

DUANE ARNOLD ENERGY CENTER

UNIT #1 PALO, IOWA

Commercial Service Date: February 1, 1975

INSERVICE INSPECTION REPORT

November 1, 1985 through June 29, 1987

Date: October 26, 1987

OWNER:

Iowa Electric Light and Power Company
P.O. Box 351
Cedar Rapids, Iowa

Prepared by: John P. Morgan Date: 10/26/87
Engineer, NDE/Metallurgical

Reviewed by: Ronald C. Montgomery Date: 10/26/87
ASME Section XI Administrator

Concurred by: Walter P. Peden Date: 10/26/87
Supervising Engineer, Systems

Approved by: Roger Hassley Date: 10/26/87
Manager, Design Engineering

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- 1) Owners: Iowa Electric Light and Power Company
P.O. Box 351
Cedar Rapids, Iowa 52406
- Central Iowa Power Cooperative
Marion, Iowa
- Corn Belt Power Cooperative
Humboldt, Iowa
- 2) Plant Duane Arnold Energy Center, Palo, Iowa
- 3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A
- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A
- GROSS GENERATING CAPACITY: 565 MWE
- NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Reactor Pressure Vessel

Manufacturer: Chicago Bridge and Iron
Post Office Box 13308
Memphis, TN 38113

National Board Number 3663, MFG. Serial Number 3-4833

Refer to Part A, pages 1 and 2, Form NIS-1, Owners Data Report for Inservice Inspections.

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Iowa Electric Light and Power Company, Cedar Rapids, Iowa
(Name and Address of Owner)

2. Plant Duane Arnold Energy Center, Palo, Iowa
(Name and Address of Plant)

3. Plant Unit Number 1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 02-01-75 6. National Board Number for Unit N/A

7. Components Inspected This report includes a Table of Contents (pp. i-iii), Part A (pp. 1-2), Part B (pp. 1-14), Part C (p. 1), Part D (pp. 1-24), Part E (pp. 1-46) and Part F (pp. 1-60)

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Reactor Pressure Vessel	Chicago Bridge and Iron	3-4833	35059	3663
Vessel Top Head Welds	"	"	"	"
HCC-B2	"	"	"	"
HCC-C1	"	"	"	"
HMC-B2	"	"	"	"
Vessel Circ Seam Welds	"	"	"	"
VCB-C5	"	"	"	"
Vessel Nozzle Welds	"	"	"	"
HVA-BD-1	"	"	"	"
RHA-BD-1	"	"	"	"
MSA-BD-1	"	"	"	"
FWA-BD-1	"	"	"	"
VIC-BE-1	"	"	"	"
RRE-BD-1	"	"	"	"
RRF-BD-1	"	"	"	"
RRC-BD-1	"	"	"	"

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-1 (back)

8. Examination Dates 11-01-85 to 06-29-87 9. Inspection Interval from 11-01-85 to 11-01-95

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.

11. Abstract of Conditions Noted

12. Abstract of Corrective Measures Recommended and Taken

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Date October 26 19 87 Signed Iowa Electric Light and Power Company By [Signature]
Owner Manager, Nuclear Division

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Iowa and employed by Plumbers Mutual Casualty Company of Long Grove, IL have inspected the components described in this Owners' Data Report during the period 11-01-85 to 06-29-87, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date October 27, 19 87

[Signature]

Inspector's Signature

Commissions National Board 5813(I)(N), IA1041
National Board, State, Province and No.

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Iowa Electric Light and Power Company, Cedar Rapids, Iowa
(Name and Address of Owner)

2. Plant Duane Arnold Energy Center, Palo, Iowa
(Name and Address of Plant)

3. Plant Unit Number 1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 02-01-75 6. National Board Number for Unit N/A

7. Components Inspected This report includes a Table of Contents (pp. i-iii), Part A (pp. 1-2), Part B (pp. 1-14), Part C (p. 1), Part D (pp. 1-24), Part E (pp. 1-46) and Part F (pp. 1-60)

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
RRD-BD-1	Chicago Bridge and Iron	3-4833	35059	3663
RCA-BD-1	"	"	"	"
Vessel Nozzle Inside Radius	"	"	"	"
HVA-N7	"	"	"	"
RHA-N6-A	"	"	"	"
MSA-N3-A	"	"	"	"
FWA-N4-A	"	"	"	"
VIC-N12-A	"	"	"	"
RRE-N2-E	"	"	"	"
RRF-N2-F	"	"	"	"
RRC-N2-C	"	"	"	"
RRD-N2-D	"	"	"	"
RCA-N1-A	"	"	"	"
(Refer to Part B, Pages 1 through 14, of this report for continuation of components examined)				

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-1 (back)

8. Examination Dates 11-01-85 to 06-29-87 9. Inspection Interval from 11-01-85 to 11-01-95

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.

11. Abstract of Conditions Noted

12. Abstract of Corrective Measures Recommended and Taken

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Date October 26 19 87 Signed Iowa Electric Light and Power Company By [Signature]
Owner Manager, Nuclear Division

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, IL have inspected the components described in this Owners' Data Report during the period 11-01-85 to 06-29-87, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date October 27, 19 87

[Signature]

Inspector's Signature

Commissions National Board 5813(I)(N), IA1041

National Board, State, Province and No.

1) Owners: Iowa Electric Light and Power Company
P.O. Box 351
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative
Marion, Iowa

Corn Belt Power Cooperative
Humboldt, Iowa

2) Plant Duane Arnold Energy Center, Palo, Iowa

3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Reactor Pressure Vessel

Manufacturer: Chicago Bridge and Iron
Post Office Box 13308
Memphis, TN 38113

National Board Number 3663, MFG. Serial Number 3-4833

Refer to Part A, pages 1 and 2, Form NIS-1, Owners Data Report for Inservice Inspections.

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NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Piping

Manufacturers, sizes, part numbers and locations are noted and traceable through the piping isometric and piping instrumentation drawings (P&ID). Installation contractor, fabricator, systems P&ID's and isometric drawings are listed below. Welds and components are examined as noted on the numbered ISO sketches as identified under each system.

Constructor - Bechtel Power Co.
P.O. Box 3865
San Francisco, CA 94119

Fabricator - Southwest Fabricating and Welding Co.
P.O. Box 9449
Houston, TX 77011

Class 1 Components

Main Steam Loops A, B, C and D

P&ID M-103
GE Drawing 731E615
ISO No's 1.2-1, 1.2-2, 1.2-3,
and 1.2-4

Feedwater A and B

P&ID M-106, M-107
Bechtel ISO DLA-2-4
ISO No. 1.2-5

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- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A
- GROSS GENERATING CAPACITY: 565 MWE
- NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Feedwater C and D	P&ID M-106, M-107 Bechtel ISO DLA-2-4 ISO No. 1.2-6
Core Spray A and B	P&ID M-122 Bechtel Drawings DLA-7-1 and DLA-7-2 ISO No's. 1.2-7 and 1.2-8
High Pressure Coolant Injection - Steam	P&ID M-122 Bechtel Drawing DBA-3-1 ISO 1.2-9
High Pressure Coolant Injection - Water	P&ID M-123 Bechtel Drawing DLA-1-1 ISO No. 1.2-10
Reactor Water Clean-Up - Suction	P&ID M-127 Bechtel Drawing DCA-6-1 ISO No. 1.2-11-A

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GROSS GENERATING CAPACITY: 565 MWE

NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Reactor Water Clean-Up - Discharge

P&ID M-127
Bechtel Drawing DCA-14-1
ISO No. 1.2-11B

Control Rod Drive Return

P&ID M-117
Bechtel Drawing DBA-6-1
ISO No. 1.2-12A

RHR-Headspray

P&ID M-119
Bechtel Drawing DBA-5-1
ISO No. 1.2-13

Residual Heat Removal - 188

P&ID M-119
Bechtel Drawing DCA-4-1
ISO No. 1.2-14

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5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Residual Heat Removal-20A

P&ID M-120
Bechtel Drawing DCA-5-1
ISO No. 1.2-15

Residual Heat Removal - 20B

P&ID M-119
Bechtel Drawing DLA-6-1
ISO No. 1.2-16

Reactor Core Isolation Cooling - Steam

P&ID M-124
Bechtel Drawing DBA-4-1
ISO No. 1.2-17

Reactor Core Isolation Cooling - Water

P&ID M-125
Bechtel Drawing DBA-7-1
ISO No. 1.2-18

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- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A
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- NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Recirculation Pump A and Bypass	P&ID M-116 GE Drawing 731E781 APED B31-9-(1)-6 ISO No. 1.2-19
Recirculation Manifold A and Risers E, F, G, and H	P&ID M-116 GE Drawing 731E781 APED B31-9-(1)-6 ISO No. 1.2-20
Recirculation Pump B and Bypass	P&ID M-116 GE Drawing 731E781 APED B31-9-(1)-6 ISO No. 1.2-21
Recirculation Manifold B and Risers A, B, C and D	P&ID M-116 GE Drawing 731E781 APED B31-9-(1)-6 ISO No. 1.2-22

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- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A
- GROSS GENERATING CAPACITY: 565 MWE
- NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Head Vent	P&ID M-114 APED B11-2655-104-3 ISO No. 1.2-24
Jet Pump Instrumentation A	P&ID M-115 APED B11-2655-105-4 ISO No. 1.2-25
Jet Pump Instrumentation B	P&ID M-115 APED B11-2655-105-4 ISO No. 1.2-26
Liquid Level Control	P&ID M-126 Bechtel Drawing FSK 3734 and FSK-3992 ISO No. 1.2-27
Vessel Instrumentation N16A	P&ID M-115 Bechtel Drawing FSK-5555 ISO No. 1.2-33

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GROSS GENERATING CAPACITY: 565 MWE

NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Main Steam Drain-Common

P&ID M-114
Bechtel Drawing DBA-2-1
ISO No. 1.2-35

Class 2

RHR Pump Suction (S.E.)

P&ID M-120
Bechtel Drawing M-712
ISO No. 2.2-32

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

RHR Pump Suction (N.W.)	P&ID M-119 Bechtel Drawing M-713 ISO No. 2.2-33
RHR Pump Shutdown	P&ID M-119 and M-120 Bechtel Drawing M-719 ISO No. 2.2-34
RHR Heat Exchanger Steam Supply (S.E./N.W.)	P&ID M-119, M-120 and M-122 Bechtel Drawing M-723 ISO No. 2.2-35
RHR Pump Suction (S.E.)	P&ID M-120. Bechtel Drawing M-714 ISO No. 2.2-36

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COMPONENTS EXAMINED:

RHR Heat Exchanger Discharge (S.E.)	P&ID M-120 Bechtel Drawing M-720 ISO No. 2.2-37
RHR Pump Discharge (N.W.)	P&ID M-119 Bechtel Drawing M-115 ISO No. 2.2-39
RHR Heat Exchanger Discharge (N.W.)	P&ID M-119 Bechtel Drawing M-721 ISO No. 2.2-40
RHR Fuel Pool Cooling and Cleanup	P&ID M-119 and M-134 Bechtel Drawing HBB-24-2, 3, 4 and 5 ISO No. 2.2-43

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

HPCI Pump Suction	P&ID M-123 Bechtel Drawing M-700 ISO No. 2.2-44
HPCI Pump Discharge	P&ID M-123 Bechtel Drawing M-701 ISO No. 2.2-45
HPCI Turbine Steam Inlet	P&ID M-122 Bechtel Drawing M-702 ISO No. 2.2-46
HPCI Turbine Steam Exhaust	P&ID M-122 Bechtel Drawing M-703 ISO No. 2.2-47

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Core Spray Suction (S.E.)	P&ID M-121 Bechtel Drawing M-708 ISO No. 2.2-48
Core Spray Discharge (S.E.)	P&ID M-121 Bechtel Drawing M-710 ISO No. 2.2-49
Core Spray Discharge (S.E.)(Cont.)	P&ID M-119 Bechtel Drawing M-710 ISO No. 2.2-50
Core Spray Suction (N.W.)	P&ID M-121 Bechtel Drawing M-709 ISO No. 2.2-51

1) Owners: Iowa Electric Light and Power Company
P.O. Box 351
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative
Marion, Iowa

Corn Belt Power Cooperative
Humboldt, Iowa

2) Plant Duane Arnold Energy Center, Palo, Iowa

3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

NUMBER ASSIGNED TO COMPONENTS BY STATE (See Page 1)

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Core Spray Discharge (N.W.)

P&ID M-121
Bechtel Drawing M-711
ISO No. 2.2-52

Main Steam Loop A

P&ID M-103
Bechtel Drawing M-716
ISO No. 2.2-53

Main Steam Loop B

P&ID M-103
Bechtel Drawing M-716
ISO No. 2.2-54

Main Steam Loop C

P&ID M-103
Bechtel Drawing M-716
ISO No. 2.2-55

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Main Steam Loop D	P&ID M-103 Bechtel Drawing M-716 ISO No. 2.2-56
Main Steam Bypass	P&ID M-103 Bechtel Drawing EBD-6-1 and EBD-6-2 ISO No. 2.2-57
Main Steam Bypass	P&ID M-103 Bechtel Drawing EBD-6-3 ISO No. 2.2-58
Scram Discharge Header - South	P&ID M-118 ISO No. 2.2-60
Scram Discharge Header - North	P&ID M-118 ISO No. 1.2-61

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Abstract:

The Inservice Inspection covered in this report was performed in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI 1980 Edition through Winter 1981 Addenda, and the Duane Arnold Energy Center Updated Final Safety Analysis Report. The examinations were performed utilizing ultrasonic, magnetic particle, visual, liquid penetrant and radiographic techniques. The examinations were conducted during the period of November 1, 1985 thru June 29, 1987. The specific details and associated records of the examinations are on file at Iowa Electric Light and Power Company.

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Abstract of Conditions Noted and Corrective Measures Taken:

During 1986 and 1987, Iowa Electric examined 161 Class 1 and 2 Component Supports (49 Class 1 and 112 Class 2) located within the ISI boundaries. Sixteen (16) Class 1 and twenty-one (21) Class 2 Component Supports were unacceptable in the as-found condition.

In accordance with the requirements of ASME Section XI, 1980 Edition through and including the Winter 1981 Addenda, IWF-2430, an additional 31 Component Supports were scheduled for examination as an additional sample.

All Component Support discrepancies were resolved previous to startup.

Class 1 Recirculation Piping Weld Overlay Surface Conditioning (DCP-1389)

During the 1987 Refueling Outage, DCP-1389 was generated to condition the surface of eight (8) of the nine (9) full structural weld overlay repairs and to perform weld buildup repairs on weld overlays RRA-BJ-4/J4A and RRF-BJ-4/J4A, 10-inch diameter Recirculation Inlet Risers. Surface conditioning was required to ensure conformance with EPRI NP-4720-LD, "Examination of Weld-Overlaid Pipe Joints" dated October 1986 and NUREG-0313, Revision 2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping -Draft Report" dated June 1986.

All nine (9) full structural overlays were examined by Ultrasonic and Liquid Penetrant methods in accordance with the requirements of NUREG-0313, Revision 2 and EPRI NP-4720-LD. Results of the examinations were acceptable. (Ref. Class 1 ISI Isometrics 1.2-14, 1.2-20 and 1.2-22 for locations of weld overlay repairs).

Class 2 HPCI Valve MO-2315 Repair (CMAR 72961)

During 1986, MO-2315 (the 8-inch diameter HPCI Pump Bypass Valve to the Condensate Storage Tanks) failed to perform its flow control function while being used during a system test. The valve was disassembled for inspection and maintenance. The inspection noted conditions in the valve as follows:

- broken stem and broken tack welds (stem to stem nut)
- deformed disc and disc guides
- internal corrosion
- ID wear on the bonnet
- 4-inch long horizontal crack on the seat ring

The stem, stem nut and disc were replaced and the corrosion was removed from the internal surfaces of the valve. A liquid penetrant examination (ISI 86-029) of the internal surfaces of the valve and a UT for thickness of the valve body followed repair. The VT-2 pressure test (ISI 86-028) was acceptable.

Class 2 HPCI Valve MO-2315 Replacement (DCP-1331-A) (CMAR 73048) (CMAR 75471)

Subsequent to the repair performed on CMAR 72961, MO-2315 (the 8-inch diameter HPCI Pump Bypass Valve to the Condensate Storage Tank) was replaced with a control valve due to the conditions noted during the CMAR 72961 repair work. Replacement of MO-2315 included the removal of 2 welds, 1 flow orifice, (FO-2314) the re-design of 2 supports and the re-routing of the Fuel Pool Return Line due to interference with the actuator of the new valve (CV-2315). The 2 new welds were preservice examined by radiographic, ultrasonic and liquid penetrant methods. The examinations were acceptable.

The Flow Orifice (FO-2314) and flange, and flange bolting were replaced with a new spectacle flange/blind flange and new flange bolting. An in-shop hydrostatic test was performed on the flange. After installation into the system, a functional test was performed on the spectacle flange, 2 new welds and CV-2315. Functional and hydrostatic tests were performed in accordance with ASME Section XI, 1980 Edition through and including the Winter 1981 Addenda. Results of the hydrostatic and functional tests were acceptable.

Class 2 Component Supports

Scram Discharge Header Component Support Modification (FCN-1323, Seq. 5, 7 & 8)

Scram Discharge Header Component Supports H-1 (ISI VT Report 87-383), H-3 (ISI Report 87-384), H-14 (ISI VT Report 87-388) and H-16 (ISI VT Report 87-389) were visually examined during the 1987 Refueling Outage and were found to be deficient with regard to the as-built configuration not being in accordance with the documents used for examination.

A Design Engineering review determined that all 12 Component Supports on the 8-inch diameter portion of the lines were inadequately constructed and proceeded to upgrade the 12 Supports by modification.

The Supports modified are as follows:

Scram Discharge Header (South)

H-1	Preservice ISI VT Report 87-694
H-2	" " " " 87-695
H-3	" " " " 87-696
H-4	" " " " 87-697
H-5	" " " " 87-698
H-6	" " " " 87-699

Scram Discharge Header (North)

H-14	Preservice ISI VT Report 87-700
H-15	" " " " 87-701
H-16	" " " " 87-702
H-17	" " " " 87-703
H-18	" " " " 87-704
H-19	" " " " 87-705

Further, H-22 (Preservice ISI VT Report 87-706) and H-23 (Preservice ISI VT Report 87-707) were added to the Scram Discharge Header (South and North, respectively) lines. The above supports (excluding H-22 and H-23) utilized full and half pipe clamps welded to plates to transfer the pipe loads to the supporting steel. This design was initially evaluated as insufficient for the loads calculated for earthquake conditions. Reverification of original design conservatisms and installed configuration demonstrated the Scram Discharge Headers' design would have performed their pressure boundary function in a seismic event.

Class 2 Component Supports Modified Due To DCP-1323/FCN-1323

Under IEB-79-14, deadweight, thermal, and seismic loads at some large bore supports were recalculated to incorporate as-built data. The reanalyses provided more accurate load information at the large bore seismic supports.

The reanalyses determined the existing design was adequate for operation under the new load data, but some supports required modification to restore recommended factors of safety. The required modifications were performed under DCP-1323 and FCN-1323, Sequence 1, 2, 3, 4 and 6.

The component supports modified in accordance with DCP-1323 and FCN-1323. Sequence 1, 2, 3, 4 and 6 are as follows:

<u>SUPPORT NO.</u>	<u>ISI IDENT.</u>	<u>ISI REPORT</u>	<u>COMMENT</u>
EBB-16-H-24	RHD-CE-13A	87-604	
EBB-16-H-25	RHD-CE-12	87-605	
GBB-5-H-19	RHF-CE-118	87-677	
GBB-13-SR-14	CSB-CE-17	87-602	
GBB-14-SR-22	CSE-CE-50	87-603	
HBB-23-H-15	RHB-CE-51	87-606	
HBB-23-H-16	RHB-CE-44	87-600	
HBB-24-H-5	RHC-CE-60	87-599	
HBB-24-H-6-1	RHC-CE-42	87-598	CMAR 83295
HBB-25-SA-179	RHM-CE-21	87-601	CMAR 80252

Component Support EBB-16-H-21 was removed by DCP-1323 and not replaced.

Class 1 RHR Headspray Modification (DCP-1385)

During the 1987 Refueling Outage, Design Change Package 1385 was generated to decommission and remove portions of the Class 1 RHR Headspray System, (Ref. Class 1 ISI Isometric 1.2-13).

The portion of the RHR Headspray System which was removed is from the 6-inch diameter flange located just beyond the Reactor Pressure Vessel to the 4-inch diameter flange at the well seal. Both the 4-inch and 6-inch diameter flanges have been blanked. RHR Headspray Reactor Pressure Vessel Nozzle "N6-A" becomes a Reactor Coolant Pressure Boundary per 10CFR50.55 and will remain in the ISI program. Pitting was found on the bottom face of the groove in the RHR Headspray Flange (6"-DBA-5). This was repaired by machining 0.040 inch from the groove and flange mating surface to remove the pitting in accordance with CMAR 75489A. The ASME Class 1 leakage test with VT-2 exam (ISI 87-692) was acceptable.

The portion of the RHR Headspray System which has been decommissioned is from the 4-inch diameter flange to valve MO-1901. Valves MO-1900 and MO-1901 have subsequently been locked in the closed position at the hand wheel.

Class 1 Component Support - DBA-1-SS-16A Removal (DCP-1341)

DCP-1341 was initiated to improve cooling in the drywell and steam tunnel. The work included, in part, installation of additional cooling units. This installation required permanent removal of interfering snubber 16-A on the 2 inch Reactor Vessel Vent Line DBA-1. Revision of the Class 1 stress report verified adequacy of the remaining supporting system.

Class 1 Component Support - DBA-1-PS-1 Modification (FCN-1341, Sequence 5)

Installation of the additional cooling units in accordance with DCP-1341 required modification of one of the PS-1, Detail C supports on the 2 inch Reactor Vessel Vent Line DBA-1 due to interference with cooling unit 1V-CC-7B. The modification included trimming of an angle brace and welded attachment of a 4" x 4" section of tube steel for reinforcement. (Refer to ISI 87-712)

Class 1 Component Support MSA-HA-1 (ISI I.D. MSA-BK-8)

ISI Visual Report 87-026 and ISI Magnetic Particle Report 87-027 (CMAR 82489)

- The bill of material from the design drawing did not correspond to the as-built condition as spacers were welded to the inner frame of the restraint.
- o The discrepancy was evaluated as acceptable as the spacers were determined to be part of the adjacent pipe rupture restraint.
- One linear indication approximately 1/2 inch long was detected by Magnetic Particle examination on one of four lug attachment welds.
- o The linear indication was removed by grinding and re-examined (ISI Magnetic Particle Report 87-644. Component Support MSD-HD-1 was selected as an additional examination.

Class 1 Component Support MS-2-14 (ISI I.D. MSB-BK-40)

ISI Visual Report 87-049 (CMAR 82492)

- Two of four anchor bolt nuts were found to be loose.
- o The loose anchor bolt nuts were re-torqued in accordance with AISC, 8th edition, Para. 5-216.6 and were found to be acceptable after reexamination. Supports DBA-1-H-25 (ISI Visual Report 87-687) and DBA-1-HB-2 (ISI Visual Report 87-688) were selected as additional examinations.

Class 1 Component Support DLA-2-H-2 (ISI I.D. FWB-BK-16)
ISI Visual Report 87-055 (DDC-783)

- The weld detail between items 7 (I-beam) and 9 (2 inch x 1/2 inch x 12 inch plate) is not shown on the as-built drawing.
- o Considering the fact that component support DLA-2-H-2 is a vertical support, Item 9 exists only for stability. The loads will be low. Therefore, the as-built weld configuration was evaluated as acceptable. The as-built drawing will be revised as part of DDC-783.

Class 1 Component Support DLA-2-H-3 (ISI I.D. FWB-BK-20)
ISI Visual Report 87-056 (DDC-783)

- There is no weld on the underside of the beam at Item 9 connecting the vertical beam to the angle beam. The weld identified by the as-built is a 1/4 inch fillet weld, all around.
- o The as-built weld configuration has been evaluated as acceptable, considering the loads at the weld joint will be low and Item 9 exists for stability only. The as-built drawing will be revised as part of DDC-783.

Class 1 Component Support DLA-2-H-6 (ISI I.D. FWB-BK-26)
ISI Visual Report 87-057 (DDC-783)

- Variable spring can VS-2B13 is installed, but the drawing requires VS-2B14.
- o Due to geometry of the support, the spring can must be VS-2B13. The hot and cold settings are within the working range required.
- A beam clamp shown on the as-built drawing is not listed on the Bill of Material nor does it conform to the design drawing.
- o The as-built drawing detail and Bill of Material will be revised as part of DDC-783 to include the beam clamp and the spring can required.

Class 1 Support DLA-7-H-1 (ISI I.D. CSA-BK-26)
ISI Visual Report 87-071 (DDC-788)

- The support is leaning 2° to 3° from vertical.
- o The support orientation is acceptable, as it is within the established acceptance criteria.
- The beam clips shown on the as-built drawing are not listed on the Bill of Material.
- o The as-built Bill of Material will be revised to include the beam clips.
- Item 3 (2-1/2 inch sch. 80 pipe) centerline is offset 2 inches from the centerline of Item 4 (variable spring can).
- o The support has been evaluated as operable as is since the load is transmitted to the spring can surface and the thermal movement is in the direction opposite to the direction the support is leaning. The as-built drawing will be revised as part of DDC-788.

Class 1 Component Support DLA-3-SS-3 (ISI I.D. PSA-BK-9A)
ISI Visual Report 87-086 (DDC-784)

- The rear clevis ears have been notched 1/2 inch on each side.
- o The distance between the center of the hole to the nearest free edge is 1-1/4 inches. This is greater than the 1 inch edge distance required by AISC 8th edition. Since both the bending stress and edge distance has been evaluated as satisfactory, the support is acceptable as is. The as-built drawing will be revised as part of DDC-784.

Class 1 Component Support DCA-6-SS-50 (ISI I.D. CUA-BK-20A)
ISI Visual Report 87-094

- A portion of a plate is not identified on the Bill of Material.
- o The location of the unidentified plate is not in a load bearing area. This support has been evaluated to use as is.

Class 1 Component Support DBA-5-H-5 (ISI I.D. RHA-BK-12A)
ISI Visual Report 87-104

- Bottom pipe clamp is loose and a two bolt clamp was installed, not a three bolt clamp as shown on the as-built drawing.
- o DCP-1385 decommissioned and removed the piping system from service of which Component Support DBA-5-H-5 was a part.

Class 2 Component Support GBB-4-SS-212 (ISI I.D. RHF-CE-92)
ISI Visual Report 87-560 (CMAR 75440 and 75440A)

- The north corner anchor bolt was tilted, causing a 1/16 inch to 1/8 inch gap between the washer and nut (4°-5° tilt).
- o A beveled washer was added. The bolt was re-torqued and is now acceptable. Due to the rejectable item, GBB-4-SS-213 (ISI Visual Report (87-661), DBB-1-H-20-A (ISI Visual Report 87-662) and GBB-4-SS-211 (ISI Visual Report 87-663) were selected as additional examinations.

Class 1 Component Support (DCA) SSA-8 (ISI I.D. RCA-BK-7)
ISI Visual Report 87-142

- The rear pin to wall dimension is incorrect.
- A 1/2 inch x 5 inch x 5 inch plate is not indicated on the as-built drawing.
- o Evaluation determined that the above noted discrepancies are not a concern from a structural standpoint due to the direction of loads. The support has been evaluated to use as is. The as-built drawing will be revised as part of a DDC, however SSA-8 has yet to be assigned to a DDC.

Class 2 Six Inch Diameter Weldolet EBD-2-12-9-SW (ISI I.D. MSA-CF-39)
ISI Magnetic Particle Report 87-319

- Examination of the weldolet revealed four linear indications ranging in length from 1/4 inch to 5/8 inch.
- The indications were removed by mechanical methods and re-examined. Re-examination revealed no indications (ISI Magnetic Particle Report 87-671). MSB-CF-35 was scheduled as an additional examination.

Class 2 Component Support HBB-24-SS-228 (A)(B) (ISI I.D. RHC-CE-38)
ISI Visual Report 87-342 (CMAR 75420)

- The two bottom anchor bolts on the top plate are tilted approximately 5°.
- o Beveled washers and two new anchor bolts, 1/2 inch longer, were installed.
- There is a 1/4 inch gap between the baseplate and the wall on the upper left hand corner.
- o The 1/4 inch gap has been evaluated as acceptable.
- o Due to the above rejectable conditions, additional examinations were scheduled as follows: Component Supports HBB-24-H-7 (ISI Visual Report 87-667), HBB-24-SS-227 (A) (B) (ISI Visual Report 87-668).

Class 2 Component Support EBB-16-H-26 (ISI I.D. RHD-CE-10)
ISI Visual Report 87-345 (DDC-794)

- A 1/8 inch thick plate was found added to the bottom of the slide plate. The additional plate is welded to the slide plate with 1 inch long welds on all 4 corners.
- Some welds identified on the as-built drawing were not made, others not identified on the as-built drawing were made. Several welds were visually unacceptable.
- o The discrepancies were evaluated as acceptable. The as-built drawing will be revised as part of DDC-794.

Class 2 Component Support EBB-16-H-25 (ISI I.D. RHD-CE-12)
ISI Visual Report 87-346 (DDC-794), (DCP-1323)

- An additional weld is not identified on the as-built drawing.
- o The discrepancy has been evaluated as acceptable. The as-built drawing will be revised as part of DDC-794 and DCP-1323.

Class 2 Component Support GBB-4-H-20D (ISI I.D. RHF-CE-88)
ISI Visual Report 87-361

- The spring can cold-load setting does not comply with the specified as-built setting.
- o The spring can setting is within 10% of the specified setting and has been evaluated as acceptable.

Class 2 Component Support GBB-4-SS-217 (ISI I.D. RHF-CE-52)
ISI Visual Report 87-363 (CMAR 80742)

- Several 1/64-inch wide cracks were noted in the concrete of the upper base plate.
- o The cracks have been evaluated as acceptable as the anchor bolts can be properly torqued.
- The upper snubber has a "bump" (corrosion) 1/8 inch high on the bottom of the piston rod 1-1/2 inches from the snubber housing.
- o Calculations demonstrate that the thermal movement in the east to west direction is less than 1 inch, therefore, seal damage would not result from snubber movement. The corrosion was removed. This support has been evaluated as acceptable.

Class 2 Component Support GBB-4-SR-5 (ISI I.D. RHF-CE-49)
ISI Visual Report 87-365 (CMAR 80744)

- The middle baseplate has a 1/4 inch gap between the wall and baseplate.
- o The anchor bolts have been properly torqued, therefore, the support is acceptable as is.

Class 2 Component Support HBB-2-SR-3 (ISI I.D. CSA-CE-33)
ISI Visual Report 87-372 (DDC-829)

- The weld symbol for Item 7 (beam) and Item 8 (beam) calls for a weld all around. Contrary to this, the flange tips and the top of the connection are not welded.
- o The weld has been evaluated as acceptable.
- Item 1 (threaded rod) should be at 8°, but is actually at 5°.
- o Support members may be within 15° of that shown on the drawing in accordance with engineering evaluation. The support is acceptable as is. The as-built drawing will be revised as part of DDC-829.

Class 2 Component Support DBA-7-H-14-A (ISI I.D. RSB-BK-10A)
ISI Visual Report 87-394 (DDC-775)

- The slide plate is 3/4 inch off center.
- o The slide plate condition is acceptable since the load is transmitted to the spring can surface, the thermal movement would need to be 5-1/4 inches before the support would be inoperable.
- The grout is 5/8 inch instead of 1 inch as shown on the drawing.
- o The concrete grout pads are used typically to distribute compressive loads and to allow the baseplate to sit level. Design Engineering has evaluated this condition as acceptable. The as-built drawing will be revised as part of DDC-775.

Class 1 Valve CV-4412-MSIV-"A" Loop - Inboard
ISI Visual Report 87-452 (CMAR 75914)

- Junk ring and stem are badly galled, one cap screw is missing.
- o The galled junk ring, stem, disc, body to bonnet gasket and packing have been replaced and the seat has been ground. The Class 1 leakage test with VT-2 exam (ISI 87-626) was acceptable. No additional examinations were scheduled as all MSIVs (8) were examined during the 1987 Refuel Outage.

Class 1 Component Support SSA-4
ISI Visual Report 87-559 (CMAR 75435)

- Snubber lug (motor end) is pressed tightly against the side weld on the south ear of the end attachment restricting movement.
- o The snubber lug was coped and showed no indication of binding and is free to move after coping. Due to the unacceptable condition of Component Support SSA-4, Component Supports HA-5 (ISI Visual Report 87-664) and SSA-1 (ISI Visual Report 87-665) were selected as additional examinations.

Class 2 Component Support HBB-25-SS-178 (ISI I.D. RHM-CE-9)
ISI Visual Report 87-562 (CMAR 75421)

- Item 3 (8 inch pipe attachment) clamp has moved down 1-1/2 inches from original installation, also the outside bolt on the clamp is slightly loose.
- o The clamp has been moved to its proper location and the bolts have been tightened.
- The bottom left anchor bolt located on the baseplate has tilted 3° to 5°. A 3/16 inch gap exists between the nut and washer.
- o A beveled washer was added to the assembly at the tilted anchor bolt. The kwik bolts re-torqued satisfactorily. Due to the rejectable items additional examinations were scheduled as follows: Component Support HBB-25-H-165 (ISI VT Report 87-659) and Component Support HBB-25-H-166 (ISI VT Report 87-660).

Class 2 Component Support HBB-25-SA-179 (ISI I.D. RHM-CE-21)
ISI Visual Report 87-601 (DCP-1323), (CMAR 80252)

- The south base plate has one anchor bolt which is tilted 5°.
- o A beveled washer was installed and the bolt was re-torqued.

Class 1 Valve CV-2002
ISI Visual Report 87-615 with supplemental
ISI Liquid Penetrant Examination Report 87-615 (CMAR 72409)

- Numerous transverse cracks were found throughout the stellite sealing surface of the disc.
- o The transverse cracks in the stellite seat have been evaluated as acceptable.
- The VT-2 test with VT-2 exam (ISI 87-624) was acceptable.

Class 2 Component Support HBB-23-SS-220 (ISI I.D. RHB-CE-50)
ISI Visual Report 87-682 (CMAR 80739)

- Paint drops were detected on the piston shaft by visual examination. The paint was outside of the stroke area. No gasket damage was detected.
- o The paint was removed from the piston shaft and a light coating of lubricant was applied to the piston shaft.

Due to the amount of unacceptable visual (snubber) examinations on the Residual Heat Removal System (RHR), all nine remaining snubbers on the Class 2 RHR System which were not scheduled for examination during the 1987 Refueling Outage were examined by visual examination. Their identifications are:

<u>SUPPORT NO.</u>	<u>ISI IDENT.</u>	<u>VISUAL</u> <u>ISI REPORT</u>	
HBB-24-SS-221	RHA-CE-42	87-713	CMAR 80816
HBB-24-SS-212	RHA-CE-50	87-714	CMAR 80814
EBB-16-SS-232	RHD-CE-27	87-715	
EBB-16-SS-233	RHD-CE-13	87-716	
GBB-7-SS-223	RHE-CE-53	87-717	
GBB-6-SS-226	RHI-CE-52	87-718	
GBB-3-SS-235	RHJ-CE-24	87-719	
GBB-3-SS-237	RHJ-CE-76	87-720	CMAR 80815
GBB-3-SS-236	RHJ-CE-43	87-721	

Class 2 Component Support HBB-24-H-6-1 (ISI I.D. RHC-CE-42)
ISI Visual Report 87-598 (CMAR 83295) (DCP-1323)

- One anchor bolt on the southwest corner of the baseplate has a 3/32-inch gap between the nut and baseplate.
- o See below.
- Actual diameter of the anchor bolts are 1/2-inch diameter however, the drawing Bill of Material indicates 5/8-inch diameter are needed.
- o The calculation record for Class 2 Component Support HBB-24-H-6-1 was reviewed and found acceptable for the 1/2-inch diameter anchor bolts. However, hardened washers were installed to satisfy AISC Code criteria for oversized holes which were drilled in the baseplate for bolts. (This resolution applies to both discrepancies listed above).

Class 2 Component Support HBB-24-SS-221 (ISI I.D. RHA-CE-56)
ISI Visual Report 87-713 (CMAR 80816)

- The pin-to-pin dimension was found to be 40-1/4 inches as compared to 40-5/8 inches as indicated on the design drawing.
- o This condition is acceptable since the discrepancy is 3/8 inch while the snubber has a 6-inch stroke and the thermal movement is only 1/2-inch.
- A washer on a baseplate connection bolt was found riding on a weld causing a gap between the washer and baseplate and between the washer and nut.
- o The washer was coped and reinstalled in accordance with CMAR 80816.

Class 2 Component Support HBB-24-SS-222 (ISI I.D. RHA-CE-50)
ISI Visual Report 87-714 (CMAR 80814)

- The pin-to-pin dimension is 38 inches instead of the design drawing dimension of 3 feet 1-13/16 inches (37-13/16 inches).
- o This condition is acceptable since the discrepancy is only 3/16 while the snubber has a 6 inch stroke and the thermal movement is less than 1/2 inch.
- The two (2) west bolts are tilted approximately 5°
- o The nuts were removed one at a time and beveled washers were installed. The bolts were then re-torqued.

Class 2 Component Support EBB-16-SS-232 (ISI I.D. RHD-CE-27)
ISI Visual Report 87-715

- The top snubber is near its full extension for EBB-16-SS-232.
- o The geometry for EBB-16 in the area of EBB-16-SS-232 was analyzed and the conclusion was that any thermal growth would tend to compress the snubber, therefore this condition was evaluated as acceptable.

Class 2 Component Support EBB-16-SS-233 (ISI I.D. RHD-CE-13)
ISI Visual Report 87-716

- The actual pin-to-pin dimension for EBB-16-SS-233 is 2 ft. 1 inch as compared to the design drawing requirements of 2 ft. 2-5/8 inches (cold setting) and 2 ft. 6-1/4 inches (hot setting).
- o Since the snubber remains in its travel range, the as-found setting has been evaluated as acceptable since the thermal movement of the line will extend the snubber pin-to-pin dimension.

This was one of the group of remaining RHR snubbers already scheduled for examination as a result of previous unacceptable exam results, therefore no further additional examinations were scheduled.

Class 2 Component Support GBB-3-SS-237 (ISI I.D. RHJ-CE-76)
ISI Visual Report 87-720 (CMAR 80815) (DDC-798)

- A 1/16 inch to 3/16-inch gap was detected by visual examination between the base plate and concrete all the way around.
- o The anchor bolts were re-torqued and the baseplate was re-grouted.
- The pipe clamp shows signs of minor corrosion.
- o The pipe clamp was cleaned and repainted.
- The design drawing indicates that component supports GBB-3-SS-238 and GBB-3-SS-237 have a common pipe clamp. Actual conditions are that GBB-3-SS-238 has its own clamp.
- o The as-built drawing will be revised as part of DDC-798.

Class 2 Component Support GBB-3-SS-236 (ISI I.D. RHJ-CE-43)
ISI Visual Report 87-721

- Hole number four for a 3/4-inch x 12-inch x 15-inch plate is not in the location indicated on the design drawing.
- o The reported condition is acceptable since the number of anchor bolts has not been reduced. A Design Engineering computer analysis was performed which indicated a sufficient factor of safety for the support.

Class 2 Component Support HBB-1-H-6 (ISI I.D. CSD-CE-33)
ISI Visual Report 86-040 (CMAR 74610)

- One (1) loose nut was detected during routine non-ISI inspection the pipe clamp of Component Support HBB-1-H-6.
- o The loose nut was tightened.

Class 2 Component Support GBB-4-H-7 (ISI I.D. RHF-CE-56)
ISI Visual Report 86-042

- Item 2 (6-inch x 1/2 x 6-inch long plate) is offset 3/4-inch of item 4 (14 V.S.) towards the wall.
- o The non-centered loading experienced by Component Support GBB-4-H-7 does not affect operability of the Support. Component Support GBB-4-H-7 is acceptable as found.

Class 2 Component Support GBB-4-H-9 (ISI I.D. RHF-CE-65)
ISI Visual Report 86-041 (CMAR 74588)

- There is a 1/8-inch deep indentation on the stantion portion of Component Support GBB-4-H-9.
- o The dent in the stantion portion of the component support does not affect its operability.
- The ears on the pipe clamp are drawn in approximately 1-inch from 90°.
- o Per engineering evaluation, the bent pipe clamp ears do not affect the operability of the support.
- Two (2) of the anchor bolts are stamped "J" (6-inch to 6-1/2-inch long). One-inch diameter x 9-inch long anchor bolts are required by the design drawing.
- o Engineering evaluation indicates the support is acceptable as installed. The drawing will be revised by DDC-799 to show the as-built condition.

Class 2 Six Inch Diameter Weldolet EBD-2-16-7-SW (ISI I.D. MSB-CF-35)
ISI Magnetic Particle Report 87-616 (CMAR 82975)

- Three linear indications were detected ranging from 1/2-inch to 1 3/8-inches in length.
- o Indications were removed by mechanical means. The blended areas were re-examined by Magnetic Particle examination (ISI 87-669) and found acceptable. The material thickness was checked by ultrasonic examination and found acceptable.

Class 1 Valve CV-4415
ISI Visual Report 87-617 (CMAR 79174 and 79174A)

- Approximately 6 inches of the disk is uneven and does not appear to be making contact to the valve seat. Excess wear on guide ribs and piston.
- o The piston and disk were built up by weld deposit and stellite seat rebuilt by welding. The junk ring was replaced, all bolting and gasket surfaces were cleaned and the valve seat has been machined. The valve was re-examined after repair and found acceptable. Due to the rejectable condition, CV-4412 and CV-4413 were selected as additional items for examination. The VT-2 pressure test (ISI 87-618) was acceptable.

Class 1 Valve CV-4418
ISI Visual Report 87-619 (CMAR 79175)

- Junk ring badly galled, stem badly galled and the valve does not appear to be seating from the 7 o'clock to the 9 o'clock position. Excess wear on guide ribs and piston.
- o The stem and junk ring has been replaced, the disc and piston were built up by welding and stellite seat rewelded and the seating surfaces have been dressed. The valve was re-examined after repair and found to be acceptable. Due to the rejectable conditions, CV-4412 and CV-4413 were selected as additional items for examination. The VT-2 pressure test (ISI 87-620) was acceptable.

Class 2, Six Inch Diameter Weldolet EBD-2-4-9-SW (ISI I.D. MSC-CF-39)
ISI Magnetic Particle Report 87-630 (CMAR 79150)

- Five linear indications ranging from 3/16-inch to 1 3/4 inch were detected by Magnetic Particle examination.
- o The indications were removed by grinding and re-examined by Magnetic Particle examination (ISI 87-711) and found to be acceptable.

As this was the last of four 6-inch weldolets to be examined on the Main Steam System, no additional examinations were scheduled.

Class 2 Component Support MSD-HD-1 Lugs (ISI I.D. MSD-BK-7)
ISI Magnetic Particle Report 87-645 (CMAR 82491)

- On the SW lug of four lugs, two linear indications were detected by Magnetic Particle examination, only one of which was rejectable.
- o The SW lug (with the magnetic particle indications) was removed by grinding. The area was re-examined by the Magnetic Particle method (ISI 86-673) and found to be acceptable. Due to the unacceptable examination results, the remainder of similar lugs (MSB-HB-1 and MSC-HC-1) in the Main Steam system were scheduled for examination.

Class 2 Component Support MSB-HB-1 Lugs (ISI I.D. MSB-BK-8)
ISI Magnetic Particle Report 87-655

- One linear indication 3/16 inch long was detected by Magnetic Particle examination. This examination was performed due to unacceptable exam (ISI-87-645) on HD-1 Lugs (above).
- o The linear indication was evaluated as acceptable on NCR 87-067.

Class 2 Component Support HBB-23-SS-219 (ISI I.D. RHB-CE-57)
ISI Visual Report 87-658 (CMAR 82513, 82513A)

- The snubber marginally passed its functional test. The fluid in the plunger assembly was found to be dirty and the plunger did not retract with the fluid.
- o The snubber was replaced with a refurbished snubber.
- Bottom right anchor bolt on base plate is tilted 5°.
- o Beveled washers were installed and bolts were re-torqued.
- Actual pin to pin dimension is 3 ft. 3-1/4 inches (39-1/4 inches)
- o The walkdown pin-to-pin dimension of 3 ft. 3-1/4 inches is acceptable since thermal movement is .28 inches and the minimum allowable pin-to-pin dimension is 36-7/8 inches. Due to the rejectable conditions, additional Snubber GBB-3-SS-238 was examined.

Class 2 Component Support GBB-4-SS-213 (ISI I.D. RHF-CE-92)
ISI Visual Report 87-661 (CMAR 80736)

- An arc strike was detected by visual examination on the piston shaft. Approximate dimensions of the arc strike were 1-1/4 inches long by 1/64 to 1/32-inch deep and was approximately 2 inches from the piston seal.
- o The maximum thermal movement for this snubber is 0.6 inches. Therefore, the condition is acceptable as is since the arc strike would not damage the piston seal during snubber movement, however, the arc strike has been removed by buffing and the affected area was Liquid Penetrant examined.

Results of the Liquid Penetrant examination were satisfactory. Due to the rejectable condition, the following additional examinations were performed. GBB-4-SS-210 (ISI VT Report 87-683), GBB-4-SS-216-A (ISI VT Report 87-684) and GBB-5-SS-215 (ISI VT Report 87-685).

Class 2 Supports HBB-24-SS-277(A) & (B) (ISI I.D. RHC-CE-22)
ISI Visual Report 87-668 (CMAR 80735)

- Entire snubber has general corrosion, spherical bearing on rear end of top snubber rusted in place, spherical bearings on both ends of bottom snubber rusted in place.
- o Both snubbers have been cleaned, lubricated and painted. Visual examination results after cleaning were acceptable.
- Actual pin-to-pin dimension on both snubbers is 28-3/4 inches.
- o The actual pin-to-pin dimension is less than the maximum allowed by the drawing and there is sufficient stroke to accommodate the calculated thermal movement.
- There is a 0.188-inch gap between each base plate and the concrete (at the bottom of the upper plate and at the top of the lower plate),
- o The anchor bolts have been re-torqued, the gap still exists but the results are evaluated as acceptable. Additional examinations normally required were not scheduled since all component supports of the same design, type and function on this system were examined during the 1987 Refuel Outage.

Class 1 Valve PSV-4407, MSRV, Loop "D"-Inboard
(CMAR 68871, and CMAR 76336A) (ISI 87-580) (ISI 87-522)

- In 1986, the tail pipe temperatures indicated the pilot valve assembly was leaking past the seat.
- o The pilot valve assembly was replaced with a spare in accordance with CMAR 68871. A leakage test and VT-2 examination was not performed. An NCR was generated to address the Code non-compliance.
- During the 1987 refueling outage, the pilot valve assembly failed to pass its seat-leakage test. In addition, ten (10) retaining bolts were damaged during the maintenance activity. (Ref. ISI 87-723) (ISI I.D. MSD-BG-22)
- o The pilot valve was again replaced with a refurbished pilot valve in accordance with CMAR 76336A. The VT-2 pressure test (ISI 87-522) was acceptable.

Class 2 Valve PSV-2129
CMAR 68999 (ISI 87-398)

- Dirt and rust are in the valve. The disc is beyond repair.
- o The valve was cleaned and the disc was replaced. The VT-2 pressure test (ISI 87-398) was acceptable.

Class 2 Rupture Disc, PSE-2213
CMAR 71102 (ISI 87-586)

- The rupture disc needs to be replaced annually in accordance with manufacturers recommendations.
- o The rupture disc was replaced. The VT-2 pressure test (ISI 87-586) was acceptable.

Class 2 Component Support GBB-4-H-11 (ISI I.D. RHF-CE-72)
CMAR 71734 (ISI 86-043)

- The hanger rod has evidence of slight elongation.
- o The hanger rod was replaced and visually examined.

Class 2 Component Support GBB-4-H-12 (ISI I.D. RHF-CE-74)
CMAR 71735 (ISI 86-044)

- There is a slight bend in the spring can clevis pin.
- o The clevis pin was replaced and visually examined.

Class 2 Valve MO-2030
CMAR 73106

- NCR 85-096 reports cracking on the valve stem and on the disc seating surface after machining.
- o The disc, stem, retaining ring, packing and pressure seal gasket were replaced and the disc nut was tack welded to the disc. The VT-2 pressure test (ISI 87-693) was acceptable.

Class 2 Valve MO-1940 (CMAR 73107)

- Per Engineering Evaluation the disc nut should be tack welded to the disc.
- o The disc nut was tack welded to the disc. The VT-2 pressure test (ISI 87-643) was acceptable.

Class 1 Valve MO-2239 (CMAR 75472)
(ISI 86-055), (ISI 86-056), (ISI 86-060)

- Valve MO-2239 was disassembled to repair a packing leak. A VT-3 examination found the stem badly pitted and stuffing box badly eroded. The valve internal surfaces were found acceptable.
- o Indications in the stuffing box area were ground and weld repaired. The valve stem pressure seal and spacer were replaced. The VT-2 pressure test (ISI 86-055) was acceptable. The stuffing box area of another similar valve was VT-3 examined. The internal surfaces of the additional valve were not examined since the internal surfaces of MO-2239 were acceptable.

Class 1 Valve CV-4419 (CMAR 65258A)

- Relevant linear indications were detected by liquid penetrant examination on the disc seat.
- o The linear indications on the disc seat were ground out and excavated areas have been weld repaired. Repaired areas were machined and liquid penetrant examined. The liquid penetrant examination was acceptable. The VT-2 pressure test (ISI 87-568) was acceptable.

Class 1 Valve MO-4423 (CMAR 73108), (ISI 87-592, VT-3)

- An excessive gap exists between the guide ribs due to disc movement.
- o The guide ribs were machined and the disc was replaced. The VT-2 pressure test (ISI 87-593) was acceptable.

Class 2 Component Support GBB-13-H-1 (ISI I.D. CSB-CE-13)
CMAR 78270 (ISI 87-379, VT-3), (DDC-806)

- As found condition was a loose washer on the base plate and a missing nut from the beam attachment. The support drawing does not identify the symbol for a weld.
- o Washers were added and the beam attachment nut was replaced. The drawing will be revised in accordance with DDC-806.

Class 1 Valve CV-2138
CMAR 79312A (ISI 87-631, VT-3)

- Valve failed leak rate test. The valve did not seat properly because the hinge pin may not fit properly. The hinge pin needs to be machined.
- o The hinge pin has been machined (.007" removed). The valve now seats properly and passed the leak rate test. The ASME Class 1 leakage test with VT-2 exam (ISI 87-632) was acceptable.

Class 2 Component Support EBB-14-SS-14 (ISI I.D. HPC-CE-34)
CMAR 80391A (ISI 87-646)

- The snubber failed its functional test.
- o The snubber was replaced with a refurbished snubber and visually examined.

Class 2 Component Support HBB-24-SS-222 (ISI I.D. RHA-CE-50)
CMAR 80814 (ISI 87-714)

- Two anchor bolts are installed with a 5° tilt.
- o The anchor bolts were removed one at a time and the existing flat washers were replaced with beveled washers.

Class 2 Component Support EBB-14-SS-13 (ISI I.D. HPC-CE-27)
CMAR 75437A (ISI 87-563)

- The snubber failed its functional test
- o The snubber was replaced with a refurbished snubber and visually examined.

Class 1 Valve MO-4424
CMAR 75608A

- The wedge was found to be eroded.
- o The wedge was replaced. The ASME Class 1 leakage test with VT-2 exam (ISI 87-708) was acceptable.

Class 1 Valve PSV-4404

CMAR 76108A (ISI 87-678, VT-3) (ISI 87-582, VT-2)

- Significant degradation of the disc was found during disassembly of PSV-4404.
- o The disc was replaced. The ASME Class 1 leakage test with VT-2 exam (ISI 87-582) was acceptable. DCP-1341 will update the drawing to identify new disc material.

Class 2 Component Support GBB-4-SS-217A & B (ISI I.D. RHF-CE-52)

CMAR 76109 (ISI 87-424, VT-3/VT-4)

- The snubber was found to be leaking.
- o The snubber was replaced and visually examined (ISI 87-424)

Class 1 Valve PSV-4401

CMAR 76331A (ISI 87-532)

- A damaged hex nut was found during installation.
- o The hex nut was replaced. The ASME Class 1 leakage test with VT-2 exam (ISI 87-532) was acceptable.

Class 2 Component Support EBB-14-SS-15 (ISI I.D. HPC-CE-59)

CMAR 82509A (ISI 87-657)

- The snubber failed its functional test.
- o The snubber was replaced with a new snubber and visually examined.

Class 2 Component Support HBB-1-SS-10 (ISI I.D. CSD-CF-31)

CMAR 75665 (ISI 87-425)

- The snubber was found to be in satisfactory condition. However, the snubber is approaching its expected serial life time.
- o The snubber was replaced with a refurbished snubber and visually examined.

Class 2 Six Inch Diameter Weldolet EBD-2-8-7-SW (ISI I.D. MSD-CF-34)
ISI Magnetic Partical Report 87-629 (CMAR 82974)

- Three linear indications were detected ranging from 1/8 inch to 5/16 inch in length.
- o The linear indications were removed by grinding (Reference: NCR-87-046). The blended areas were re-examined (ISI 87-670) by magnetic partical examination and accepted. The material thickness was checked by ultrasonic examination and found acceptable.

Class 1 Valve, CV-4413, MSIV - "A" Loop Outboard
ISI Visual Report 87-588 (CMAR-84014)

- Valve failed LLRT. The VT-3 visual examination was performed upon disassembly. Slight oxidation was noted on the valve seat and disc seat, slight guide wear. One bonnet nut had been damaged by a torch. Two bonnet nuts were found with linear indications by liquid penetrant examination. Two non-pressure retaining cap-screws were found with missing threads and one non-pressure retaining cap screw was missing.
- o Ground the seat, lapped the back-seat on bonnet, replaced the bonnet gasket, replaced 3 non-pressure retaining cap screws, replaced 3 pressure retaining bonnet nuts, replaced packing, replaced pneumatic control with new 'O'-rings and nitrogen flange gasket. The ASME Class 1 leakage test with VT-2 exam (ISI 87-587) was acceptable.

Class 1 Component Support DBA-6-H-1 (ISI I.D. CRA-BK-29)
(CMAR 82479) (ISI 87-627)

- To allow MOVATS testing of nearby valve MO-2238-0, support DBA-6-H-1 needed temporary removal and reinstallation after completion of the valve test.
- o The spring can welded to the I-beam of the building structure was detached by removing the weld by grinding and the half-clamp with associated bolting to the piping were removed. The original half-clamp and bolting were re-installed, and the spring can rewelded to the building structure I-beam in the "As-built" configuration and visually examined.

Class 2 Valve V19-0003
CMAR 68783 (ISI 87-447)

- Tack welds between hinge support and bonnet need to be repaired.
- o Tack welds between the hinge support and bonnet, cap screws and hinge support and set screws and hinge support were repaired by tack welding. The VT-2 pressure test (ISI 87-447) was acceptable.

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
RPV System Leakage Test	X						RPV		87-001	<div>ABBREVIATIONS</div> <div>RPV - Reactor Pressure Vessel IR - Nozzle Inner Radius NV - Nozzle to RPV Weld WOL - Weld Overlay Repair OA - Long Seam Outer Arc IA - Long Seam Inner Arc LS - Long Seam</div>		
Class 1 Piping Leakage Test	X						Piping					
Class 1 Pumps Leakage Test	X						Pumps					
Class 1 Valves Leakage Test	X						Valves					
Reactor Pressure Vessel Top Head Meridional	X						HMC-B2	87-009-0°				1.7 ft. examined
	X						HMC-B2	87-009-45°				" " "
	X						HMC-B2	87-009-60°				" " "
Head to Flange Weld	X						HCC-C1	87-010-0°				17.4 ft. examined
	X						HCC-C1	87-010-45°				from studhole
	X						HCC-C1	87-010-60°				60 to 20
	X						HCC-C1			87-011		" "
Circumferential	X						HCC-B2	87-012-0°				13.3 ft. examined
	X						HCC-B2	87-012-45°				" "
	X						HCC-B2	87-012-60°				" "
Head Flange	X						1T-201		87-443			VT-2

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Shell to Flange Weld	X						VCB-C5	87-013-0°				17.4 ft. examined from studhole 60 to 20
	X						VCB-C5	87-013-45°				
	X						VCB-C5	87-013-60°				
NV Nozzles:	X						HVA-N7	87-015				
Head Vent (IR)	X						RHA-BD-1	87-016-0°				
IR-Headspray (N-V)	X						RHA-BD-1	87-016-45°				
	X						RHA-BD-1	87-016-60°				
IR-Headspray (IR)	X						RHA-N6-A	87-017				
Main Steam "A" (N-V)	X						MSA-BD-1	87-018-0°				
	X						MSA-BD-1	87-018-45°				
	X						MSA-BD-1	87-018-60°				
Main Steam "A" (IR)	X						MSA-N3-A	87-019				
Feedwater "A" (N-V)	X						FWA-BD-1	87-020-L				
	X						FWA-BD-1	87-020-45°				
	X						FWA-BD-1	87-020-60°				
Feedwater "A" (IR)	X						FWA-N4-A	87-021				
Feedwater "A" Thermal Sleeve	X						FWA-N4-A	87-633				Feedwater Thermal Sleeve Attachment Weld

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Vessel Instrumentation (N-V)	X						VIC-E1	87-022-L				
	X						VIC-E1	87-022-45°				
	X						VIC-E1	87-022-60°				
Vessel Instrumentation (IR)	X						VIC-N12-A	87-023				
Recirc. Riser "E" (N-V)	X						RRE-BD-1	87-024-L				
	X						RRE-BD-1	87-024-45°				
	X						RRE-BD-1	87-024-60°				
Recirc. Riser "E" (I-R)	X						RRE-N2-E	87-025				
Recirc. Riser "F" (N-V)	X					X	RRF-BD-1	87-407-L				"Other" defined as examinations which were performed as a self-imposed augmentation and where performed within the guidelines of NUREG-0313, Rev. 2 dated June 1986 and EPRI NP-4720-LD dated October 1986.
	X					X	RRF-BD-1	87-407-45°				
	X					X	RRF-BD-1	87-407-60°				
Recirc. Riser "F" (IR)	X					X	RRF-N2-F	87-408				
Recirc. Riser "C" (N-V)	X					X	RRC-BD-1	87-409-L				
	X					X	RRC-BD-1	87-409-45°				
	X					X	RRC-BD-1	87-409-60°				
Recirc. Riser "C" (IR)	X					X	RRC-N2-C	87-410				
Recirc. Riser "D" (N-V)	X					X	RRD-BD-1	87-411-L				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Riser "D" (IR) Recirc. Pump Loop "A" (N-V)	X					X	RRD-BD-1	87-411-45°				"Other" defined as examinations which were performed as a self-imposed augmentation and were performed within the guidelines of NUREG-0313, Rev. 2 dated June 1986 and EPRI NP-4720-LD dated October 1986
	X					X	RRD-BD-1	87-411-60°				
	X					X	RRD-N2-D	87-412				
	X					X	RCA-BD-1	87-422-L				
	X					X	RCA-BD-1	87-422-45°				
	X					X	RCA-BD-1	87-422-60°				
Recirc. Pump Loop "A" (IR)	X					X	RCA-N1A	87-423				
Top Head Vent	X						N7-D-1	87-014-0° 87-014-45° 87-014-60°				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
<u>Class I Systems</u>												
in Steam Loop "A"	X						MSA-BK-8		87-026	87-027		Lugs
	X						MSA-BJ-20	87-028		87-029		
	X						MSA-BG-37		87-030			CV-4412-Bolting
	X						MSA-BJ-41	87-031		87-032		
	X						MSA-BM-37		87-626			CV-4412, VT-2
	X						MSA-BM-23		87-532			PSV-4401, VT-2
	X						MSA-BM-18		87-533			PSV-4400, VT-2
	X						MSA-BK-11		87-553			
	X						MSA-BM-42		87-587			CV-4413, VT-2

* Otherwise ASME

(continued on next page)

System or Component Description			* Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Main Steam Loop "B"	X						MSA-BM-42		87-588			CV-4413, VT-3
	X						MSA-BM-37		87-452			CV-4412, VT-3
	X						MSA-BK-8			87-644		
	X						MSB-BJ-4-0A	87-034		87-033		
	X						MSB-BJ-4-1A	87-036		87-035		
	X						MSB-BJ-5	87-038		87-037		
	X						MSB-BJ-10	87-040		87-039		
	X						MSB-BJ-10-1A	87-042		87-041		
	X						MSB-BJ-10-0A	87-044		87-043		
	X						MSB-BG-47		87-045			CV-4416-Bolting
	X						MSB-BK-28		87-047	87-046		Lugs
	X						MSB-BK-40		87-049	87-048		Lugs
	X						MSB-BM-42		87-617			CV-4415, VT-3
	X						MSB-BM-42		87-618			CV-4415, VT-2
	X						MSB-BM-27		87-525			PSV-4402, VT-2
	X						MSB-BM-23		87-583			PSV-4403, VT-2

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
in Steam Loop "C"	X						MSB-BK-8			87-655		Lugs
	X						MSB-BM-21		87-679			PSV-4403, VT-3
	X						MSB-BK-45		87-687			
	X						MSB-BK-19		87-688			
	X						MSC-BM-40		87-619			CV-4418, VT-3
	X						MSC-BM-40		87-620			CV-4418, VT-2
	X						MSC-BM-25		87-523			PSV-4405, VT-2
	X						MSC-BM-45		87-567			CV-4419, VT-3
	X						MSC-BM-45		87-568			CV-4419, VT-2
	X						MSC-BM-21		87-582			PSV-4404, VT-2
	X						MSC-BK-7			87-654		
	X						MSC-BM-21		87-678			PSV-4404, VT-2
	X						MO-4423		87-592			VT-3
in Steam Loop "D"	X						MO-4423		87-593			VT-2
	X						MSD-BM-22		87-522			PSV-4407, VT-2
	X						MSD-BM-17		87-524			PSV-4406, VT-2

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Partical Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Primary Water Loop "A"	X						MSD-BM-22		87-580			PSV-4407, VT-3
	X						MSD-BK-7			87-645		**
	X						MSD-BK-7			87-673		
	X						MSD-BG-22		87-723			PSV-4407-Bolting
	X						FWA-BK-4		87-050			
	X						FWA-BJ-11	87-051		87-052		
Primary Water Loop "B"												
	X						FWB-BJ-15	87-053		87-054		
	X						FWB-BK-16		87-055			
	X						FWB-BK-20		87-056			
	X						FWB-BK-26		87-057			
	X						FWB-BJ-30	87-058		87-059		
	X						FWB-BM-35		87-690			V-14-3, VT-3
	X						FWB-BM-35		87-691			V-14-3, VT-2

* Otherwise ASME

** Unacceptable indications were detected by Magnetic Particle Examination (ISI MT Report 87-645)
ISI Magnetic Particle Report 87-673 is a re-MT after grinding to verify indications were removed.

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Partical Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
edwater Loop "C"	X						FWC-BM-32		87-622			V-14-1, VT-2
	X						FWC-BM-32		87-621			V-14-1, VT-3
e Spray Loop "A"	X						CSA-BF-2	87-061			87-060	
	X						CSA-BF-2	87-061-A				
	X		X				CSA-BF-2A	87-063			87-062	
	X		X				CSA-BF-2A	87-063-A				
	X		X				CSA-BJ-3	87-065			87-064	
	X		X				CSA-BF-4	87-067-A			87-066	
	X		X				CSA-BF-4	87-067-B				
	X						CSA-BJ-25	87-069		87-070		
	X						CSA-BK-26		87-071			
e Spray Loop "B"	X		X				CSB-BF-2	87-072			87-073	
	X		X				CSB-BF-2	87-072-A				
	X		X				CSB-BF-2A	87-074			87-075	
	X		X				CSB-BF-2A	87-074-A				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
HPCI-Steam	X		X				CSB-BJ-3	87-076			87-077	
	X		X				CSB-BF-4	87-078-A			87-079	
	X		X				CSB-BF-4	87-078-B				
	X						CSB-BJ-25	87-080		87-081		
	X						CSB-BK-26		87-082			
	X						CSB-BM-15		87-631			CV-2138, VT-3
	X						CSB-BM-15		87-632			CV-2138, VT-2
	X						PSV-2129		87-398			VT-2
	X						PSA-BK-9A		87-086			
	X						PSA-BK-8		87-087			
HPCI-Water	X						PSE-2213		87-586			VT-2
	X						PSB-BJ-8	87-090		87-091		
	X						PSB-BK-6		87-092			
	X						PSB-BM-4		87-453			CV-2313, VT-2
	X						PSB-BM-4		87-454			CV-2313, VT-3

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
WCU - Suction	X						CUA-BK-22		87-093			
	X						CUA-BK-20-A		87-094			Support ID DCA-6-SS-50
	X						CUA-BK-20-A		87-095			Support ID DCA-6-SR-51
	X				X		CUA-BJ-10	87-097			87-098	
	X						CUA-BJ-9	87-099			87-100	
	X				X		CUA-BJ-6	87-101			87-102	
	X				X		CUA-BJ-14	87-426			87-428	
	X				X		CUA-BJ-20	87-427			87-429	
WCU - Discharge	X						CUB-BK-7		87-554			
Control Rod Drive Return	X			X			CRA-BF-2	87-404				
	X			X			CRA-BJ-3	87-405				
	X			X			CRA-BF-4	87-406				
	X			X			CRA-BF-4	87-406-A				
	X						CRA-BK-29		87-627			Preservice
	X						CRA-BK-15-A		87-555			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
HR - Headspray	X						N6A-Flange		86-062			VT-2, Functional
	X						N6A-Flange		87-103			Bolting
	X						N6A-Flange		87-692			VT-2
	X						RHA-BK-12-A		87-104			
	X						RHA-BK-14-B		87-106			
HR-18B	X		X				RHB-BJ-1-WOL	87-114-0°			87-390	
	X		X				RHB-BJ-1-WOL	87-114-60°				
	X		X				RHB-BF-3	87-115			87-116	
	X		X				RHB-BF-3	87-115-A				
	X						RHB-BJ-7	87-117		87-118		
HR-20-A	X						RHB-BK-15-A		87-119			Support ID DLA-4-SS-14
							RHB-BK-15-A		87-120			Support ID DLA-4-SS-15
	X		X				RHC-BJ-1	87-122				
	X		X				RHC-BF-2	87-123				
	X		X				RHC-BF-2	87-123-A				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
RHR-20-B	X						RHC-BK-5		87-124			
	X						RHC-BK-7		87-125			
	X						RHC-BJ-25	87-126		87-127		
	X						RHC-BM-10		87-615			CV-2002, VT-3
	X						RHC-BM-10		87-624			CV-2002, VT-2
	X						RHC-BM-10		86-025			CV-2002, VT-3
	X						RHC-BM-10		86-026			CV-2002, VT-2
	X		X				RHD-BJ-1	87-129				
	X		X				RHD-BF-2	87-130				
	X		X				RHD-BF-2	87-130-A				
	X						RHD-BJ-8	87-131		87-132		
	X						RHD-BK-16		87-133			
	X						RHD-BK-20		87-134			
	X						RHD-BM-10		87-652			CV-1906, VT-3
	X						RHD-BM-10		87-653			CV-1906, VT-2
RCIC - Steam	X						RSA-BK-14		87-556			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	CL-84-11	Other						
RCIC - Water	X						RSB-BK-10A		87-394			
Recirc. Pump "A" Supports	X						HA-5		87-664			
	X						SSA-4		87-559			
	X						SSA-1		87-665			
	X						SSA-5		87-558			
Recirc. Pump Loop "A"	X		X				RCA-BF-2	87-136			87-137	
	X		X				RCA-BF-2	87-136-A				
	X		X				RCA-BJ-3	87-138				
	X		X				RCA-BJ-4	87-139				
	X		X				RCA-BJ-5	87-140				
	X		X				RCA-BJ-6	87-141				
	X						RCA-BK-7		87-142		87-143	Shock Lugs SSA-B
	X						RCA-BK-7		87-144		87-145	Shock Lugs SSA-9
	X		X				RCA-BJ-8	87-597				
	X		X				RCA-BJ-8	87-597-A				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
	X		X				RCA-BJ-12	87-146				
	X		X				RCA-BJ-23	87-147				
	X						RCA-BG-14		87-148			M0-4601-Bolting
	X						RCA-BJ-15	87-149			87-150*	
	X						RCA-BJ-15-LS	87-151			87-152	
	X		X				RCA-BJ-21	87-153				
	X		X				RCA-BJ-15-LS	87-153-A				Intersect at BJ-21
	X		X				RCA-BJ-22	87-154				
	X						RCA-BK-31		87-155			
	X		X				RCA-BJ-24	87-159				
	X		X				RCA-BJ-28	87-160				
	X		X				RCA-BJ-30	87-161				
	X		X				RCA-BJ-32	87-162				
	X		X				RCA-BJ-38	87-163				
	X		X				RCA-BJ-41	87-164				
	X		X				RCA-BJ-43	87-165				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Circ. Pump Loop "A" /pass	X						RBA-BK-4		87-156			
	X						RBA-BJ-7	87-157			87-158	
	X				X		RBA-BJ-1	87-430			87-432	
	X				X		RBA-BJ-12	87-431			87-433	
Circ. Manifold "A"	X		X				RMA-BJ-1	87-416				
	X		X				RMA-BJ-2	87-190				
	X		X				RMA-BJ-4	87-183				
	X		X				RMA-BJ-5	87-191				
	X						RMA-BJ-6	87-192			87-193	
	X		X				RMA-BJ-7	87-194				
	X		X				RMA-BJ-8	87-211				
	X						RMA-BK-9		87-195			
	X		X				RMA-BJ-10	87-210				
	X		X				RMA-BJ-11	87-209				
Circ. Riser "E"	X						RRE-BF-2	87-172		87-173		

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Riser "F"	X						RRE-BF-2	87-172-A				
	X						RRE-BF-2A	87-170			87-171	
	X						RRE-BJ-3	87-168			87-169	
	X		X				RRE-BJ-4/ J4A-WOL	87-166-0°			87-167	
	X		X				RRE-BJ-4/ J4A-WOL	87-166-60°			87-634	
	X		X				RRE-BJ-5	87-200-A				
	X		X				RRE-BJ-5	87-200-B				
	X		X				RRE-BJ-7	87-201				
	X		X				RRF-BF-2	87-202				
	X		X				RRF-BF-2	87-202-A				
	X		X				RRF-BF-2A	87-204				
	X		X				RRF-BJ-3	87-203				
	X		X				RRF-BJ-4/ J4A-WOL	87-174-0°			87-175	
	X		X				RRF-BJ-4/ J4A-WOL	87-174-60°			87-635	
	X		X				RRF-BJ-5	87-205-A				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Riser "G"	X		X				RRF-BJ-5	87-205-B				
	X		X				RRF-BJ-7	87-206				
	X		X				RRG-BF-2	87-196			87-197	
	X		X				RRG-BF-2	87-196-A				
	X		X				RRG-BF-2A	87-177				
	X		X				RRG-BJ-3	87-176				
	X		X				RRG-BJ-4/ J4A-WOL	87-178-0°			87-179	
	X		X				RRG-BJ-4/ J4A-WOL	87-178-60°			87-636	
	X		X				RRG-BJ-5	87-180				
	X		X				RRG-BJ-7	87-182				
Recirc. Riser "H"												
	X		X				RRH-BF-2	87-198			87-199	
	X		X				RRH-BF-2	87-198-A				
	X		X				RRH-BF-2A	87-184				
	X		X				RRH-BJ-3	87-185				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Pump Loop "B"	X		X				RRH-BJ-4\ J4A-WOL	87-186-0°			87-187	
	X		X				RRH-BJ-4\ J4A-WOL	87-186-60°			87-637	
	X		X				RRH-BJ-5	87-188				
	X		X				RRH-BJ-7	87-189				
	X		X				RCB-BF-2	87-212				
	X		X				RCB-BF-2	87-212-A			87-213	
	X		X				RCB-BJ-5	87-214				
	X		X				RCB-BJ-6	87-215				
	X		X				RCB-BJ-7	87-216				
	X						RCB-BK-8		87-217		87-218	
	X						RCB-BK-10		87-219		87-220	Shock Lugs SSB-8
	X						RCB-BK-10		87-221		87-222	Shock Lugs SSB-9
	X		X				RCB-BJ-15	87-223				
	X		X				RCB-BJ-16	87-224				
	X						RCB-BJ-18	87-225			87-226	

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
	X						RCB-BJ-18-LS	87-227-A			87-228	
	X						RCB-BJ-18-LS	87-227-B				
	X		X				RCB-BJ-24	87-229				
	X		X				RCB-BJ-25	87-230				
	X						RCB-BJ-30	87-231			87-232	
	X		X				RCB-BJ-27	87-235				
	X		X				RCB-BJ-31	87-236				
	X		X				RCB-BJ-33	87-237				
	X		X				RCB-BJ-35	87-238				
	X		X				RCB-BJ-41	87-239				
	X		X				RCB-BJ-44	87-240				
	X		X				RCB-BJ-46	87-241				
	X		X				RCB-BJ-3	87-417			87-419	
	X		X				RCB-BJ-9	87-421				
	X		X				RCB-BJ-4	87-608				
	X						RCB-BK-45		87-557			
	X				X		RBB-BJ-1	87-233			87-234	

* Otherwise ASME

ecirc. Pump Loop "B"
ypass

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Manifold "B"	X				X		RBB-BJ-8	87-611			87-596	
	X				X		RBB-BJ-10	87-612			87-595	
	X		X				RMB-BJ-1	87-281				
	X		X				RMB-BJ-2	87-282				
	X						RMB-BJ-5	87-266			87-267	
	X		X				RMB-BJ-6	87-283				
	X		X				RMB-BJ-7	87-284				
	X		X				RMB-BJ-8	87-285				
	X		X				RMB-BJ-9	87-264				
	X		X				RMB-BJ-11	87-253				
	X		X				RMB-BJ-12	87-265-A				
	X		X				RMB-BJ-12	87-265-B				
Recirc. Riser "A"	X						RRA-BF-2	87-242			87-243	
	X						RRA-BF-2	87-242-A				
	X						RRA-BF-2A	87-244			87-245	
	X		X				RRA-BJ-3	87-246				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Riser "B"	X		X				RRA-BJ-4/ 4A-WOL	87-247-0°			87-248	
	X		X				RRA-BJ-4/ 4A-WOL	87-247-60°			87-638	
	X		X				RRA-BJ-4/ 4A-WOL				87-656	
	X						RRA-BJ-5-IA	87-249			87-250	
	X		X				RRA-BJ-5	87-251				
	X		X				RRA-BJ-7	87-252				
	X		X				RRB-BF-2	87-254			87-255	
	X		X				RRB-BF-2	87-254-A				
	X						RRB-BF-2A	87-256			87-257	
	X						RRB-BJ-3	87-258				
	X		X				RRB-BJ-4/ J4A-WOL	87-259-0°			87-260	
	X		X				RRB-BJ-4/ J4A-WOL	87-259-60°			87-639	
	X		X				RRB-BJ-5	87-261				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Recirc. Riser "C"	X		X				RRB-BJ-7	87-263				
	X		X				RRC-BF-2	87-270				
	X		X				RRC-BF-2	87-270-A				
	X		X				RRC-BF-2A	87-271				
	X		X				RRC-BJ-3	87-272				
	X		X				RRC-BJ-4	87-273				
	X		X				RRC-BJ-4	87-273-I				
	X		X				RRC-BJ-4A	87-274				
	X		X				RRC-BJ-5	87-420				
Recirc. Riser "D"	X		X				RRC-BJ-7	87-275				
	X		X				RRD-BF-2	87-276				
	X		X				RRD-BF-2	87-276-A				
	X		X				RRD-BF-2A	87-277				
	X		X				RRD-BJ-3	87-278				
	X		X				RRD-BJ-4/ J4A-WOL	87-268-0°			87-269	

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
RPV-Head Vent	X		X				RRD-BJ-4/J4A-WOL	87-268-60°			87-640	
	X		X				RRD-BJ-5	87-279				
	X		X				RRD-BJ-7-WOL	87-280-0V			87-418	Liquid Penetrant Report 87-641 is for PT after weld preparation
	X		X				RRD-BJ-7-WOL	87-280-0°			87-641	
	X		X				RRD-BJ-7-WOL	87-280-45°				
	X						HVA-BJ-2			87-287		
	X						N-7 Flg Bltg		87-288			
	X						N7-A Flg Bltg		87-573			
Jet Pump Instrumentation "A"	X		X				JPA-BF-2	87-434			87-435	
	X		X				JPA-BF-2	87-434-A				
	X		X				JPA-BJ-3	87-436			87-437	
Jet Pump Instrumentation "B"	X		X				JPB-BF-2	87-438			87-439	
	X		X				JPB-BF-2	87-438-A				

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Liquid Level Control	X		X				JPB-BJ-3	87-440			87-441	
	X						LCA-BK-6A		87-289		.	
	X						LCA-BJ-20				87-291	
	X						LCA-BJ-21				87-293	
	X						LCA-BK-5A		87-294			
Vessel Instrumentation V-16-A												
	X						VIE-BF-2				87-295	
	X						VIE-BJ-3				87-296	
Main Steam Drain - Common												
	X						SDR-BJ-7	87-298		87-299		
	X						SDR-BM-1		87-708			MO-4424-VT-2

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
<u>Class 2 Systems</u>												
HR Heat Exchanger "A"	X						HEA-CA-3	87-333-L				Shell to Shell
	X						HEA-CA-3	87-333-S				Shell to Shell
	X						HEA-CC-7			87-334		
HR Pump Suction (S.E.)	X						RHA-CE-42		87-598			DCP-1323 Preservice
	X						RHA-CE-50		87-714			
	X						RHA-CE-51		87-599			DCP-1323 Preservice
	X						RHA-CE-56		87-713			
HR Pump Suction (N.E.)	X						RHB-CE-44		87-600			DCP-1323 Preservice
	X						RHB-CE-51		87-606			
	X						RHB-CE-57		87-658			
	X						RHB-CE-58		87-680			
	X						RHB-CE-50		87-682			
	X						RHB-CF-70			86-032		

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
HR Pump Shutdown	X						RHC-CF-82			87-335		
	X						RHC-CE-74		87-336			
	X						RHC-CE-70		87-337			
	X						RHC-CF-47			87-338		
	X						RHC-CF-46			87-339		
	X						RHC-CF-43			87-340		
	X						RHC-CE-42		87-341			
	X						RHC-CE-38		87-342			
	X						RHC-CE-37		87-343			
	X						RHC-CE-34		87-344			
	X						RHC-CE-40		87-666			
	X						RHC-CE-31		87-667			
	X						RHC-CE-22		87-668			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
HR Heat Exchanger team Supply (SE/NW)												
	X						RHD-CE-12		87-605			DCP-1323 Preservice
							RHD-CE-10		87-345			
	X						RHD-CE-12		87-346			
	X						RHD-CE-13		87-716			Re-examination of RMD-CE-13
	X						RHD-CE-19		87-347			
							RHD-CE-19		87-722			VT-3/VT-4
	X						RHD-CE-25		87-348			
	X						RHD-CF-36			87-349		
	X						RHD-CF-37			87-350		
	X						RHD-CE-46		86-036			
	X						RHD-CF-52	87-351		87-352		
	X						RHD-CE-57		87-353			
	X						RHD-CE-13A		87-604			DCP-1323 Preservice
	X						RHD-CE-27		87-715			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
	X						RHD-CE-3		86-033			
	X						RHD-CE-5		86-034			
	X						RHD-CE-5			86-035		

* Otherwise ASME

(continued next page)

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
R Pump Discharge (S.E.)	X						RHE-CE-49		87-354			
	X						RHE-CE-43			87-355		
	X						RHE-CE-16A		87-356			
	X						RHE-CE-7		87-357			
	X						RHE-CE-53		87-717			
R Heat Exchanger Discharge (S.E.)	X						RHF-CF-127			87-358		
	X						RHF-CE-107		87-359	87-360		
	X						RHF-CE-88		87-361			
	X						RHF-CF-79			87-362		
	X						RHF-CE-65		86-041			
	X						RHF-CE-52		87-363	87-364		
	X						RHF-CE-49		87-365			
	X						RHF-CE-72		86-043			
	X						RHF-CE-74		86-044			
	X						RHF-CE-7		87-366			
	X						RHF-CE-56		86-042			
	X						RHF-CE-52		87-424			
	X						RHF-CE-92		87-560			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Imp Discharge (N.W.)	X						RHF-CE-81		87-561			
	X						RHF-CE-92		87-661			
	X						RHF-CE-98		87-662			
	X						RHF-CE-68		87-663			
	X						RHF-CE-38		87-683			
	X						RHF-CE-81		87-684			
	X						RHF-CE-119		87-685			
	X						RHF-CD-18		87-693			MO-2030-Bolting
	X						RHF-CE-118		87-677			DCP-1323-VT-3/4 Preservice
	X						RHF-CE-65		86-041			
	X						RHF-CE-56		86-042			
	X						RHF-CE-72		86-043			
	X						RHF-CE-74		86-044			
	X						RHI-CE-56		86-037			
	X						RHI-CE-73		86-038	86-039		
	X						RHI-CD-37		87-447			V-19-3, VT-2
	X						RHI-CE-52		87-718			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
			NUREG 0313	NUREG 0619	GL-84-11	Other						
RHR Heat Exchanger Discharge												
	X						RHJ-CD-17		87-643			MO-1940, VT-2
	X						RHJ-CE-75		87-647			
	X						RHJ-CE-75		87-710			

* Otherwise ASME

(continued on next page)

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
HR Fuel Pool Cooling and Cleanup	X						RHJ-CE-76		87-720			
	X						RHJ-CE-24		87-719			
	X						RHJ-CE-43		87-721			
	X						RHM-CE-9		87-562			
	X						RHM-CE-6		87-659			
	X						RHM-CE-11		87-660			
	X						RHM-CE-21		87-601			DCP-1323 Preservice
PCI Pump Suction												
	X						HPA-CF-52			87-367		
	X						HPA-CE-48		87-368			
	X						HPA-CE-44		87-369			
	X						HPA-CE-35		87-370			
PCI Pump Discharge												
	X						HPB-CE-72		87-623			
	X						HPB-CD-31		86-027			M0-2315 Repair-VT-2

* Otherwise ASME

System or Component Description	Accept	Reject	*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
			NUREG 0313	NUREG 0619	GL-84-11	Other						
HPCI Turbine Steam Inlet	X						HPB-CD-34		86-028		86-029	MO-2315 Repair-VT-2
	X						HPB-CF-32				86-045	MO-2315 Replacement
	X						HPB-CF-32	86-047				MO-2315 Replacement
	X						HPB-CF-32					MO-2315 Replacement 86-046-RT
	X						HPB-CF-32		86-049			VT-2
	X						"		86-050			VT-2
	X						"		86-051			VT-2
	X						"		86-053			VT-2
	X						EBB-7-1-2-FW	86-058			86-057	RT-86-059
Core Spray Suction	X						HPC-CE-27		87-563			
	X						HPC-CE-34		87-646			
	X						HPC-CE-59		87-657			
	X						MO-2239		86-055			VT-2
	X						MO-2239		86-060			VT-3
	X						CSA-CE-36		87-371			
	X						CSA-CE-33		87-372			
	X						CSA-CE-20		87-373			

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Core Spray Discharge S.E.	X						CSA-CF-18			87-374		
	X						CSB-CE-48		87-375			
	X						CSB-CE-35		87-376			
	X						CSB-CF-22			87-377		
	X						CSB-CE-17		87-378			DCP-1323 Preservice
	X						CSB-CE-13		87-379	87-380		
	X						CSB-CE-11		87-381			
	X						CSB-CE-25		87-403			
	X						CSB-CE-17		87-602			DCP-1323 Preservice
Core Spray Discharge S.E.												
	X						CSC-CE-3		87-382			
Core Spray Suction N.W.												
	X						CSD-CF-31		87-425			
	X						CSD-CE-33		86-040			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Core Spray Discharge (N.W.)	X						CSE-CE-50		87-603			DCP-1323 Preservice
	X						CSE-CE-26		87-648			
Main Steam Loop "A"	X						MSA-CF-3	87-313		87-312		
	X						MSA-CE-14		87-314			
	X						MSA-CE-18		87-315			
	X						MSA-CE-21		87-316			
	X						MSA-CF-22	87-318		87-317		
	X						MSA-CF-39			87-319		
	X						MSA-CF-39			87-671		
Main Steam Loop "B"	X						MSB-CE-17		87-320			
	X						MSB-CE-21		87-321			
	X						MSB-CE-23		87-322			
	X						MSB-CF-34			87-616		
	X						MSB-CF-35			87-669		

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
Main Steam Loop "C"	X						MSC-CF-39			87-630		
	X						MSC-CF-39			87-711		
Main Steam Loop "D"	X						MSD-CF-34			87-629		
	X						MSD-CF-34			87-670		
Main Steam Bypass	X						MSE-CE-31		87-323			
	X						MSE-CE-25		87-324			
	X						MSE-CF-14	87-325		87-326		
	X						MSE-CF-20	87-327		87-328		
	X						MSE-CF-7			87-329		
	X						MSF-CE-9		87-330			
	X						MSF-CF-29	87-332		87-331		
Scram Discharge Header (South)	X						SDS-CE-13A		87-383			Examinations were performed before modification of the Components Supports
	X						SDS-CE-12A		87-384			

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
	X						SDS-CF-1	87-385		87-386		
	X						SDS-CF-3			87-387		
	X						SDS-CE-13A		87-694			Preservice **
	X						SDS-CE-10A		87-695			Preservice **
	X						SDS-CE-12A		87-696			Preservice **
	X						SDS-CE-9A		87-697			Preservice **
	X						SDS-CE-7A		87-698			Preservice **
	X						SDS-CE-7B		87-699			Preservice **
	X						SDS-H-22		87-706			New Support-Preservice
	X						SDN-CE-9B		87-388			Examinations were performed before modifications of the Component Supports
	X						SDN-CE-9A		87-389			
	X						SDN-CE-9B		87-700			Preservice **
	X						SDN-CE-12B		87-701			Preservice **
	X						SDN-CE-9A		87-702			Preservice **
	X						SDN-CE-12A		87-703			Preservice **

* Otherwise ASME

** (after modification)

Scram Discharge Header
(North)

[illegible]

* Otherwise ASME
** (after modification)

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
CRD Housing Flange Welds	X						1T-221(12)-D		87-458			VT-2
	X						1T-221(07)-D		87-459			VT-2
	X						1T-221(82)-D		87-460			VT-2
	X						1T-221(59)-D		87-461			VT-2
	X						1T-221(10)-D		87-462			VT-2
	X						1T-221(46)-D		87-463			VT-2
	X						1T-221(45)-D		87-464			VT-2
	X						1T-221(33)-D		87-465			VT-2
	X						1T-221(05)-D		87-466			VT-2
	X						1T-221(75)-D		87-467			VT-2
	X						1T-221(11)-D		87-468			VT-2
	X						1T-221(72)-D		87-469			VT-2
	X						1T-221(47)-D		87-470			VT-2
	X						1T-221(48)-D		87-471			VT-2
	X						1T-221(31)-D		87-472			VT-2
	X						1T-221(85)-D		87-473			VT-2

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
X							1T-221(64)-D		87-474			VT-2
X							1T-221(37)-D		87-475			VT-2
X							1T-221(23)-D		87-476			VT-2
X							1T-221(36)-D		87-477			VT-2
X							1T-221(17)-D		87-478			VT-2
X							1T-221(58)-D		87-479			VT-2
X							1T-221(87)-D		87-480			VT-2
X							1T-221(44)-D		87-481			VT-2
X							1T-221(04)-D		87-482			VT-2
X							1T-221(68)-D		87-483			VT-2
X							1T-221(70)-D		87-484			VT-2
X							1T-221(06)-D		87-485			VT-2
X							1T-221(29)-D		87-486			VT-2
X							1T-221(54)-D		87-487			VT-2
X							1T-221(14)-D		87-488			VT-2
X							1T-221(35)-D		87-489			VT-2

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	CL-84-11	Other						
ID Mounting Flange	X						1T-221(84)-D		87-490			VT-2
	X						1T-221(63)-D		87-491			VT-2
	X						1T-221(19)-D		87-492			VT-2
	X						1T-221(21)-D		87-493			VT-2
	X						1T-221(20)-D		87-494			VT-2
	X						1T-221(56)-D		87-614			VT-2
	X						1T-221(56)-D		87-650			VT-2
	X						1T-221(12)-D		87-495			VT-1
	X						1T-221(07)-D		87-496			VT-1
	X	..					1T-221(82)-D		87-497			VT-1
	X						1T-221(59)-D		87-498			VT-1

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
X							1T-221(10)-D		87-499			VT-1
X							1T-221(46)-D		87-500			VT-1
X							1T-221(45)-D		87-501			VT-1
X							1T-221(33)-D		87-502			VT-1
X							1T-221(05)-D		87-503			VT-1
X							1T-221(75)-D		87-504			VT-1
X							1T-221(11)-D		87-505			VT-1
X							1T-221(12)-D		87-506			VT-1
X							1T-221(47)-D		87-507			VT-1
X							1T-221(48)-D		87-508			VT-1
X							1T-221(31)-D		87-509			VT-1
X							1T-221(85)-D		87-510			VT-1
X							1T-221(64)-D		87-511			VT-1
X							1T-221(37)-D		87-512			VT-1
X							1T-221(23)-D		87-513			VT-1
X							1T-221(36)-D		87-514			VT-1

* Otherwise ASME

System or
Component
Description

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
X							1T-221(17)-D		87-515			VT-1
X							1T-221(58)-D		87-516			VT-1
X							1T-221(87)-D		87-517			VT-1
X							1T-221(44)-D		87-518			VT-1
X							1T-221(68)-D		87-526			VT-1
X							1T-221(04)-D		87-527			VT-1
X							1T-221(70)-D		87-528			VT-1
X							1T-221(06)-D		87-529			VT-1
X							1T-221(29)-D		87-530			VT-1
X							1T-221(54)-D		87-531			VT-1
X							1T-221(14)-D		87-534			VT-1
X							1T-221(35)-D		87-535			VT-1
X							1T-221(84)-D		87-536			VT-1
X							1T-221(63)-D		87-537			VT-1
X							1T-221(19)-D		87-538			VT-1
X							1T-221(21)-D		87-539			VT-1

* Otherwise ASME

System or Component Description			*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
	Accept	Reject	NUREG 0313	NUREG 0619	GL-84-11	Other						
D Hydraulic cumulators	X						1T-221(20)-D		87-540			VT-1
	X						1T-221(56)-D		87-613			VT-1
	X						1T-221(56)-D		87-649			VT-1
	X						1S-220(01)		87-541			VT-2 HCU Unit 02-27
	X						1S-220(03)		87-542			VT-2 HCU Unit 06-35
	X						1S-220(09)		87-543			VT-2 HCU Unit 18-03
	X						1S-220(51)		87-544			VT-2 HCU Unit 18-11
	X						1S-220(11)		87-545			VT-2 HCU Unit 18-35
	X						1S-220(76)		87-546			VT-2 HCU Unit 20-07
	X						1S-220(55)		87-547			VT-2 HCU Unit 22-19

* Otherwise ASME

System or
Component
Description

	Accept Reject	*Augmented				Weld or Component Description	Ultrasonic and Visual Report No.	Visual Report No.	Magnetic Particle Report No.	Penetrant Report No.	Comments
		NUREG 0313	NUREG 0619	GL-84-11	Other						
X						1S-220(33)		87-549			VT-2 HCU Unit 22-31
X						1S-220(37)		87-550			VT-2 HCU Unit 30-19
X						1S-220(61)		87-551			VT-2 HCU Unit 30-39
X						1S-220(21)		87-552			VT-2 HCU Unit 34-27

* Otherwise ASME

INSERVICE INSPECTION REPORT
November 1, 1985 through June 29, 1987

Part F - ISI FIGURES & ISOs

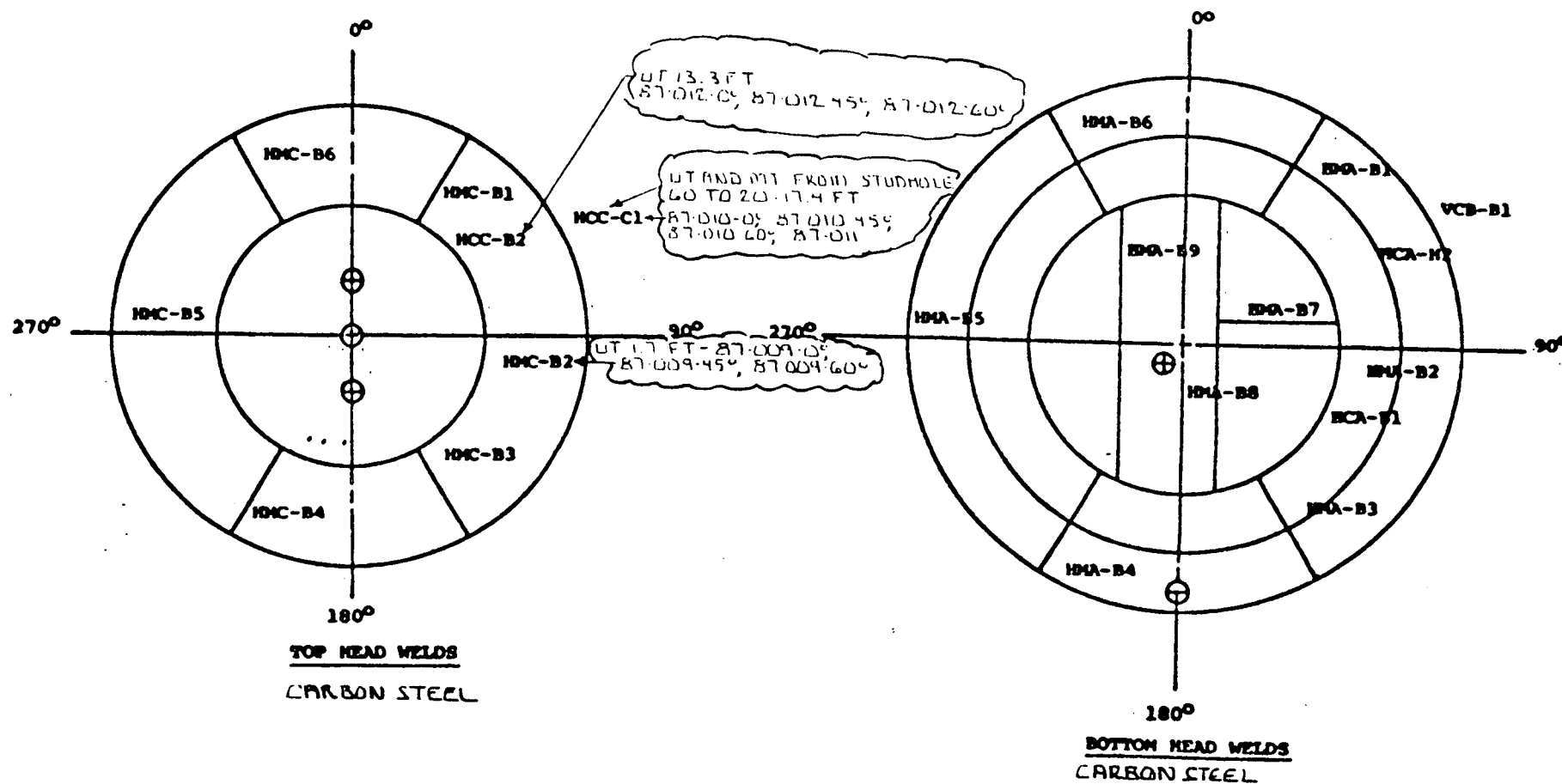
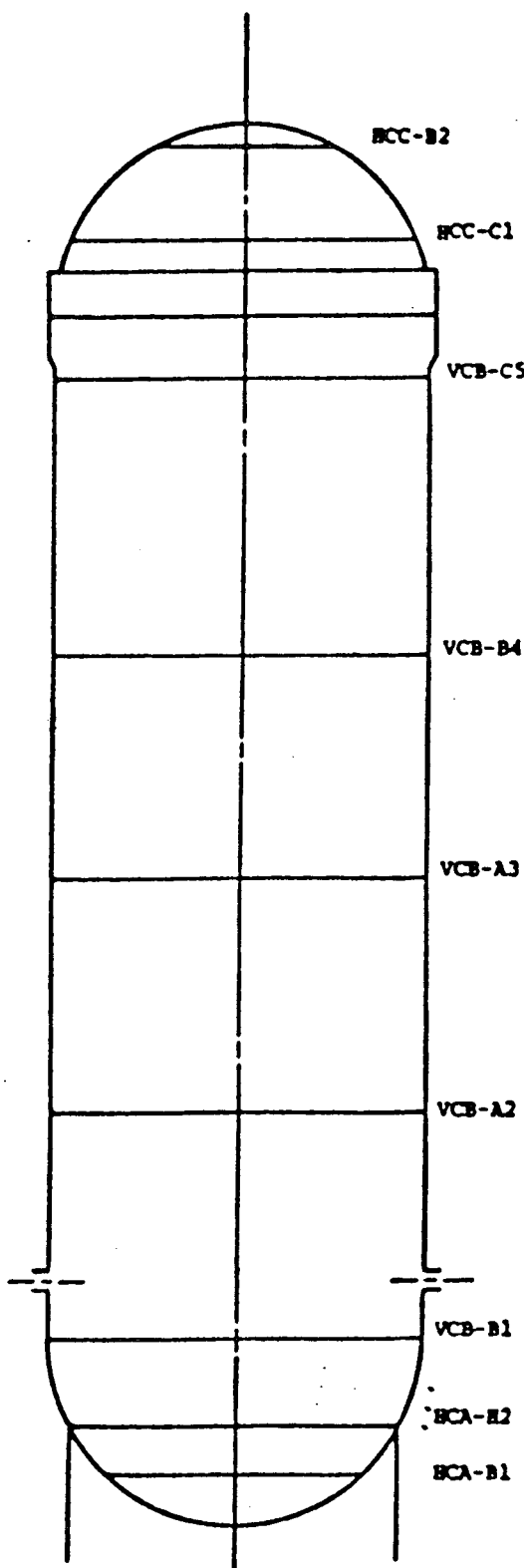


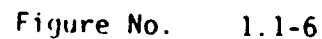
Figure No. 1.1-2

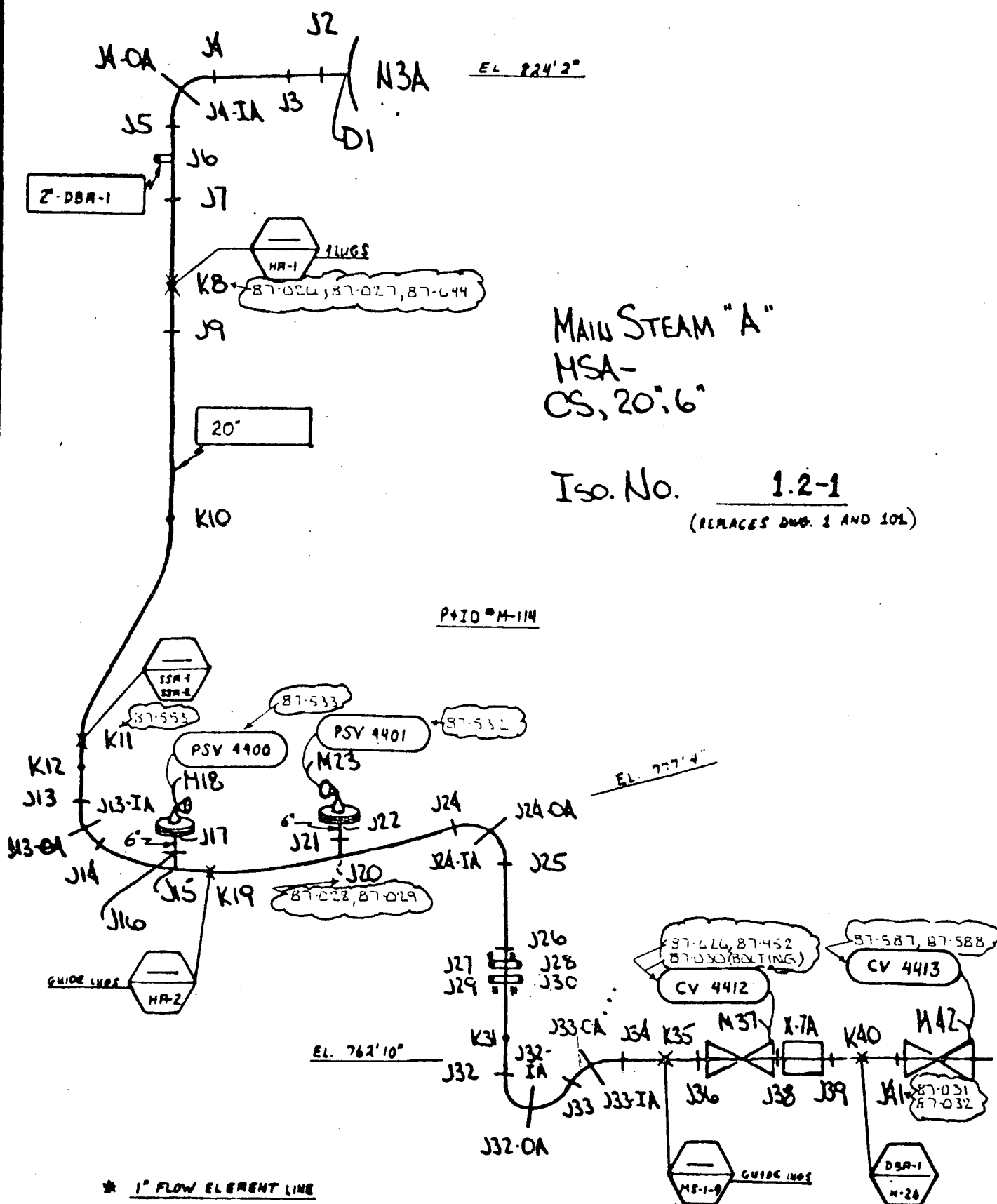


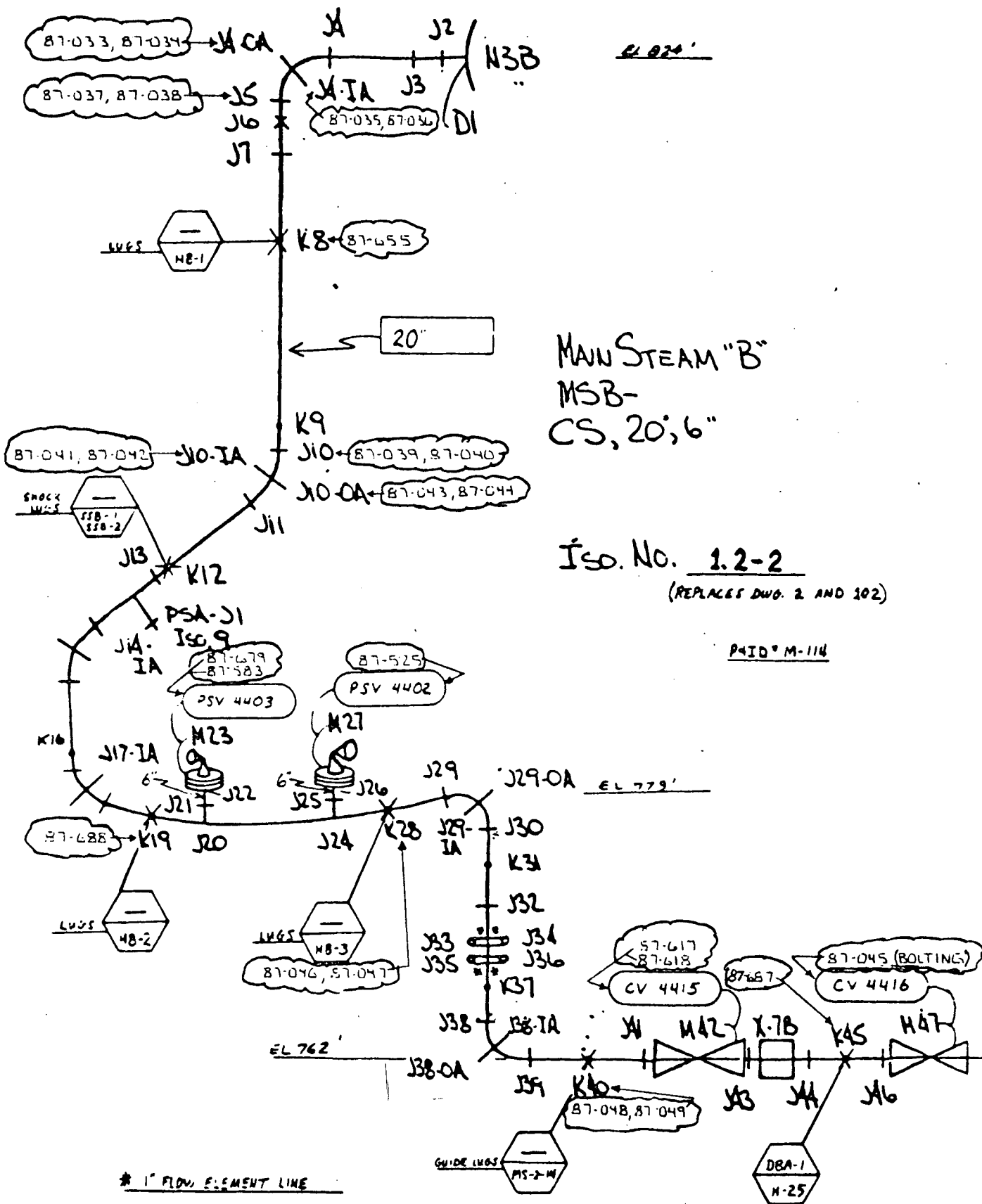
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87-013-01, 87-013-45, 87-013-60

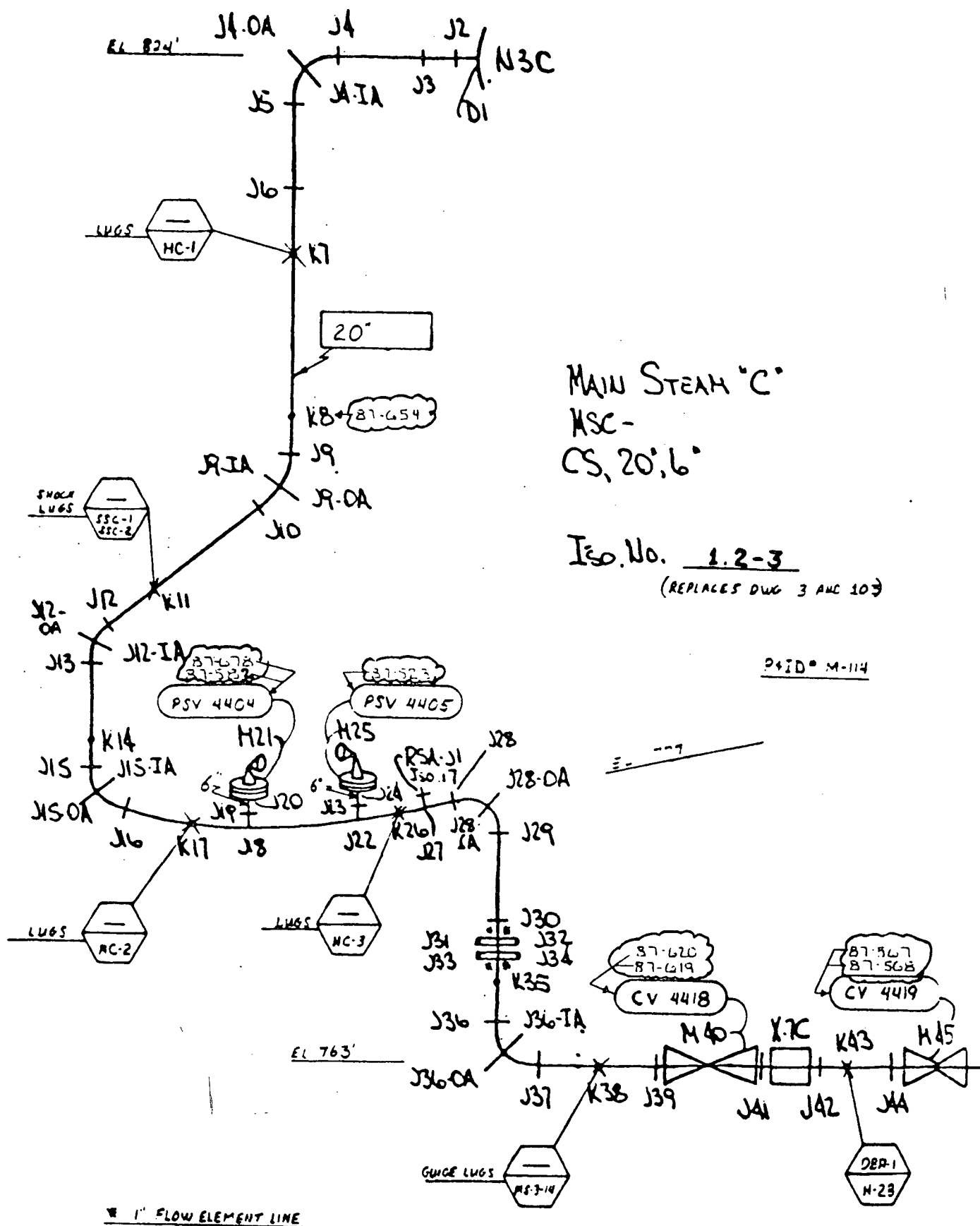
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CARBON STEEL

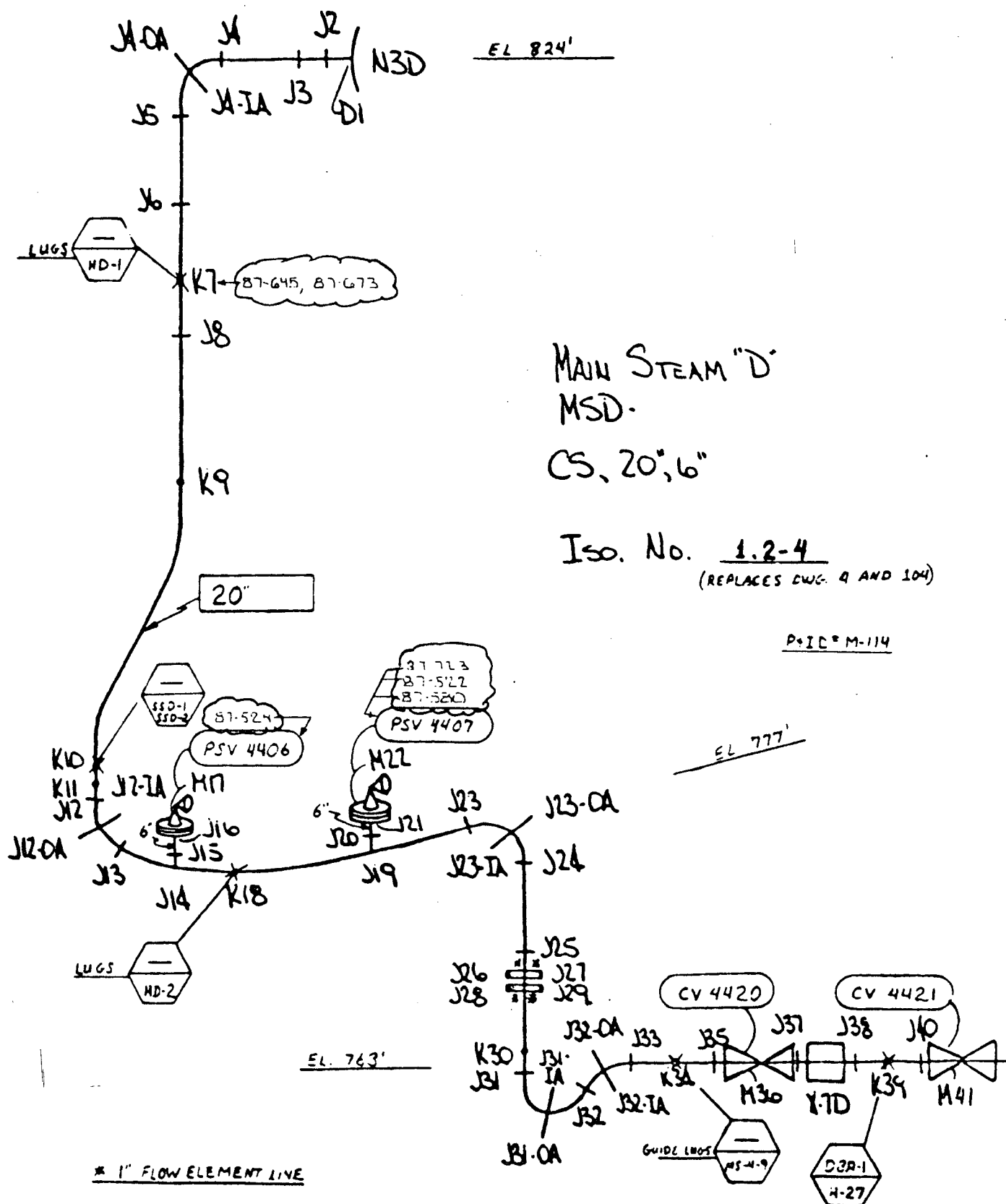
Figure No. 1.1-3

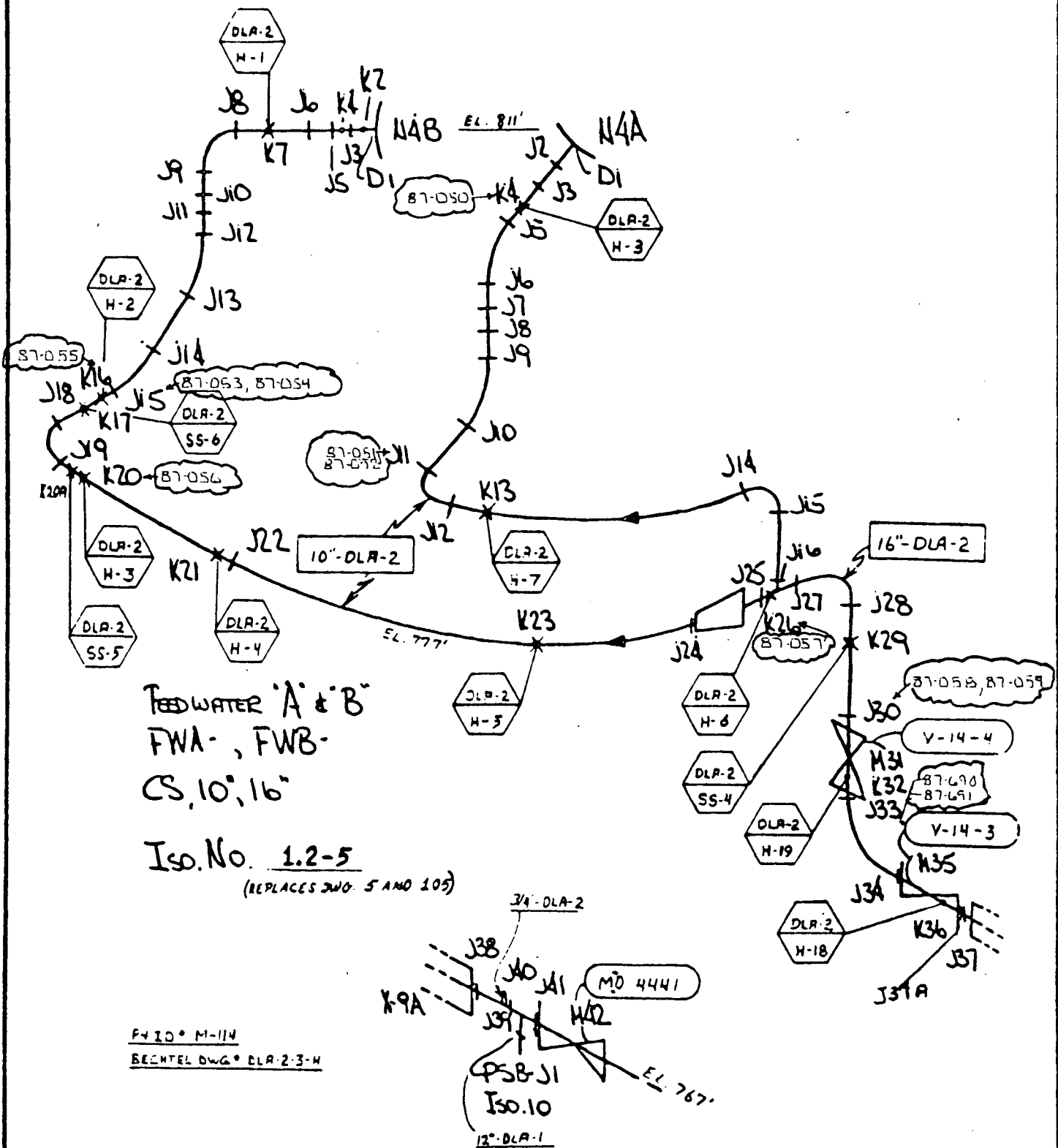


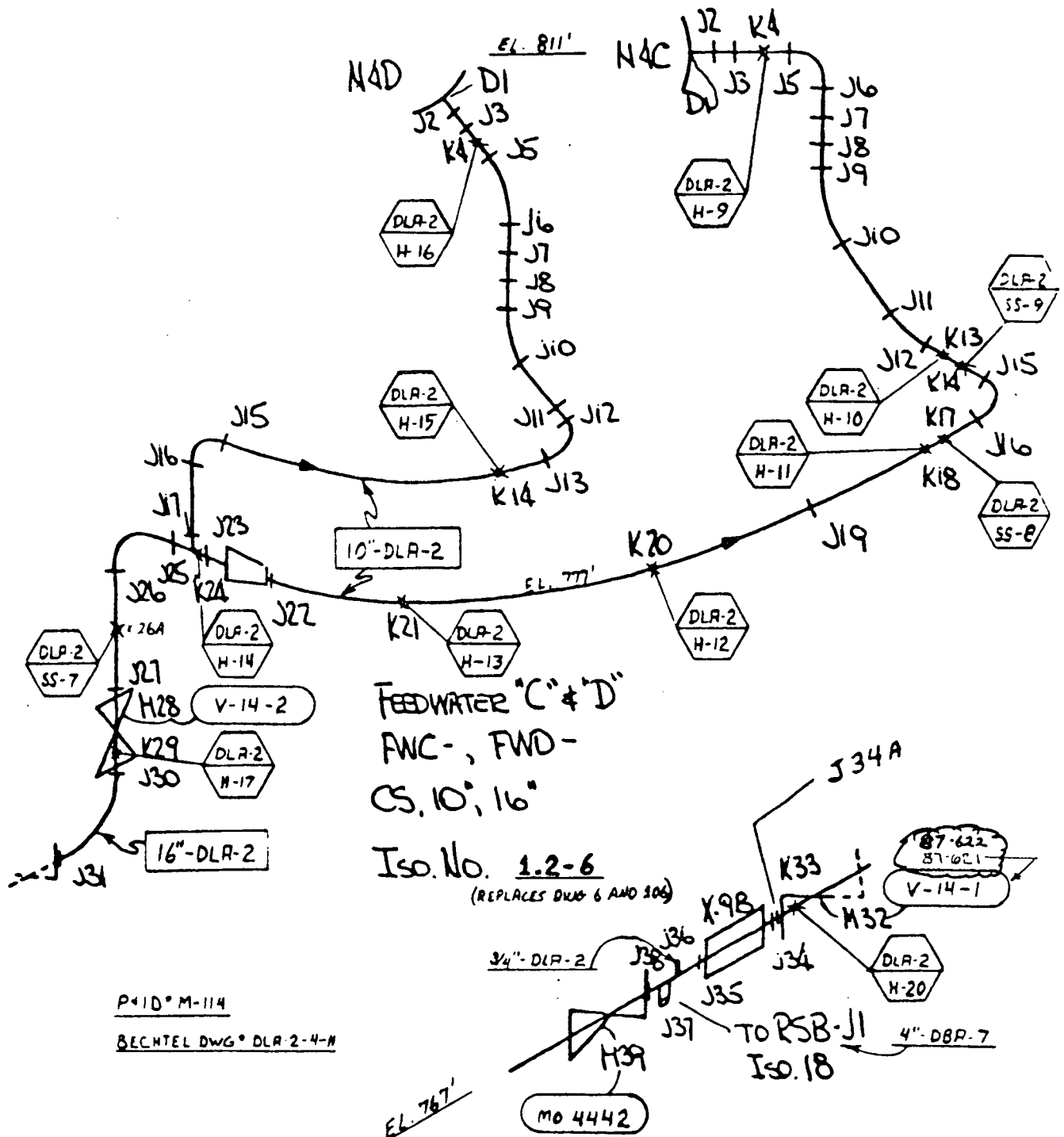


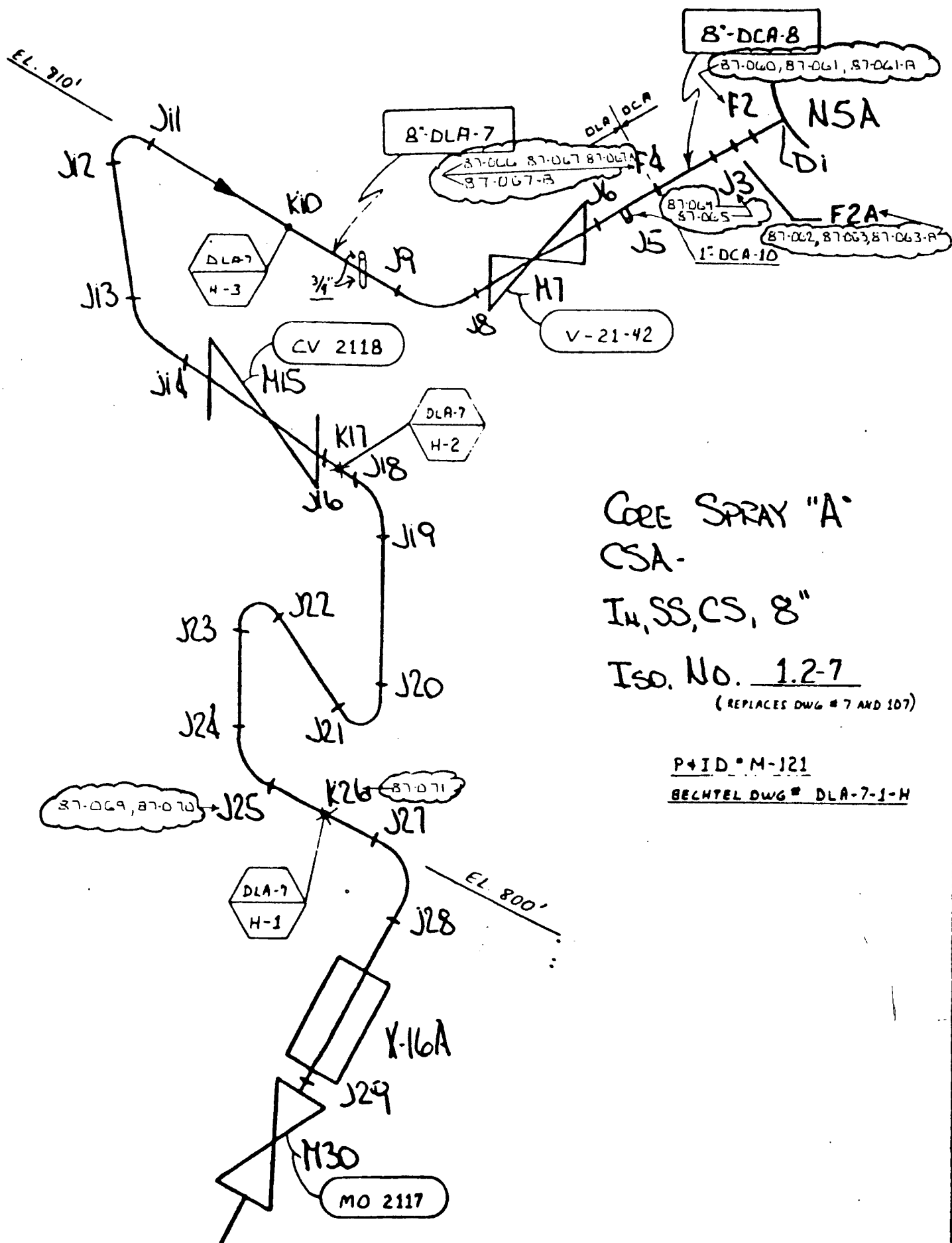


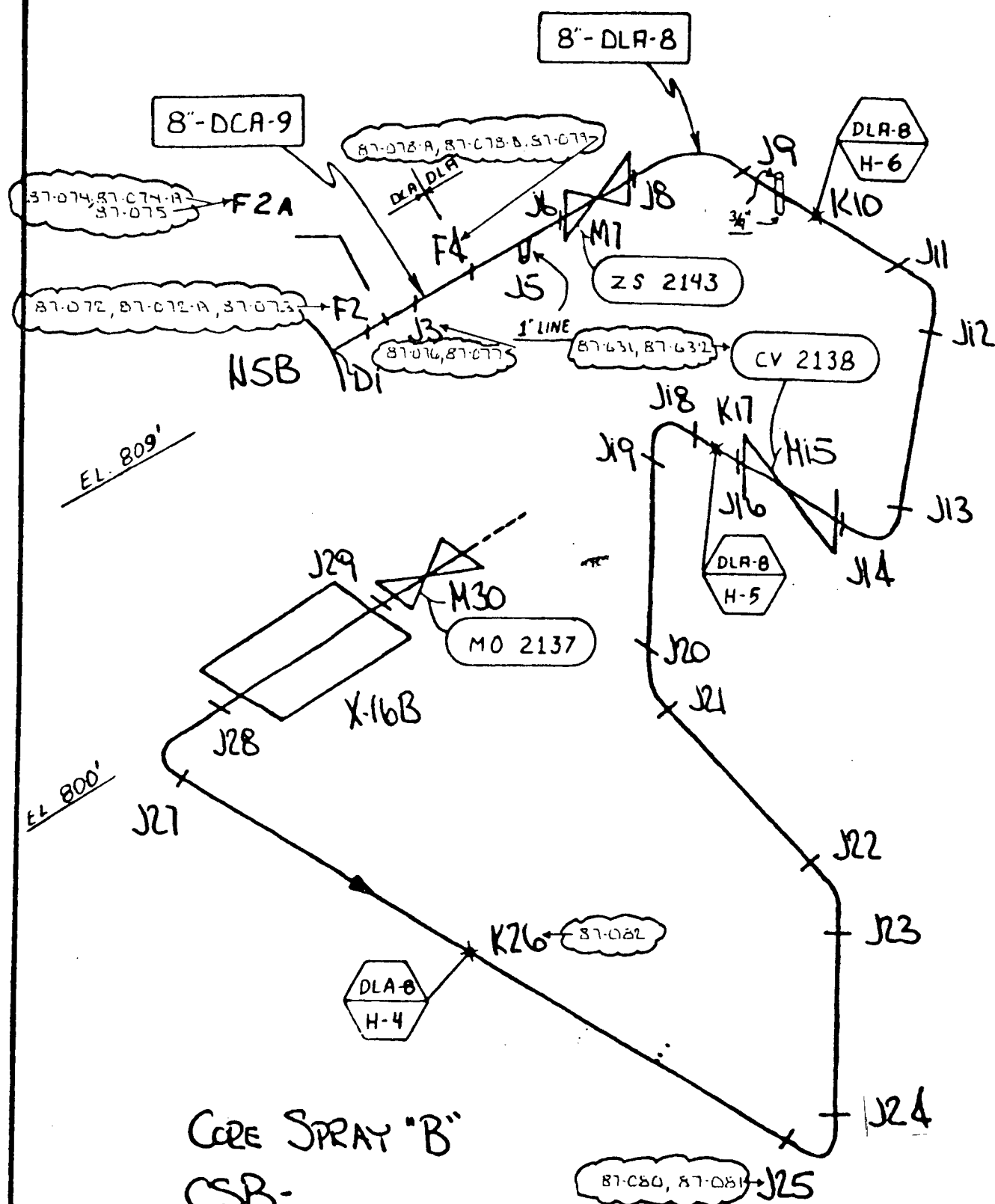












CORE SPRAY "B"
CSB-
IN, SS, CS, 8"

Iso. No. 12-8
(REPLACES DWG # 8 AND 108)

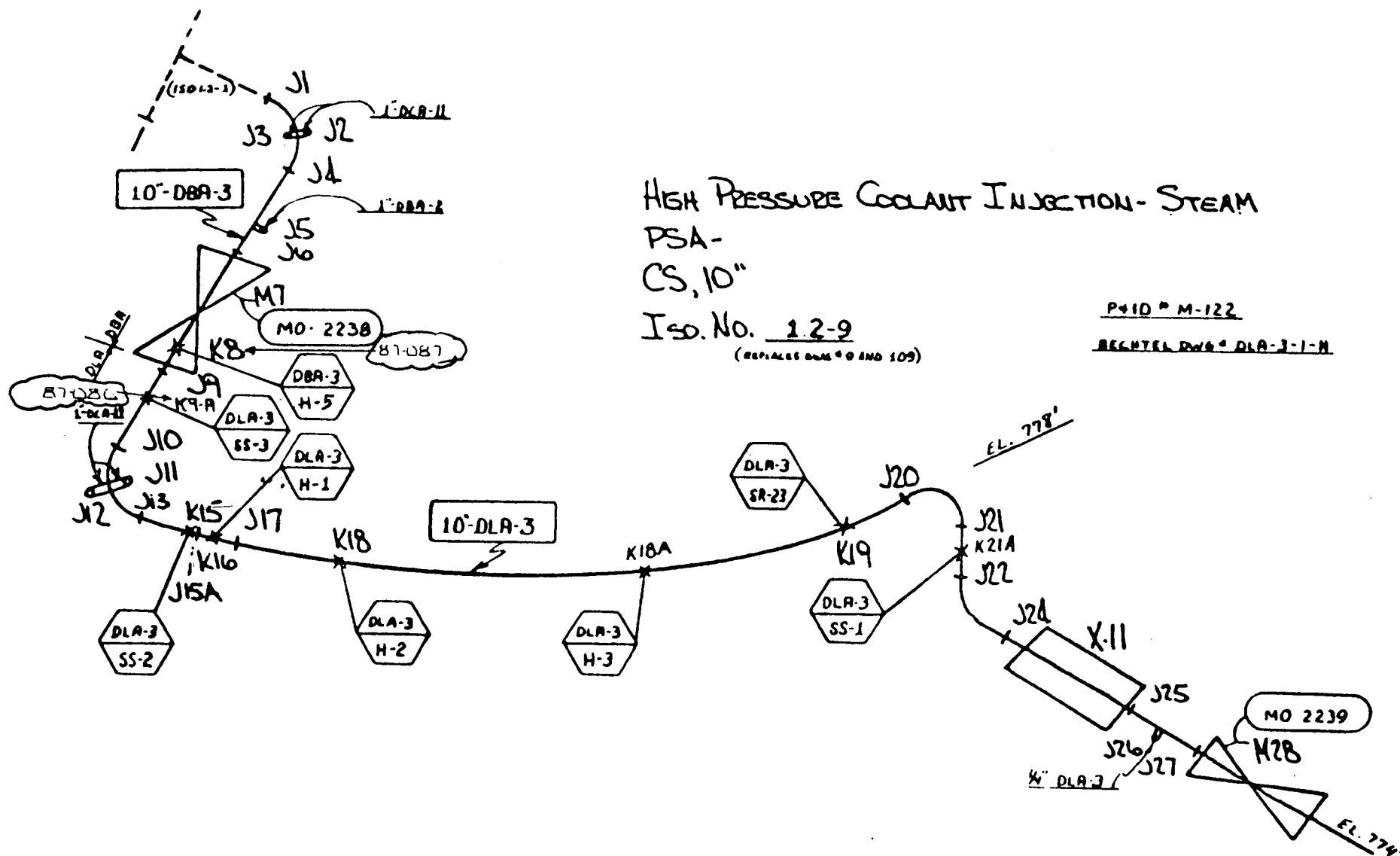
P4 ID - M-121

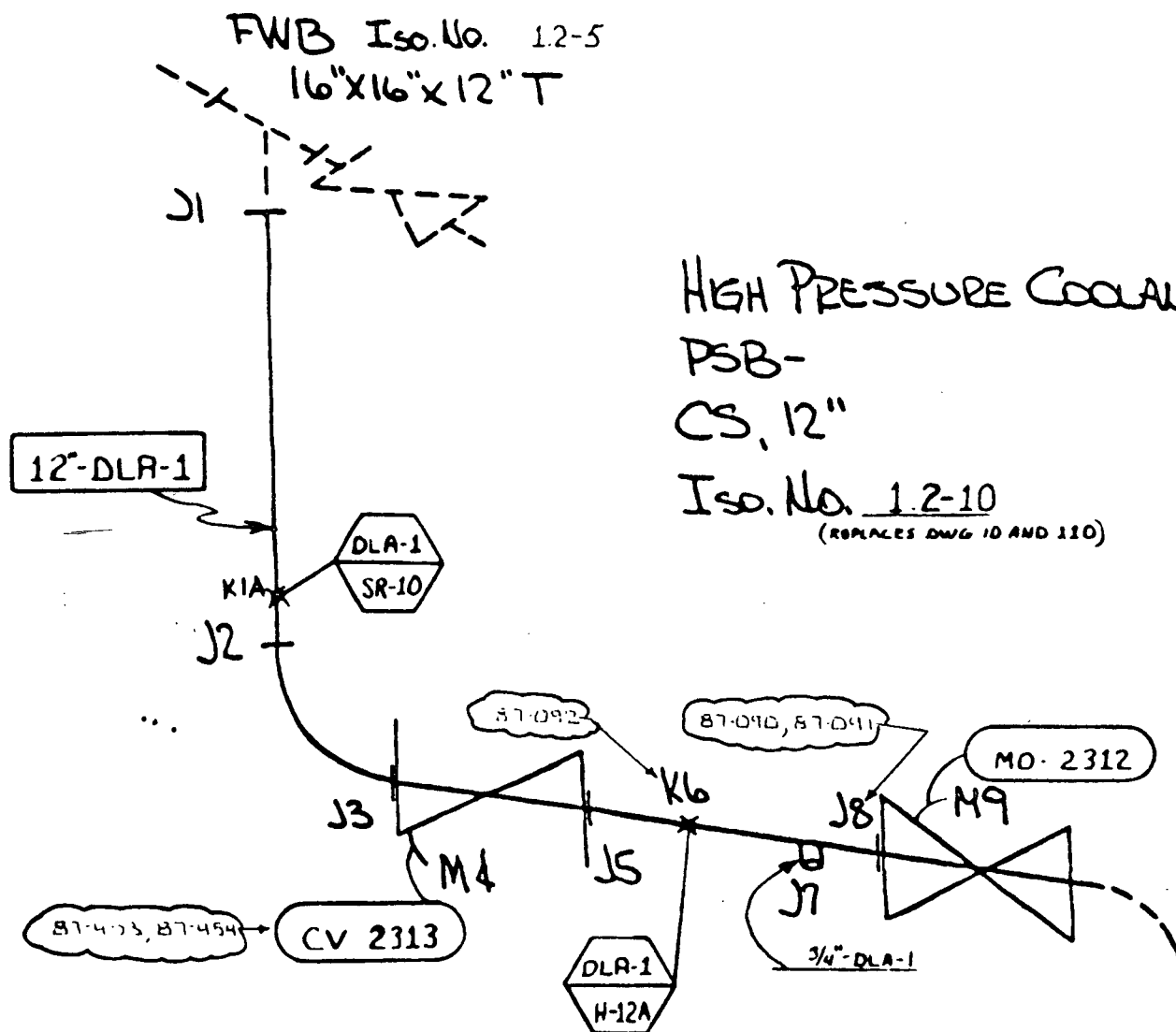
BECHTEL DWG # DLA-8-1-H

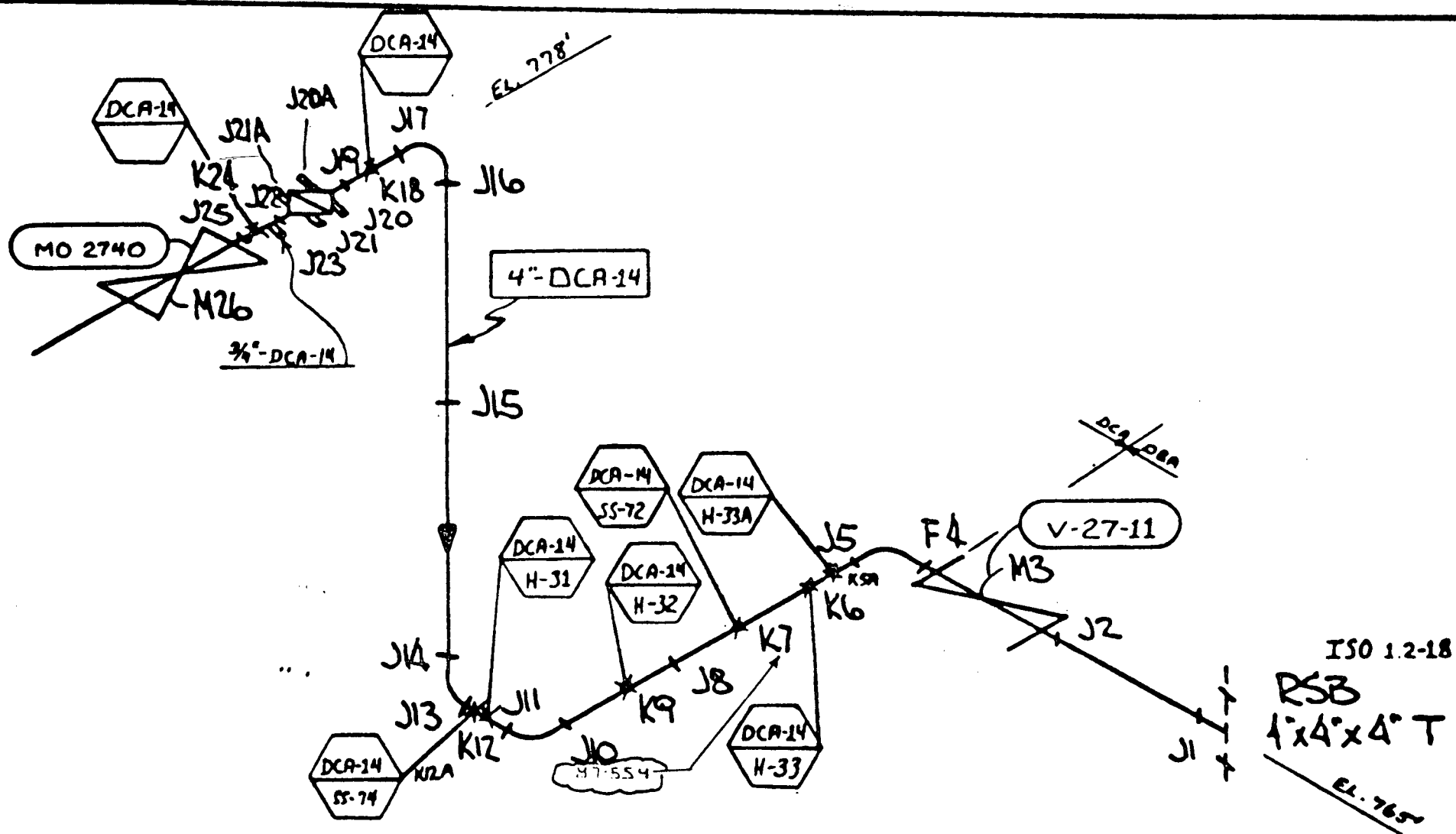
HIGH PRESSURE COOLANT INJECTION-STEAM
 PSA-
 CS, 10"
 Iso. No. 12-9
 (REPLACES DWA # 0 AND 109)

P+10 M-122

RECHTEL DWA # DLA-3-1-M







REACTOR WATER CLEANUP - Discharge (CLEAN)

CUB-

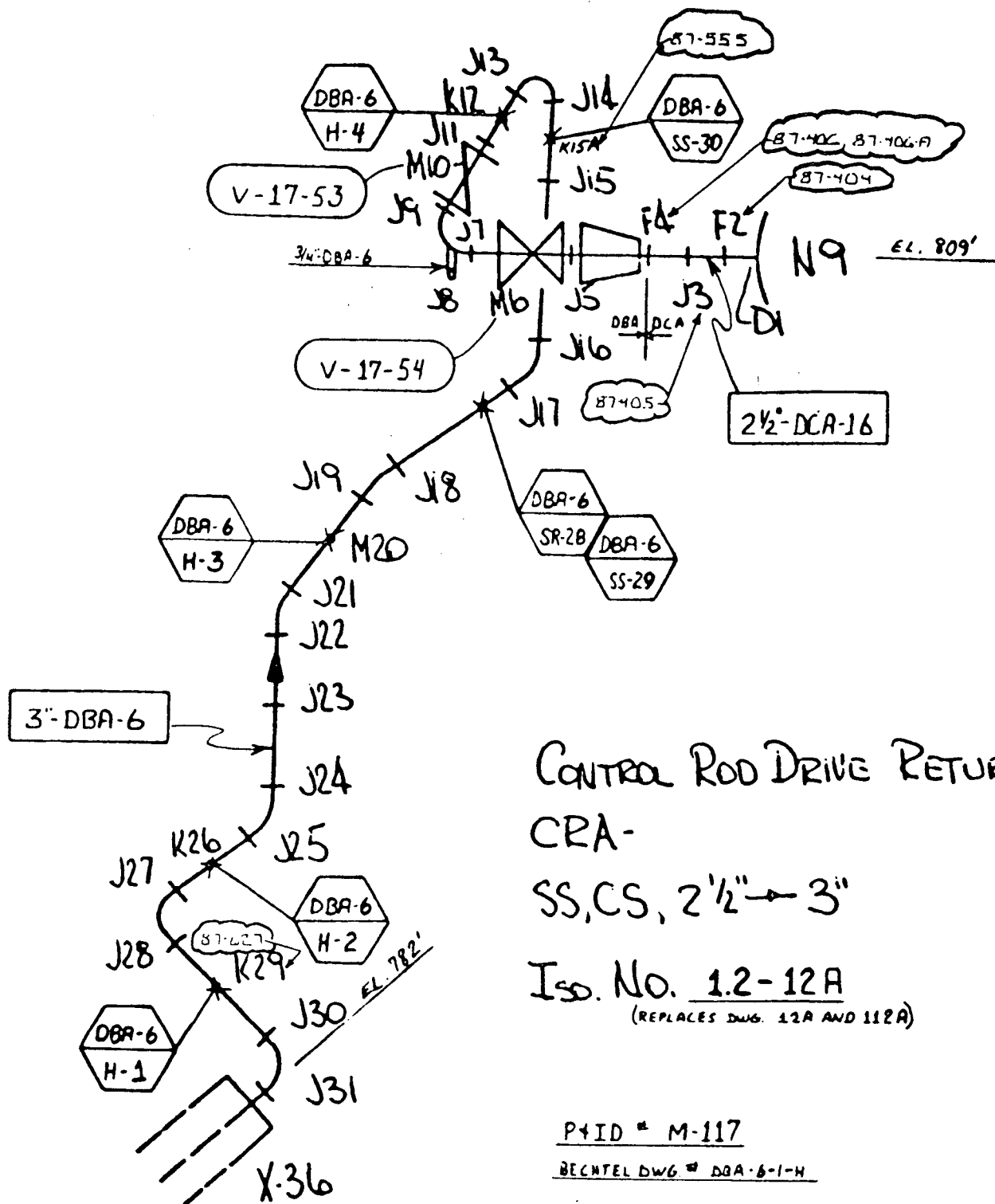
CS.SS, 4"

Isa No. 1.2-11B

(REPLACES DWS 11B AND 111B)

P&ID # M-127

RENTED DWS # DCA-14-1-4



CONTROL ROD DRIVE RETURN
CRA-

SS, CS, 2 1/2" → 3"

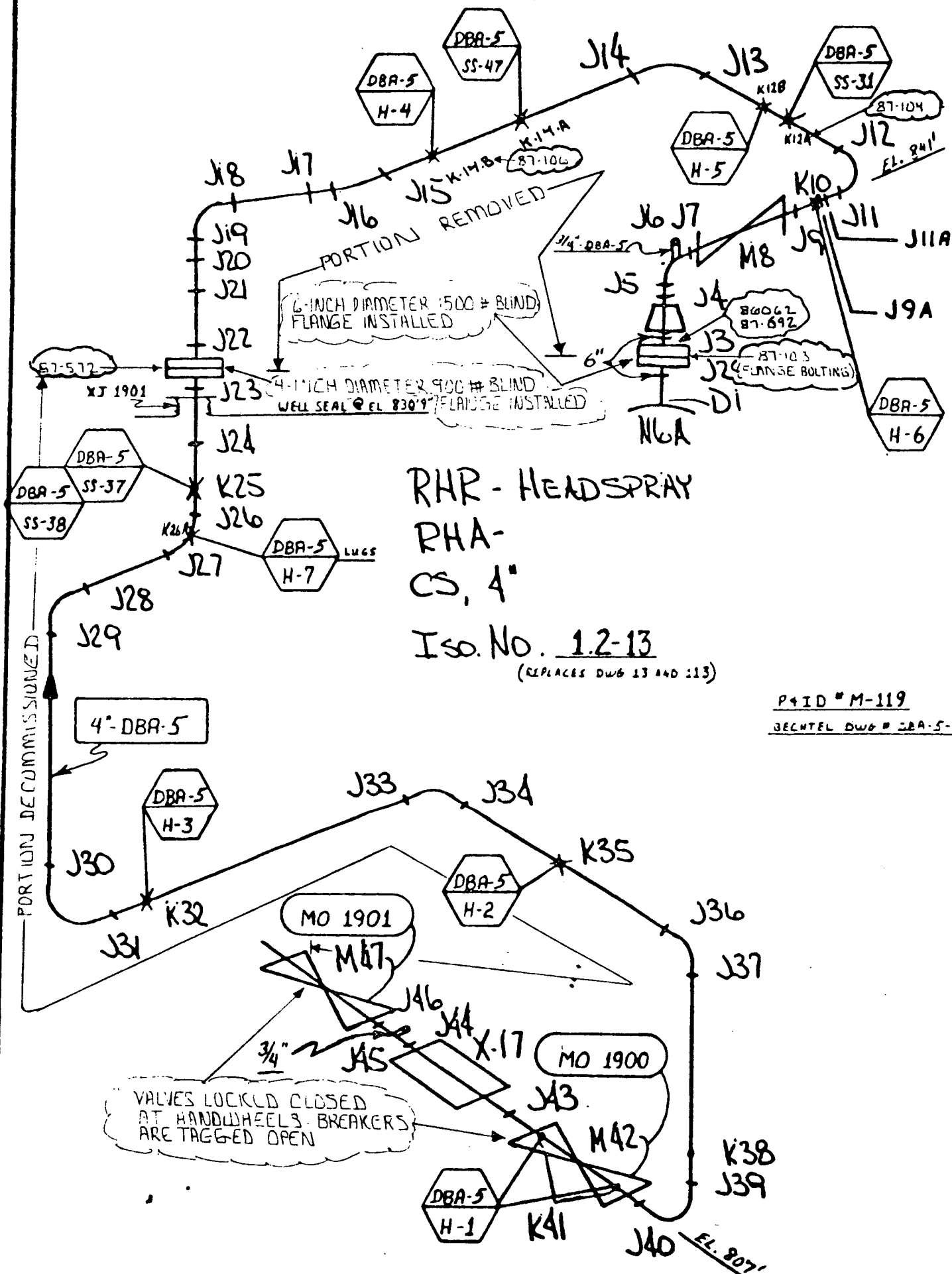
ISO. No. 1.2-12A

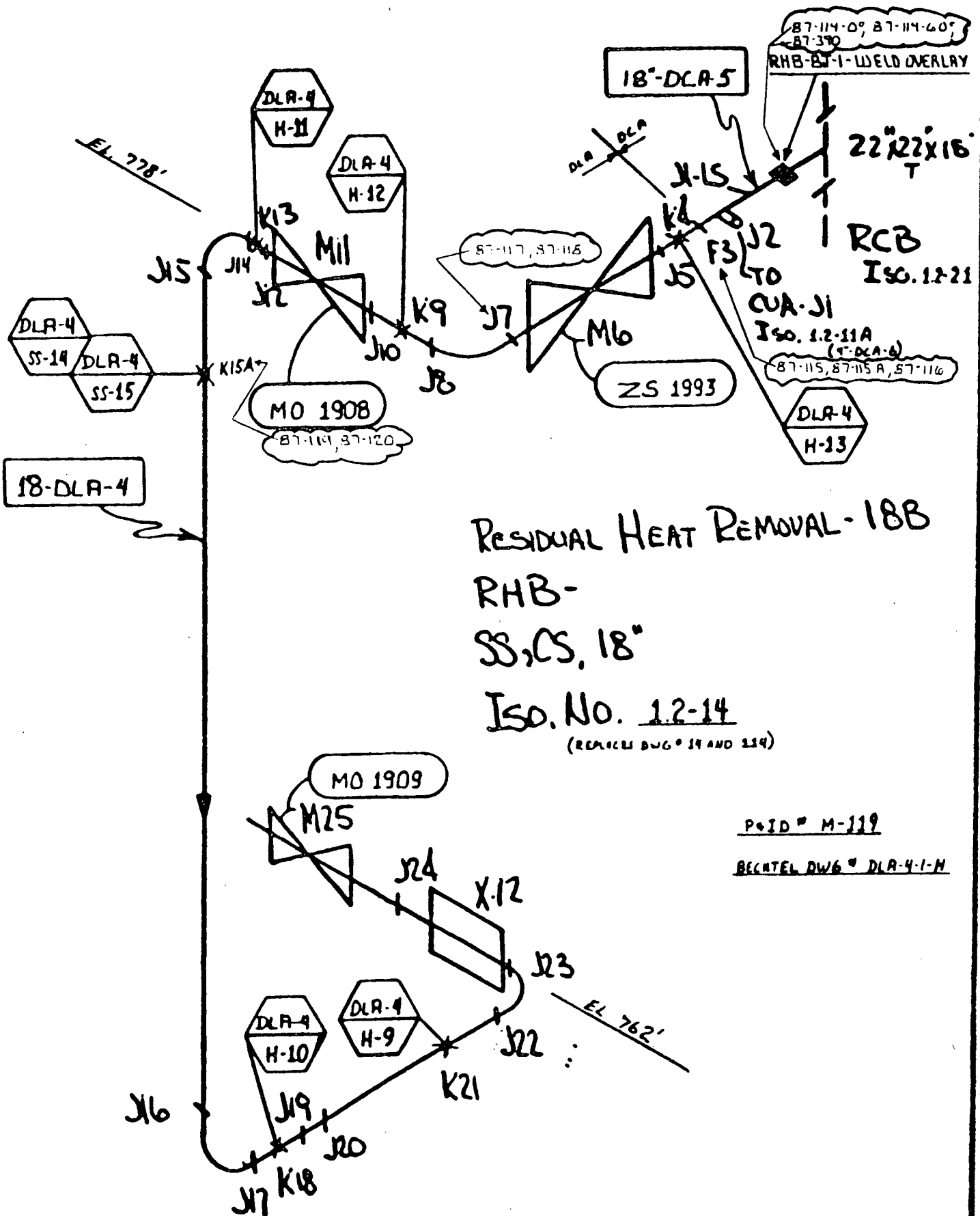
(REPLACES DWG. 12A AND 112A)

P&ID # M-117

BECHTEL DWG # DGA-8-1-H

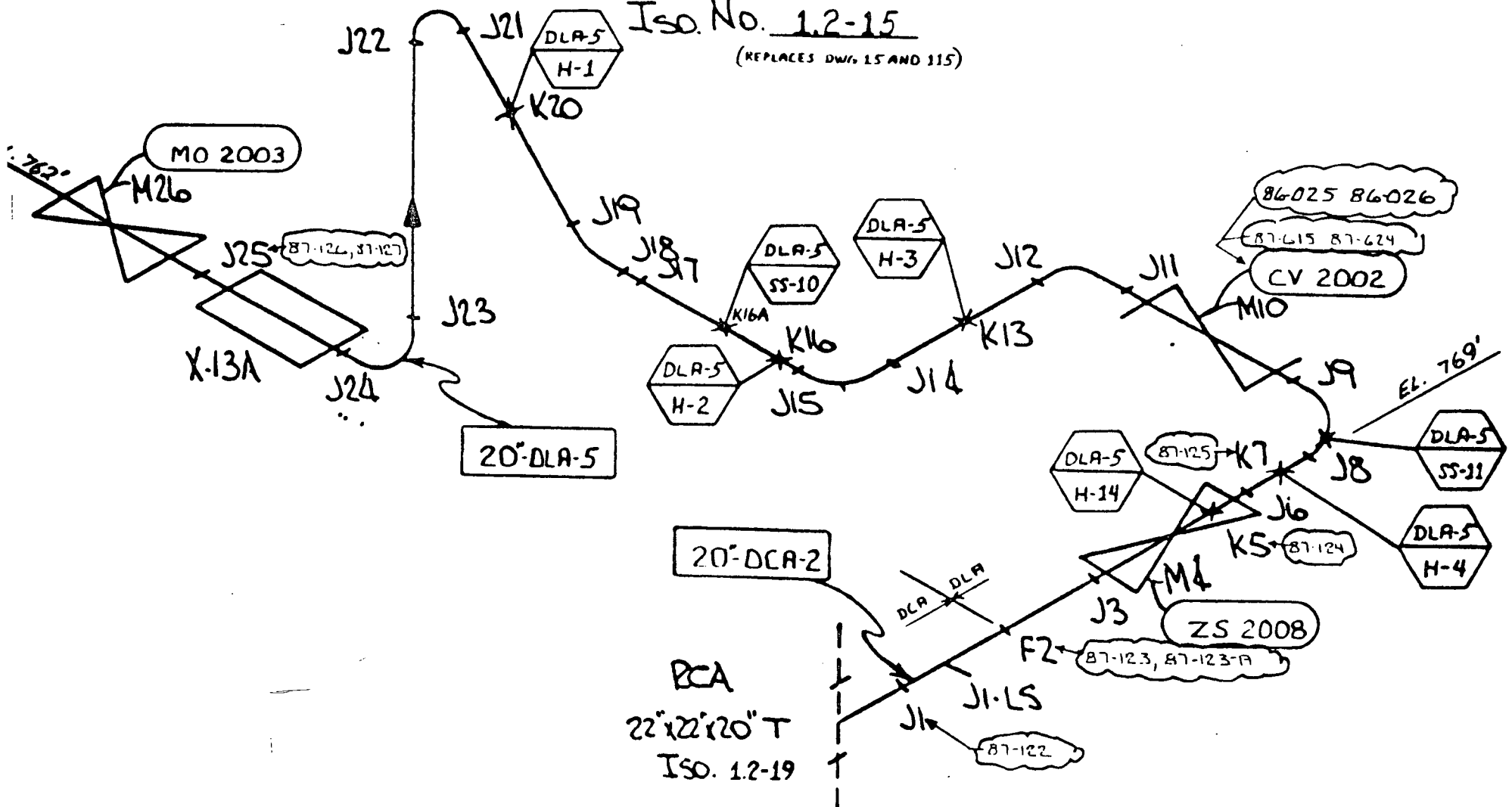
CONT. ON ISO 1.2-12B

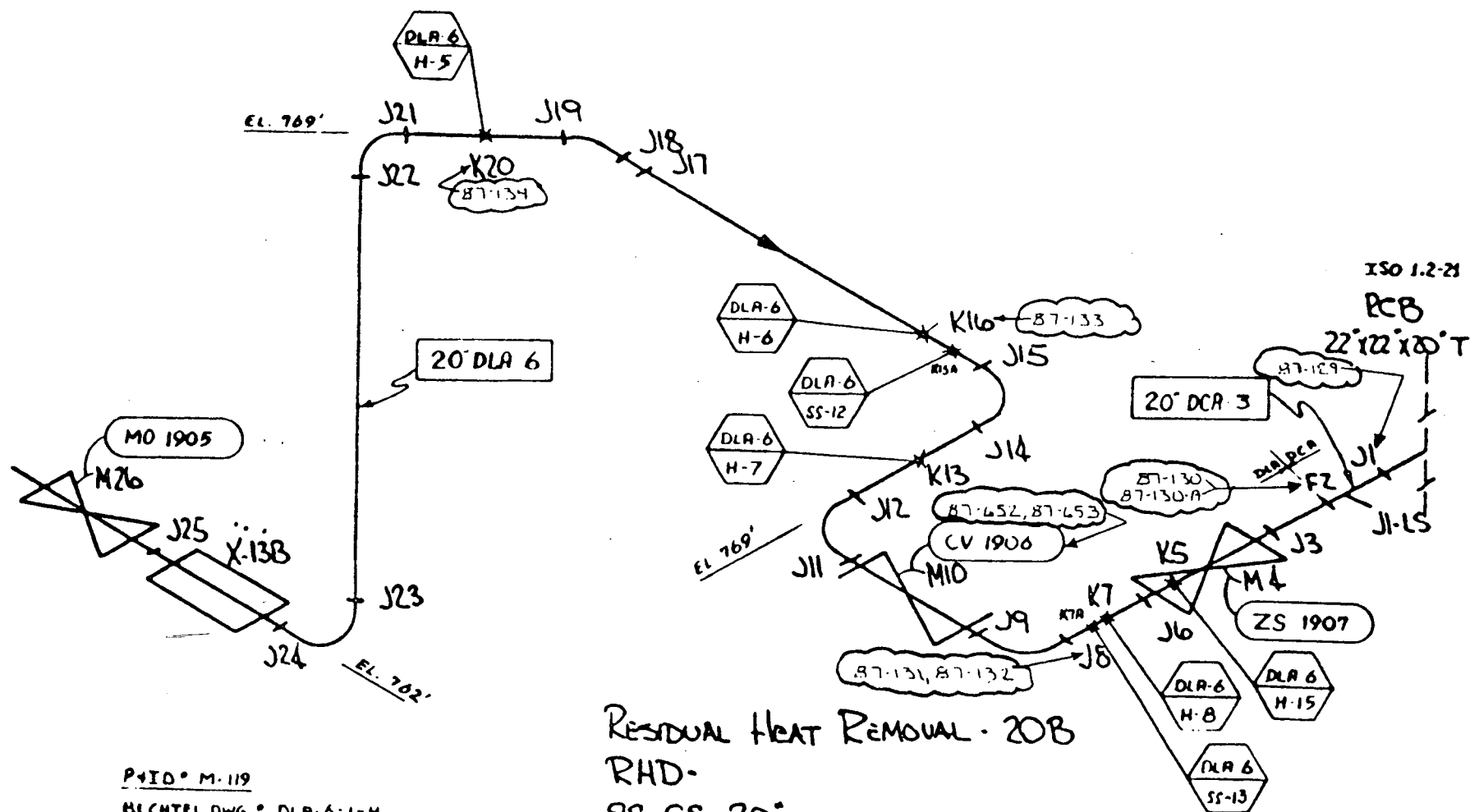




ISO. No. 1.2-15
(REPLACES DWG. 15 AND 115)

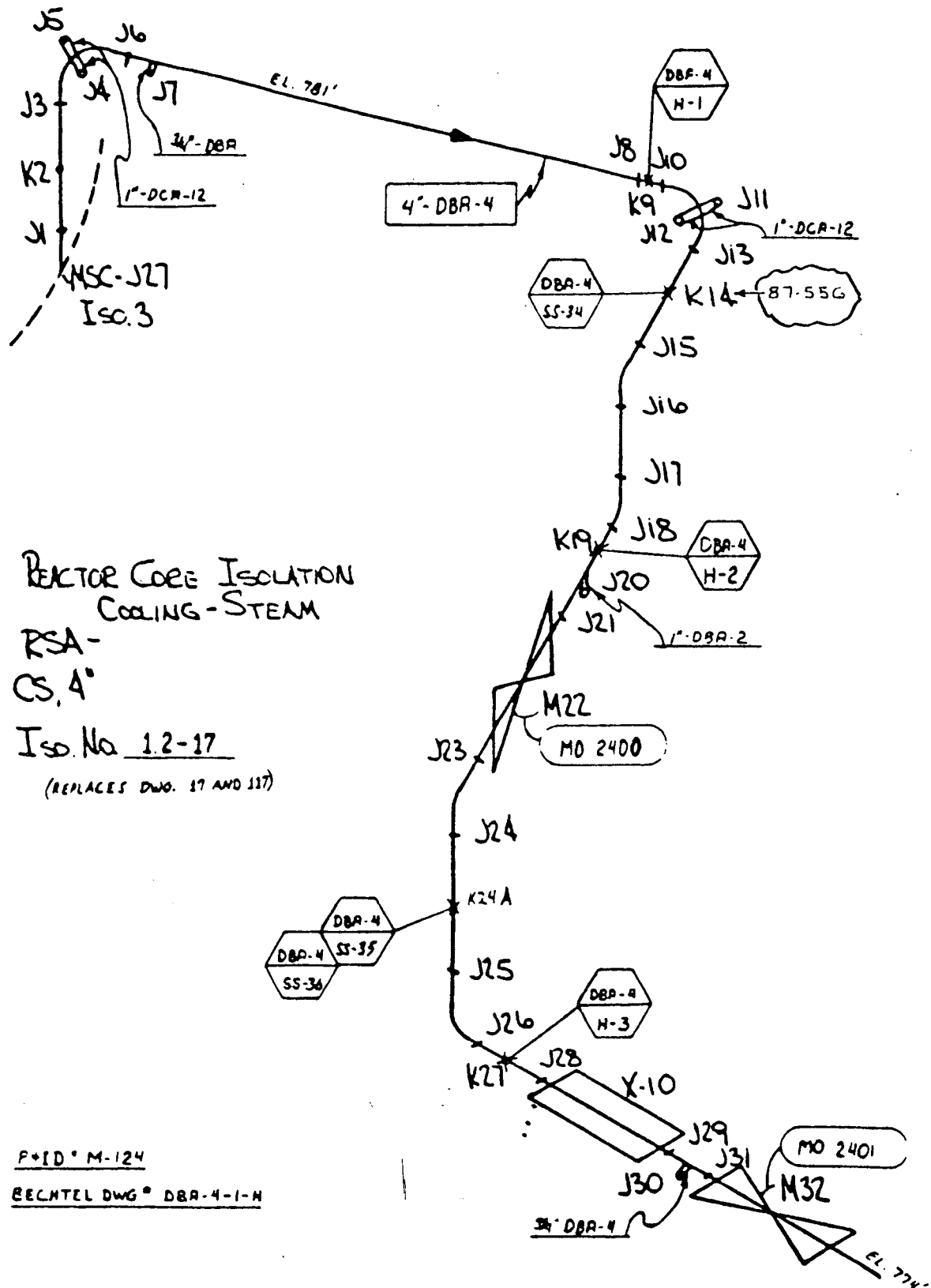
BECHTEL DWG # DLA-5-1-N

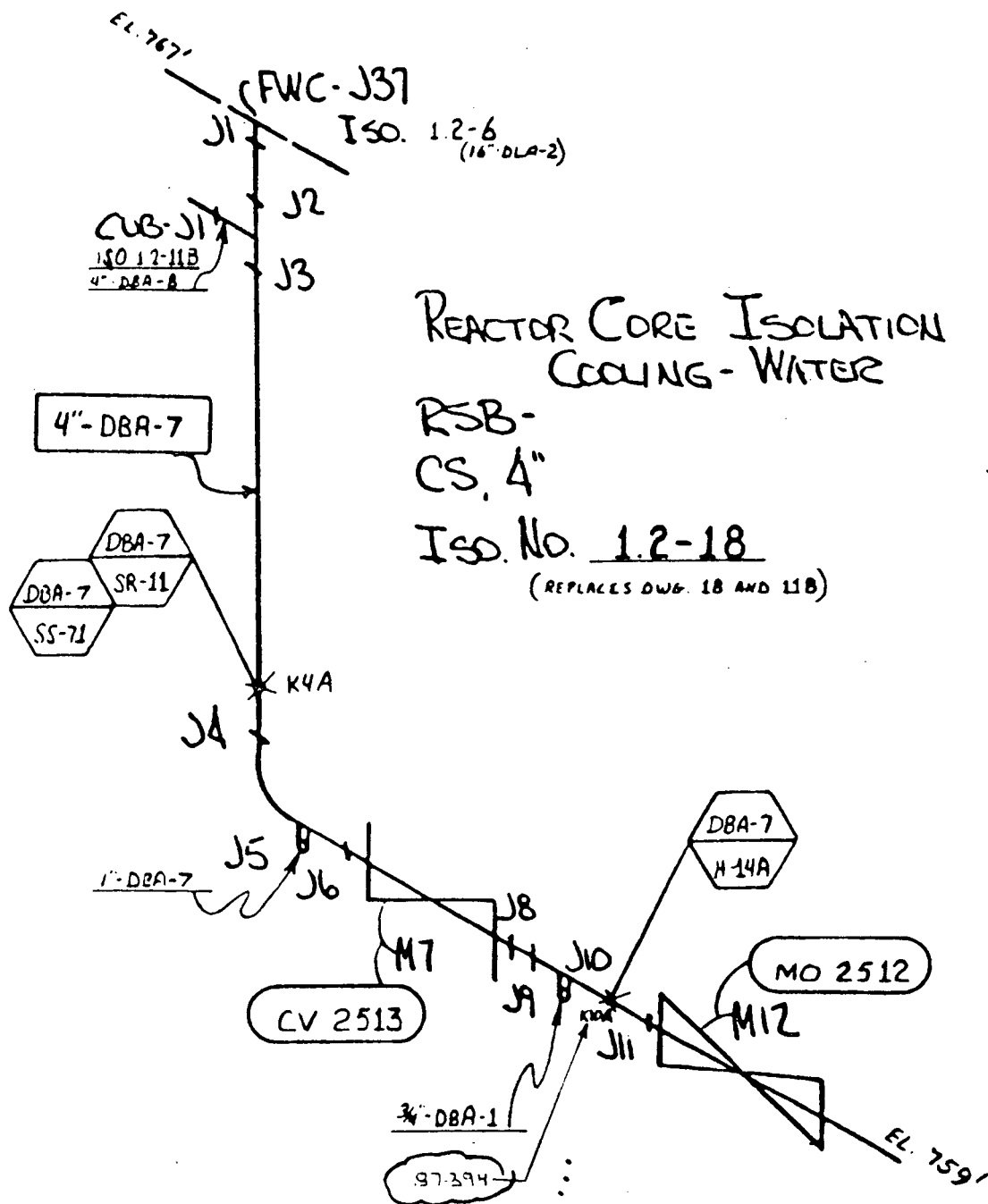




RESIDUAL HEAT REMOVAL - 20B
RHD-
SS, CS, 20°
Iso. No. 1,2-16

(REPLACES nos. 16 AND 116)



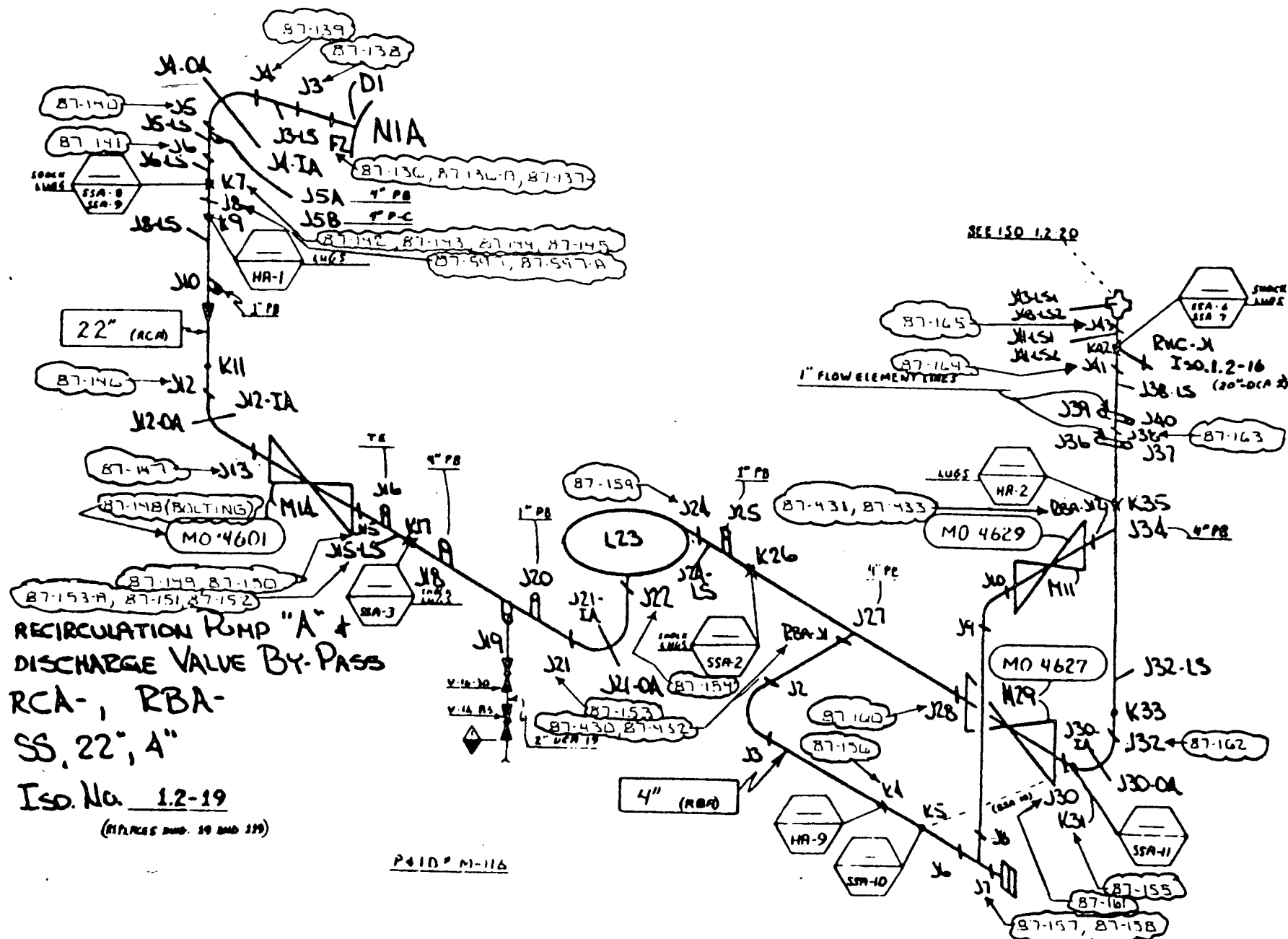


REACTOR CORE ISOLATION
COOLING - WATER

RSB-
CS, 4"

ISO. No. 1.2-18
(REPLACES DWG. 18 AND 11B)

P+ID # M-125
BECHTEL DWG. # DBA-7-1-H



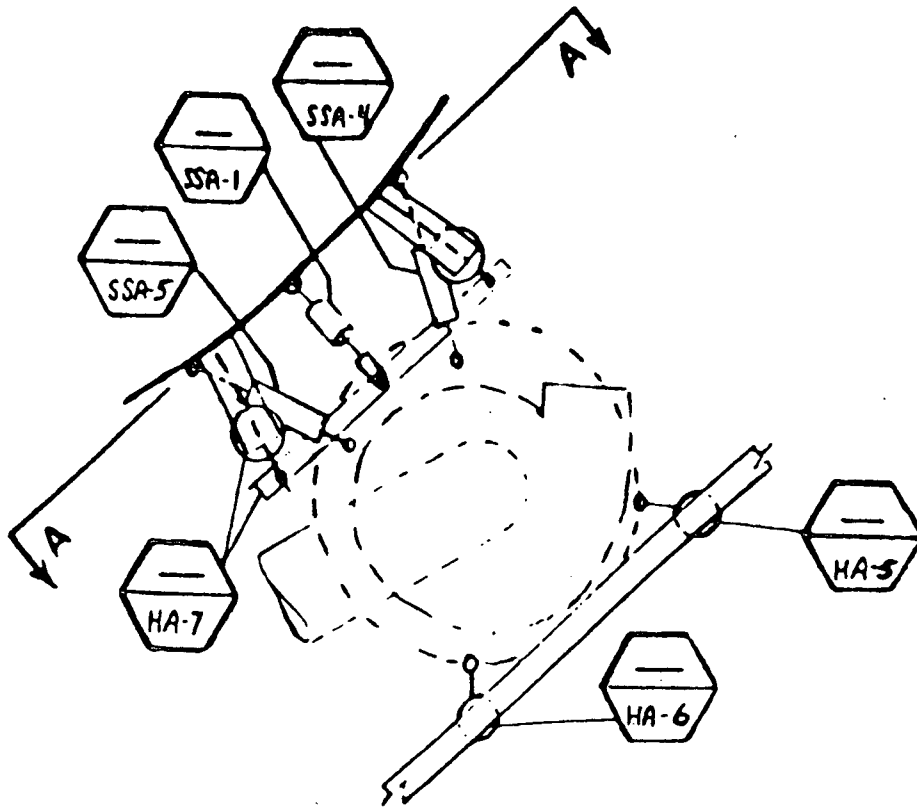
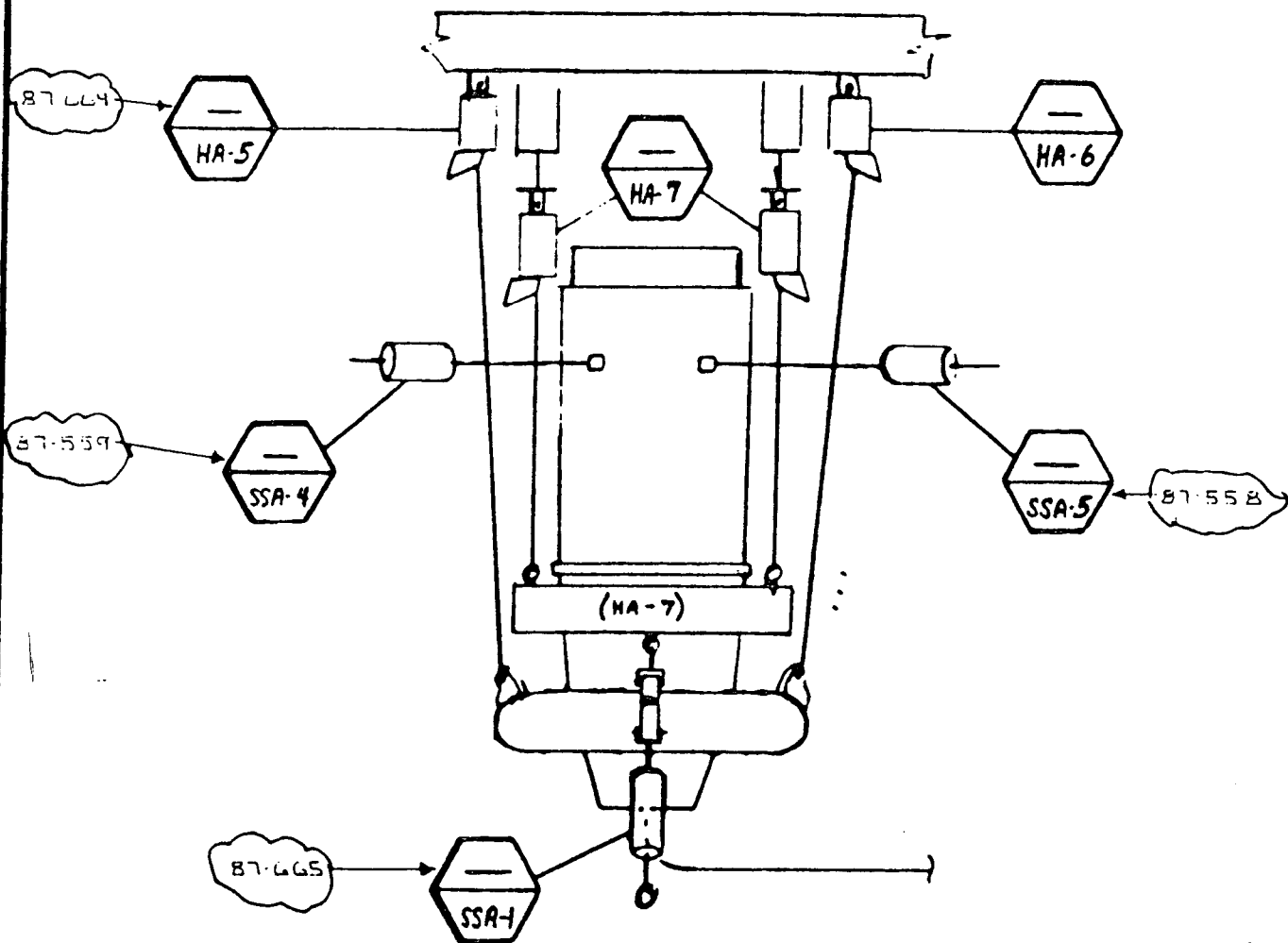
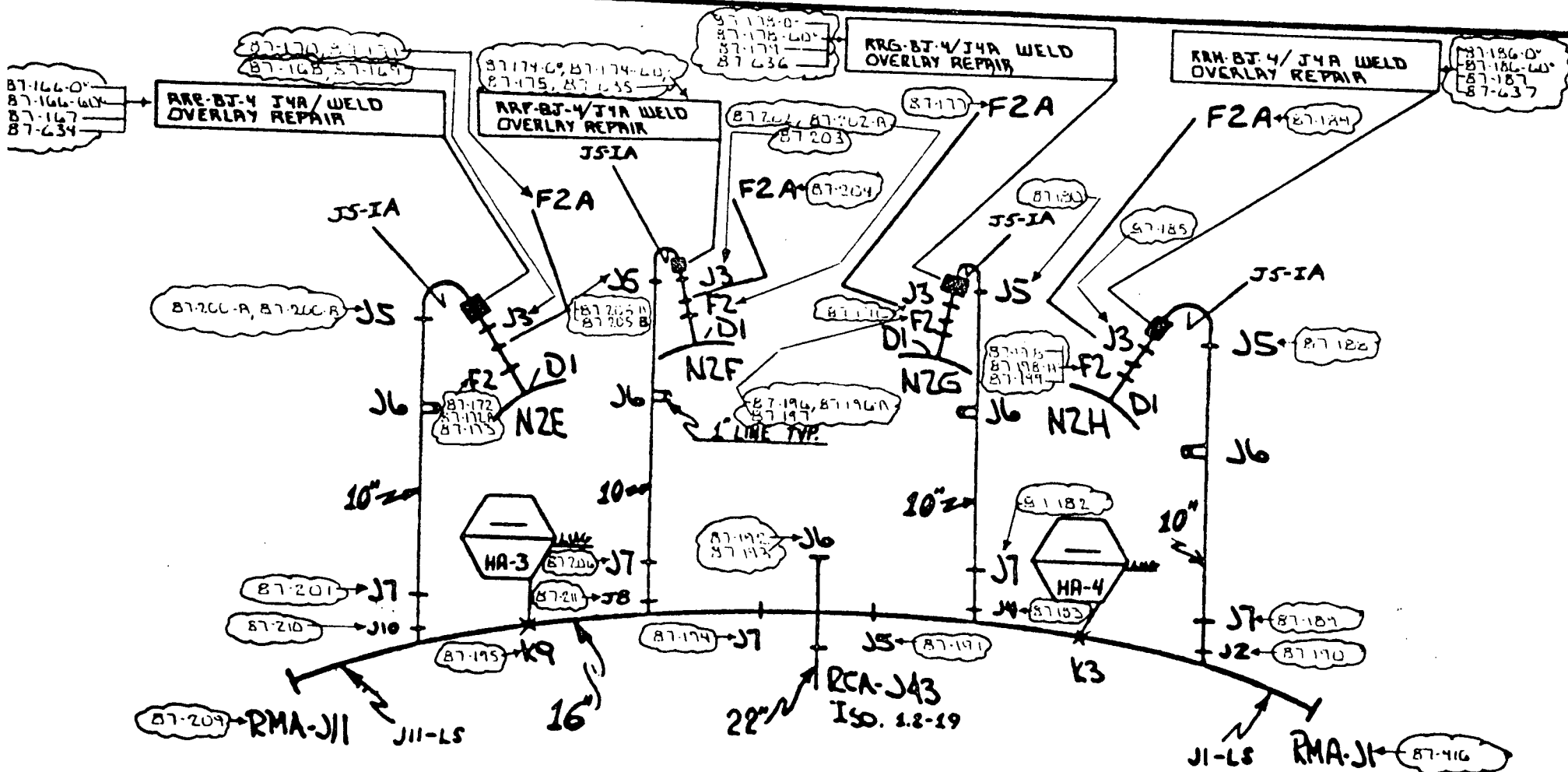
RECIRC. PUMP "A" SUPPORTS

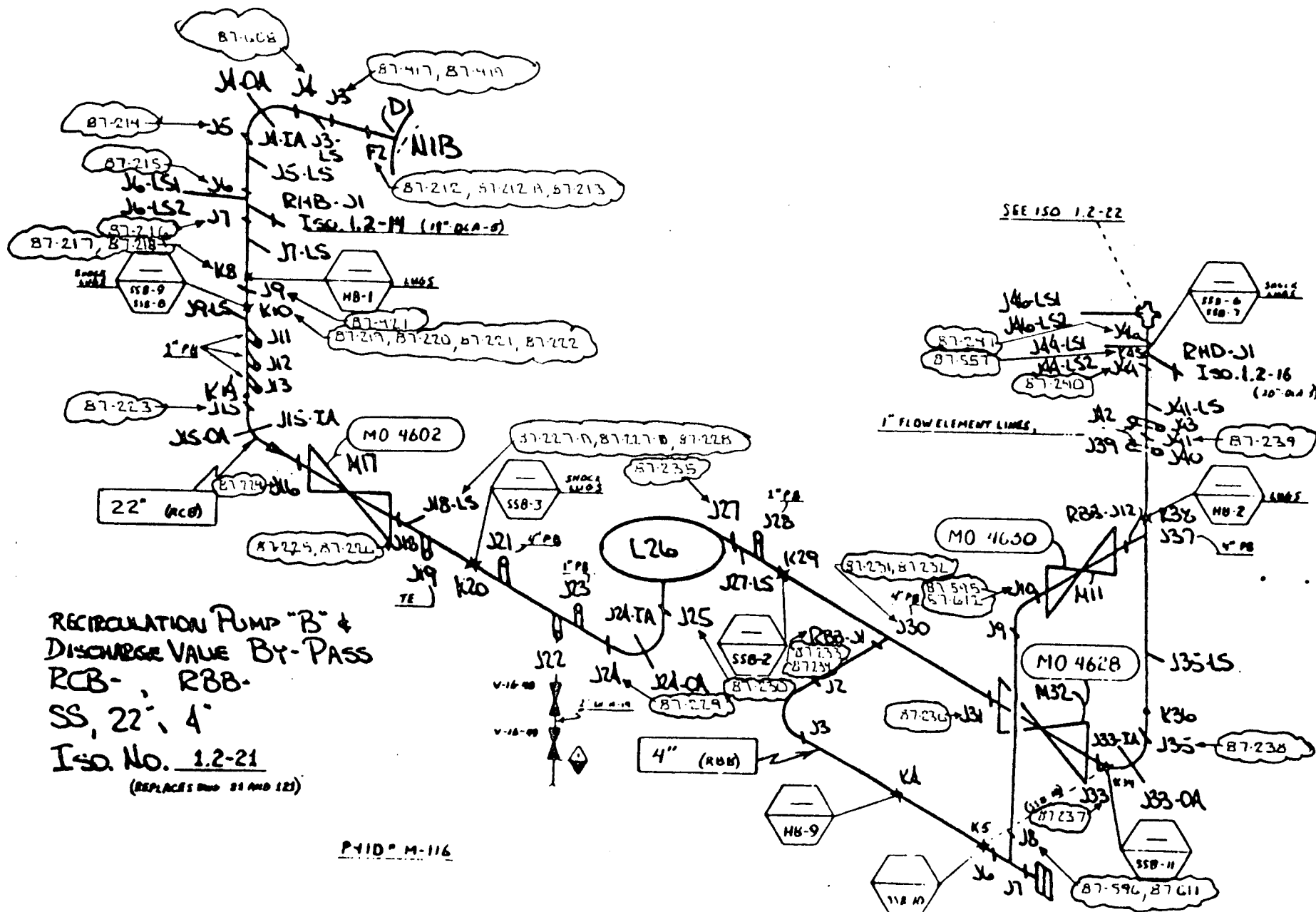
Figure No. 1.3-2

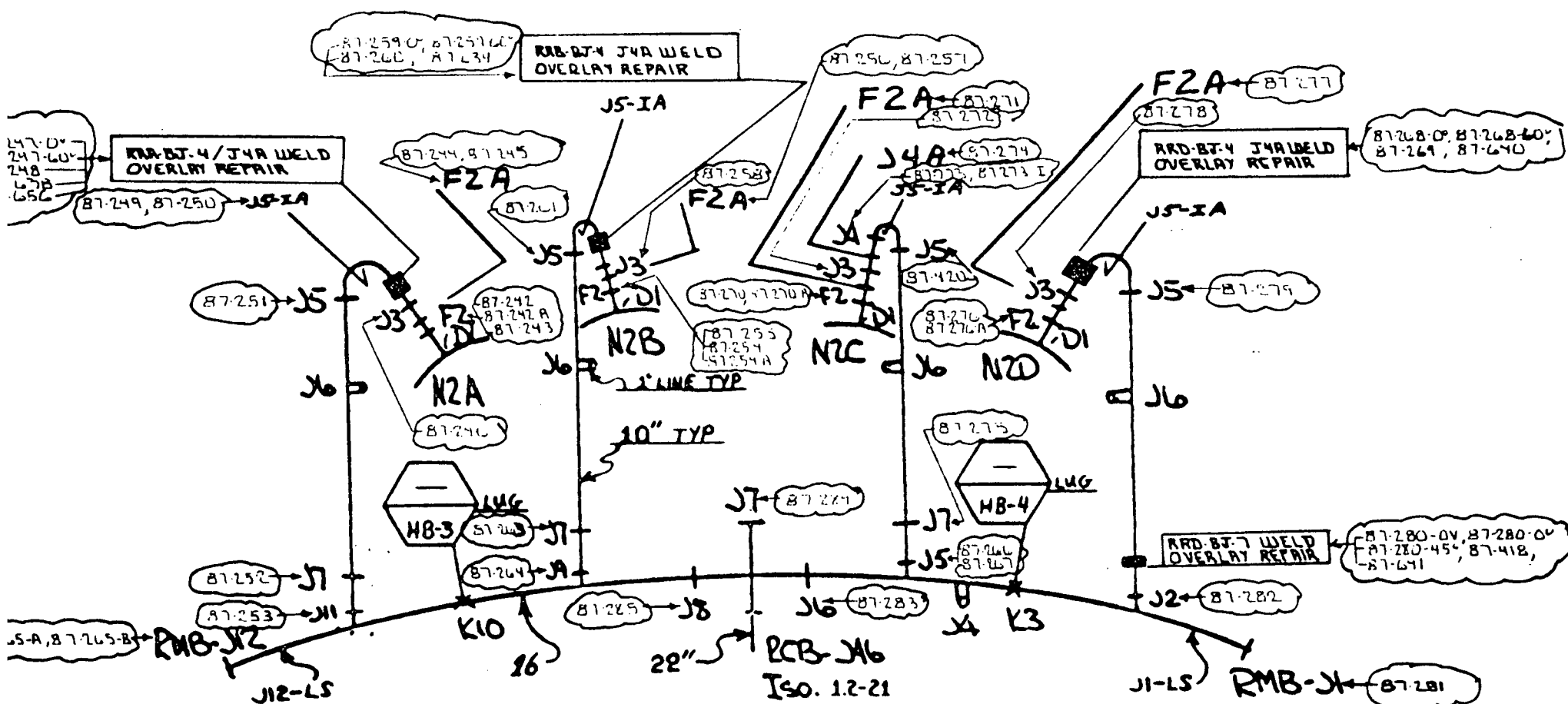
VIEW A-A



RECIRCULATION MANIFOLD "A" & RISERS E, F, G, H
 RMA-, RRE-, RRF-, RRG-, RRH-
 SS, 16", 10"
 Iso. No. 1.2-20
 (REPLACES DWG # 20 AND 120)

PIED # M-116





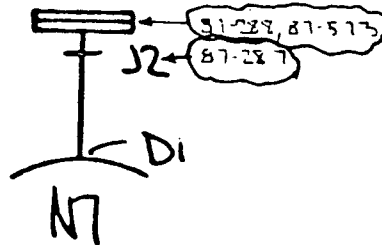
Recirculation Manifold "B" & Riser A.B.C.D
RMB-, RRA-, RRB-, RRC-, RRD-,

SS, 16", 10"

Iso. No. 12-22

(REPLACES DWG # 22 AND 122)

P+ID# M-116



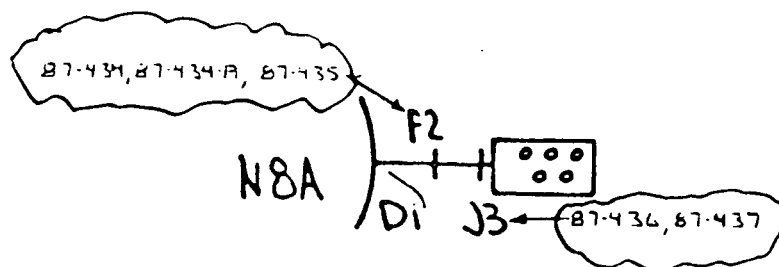
HEAD VENT

HVA-

CS, 4"

Iso. No. 1.2-24

(REPLACES DWG 24 AND 124)

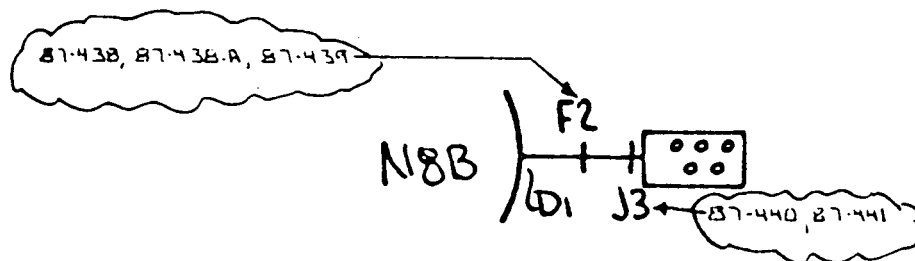


JET PUMP INSTRUMENTATION "A"
JPA-

SS, 4"

Iso. No. 1.2-25

(REPLACES DWG # 25 AND 125)



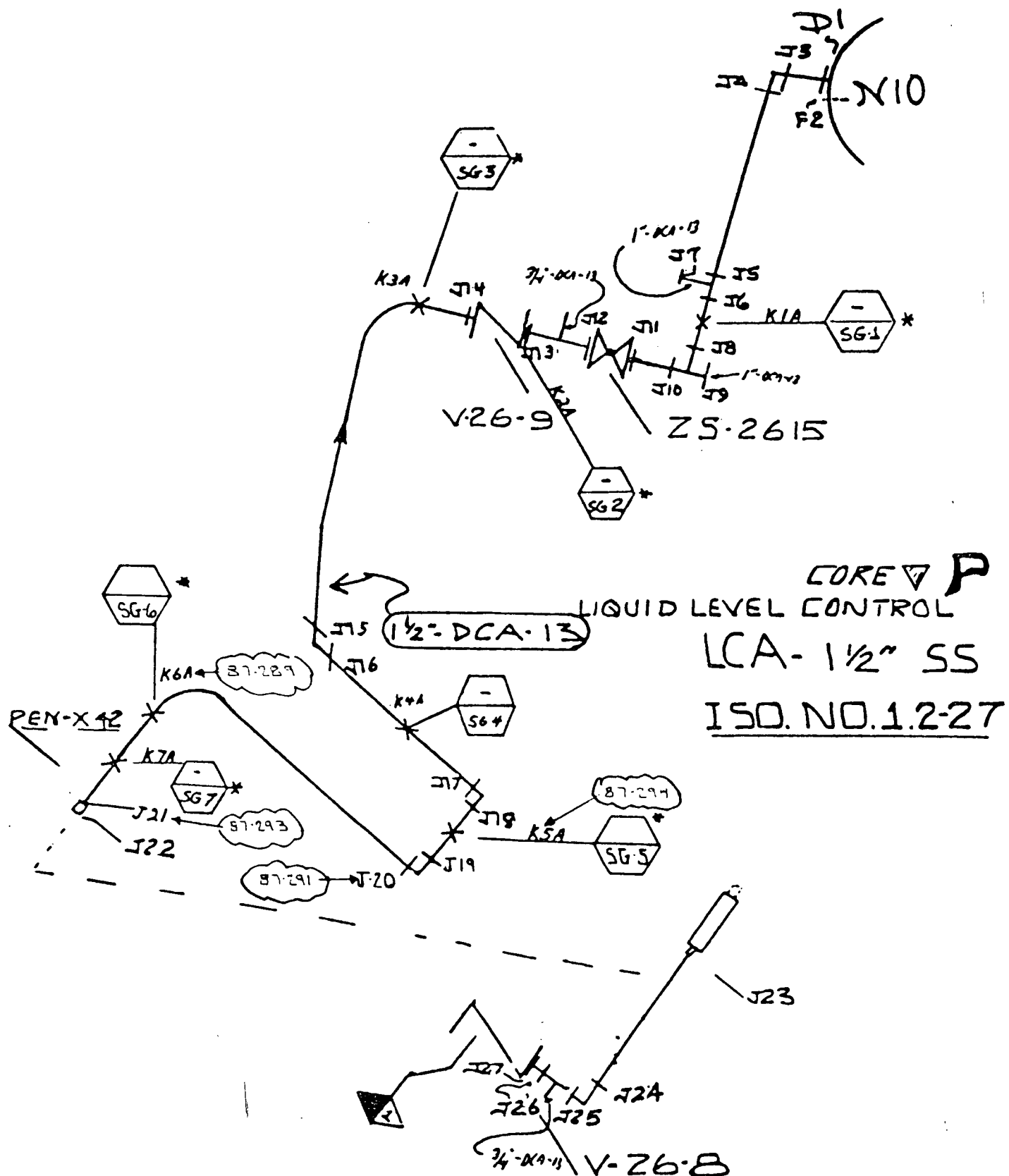
Jet Pump Instrumentation "B"

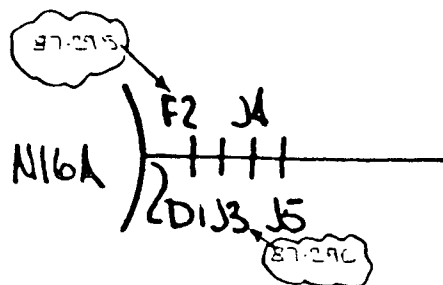
JPB-

SS

Iso. No. 1.2-26

(REPLACES DWG 26 AND 126)





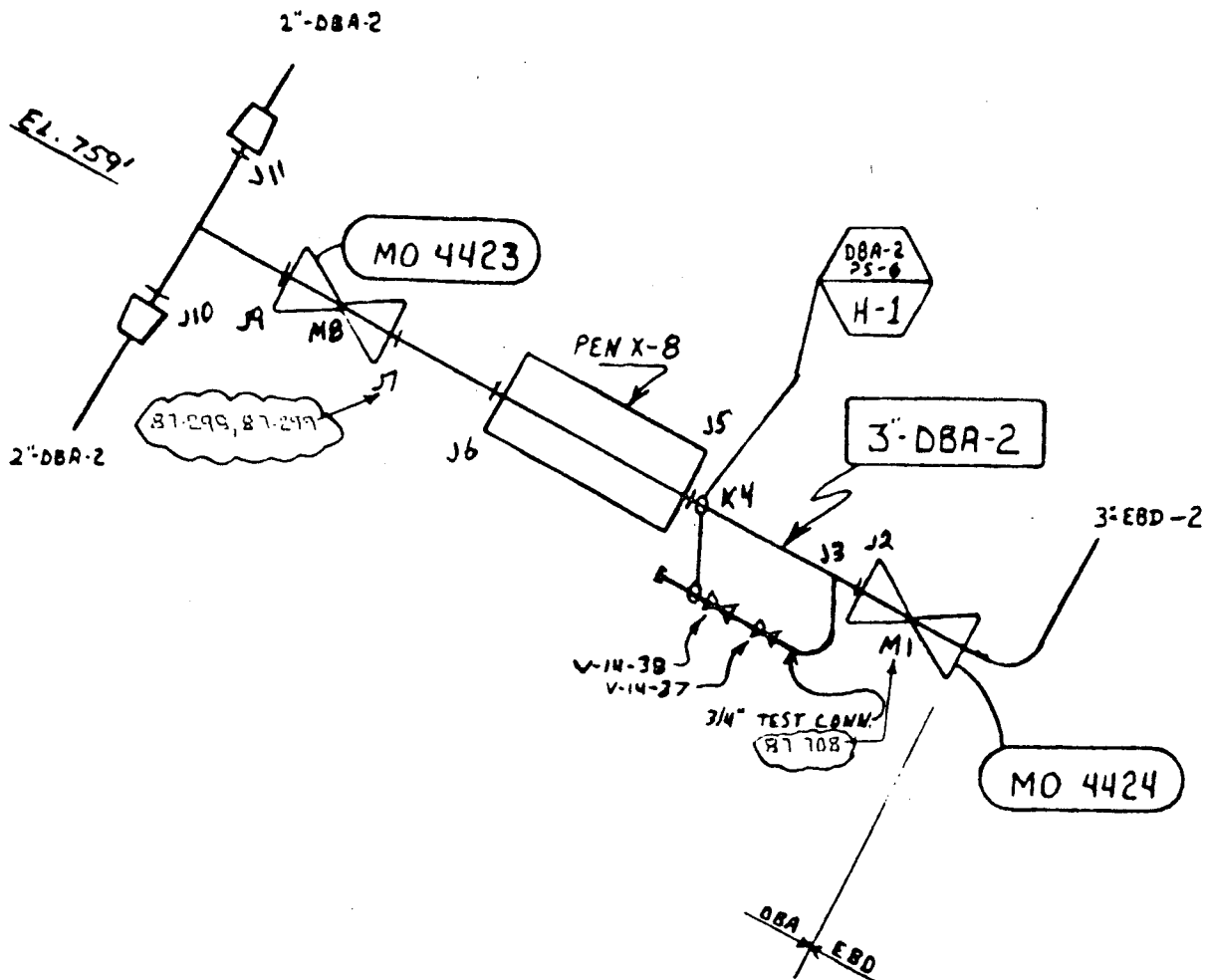
VESSEL INSTRUMENTATION N16A

VIE -

SS

ISO. No. 1.2-33

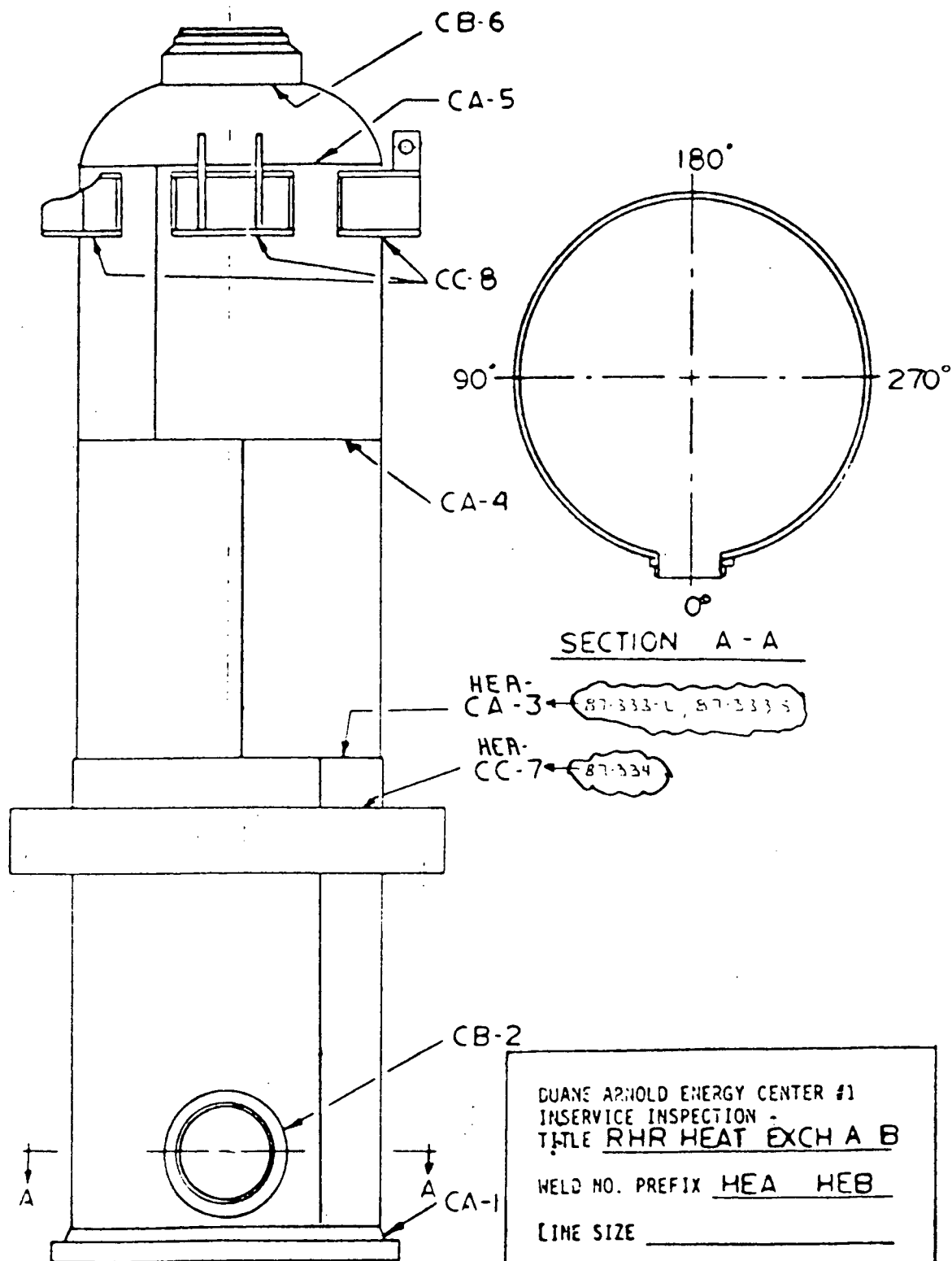
(REPLACES DWG 33 AND 133)



MAIN STEAM DRAIN - COMMON
 SDR. -
 C.S., 3"
 ISO. NO. 1.2-36

P&ID # M-114

PSK-42208



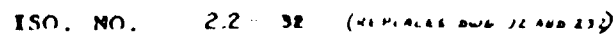
DUANE ARNOLD ENERGY CENTER #1
INSERVICE INSPECTION -
TITLE RHR HEAT EXCH A B

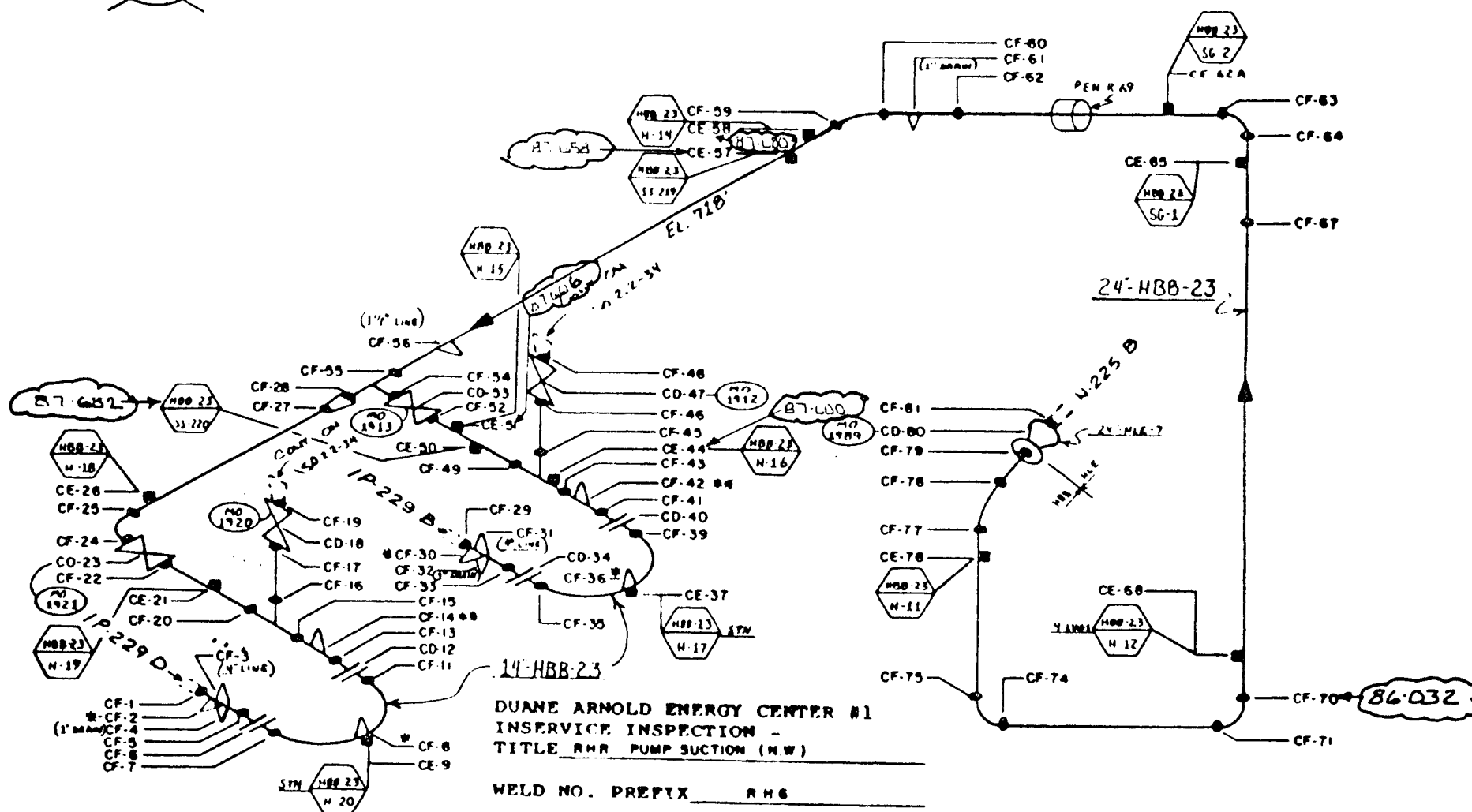
WELD NO. PREFIX HEA HEB

LINE SIZE _____

MATERIAL C.S.

FIGURE NO. 2.1-1





P-119 M-119
 BECNEL DWA M-713-H
 INST. LINE
 PSV LINE (1")

DUANE ARNOLD ENERGY CENTER #1
 INSERVICE INSPECTION -
 TITLE RMR PUMP SUCTION (N.W.)

WELD NO. PREFIX RH6

LINE SIZE 14" x 24"

MATERIAL CARBON STEEL

ISO. NO. 2.2-33 (REPLACES DWA 33 AND 233)



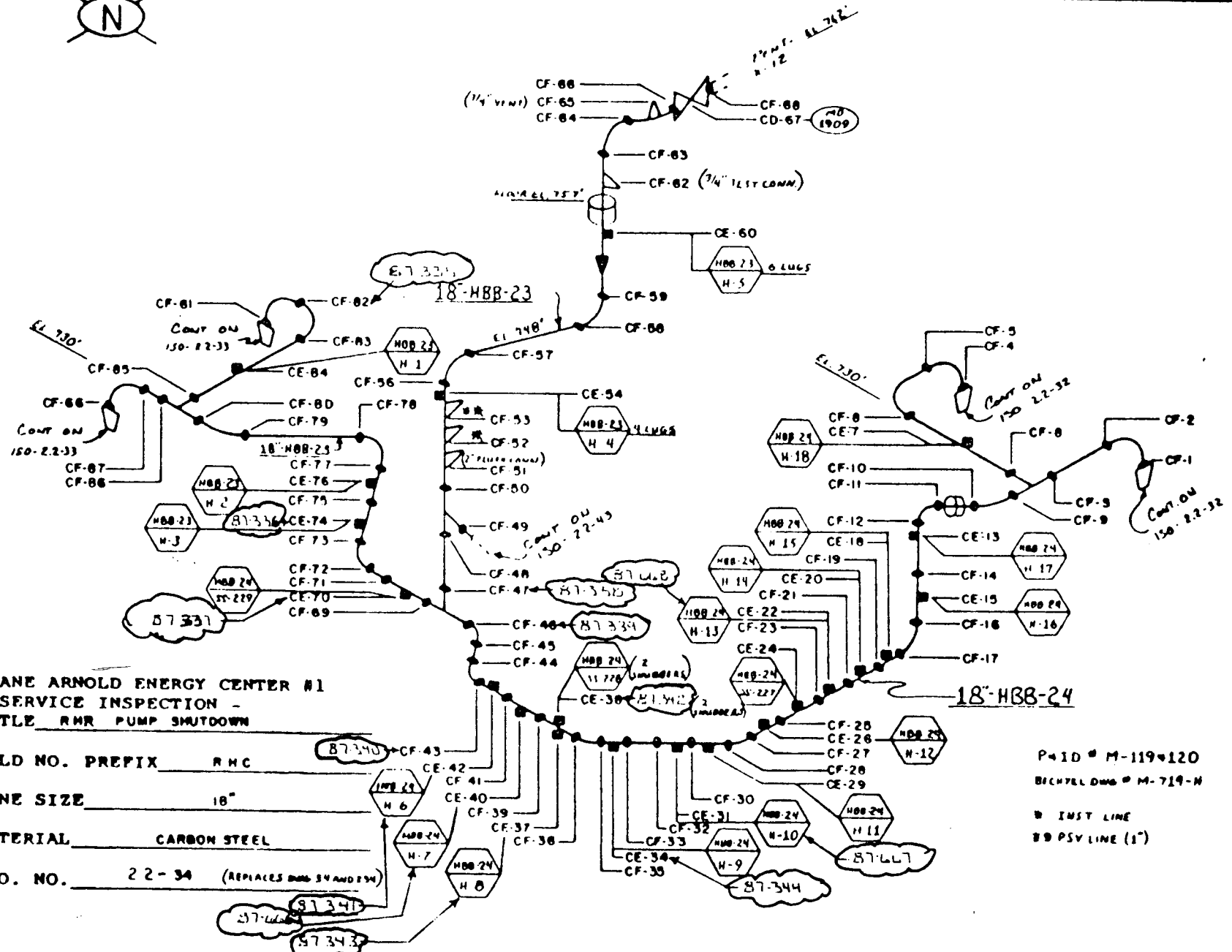
DUANE ARNOLD ENERGY CENTER #1
INSERVICE INSPECTION -
TITLE RMR PUMP SHUTDOWN

WELD NO. PREFIX RMC

LINE SIZE 18"

MATERIAL CARBON STEEL

ISO. NO. 22-34 (REPLACES DMS 34 AND 34A)



P-10 # M-119-120

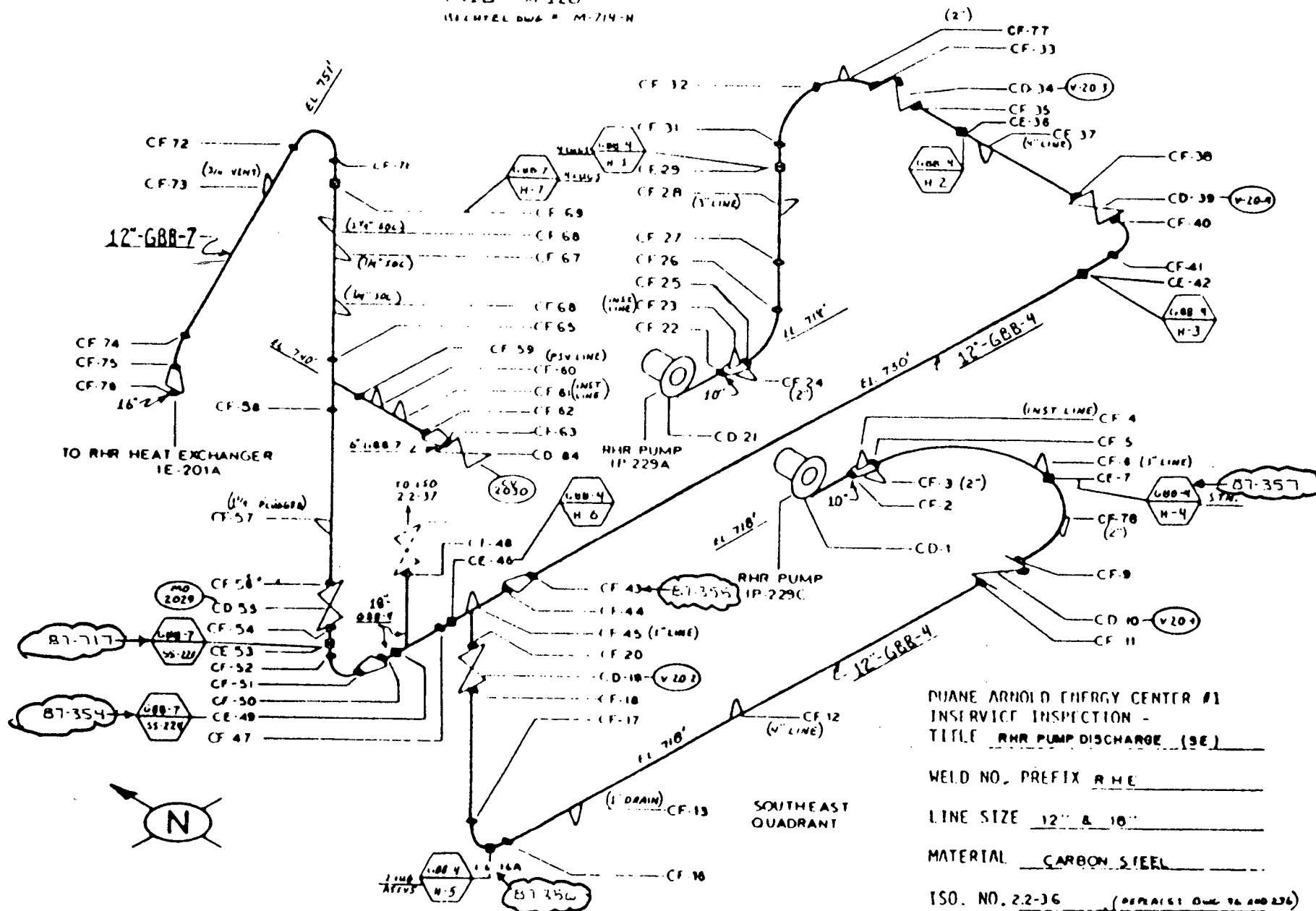
BICHEL DMS # M-719-N

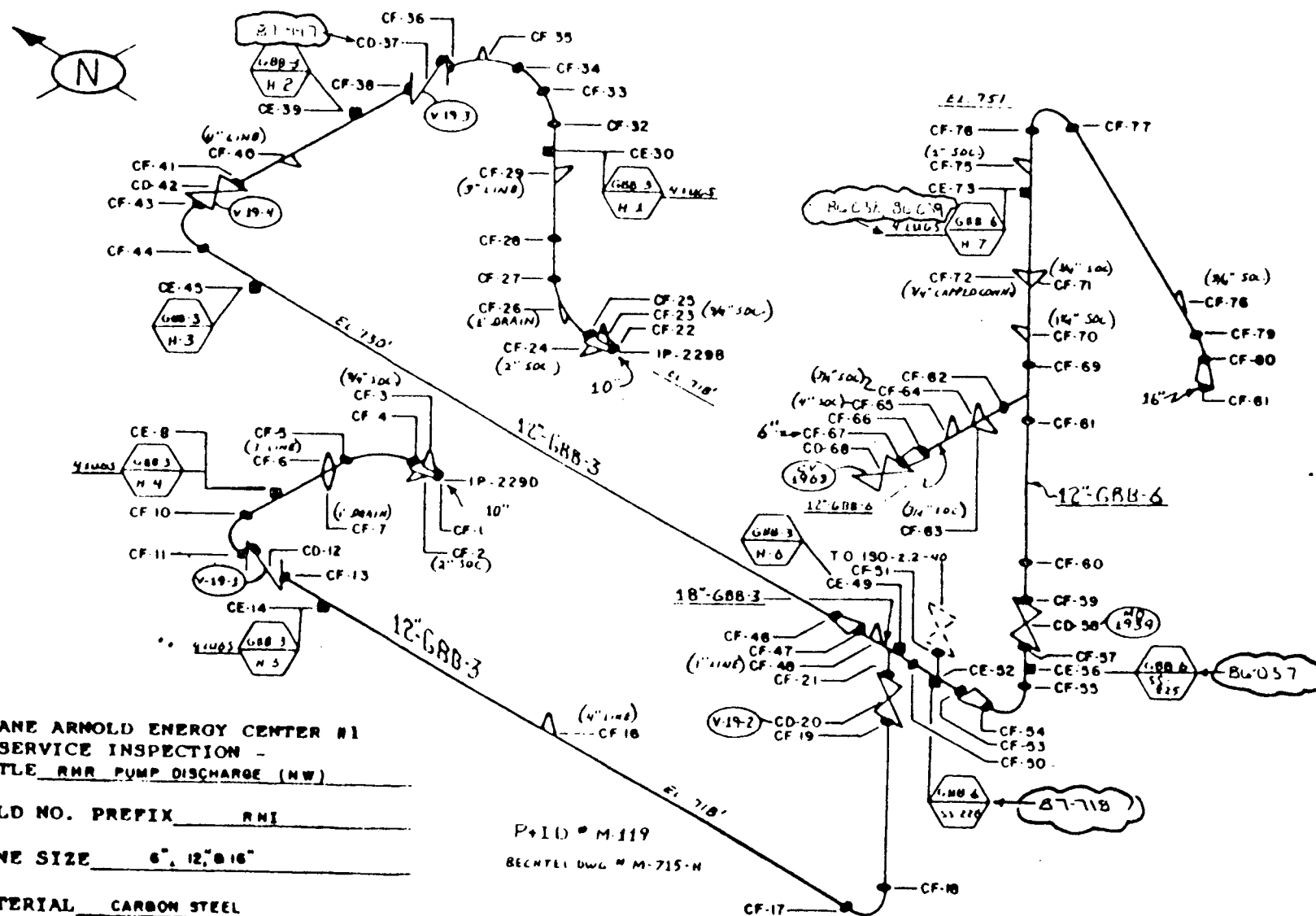
INST LINE

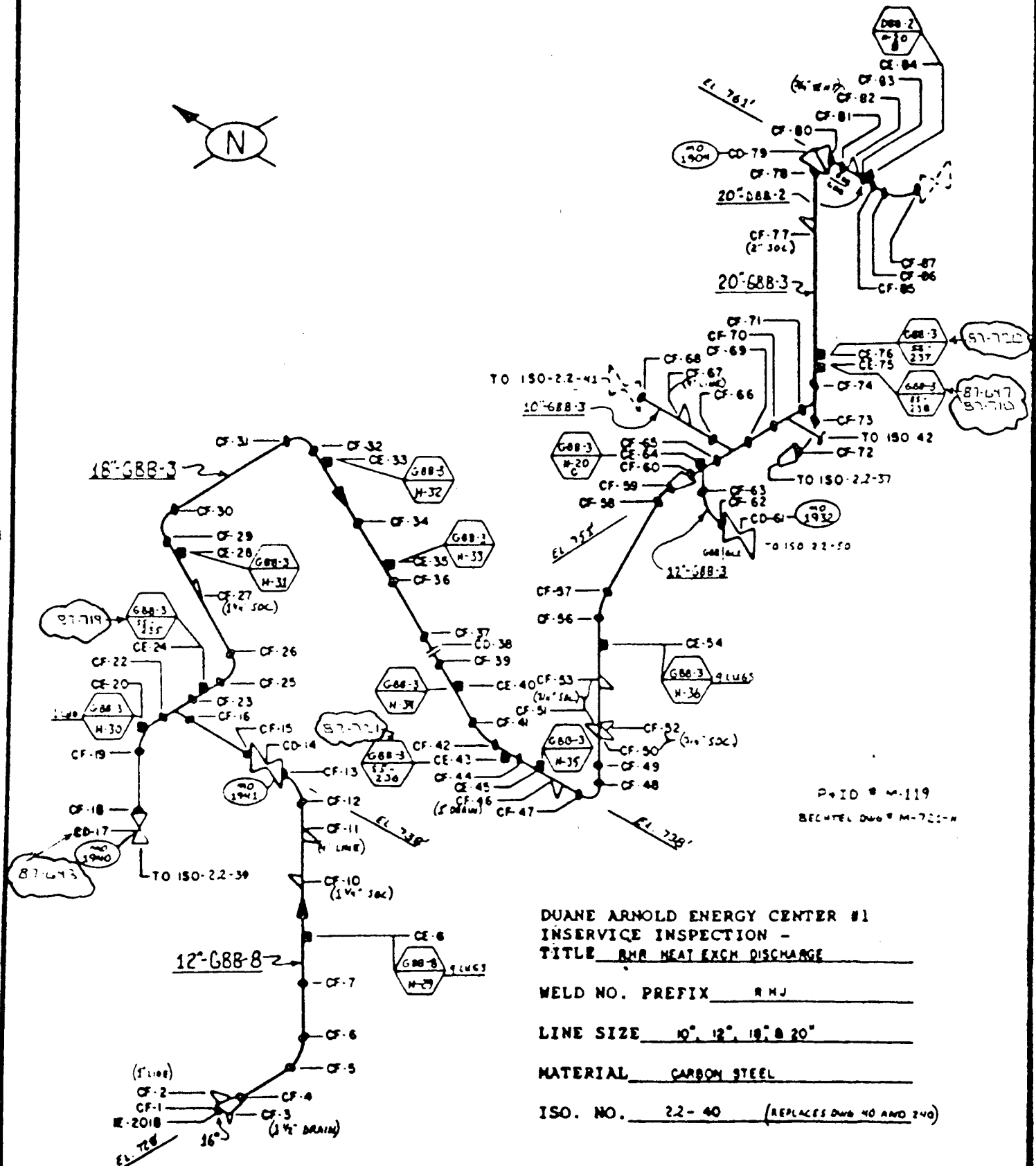
80 PSV LINE (1")

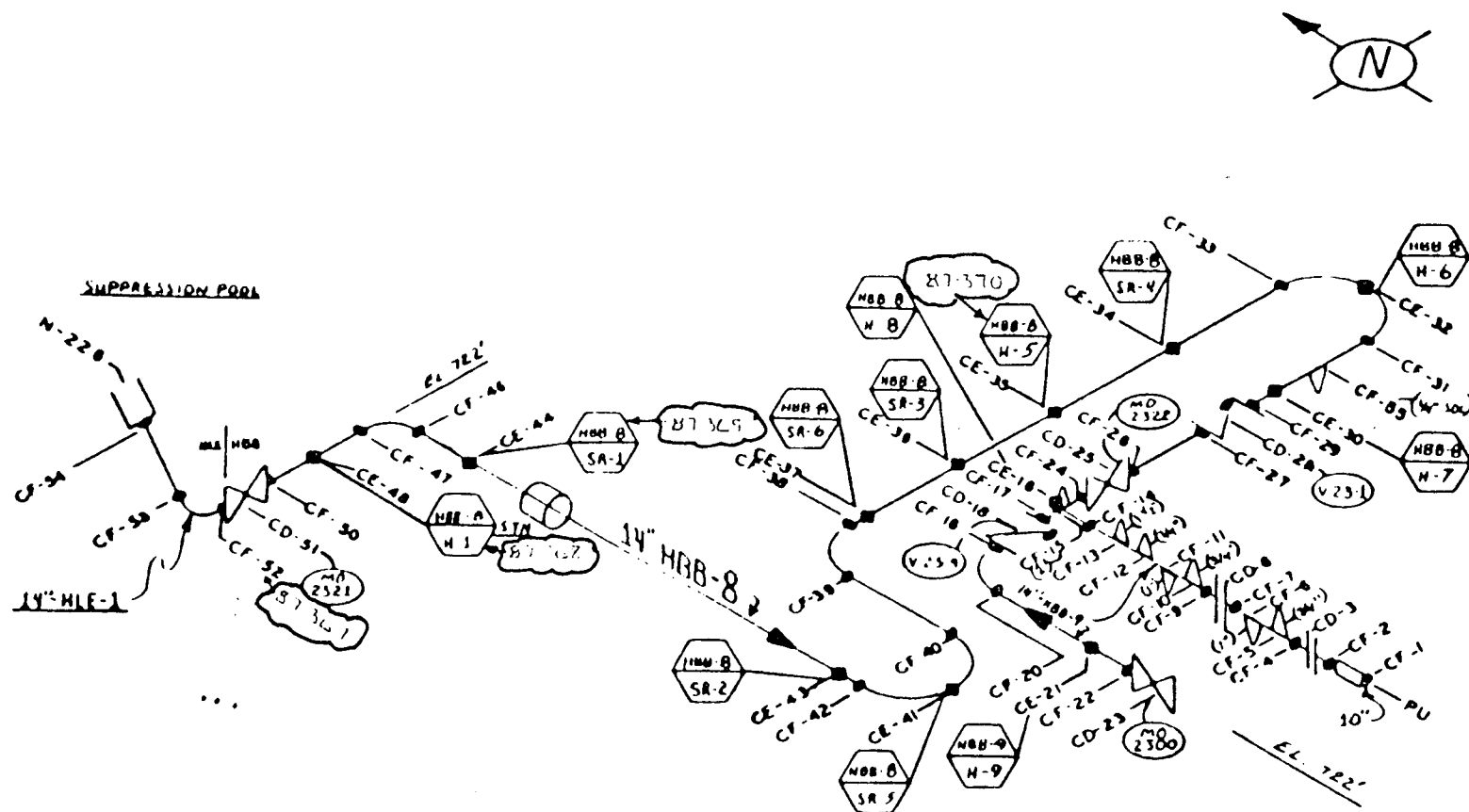


P-10 M 120
 (HCHTEL DWG # M-714-H)









DUANE ARNOLD ENERGY CENTER #1
 ISERVICE INSPECTION -
 TITLE HPCI PUMP SUCTION

WELD NO. PREFIX HPA

LINE SIZE 14"

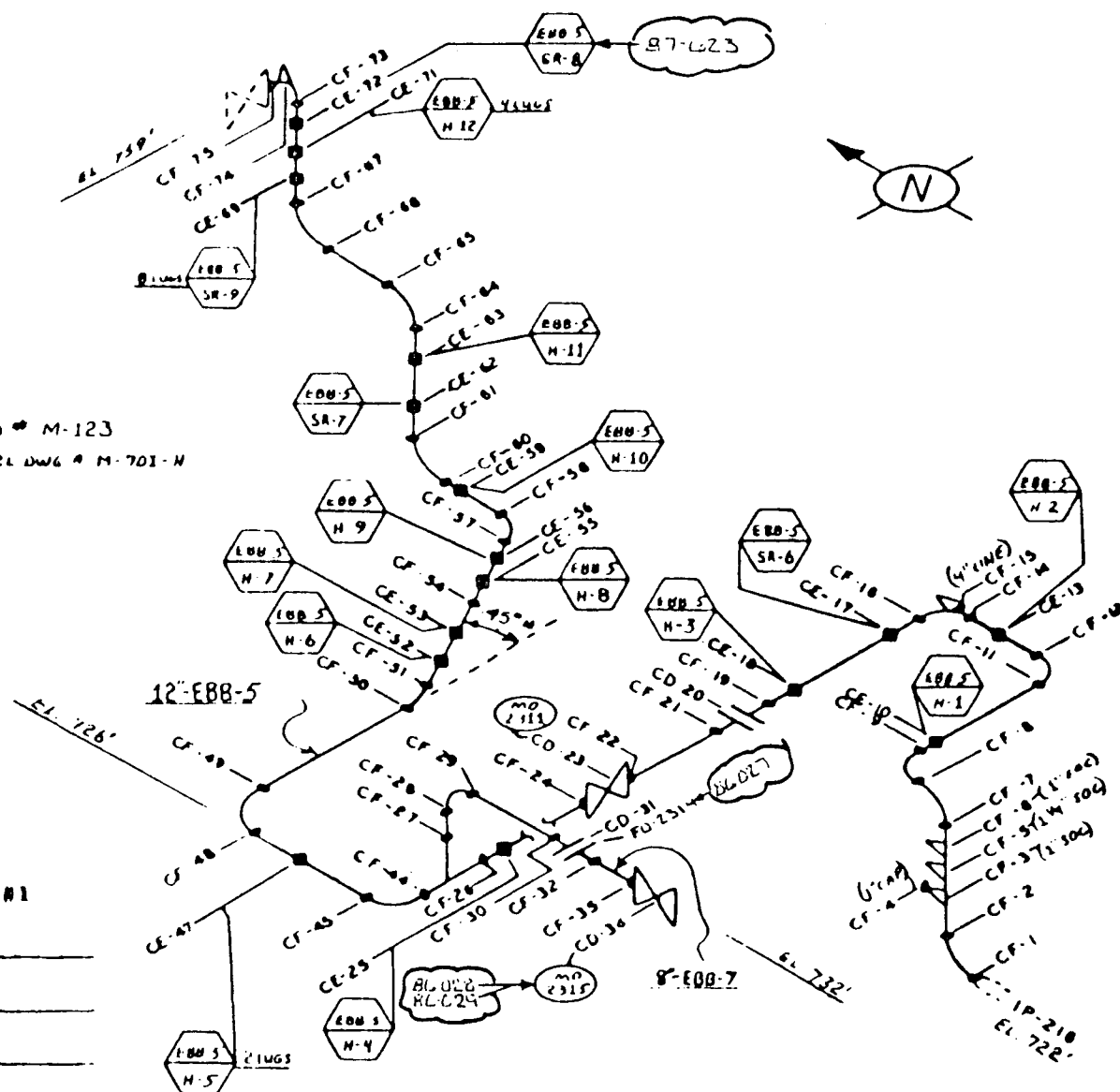
MATERIAL CARBON STEEL

ISO. NO. 2.2-44 (REPLACES DWG 44 AND 244)

P+ID # M-123

BLENDED DWG # M-700-H

P+ID # M-123
BECHTEL DWG # M-701-N



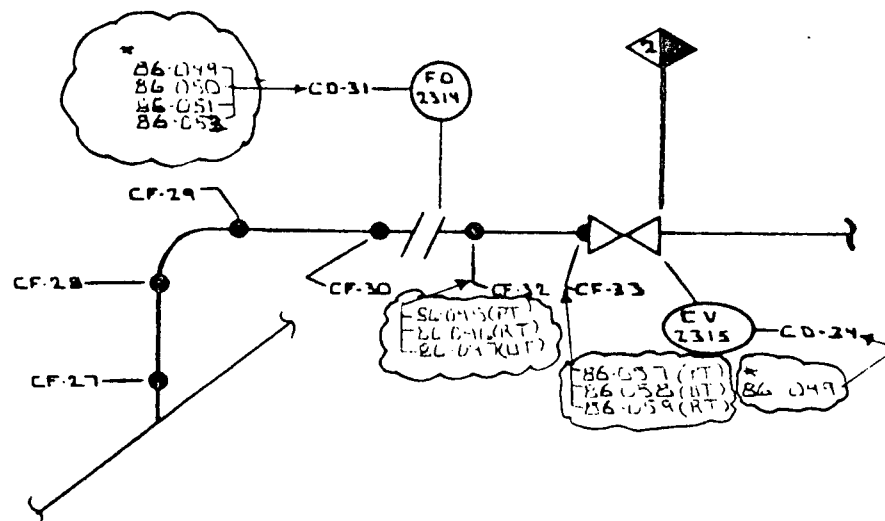
DUANE ARNOLD ENERGY CENTER #1
INSERVICE INSPECTION -
TITLE HPCI PUMP DISCHARGE

WELD NO. PREFIX H P D

LINE SIZE 12" 8"

MATERIAL CARBON STEEL

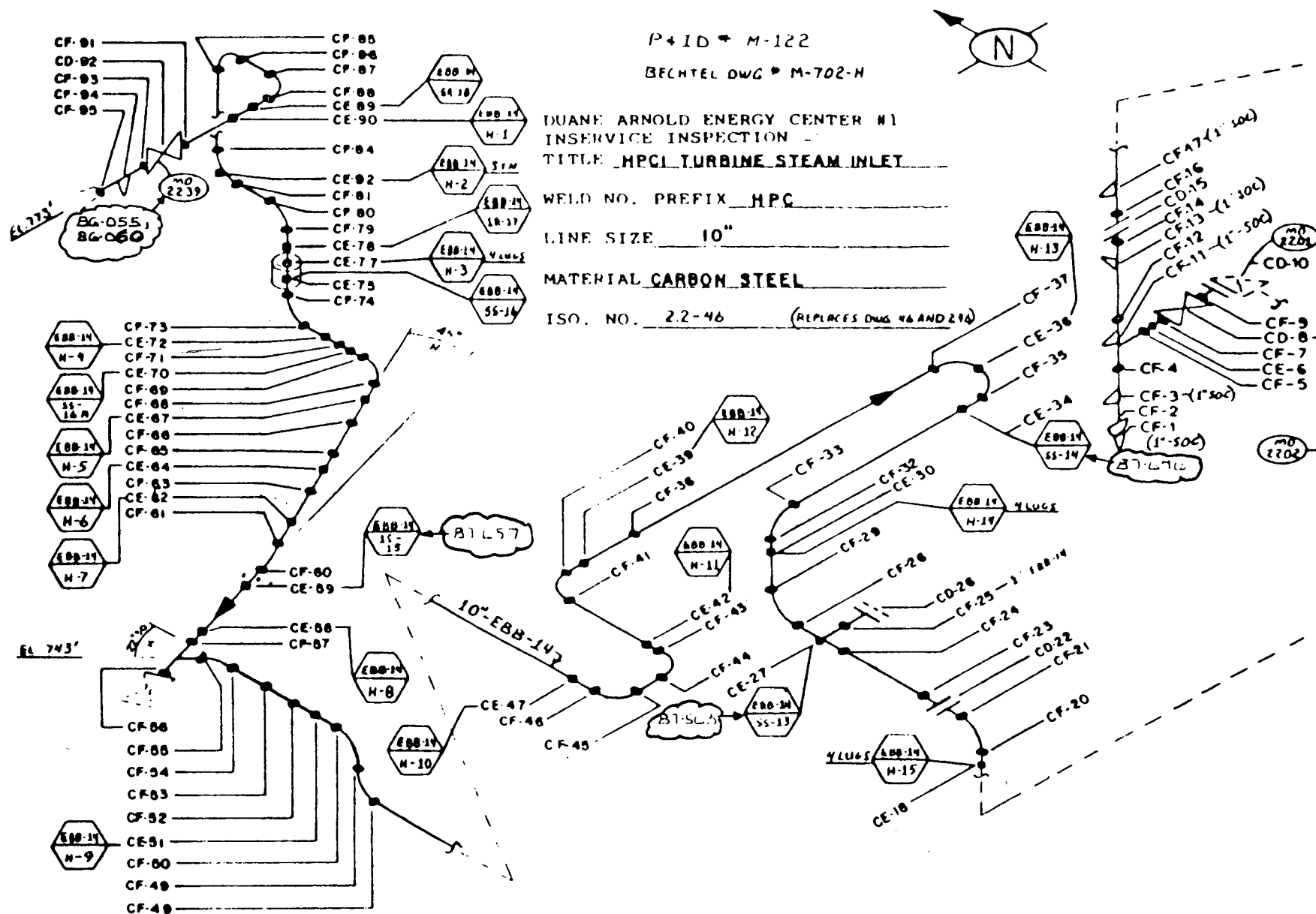
ISO. NO. 2.2-45 (HPI M E E DWG # VS AND 2US)



* REPORT 86-049-VT-2 PIPING HYDRO FROM FO 2314 TO CV 2315

DURANE ARNOLD ENERGY CENTER #1
INSERVICE INSPECTION

WPCI PUMP DISCHARGE
MO-2315 VALVE REPLACEMENT (1986)
8-INCH DIAMETER, CARBON STEEL
LOCATED ON ISI ISOMETRIC 2.2-45



DUANE ARNOLD ENERGY CENTER #1
INSERVICE INSPECTION -
TITLE CORE SPRAY SUCTION (SEE)

WELD NO. PREFIX C SA

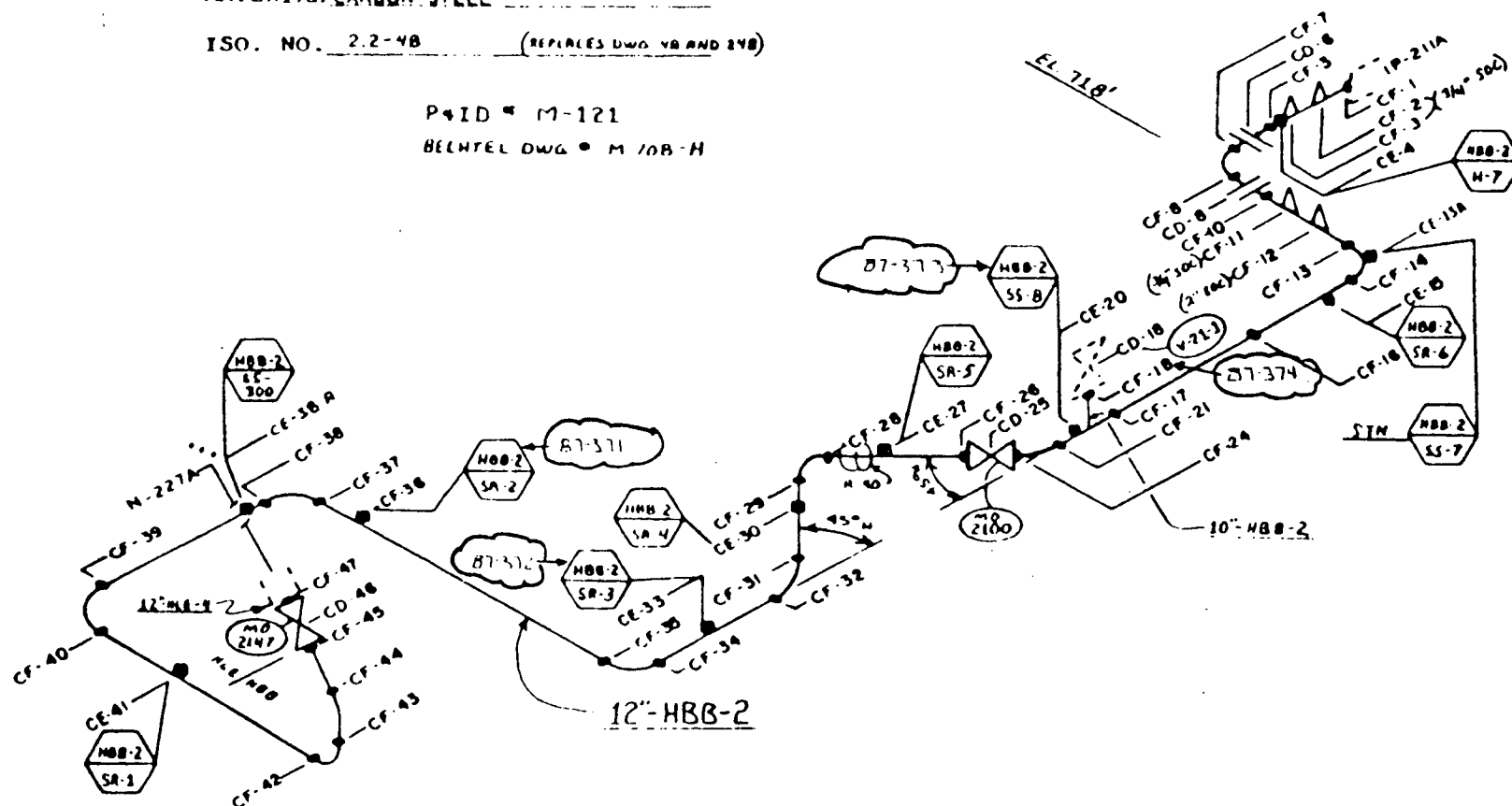
LINE SIZE 12"

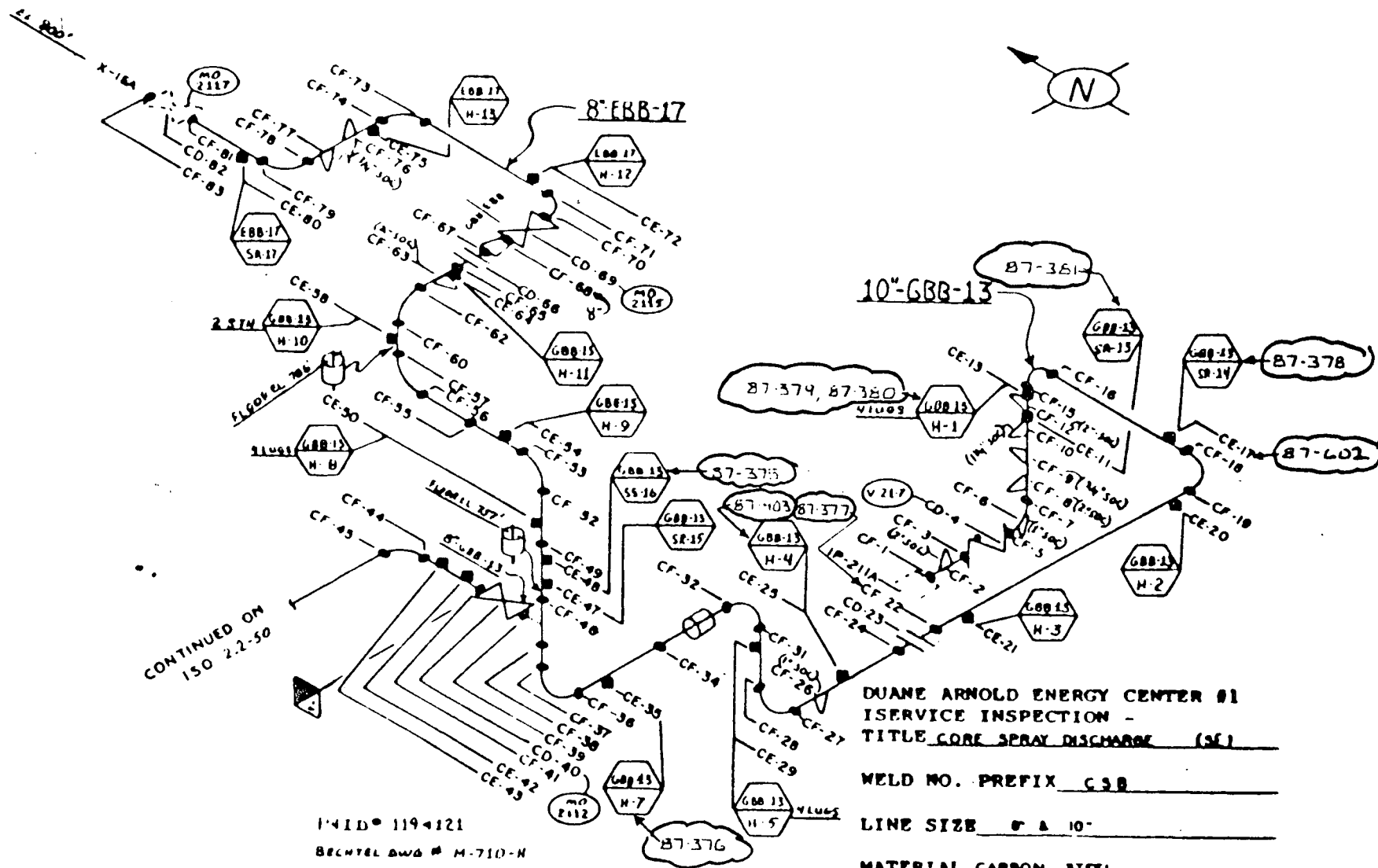
MATERIAL CARBON STEEL

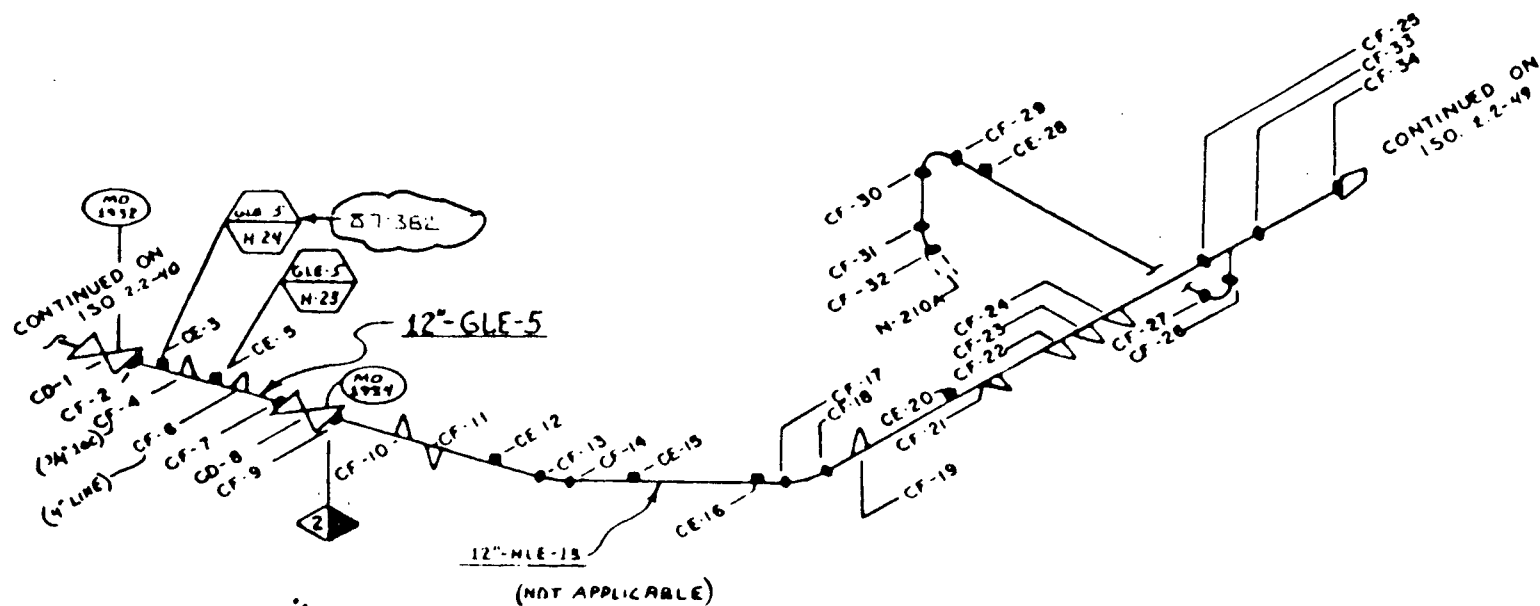
ISO. NO. 2.2-48 (REPLACES DWG. 48 AND 248)

P&ID # M-121

HELWEL DWG # M 108-H







P&ID # M-119
 RECENT UML # M-710-N

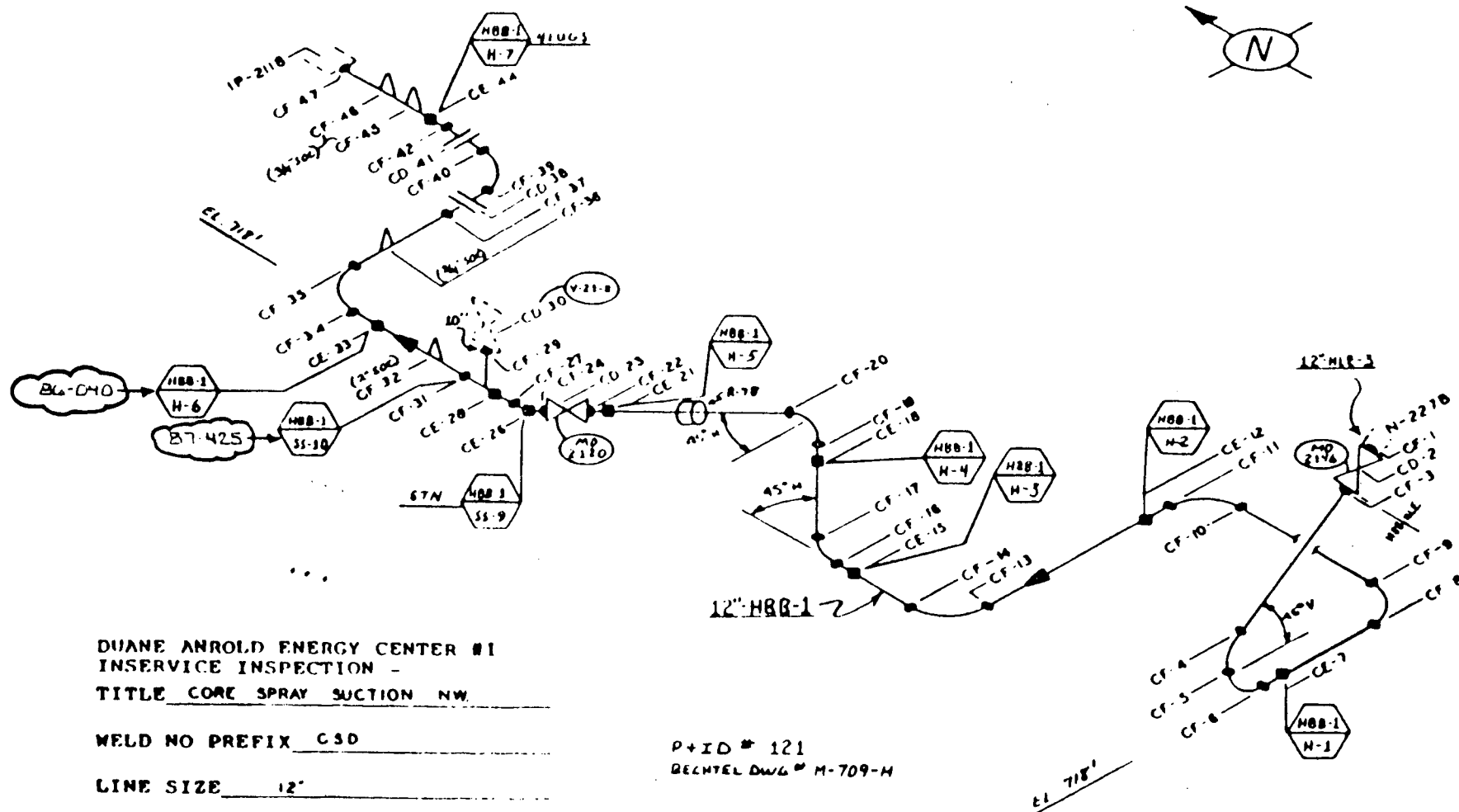
DUANE ARNOLD ENERGY CENTER #1
 INSERVICE INSPECTION -
 TITLE CORE SPRAY DISCHARGE (SE CONT)

WELD NO. PREFIX CSC

LINE SIZE 4" & 12"

MATERIAL CARBON STEEL

ISO. NO. 2.2-50 (REPLACES DWG 50 AND 250)



DUANE ANROLD ENERGY CENTER #1
INSERVICE INSPECTION -
TITLE CORE SPRAY SUCTION NW

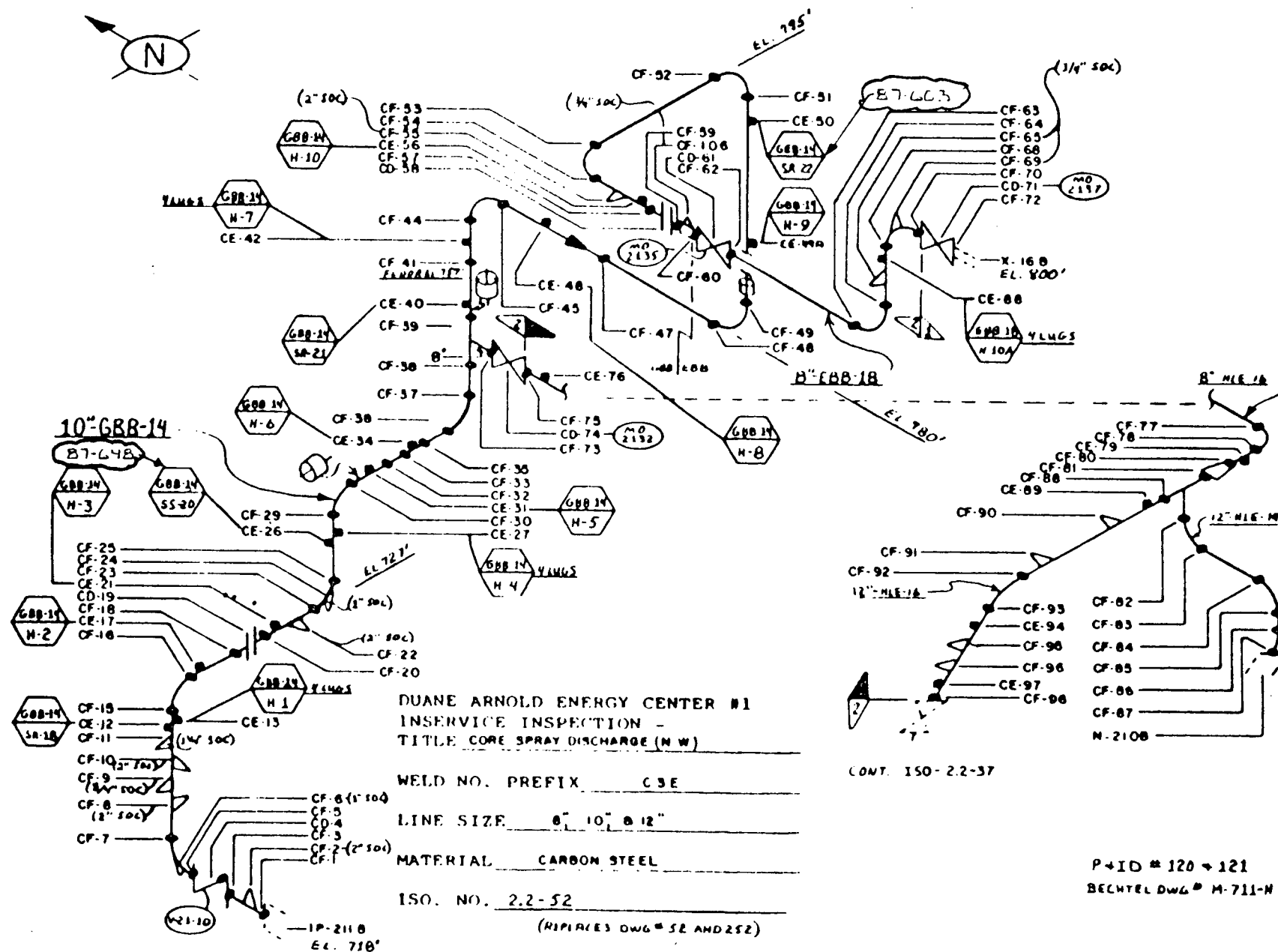
WELD NO PREFIX CSD

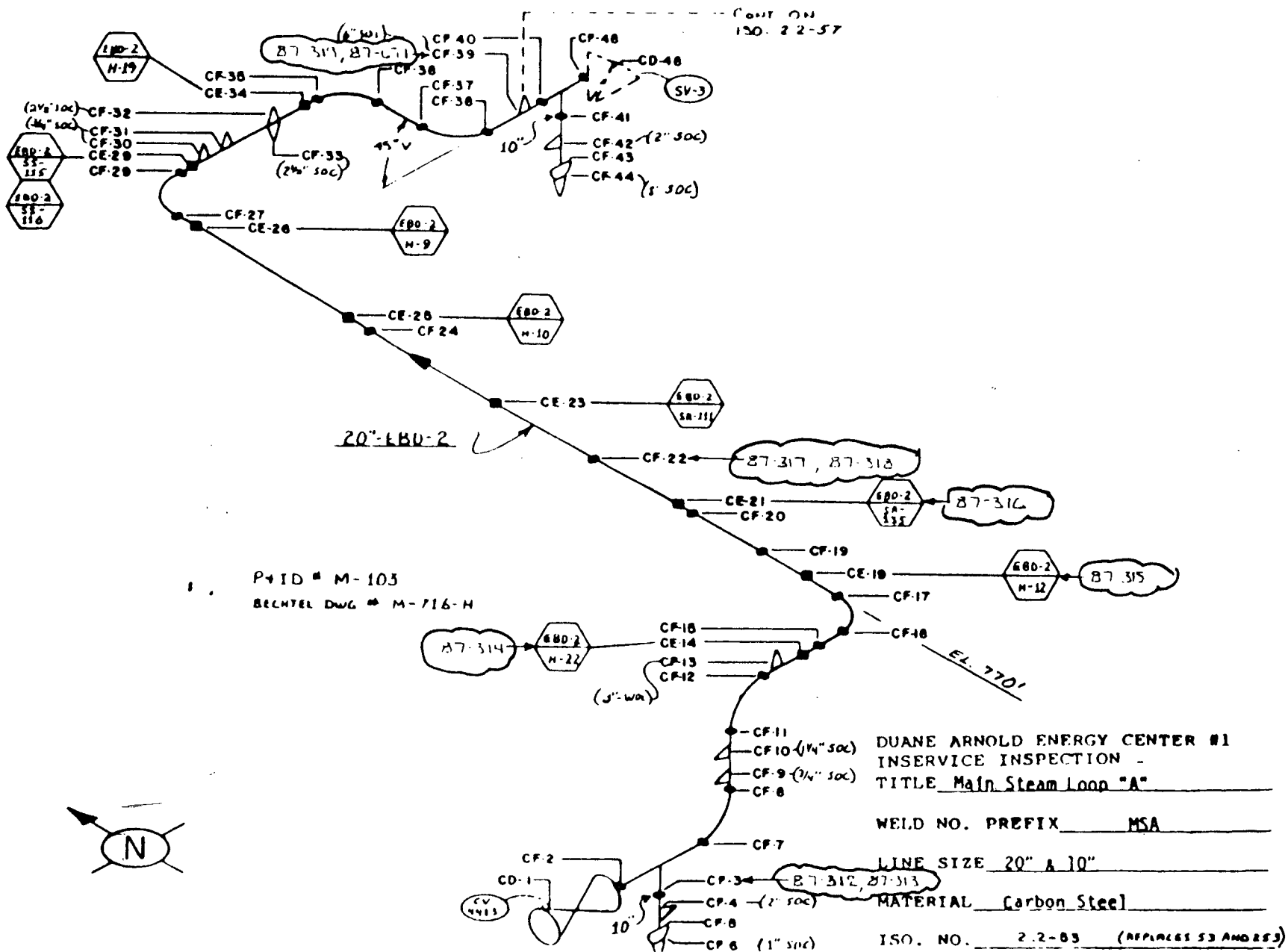
LINE SIZE 12"

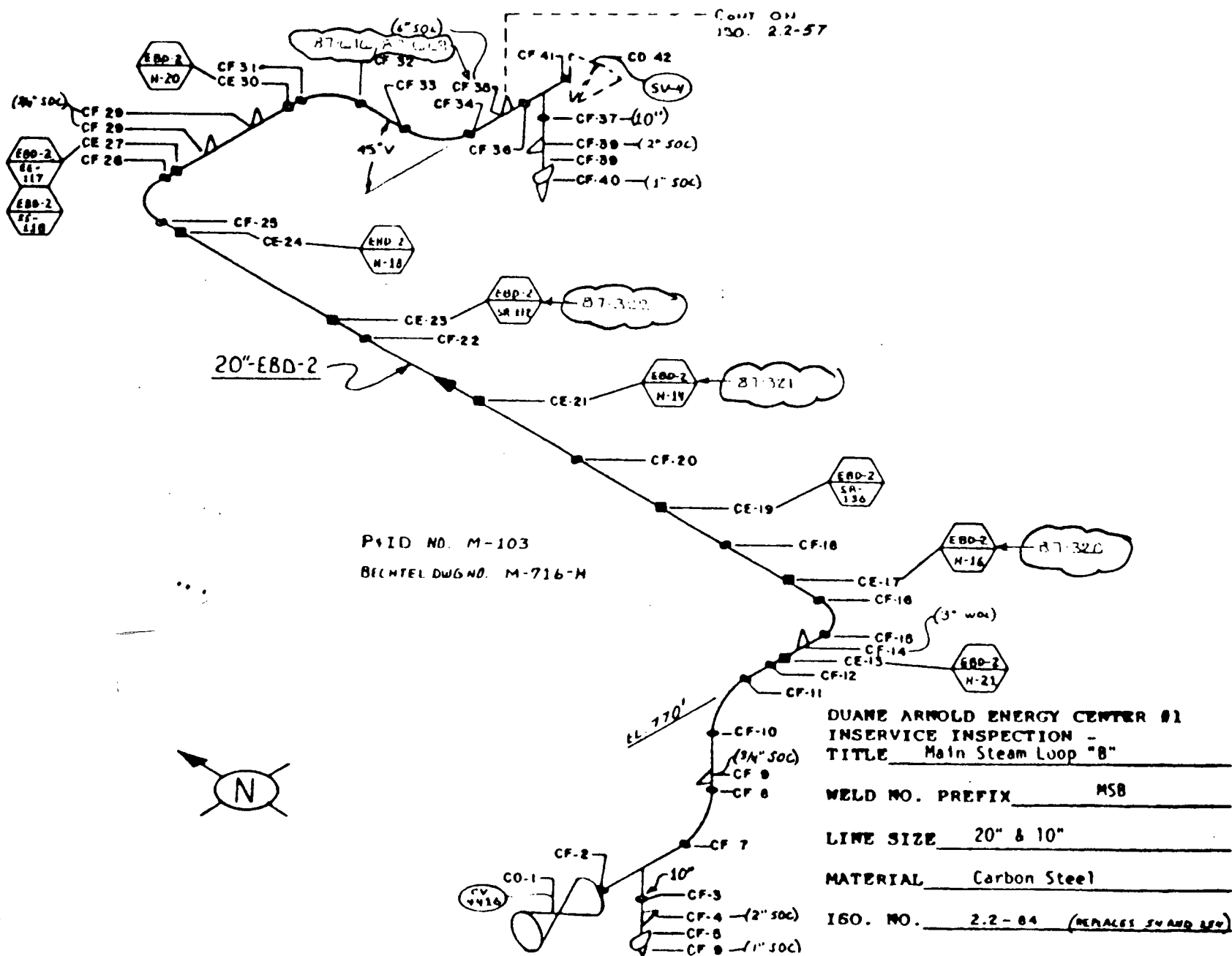
MATERIAL CARBON STEEL

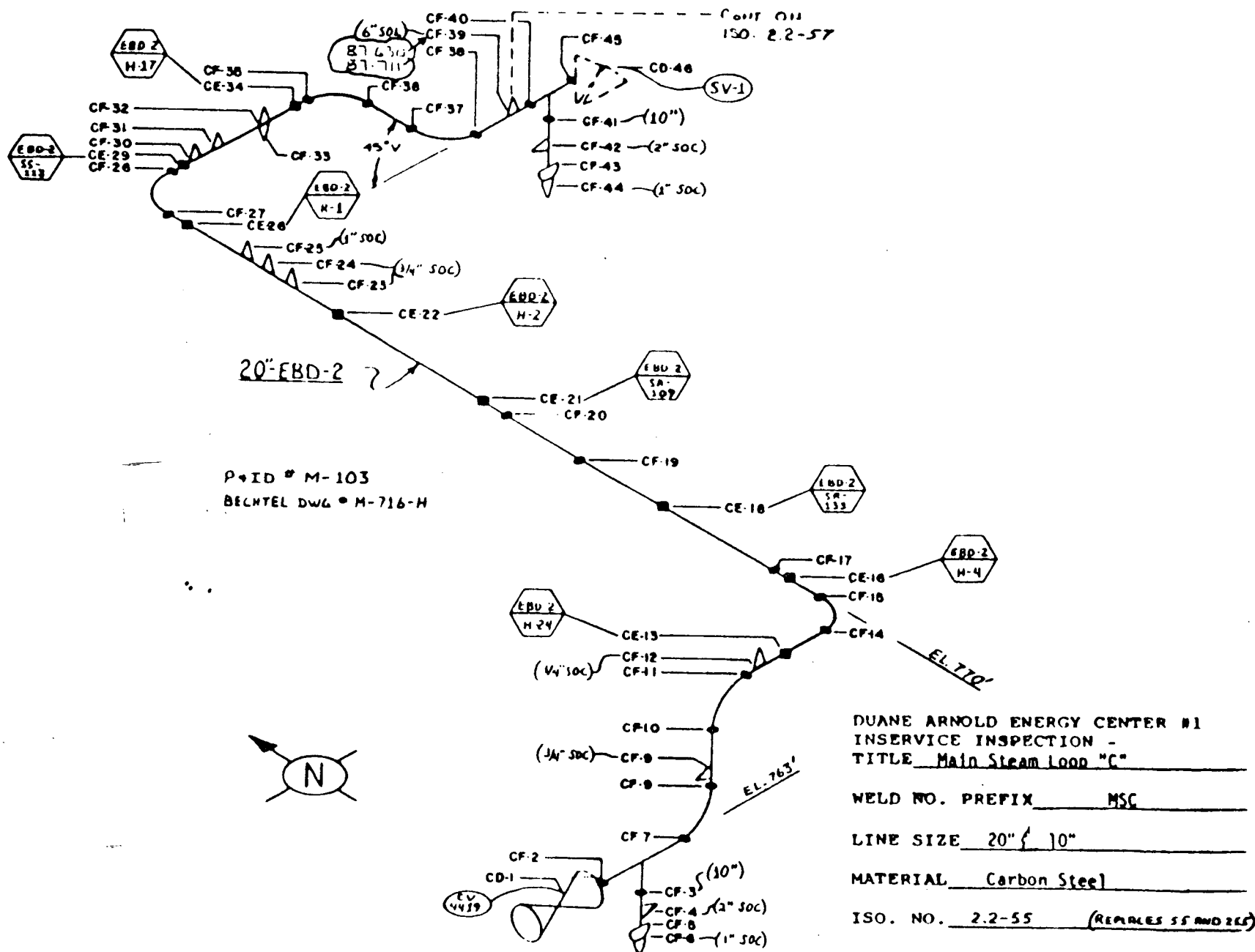
ISO. NO. 22-51 (REPLACES DWG # 51 AND 251)

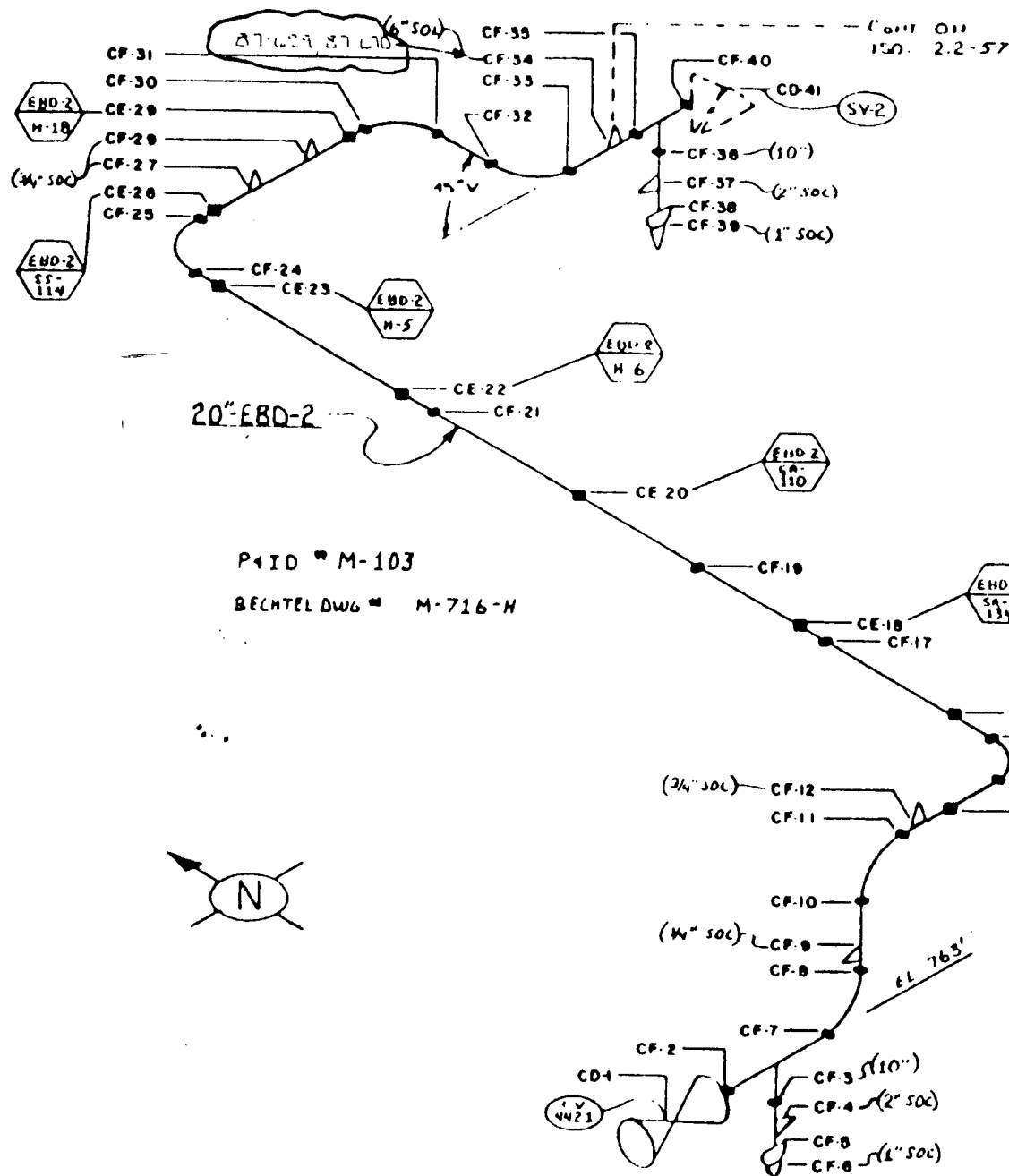
P+ID # 121
RECHTEL DWG # M-709-M











P&ID # M-103
 BECHTEL DWG # M-716-H



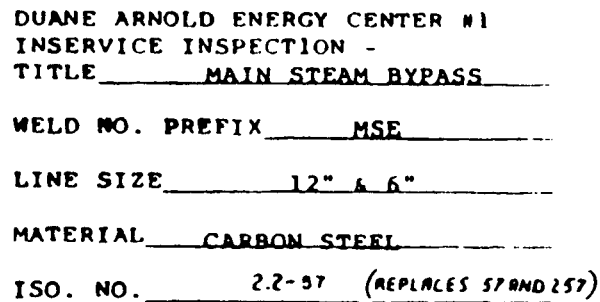
DUANE ARNOLD ENERGY CENTER #1
 INSERVICE INSPECTION -
 TITLE Main Steam Loop "D"

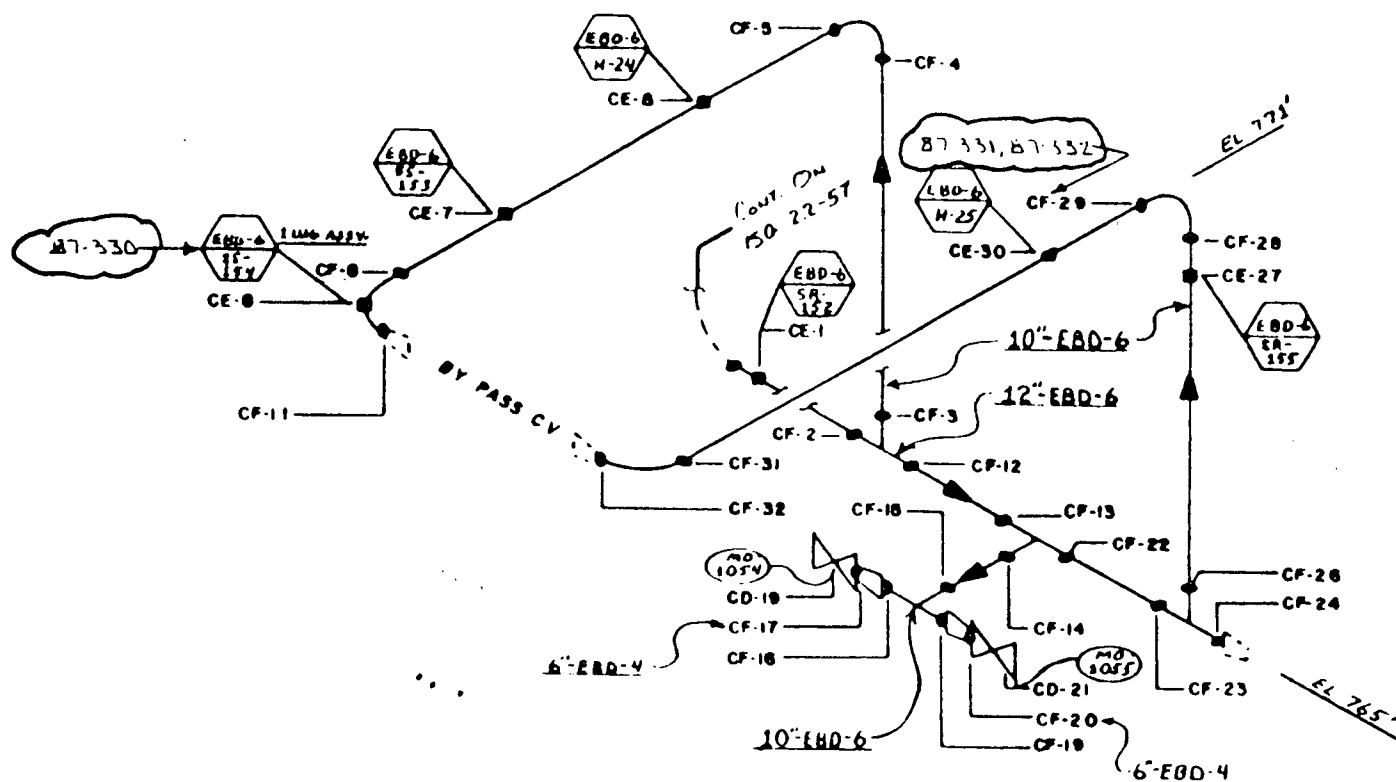
WELD NO. PREFIX MSD

LINE SIZE 20" & 10"

MATERIAL Carbon Steel

ISO. NO. 2.2-56 (REPLACES 56 AND 256)





P-ID # M-103
 BECHTEL DWG. # EBD-6-3-N

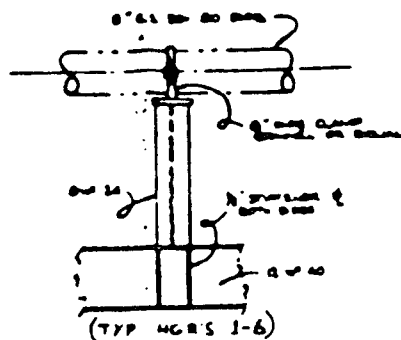
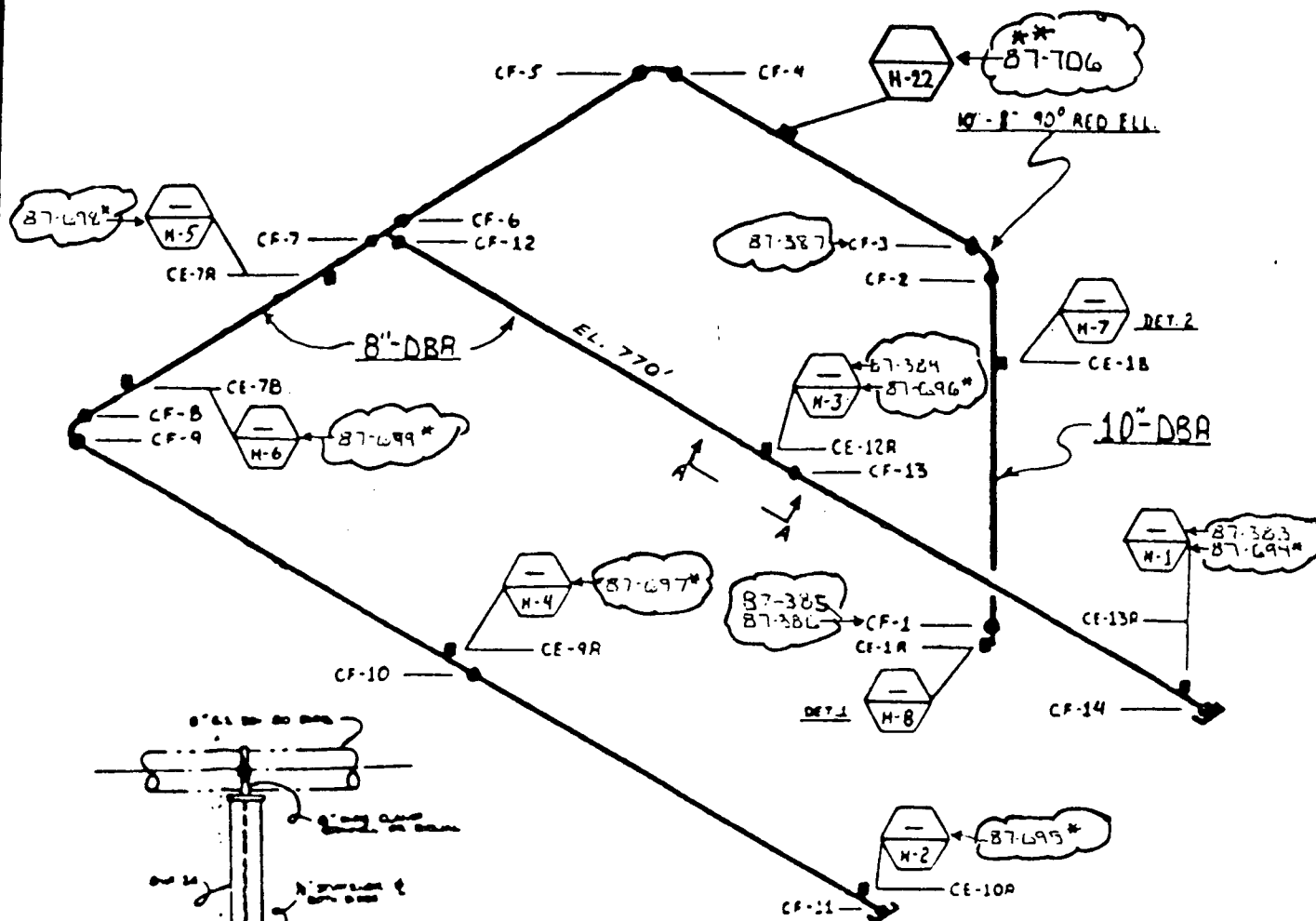
DUANE ARNOLD ENERGY CENTER #1
 INSERVICE INSPECTION -
 TITLE MAIN STEAM BYPASS

WELD NO PREFIX MSF

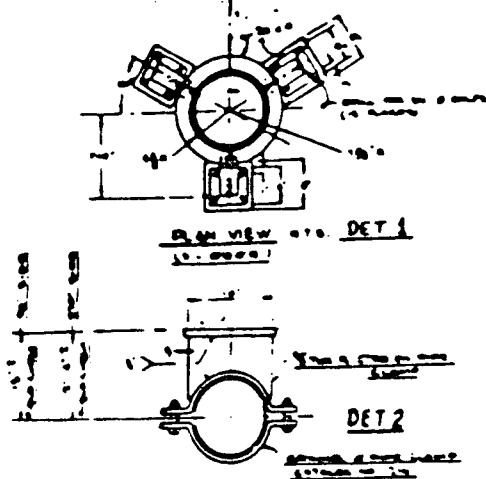
LINE SIZE 12" + 10"

MATERIAL CARBON STEEL

ISO. NO. 2.2-58 (REPLACES 58 AND 258)



SECTION A-A



* PRESERVICE EXAMINATION AFTER MODIFICATION
TO SUPPORTS DUE TO FCN-1323 SEQUENCE 5.

** PRESERVICE EXAMINATION OF A NEW SUPPORT
ADDED DURING THE 1987 REFUELING
OUTAGE DUE TO FCN-1323 SEQUENCE 5.

DUANE ARNOLD ENERGY CENTER #1
INSERVICE INSPECTION -
TITLE SCRAM DISCHARGE HDR. (SOUTH)

WELD NO. .PREFIX _____ SDS _____

LINE SIZE _____ 10' x 8" _____

MATERIAL _____ CARBON STEEL _____

ISO. NO. _____ 2.2-60 _____

