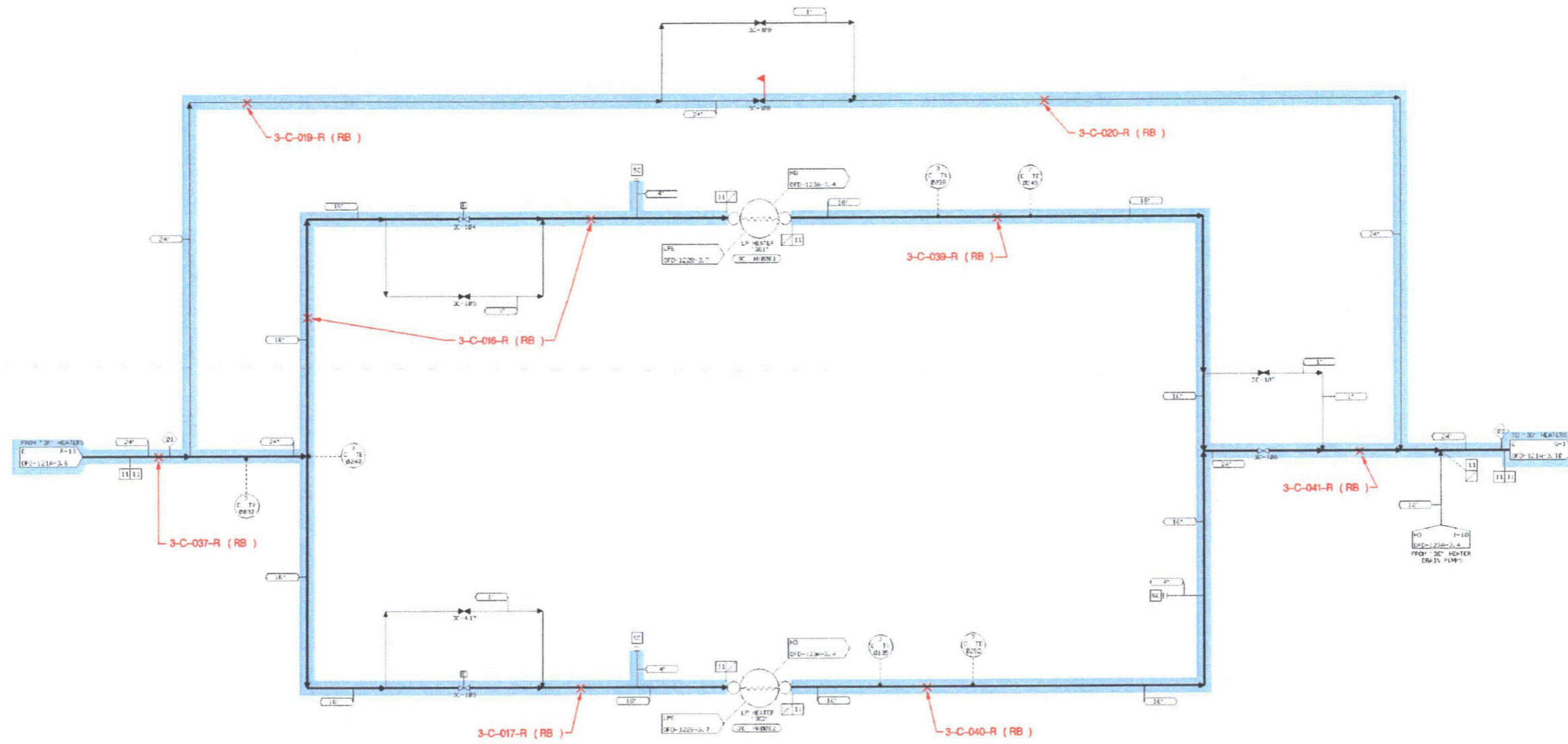
**FIGURE 6.1-2
CONDENSATE SYSTEM**

High Energy Lines, Piping Configurations,
Boundaries, Break Locations and Numbers
(Sheet 1 of 5)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
BREAK PURPOSES ONLY.
REFERENCE FLOW DIAGRAM OFD-121A-3.6 FOR
COMPLETE SYSTEM DESIGN INFORMATION.

HELB-121A-03-06



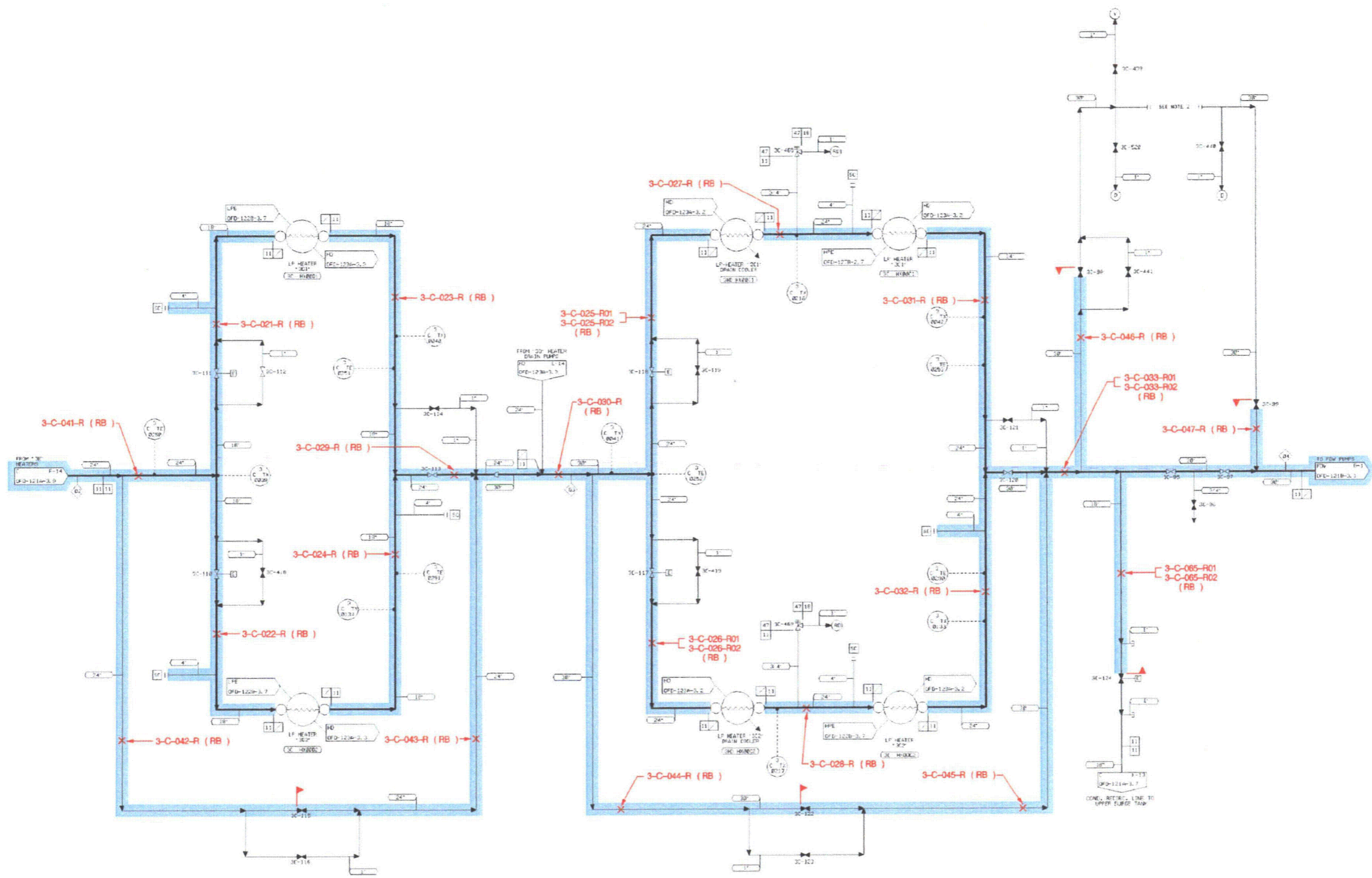
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NINN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - |— - Running Break Boundary

FIGURE 6.1-2
CONDENSATE SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 5)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-121A-3.9 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-121A-03-09



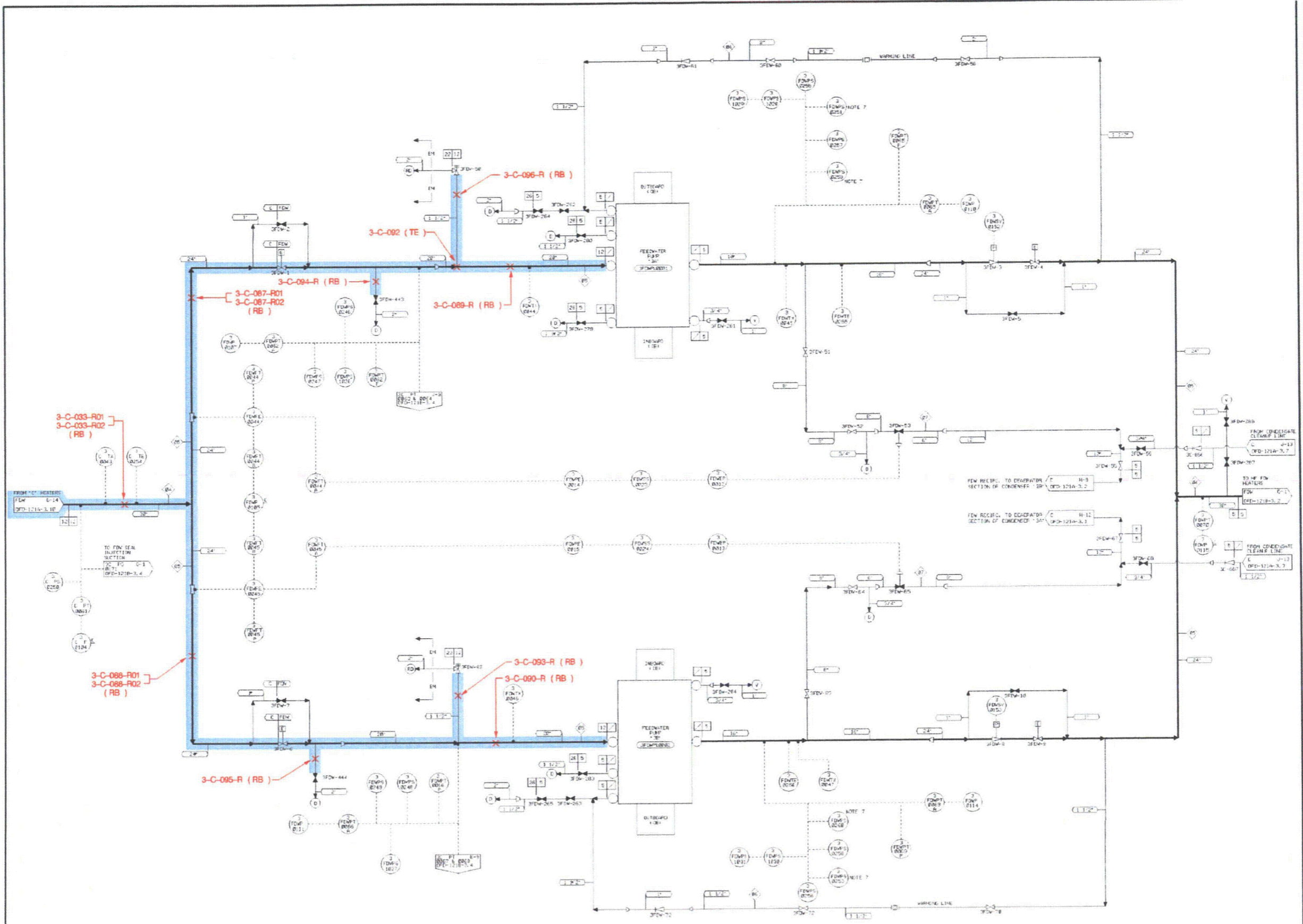
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - |— - Running Break Boundary

FIGURE 6.1-2
CONDENSATE SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 5)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-121A-3.10 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-121A-03-10



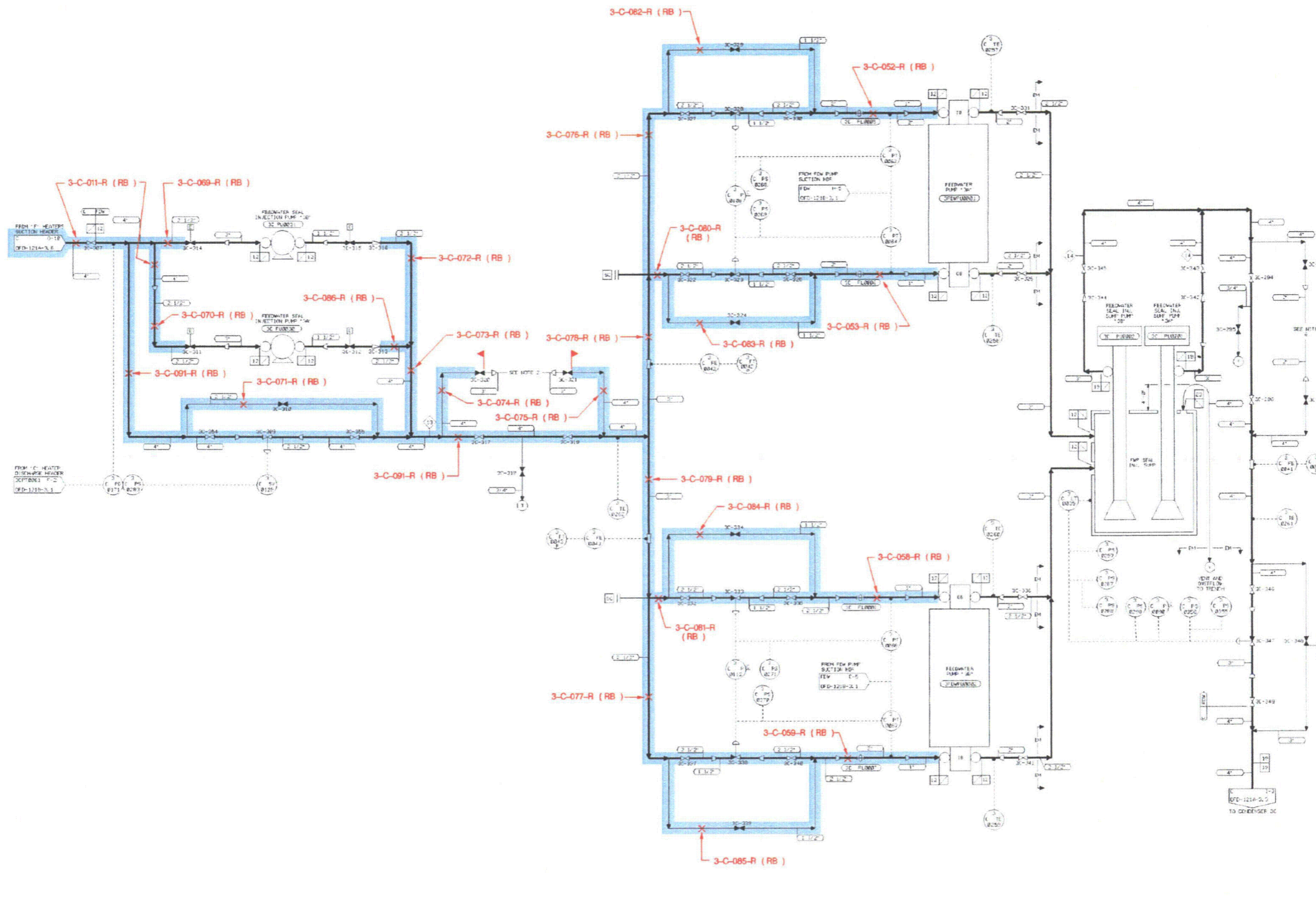
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - |— - Running Break Boundary

FIGURE 6.1-2
CONDENSATE SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 4 of 5)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-121B-3.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-121B-03-01



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▶ - Running Break Boundary

**FIGURE 6.1-2
CONDENSATE SYSTEM**

High Energy Lines, Piping Configurations,
Boundaries, Break Locations and Numbers
(Sheet 5 of 5)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
BREAK PURPOSES ONLY.
REFERENCE FLOW DIAGRAM OFD-121B-3.4 FOR
COMPLETE SYSTEM DESIGN INFORMATION.

HELB-121B-03-04

Table 6.1-3
 Extraction Steam System – High Energy Line Data – Unit 3

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-) See Note 6	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-ES-002-R	122B-3.2	RB	16.000	0.375	TB	2401E	796'-6"	J-K	51-52	455	465
3-ES-004-R	122B-3.2 122C-3.1	RB	16.000	0.500	TB	2401B	796'-6"	G-K	51-56	460	480
3-ES-005-R	122B-3.2 122B-3.6	RB	1.900	0.145	TB	2401B, 2411C	796'-6"	J-K	48-53	455	465
3-ES-008-R	122B-3.2	RB	1.660	0.140	TB	2403D	796'-6"	F-G	52-53	275	420
3-ES-009-R	122B-3.2	RB	1.900	0.145	TB	2403D	796'-6"	F-G	52-53	275	420
3-ES-010-R	122B-3.2	RB	42.000	0.625	TB	2401B	796'-6"	E-H	52-54	165	375
3-ES-011-R	122B-3.2	RB	24.000	0.375	TB	2401B	796'-6"	E-F	52-54	165	375
3-ES-012-R	122B-3.2 122B-3.7	RB	30.000	0.375	TB	2401B	796'-6"	E-K	53-56	165	375
3-ES-013-R	122B-3.2 148B-3.1	RB	4.500	0.237	TB	2403D	796'-6"	F-G	54-55	165	375
3-ES-014-R	122B-3.2	RB	42.000	0.625	TB	2401B	796'-6"	C-F	52-54	165	375
3-ES-015-R	122B-3.2	RB	42.000	0.625	TB	2401B	796'-6"	E-J	52-53	165	375
3-ES-016-R	122B-3.2	RB	30.000	0.500	TB	2401B	796'-6"	C-D	53-55	155	510
3-ES-017-R	122B-3.2 122B-3.4	RB	36.000	0.500	TB	2401A, 2401B	796'-6"	C-E	49-54	155	510
3-ES-018-R	122B-3.2	RB	30.000	0.500	TB	2401B	796'-6"	G-H	53-55	155	510
3-ES-019-R	122B-3.2 122B-3.4	RB	36.000	0.500	TB	2401A, 2401B	796'-6"	F-H	49-54	155	510
3-ES-020-R	122B-3.2 122B-3.5	RB	36.000	0.500	TB	2401A, 2401B	796'-6"	F-J	47-54	155	510
3-ES-021-R	122B-3.2 122B-3.3	RB	30.000	0.500	TB	2401B	796'-6"	G-J	53-55	155	510
3-ES-022-R	122B-3.2 122B-3.5	RB	36.000	0.500	TB	2401A, 2401B	796'-6"	B-E	47-54	155	510
3-ES-023-R	122B-3.2 122B-3.3	RB	30.000	0.500	TB	2401B	796'-6"	B-D	53-55	155	510
3-ES-024-R	122B-3.2	RB	42.000	0.625	TB	2401B	796'-6"	B-F	52-53	165	375
3-ES-025-R	122B-3.3	RB	18.000	0.375	TB	2401B, 2200-41	796'-6"	F-G	51-52	155	510
3-ES-026-R	122B-3.3	RB	18.000	0.375	TB	2401B, 2200-41	796'-6"	D-E	51-52	155	510
3-ES-027-R	122B-3.2 122B-3.3	RB	36.000	0.500	TB	2401B	796'-6"	C-E	51-54	155	510
3-ES-028-R	122B-3.2 122B-3.3	RB	36.000	0.500	TB	2401B	796'-6"	F-H	51-54	155	510
3-ES-029-R	122B-3.3	RB	18.000	0.375	TB	2401B	796'-6"	E-F	51-52	45	295
3-ES-030-R	122B-3.3	RB	18.000	0.375	TB	2401B	796'-6"	E-F	50-51	45	295

Table 6.1-3
 Extraction Steam System – High Energy Line Data – Unit 3

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-) See Note 6	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-ES-031-R	122B-3.3 122B-3.7	RB	20.000	0.375	TB	2401B	796'-6"	E-H	50-52	45	295
3-ES-032-R	122B-3.3 122B-3.7	RB	20.000	0.375	TB	2401B	796'-6"	E-H	50-51	45	295
3-ES-033-R	122B-3.3	RB	2.875	0.203	TB	2401L	796'-6"	F-G	51-52	45	295
3-ES-034-R	122B-3.3	RB	2.875	0.203	TB	2401L	796'-6"	F-G	50-51	45	295
3-ES-041-R	122B-3.4	RB	18.000	0.375	TB	2401A, 2200-41	796'-6"	D-E	49-50	155	510
3-ES-042-R	122B-3.4	RB	18.000	0.375	TB	2401A, 2200-41	796'-6"	F-G	49-50	155	510
3-ES-043-R	122B-3.4	RB	18.000	0.375	TB	2401A	796'-6"	E-F	49-50	45	295
3-ES-044-R	122B-3.4	RB	18.000	0.375	TB	2401A	796'-6"	E-F	48-49	45	295
3-ES-045-R	122B-3.4 122B-3.7	RB	20.000	0.375	TB	2401A	796'-6"	E-H	49-50	45	295
3-ES-046-R	122B-3.4 122B-3.7	RB	20.000	0.375	TB	2401A	796'-6"	E-H	48-49	45	295
3-ES-047-R	122B-3.4	RB	2.875	0.203	TB	2401L	796'-6"	F-G	49-50	45	295
3-ES-048-R	122B-3.4	RB	2.875	0.203	TB	2401L	796'-6"	F-G	48-49	45	295
3-ES-055-R	122B-3.5	RB	18.000	0.375	TB	2401A, 2200-41	796'-6"	F-G	47-48	155	510
3-ES-056-R	122B-3.5	RB	18.000	0.375	TB	2401A, 2200-41	796'-6"	D-E	47-48	155	510
3-ES-057-R	122B-3.5	RB	18.000	0.375	TB	2401A	796'-6"	E-F	47-48	45	295
3-ES-058-R	122B-3.5	RB	18.000	0.375	TB	2401A	796'-6"	E-F	46-47	45	295
3-ES-059-R	122B-3.5 122B-3.7	RB	20.000	0.375	TB	2401A	796'-6"	E-H	47-48	45	295
3-ES-060-R	122B-3.5 122B-3.7	RB	20.000	0.375	TB	2401A	796'-6"	E-H	46-48	45	295
3-ES-061-R	122B-3.5	RB	2.875	0.203	TB	2401L	796'-6"	F-G	46-47	45	295
3-ES-062-R	122B-3.5	RB	2.875	0.203	TB	2401L	796'-6"	F-G	47-48	45	295
3-ES-078-R	122B-3.7	RB	30.000	0.375	TB	2401H	796'-6"	G-H	49-51	45	295
3-ES-079-R	122B-3.7	RB	30.000	0.375	TB	2401H	796'-6"	G-H	47-49	45	295
3-ES-080-R	122B-3.7	RB	48.000	0.375	TB	2401H	796'-6"	G-H	48-50	45	295
3-ES-081-R	122B-3.7	RB	48.000	0.375	TB	2401A	796'-6"	G-J	49-50	45	295
3-ES-082-R	122B-3.7	RB	42.000	0.375	TB	2401A, 2401B	796'-6"	H-L	49-54	45	295
3-ES-083-R	122B-3.7	RB	30.000	0.375	TB	2401B	796'-6"	J-L	52-54	45	295
3-ES-084-R	122B-3.6	RB	2.875	0.203	TB	2401A, 2411B	796'-6"	K-L	48-49	455	465
3-ES-085-R	122B-3.7	RB	2.375	0.154	TB	2401B	796'-6"	K-L	52-54	45	295
3-ES-086-R	122B-3.7	RB	2.375	0.154	TB	2401B	796'-6"	J-K	53-54	165	375
3-ES-087-R	122B-3.7	RB	24.000	0.375	TB	2401B	796'-6"	K-L	53-55	165	375

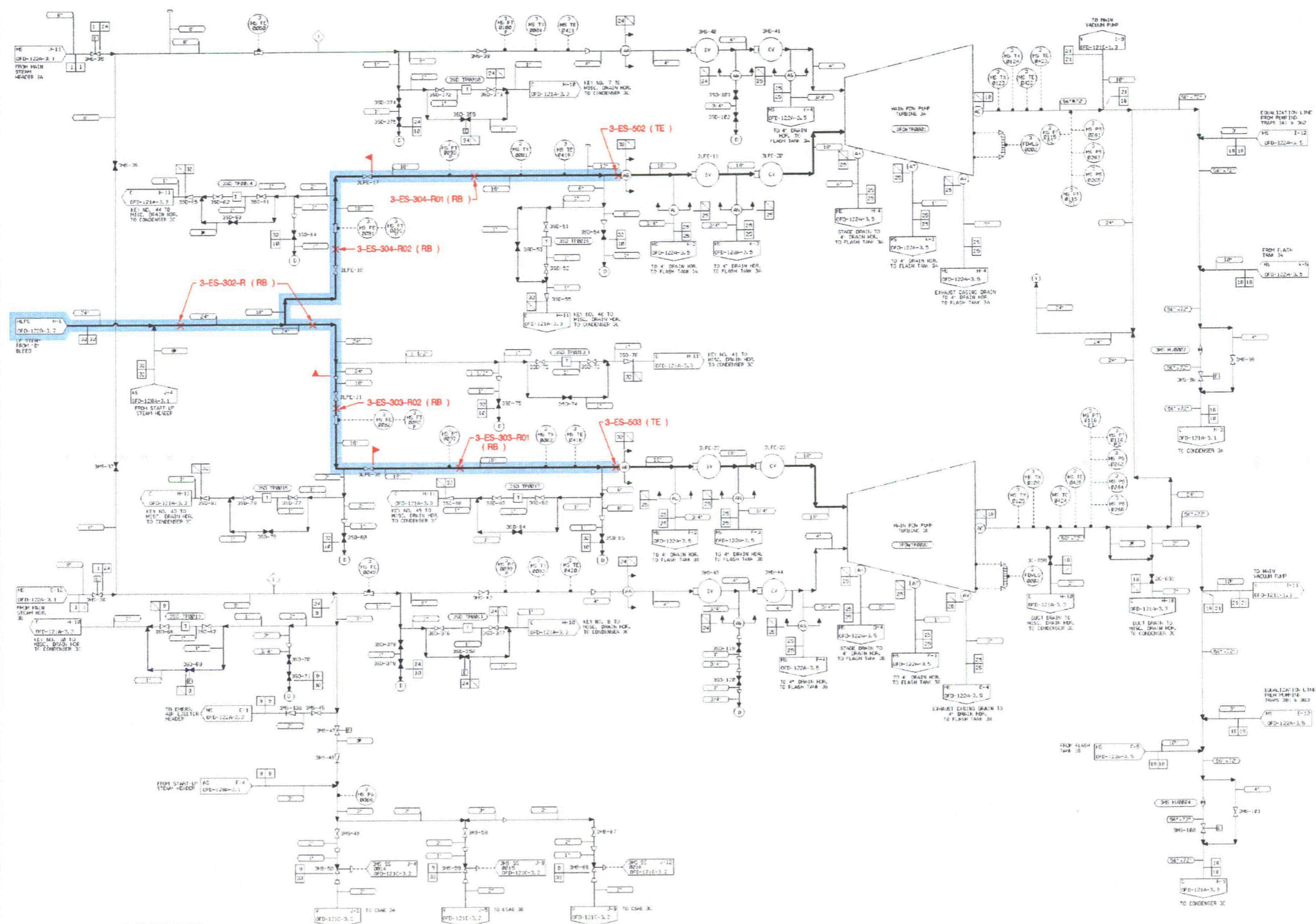
Table 6.1-3
 Extraction Steam System – High Energy Line Data – Unit 3

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-) See Note 6	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-ES-094-R	122C-3.1	RB	12.750	0.375	TB	2401B	796'-6"	C-H	55-56	460	480
3-ES-095-R	122C-3.1	RB	8.625	0.322	TB	2200-52-01	796'-6"	G-J	54-56	460	480
3-ES-096-R	122C-3.1	RB	10.750	0.365	TB	2200-52-01	796'-6"	H-J	54-55	460	480
3-ES-097-R	122C-3.1	RB	10.750	0.365	TB	2200-52-01	796'-6"	G-H	55-56	460	480
3-ES-098-R	122C-3.1	RB	8.625	0.322	TB	2200-52-02	796'-6"	B-D	54-56	460	480
3-ES-099-R	122C-3.1	RB	10.750	0.365	TB	2200-52-02	796'-6"	B-C	54-55	460	480
3-ES-100-R	122C-3.1	RB	10.750	0.365	TB	2200-52-02	796'-6"	C-D	55-56	460	480
3-ES-211-R	122B-3.2	RB	24.000	0.375	TB	2401B	796'-6"	E-F	52-54	165	375
3-ES-283-R	122B-3.7	RB	30.000	0.375	TB	2401B	796'-6"	K-L	52-54	45	295
3-ES-287-R	122B-3.7	RB	24.000	0.375	TB	2401B	796'-6"	K-L	53-55	165	375
3-ES-301-R	122B-3.7	RB	24.000	0.375	TB	2401A, 2401I	796'-6"	H-K	48-50	45	295
3-ES-302-R	122B-3.7 122A-3.3	RB	24.000	0.375	TB	2401A, 2401H, 2401I, 2403C	796'-6"	G-K	45-49	45	350
3-ES-303-R01	122A-3.3	RB	18.000	0.375	TB	2400A	775'-0"	C-Dd	43-46	45	350
3-ES-303-R02	122A-3.3	RB	18.000	0.375	TB	2401A, 2401H, 2401K	796'-6"	D-H	45-46	45	350
3-ES-304-R01	122A-3.3	RB	18.000	0.375	TB	2400A	775'-0"	C-Dd	45-46	45	350
3-ES-304-R02	122A-3.3	RB	18.000	0.375	TB	2401A, 2401H, 2401K	796'-6"	D-H	45-46	45	350
3-ES-310-R	122B-3.2	RB	12.750	0.375	TB	2401B, 2401G	796'-6"	E-F	52-53	275	420
3-ES-311-R	122B-3.2	RB	12.750	0.375	TB	2401B, 2401G	796'-6"	E-F	52-53	275	420
3-ES-312-R	122B-3.2 122B-3.6	RB	18.000	0.375	TB	2401A, 2401B 2401G	796'-6"	E-L	49-53	275	420
3-ES-313-R	122B-3.6	RB	12.750	0.375	TB	2401A, 2401B	796'-6"	J-L	49-51	275	420
3-ES-314-R	122B-3.6	RB	12.750	0.375	TB	2401A, 2401B	796'-6"	K-M	49-51	275	420
3-ES-320-R	122B-3.2	RB	14.000	0.375	TB	2401B, 2401G	796'-6"	E-F	52-53	470	480
3-ES-321-R	122B-3.2	RB	14.000	0.375	TB	2401B, 2401G	796'-6"	E-F	52-53	470	480
3-ES-322-R	122B-3.2	RB	20.000	0.500	TB	2401B, 2401G	796'-6"	E-K	51-53	470	480
3-ES-323-R	122B-3.2 122B-3.6	RB	16.000	0.500	TB	2401A, 2401B	796'-6"	H-L	48-52	470	480
3-ES-324-R	122B-3.6	RB	12.750	0.375	TB	2401A	796'-6"	J-L	47-49	470	480
3-ES-325-R	122B-3.6	RB	12.750	0.375	TB	2401A	796'-6"	K-M	47-49	470	480
3-ES-501	122B-3.7	TE	24.000	0.375	TB	2401A	796'-6"	H-J	49-50	45	295
3-ES-502	122A-3.3	TE	18.000	0.375	TB	2400A	775'-0"	B-D	45-46	45	350
3-ES-503	122A-3.3	TE	18.000	0.375	TB	2400A	775'-0"	B-D	43-44	45	350

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-) See Note 6	Floor Elev.	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-ES-504	122B-3.2	TE	14.000	0.375	TB	2401B	796'-6"	E-F	52-53	455	465
3-ES-505	122B-3.2	TE	14.000	0.375	TB	2401B	796'-6"	E-F	52-53	455	465
3-ES-506	122B-3.6	TE	12.750	0.375	TB	2401A	796'-6"	J-K	48-49	455	465
3-ES-507	122B-3.6	TE	12.750	0.375	TB	2401A	796'-6"	K-L	48-49	455	465
3-ES-508	122B-3.2	TE	12.750	0.375	TB	2401B	796'-6"	E-F	52-53	275	420
3-ES-509	122B-3.2	TE	12.750	0.375	TB	2401B	796'-6"	E-F	52-53	275	420
3-ES-510	122B-3.6	TE	14.000	0.375	TB	2401A	796'-6"	J-K	49-50	275	420
3-ES-511	122B-3.6	TE	14.000	0.375	TB	2401A	796'-6"	K-L	49-50	275	420

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break
3. Building: TB – Turbine Building, AB – Auxiliary Building.
4. Each running break may contain one or more Sub-breaks.
5. For the Unit 3 Extraction Steam System 113 Running Breaks and 11 Terminal End Breaks were considered; the non-excluded breaks listed in this table include 83 Running Breaks and 11 Terminal End Breaks.
6. Layout of piping system may be shown on vendor supplied drawings (OM-)
7. For each Running Break and each Terminal End Break the elevation of the floor or room that contains the break is given.
8. Other Abbreviations: OD – Outer Diameter, in – inches, Op - operating



LEGEND

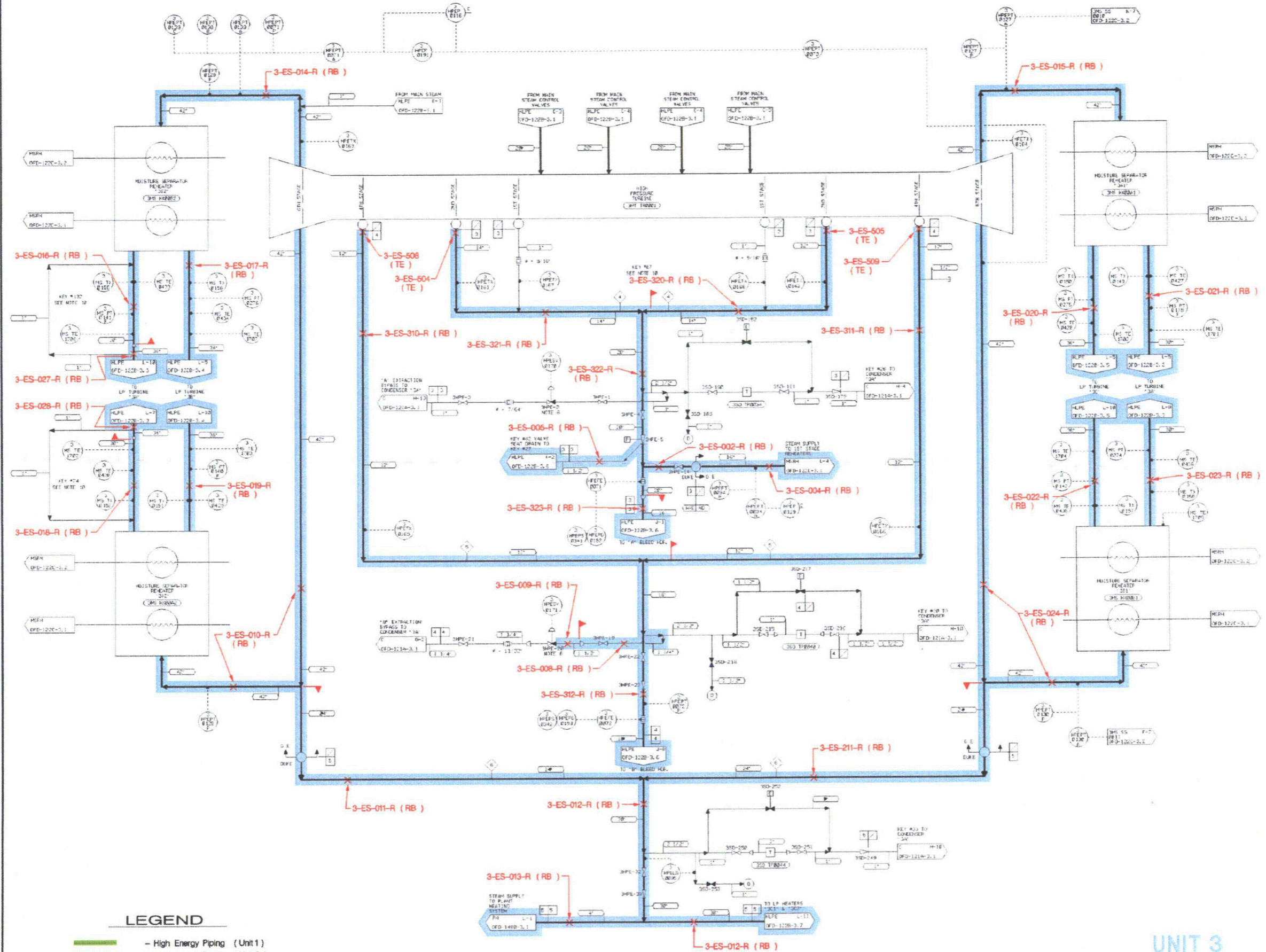
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- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 1 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-3.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122A-03-03



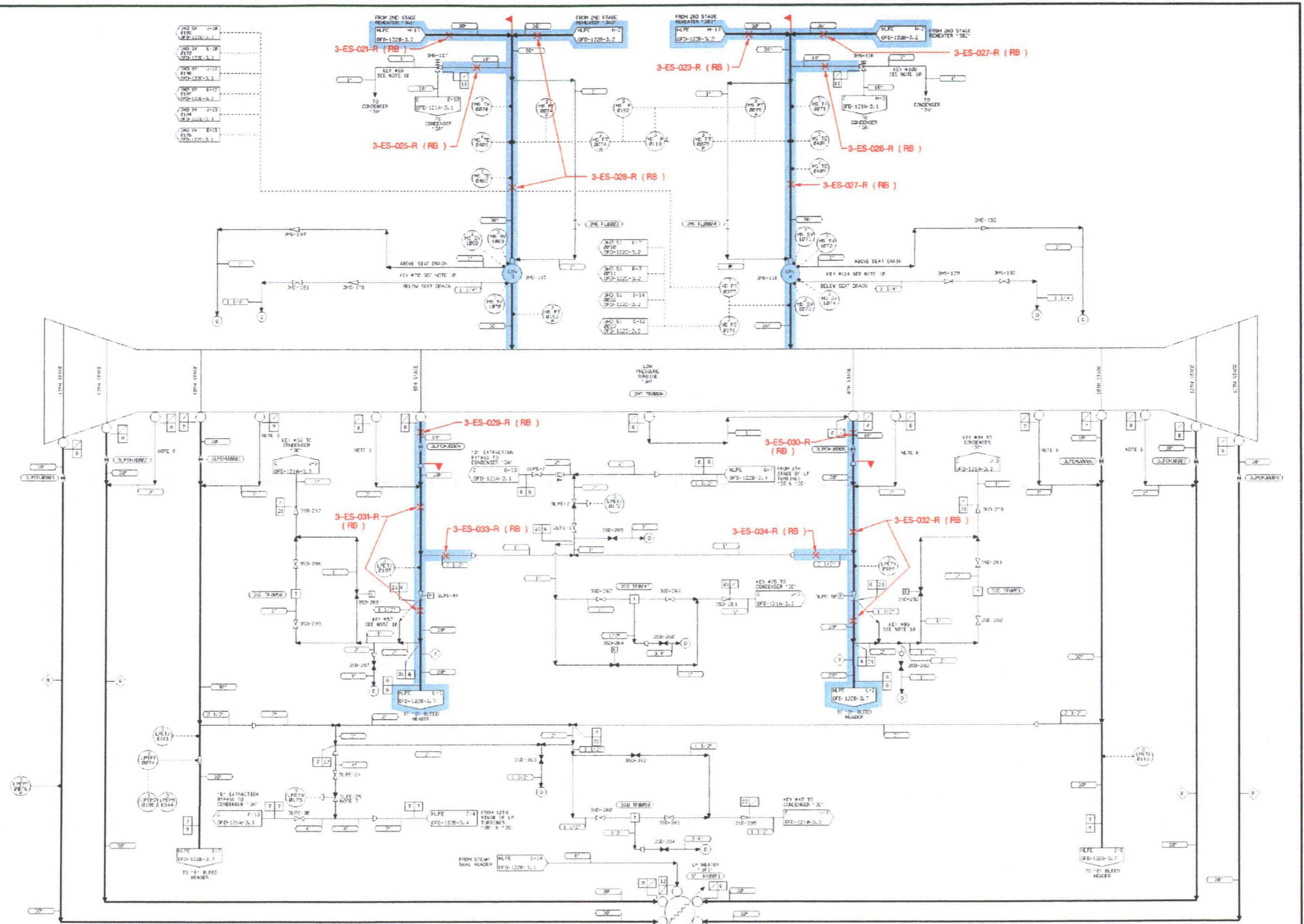
- LEGEND**
- High Energy Piping (Unit 1)
 - High Energy Piping (Unit 2)
 - High Energy Piping (Unit 3)
 - X High Energy Line Break Location
 - N-SYS-NNIN (-N) Break Number
 - TE Terminal End (Break)
 - RB Running Break
 - CR Critical Crack
 - IB Intermediate Break
 - ▶ Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 2 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122A-3.2 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122B-03-02



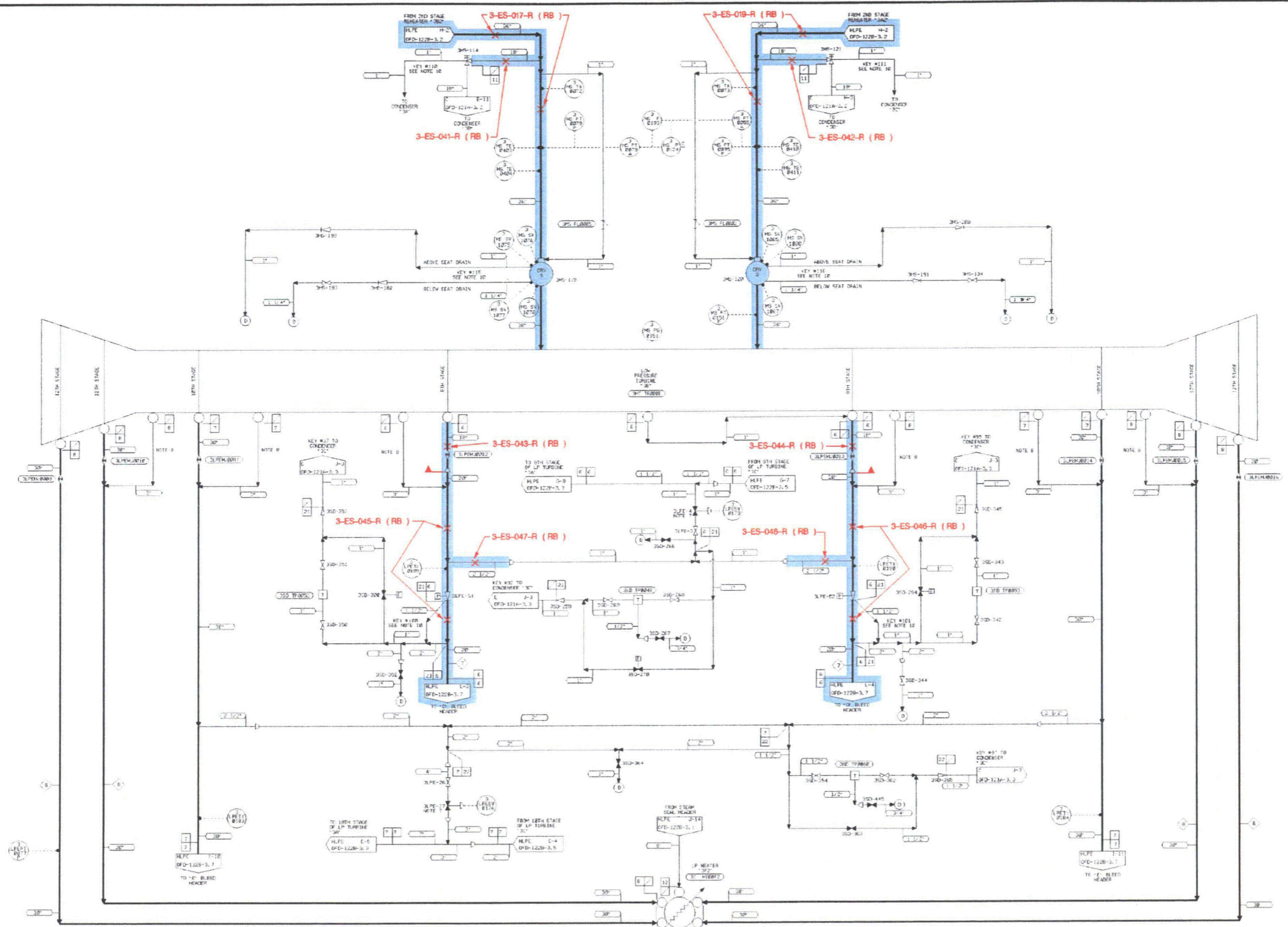
LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ↑ - Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 3 of 9)

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-3.3 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HEL B-122B-03-03



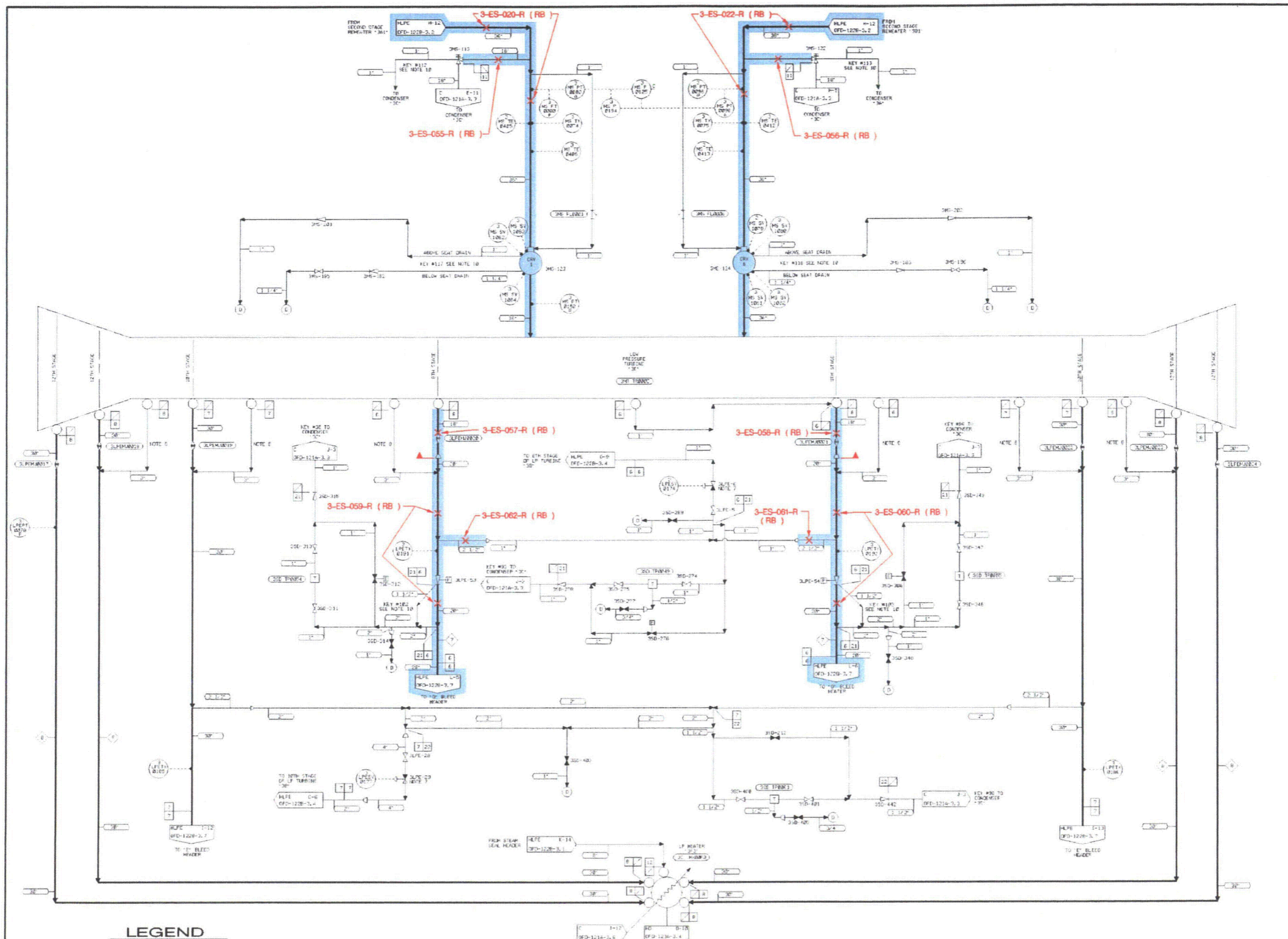
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - P - Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 4 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-3.4 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122B-03-04



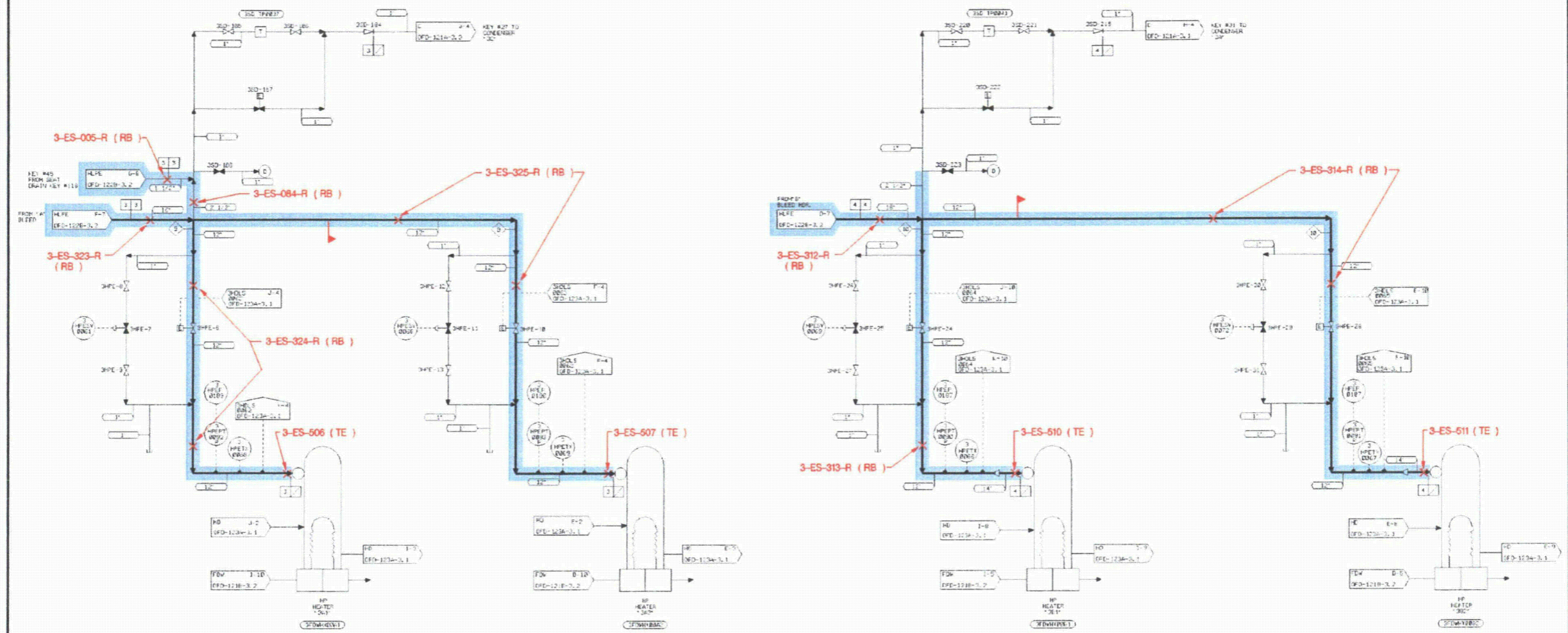
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - |— - Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 5 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-3.5 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122B-03-05

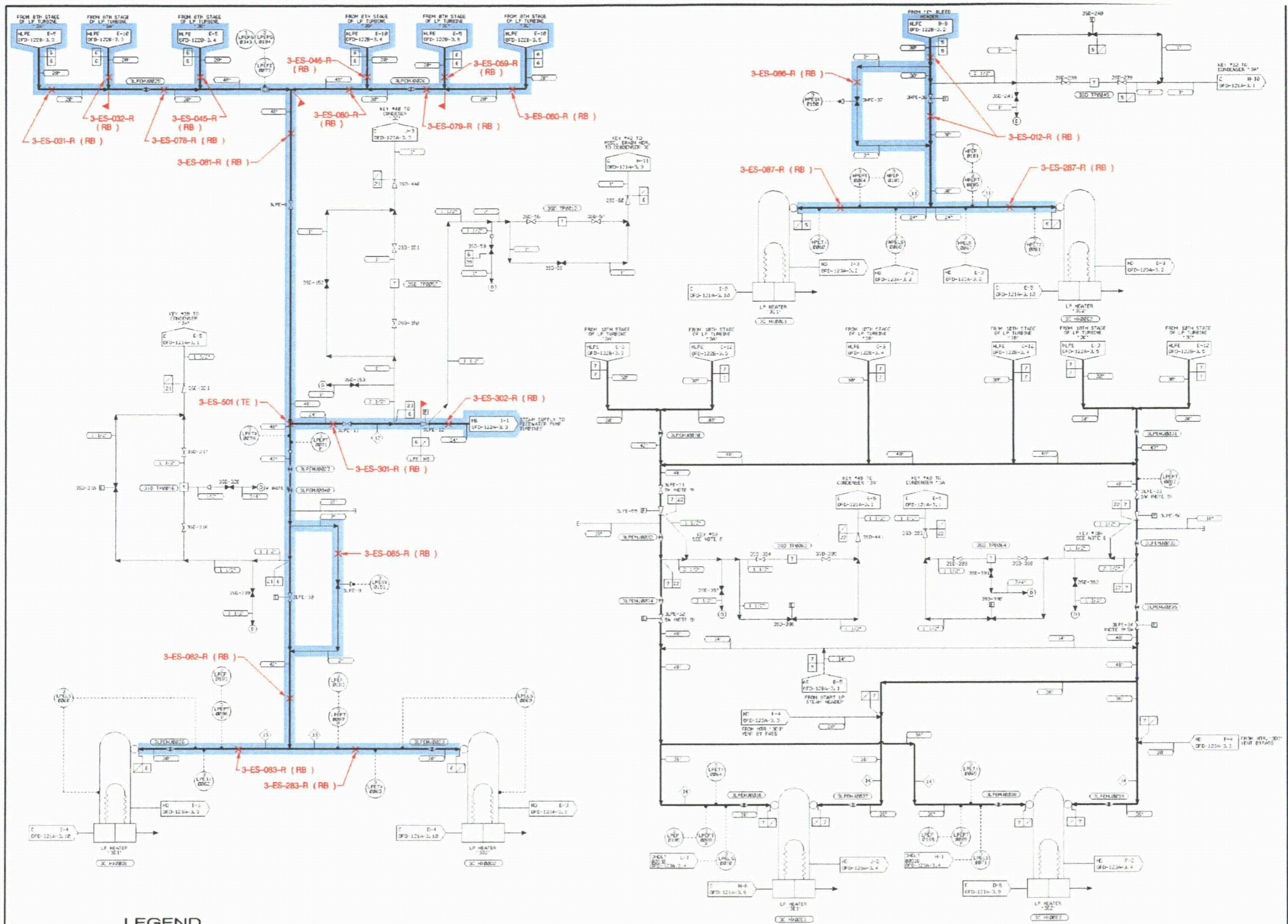


- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - ▶ - Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 6 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-3.6 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.
HELB-122B-03-06



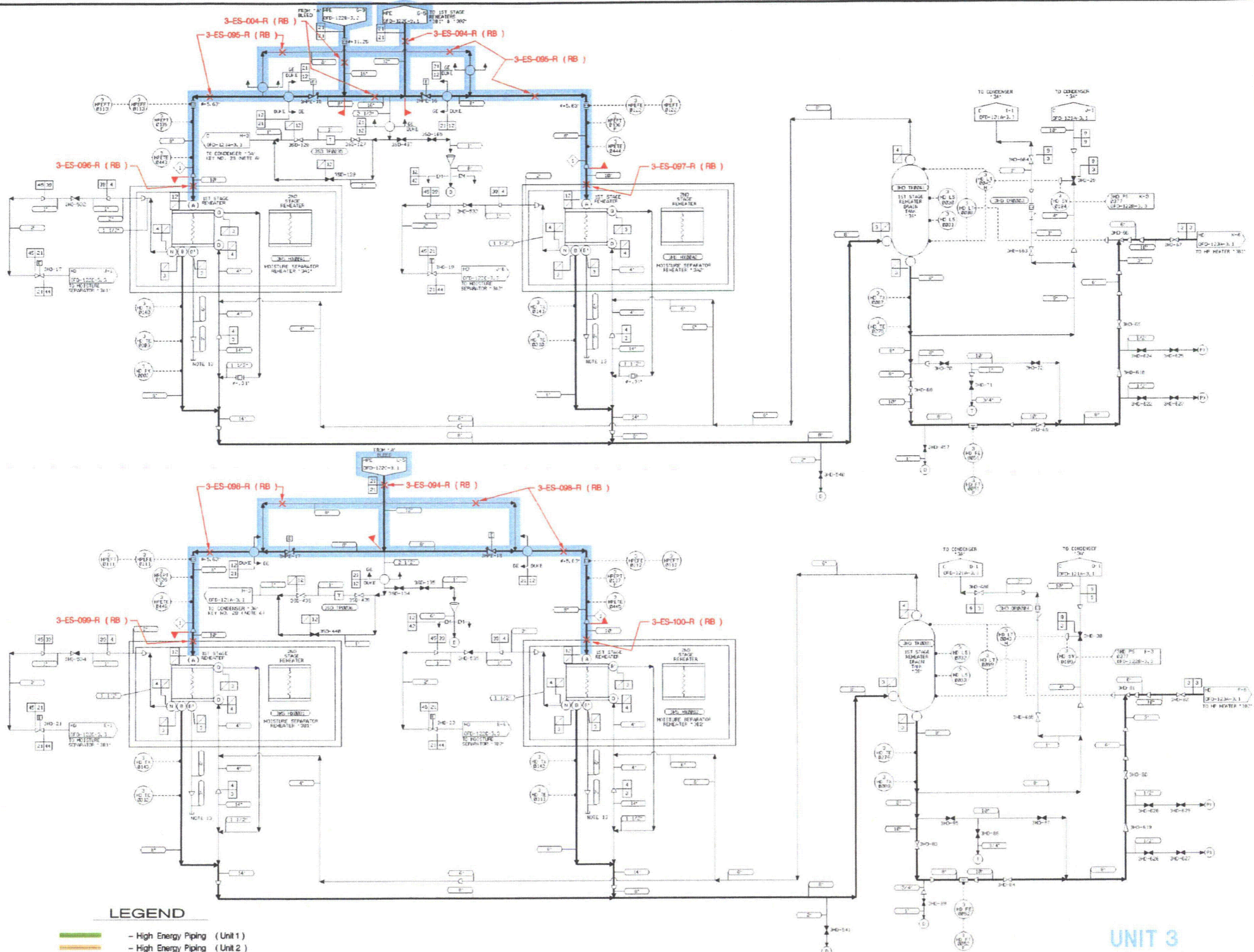
- LEGEND**
- - High Energy Piping (Unit 1)
 - - High Energy Piping (Unit 2)
 - - High Energy Piping (Unit 3)
 - X - High Energy Line Break Location
 - N-SYS-NNN (-N) - Break Number
 - TE - Terminal End (Break)
 - RB - Running Break
 - CR - Critical Crack
 - IB - Intermediate Break
 - P - Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 7 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122B-3.7 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-122B-03-07



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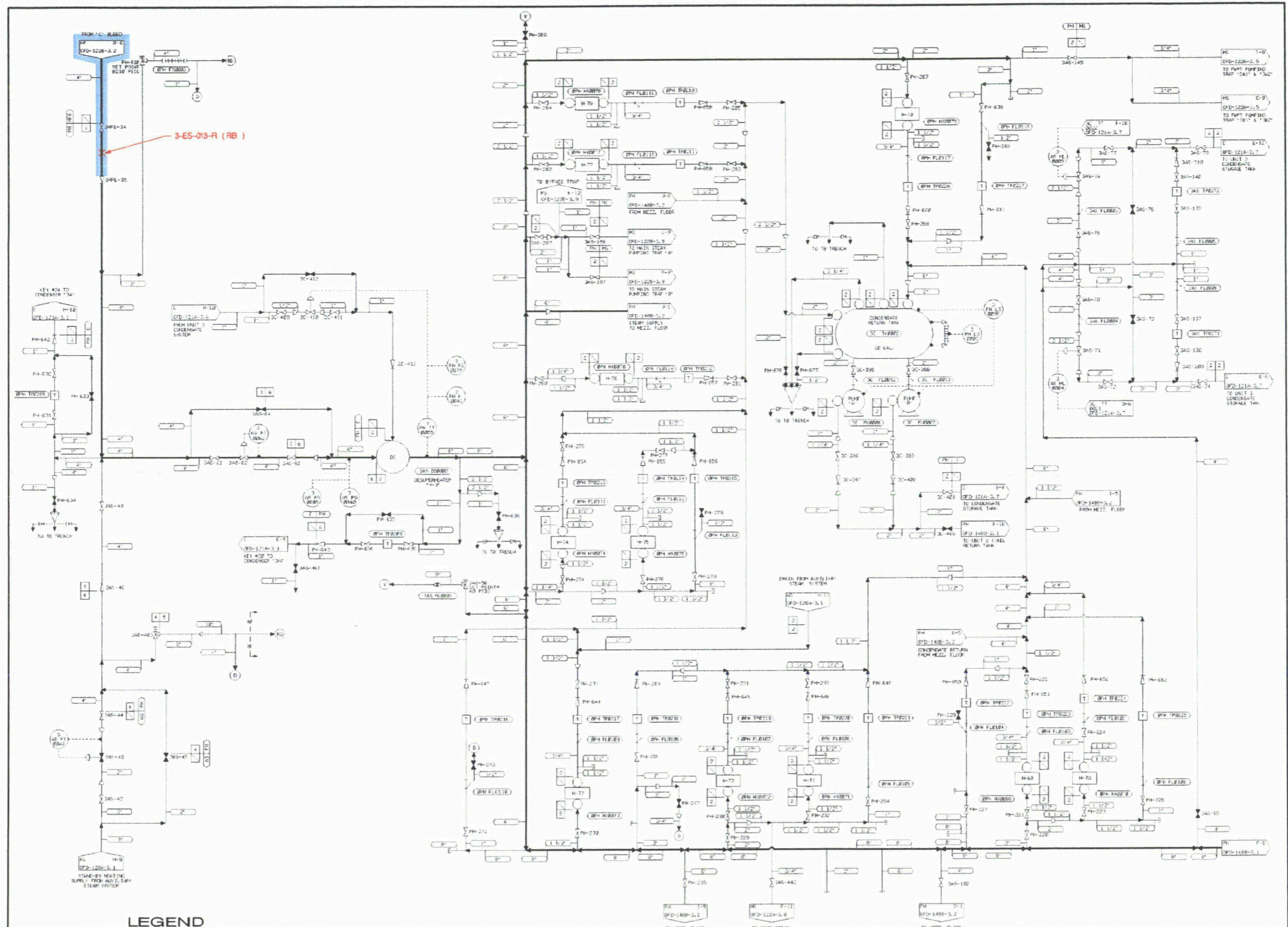
- High Energy Piping (Unit 1)
- High Energy Piping (Unit 2)
- High Energy Piping (Unit 3)
- X High Energy Line Break Location
- N-SYS-NNN (-N) Break Number
- TE Terminal End (Break)
- RB Running Break
- CR Critical Crack
- IB Intermediate Break
- Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 8 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-122C-3.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION

HELB-122C-03-01



LEGEND

- - High Energy Piping (Unit 1)
- - High Energy Piping (Unit 2)
- - High Energy Piping (Unit 3)
- X - High Energy Line Break Location
- N-SYS-NNN (-N) - Break Number
- TE - Terminal End (Break)
- RB - Running Break
- CR - Critical Crack
- IB - Intermediate Break
- ▴ - Running Break Boundary

FIGURE 6.1-3
EXTRACTION STEAM SYSTEM
 High Energy Lines, Piping Configurations,
 Boundaries, Break Locations and Numbers
 (Sheet 9 of 9)

UNIT 3

THIS DIAGRAM IS FOR HIGH ENERGY LINE
 BREAK PURPOSES ONLY.
 REFERENCE FLOW DIAGRAM OFD-148B-3.1 FOR
 COMPLETE SYSTEM DESIGN INFORMATION.

HELB-148B-03-01

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-FDW-001	121B-3.2	TE	24	1.219	TB	2400A	782'-0"	J-K	48-49	1020	454
3-FDW-002	121B-3.2	TE	24	1.219	TB	2400A	782'-0"	J-K	48-49	1020	408
3-FDW-003	121B-3.2	TE	24	1.219	TB	2400A	782'-0"	K-L	48-49	1020	454
3-FDW-004	121B-3.2	TE	24	1.219	TB	2400A	782'-0"	K-L	48-49	1020	408
3-FDW-005-R	121B-3.2	RB	24	1.219	TB	2400A	775'-0"	J-K	49-50	1020	365
3-FDW-006-R	121B-3.2	RB	24	1.219	TB	2400A	775'-0"	H-L	48-50	1020	408
3-FDW-007-R	121B-3.2	RB	24	1.219	TB	2400A	775'-0"	K-M	49-50	1020	365
3-FDW-008-R	121B-3.2	RB	24	1.219	TB	2400A	775'-0"	K-M	48-50	1020	408
3-FDW-009	121B-3.1	TE	8.625	0.500	TB	2400C	786'-0"	C-D	45-46	1020	365
3-FDW-010	121B-3.1	TE	8.625	0.500	TB	2400C	786'-0"	C-D	43-44	1020	365
3-FDW-011-R	121B-3.1	RB	1.900	0.200	TB	2407A	775'-0"	B-D	44-46	1020	365
3-FDW-012-R	121B-3.1	RB	1.900	0.200	TB	2407A	775'-0"	C-E	43-44	1020	365
3-FDW-013-R	121B-3.1	RB	1.900	0.200	TB	2407G	775'-0"	C-D	45-46	1020	365
3-FDW-014-R	121B-3.1	RB	1.900	0.200	TB	2407G	775'-0"	C-D	43-44	1020	365
3-FDW-017	121B-3.3	IB	6.625	0.432	TB	2401C	812'-7"	L-M	46-47	1020	454
3-FDW-019-R	121B-3.1	RB	1.900	0.200	TB	2407G	775'-0"	C-D	45-46	1020	365
3-FDW-020-R	121B-3.1	RB	1.900	0.200	TB	2407G	775'-0"	C-D	43-44	1020	365
3-FDW-021-R	121B-3.1	RB	16	0.844	TB	2400C	775'-0"	C-D	45-46	1020	365
3-FDW-022-R	121B-3.1	RB	16	0.844	TB	2400C	775'-0"	C-D	43-44	1020	365
3-FDW-023	121B-3.3	TE	6.625	0.432	TB	2401C	805'-0"	K-L	47-48	1020	454
3-FDW-024	121B-3.3	TE	6.625	0.432	TB	2401C	810'-9"	L-M	47-48	1020	454
3-FDW-025	121B-3.3	TE	6.625	0.432	TB	2401C	805'-0"	K-L	46-47	1020	454
3-FDW-026	121B-3.3	TE	6.625	0.432	TB	2401C	816'-6"	L-M	46-47	1020	454
3-FDW-027	121B-3.3	TE	24	1.218	AB	2439B	828'-6"	East Penetration Room No. 562		1020	454
3-FDW-028	121B-3.3	TE	24	1.218	AB	2439B	828'-6"	East Penetration Room No. 562		1020	454
3-FDW-029-R01	121B-3.1	RB	24	1.218	TB	2400A	775'-0"	B-D	43-46	1020	365
3-FDW-029-R02	121B-3.1	RB	24	1.218	TB	2401A	796'-6"	C-E	43-45	1020	365
3-FDW-030-R01	121B-3.1	RB	24	1.218	TB	2400A	775'-0"	C-E	43-44	1020	365
3-FDW-030-R02	121B-3.1	RB	24	1.218	TB	2401A, 2401K	796'-6"	D-E	43-45	1020	365

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-FDW-031-R	121B-3.2 121B-3.1	RB	30	1.157	TB	2401A	796'-6"	D-L	44-50	1020	365
3-FDW-032-R	121B-3.2	RB	20	1.031	TB	2400A	775'-0"	H-K	49-50	1020	408
3-FDW-033-R	121B-3.1	RB	2.375	0.218	TB	2407G	775'-0"	C-D	45-46	1020	365
3-FDW-034-R	121B-3.2	RB	20	1.031	TB	2400A	775'-0"	L-M	49-50	1020	408
3-FDW-035-R01	121B-3.2	RB	24	1.218	TB	2400A	775'-0"	J-L	49-50	1020	365
3-FDW-035-R02	121B-3.2	RB	24	1.218	TB	2401D	796'-6"	K-L	49-50	1020	365
3-FDW-036-R01	121B-3.2	RB	24	1.218	TB	2400A	775'-0"	K-M	49-50	1020	365
3-FDW-036-R02	121B-3.2	RB	24	1.218	TB	2401D	796'-6"	K-L	49-50	1020	365
3-FDW-037-R	121B-3.3	RB	2.375	0.218	TB	2401C	796'-6"	K-L	46-47	1020	454
3-FDW-041-R01	121B-3.1	RB	8.625	0.5	TB	2400A, 2400C	775'-0"	C-D	43-46	1020	365
3-FDW-041-R02	121B-3.1	RB	8.625	0.5	TB	2401B, 2401A 2401K	796'-6"	B-E	45-52	1020	365
3-FDW-042-R01	121B-3.1	RB	8.625	0.5	TB	2400A, 2400C	775'-0"	C-D	45-46	1020	365
3-FDW-042-R02	121B-3.1	RB	8.625	0.5	TB	2401A	796'-6"	B-E	45-50	1020	365
3-FDW-043-R	121B-3.3	RB	12.75	0.687	TB	2401A	796'-6"	K-L	47-48	1020	454
3-FDW-044-R	121B-3.3	RB	12.75	0.687	TB	2401A	796'-6"	K-M	46-47	1020	454
3-FDW-045-CR	121B-3.2	CR	30	1.157	TB	2401A	796'-6"	J-K	46-47	1020	454
3-FDW-046	121B-3.2	IB	24	1.218	TB	2400A	775'-0"	K-L	48-49	1020	454
3-FDW-049	121B-3.3	IB	6.625	0.432	TB	2401A	810'-9"	L-M	47-48	1020	454
3-FDW-050-CR	121B-3.3	CR	24	1.218	TB	2401A	805'-0"	K-L	47-48	1020	454
3-FDW-051-CR	121B-3.3	CR	30	1.157	TB	2401A	813'-0"	H-J	46-48	1020	454
3-FDW-052-CR	121B-3.3	CR	24	1.218	TB	2401A	805'-0"	K-M	46-47	1020	454
3-FDW-053-CR	121B-3.3	CR	24	1.218	TB	2401A, 2401D	816'-6"	L-M	45-46	1020	454
3-FDW-054-CR	121B-3.3	CR	24	1.218	TB	2401D	816'-6"	L-M	46-47	1020	454
3-FDW-055-CR	121B-3.3	CR	24	1.218	AB	2439A	817'-6"	East Penetration Room No. 452		1020	454
3-FDW-056-CR	121B-3.3	CR	24	1.218	AB	2439B	828'-6"	East Penetration Room No. 562		1020	454
3-FDW-057-CR	121B-3.2	CR	24	1.218	TB	2400F	791'-4"	K-L	48-49	1020	454
3-FDW-058-CR	121B-3.3 121D-3.1	CR	6.625	0.432	TB	2401A, 2401C	810'-6"	K-M	47-48	1020	454
3-FDW-059-CR	121B-3.3	CR	6.625	0.432	TB	2401A, 2401C	812'-7"	L-M	46-47	1020	454

Break ID	Flow Diagram (OFD-)	Break Type	Pipe OD (in)	Pipe Thickness (in)	Building	Layout Drawing (O-)	Floor Elev. or Break Elev. (See Note 6)	Location (Room No. or Column Numbers)		Op Pres. (psig)	Op Temp. (°F)
3-FDW-060-CR	121B-3.3	CR	6.625	0.432	TB	2401C, 2401D	810'-6"	K-L	46-47	1020	454
3-FDW-061-CR	121B-3.3	CR	6.625	0.432	TB	2401D	807'-3"	K-L	45-46	1020	454
3-FDW-062-CR	121B-3.3	CR	24	1.218	AB	2439B	828'-6"	East Penetration Room No. 562		1020	454

Notes:

1. Break numbers may not be consecutive
2. Break type: RB – Running Break (Piping not analyzed for seismic), TE – Terminal End, IB – Intermediate Break, CR – Critical Cracks
3. Building: TB – Turbine Building, AB – Auxiliary Building, EPR – East Penetration Room.
4. Each Running Break may contain one or more sub-breaks.
5. For the Unit 3 Main Feedwater System 12 Terminal End Breaks, 14 Critical Cracks, 3 Intermediate Breaks, and 31 Running Breaks were considered; the non-excluded breaks listed in this table include 12 Terminal End Breaks, 14 Critical Cracks, 3 Intermediate Breaks, and 31 Running Breaks.
6. For each Terminal End and each Critical Crack location and Intermediate Breaks 3-FDW-017 & 3-FDW-049, the elevation of the break location is given. For each Running Break and Intermediate Breaks 3-FDW-045 & 3-FDW-046, the elevation of floor or room that contains break location is given.
7. Other Abbreviations: OD – Outer Diameter, in – inches, Op – operating