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THE CINCINNATI GAS & ELECTRIC COMPANY

CINCINNATI, OHIO 45201

July 7, 1980

E. A. BORGMANN
SENIOR VICE PRESIDENT

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Attn: Mr. James G. Keppler
Regional Director

Re: WM. H. ZIMMER NUCLEAR POWER STATION - UNIT 1
IE BULLETIN 80-08, DOCKET NO. 50-358
W.O. 57300, JOB E-5590

Gentlemen:

In response to IE Bulletin 80-08 concerning the examination of Containment Liner Penetration Welds, please be advised that the Zimmer Station contains the flued head designs as illustrated in figure NE 1120-1 of the ASME B&PV Code. IE Bulletin 80-08 identified potential concerns in the examination techniques used on the primary piping containment penetration flued head to outer sleeve welds.

Process pipe penetrations which include mechanical (M) and instrument (I) penetrations consist of thirteen (13) types. Drawings of the "M" penetrations (type 1, 2, 3A, 3B, 4E, 5, 6, and 7) and "I" penetrations (type 4A, 4B, 4C, 4F, 4G and 6) are included in the attachments to this response. The "M" penetration type 3A and the "I" penetrations type 4F and 4G are used only as Drywell Floor Penetrations, and thus are not addressed.

All field welds to primary containment penetrations at the Zimmer Station are in accordance with Section III of the ASME Boiler and Pressure Vessel Code, 1971, Subsection NE, including Winter 1973 Addenda. Field welds are fully radiographed except when the joint detail does not permit radiography, then ultrasonics plus liquid penetrant or magnetic particle examination of the completed weld as allowed by NE-5000 is performed.

The joint detail on penetration types 3B, 4A, 4B, 4C, 4E, and 5 does not permit a meaningful radiographic inspection due to the more complex geometry. An ultrasonic inspection plus liquid penetrant or magnetic particle examination is performed in such cases.

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The Zimmer M and I containment penetrations are listed in Tables 1 and 2 respectively. Tables 1A and 2A provide information requested by IE Bulletin 80-08.

Specifically, Tables 1A and 2A provide the following information:

1. Penetration Column:
   Identifies penetration number and type.

2. Weld Joint Column:
   Identifies the type of sleeve and flued head material used.

3. Pipe Size Column:
   Sleeve pipe O.D.

4. Backing Bar Column:
   Indicates if backing ring is presently installed (welding of penetration head fittings to penetration sleeve will be done with permanent, continuous backing rings as permitted by the ASME Code, Section III).

5. NDE Performed Column:
   Indicates type of NDE performed during construction on the completed weld and the results. Welds which required either (1) repair during construction, or (2) are not complete are noted. The explanations appear in Appendix A (NOTES).

Very truly yours,
THE CINCINNATI GAS & ELECTRIC COMPANY

E. A. Borgmann
Senior Vice President

DJF:PLH/jb
Attachments
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NRC Office of Inspection and Enforcement
Division of Fuel Facility and Materials
Safety Inspection
Washington, D.C. 20055

TABLE 1

CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
M-1	Main Steam
M-2	Main Steam
M-3	Main Steam
M-4	Main Steam
M-5	Reactor Feed
M-6	Reactor Feed
M-7	Main Steam Drain
M-8	Spare
M-9	R.B.C.C. Water Return
M-10	R.P.V. Head Spray
M-11	R.H.R./L.P.C.I.
M-12	R.H.R./L.P.C.I.
M-13	R.H.R./L.P.C.I.
M-14	C.R.D. Return
M-15	L.P. Core Spray
M-16	H.P. Core Spray
M-17	Containment Spray
M-18	Steam to RHR Heat Exchanger
M-19	Spare
M-20	R.H.R. Shutdown Suction
M-21	Containment Spray
M-22	Spare
M-23	R.B.C.C. Water Supply
M-24	Steam to R.C.I.C. Turbine
M-25	R.H.R./Shutdown/Return
M-26	R.H.R./Shutdown/Return
M-27	R.W.C.U. Pump Suction
M-28	T.I.P. System
M-29	Control Rod Drive Hydraulic System
M-30	Equipment Hatch
M-31	Personnel Lock
M-32	Access Hatch
M-33	Access Hatch
M-34	R.H.R. Suction Pump #1
M-35	R.H.R. Suction Pump #2

TABLE 1

CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
M-36	R.H.R. Suction Pump #3
M-37	L.P.C.S. Suction
M-38	H.P.C.S. Suction
M-39	R.C.I.C. Turbine Exhaust
M-40	R.C.I.C. Vacuum Pump Disch.
M-41	R.C.I.C. Pump Suction
M-42	R.C.I.C. Pump Discharge
M-43	Supp. Pool Cont. Spray
M-44	R.H.R. Test Line
M-45	Supp. Pool Cont. Spray
M-46	R.H.R. Test Line
M-47	H.P.C.S. Test Line
M-48	Control Rod Drive Rem. Hatch
M-49	Drywell Equip. Drain Sump Pump Disch.
M-50	Drywell Floor Drain Sump Pump Disch.
M-51	Clean Condensate Water Supply
M-52	Nitrogen Equipment
M-53	Spare
M-54	Hydrogen Gas Control
M-55	Spare
M-56	Standby Liquid Control
M-57	Spare
M-58	Spare Number
M-59	Spare
M-60	Spare
M-61	Spare
M-62	Spare
M-63	Spare
M-64	Spare
M-65	Drywell Pneumatic
M-66	Spare
M-67	Spare
M-68	Recirc. Loop "A" Control Valve Hyd. Lines
M-69	Recirc. Loop "B" Control Valve Hyd. Lines
M-70	Nitrogen Instrument Supply

TABLE 1

CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
M-71	Service Air
M-72	H.P.C.S. Relief Vents
M-73	L.P.C.S. and R.H.R. Relief Vents
M-74	Drywell Cooler Chilled Water Supply Pipe
M-75	Drywell Cooler Chilled Water Return Pipe
M-76	Drywell Cooler Chilled Water Supply Pipe
M-77	Drywell Cooler Chilled Water Return Pipe
M-78	Main Steam Vent
M-79	Main Steam Vent
M-80	Main Steam Vent
M-81	Main Steam Vent
M-82	Main Steam Vent
M-83	Main Steam Vent
M-84	Main Steam Vent
M-85	Main Steam Vent
M-86	Main Steam Vent
M-87	Main Steam Vent
M-88	Main Steam Vent
M-89	Main Steam Vent
M-90	Main Steam Vent
M-91	Drywell Leak Off Header
M-92	Drywell Equipment Drain
M-93	Nitrogen Suction From Containment
M-94	Spare
M-95	Nitrogen Bottel Supply
M-96	Spare
M-97	R.H.R. Relief Vents
M-98	R.H.R. Test Line
M-99	Spare
M-100	Spare
M-101	Drywell Purge Air Inlet Duct
M-102	Drywell Purge Air Outlet Duct
M-103	Suppression Pool Purge Air Outlet Duct
M-104	Suppression Pool Purge Air Inlet Duct
M-105	R.H.R. Relief Valve Disch.

TABLE 1
CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
M-106	R.H.R. Relief Valve Disch.
M-107	Vacuum Breaker
M-108	Vacuum Breaker
M-109	Vacuum Breaker
M-110	Vacuum Breaker
M-111	Vacuum Breaker Drain
M-112	Vacuum Breaker Drain
M-113	Vacuum Breaker Drain
M-114	Vacuum Breaker Drain

TABLE 1A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
M-1	1	SA 516-GR.70	SA 351-GR.LF1	42"	Yes	PT, RT	ACCEPTED
M-2	1			42"	Yes	PT, RT	NOTE 1
M-3	1			42"	Yes	PT, RT	ACCEPTED
M-4	1			42"	Yes	PT, RT	ACCEPTED
M-5	1			38"	Yes	PT, RT	ACCEPTED
M-6	1			38"	Yes	PT, RT	ACCEPTED
M-7	3B	SA 516-GR.60	SA 516-GR.KC70	16"	Yes	PT, UT	ACCEPTED
M-8	6	SA 333-GR.1		20"			NOTE 2
M-9	3B	SA 333-GR.1	SA 516-GR.KC70	18"	Yes	PT, UT	ACCEPTED
M-10	3B	SA 516-GR.70	SA 516-GR.KC70	22"	Yes	PT, UT	ACCEPTED
M-11	2		SA 350-GR.LF1	22"	Yes		NOTE 3
M-12	2			22"	Yes		NOTE 3
M-13	2			22"	Yes	PT, RT	ACCEPTED
M-14	3B	SA 333-GR.1	SA 516-GR.KC70	12 3/4"	Yes	PT, UT	ACCEPTED
M-15	2	SA 516-GR.70	SA 350-GR.LF1	22"	Yes	PT, RT	ACCEPTED
M-16	2			22"	Yes	PT, RT	ACCEPTED
M-17	2			26"	Yes	RT	ACCEPTED
M-18	2			26"	Yes	PT, RT	ACCEPTED
M-19	6	SA 333-GR.1		12 3/4"			NOTE 2
M-20	1	SA 516-GR.70	SA 350-GR.LF1	34"	Yes	PT, RT	ACCEPTED
M-21	2		SA 350-GR.LF1	26"	Yes	RT	ACCEPTED
M-22	6			22"			NOTE 2
M-23	3B	SA 333-GR.1	SA 516-GR.KC70	18"	Yes	PT, UT	ACCEPTED
M-24	3B	SA 333-GR.1	SA 516-GR.KC70	20"	Yes	PT, UT	ACCEPTED

TABLE 1A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
M-25	2	SA516-GR.70	SA350-GR.LF1	26"	YES	PT, RT	ACCEPTED
M-26	2	↓	SA350-GR.LF1	26"	YES	PT, RT	ACCEPTED
M-27	3B	↓	SA516-GR.KC70	24"	YES	PT, UT	ACCPETED
M-28A	7	SA333-GR.1	↓	1.9"			NOTE 4
M-28B	7	↓	↓	1.9"			NOTE 4
M-28C	7	↓	↓	1.9"			NOTE 4
M-28D	7	↓	↓	1.9"			NOTE 4
M-29-1	5	↓	SA240-GR.304	OVAL	YES	PT, UT	ACCEPTED
M-29-2	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-3	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-4	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-5	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-6	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-7	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-8	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-9	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-10	5	↓	↓	↓	YES	PT, UT	NOTE 5
M-29-11	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-12	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-13	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-14	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-15	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-16	5	↓	↓	↓	YES	PT, UT	ACCEPTED

TABLE 1A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
M-29-17	5	SA333-GR.1	SA240-GR.304	OVAL	YES	PT, UT	ACCEPTED
M-29-18	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-19	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-29-20	5	↓	↓	↓	YES	PT, UT	ACCEPTED
M-30		Equipment Hatch					
M-31		Personnel Hatch					
M-32		Access Hatch					
M-33		Access Hatch					
M-34	2	SA240-GR.304	SA350-GR.LF1	28"	YES	RT	ACCEPTED
M-35	2	↓	↓	28"	YES	RT	ACCEPTED
M-36	2	↓	↓	28"	YES	RT	ACCEPTED
M-37	2	↓	↓	28"	YES	RT	ACCEPTED
M-38	2	↓	↓	28"	YES	RT	NOTE 6
M-39	3B	SA333-GR.1	SA516-GR.KC70	16"	YES	PT, UT	ACCEPTED
M-40	3B	SA333-GR.1	↓	12 3/4"	YES	PT, UT	ACCEPTED
M-41	3B	SA312-GR.304	↓	14"	YES	PT, UT	ACCEPTED
M-42	3B	SA333-GR.1	↓	12 3/4"	YES	PT, UT	ACCEPTED
M-43	3B	SA333-GR.1	↓	14"	YES	MT, UT	ACCEPTED
M-44	2	SA516-GR.70	SA350-GR.LF1	26"	YES	RT	NOTE 7
M-45	3B	SA333-GR.1	SA516-GR.KC70	14"	YES	MT, UT	ACCEPTED
M-46	2	SA516-GR.70	SA350-GR.LF1	26"	YES	RT	ACCEPTED
M-47	2	SA516-GR.70	SA350-GR.LF1	22"	YES	RT	NOTE 8
M-48		CRD Removal Hatch					
M-49	3B	SA312-GR.304	SA240-GR.304	12 3/4"	YES	PT, UT	ACCEPTED

TABLE 1A

PENETRATION		WELD JOINT		PIPE SIZE (OD)	BACKING BAR	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL			TYPE	RESULT
M-50	3B	SA312-GR.304	SA240-GR.304	12 3/4"	YES	PT, UT	ACCEPTED
M-51	3B	SA333-GR.1	SA516-GR.KC70	14"	YES	PT, UT	ACCEPTED
M-52	3B	SA516-GR.70	SA516-GR.KC70	24"	YES		NOTE 3
M-53	6	↓		24 3/8"			NOTE 2
M-54	2		SA350-GR.LF1	24"	YES	RT	ACCEPTED
M-55	6			24"			NOTE 2
M-56	3B		SA240-GR.316	14"	YES		NOTE 3
M-57	6	SA333-GR.1		20"			NOTE 2
M-58		Spare Number					
M-59	6	SA333-GR.1		20"			NOTE 2
M-60	6	↓		14"			NOTE 2
M-61	6			14"			NOTE 2
M-62	6			14"			NOTE 2
M-63	6			14"			NOTE 2
M-64	6			12 3/4"			NOTE 2
M-65	3B		SA516-GR.KC70	12 3/4"			NOTE 9
M-66	6			12 3/4"			NOTE 2
M-67	6			12 3/4"			NOTE 2
M-68	4E		SA240-GR.304	14"	YES	PT, UT	ACCEPTED
M-69	4E		SA240-GR.304	14"	YES	PT, UT	ACCEPTED
M-70	3B		SA516-GR.KC70	10 3/4"	YES	PT, UT	ACCEPTED
M-71	3B		↓	10 3/4"	YES	PT, UT	ACCEPTED
M-72	3B			14"	YES	PT, UT	ACCEPTED
M-73	3B	↓		14"	YES	PT, UT	ACCEPTED

TABLE 1A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
M-74	3B	SA333-GR.1	SA516-GR.KC70	20"	YES	PT, UT	ACCEPTED
M-75	3B			20"	YES	PT, UT	ACCEPTED
M-76	3B			20"	YES		NOTE 3
M-77	3B			20"	YES	PT, UT	ACCEPTED
M-78	3A			16"			
M-79	3A						
M-80	3A						
M-81	3A						
M-82	3A						
M-83	3A					SRV Vents through	
M-84	3A					Drywell Floor	
M-85	3A						
M-86	3A						
M-87	3A						
M-88	3A						
M-89	3A						
M-90	3A						
M-91	3A			10 3/4"		Drywell Floor Penetration	
M-92	3A			14"		Drywell Floor Penetration	
M-93	3B			10 3/4"	YES	PT, UT	ACCEPTED
M-94	6			8 3/4"			NOTE 2
M-95	3B			10 3/4"	YES		NOTE 3
M-96	6			10 3/4"			NOTE 2
M-97	3B			14"	YES	PT, UT	ACCEPTED

TABLE 1A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
M-98	2	SA333-GR.1	SA516-GR.KC70	20"	YES	RT	ACCEPTED
M-99	6	↓	↓	12 3/4"			NOTE 2
M-100	6			12 3/4"			NOTE 2
M-101	2	SA516-GR.70	SA350-GR.	30"	YES	PT, RT	NOTE 10
M-102	2	↓	↓	30"	YES	RT	ACCEPTED
M-103	2			30"	YES	PT, RT	ACCEPTED
M-104	2			30"	YES	PT, RT	ACCEPTED
M-105	3B	SA516-GR.60	SA516-GR.KC70	20"	YES		NOTE 3
M-106	3B	SA516-GR.60	SA516-GR.KC70	20"	YES		NOTE 3
M-107		Concrete				Vacuum Breakers through Drywell Floor	
M-108		Concrete					
M-109		Concrete					
M-110		Concrete					
M-111	3A	SA333-GR.1	SA240-GR.304	3.5"		Vacuum Breaker Drains through Drywell Floor	
M-112	3A	↓	↓	3.5"			
M-113	3A			3.5"			
M-114	3A			3.5"			

TABLE 2

CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
I-1	4-Jet Pump Flow; 1-RWC Rx Vessel Core Plate to Drain; Reactor Water Level; 1-Spare.
I-2	4-Jet Pump Flow; 1-Pressure above Core Plate; 2-Spares.
I-3	4-Jet Pump Flow; 1-Pressure below Core Plate; 2-Spares.
I-4	4-Jet Pump Flow; 2-Main Steam Flow A; 1-Spare.
I-5	4-Jet Pump Flow; 1-Recirc Pump 1A Seal Purge Water; 2-Spares.
I-6	4-Jet Pump Flow; 1-Press above Core Plate; 2-Spares.
I-7	1-H_2 Air Sample Return; 2-RHR Flow Leak Det. A; 1-Recirc Pump 1A Suction Pressure; 3-Spares.
I-8	2-Reactor Recirc Pump 1A Diff. Press; 1-Reactor Recirc Pump 1A, #1 Seal Cavity; 1-Reactor Recirc Pump 1A, #2 Seal Cavity; 3-Spares.
I-9	2-Reactor Recirc Pump 1B-Diff. Press; 1-Reactor Recirc Pump 1B, #1 Seal Cavity; 1-Reactor Recirc Pump 1B, #2 Seal Cavity; 2-Main Steam Flow; 1-Spare.
I-10	2-Reactor Recirc Pump 1A Flow; 2-Reactor Recirc Pump 1B Flow; 3-Spares.
I-11	1-Drywell Atmos. Sample; 1-Low Press. Core Spary; 2-Reactor Water Level; 3-Spares.
I-12	1-Primary Containment Pressure; 6-Spares.
I-13	1-High Pressure Core Spray; 1-Pressure above Core Plate; 1-Pressure below Core Plate; 4-Spares.
I-14	1-Reactor Vessel Water Level-Wide Range; 6-Spares.
I-15	2-Main Steam Flow; 2-Reactor Recirc Pump 1A Flow; 2-Reactor Recirc Pump 1B Flow; 1-Spare.
I-16	2-Reactor Recirc Pump 1A Flow; 2-Reactor Recirc Pump 1B Flow; 2-RCIC System Steam Leak Detection-2B; 1-Spare.
I-17	2-Reactor Recirc Pump 1A Flow; 2-Reactor Recirc Pump 1B Flow; 1-RHR LPCI Header 1B Press; 1-RHR LPCI Header 1C Press; 1-Recirc Pump 1B Suction Press
I-18	6-ADS Valve 30 Gal. Accumulator, Low Pressure; 1-Spare.

TABLE 2
CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
I-19	1-Primary Containment Air Sample; 1-Air Sample, Control Rod Drive Pedes.; 2-Air Sample, Jet Pump Valves; 1-Reactor Recirc.Sample; 2-Spares.
I-20	Suppression Chamber Water Level.
I-21	2-RCIC System Steam Leak Detection 1A; 2-RCIC System Steam Leak Detection 2A; 1-Recirc Pump 1B Seal Purge Water; 2-Spares.
I-22	1-Reactor Water Level; 6-Spares.
I-23	1-Reactor Water Level; 6-Spares.
I-24	6-Main Steam Flow (2B, 2C, 2D); 1-Spare.
I-25	2-RHR Hi Flow Leak Detection B; 2-Main Steam Flow A; 2-RCIC Steam Leak Detection System 1B; 1-Spare.
I-26	1-Spare
I-27	1-Suppression Chamber Air Sample; 6-Spares.
I-28	1-Spare
I-29	2-Suppression Chamber Air Samples; 5-Spares.
I-30	1-Spare
I-31	1-Spare
I-32	1-Spare
I-33	1-Spare
I-34	Spare Number
I-35	Spare Number
I-36	6-Main Steam Flow (2B, 2C, 2D); 1-Spare.
I-37	1-Primary Containment Pressure
I-38	1-Primary Containment Pressure; 6-Spare.
I-39	Primary Containment Pressure
I-40	6-Main Steam Flow (2A, 2B, 2C); 1-Spare.
I-41	Suppression Chamber Water Level
I-42	Suppression Chamber Water Level

TABLE 2
CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
I-43	Suppression Chamber Water Level
I-44	Suppression Chamber Water Level
I-45	Containment Flood Level
I-46	Containment Flood Level
I-47	4-Spares
I-48	2-Reactor Water Clean-up Inlet; 5-Spares.
I-49	7-Spares
I-50	2-Air Sample-Reactor Head Closure; 5-Spares.
I-51	Suppression Chamber Water Level
I-52	Containment Flooding Level
I-53	Containment Flooding Level
I-54	6-Main Steam Flow (2B, 2C, 2D); 1-Spare.
I-55	2-Main Steam Flow A; 2-RCIC Steam Leak Detection System 1B.
I-56	1-RHR LPCI Header 1C Pressure; 1-RWC Rx Ves. Core Plate to Drain; 2-Spares.
I-57	2-Reactor Recirc Pump 1A Flow; 2-RCIC Sytem Steam Leak Detection-2B.
I-58	2-Reactor Recirc Pump 1B Flow; 2-Spares.
I-59	2-Reactor Recirc Pump 1B-Flow; 1-Recirc Pump 1B Suction Press; 1-Spare.
I-60	2-Reactor Recirc Pump 1B-Diff. Press; 2-Main Steam Flow.
I-61	1-Reactor Recirc Pump 1A, #2 Seal Cavity; 3-Spares.
I-62	2-RHR Hi Flow Leak Detection B; 2-Reactor Recirc Pump 1A Diff. Press.
I-63	2-RHR Flow Leak Detection A; 1-Recirc Pump 1A Suction Press; 1-Reactor Recirc Pump 1A, #1 Seal Cavity.
I-64	Spare Number
I-65	4-Primary Containment Air Samples; 3-Spares.
I-66	5-Primary Containment Air Samples; 2-Spares

TABLE 2
CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
I-67	5-Primary Containment Air Samples; 2-Spares.
I-68	Reactor Water Level & Press.
I-69	Reactor Water Level
I-70	Reactor Water Level
I-71	Reactor Water Level & Press.
I-72	Reactor Water Level
I-73	Reactor Water Level & Press.
I-74	Reactor Water Level & Press.
I-75	Reactor Water Level
I-76	Reactor Water Level & Press.
I-77	Reactor Water Level
I-78	2-Reactor Recirc. Pump 1A Flow; 2-Spares.
I-79	4-Spares
I-80	1-Reactor Recirc Pump 1B-#1 Seal Cavity; 1-Reactor Recirc Pump 1B-#2 Seal Cavity; 2-Main Steam Flow
I-81	Supp. Pool Water Temp.
I-82	Spare Number
I-83	Supp. Pool Water Temp.
I-84	Supp. Pool Water Temp.
I-85	Supp. Pool Water Temp.
I-86	Supp. Pool Water Temp.
I-87	Supp. Pool Water Temp.
I-88	Supp. Pool Water Temp.
I-89	Supp. Pool Water Temp.
I-90	Supp. Pool Water Temp.
I-91	Supp. Pool Water Temp.
I-92	Supp. Pool Water Temp.
I-93	Supp. Pool Water Temp.

TABLE 2
CONTAINMENT PENETRATIONS

PENETRATION NUMBER	DESCRIPTION
I-94	Supp. Chamber Air Temp.
I-95	Supp. Pool Water Temp.
I-96	Supp. Pool Water Temp.
I-97	Supp. Pool Water Temp.
I-98	Supp. Pool Water Temp.
I-99	Supp. Pool Water Temp.
I-100	Supp. Pool Water Temp.
I-101	Supp. Chamber Air Temp.
I-102	Supp. Pool Water Temp.
I-103	Supp. Chamber Air Temp.
I-104	Supp. Chamber Air Temp.

TABLE 2A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
I-1	4A	SA333-GR.1	SA240-GR.304	12 3/4"	YES	PT, UT	ACCEPTED
I-2	4A	↓	↓	↓	YES	PT, UT	ACCEPTED
I-3	4A				YES	PT, UT	ACCEPTED
I-4	4A				YES	PT, UT	ACCEPTED
I-5	4A				YES		NOTE 3
I-6	4A				YES	PT, UT	ACCEPTED
I-7	4A		↓		YES		NOTE 3
I-8	4A		SA240-GR.316		YES	PT, UT	ACCEPTED
I-9	4A		SA240-GR.304		YES	PT, UT	ACCEPTED
I-10	4A				YES	PT, UT	ACCEPTED
I-11	4A				YES	PT, UT	ACCEPTED
I-12	4A				YES	PT, UT	ACCEPTED
I-13	4A				YES	PT, UT	ACCEPTED
I-14	4A				YES	PT, UT	ACCEPTED
I-15	4A				YES	PT, UT	ACCEPTED
I-16	4A				YES	PT, UT	ACCEPTED
I-17	4A				YES	PT, UT	ACCEPTED
I-18	4A				YES		NOTE 3
I-19	4A	↓		↓	YES	PT, UT	ACCEPTED
I-20	4C	SA312-GR.304		3 ½"	YES		NOTE 3
I-21	4A	SA333-GR.1		12 3/4"	YES	PT, UT	ACCEPTED
I-22	4A	↓		↓	YES	PT, UT	ACCEPTED
I-23	4A				YES	PT, UT	ACCEPTED
I-24	4A	↓	↓	↓	YES	PT, UT	ACCEPTED

TABLE 2A

PENETRATION		WELD JOINT		PIPE SIZE (OD)	BACKING BAR	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL			TYPE	RESULT
I-25	4A	SA333-GR.1	SA240-GR.304	12 3/4"	YES		NOTE 3
I-26	4C			3 ½"	YES	PT, UT	ACCEPTED
I-27	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-28	4C			3 ½"	YES	PT, UT	ACCEPTED
I-29A	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-30	6	SA312-GR.304		3 ½"			NOTE 2
I-31	4C				YES	PT, UT	ACCEPTED
I-32	6						NOTE 2
I-33	4C				YES	PT, UT	ACCEPTED
I-34		Spare Number					
I-35		Spare Number					
I-36	4A	SA333-GR.1	SA240-GR.304	12 3/4"	YES	PT, UT	ACCEPTED
I-37	4C			3 ½"	YES	PT, UT	ACCEPTED
I-38	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-39	4C			3 ½"	YES	PT, UT	ACCEPTED
I-40	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-41	4C	SA312-GR.304		3 ½"	YES	PT, UT	ACCEPTED
I-42	4C				YES	PT, UT	ACCEPTED
I-43	4C				YES	PT, UT	ACCEPTED
I-44	4C				YES	PT, UT	ACCEPTED
I-45	4C	SA333-GR.1			YES	PT, UT	ACCEPTED
I-46	4C				YES	PT, UT	ACCEPTED
I-47	4B			10 3/4"	YES	PT, UT	ACCEPTED
I-48	4A			12 3/4"	YES	PT, UT	ACCEPTED

TABLE 2A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
I-49	4A	SA333-GR.1	SA240-GR.304	12 3/4"	YES	PT, UT	ACCEPTED
I-50	4A	SA333-GR.1		12 3/4"	YES	PT, UT	ACCEPTED
I-51	4C	SA312-GR.304		3 ½"	YES	PT, UT	ACCEPTED
I-52	4C	SA333-GR.1		3 ½"	YES	PT, UT	ACCEPTED
I-53	4C			3 ½"	YES	PT, UT	ACCEPTED
I-54	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-55	4F			6 5/8"			
I-56	4G						
I-57	4F						
I-58	4G						
I-59	4F		SA240-GR.316			Drywell Floor Penetrations	
I-60	4G		SA240-GR.304				
I-61	4F		SA240-GR.304				
I-62	4G		SA240-GR.316				
I-63	4G		SA240-GR.304				
I 64		Spare Number					
I-65	4A	SA333-GR.1	SA240-GR.304	12 3/4"	YES	PT, UT	ACCEPTED
I-66	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-67	4A			12 3/4"	YES	PT, UT	ACCEPTED
I-68	4C			3 ½"	YES	PT, UT	ACCEPTED
I-69	4C			3 ½"	YES	PT, UT	ACCEPTED
I-70	4C			3 ½"	YES	PT, UT	ACCEPTED
I-71	4C			3 ½"	YES	PT, UT	ACCEPTED
I-72	4C			3 ½"	YES	PT, UT	ACCEPTED

TABLE 2A

PENETRATION		WELD JOINT		PIPE SIZE (OD)	BACKING BAR	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL			TYPE	RESULT
I-73	4C	SA333-GR.1	SA240-GR.304	3 ½"	YES	PT, UT	ACCEPTED
I-74	4C			3 ½"	YES	PT, UT	ACCEPTED
I-75	4C			3 ½"	YES	PT, UT	ACCEPTED
I-76	4C			3 ½"	YES	PT, UT	ACCEPTED
I-77	4C			3 ½"	YES	PT, UT	ACCEPTED
I-78	4G			6 5/8"			
I-79	4F			6 5/8"	Drywell Floor Penetrations		
I-80	4F			6 5/8"			
I-81	4C			3 ½"			
I-82		Spare Number					
I-83	4C	SA333-GR.1		3 ½"			
I-84	4C						
I-85	4C						
I-86	4C						
I-87	4C						
I-88	4C						
I-89	4C				Drywell Floor Penetrations		
I-90	4C						
I-91	4C						
I-92	4C						
I-93	4C						
I-94	4C						
I-95	4C						
I-96	4C						

TABLE 2A

PENETRATION		WELD JOINT		PIPE SIZE	BACKING	NDE PERFORMED	
NO.	TYPE	SLEEVE PIPE MAT.	HEAD MATERIAL	(OD)	BAR	TYPE	RESULT
I-97	4C	SA333-GR.1		3 ½"	Drywell Floor Penetrations		
I-98	4C						
I-99	4C						
I-100	4C						
I-101	4C						
I-102	4C						
I-103	4C						
I-104	4C						

APPENDIX A
NOTES

1. PENETRATION M-2:

   The sleeve to head weld was rejected after first RT due to porosity. Affected areas were ground out and repair work was accepted after second RT.

2. PENETRATIONS M-8, 19, 22, 53, 55, 57, 59, 60, 61, 62, 63, 64, 66, 67, 94, 96, 99 and 100:

   PENETRATIONS I-30 and 32:

   These are "Spare" penetrations. Permanent closure of these "type 6" penetrations has not been performed.

3. PENETRATIONS M-11, 12, 52, 56, 76, 95, 105 and 106:

   PENETRATIONS I-5, 7, 12, 20 and 25:

   These penetrations are at various stages of construction and the final NDE's have not been completed.

4. PENETRATIONS M-28-A, B, C, D and E:

   Construction of "TIP SYSTEM" penetrations (Type 7) has not been completed.

5. PENETRATION M-29-10:

   The sleeve to head weld was rejected after first UT revealed 1" long unacceptable defect. Defect was excavated and repair made. Second PT and UT were accepted.

6. PENETRATION M-38:

   The sleeve to head weld was rejected after "visual exam" of root pass.

   First Repair; grind out and remove 50% of filler metal 360°. Repair rejected due to linear indications running circumferentially.

   Second Repair; grind out defect and reweld. Repair rejected due to linear indications running circumferentially, and 5" lack of fusion between backing ring and root.

   Third Repair; grind out defect and reweld. Repair accepted.

7. PENETRATION M-44:

   The sleeve to head weld rejected after first RT. Affected area was ground out to remove defect. Repair work was accepted after second RT.

APPENDIX A
NOTES

8. PENETRATION M-47:

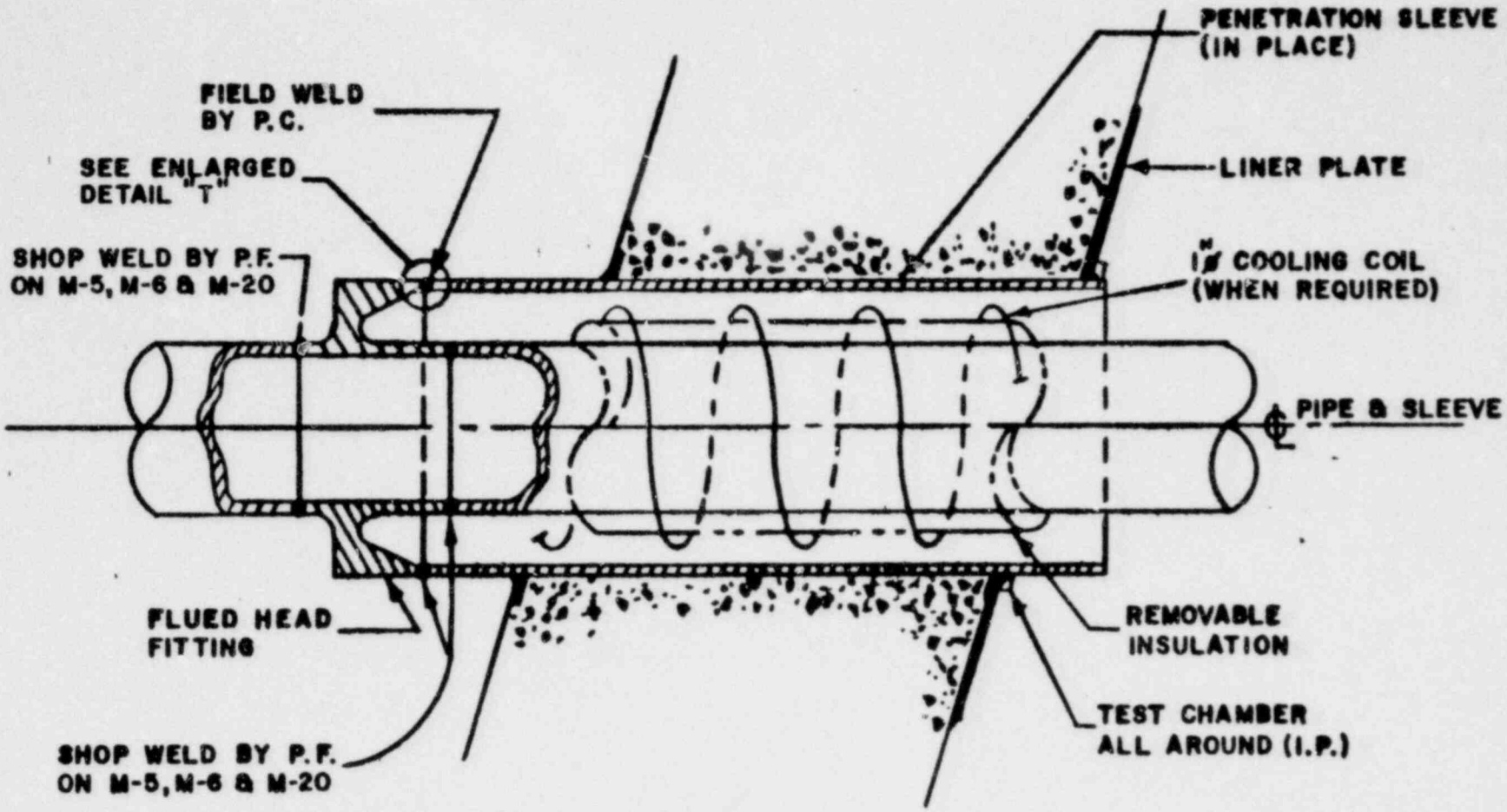
   The sleeve to head weld was rejected after first RT due to low density and processing marks. Affected areas were ground out and rewelded. Repair work was accepted after second RT.

9. PENETRATION M-65:

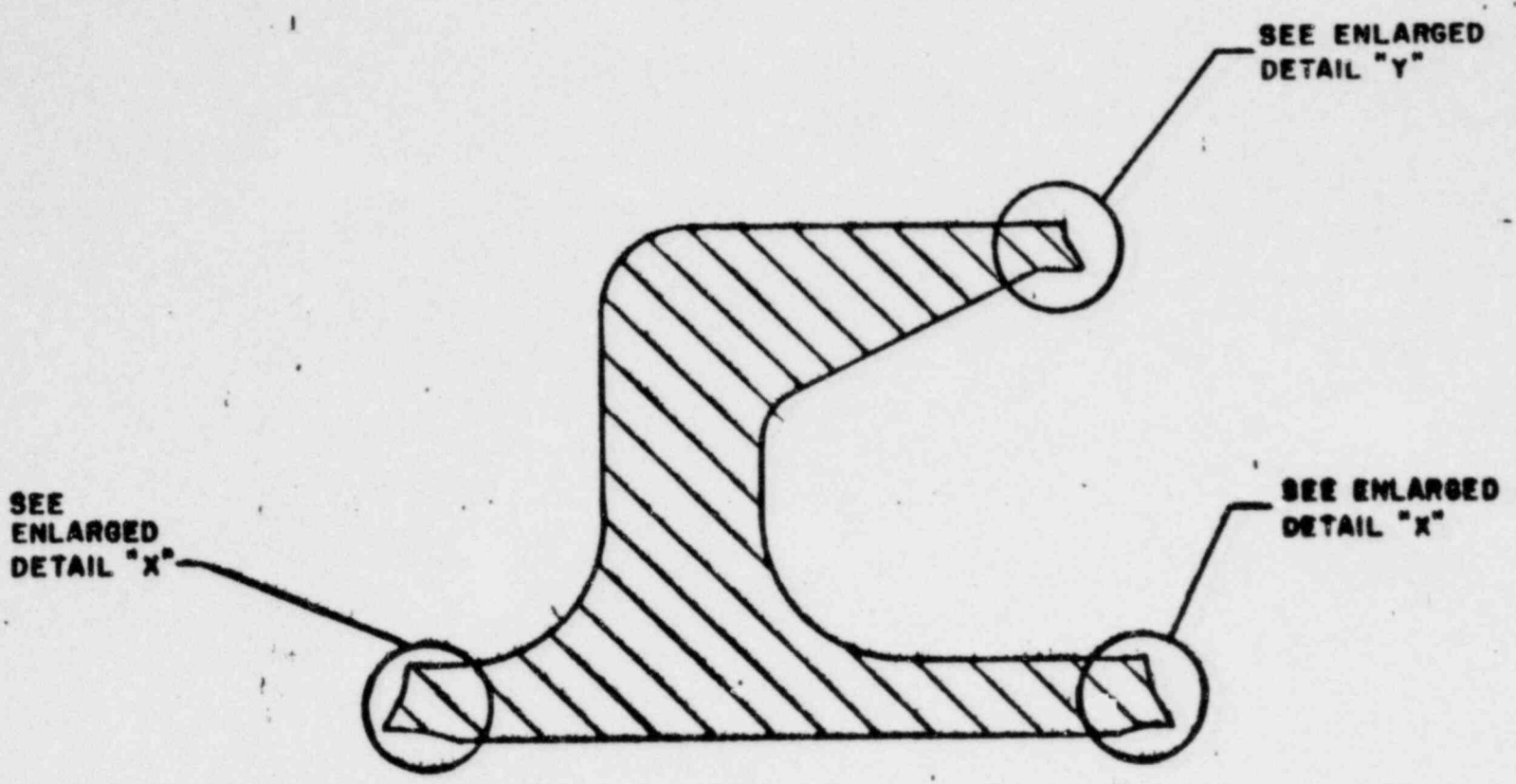
   This penetration was originally a "Spare." It is to be used in the "Drywell Pneumatic" system and is still under construction.

10. PENETRATION M-101:

    The sleeve to head weld was rejected due to non-fusion of backing ring. Affected areas were ground to remove defect. Repair accepted.

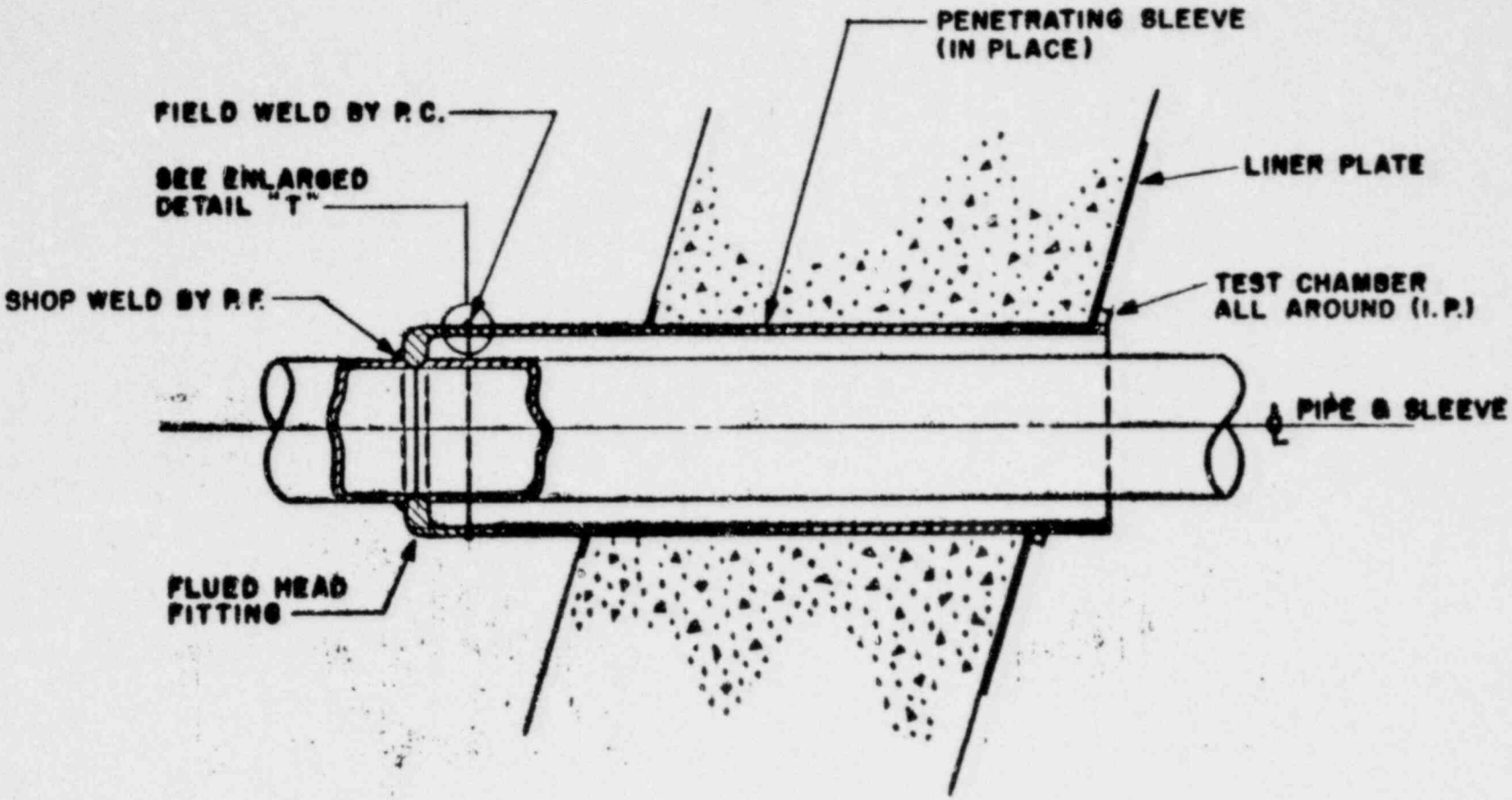

PENETRATION SLEEVE
(IN PLACE)
FIELD WELD
BY P.C.
SEE ENLARGED
DETAIL "T"
LINER PLATE
SHOP WELD BY P.F.
ON M-5, M-6 & M-20
1" COOLING COIL
(WHEN REQUIRED)
PIPE & SLEEVE
FLUED HEAD
FITTING
REMOVABLE
INSULATION
TEST CHAMBER
ALL AROUND (I.P.)
SHOP WELD BY P.F.
ON M-5, M-6 & M-20

TYPE 1

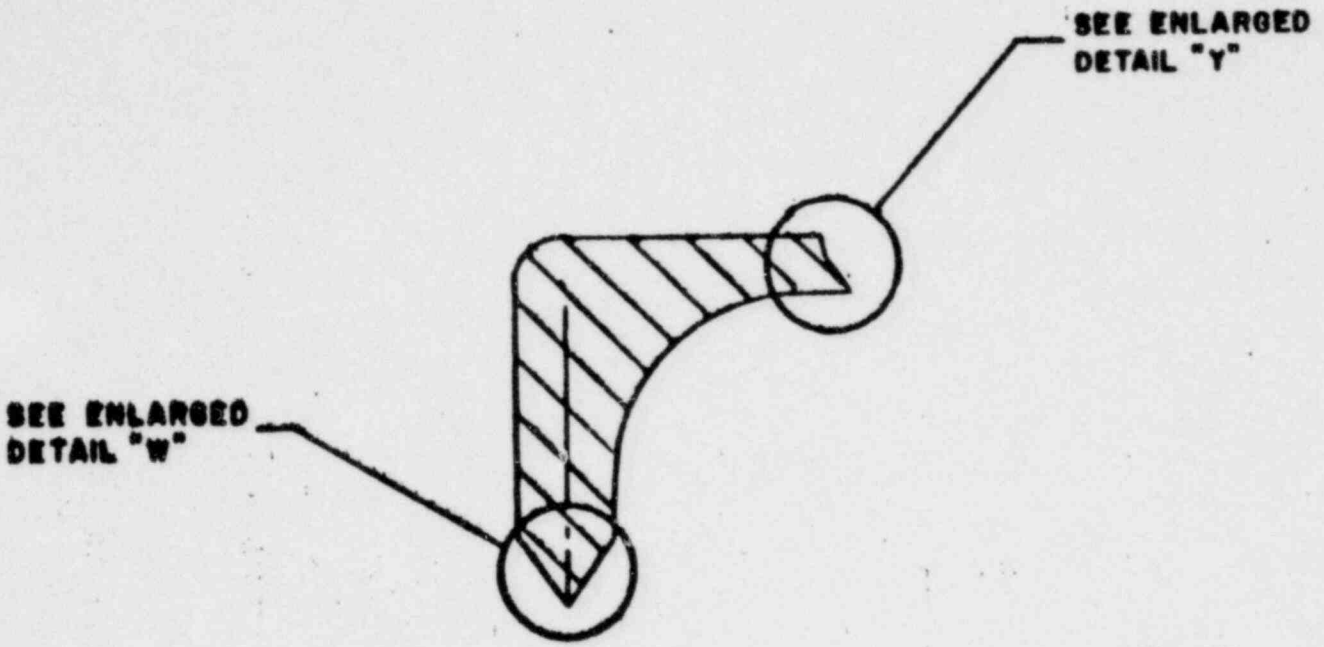


TYPE 1

FURNISHED BY OTHERS
ATTACHED TO ASSOCIATED
PIPING BY P.F.

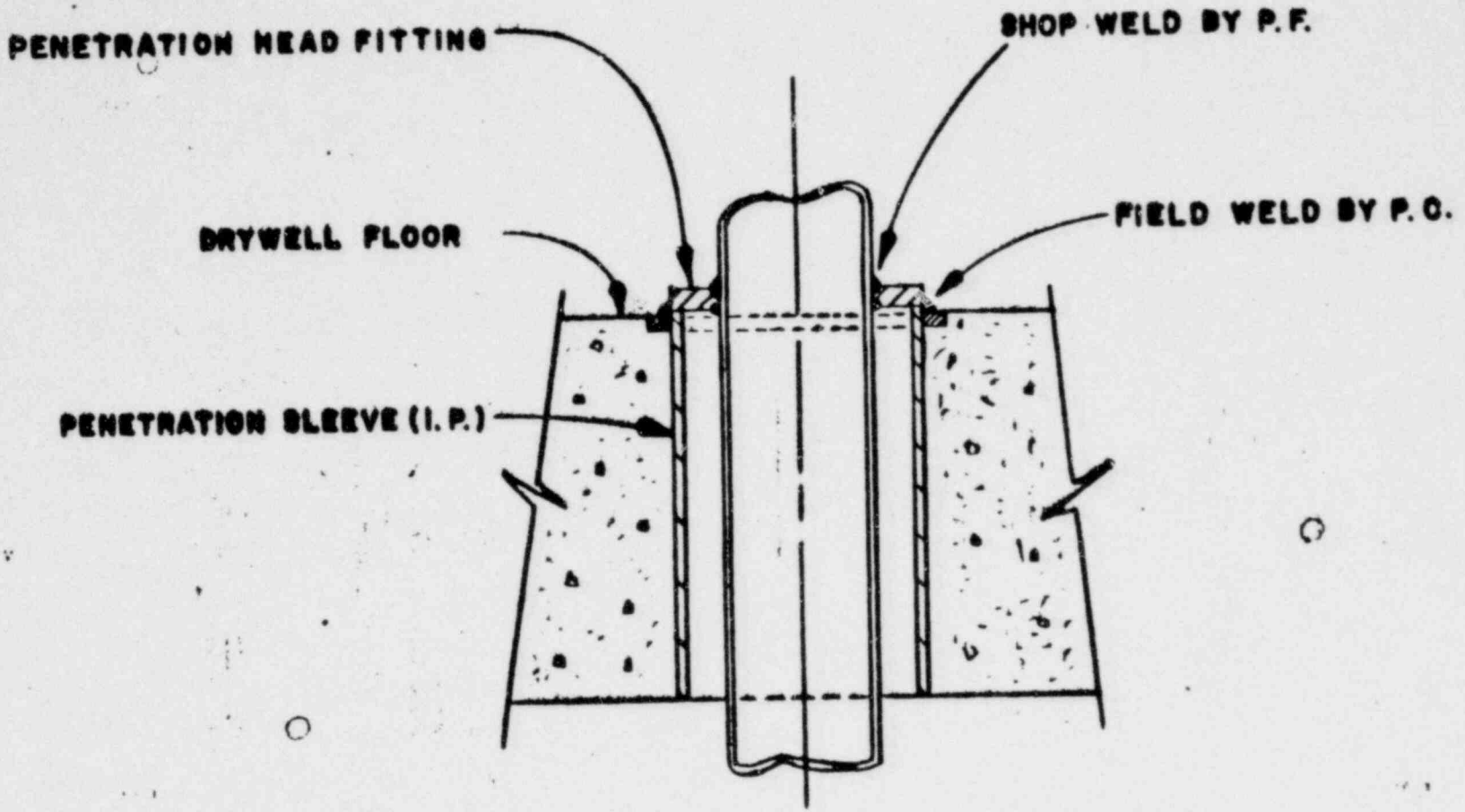

PENETRATING SLEEVE
(IN PLACE)
FIELD WELD BY R.C.
SEE ENLARGED
DETAIL "T"
LINER PLATE
SHOP WELD BY R.F.
TEST CHAMBER
ALL AROUND (I.P.)
PIPE & SLEEVE
FLUED HEAD
FITTING

TYPE 2

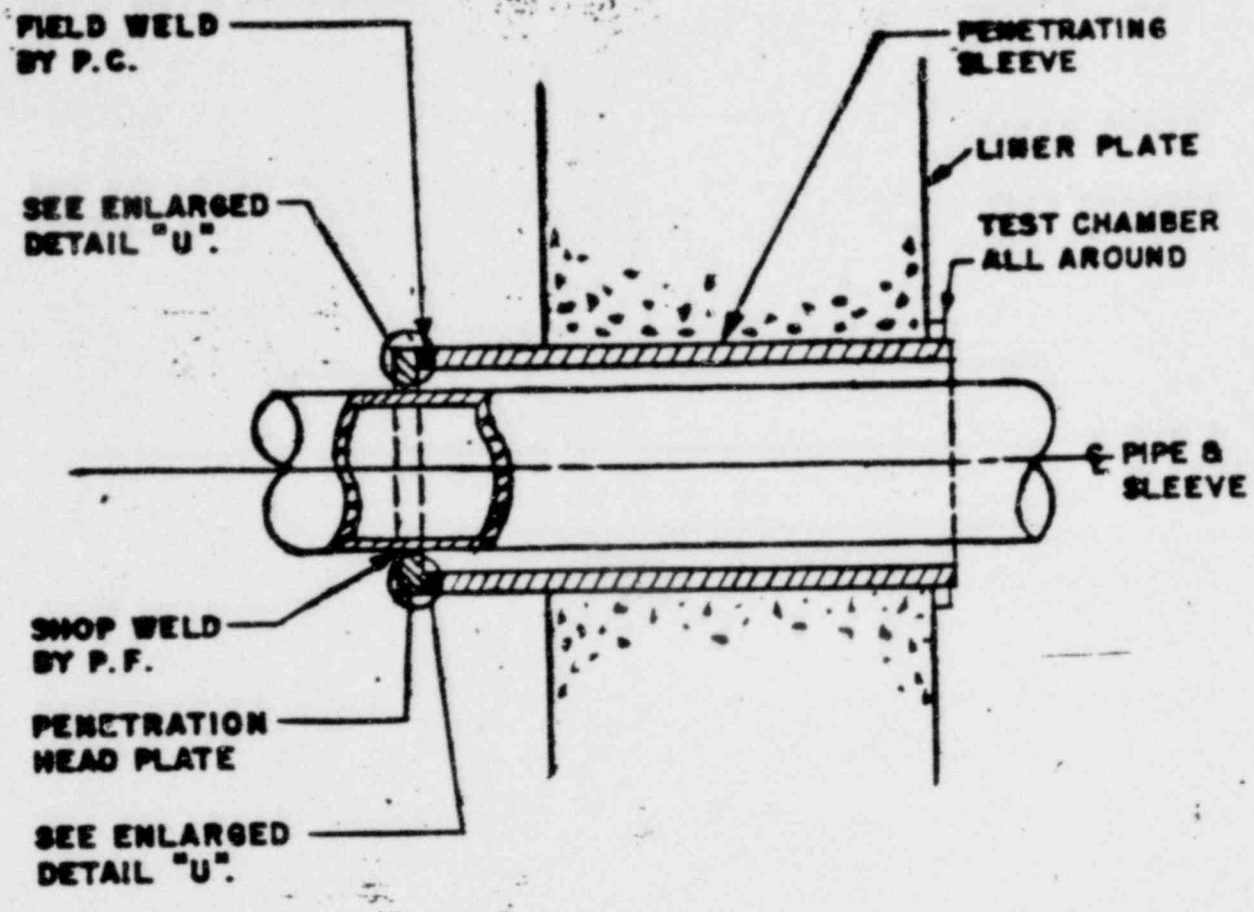


TYPE 2

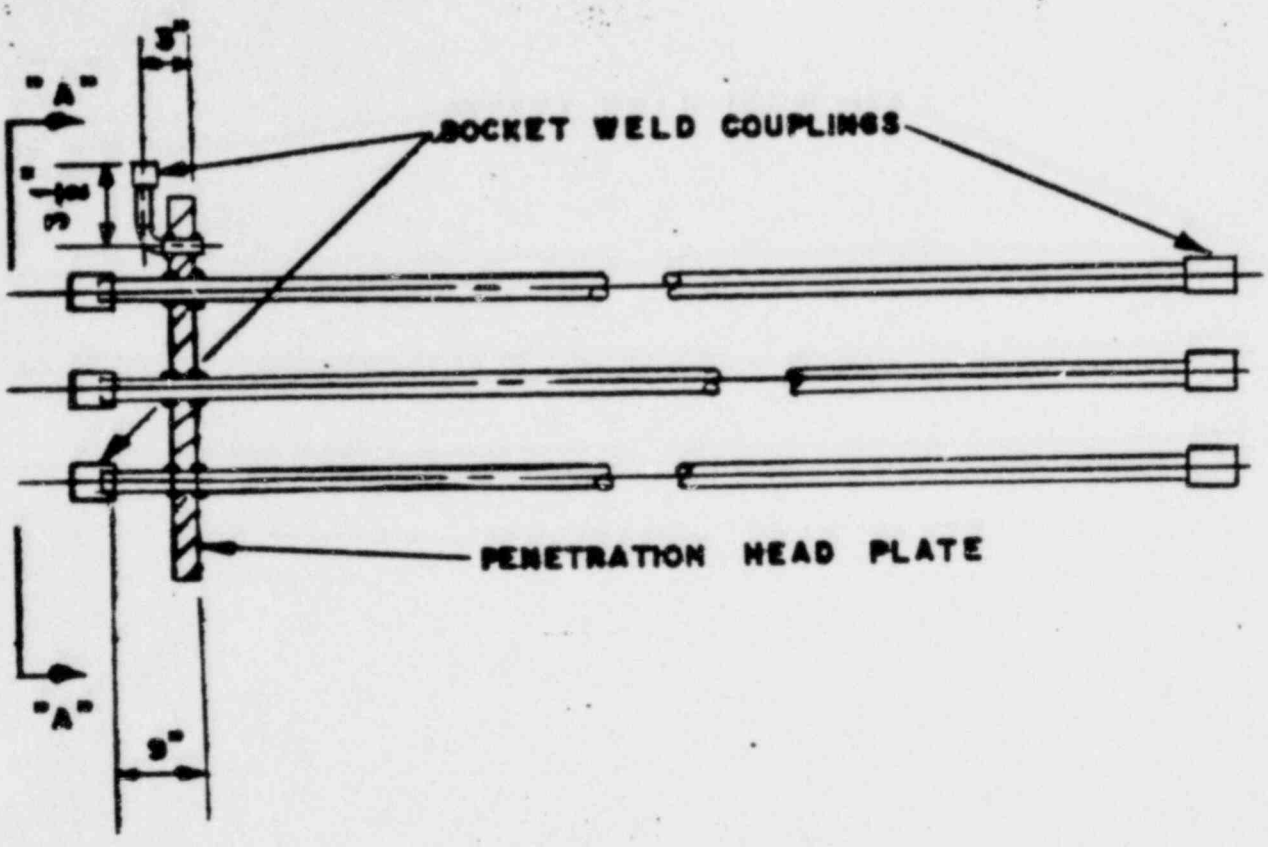
FURNISHED BY OTHERS
ATTACHED TO ASSOCIATED
PIPING BY P. F.


PENETRATION HEAD FITTING
SHOP WELD BY P.F.
DRYWELL FLOOR
FIELD WELD BY P.C.
PENETRATION SLEEVE (I.P.)

TYPE 3A

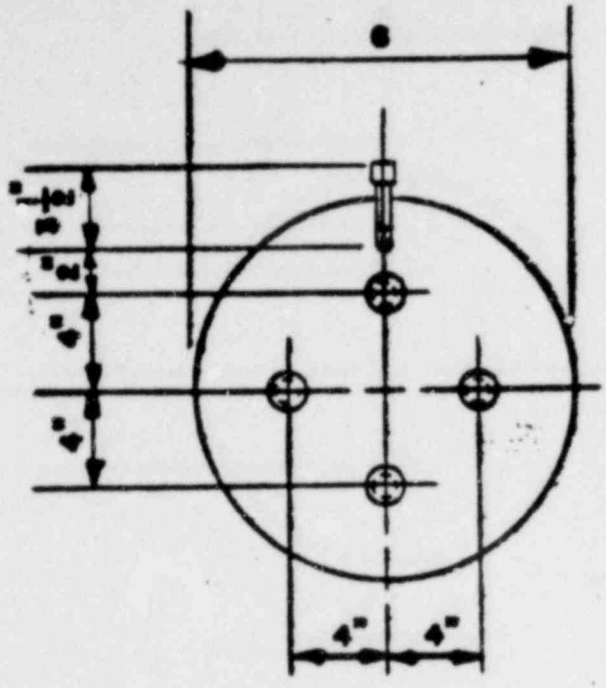

FIELD WELD BY P.C.
PENETRATING SLEEVE
LINER PLATE
SEE ENLARGED DETAIL "U".
TEST CHAMBER ALL AROUND
℄ PIPE & SLEEVE
SHOP WELD BY P.F.
PENETRATION HEAD PLATE
SEE ENLARGED DETAIL "U".

TYPE 3B

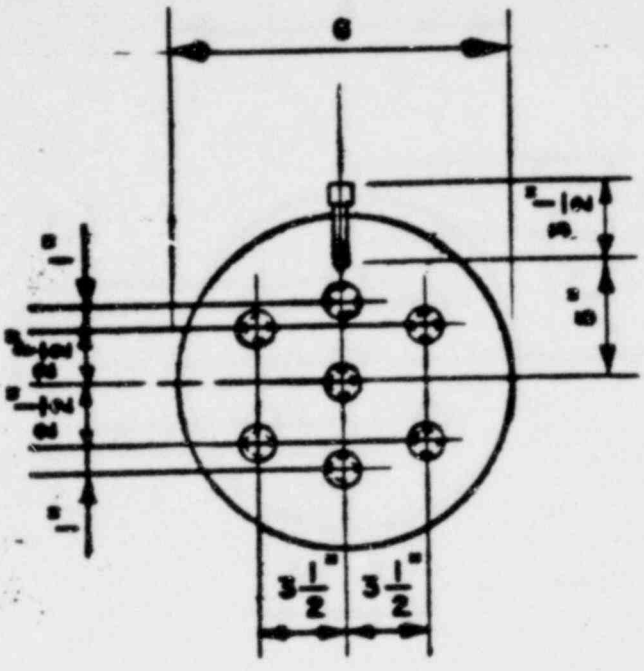


TYPE - 4 (A, B, C, & E)

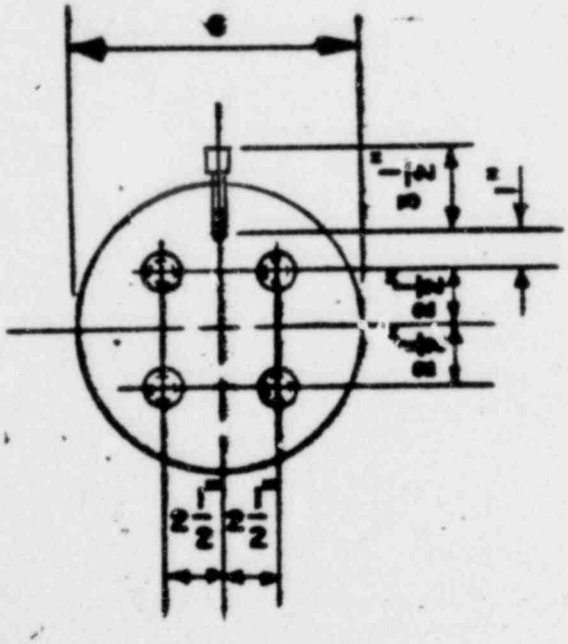
PENETRATION ASSEMBLE
TO BE FURNISHED BY P. F.



TYPE — 4E



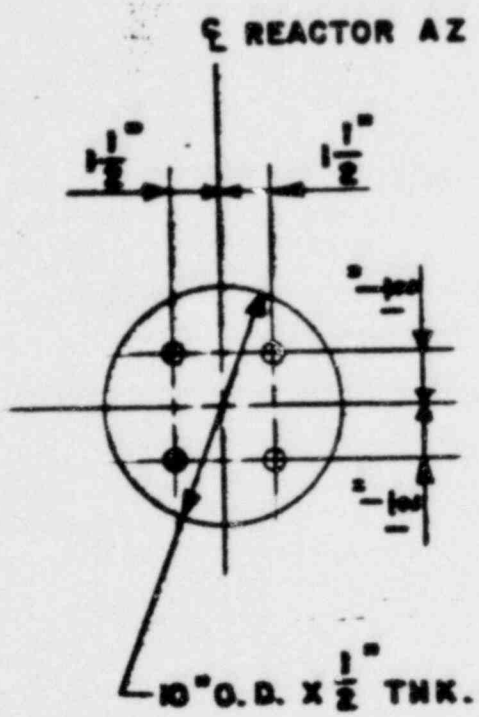
TYPE — 4A



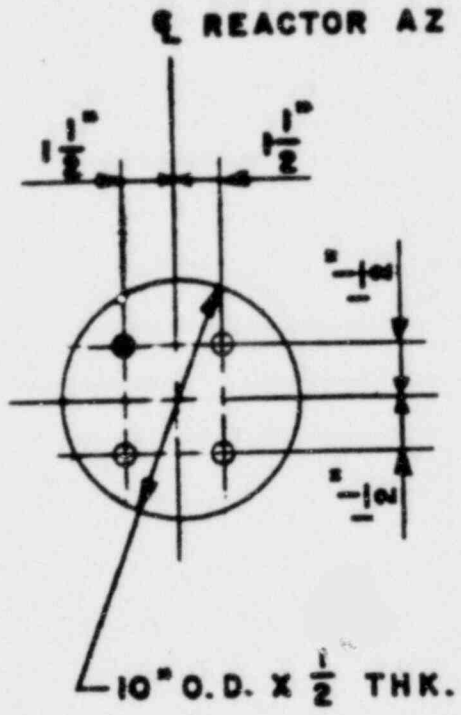
TYPE — 4B

TYPE — 4C

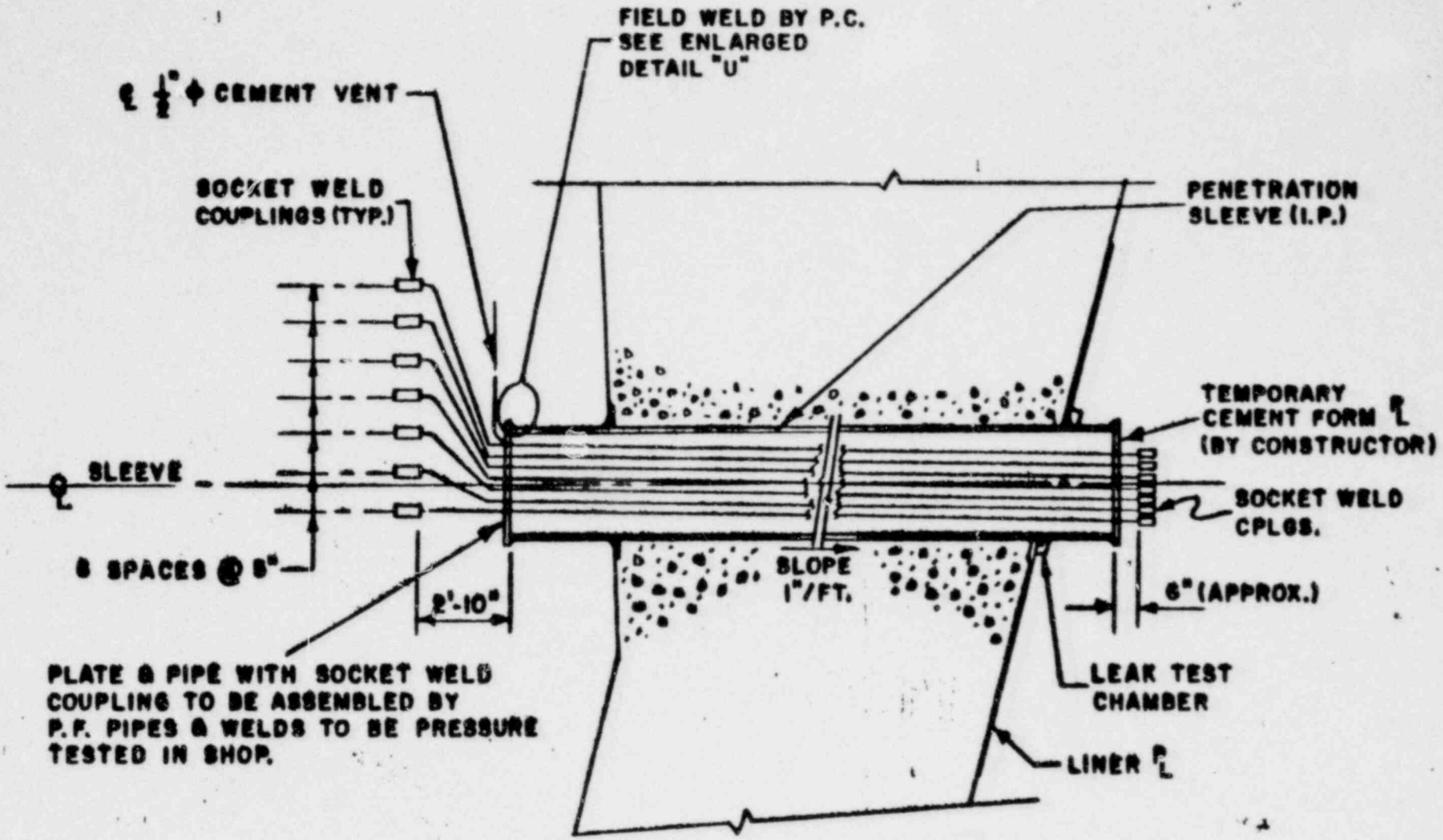
SECTION "A — A"



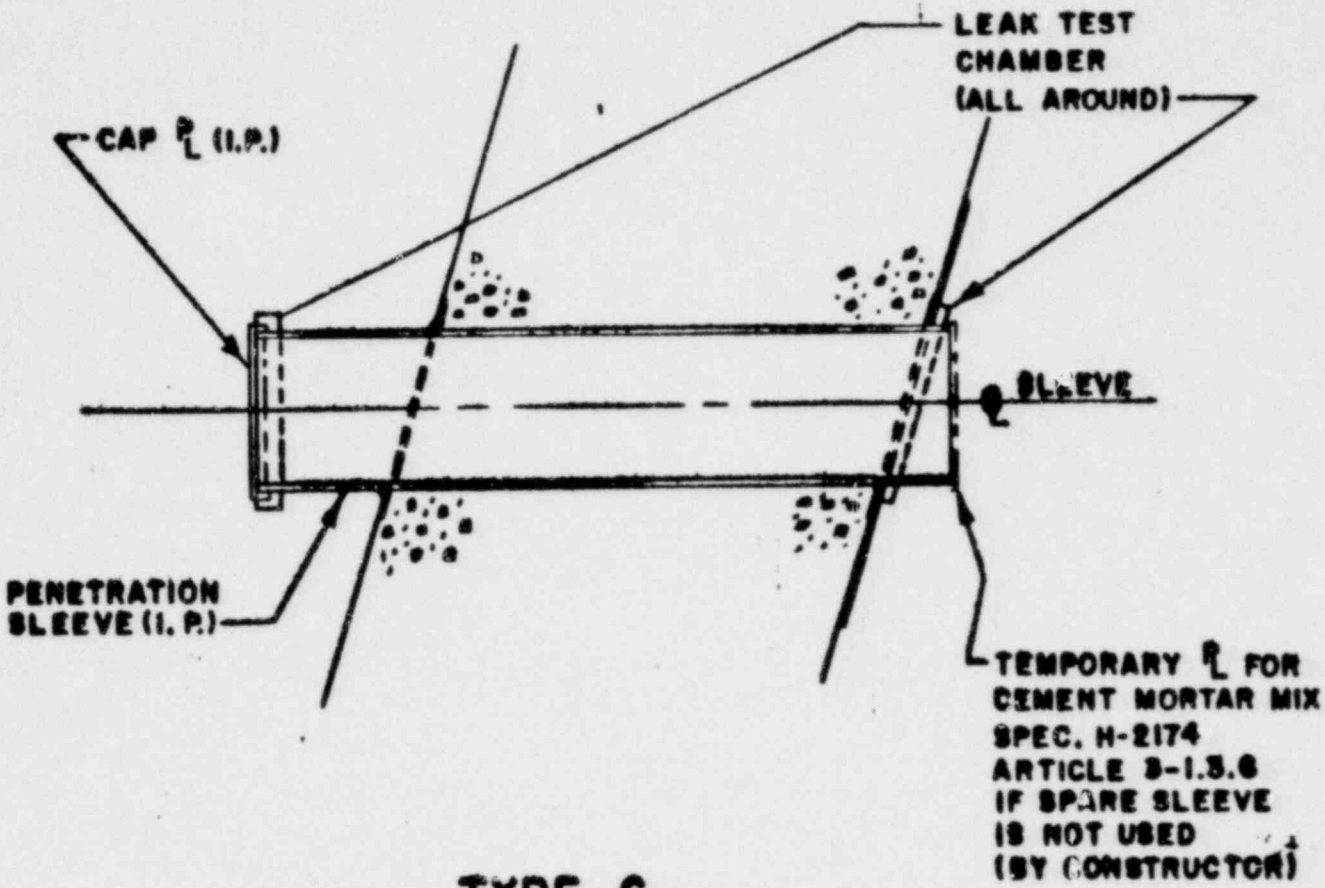
TYPE 4F



TYPE 4G

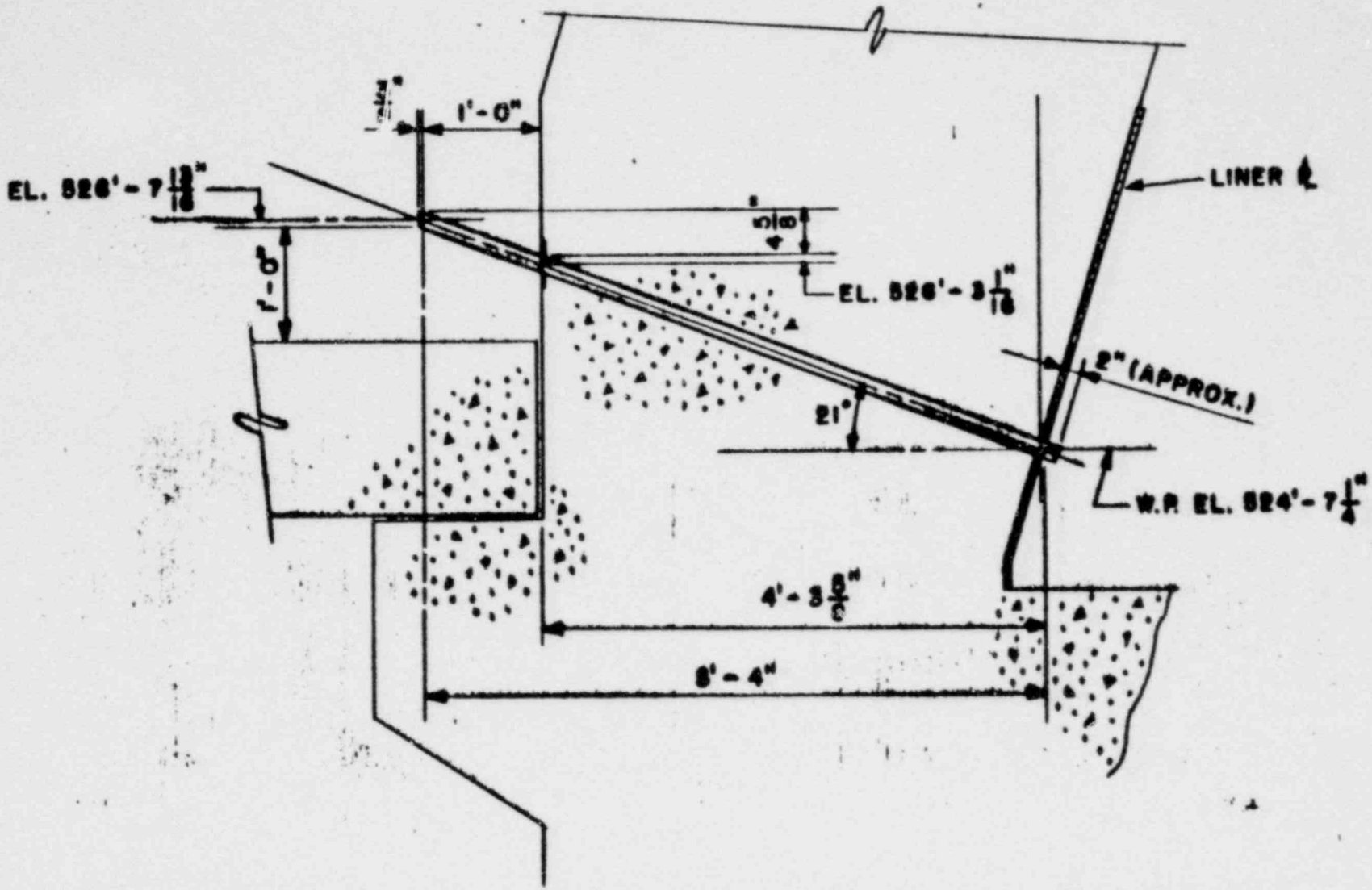

FIELD WELD BY P.C.
SEE ENLARGED
DETAIL "U"
℄ 1/2" ♦ CEMENT VENT
SOCKET WELD
COUPLINGS (TYP.)
PENETRATION
SLEEVE (I.P.)
TEMPORARY
CEMENT FORM ℄
(BY CONSTRUCTOR)
SLEEVE ℄
SOCKET WELD
CPLGS.
8 SPACES @ 8"
2'-10"
SLOPE
1"/FT.
6" (APPROX.)
PLATE & PIPE WITH SOCKET WELD
COUPLING TO BE ASSEMBLED BY
P.F. PIPES & WELDS TO BE PRESSURE
TESTED IN SHOP.
LEAK TEST
CHAMBER
LINER ℄

TYPE 5

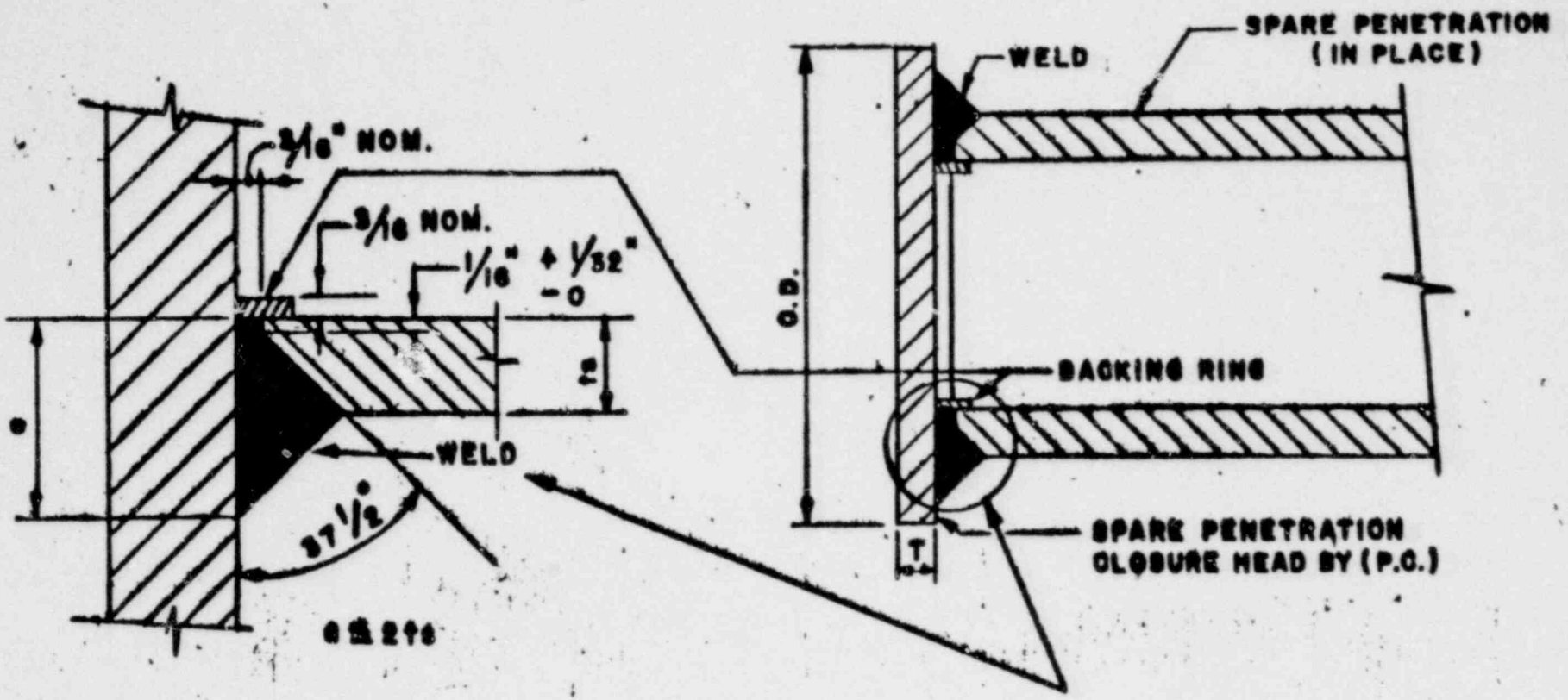


TYPE 6

NOTE: FOR PERMANENT CLOSURE OF SPARE "M"
(TYPE 6) PENETRATIONS SEE DETAIL "S"


1'-0"
EL. 826'-7 13/16"
LINER ℄
EL. 826'-3 1/16"
2" (APPROX.)
21"
W.P. EL. 824'-7 1/4"
4'-3 5/8"
8'-4"

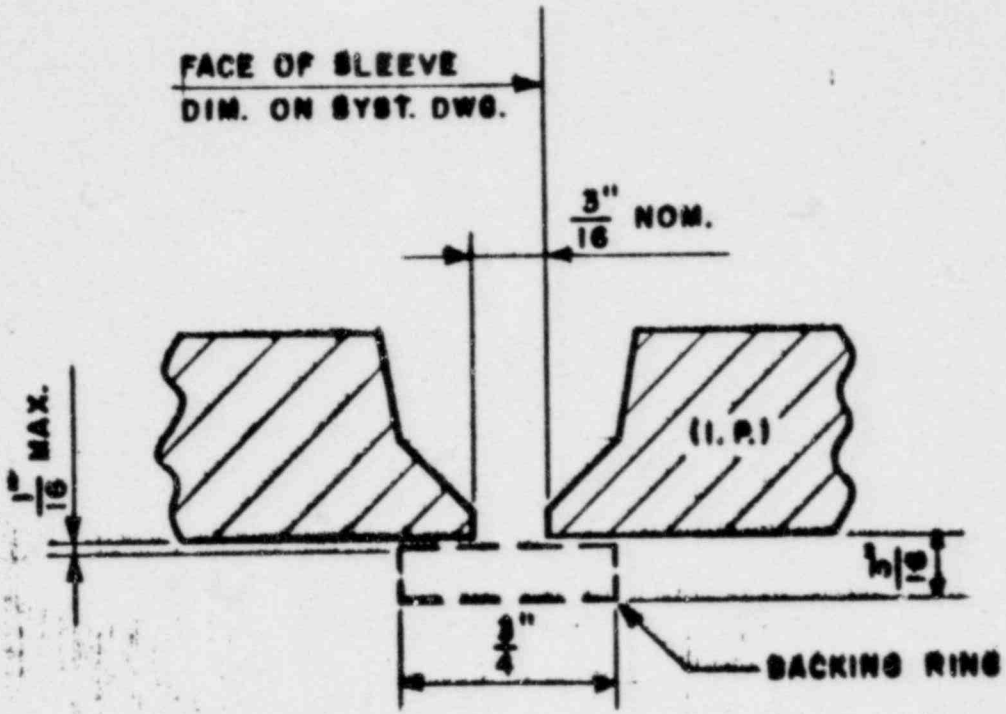
TYPE 7



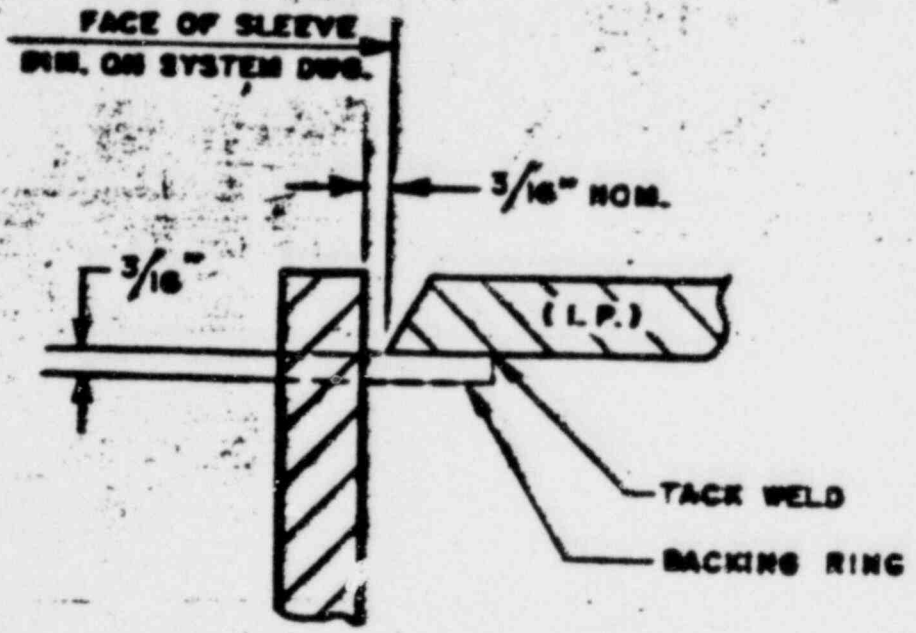
WELD DETAIL FOR PERMANENT CLOSURE OF SPARE "M" PENETRATIONS

DETAIL "S"

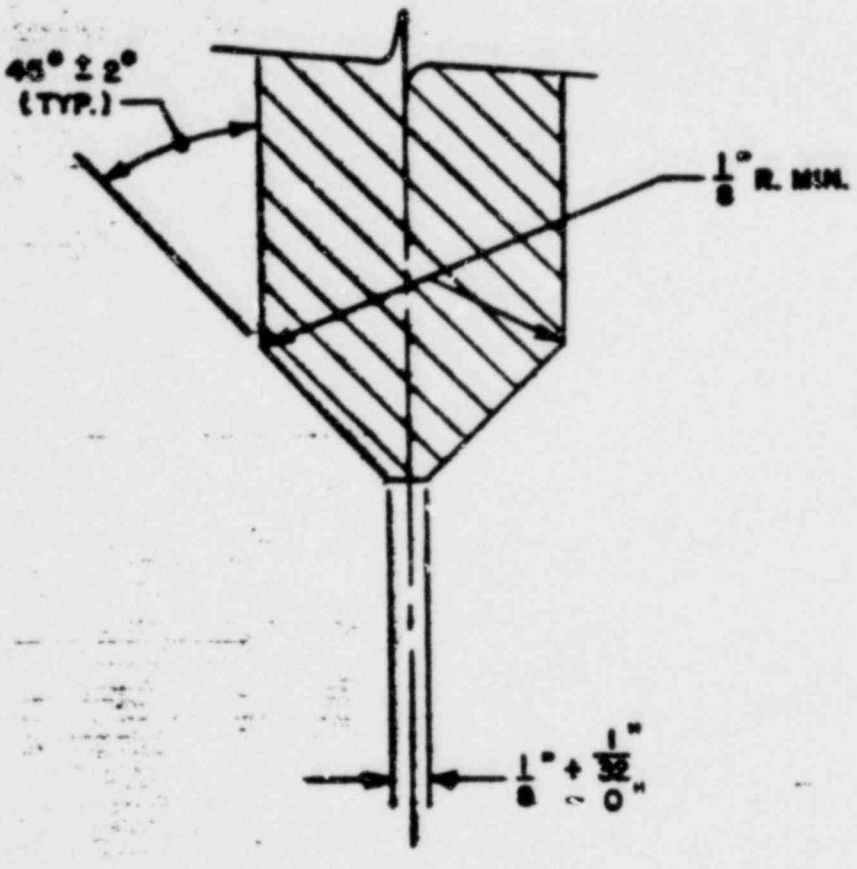
(FOR PERMANENT CLOSURE OF SPARE "M" PENETRATIONS)


FACE OF SLEEVE
DIM. ON SYST. DWG.
3/16 NOM.
1/16 MAX.
(I. P.)
h/2
3/4
BACKING RING

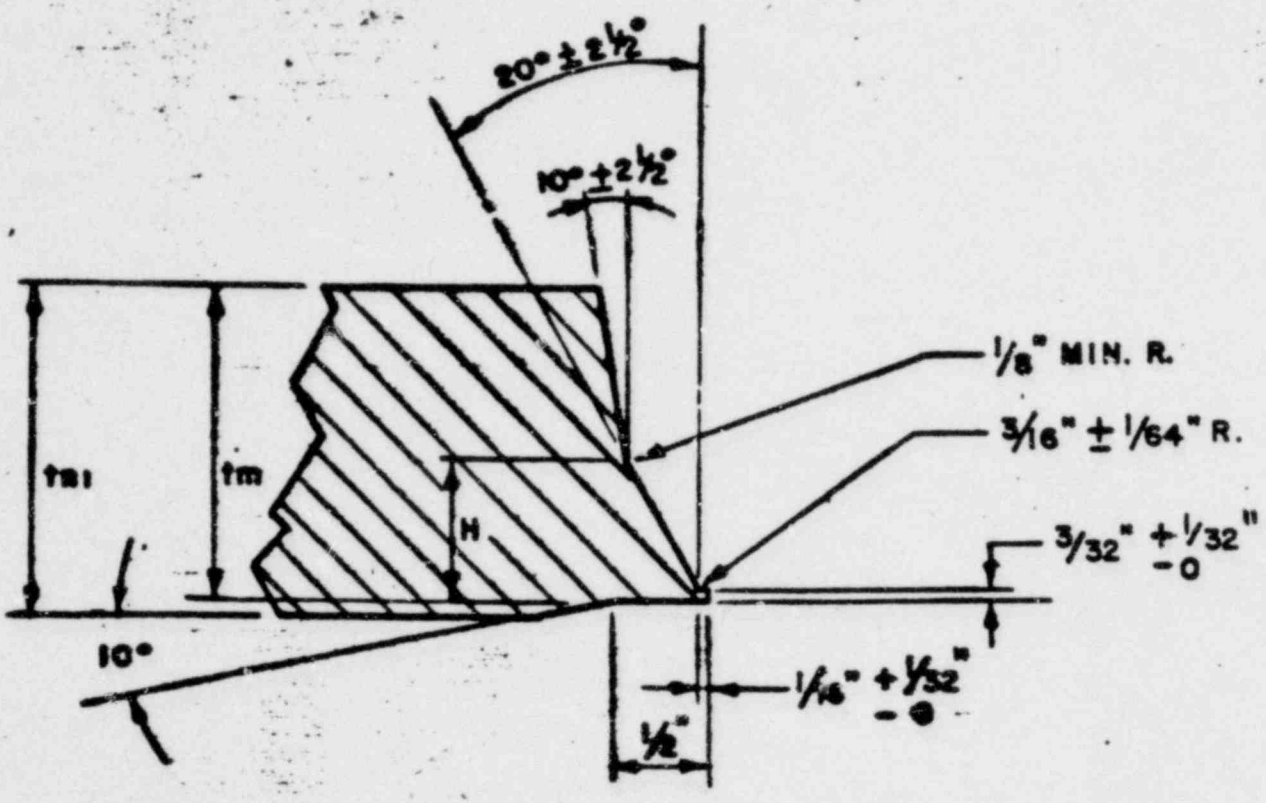
DETAIL "T"


FACE OF SLEEVE
DIM. ON SYSTEM DWG.
3/16" NOM.
3/16"
(L.P.)
TACK WELD
BACKING RING

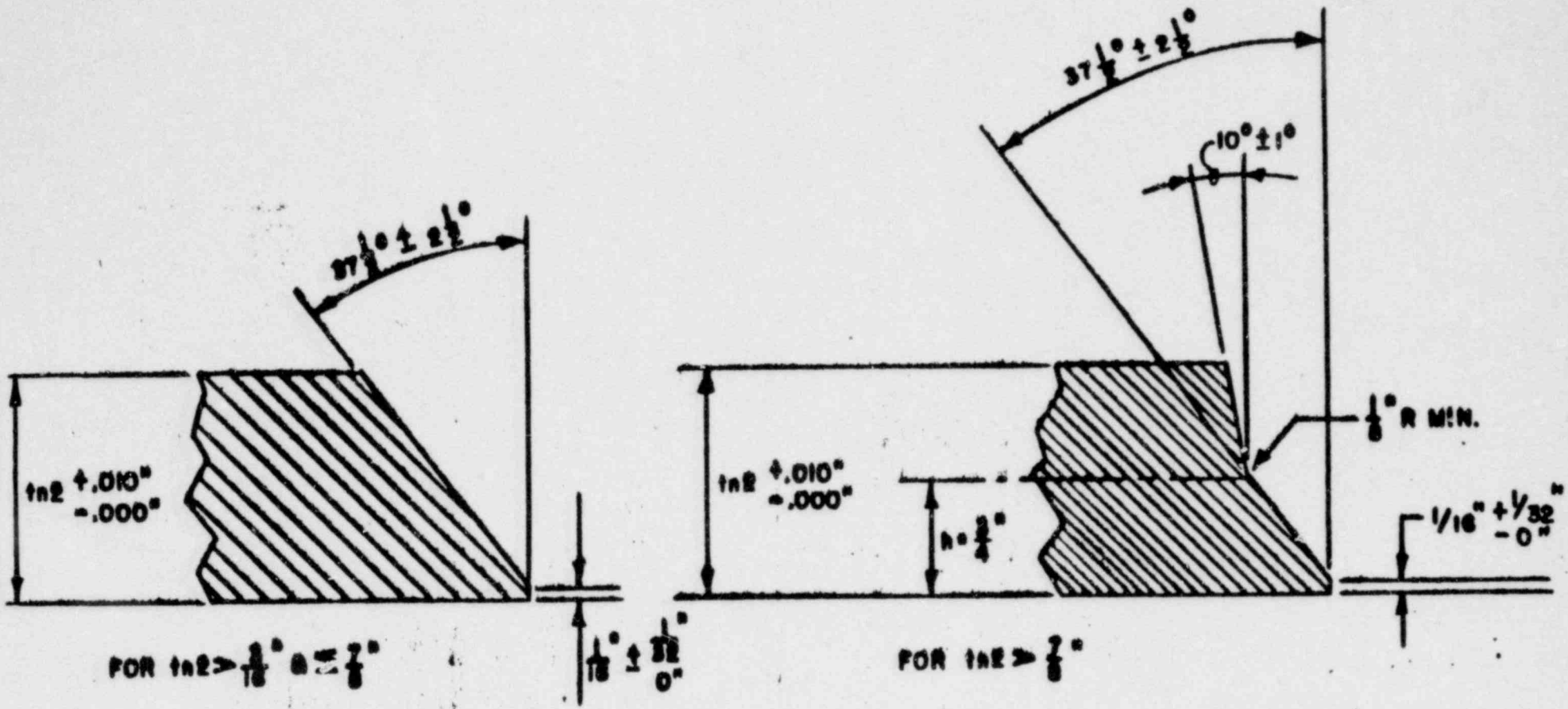
DETAIL "U"



DETAIL "W"



DETAIL "X"


37½° ± 2½°
10° ± 1°
tn2 +.010" -.000"
h = 3/4"
1/8" R MIN.
1/16" +1/32" -0"
FOR tn2 ≥ 3/8"
1/16" ± 1/32" 0"
FOR tn2 ≥ 5/16" & ≤ 3/8"

DETAIL "Y"