William J. Cahill, Jr.
Vice President

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

June 18, 1979

Re: Indian Point Units Nos. 1 & 2
Docket Nos. 50-3 & 50-247

Director of Nuclear Reactor Regulation
ATTN: Mr. Victor Stello, Jr., Director
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Stello:

In accordance with your May 25, 1979 letter, Attachment A to this letter provides the information requested in the enclosure of your letter. This information pertains to Indian Point Unit No. 2 and is being submitted pursuant to 10 CFR 50.54(f). Forty (40) copies of this submittal and ten (10) copies of the referenced drawings are being provided.

With respect to Indian Point Unit No. 1, the unit was shutdown on October 31, 1974 and is presently in the defueled condition awaiting a decision by the Company whether or not to install an emergency core cooling system in accordance with the Commission's regulations. The information requested in your May 25, 1979 letter will be provided if an affirmative decision is reached to return the unit to service.

Should you or your staff have any additional questions, please contact us.

Very truly yours,

William J. Cahill, Jr.
Vice President

attach.

Subscribed and sworn to
before me this 18 day
of June, 1979.

Notary Public
THOMAS LOVE
Notary Public State of New York
No. 31-2409638
Qualified in New York County
Commission Expires March 30, 1981

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1
1/40
DRWGS TO:
FILES POR
NRC POR
LPDR
I&E(1)
ENG BR(13)

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ATTACHMENT A

Information Requested on
PWR Feedwater Lines
(May 25, 1979 letter - Mr. V. Stello, Jr.
to All Pressurized Water
Reactor Licensees)

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
June, 1979

Design-Staff Request 1:

Provide as-built piping or isometric drawings of the feedwater line to steam generator sparger within containment. Show details of the design such as dimensions, pipe schedule, support type and locations, pipe restraints, and valve(s).

Response:

The drawings listed in Table SR-1 and provided with this response show the Indian Point Unit No. 2 feedwater piping inside containment including dimensions, support types and locations, and pipe restraints. The feedwater pipe inside containment is 18" ASTM A-106, Grade C, Schedule 60. There are no valves installed in the feedwater piping within containment.

TABLE SR-1

IP2 Feedwater System Drawings

1)	9321-F-2549, Rev. 13	(UE & C)
2)	9321-F-2550, Rev. 12	(UE & C)
3)	9321-F-2551, Rev. 11	(UE & C)
4)	9321-F-2552, Rev. 10	(UE & C)
5)	9321-F-2754, Rev. 6	(UE & C)
6)	9321-F-2757, Rev. 5	(UE & C)
7)	9321-F-2758, Rev. 7	(UE & C)
8)	9321-F-2759, Rev. 4	(UE & C)
9)	9321-F-2760, Rev: 6	(UE & C)
10)	9321-F-2761, Rev. 5	(UE & C)
11)	9321-F-2764, Rev. 2	(UE & C)
12)	9321-F-2767, Rev. 2	(UE & C)
13)	9321-F-2770, Rev. 8	(UE & C)
14)	A190541, Rev. 2	(Con Edison)
15)	A205907, Rev. 0	(Con Edison)
16)	BF-SR-9, Rev. 0	(Bergen-Paterson)
17)	HBF-1, Rev. 0	(Bergen-Paterson)
18)	HBF-2, Rev. 0	(Bergen-Paterson)
19)	HBF-3, Rev. 0	(Bergen-Paterson)
20)	HBF-4, Rev. 0	(Bergen-Paterson)

Design-Staff Request 2:

Provide the results of any stress or fatigue analyses which were performed for this system.

Response:

The Indian Point Unit No. 2 feedwater piping within containment was analyzed using the United Engineers and Constructors (UE&C) MEL 21 P thermal piping code. The analyses were performed for both the startup condition (i.e., feedwater piping cold and steam generator hot) and the normal operating condition (i.e., both feedwater piping and steam generator hot). The results of the analyses for the maximum stress point in each of the four (4) feedwater lines are presented in Table SR-2a. In addition, the analytical results at each of the four steam generator nozzles are presented in Table SR-2b. As indicated in these Tables, the maximum stress (i.e., 13, 506 psi) occurs during normal operation in feedwater line no. 23 at the steam generator nozzle/feedwater piping junction. Note that this stress value is well within the allowable stress of 26,250 psi for expansion stresses. This allowable stress is calculated using a stress reduction factor which accounts for cyclical loading of the material.

In addition, a special parametric evaluation of the dynamic response of feedwater line no. 22 to postulated waterhammer effects was performed following the feedwater line incident which occurred on November 13, 1973. This analysis was performed by UE&C as part of the full investigation of the incident and was intended to predict the hydraulic forces and stress conditions that existed during the incident. A description of the analysis and its results are contained in Appendix VI of the Indian Point Unit No. 2 Feedwater Line Incident Report, dated January 14, 1974.

Design-Staff Request 2 (Cont'd):

Summaries of the results of other feedwater system stress analyses are being developed and, as permitted by Mr. Stello's May 25, 1979 letter, will be provided in a supplemental response on or before July 27, 1979.

TABLE SR-2a

IP2 Feedwater Piping - Maximum Stress Points

Startup Condition:

Feedwater Line Location (nodal pt.)		21 110 (tangent)	22 (1) 20	23 105	24 70 (tangent)
Forces (lbs.):	Fx	1,890	-1,876	611	-2,533
	Fy	-12,320	-8,714	-8,276	-16,394
	Fz	-2,536	-3,088	2,318	1,611
Moments (ft-lbs):	Mx	-75,950	-58,546	87,789	17,734
	My	10,582	-17,539	11,362	-21,386
	Mz	-43,208	97,601	24,827	-145,536
Pipe Stress (psi)		6,993	8,211	6,555	10,565

Normal Operating Condition:

Feedwater Line Location (nodal pt.)		21 30 (bend)	22 (1) 80 (tangent)	23 105	24 70 (tangent)
Forces (lbs):	Fx	-2,557	3,902	-4,623	4,331
	Fy	-791	9,904	18,004	10,335
	Fz	2,136	4,353	-8,487	-4,586
Moments (ft-lbs):	Mx	1,647	-84,314	-92,621	21,233
	My	-92,643	64,599	-90,040	63,349
	Mz	-7,424	-60,086	-138,530	126,384
Pipe Stress (psi)		6,628	8,702	13,506	10,193

(1) Results presented for feedwater line no. 22 are from the reanalysis performed following modification of this line in 1973. Results presented for feedwater lines nos. 21, 23 and 24 are from original analyses.

TABLE SR-2b

IP2 Feedwater Piping/S.G. Nozzle Stress

Startup Condition:

Steam Generator/Feedline		21	22[1]	23	24
Location (nodal pt.)		105	20	105	120
Forces (lbs):	Fx	1,890	-1,876	611	2,533
	Fy	-12,320	-8,714	-8,276	-14,130
	Fz	-2,536	-3,088	2,318	2,736
Moments (ft-lbs.):	Mx	-82,727	-58,546	87,789	127,856
	My	10,348	-17,539	11,362	22,516
	Mz	-47,122	97,601	24,827	16,539
Pipe Stress (psi)		6,829	8,211	6,555	9,332

Normal Operating Condition:

Steam Generator/Feedline		21	22[1]	23	24
Location (nodal pt.)		105	20	105	120
Forces (lbs.):	Fx	-4,404	3,902	-4,623	-4,331
	Fy	10,590	9,143	18,004	15,536
	Fz	3,700	4,353	-8,487	-5,692
Moments (ft-lbs.):	Mx	33,618	34,659	-92,621	-56,946
	My	2,855	14,112	-90,040	-47,568
	Mz	-26,569	-48,200	-138,530	-56,140
Pipe Stress (psi)		3,062	4,351	13,506	6,634

(1) Results presented for feedwater line No. 22 are from the reanalysis performed following modification of this line in 1973. Results presented for feedwater lines Nos. 21, 23 and 24 are from original analyses.

Fabrication History-Staff Request 1:

Supply a list of the materials for the steam generator sparger, steam generator feedwater nozzles and feedwater piping within containment.

Response:

The materials used in fabrication of the above feedwater system components are as follows:

a) Steam Generator Sparger: ASTM A106, Grade B
(including "J" tubes
added in 1974)

b) Steam Generator Feedwater Nozzles: ASME SA336, Class F1

c) Feedwater Piping* Within Containment: ASTM A106, Grade C

---

* 18" Fittings are A-234 WPB, Schedule 80 (butt-welded).

Fabrication History-Staff Request 2:

Provide the details of the welding process(es) used to make the nozzle-to-pipe, pipe to sparger and piping welds. Include details of welding such as preheat, joint configuration (include with or without backing ring), and post weld treatment, if any.

Response:

The response to this request requires further research of archived construction documents. As permitted by Mr. Stello's May 25, 1979 letter, the response to this request will be provided on or before July 27, 1979.

Fabrication History-Staff Request 3:

Provide the NDE performed during and after fabrication of the weld joints requested in question 2.

Response:

Since this response is contingent on the response to the previous Staff Request 2, it will also be provided on or before July 27, 1979.

Fabrication History-Staff Request 4:

Provide the Code edition to which the feedwater piping system was fabricated.

Response:

The feedwater piping was fabricated to the American Standard Code for Pressure Piping ASA B31.1-1955, as modified by appropriate Nuclear Code Cases and as specified by UE&C (the architect/engineer for Indian Point Unit No. 2).

Fabrication History-Staff Request 5:

State the fracture toughness requirements, if any, for the feedwater piping system.

Response:

No fracture toughness requirements (i.e., impact tests or fracture toughness tests) were specified for the Indian Point Unit No. 2 feedwater piping system.

Preservice/Inservice Inspection and Operating History-
Staff Request 1:

State whether the feedwater system welds received a preservice inspection in accordance with ASME B&PV Code, Section XI.

Response:

Indian Point Unit No. 2 was designed and constructed prior to the inception of ASME Code Section XI requirements for pressurized water reactor secondary feedwater systems. Therefore, no preservice inspection of the feedwater line per Section XI was required.

Preservice/Inservice Inspection and Operating History-
Staff Request 2:

Provide the extent of inservice inspection performed on the feedwater pipe to steam generator nozzle welds. Include the results of the examination any corrective actions taken and causes of any failures.

Response:

No inservice inspections per ASME Code Section XI have been performed to-date on the feedwater pipe to steam generator nozzle welds. However, following the feedwater line no. 22 failure in November, 1973, a magnetic particle inspection was performed on the steam generator no. 22 nozzle and approximately sixteen (16) inches of the feedwater piping coming off the steam generator nozzle with no reportable indications.

Preservice/Inservice Inspection and Operating History-
Staff Request 3:

Provide the schedule and extent of inservice inspection for the feedwater system for the next inspection interval.

Response:

During the cycle 3/4 refueling outage which began on June 16, 1979, line No. 5 (feedwater line to No. 22 s/g) has been selected for inservice inspection.

This inspection will include the following:

a) Three circumferential welds including the nozzle to pipe weld.

b) One branch weld.

c) Six pipe supports.

d) Four integrally welded pipe supports.

e) One flange bolting.

In addition, special volumetric inspections will be performed during the present refueling outage on the steam generator nozzle to pipe welds for the remaining three (3) feedwater lines.

Preservice/Inservice Inspection and Operating History-
Staff Request 4:

Provide any history of water hammer or vibration in the feedwater system and design changes and/or actions taken to prevent these occurrences.

Response:

Con Edison's initial experience with "waterhammer" phenomenon in the feedwater system was on November 13, 1973. Following the waterhammer, a detailed program was begun by Con Edison and Westinghouse to determine the causes and to find means of preventing recurrence. This program is described in detail in our submittals of January 14, 1974, March 12, 1974 and August 30, 1974. The incident is fully described in the first five chapters and Appendices I-III of the report submitted on January 14, 1974. The subsequent testing and reproduction of the plant conditions are described in the March 12, 1974 and August 30, 1974 reports. Phase I of this testing is described on pages 2-5 of the March 12, 1974 submittal and Phase II Testing on Pages 5-11. Phase III Testing is described in the August 30, 1974 submittal.

To eliminate the phenomenon and the problems associated with it, a number of modifications were made to the plant. Three of these modifications were described in the report of January 14, 1974. On page 6-1 to 6-2 of that submittal, a description is made of the modification to feedwater line no. 22 which prevents its rapid draining. Also on page 6-2, the change made to the feedwater piping supports is explained. This modification precludes the rebound-type failure of this feedwater line from recurring. Finally, the modification to the feedwater regulating valves and bypass system is described on pages 6-2 to 6-3. With this change, control of low feedwater flows is improved and the likelihood of level variances in the steam generators is reduced.

Preservice/Inservice Inspection and Operating History-
Staff Request 4: (Cont'd)

The final modification to the feedwater system involved the installation of "J" tubes in the feedwater sparger rings of the steam generators. This modification, which is discussed in our submittals of March 12, 1974 and August 30, 1974, effectively prevents the rapid draining of the feedwater spargers and lines. Since the installation of the "J" tubes, no further waterhammers have been experienced in the Indian Point Unit No. 2 feedwater system.

Preservice/Inservice Inspection and Operating History-
Staff Request 5:

Provide a description of feedwater chemistry controls and a summary of chemistry data.

Response:

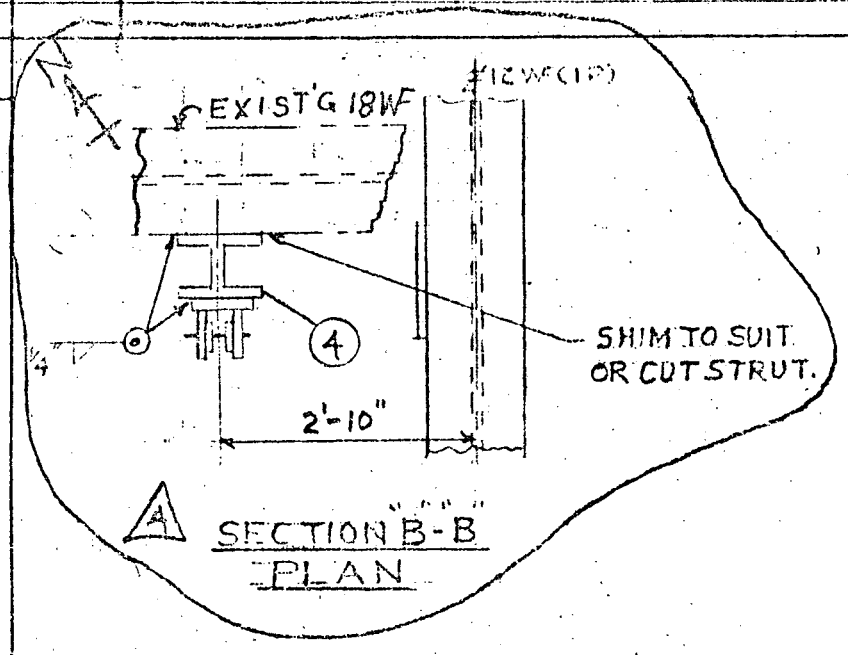
Feedwater chemistry controls and a chemistry data summary are provided below:

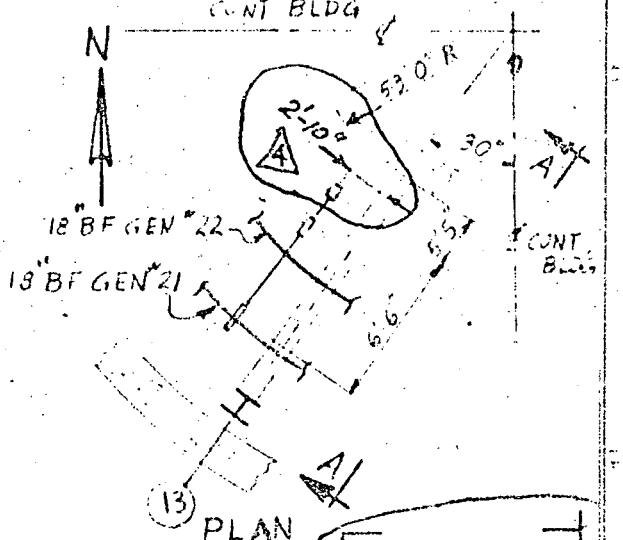
Parameter	Normal Operating Guide Lines	Typical Chemistry Results For Steam Generator	Typical Chemistry Results For Feedwater
Steam Generator			
pH @ 25°c	8.5-9.0	8.5-8.7	8.8-9.2
Conductivity, μmHo/cm	< 12.0	2.0-5.0	0.10-0.35
Chloride, PPm	< 0.15	< 0.10	< 4 PPB measured as sodium
Feedwater			
Dissolved oxygen, PPB	5	5	5

Phosphate treatment of the steam generator secondary side was used prior to February 28, 1975, for a total of approximately eight effective full power months of operation. Cyclohexylamine and Hydrazine were also added to the feedwater as treatment chemicals during this period.

Since February 28, 1975, all volatile treatment has been used for a total of approximately 31 effective full power months through May 31, 1979. Hydrazine is the only chemical additive normally used. During June and July, 1978 and since February, 1979, boric acid has been added to the feedwater to inhibit corrosion.

ITEM NO	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	WGT			
	1	64116	18 EA-3	PIPE END ATTACH.				
	1	252	HSSA-20	HYDRAULIC STRUT ASS'Y T 3¾" STROKE 6" (5-1-6⅛")				
	1	64101	EA1-B	STL END ATTACH.				
	1	~	8WF 48#	X 2'-0" LG		4		
	4	~	7" x ½"	x 4" STIFF. PL (CLIP CORNER)		4		





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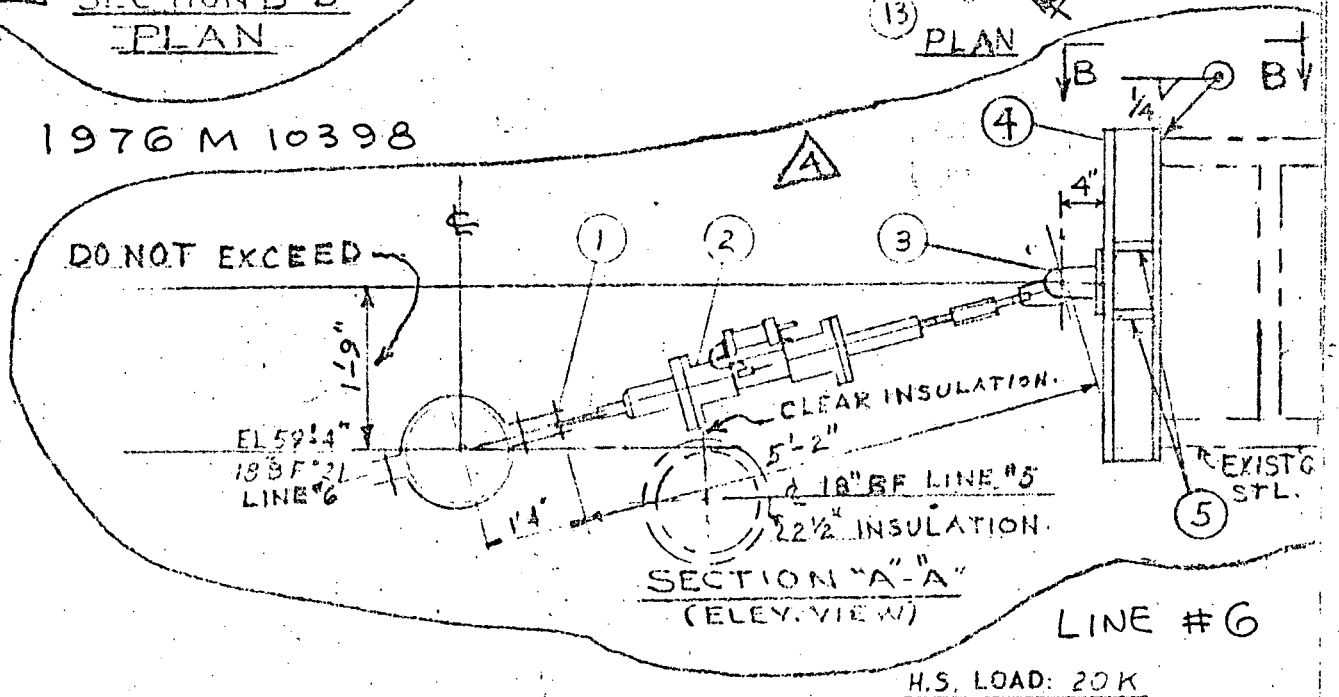


LINE #6

H.S. LOAD: 20K

REV	DATE	DESCRIPTION	INVOICE CODE	APP.
1	10-8-71	REV. & REDRAWN PER U.E. & C. COMMENT	(N.C. (REV. CHG. C.)	AJP
	9-24-71	REV. & REDRAWN PER U.E. & C. COMMENT		AJP
	3-4-71	REV. AS NOTED		

UNITED ENG[illegible]

CUSTOMER UNITED ENGINEERING [illegible]

ENGINEER CONSOLIDATED [illegible] 1½

CONSUMER

PIPING SYSTEM BOILER FEED SEISMIC RESTRAINT

REFERENCE DWG. 142(2549)

MARK NO BF-SR-9 NO. REQ'D. 1

BERGEN-PATERSON PIPESUPPORT CORP.

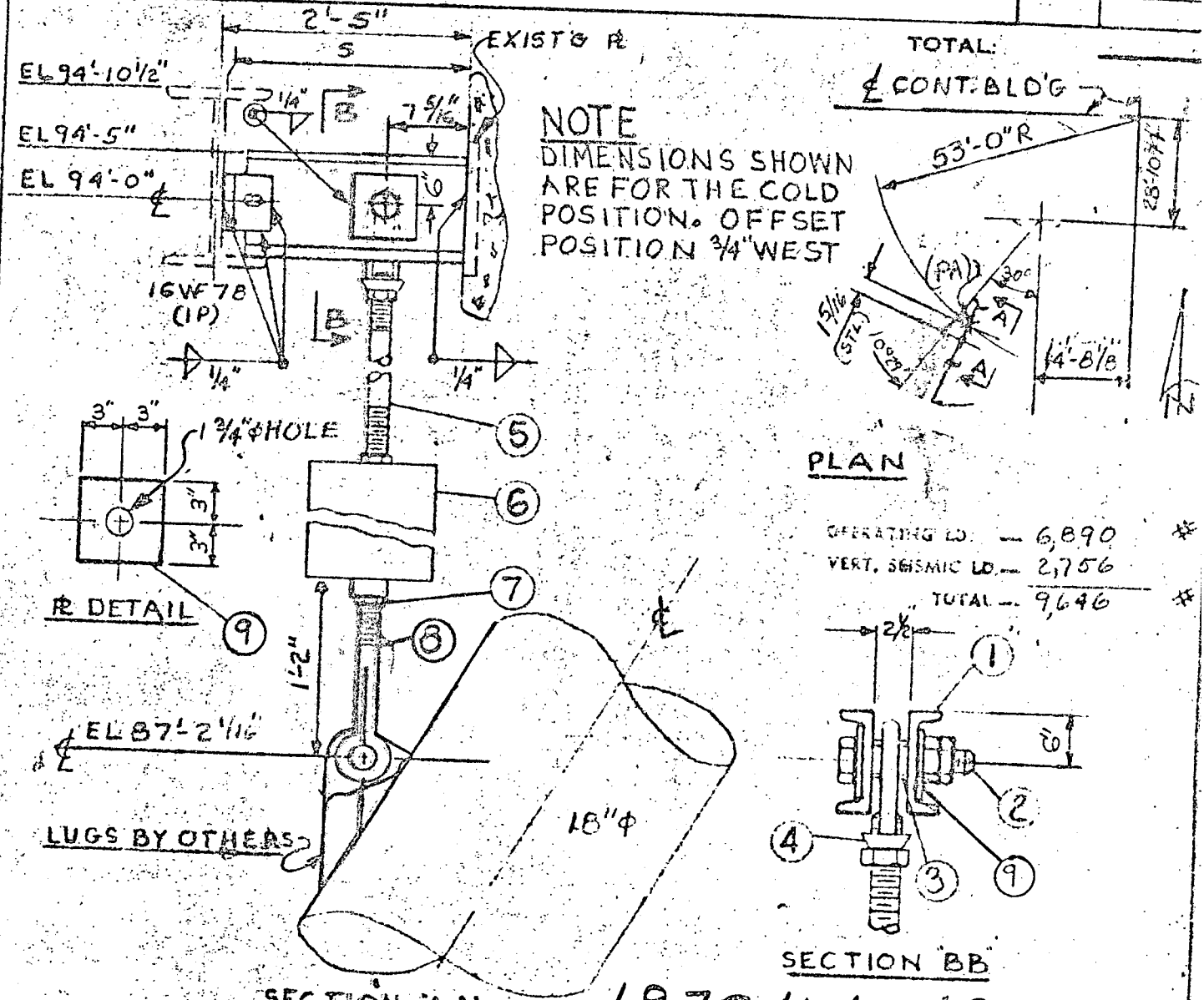
BOSTON, MASS. WOOD-RIDGE, N.J. SAN FRANCISCO, CALIF.
PITTSBURGH, PA. HEMPSTEAD, N.Y. CHICAGO, ILL.

DRAWN	CHK'D.	APPVD	DATE
MS	SR	NN	12-11-70

JOB NO P67-119

DWG NO. 9659-4

NO.	REQ'D	PART NO.	DESCRIPTION	WGT.	
1	1	6011DC	D=10, S=2'-4 3/4" (bb=2 1/2) W CLIP ANGLES		
2	2		1"φ X 8" BOLTS W/(1) 1 5/8"φ HN & (1) 1 5/8"φ FN		
3	1		2"φ SCH. 40 PIPE SPACER X 0'-2 1/2" LG		
4	1	274	SIZE 14 FORGED STEEL WELDLESS EYENUT	TAP= 1 1/2"	
5	1	133	1 1/2"φ HANGER ROD X 3'-2 1/2" LG. T.=6" Tb=6"		
6	1		VS4A-17 VAR. SUPT. HL=6,890# CL=7,495#		
			MVT=.803" UP		
7	3		1 1/2"φ HALF NUT		
8	1		1 1/2"φ X 1'-5 LG S295 CROSBY-LAUGHLIN F.S..		
			EYEBOLT THD=12" DRILL FOR 1 5/8"φ BOLT		
9	2		6" X 5/16" X 6" PL (SEE PL DETAIL)		



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UNITED ENGINEERS & CONSTRUCTORS INC.
CUSTOMER
0934 — 2026-VR-9
UNITED ENGINEERS & CONSTRUCTORS INC.
ENGINEER
CONSOLIDATED EDISON - INDIAN POINT #2
CONSUMER

PIPING SYSTEM — FEED
REFERENCE DWG. 141 (2549)
MARK NO. HBF-1 NO. REQ'D. 1

BERGEN-PATERSON PIPESUPPORT CORP.
☐ CAMBRIDGE, MASS. ☐ WOOD-RIDGE, N. J.
☐ PITTSBURGH, PA. ☒ HEMPSTEAD, N. Y.
☐ SAN FRANCISCO, CALIF.

DRAWN	CHK'D.	APPVD.	DATE
FS	TJ	NN	1-17-68

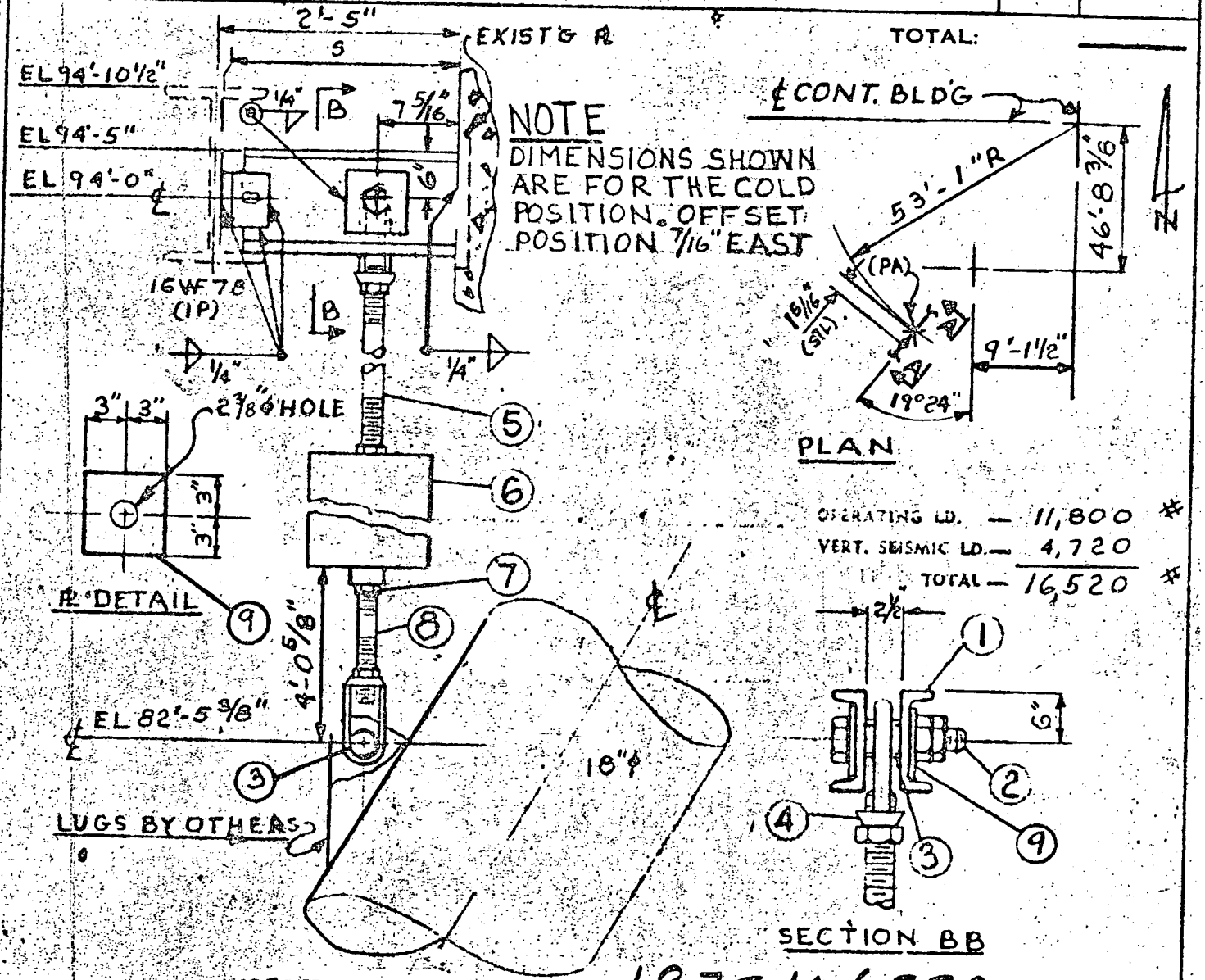
JOB NO. P67-139
DWG. NO. 56 53 - 2

REV.	DATE	DESCRIPTION
2	8-9-71	REV. PER UE&C COMM. (REV. CHG'D)
1	2-22-68	REVISED AS NOTED

REV.	DATE	APP.	DESCRIPTION
4		AJP	
3		FS	A/C

NO.	REQ'D	PART NO.	DESCRIPTION	WGT.
1	1	601DC	DC [redacted] S=2'-4 3/4" ø (b b=2 1/2) W/ [redacted] IP ANGLES	
2	2		2 1/4" x 9 1/2" BOLTS W/ (1) 2 1/4" ø HN & (1) 2 1/4" ø FN	
3	2		2 1/2" SCH. 40 PIPE SPACER X 0'-2 1/2" LG	
4	2	274	SIZE 16 FORGED STEEL WELDLESS EYENUT	TAP= 2
5	1	133	2" ø HANGER ROD X 4'-10 1/2" LG. T1 = 8" T2 = 8"	
6	1		VS4A-19 VAR. SUPT. HL=(12,737)# CL=(13,552)# MVT. ±687" UP	
7	4		2" ø HALF NUTS	
8	1	133A	2" ø HANGER ROD x 3'-10 1/2" LG. T1 = 12" T2 = 8"	
9	2		6" x 3/4" x 6" PL (SEE PL DETAIL)	

TOTAL:



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UNITED ENGINEERS & CONSTRUCTORS INC.
CUSTOMER
UNITED ENGINEERS & CONSTRUCTORS INC.
ENGINEER
CONSOLIDATED EDISON - INDIAN POINT #2
CONSUMER

PIPING SYSTEM BOILER FEED
REFERENCE DWG. 141 (2549)
MARK NO. HBF-2 NO. REQ'D. 1

BERGEN-PATERSON PIPESUPPORT CORP.
☐ CAMBRIDGE, MASS. ☐ WOOD-RIDGE, N. J.
☐ PITTSBURGH, PA. ☒ HEMPSTEAD, N. Y.
☐ SAN FRANCISCO, CALIF.

DRAWN	CHK'D.	APPVD.	DATE
F.S.	T.J.	N.N.	1-17-68

JOB NO. P67-139
DWG. NO. 5632-3

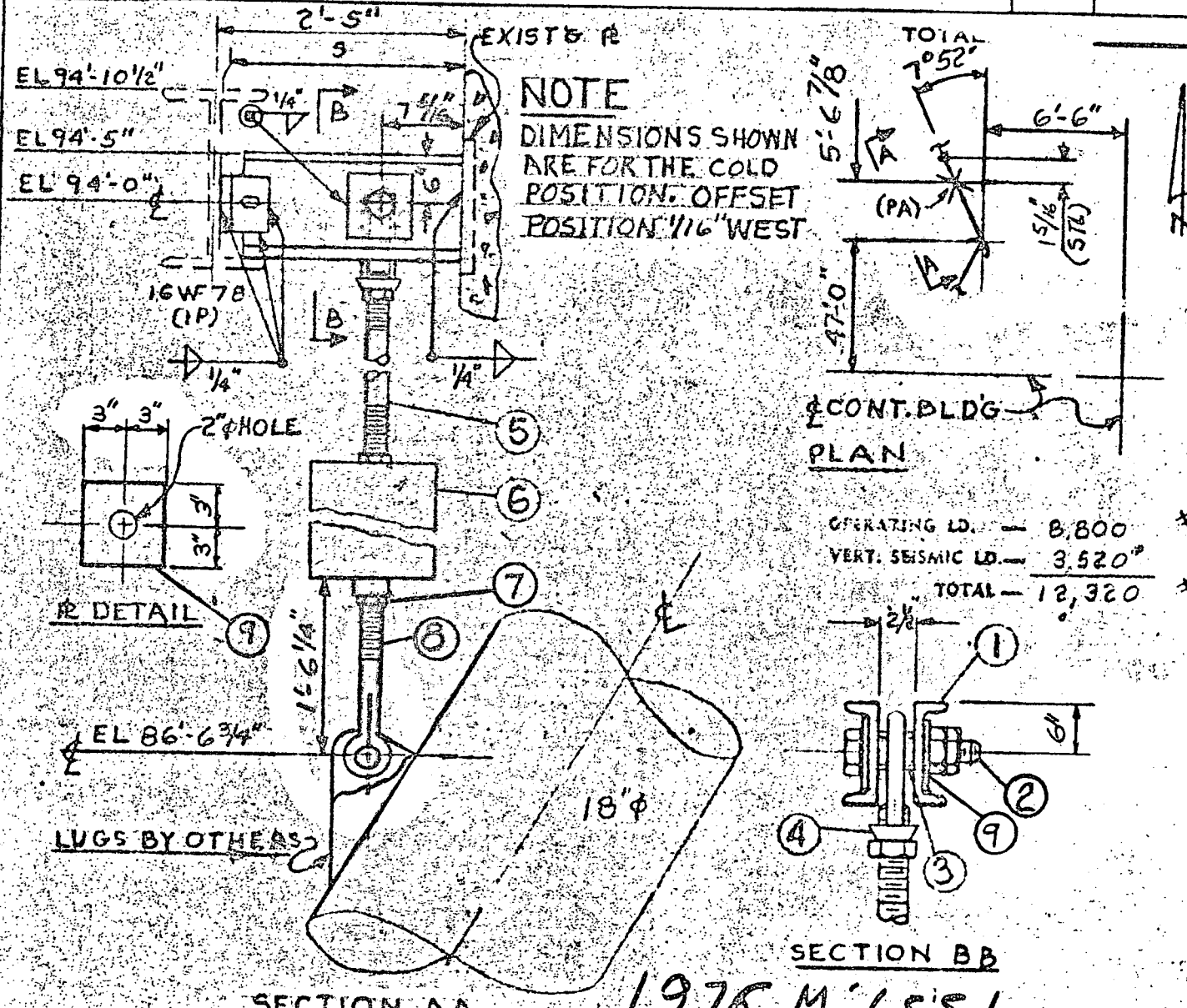
REV.	DATE	DESCRIPTION
3	3-4-68	REV. LOADS & LGTHS
2	2-21-68	REVISED AS NOTED
1	B-9-71	REV. PER O&E/C COMM. (REV. CHG'D)

REV.	DESCRIPTION	APP.	DATE
4	N.C.	NN	
3	A.E.	ES	

FORM BP

FORM BF-2

ITEM NO.	NO. REQ'D	DWG. OR PART NO.	DESCRIPTION	WGT.	
1	1	601DC	DC [redacted], S = 2'-4 3/4" (b b = 2 1/2) W/(2) CLIP ANGLES		
2	2		1 7/8"φ X 8 1/2" BOLTS W/(1) 1 7/8"φ HN & (1) 1 7/8"φ FN		
3	1		2"φ SCH. 40 PIPE SPACER X 0'-2 1/2" LG		
4	2	274	SIZE 14 FORGED STEEL WELDLESS EYENUT	TAP = 1 3/4"	
5	1	133	1 3/4"φ HANGER ROD X 3'-3 1/2" LG. T1 = 7" T2 = 7"		
6	1		VS4A-18 VAR. SUPT. HL = 9380# CL (10382#)		
			MVT. = (1") UP		
7	3		1 3/4"φ HALF NUTS		
8	1		1 3/4"φ X 1'-7" LG. S-295 CROSBY-LAUGHLIN F. S.		
			EYEBOLT THD = 12" DRILL FOR 1 7/8"φ BOLT		
9	2		6" X 3/4" X 6" PL (SEE PL DETAIL)		



1976 M 6551

UNITED ENGINEERS & CONSTRUCTORS INC.
CUSTOMER
UNITED ENGINEERS & CONSTRUCTORS INC.
ENGINEER
CONSOLIDATED EDISON INDIAN POINT #2
CONSUMER

PIPING SYSTEM BOILER FEED
REFERENCE DWG. 142 (2549)
MARK NO. HBF-3 NO. REQ'D. 1

BERGEN-PATERSON PIPESUPPORT CORP.
☐ CAMBRIDGE, MASS. ☐ WOOD-RIDGE, N. J.
☐ PITTSBURGH, PA. ☒ HEMPSTEAD, N. Y.
☐ SAN FRANCISCO, CALIF.

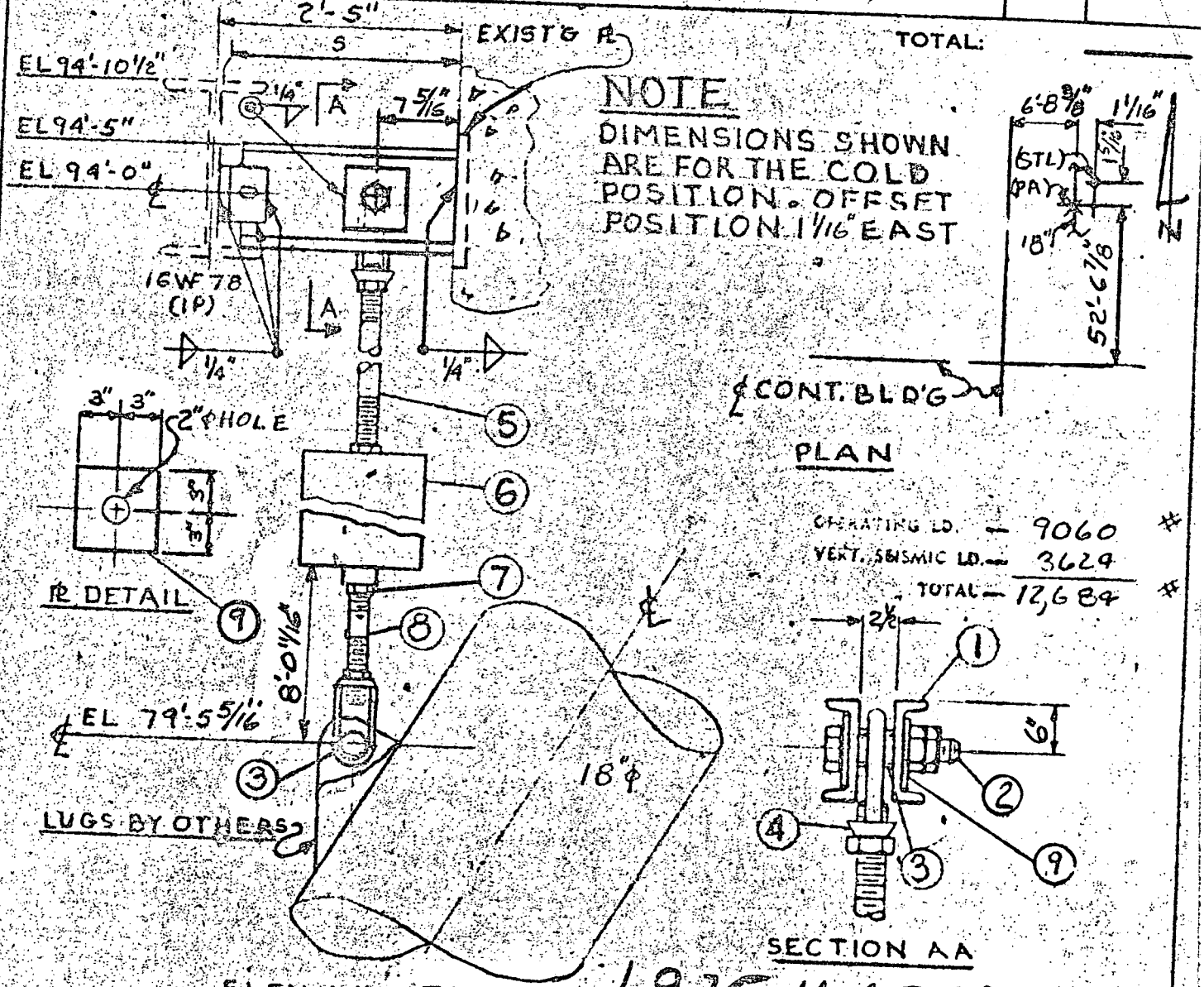
DRAWN	CHK'D	APPVD.	DATE
FS	TJ	NN	1-17-68

JOB NO. P67-139
DWG. NO. 5633-3

REV.	DATE	DESCRIPTION	APP.
4			
3	8-9-71	REV. PER UE&C COMM. (REV. CHG. D)	NN
2	3-4-68	REV. ROD LGTHS	NN
1	2-27-68	REVISED AS NOTED	NN
REV.	DATE	DESCRIPTION	APP.

ITEM NO.	NO. REQ'D	DWG. OR PART NO.	DESCRIPTION	WGT.
1	1	601DC	D[redacted] O.S = 2'-4 3/4" ℄ (b.b = 2 1/2) W/ CLIP ANGLES	
2	2		1 7/8" ℄ X 8 1/2" BOLTS W/ (1) 1 7/8" ℄ HN & (1) 1 7/8" ℄ FN	
3	2		2" ℄ SCH. 40 PIPE SPACER X 0'-2 1/2" LG.	
4	2	274	SIZE 14 FORGED STEEL WELDLESS EYE NUT	TAP = 1 3/4"
5	1	133	1 3/4" ℄ HANGER ROD X 3'-9 1/2" LG. T1 = 7" T2 = 7"	
6	1		V54A-18 VAR. SUPT. HL = 10,410# CL = 10,870#	
			MVT. = 459# UP	
7	4		1 3/4" ℄ HALF NUTS	
8	1	133A	1 3/4" ℄ HANGER ROD X 7'-11" LG. T1 = 12" T2 = 7"	
9	2		6" X 3/4" X 6" ℞ (SEE ℞ DETAIL)	

TOTAL:



1976 M6552

UNITED ENGINEERS & CONSTRUCTORS INC
PHILADELPHIA, PA.
ENGINEER
CONSOLIDATED EDISON - INDIAN POINT #2
CONSUMER

PIPING SYSTEM: BOILER FEED
REFERENCE DWG.: 142 (2550)
MARK NO.: HBF-4 NO. REQ'D.: 1

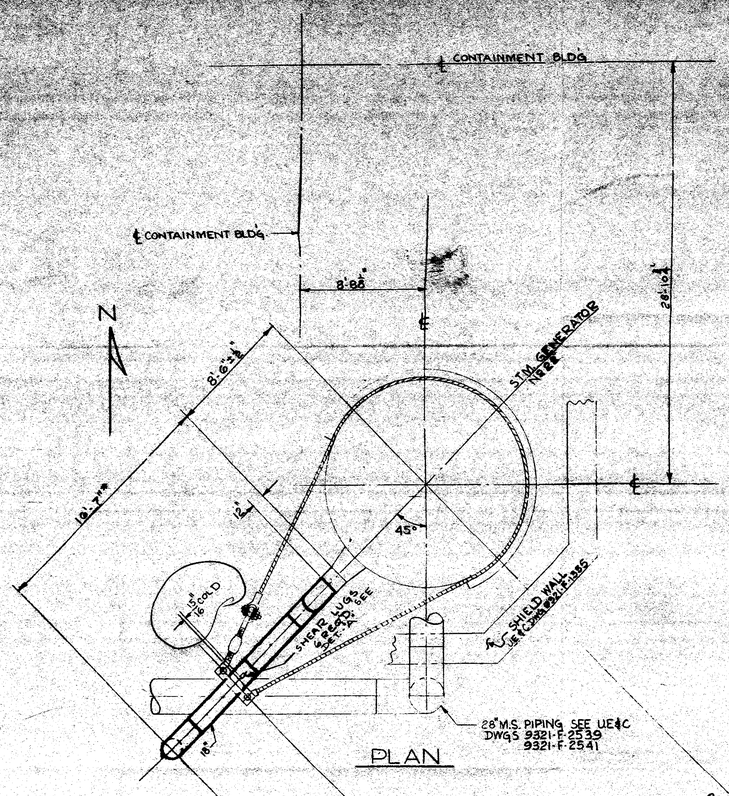
BERGEN-PATERSON PIPESUPPORT CORP.
☐ CAMBRIDGE, MASS. ☐ WOOD-RIDGE, N. J.
☐ PITTSBURGH, PA. ☒ HEMPSTEAD, N. Y.
☐ SAN FRANCISCO, CALIF.

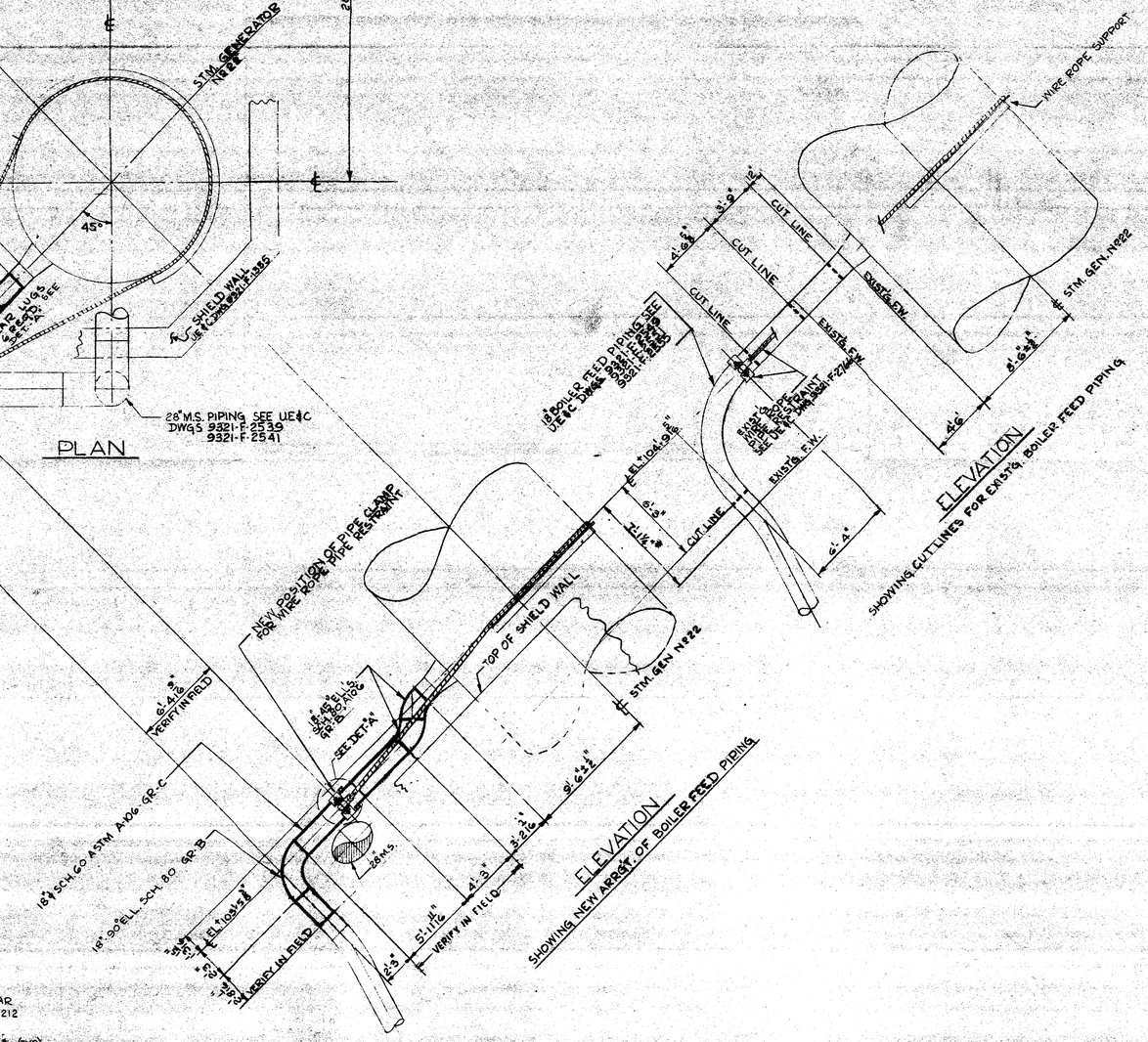
DRAWN	CHK'D.	APPVD.	DATE
FS	TJ	NN	1-17-66

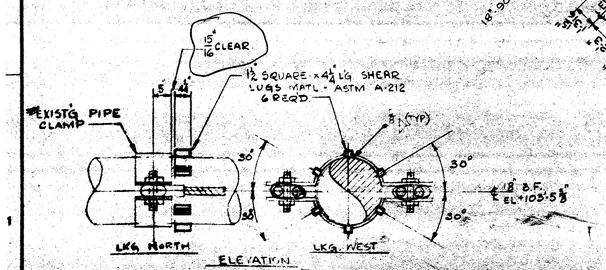
JOB NO. P67-139
DWG. NO. 56.24-2

REV.	DATE	DESCRIPTION
2	8-9-71	REV. PER UE&C COMM. (REV. CHG'D)
1	2-27-68	REVISED AS NOTED

FORM BP-2







DIMENSIONS BY FIELD SURVEY

NOTE

1 FOR GENERAL NOTES & REFERENCE DRAWINGS SEE C-E DWG A205905
GENERAL NOTES 1THRU 4 APPLY

2 INSTALLATION METHOD TO BE IN ACCORDANCE WITH MODIFICATION PROCEDURE No 2CM-PS-82

NOT FOR FABRICATION OR INSTALLATION

THIS REVISION IS CLASS "A" AS PER CI-240-1 REVISED SHEAR LUG CLEARANCE FROM ¼" to ⅝" FOR RECORD ONLY. PN 4000 J.J.M. 3-4-74

50-3/247
Amr 6-18-79
7906210138

50-3/247
Amr 6-18-79
7906210138
RETURN TO REACTOR DOCKET FILES

A190541-2

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

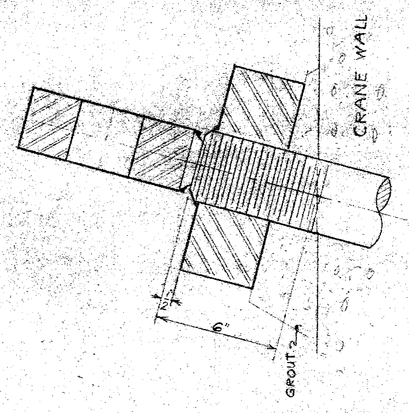
INDIAN POINT NO. 2

REARRANGEMENT TO FEEDWATER PIPING AT STEAM GENERATOR #22

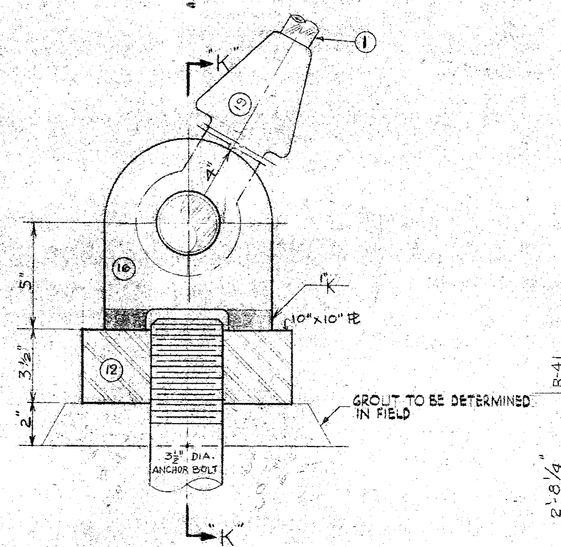
1/4"=1'-0" MILLTAT

APPROVALS

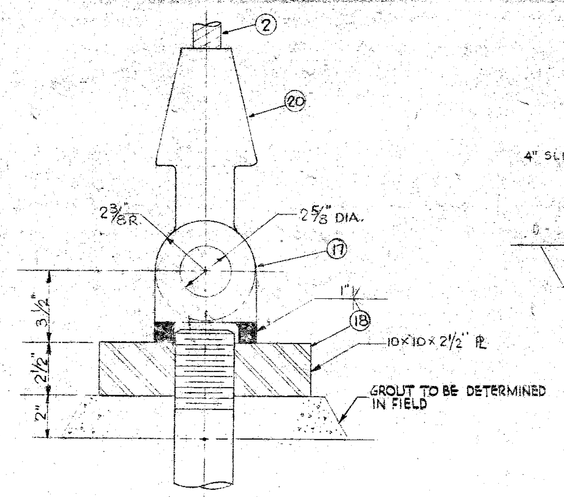
00D0024
NO. LEAD
ANODE RIVETING



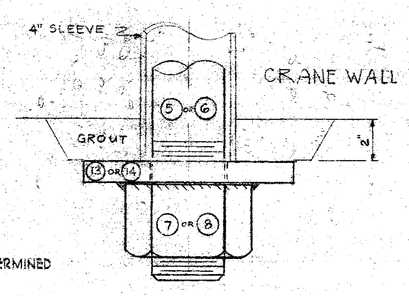
SECTION "K-K"
SCALE: 3"= 1'-0"



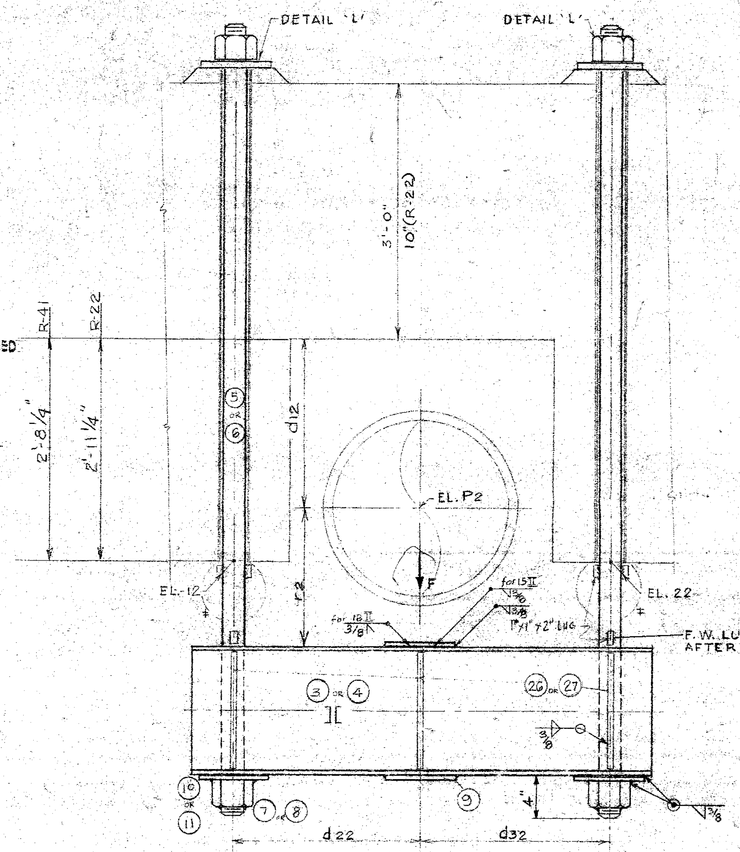
DETAIL 'K'
SCALE: 3" = 1'-0"



DETAIL "M"
SCALE: 3"=1'-0"



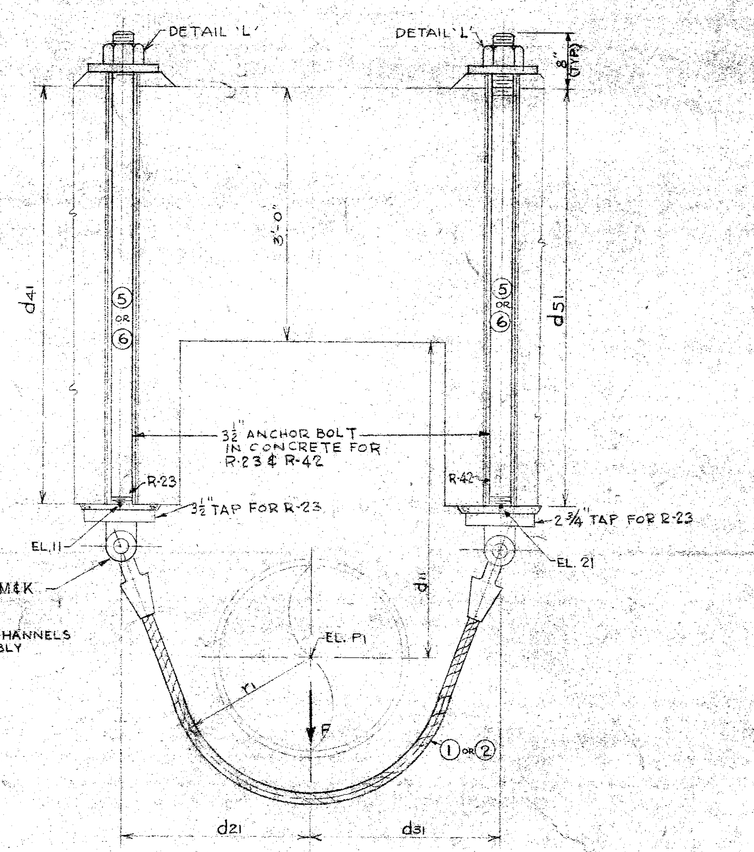
DETAIL 'L'
SCALE: 3" = 1'-0"



DETAIL 'R62'

DETAIL NO.	SIZES JI	SIZES ROD	r2	d12	d22	d32	EL.P2	EL.12	EL.22		"F" FORCE
*R 22	15 [330]	3½ ⅜	1'-4"	3'-0"	2'-1⅝"	2'-4⅝"	77'-10"	*77'-9"	77'-9"	4"	200K
R 31	18 [458]	3½ ⅜	1'-8"	1'-11⅜"	2'-3"	2'-3"	75'-8"	75'-9"	75'-9"	4"	340K
*R 41	18 [458]	3½ ⅜	1'-8"	3'-5½"	2'-3"	3'-0"	77'-0"	76'-0	*76'-5"	4"	
*R 62	15 [330]	2⅜ ⅜	1'-4"	1'-10"	1'-9⅝"	1'-11⅜"	77'-5"	77'-6"	77'-6"	3½	200K
*R 71	18 [458]	3½ ⅜	2'-6"	1'-11⅜"	2'-3"	2'-6"	78'-1"	78'-6"	78'-6"	4"	340K
R 72	18 [458]	3½ ⅜	1'-8"	1'-11½"	2'-3"	2'-6"	72'-0"	72'-0"	72'-0"	4"	
R 81	18 [458]	3½ ⅜	2'-0"	3'-5"	2'-6"	2'-3"	78'-6"	78'6	78'-6"	4"	

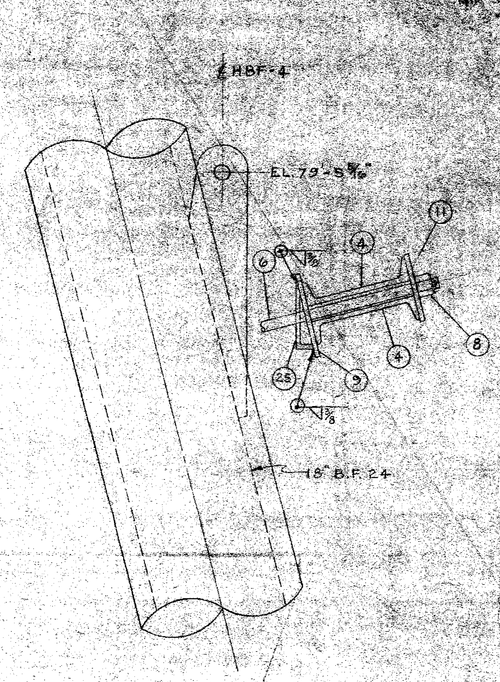
+ USE DETAIL 'K' FOR INDICATED SECTION
* USE DETAIL 'M' FOR INDICATED SECTION
& SEE DETAIL OF THIS RESTRAINT



DETAIL 'R61'

DETAIL No.	ROPE ⊗ DIA.	ROPE ⊗ LENGTH	r1	d11	d21	d31	d41	d51	EL.11	EL.21	EL.P1	"F" FORCE
R 12	1¼"	12-5	1'-2"	6'-8"	1'-11⅜"	2'-0⅝"	4'-4"	4'-11"	78'-0"	73'-6"	75'-5"	200K
R 13	1¼"	18-1	1'-2"	7'-7"	3'-3⅝"	2'-5½"	3'-2"	3'-0"	68'-6"	65'-3"	70'-2"	
*R 23	1¼"	9-3	1'-2"	3'-1"	5'-2½"	3'-0½"	+	5'-2⅝"	71'-3"	76'-3"	71'-2½"	
R 24	1½"	14-4	1'-2"	5'-10½"	2'-1⅝"	2'-4⅛"	3'-0"	3'-0"	64'-9"	64'-9"	67'-0"	
**R 32	1⅝"	7'-0"	1'-8"	2'-3"	2'-8⅛"	1'-8¾"	4'-0"	3'-1¾"	70'-6"	69'-0"	70'-2"	340K
*R 42	1⅝"	10'-4	1'-8"	4'-5"	2'-3"	3'-0"	4'-4"	+	70'-3"	70'-3"	71'-5"	
R 43	1⅝"	14'-1	1'-8"	5'-0"	1'-9"	2'-3"	3'-0"	3'-0"	68'-0"	64'-0"	67'-6"	
R 52	1½"	9'-8"	1'-2"	5'-7½"	2'-6⅜"	2'-6⅜"	5'-4⅜"	5'-2⅛"	75'-6	74'-10⅝"	76'-8"	200K
R 53	1½"	14-11	1'-2"	6'-11"	2'-1⅜"	2'-1⅜"	3'-8⅜"	3'-3⅜"	69'-0"	65'-0"	71'-0"	
R63	1⅝"	6'-8	1'-2"	1'-11⅜"	1'-9⅜"	1'-11⅜"	3'-10½"	4'-2⅜"	71'-0"	71'-0"	71'-2"	
R64	1⅝"	7'-11	1'-2"	1'-3⅜"	1'-9⅜"	3'-1⅞"	3'-1⅞"		65'-6"	65'-0"	65'-1⅛"	
R 73	1⅝"	7'-8	1'-8"	2'-0"	2'-1⅛"	2'-1⅛"	3'-1⅛"	3'-2"	67'-0"	65'-0"	66'-6"	340K
R 82	1⅝"	8'-0	1'-8"	4'-0"	2'-6"	2'-3"	4'-9⅛"	5'-0"	73'-0"	73'-0"	73'-8"	
R 83	1⅝"	11-10	1'-8"	2'-8⅛"	1'-10⅛"	1'-10⅛"	3'-0"	3'-2"	65'-5"	67'-0"	67'-7"	

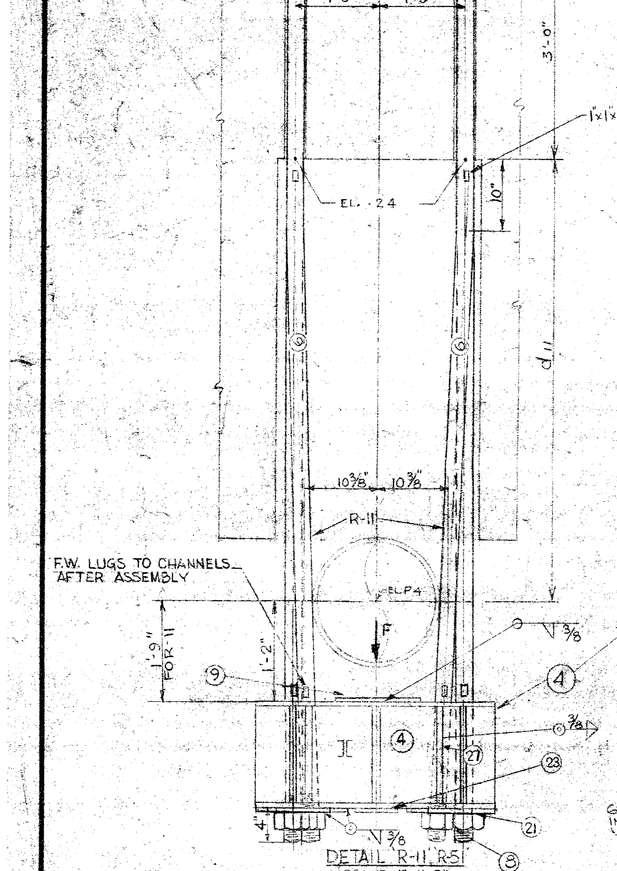
⊗ = LENGTH OF ROPE FROM ℄ OF PIN TO ℄ OF PIN.
** FIELD DRILLED NEW LEFT HAND HOLE 1'-0" TO LEFT & 4" ABOVE ORIGINAL HOLE & MADE CORRESPONDING ADJUSTMENTS



DETAIL R-62
SCALE: 1"=1'-0"

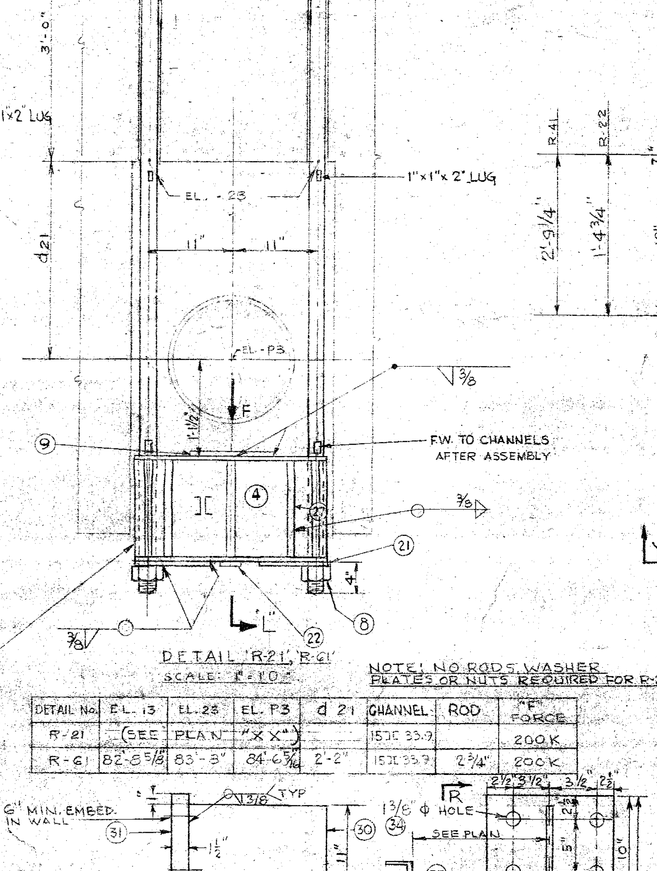
BILL OF MATERIAL (TOTAL QUANTITIES)

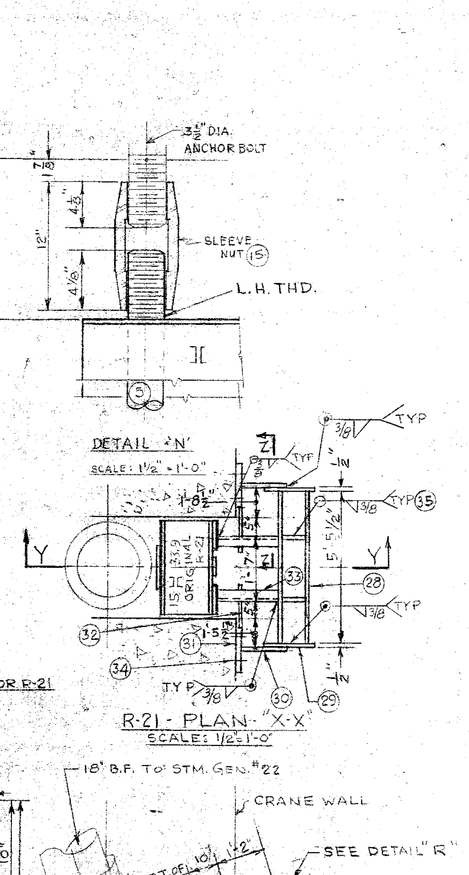
PART No.	QTY.	DESCRIPTION	MATERIAL SPEC.
1	6 PCS	1⅞ WIRE ROPE, IWRC, 6X37	EXTRA IMPROVED P/S
2	8 PCS	1¼ WIRE ROPE, IWRC, 6X37	EXTRA IMPROVED P/S
3	10 PCS	18 J 58	ASTM A 36
4	12 PCS	15 J 33.9	ASTM A 36
5	24 PCS	3½" DIA. ROD-8½-4UNC-2	ASTM A 307
6	24 PCS	2¾" DIA. ROD-22½-4UNC-2	ASTM A 307
7	36 PCS	3½" HEAVY HEX NUT-8½-4UNC-2	ASTM A 307
8	32 PCS	2¾" HEAVY HEX NUT-22½-4UNC-2	ASTM A 307
9	18 PCS	12"x12"x½" th. PL	ASTM A 36
10	12 PCS	12"x12"x½" th. PL w/3⅜ HOLE	ASTM A 36
11	2 PCS	10"x10"x½" th. PL w/2⅞ HOLE	ASTM A 36
12	16 PCS	10"x10"x3½" th. PL w/3½" TAP	ASTM A 36
13	26 PCS	10"x10"x1" th. PL w/3⅜" HOLE	ASTM A 36
14	22 PCS	16"x10"x1" th. PL w/2⅞" HOLE	ASTM A 36
15	2 PCS	3½" SLEEVE NUT	ASTM A 36
16	12 PCS	2¾" PL w/ 3⅜" HOLE	ASTM A 36
17	16 PCS	2¾" PL w/ 2⅝" HOLE	ASTM A 36
18	16 PCS	10"x10"x2½" PL w/2⅝" TAP-15° BEVEL ON ½" TAP	ASTM A 36
19	12 PCS	15⅜" OPEN SPELTER SOCKET	SAE 1035
20	16 PCS	17⅜" OPEN SPELTER SOCKET	SAE 1035
21	8 PCS	10"x10"x½" PL w/ SLEEVE LUG & 2¾" HOLE	ASTM A 36
22	2 PCS	12"x 3"x½" THK PLATE	ASTM A 36
23	2 PCS	12"x6"x½" THK PLATE	ASTM A 36
24			
25	2 PCS	9"x2"∠ 26.3, 12" LG.	ASTM A 36
26	30 PCS	3½"x1" FLAT BAR, 16½ LG.	ASTM A 36
27	40 PCS	3"x1" FLAT BAR, 13" LG.	ASTM A 36
28	1 PC	10"x10"x6.5"x½" LONG	ASTM A 36
29	2 PCS	12"x½" PL, 1' LONG	ASTM A 36
30	2 PCS	13"x 1/8" Ex 1'-6" LONG	ASTM A 36
31	2 PCS	12"x1½" EN 1'-8" LONG	ASTM A 36
32	2 PCS	3"x ½" FLAT BAR-1'-0 LONG	ASTM A 36
33	2 PCS	8 C 18.75 x 2'-0" LONG	ASTM A 36
34	16 PCS	1¼" Ø x 10 WEI-LT EXPANSION ANCHORS HAVING ACCREDITED PULLOUT AND SHEAR LOADS OF 25,500 LBS & 40,000 LBS IN 5,750 PSI CONCRETE AT 6" MIN EMBEDMENT	COLD DRAWN STEEL
35	4 PCS	3⅞ Ø x ½ PL x 7⅛ LONG	ASTM A 36
36			



DETAIL R-11, R51
SCALE 1"=1'-0"

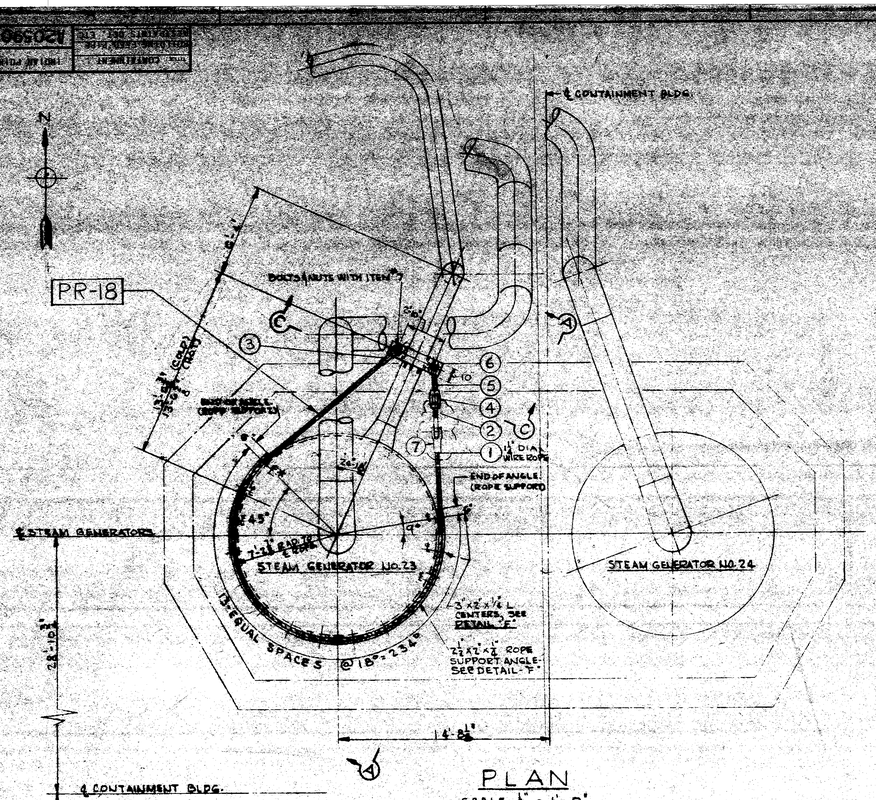
DETAIL No.	EL. 14	EL. 24	EL. P4	d11	CHANNEL	ROD	"F" FORCE
R-11	75'-7"	75'-7"	75'-7"	9'-11"	15 X 33.9	2¾"	200 K
R-51	80'-8"	81'-0"	84'-5"	4'-5⅛"	15 X 33.9	2¾"	200 K





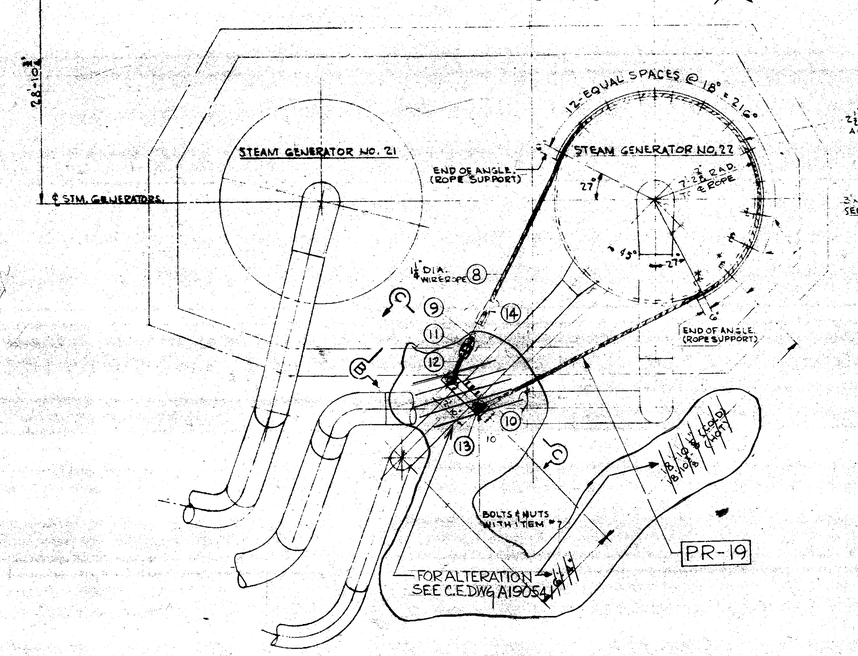
C-A205024

SEE DWG. A205907 FOR LIST OF ITEMS NOT SHOWN	SEE DWG. A205907 FOR MATERIAL SPECIFICATIONS



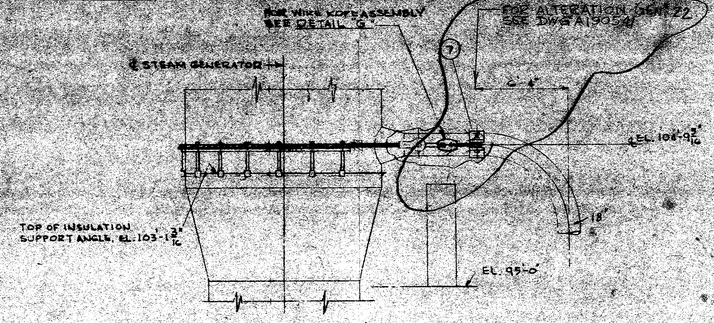
PLAN

SCALE ¼" = 1'-0"

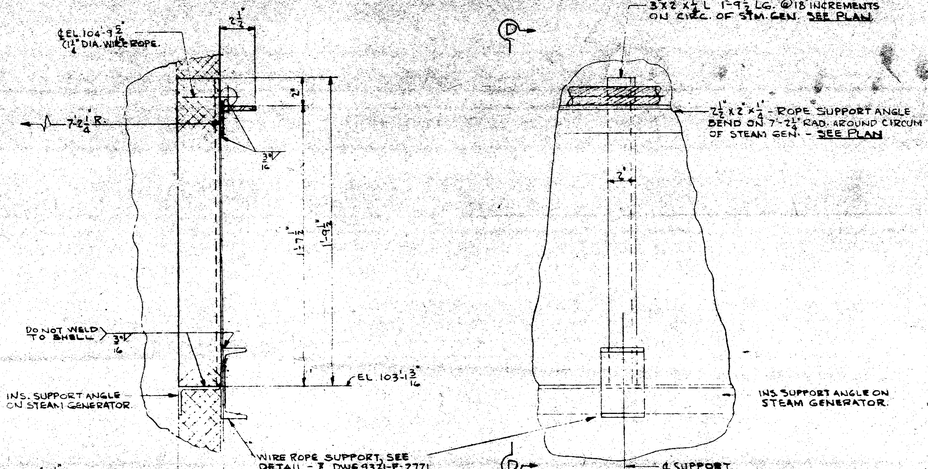


PLAN

SCALE ¼" = 1'-0"



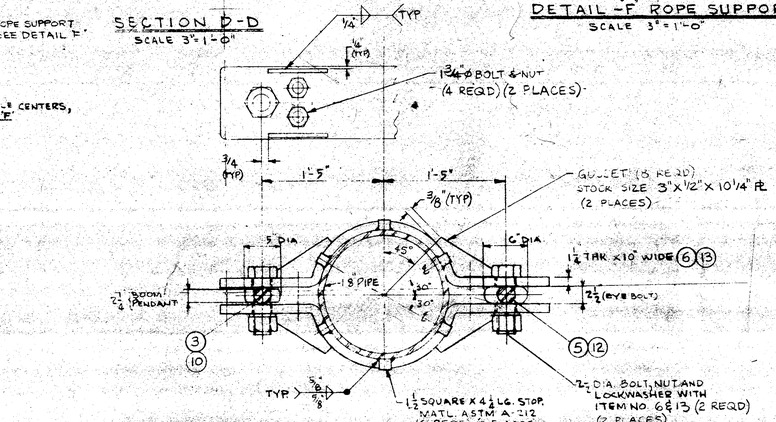
SECTION A-A (SECTION B-B SIMILAR)



DETAIL - F ROPE SUPPORT

SCALE 3" = 1'-0"

ITEM NO.	QUANTITY	LIST OF MATERIAL DESCRIPTION
1	1	1¼ DIA. WIRE ROPE ASSEMBLY - SEE DETAIL "G" DIMENSION A = 48'-0" - SEE NOTE NO. 1
8	1	1¼ DIA. WIRE ROPE ASSEMBLY - SEE DETAIL "G" DIMENSION A = 81'-0" - SEE NOTE NO. 1
2&9	1 EA	EYE BOLT 2" DIA. NC-2 - 10 THD. FULL LGTH OF SHANK 6" EYE I.D. 2 3/16" O.D. FORGED STEEL, CROSBY-LAUGHLIN OR EQUAL
3&10	1 EA	SWAGED BOOM PENDANT (CLOSED) (SWAGED WITH ITEM 14) ARMCO STEEL CO. (UNION ROPE) OR EQUAL
4&11	1 EA	TURNBUCKLE 7'-11" LONG, 2 1/2" FORGED STEEL CLEVELAND CITY FORGE & IRON CO. OR EQUAL
5&12	1 EA	EYE BOLT 2½" DIA. NC-2 8¼ THRD. 14" LONG - LGTH OF SHANK 2¼" EYE I.D. 2 9/16" O.D. FORGED STEEL CROSBY-LAUGHLIN OR EQUAL
6&13	1 EA	RISER - CLAMP FOR 8" PIPE - SEE SECTION C-C THIS SHEET BERGEN-PATTERSON PART #310 TYPE 7 OR EQUAL - MATERIAL AISI 1020 STEEL 2 1/4" DIA. BOLTS 3/4"
7&14	1 EA	SWAGED BOOM PENDANT (OPEN) (SWAGED WITH ITEM 1&2) ARMCO STEEL CO. (UNION ROPE) OR EQUAL



NOTE:-

1. 1¼ DIA. WIRE ROPE - IMPROVED PLOW STEEL/INSIDE WIRE ROPE CORE. 79.9 TON (2000) BREAKING STRENGTH. (TUFFY DEARLINE - UNION ROPE - ARMCO CO.
2. TENSION ON ROPES TO BE 0 LBS IN HOT POSITION.

FOREIGN PRINTS

9321-2177 — — — — — — — — — STEAM GENERATOR

REFERENCE DRAWINGS

A205905	~~9321-F-2551~~ BOILER FEED PIPING - PLAN - STEAM GENERATORS #21 & #22
A205903	~~9321-F-2551~~ BOILER FEED PIPING - SECTIONS & DETAILS STM. GEN #21 & #22
	9321-F-2550 BOILER FEED PIPING - PLAN - STEAM GENERATORS #23 & #24
	9321-F-2552 BOILER FEED PIPING - SECTIONS & DETAILS STM. GEN #23 & #24
	9321-F-1090 CONTAINMENT - CONCRETE PLAN AT EL. 95'-0"
	9321-F-1127 CONTAINMENT - CRANE WALL CONCRETE DETAILS.

THIS DRAWING CONFORMS TO "CLASS A" ITEMS IN AS APPROVED BY WESTINGHOUSE DISTRIBUTION

U.E.&C. F.P. 9321-01-20363

REV.	DATE	DESCRIPTION	APPD.
	12-8-70	REVISED LIST OF MAT'L FOR PR-18 & 19	

TITLE: BOILER FEED RESTRAINT LOCATION PLAN

BERGEN-PATTERSON PIPESUPPORT CORP. NEW YORK NEW JERSEY MASSACHUSETTS

DWN.	CHKD.	APPD.	DATE	JOB NO.	DRAWING NO.
JP	AJF	NN	2-3-70	P-67-139	10140

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING

BOILER FEED PIPE RESTRAINTS

DETAILS - SHEET NO. 7

FOR

CONSOLIDATED EDISON COMPANY

INDIAN POINT GENERATING STATION

9321-F-2766 UNIT NO. 2

U.E.&C. DWG. NO. — CON. ED. DWG. NO.

9321-F-2766-2

A205907-0

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

STATION LOCATION	INDIAN POINT NO 2
	CONTAINMENT BUILDING
	BOILER FEED PIPE RESTRAINTS
	DETAILS - SHEET NO 7

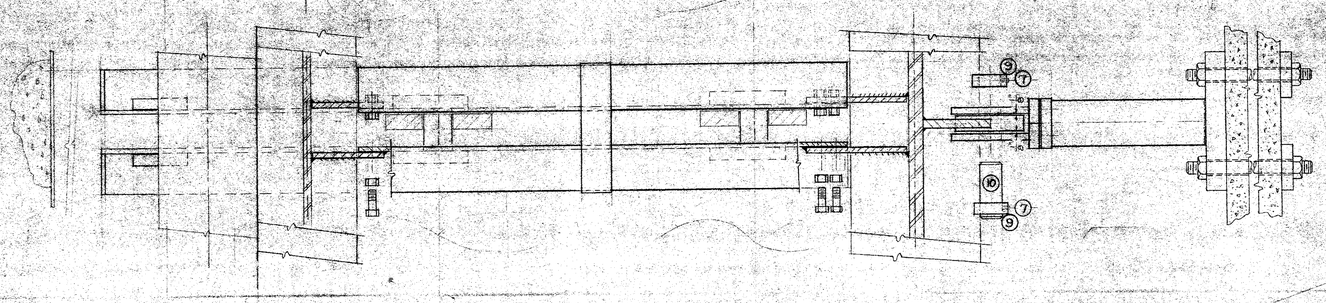
SCALE	DRAWN BY	RECORDED
1/8" = 1'-0"	J. MATUTAT	8-7-70
J.O. 4000	CHECKED BY H E	ENG.
DIAG. ELECT.	MECH. STRUCT.	DIST.

APPROVALS

GENERAL ENGINEERING	CHIEF DESIGN ENGINEER	
MECHANICAL ENGINEERING	MECH. PLANT ENGINEER	
	PLANT STRUCT. ENGINEER	
CIVIL ENGINEERING	T&D STRUCT. ENGINEER	
ELECTRICAL ENGINEERING	STATION ELECT. ENGINEER	
	T&D ENGINEER	
GAS & STEAM OPERATIONS	STRUCT. ENGINEER	
PRODUCTION	CONSTRUCTION & POWER	
	NUCLEAR POWER	

S03/W17
LW 6-18-79
19062/0108

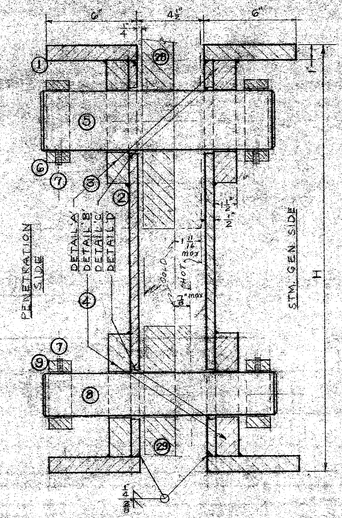
ORIGINAL DRAWING



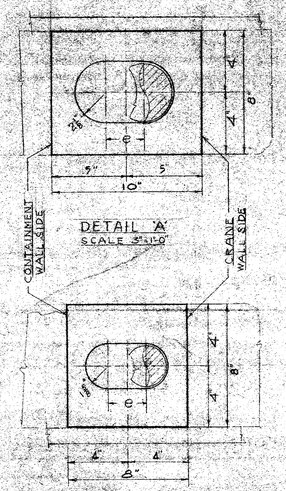
PLAN "B - B"
SCALE 1½" = 1'-0"

*LOCATION	H	d_1	e_1	d_2	e_2	d_3	e_3	d_4	e_4	c_1	c_2	ELR_3
11 X 12	31 1/2	5 1/2	3/8	5	5/8	5	7/16	5	5/8	15 5/8	10 3/4	60'-7 7/8
12 X 13	28 3/4	6 13/16	1 11/16	5	1-7/16	5	1 1/16	5 1/16	1 1/16	13 7/16	9 5/16	60'-10 3/8

*LOCATION FROM REFERENCE 2.

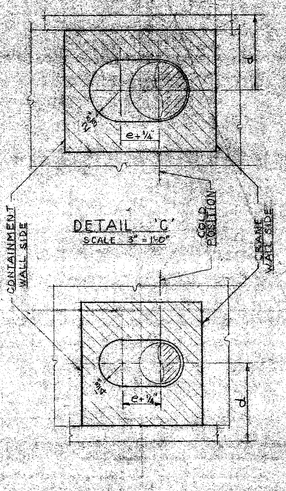


SECTION "A-A"
SCALE 3" = 1'-0"



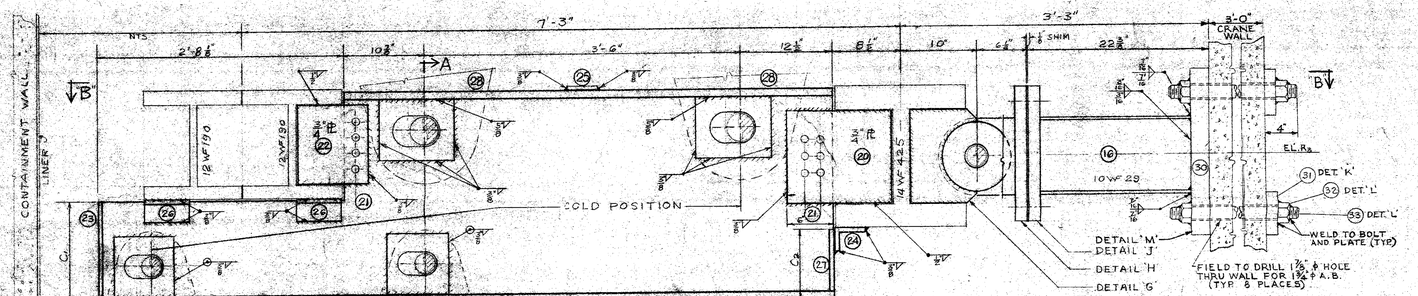
DETAIL 'A'
SCALE 3" = 1'-0"

DETAIL 'B'
SCALE 3" = 1'-0"

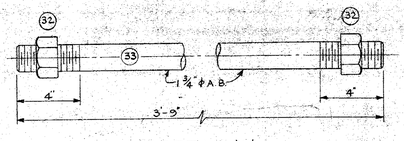


DETAIL 'C'
SCALE 3" = 1'-0"

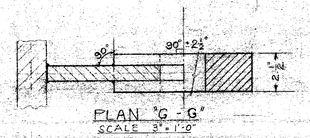
DETAIL 'D'
SCALE 3" = 1'-0"



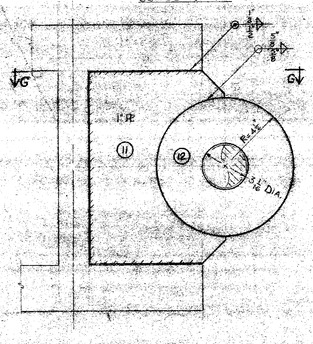
SECTION "E-E" 9321-F-2760
SCALE 1½" = 1'-0" SOUTH HALF



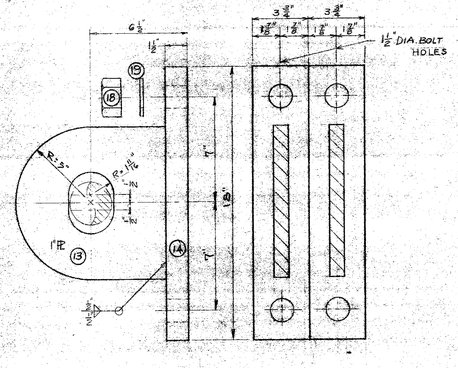
DETAIL 'L'
SCALE: 3"=1'-0"



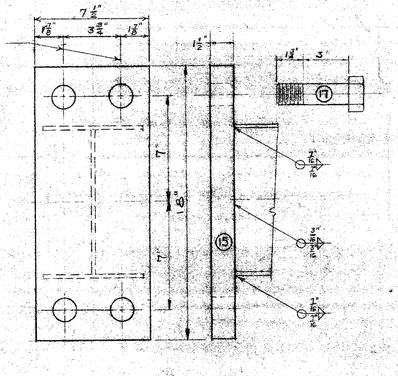
PLAN "G-G"
SCALE 3" = 1'-0"



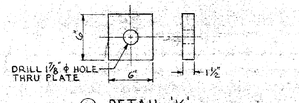
DETAIL 'G'
SCALE 3" = 1'-0"



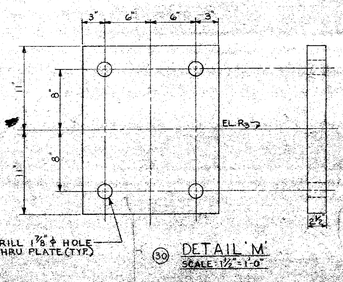
DETAIL 'H'
SCALE 3"=1'-0"



DETAIL 'J'
SCALE 3"=1'-0"



31 DETAIL 'K'
SCALE: 1½"=1'-0"



30 DETAIL 'M'
SCALE: 1½"=1'-0"

BILLS OF MATERIAL (FOR 2 ASSEMBLIES)

PART NO.	QUANTITY	DESCRIPTION	MATERIAL SPEC
1	8	1" x 6" FLANGE PL	ASTM A 36
2	4	1/2" WEB PL	ASTM A 36
3	8	1½ BEARING PL MS	ASTM A 36
4	8	1½ BEARING PL FW	ASTM A-36
5	4	4" PIN, 15½" LG.	SAE 1045
6	8	4" ID COLLAR	SAE 1035
7	18	3/8" SOCKET SET SCREW	SAE 1035
8	4	3" PIN, 15½" LG.	SAE 1045
9	10	8" ID COLLAR	SAE 1035
10	2	3" PIN, 8" LG.	SAE 1045
11	2	1" WEB PL	ASTM A36
12	2	2½ DISC	SAE 1018 (CASE HARD)
13	4	1" BEARING PL	ASTM A 36
14	4	1½ BASE PL	ASTM A 36
15	2	1½ BASE PL	ASTM A 36
16	2	10 WF 29	ASTM A 36
17	8	1½ BOLT	SAE 1035
18	8	1½" NUT	SAE 1035
19	8	1½" WASHER	SAE 1060
20	4	3/4 CLIP PL	ASTM A 36
21	40	1" BOLT W/ NUT	SAE 1035
22	4	3/4" CLIP PL	ASTM A 36
23	4	1/2"x5½" END PL	ASTM A 36
24	2	4"x3"x½" L, 17" LG.	ASTM A 36
25	6	4"x½" BAR, 17" LG.	ASTM A 36
26	8	4"x3"x½" L, 8" LG.	ASTM A 36
27	4	1/2"x5½" END PL	ASTM A 36
28	4	PIPE LUG	BY OTHERS
29	4	PIPE LUG	BY OTHERS
30	2	2½" BASE PL	ASTM A 36
31	8	1½" BEARING PL	ASTM A36
32	16	1¾ HEX NUTS	SAE 1035
33	8	1¾" ANCHOR BOLTS	SAE 1038

FOR REFERENCES SEE DWG. 9321-F-2764

50-3/247
UFC-1879
7906210638

RETURN TO REACTOR DOCKET FILES

NO.	DATE	REVISION	ENGR.	SUP. ENG.
1	7/11	FINAL ISSUE		
2	5/11	REV'D SECTION E-E, PLAN B-B, ADDED DETAIL K, L, M		RFD
3	4/11	FOR APPROVAL & FOR BIDDING		

DESIGNED: [illegible] DRAWN: [illegible] CHECKED: [illegible] APPROVED: [illegible]

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING

MAIN STEAM & BOILER FEED PIPE RESTRAINTS

DETAILS - SH. NO. 2

FOR

CONSOLIDATED EDISON COMPANY

INDIAN POINT GENERATING STATION UNIT NO. 2

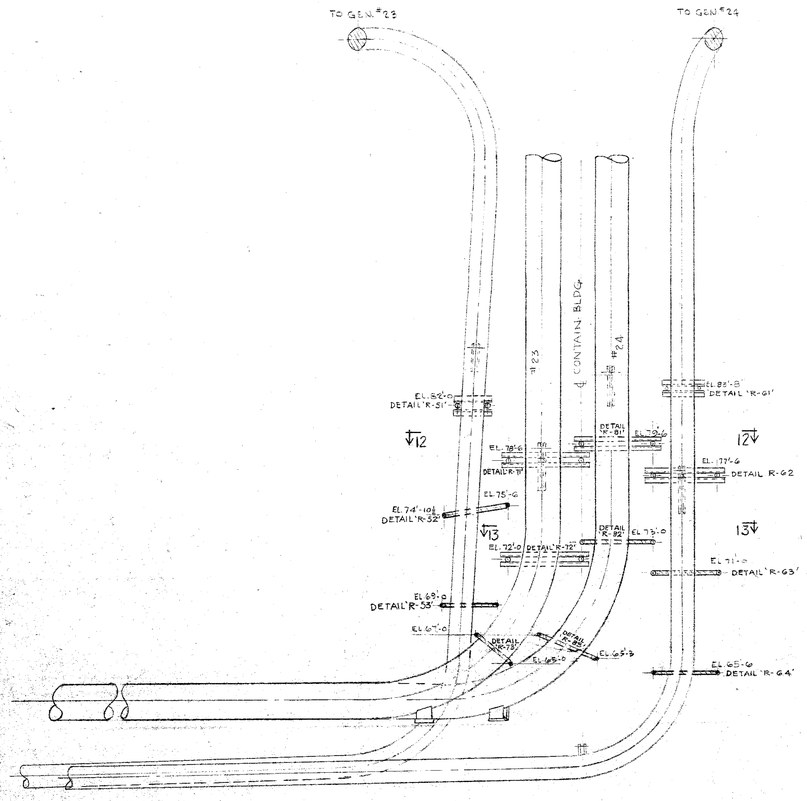
W.E. DRAWING NO. 9321-F-2761-P

SUP. CO. DRAWING NO. [illegible]

A200790

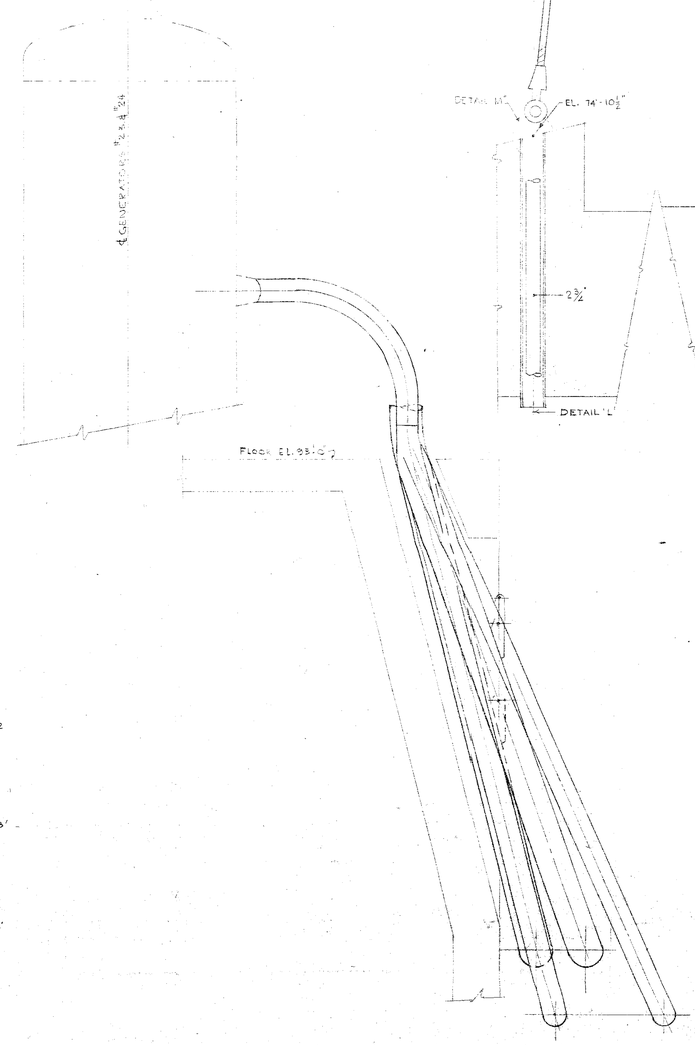
INDIAN POINT UNIT NO. 2

TITLE



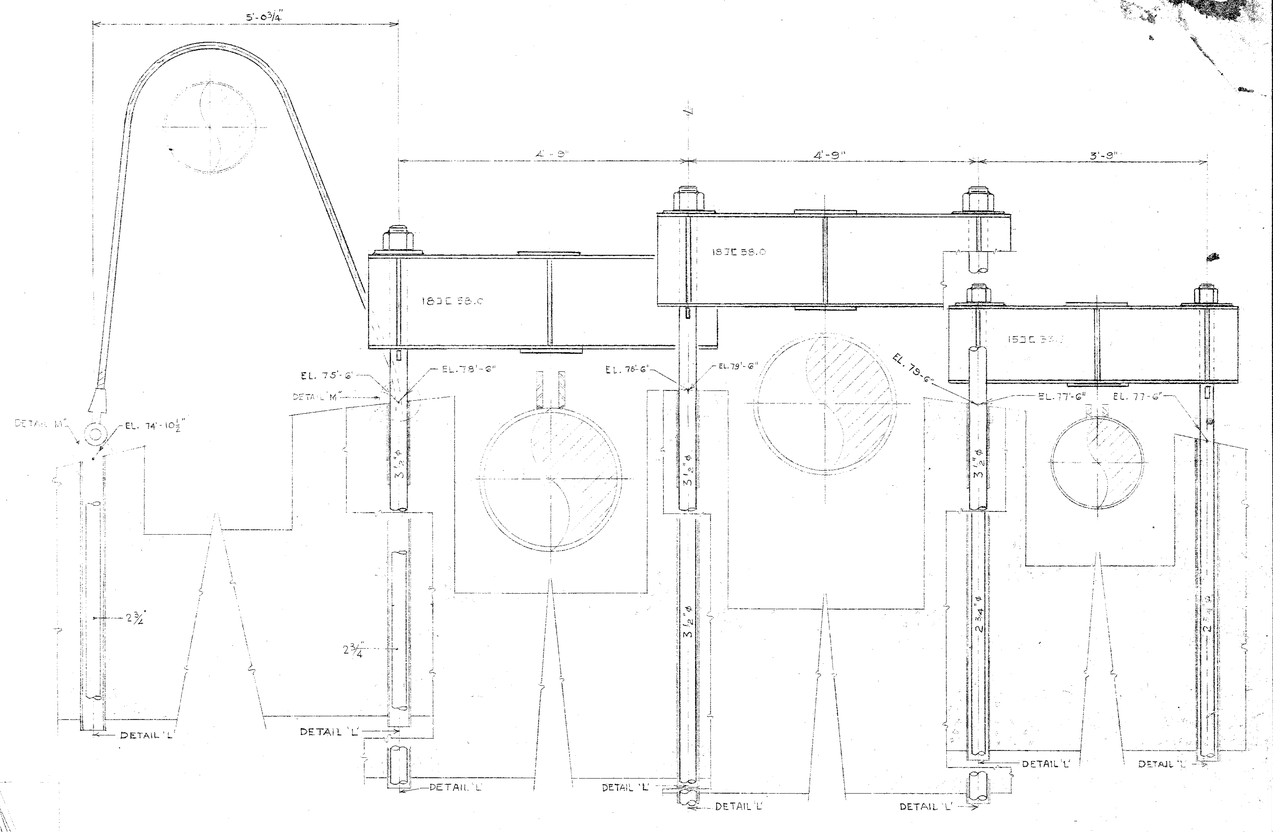
SECTION "1-1"

FOR PLAN SEE 9321-F-2758



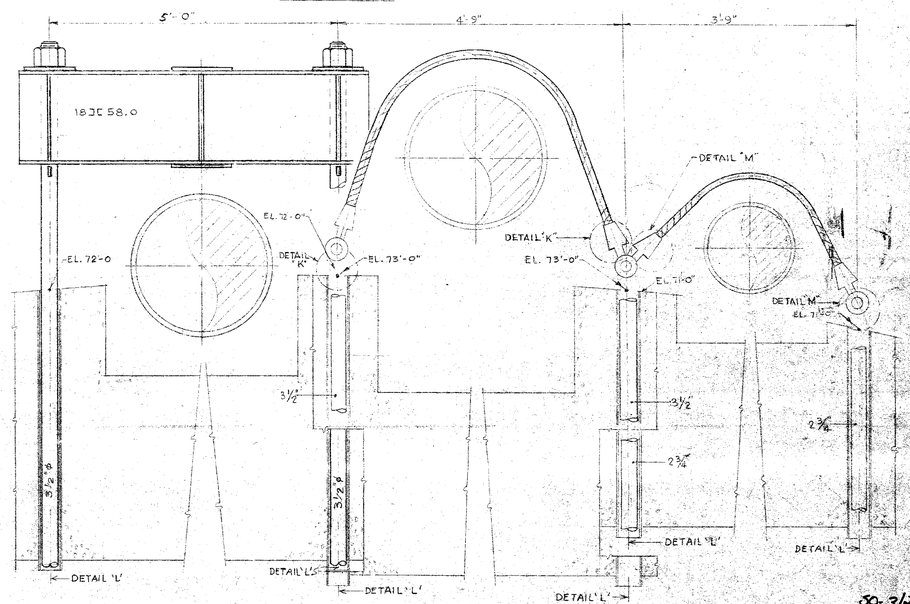
SECTION "2-2"

FOR PLAN SEE 9321-F-2758



SECTION "12-12"

SCALE 1" = 1'-0"



SECTION "13-13"

SCALE 1" = 1'-0"

30-3/247
Ur 6-18-79
790630106

RETURN TO REACTOR DOCKET FILES

WORK THIS DRAWING IN CONJUNCTION WITH DWG NO. 9321-F-2770

NO.	DATE	DESCRIPTION	ENGR	SUP ENG
4	9/19/72	FINAL ISSUE ADDED AS BUILT INFO.	DHR	RR
3	11/12/71	REVISED DETAIL LETTERS, ADDED NOTE, DOOR CLEARANCE, DETAIL M, SECTION 12-12 & 13-13	DHR	RR
2	7/25/71	REVISED DETAIL LETTERS, ADDED NOTE, DOOR CLEARANCE, DETAIL M, SECTION 12-12 & 13-13	DHR	RR
1	7/16/71	RELEASED FOR CONSTRUCTION	DHR	RR
0	5/24/71	FIRST ISSUE FOR APPROVAL	DHR	RR

ENGINEER: Donald H. Richards
STATE REG. N.Y. NO. 47736

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
ARRANGEMENT OF PIPE RESTRAINTS
MAIN STEAM & BOILER FEED-NORTH WALL

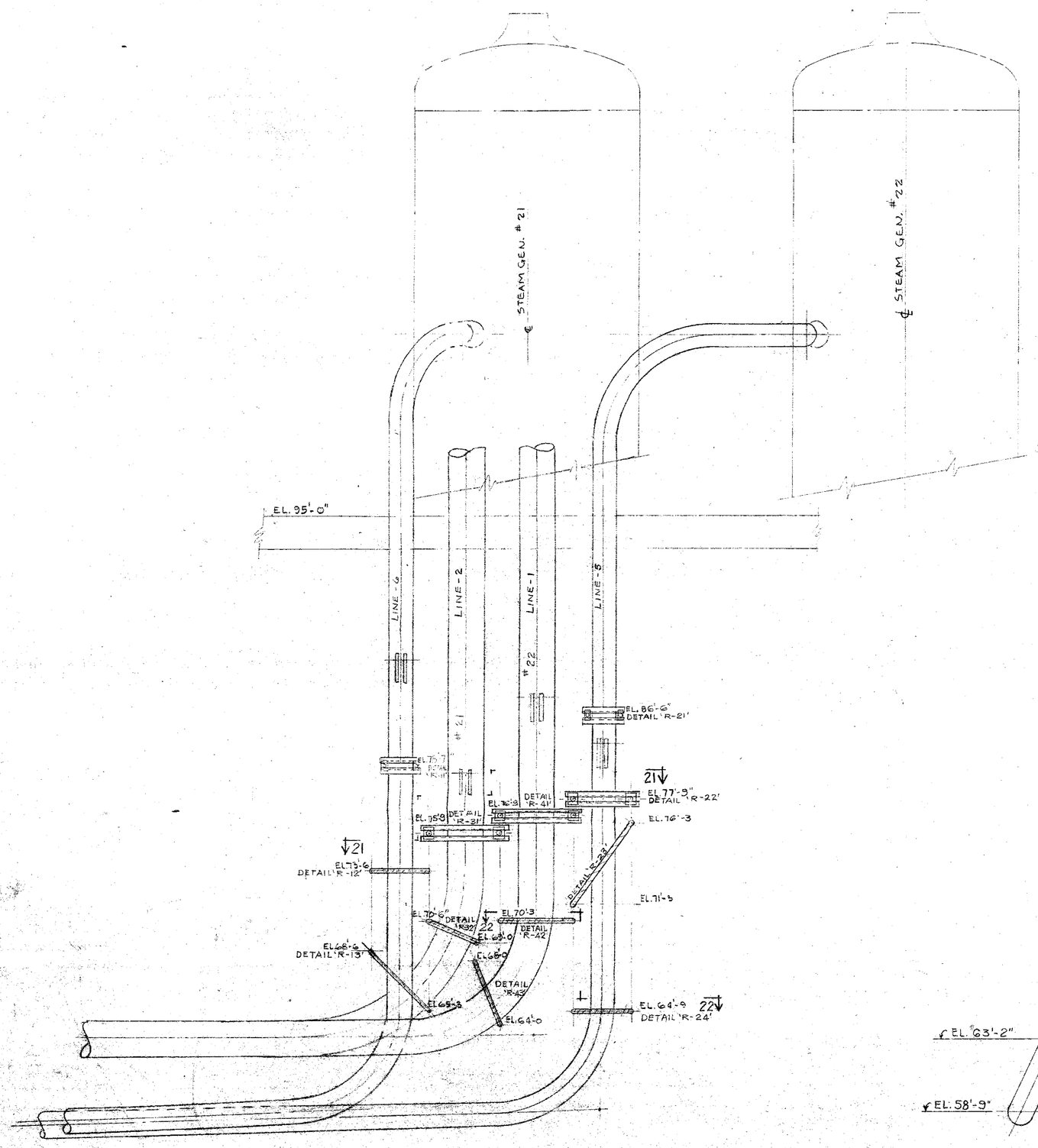
FOR

CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

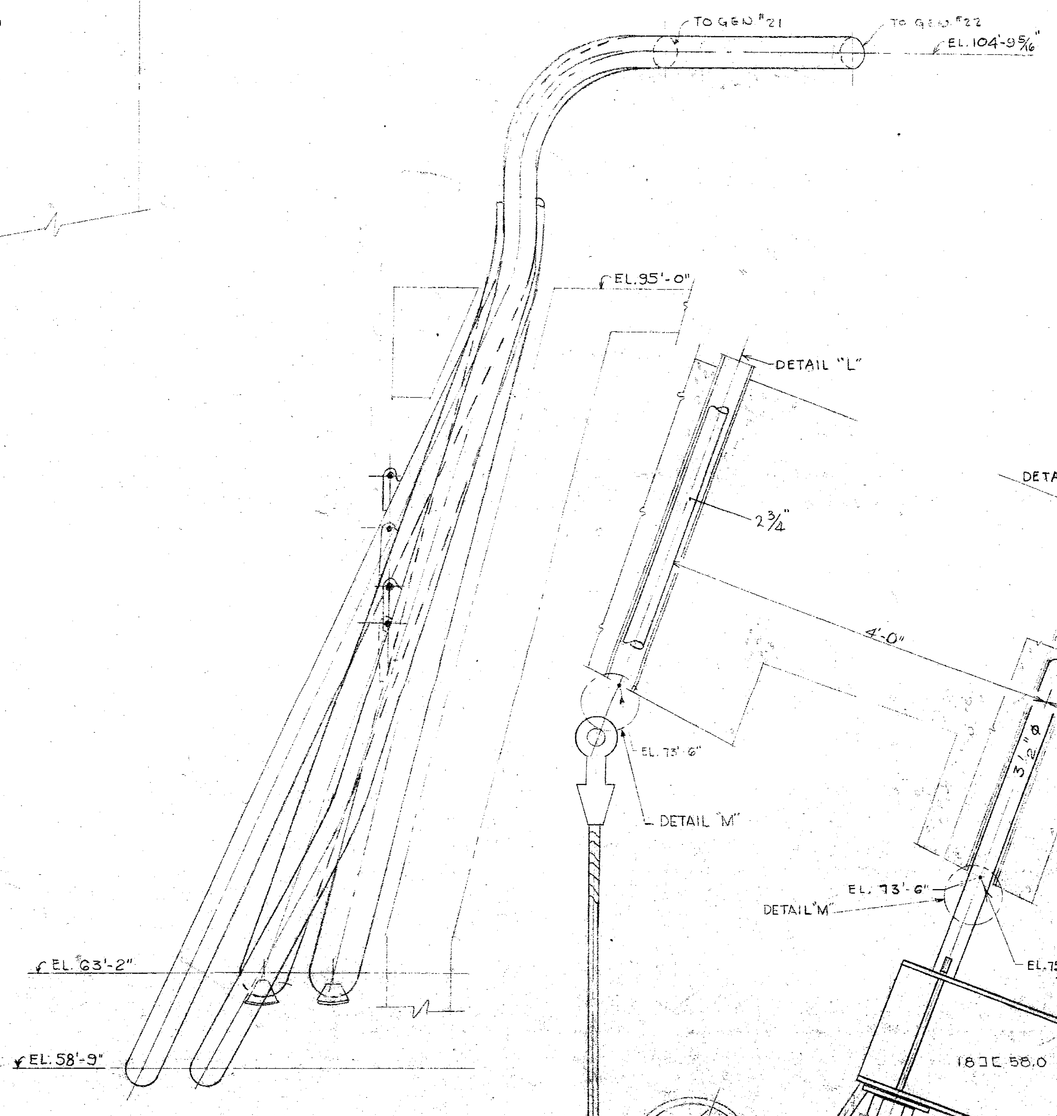
U.E.&C. DWG. NO.	CON. ED. CO. DWG. NO.
9321-F-2759-4	A200790

INCHES 0 1 2 3 4 5 6

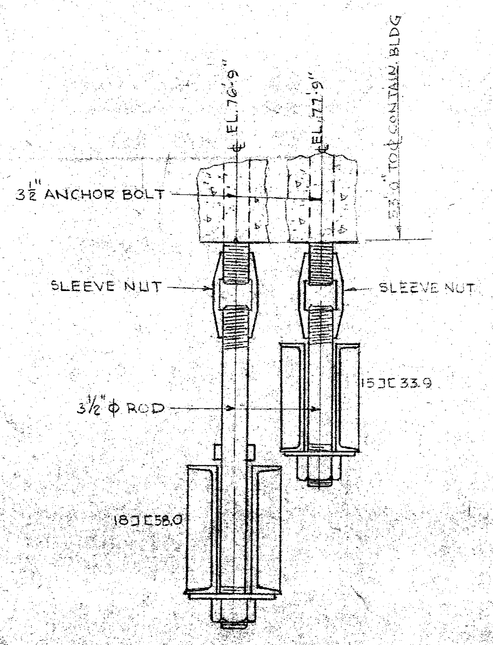
TITLE: INDIAN POINT UNIT NO. 2 — A200792



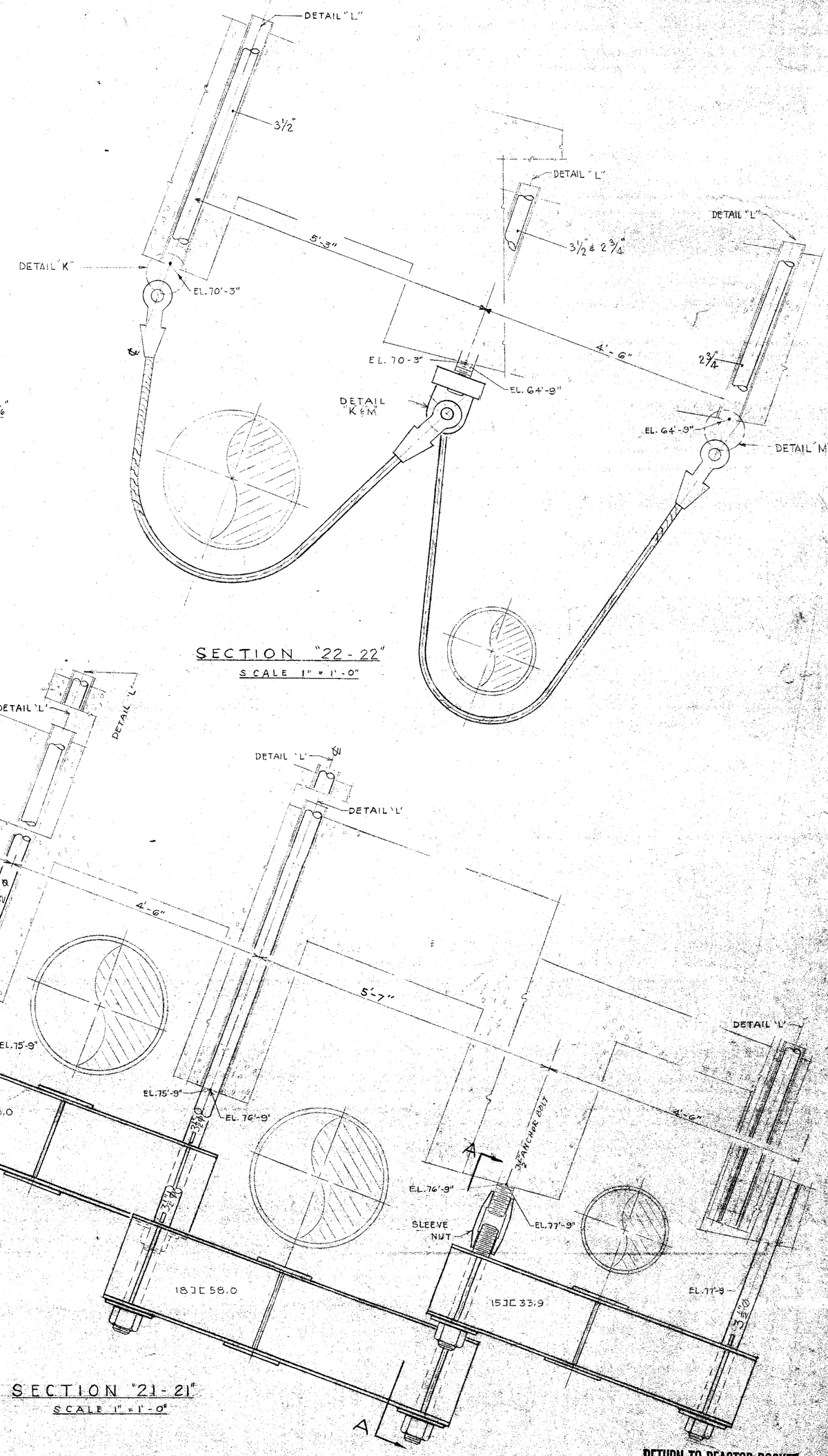
SECTION "3-3"
FOR PLAN SEE 9321-F-2760



SECTION "4-4"
FOR PLAN SEE 9321-F-2760



SECTION "A-A"
SCALE: 1"=1'-0"



SECTION "21-21"
SCALE 1" = 1'-0"

RETURN TO REACTOR DOCKET FILES

WORK THIS DRAWING IN CONJUNCTION WITH DWG. 9321-F-2770

REV. NO.	DATE	DESCRIPTION	ENGR.	SUPERV.	
5	7/1/70	FINAL ISSUE ADDED AS-BUILT INFO.	RM	WHS	
4	10/31/69	CHANGED ELEVATIONS TO SUIT AS BUILT INSTALLATION	RM	WHS	
3	11/1/68	REVISED DETAIL LETTERS, ADDED SUPP. CONCRETE AND REVISED SECTION 3-3	RM	WHS	
2	7/24/68	REVISED AS-BUILT INFORMATION	DHR	JJD	
1	7/1/68	RELEASED FOR CONSTRUCTION	JDH	FJO	
(M)	6/14/68	FIRST ISSUE FOR APPROVAL	JDH	FJO	

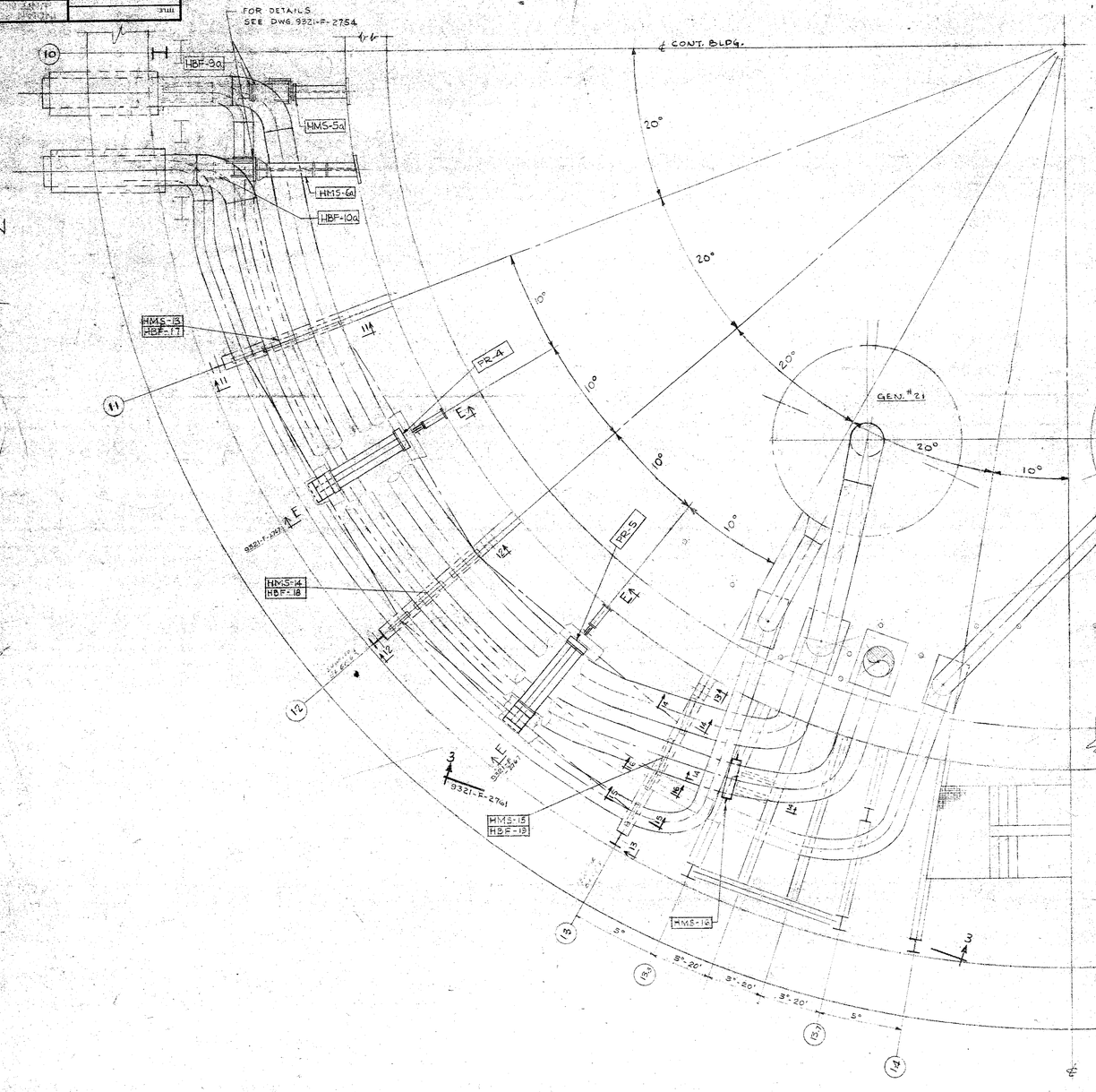
ENGINEER: [signature] REG. NO. 23,284
STATE REG. N.Y.
UNITED ENGINEERS & CONSTRUCTORS INC.

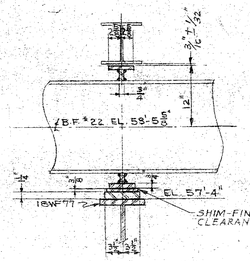
WESTINGHOUSE ELECTRIC CORPORATION
CONTAINMENT BUILDING
ARRANGEMENT OF PIPE RESTRAINTS
MAIN STEAM & BOILER FEED - SOUTH HALF - SH. 2
FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

U.E.&C. DWG. NO. 9321-F-2761-5
CON. ED. CO. DWG. NO. A200792

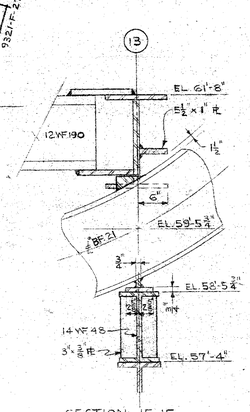
50-247
LH 6-18-71
8006101028

FOR DETAILS SEE DWG. 9321-F-2754

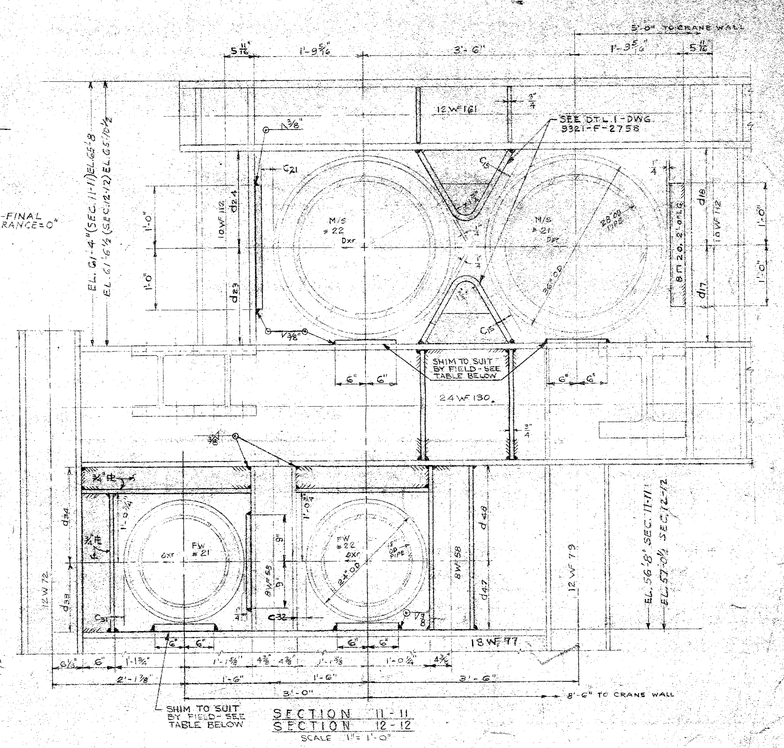




SECTION 16-16
SCALE 1"=1'-0"



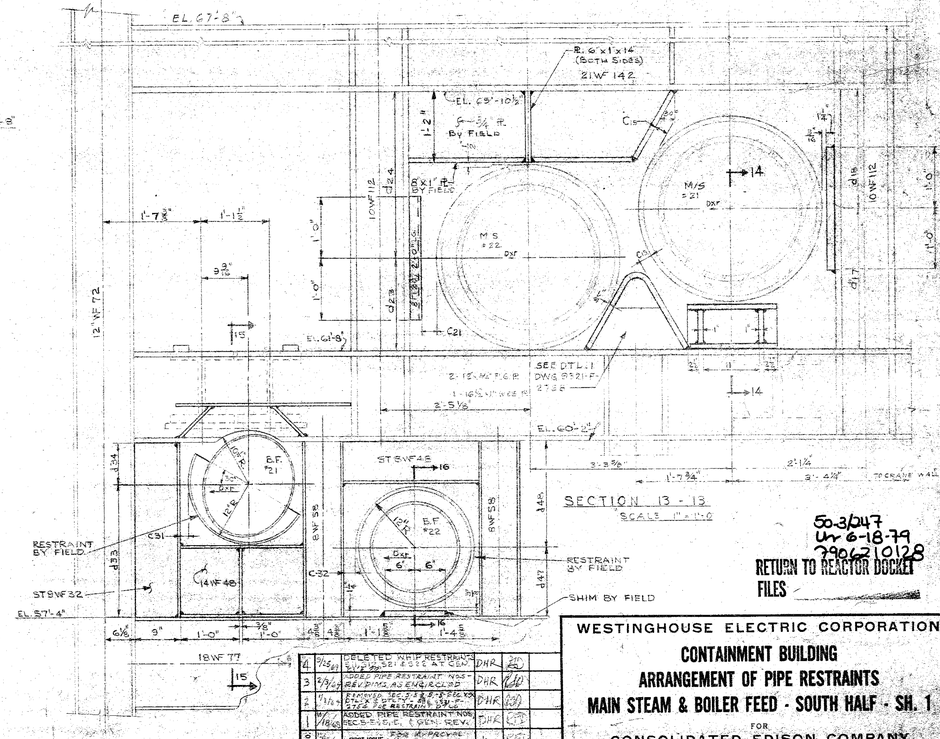
SECTION 15-15
SCALE 1"=1'-0"



SECTION 11 - 11
SECTION 12 - 12
SCALE 1"=1'-0"

RESTRAINT No.	SECTION	COLUMN LINE	28" M/S PIPE FR. STM. GEN. # 21 PIPE EL.	d17	d18	dXF	C15	28" M/S PIPE FR. STM. GEN. # 22 PIPE EL.	d22	d24	DXF	C21	REMARKS
HMS-13	11 - 11	11	62'-10"	1'-6"	1'-3 5/8"	-.106	1"	62'-10 1/2"	1'-6 1/2"	1'-7 7/8"	-.092	1"	SHIMS REQ'D #22 ONLY
HMS-14	12 - 12	12	63'-0 1/2"	1'-6"	1'-8 1/8"	0.000	1 3/8"	63'-0 1/2"	1'-6"	1'-8 1/8"	0.000	2 5/16"	NO SHIMS UNDER PIPE.
HMS-15	13 - 13	13	63'-11 1/2"	2'-3 1/8"	1'-11 5/8"	0.000	2 1/8"	63'-2"	1'-6"	2'-0 1/2"	0.000	2 7/16"	SHIMS REQ'D - SEE SEC. 13-13
			18" FW PIPE TO STM. GEN. # 21					18" FW PIPE TO STM GEN. # 22					
			PIPE EL.	d33	d34	dXF		PIPE EL.	d47	d48	DXF	C32	
HBF-17	11 - 11	11	57'-8"	1'-1"	1'-6 3/4"	-.536	1 1/2"	57'-9 1/2"	1'-1 5/16"	1'-2 5/16"	-.023	1 5/8"	SHIMS REQUIRED
HBF-18	12 - 12	12	58'-2 1/16"	1'-2 7/16"	1'-3 3/16"	0.0001	1 7/16"	58'-1 3/8"	1'-1 5/8"	1'-4 1/8"	0.0024	1 5/8"	
HBF-19	13 - 15	13	59'-5 3/4"	2'-1 1/2"	8 1/4"	42.0394	2 1/4"	58'-5 3/8"	1'-1 5/8"	1'-8 3/8"	0.000	1 5/8"	

SECTION 14 - 14
SCALE 1"=1'-0"
SUPPORTS @ COLS. 13 & 13.3



SECTION 13 - 13
SCALE 1"=1'-0"

FOR "SHIMS" SEE DWG. 9321-F-2650

WORK THIS DWG. WITH DWG. 9321-F-2758 & 9321-F-2767

NOTE:-
ALL STEEL SHOWN SHADED TO BE FURNISHED BY BERGEN-PATTERSON PIPE SUPPORT CO.

REV NO	DATE	DESCRIPTION	ENGR	SUP ENG
6	9/21/78	FINAL ISSUE ADDED AS-BUILT NOTE	DHR	[illegible]
5	8/2/78	REVISED SECTIONS 15 & 16, REVISED DWG. DIAGRAM, IN TABLE & ADDED NOTE	DHR	[illegible]
4	9/15/61	DELETED WHIP RESTRAINTS 51-12 & 52-1 & 52-2 AT GEN.	DHR	[illegible]
3	2/9/61	ADDED PIPE RESTRAINT NOS. R4 & PIPING AS ENGR'G REQ'D	DHR	[illegible]
2	1/12/61	REVISED SEC. 2-2 & 3-3 & ADDED SEC. 4-4 & DETAIL 1 ON DWG.	DHR	[illegible]
1	1/16/60	ADDED PIPE RESTRAINTS NOS. R1, R2, R3 & DWG. REVISED	DHR	[illegible]
0	7/14/59	FIRST ISSUE	[illegible]	[illegible]

ENGINEER: [illegible]
STATE REG. N.Y. NO. 42886

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
ARRANGEMENT OF PIPE RESTRAINTS
MAIN STEAM & BOILER FEED - SOUTH HALF - SH. 1

FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

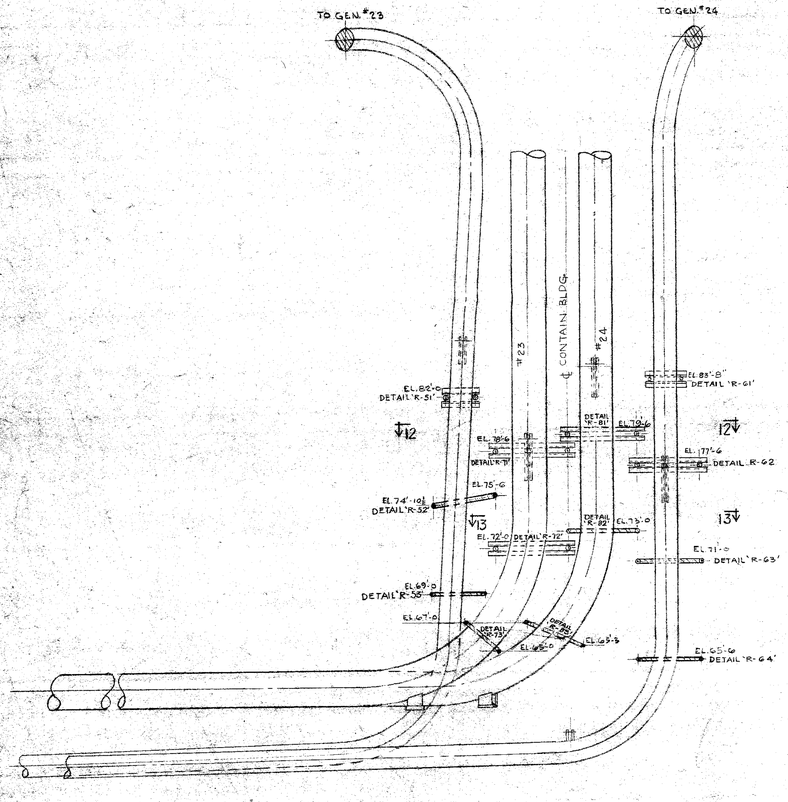
U.E.&C. DWG. NO. 9321-F-2760-6
CON. ED. CO. DWG. NO. A 200791

50-3/247
UR 6-18-79
7906210128

RETURN TO REACTOR DOCKET FILES

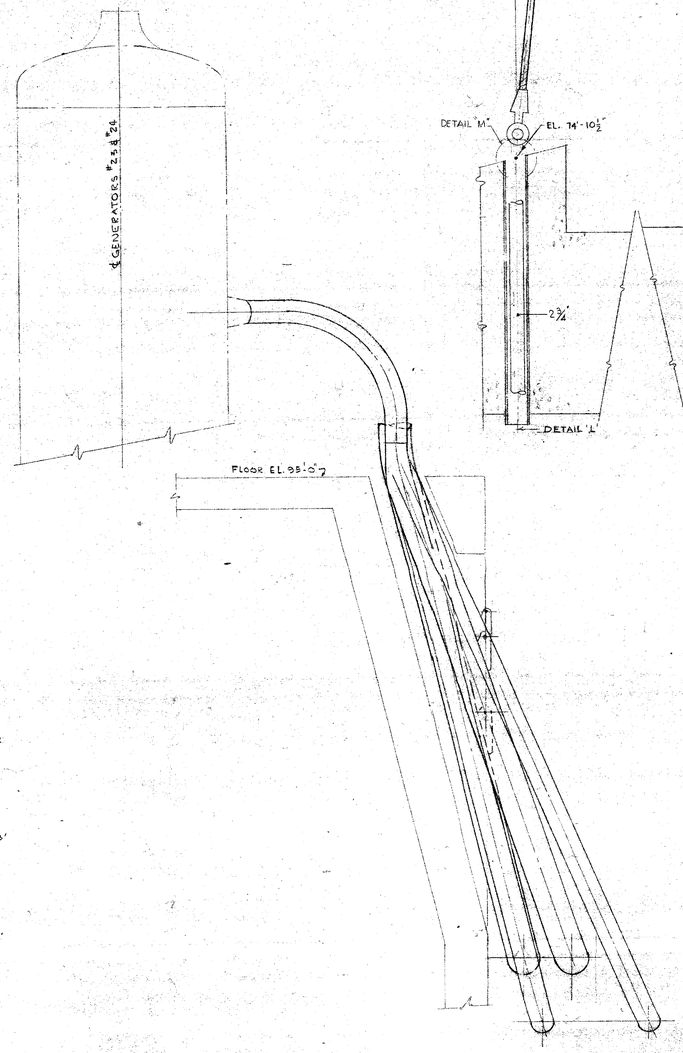
8906210128 790618

A200730
INDIAN POINT UNIT NO. 2
TITLE



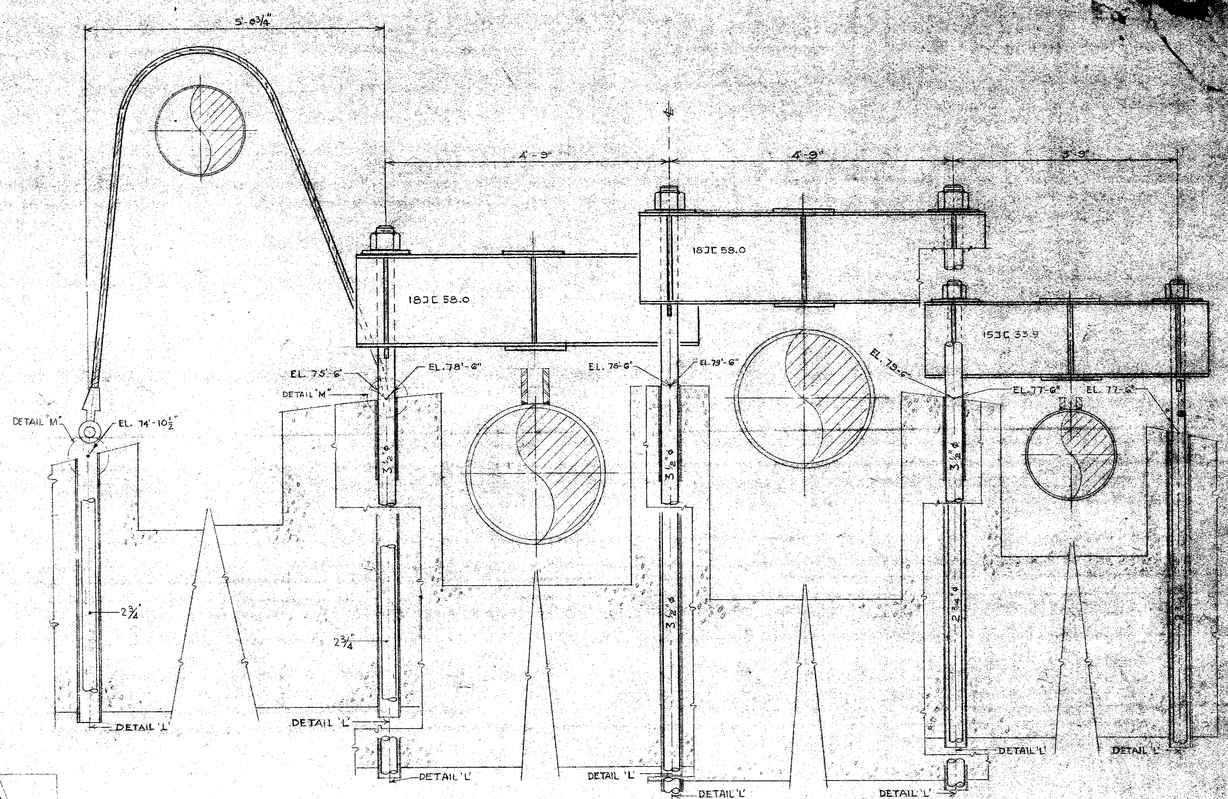
SECTION "1-1"

FOR PLAN SEE 9321-F-2758



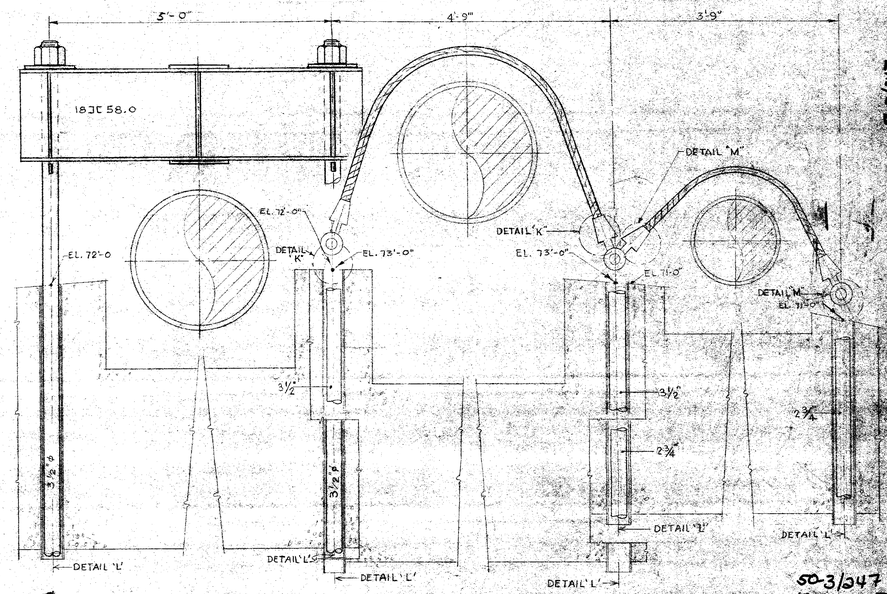
SECTION "2-2"

FOR PLAN SEE 9321-F-2758



SECTION "12-12"

SCALE 1" = 1'-0"



SECTION "13-13"

SCALE 1" = 1'-0"

50-3/347
4r 6-18-79
7906210128

RETURN TO REACTOR DOCKET FILES

WORK THIS DRAWING IN CONJUNCTION WITH DWG. NO. 9321-F-2770

4	9/14/73	FINAL ISSUE ADDED AS BUILT INFO.	RK	WB	ENG
3	11/17/72	REVISED DETAIL LETTERING, ADDED PIPE SUPPORTS ETC.	DHR	WB	
2	7/25/72	REVISED DETAIL LETTERING, ADDED PIPE SUPPORTS ETC.	DHR	WB	
1	7/14/72	RELEASED FOR CONSTRUCTION	DR	WB	
0	5/12/72	FIRST ISSUE FOR APPROVAL	DR	WB	
NO.	DATE	DESCRIPTION	ZONE	CHK'D	APP'D

STATE REG. NO. [illegible]

JOINT ENGINEER'S SEAL AND SIGNATURE

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING

ARRANGEMENT OF PIPE RESTR[illegible]

MAIN STEAM & BOILER FEED-NORTH [illegible]

FOR

CONSOLIDATED EDISON COMP[illegible]

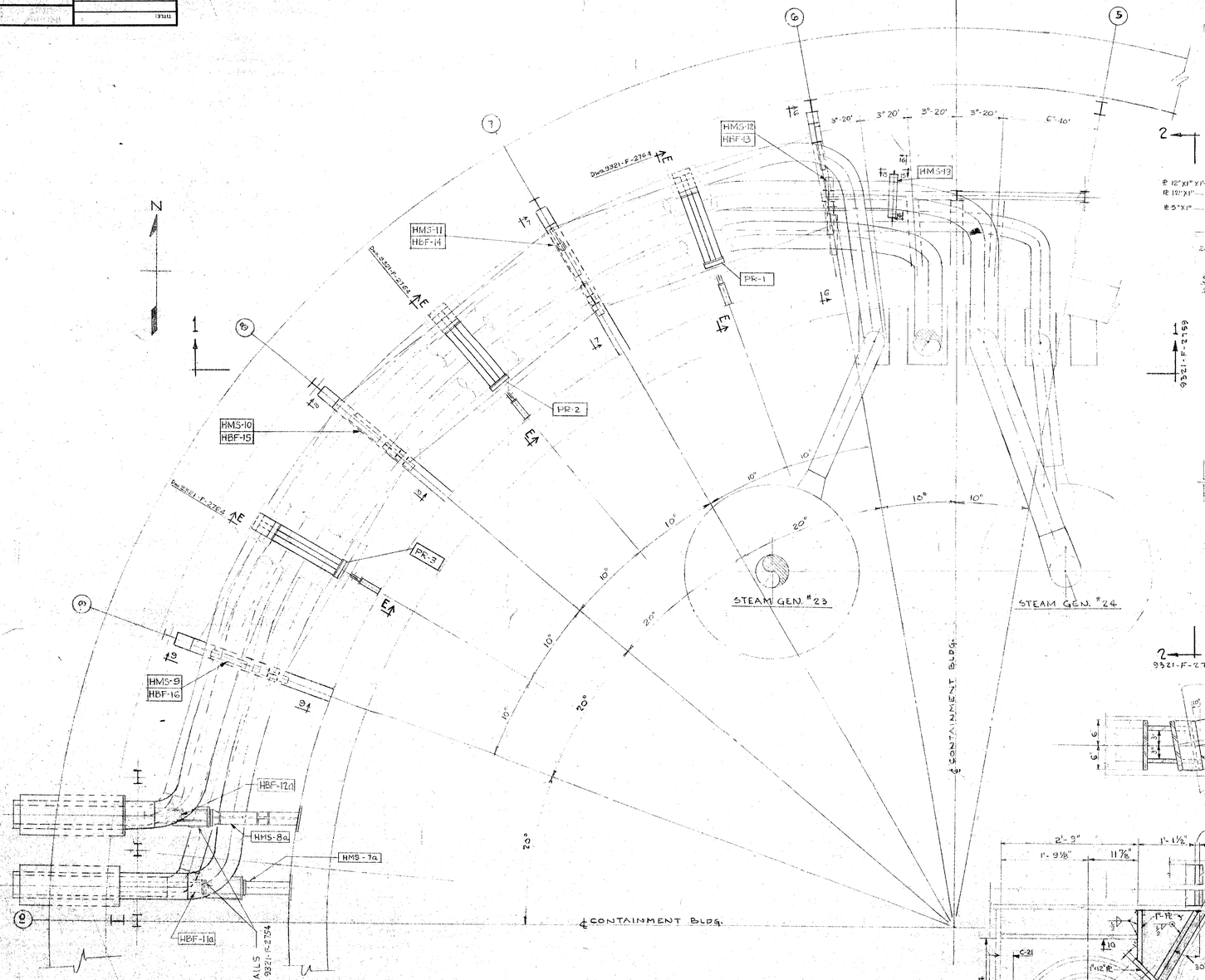
INDIAN POINT GENERATING STATION

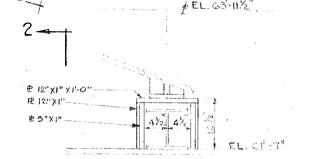
UNIT NO. 2

W.E. A.C. DWG. NO. 9321-F-2759 S

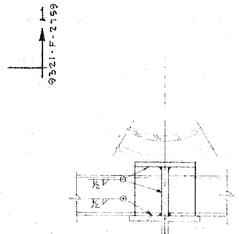
CON. ED. CR. E-[illegible] A200730

INCHES 0 1 2 3 4 5 6 7 8 9 10 11 12

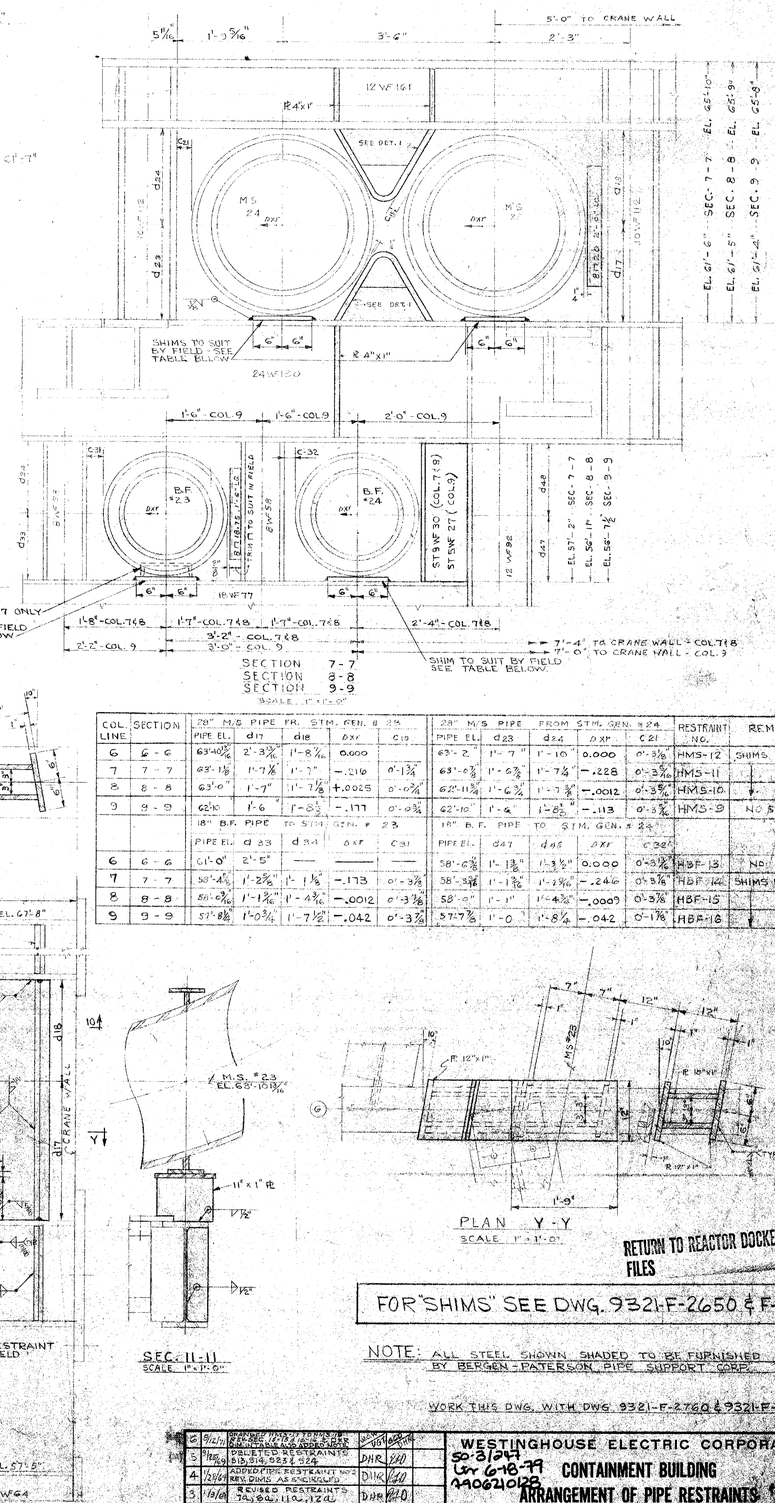




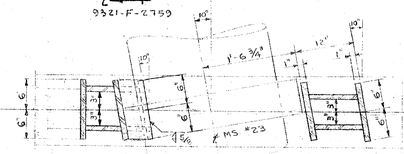
SEC. 15-15
SCALE 1"=1'-0"



SEC. 16-16
SCALE 1"=1'-0"



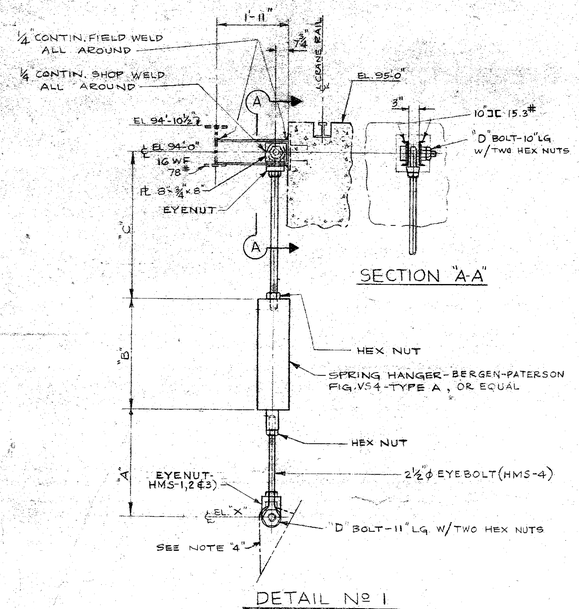
SECTION 7-7
SECTION 8-8
SECTION 9-9
SCALE 1"=1'-0"


SHIM TO SUIT BY FIELD
1'-6¾"
1'-6"
6"
6"

A200778

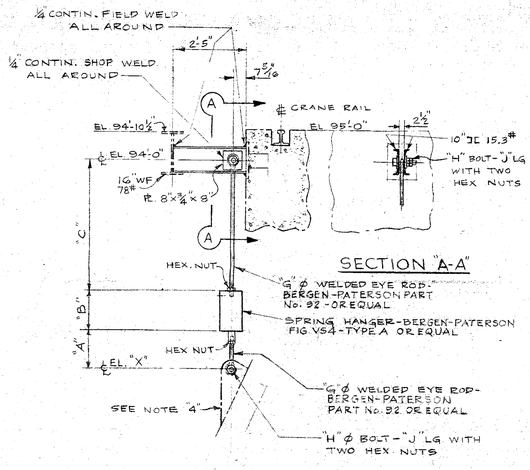
INDIAN POINT UNIT NO. 2

TITLE:



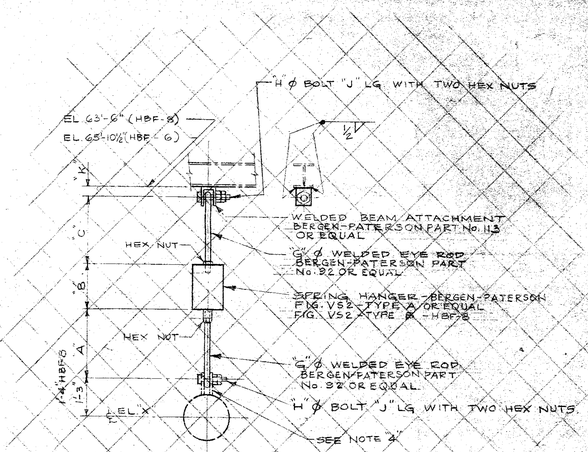
SECTION "A-A"

DETAIL Nº 1
NO SCALE



SECTION "A-A"

DETAIL Nº 2
NO SCALE



DETAIL Nº 3
NO SCALE

SPRING HANGER LIST FOR DETAIL Nº 1

HANGER Nº	SPRING SIZE	LOAD COLD	LOAD HOT	MOVEMENT COLD TO HOT	ELEV. "X"	"A"	"B"	"C"	"D" BOLT DIA.	OFFSET EAST	LOCATION DWG. Nº
HMS 1	21	19,372#	17,500#	0.755 UP	79'-5⅜"	6'-5"	3'-5	4'-10½"	2¾"	5/8	9321-F-2539
HMS 2	18	10,622#	9760#	1.050 UP	84'-2¼"	2'-5½"	2'-6			11/16	9321-F-2539
HMS 3	17	8,095#	8450#	0.885 UP	79'-5⅜"	7'-2"	2'-6			1½	9321-F-2540
HMS 4	21	21,158#	18,850#	1.235 UP	83'-10⅜"	1'-10"	3'-5	4'-10½"	2¾"	1⅝	9321-F-2540

NOTE: DIMENSIONS SHOWN ARE FOR THE COLD POSITION.

SPRING HANGER LIST FOR DETAIL Nº 2

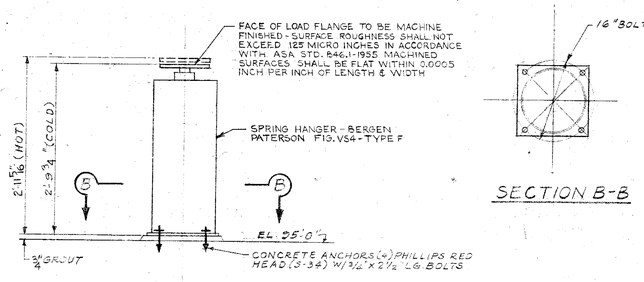
HANGER Nº	SPRING SIZE	LOAD COLD	LOAD HOT	MOVEMENT COLD TO HOT	ELEV. "X"	"A"	"B"	"C"	"G"	"H"	"J"	OFFSET	LOCATION DWG. Nº FOR DETAILS Nº 2 & 3
HBF-1	17	7,495#	6,890#	.803 UP	97'-2⅛"	1'-2"	2'-3	3'-4⅛"	1⅛	1⅝	8	¾ WEST	9321-F-2549
HBF-2	19	13,652#	12,737#	.687 UP	82'-5⅜"	4'-0⅝"	2'-6	5'-0"	2"	2¼	9½	7/16 EAST	9321-F-2549
HBF-3	18	10,382#	9,380#	1.000 UP	86'-5⅜"	11-6⅛	2'-6	5'-5"	1⅜	1⅞	8½	1/16 WEST	9321-F-2550
HBF-4	19	10,870#	10,410#	.459 UP	79'-5⅜"	8'-3½"	2'-6	4'-10"	1½	1⅜	8½	1 1/16 EAST	9321-F-2550

NOTE: DIMENSIONS SHOWN ARE FOR THE COLD POSITION.

SPRING HANGER LIST FOR DETAIL Nº 3

HANGER Nº	SPRING SIZE	LOAD COLD	LOAD HOT	MOVEMENT COLD TO HOT	ELEV. "X"	"A"	"B"	"C"	"G"	"H"	"J"	"K"	OFFSET	LOCATION DWG. Nº FOR DETAILS Nº 2 & 3
HBF-5	18	11,375#	10,720#	.328 UP	58'-5"	SEE BERGEN-PATTERSON DWG. 5G35			1¾"	2"	10"	5"	1¾" SQ.	9321-F-2549
HBF-6	17	8,310#	7,680#	.417 UP	58'-8⅝"	2'-6"	1'-3¾"	2'-3⅛"	1¼	1⅝	8"	4"	2⅝" SQ.	9321-F-2549
HBF-7	18	10,020#	9,150#	.435 UP	58'-8⅝"	SEE BERGEN-PATTERSON DWG. 5G37			1¾"	1⅞	9"	5"	2⅝" SQUARE	9321-F-2550
HBF-8	17	8,350#	7,520#	.536 UP	58'-9"	1'-6"	1'-3¾"	2'-3¼"	1½"	1⅝	8"	4"	2⅝" SQUARE	9321-F-2550

NOTE: DIMENSIONS SHOWN ARE FOR THE COLD POSITION



DETAIL No. 4
NO SCALE

SECTION B-B

SPRING HANGER LIST FOR DETAIL No. 4

HANGER No.	SPRING SIZE	LOAD COLD	LOAD HOT	MOVEMENT COLD TO HOT	OFFSET	LOCATION DWG. No.
HMS-17	19	15,950#	14,560#	1.574" UP	2.25" S	9321-F-2543
HMS-18	19	16,325#	14,370#	1.468" UP	2.25" N	9321-F-2543

NOTES

1- ALL SPRING HANGERS, ETC SHALL BE IN ACCORDANCE WITH PIPE HANGER SPEC 9321-01-248-27

2- ALL PIPE HANGER SUPPORTS TO BE POSITIONED SO THAT HANGERS ARE VERTICAL IN THE HOT POSITION

3- OFFSETS INDICATED IN LISTS ARE THE HOT POSITIONS OF HANGERS

4- PIPE LUGS FURNISHED BY OTHERS

50-3/247
Ltr 6-18-79
7906210128

RETURN TO REACTOR DOCKET FILES

NO.	DATE	DESCRIPTION	ENGR	SUP ENG
5	10/6/70	FINAL ISSUE	[illegible]	[illegible]
4	7/1/70	REVISED SPRING HANGERS WEIGHTS REVISED LOADS & DIRECTIONS TO CHB	DHR	WPT
3	11/26/69	REVISED HANGER LIST & DIMENSIONS ON DET. 4	DHR	RPD
2	9/30/69	REVISED DET. 1, 2 & 3 HANGER & LUG LIST, REVISED DET. 4 & 5 HANGER LIST & HANGER NOTE	DHR	RPD
1	2/21/69	CORRECTED QUAN. & SIZE OF HBF-5 ON DET. 2 & 3 FOR "C" & "D" REVISED DIM. "A" & "C" FOR HBF-8	GM	WCG
NO.	10/1/69	FIRST ISSUE FOR CONSTRUCTION	DHR	WPT

ENGINEER W. H. Rhoads Jr. (C. H. RHOADS JR.)
STATE REG. N.Y. No. 42886

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
PIPE SUPPORTS
MAIN STEAM & BOILER FEED

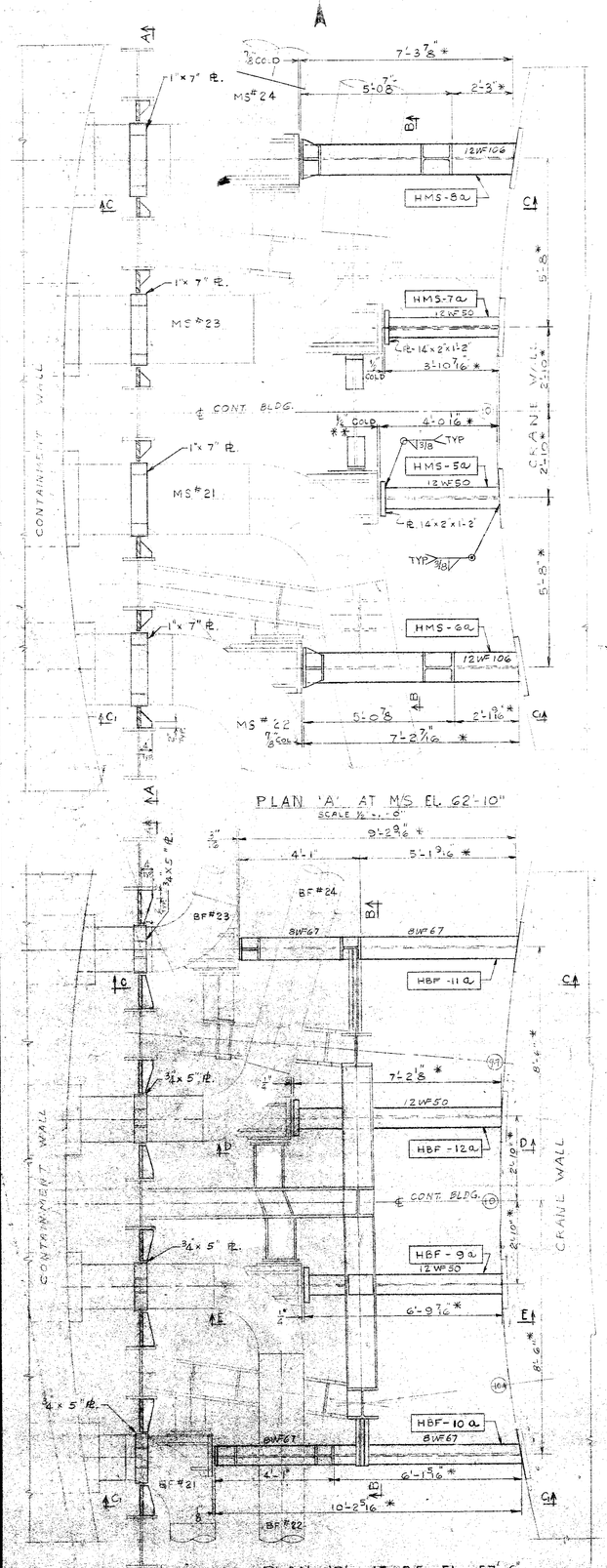
FOR

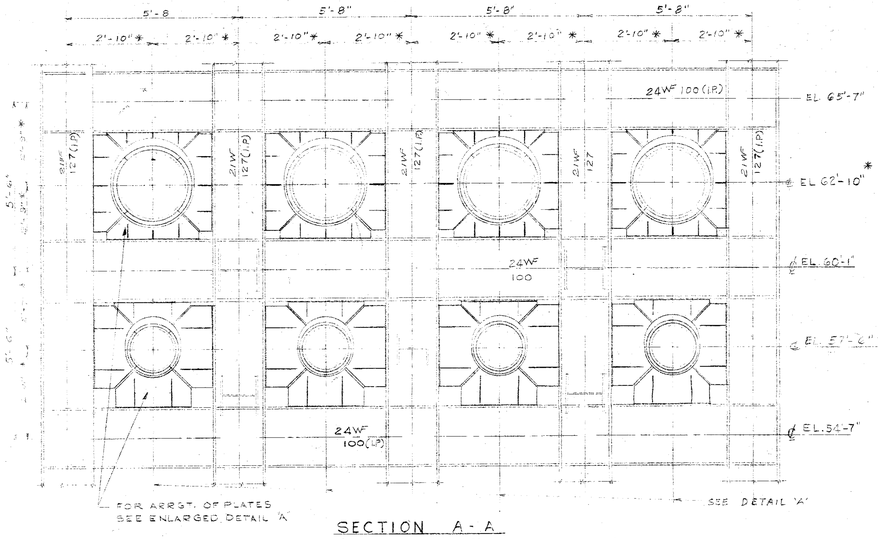
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

U.E. & C. DWG. NO. 9321-F-2757-5

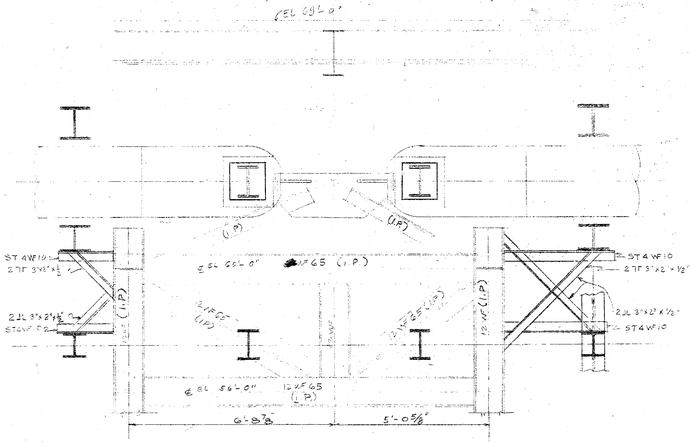
CON. ED. CO. DWG. NO. A200778

A200786
INDIAN POINT UNIT NO. 2

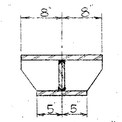




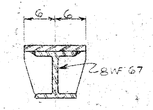
SECTION A - A
SCALE 1/2" = 1'-0"



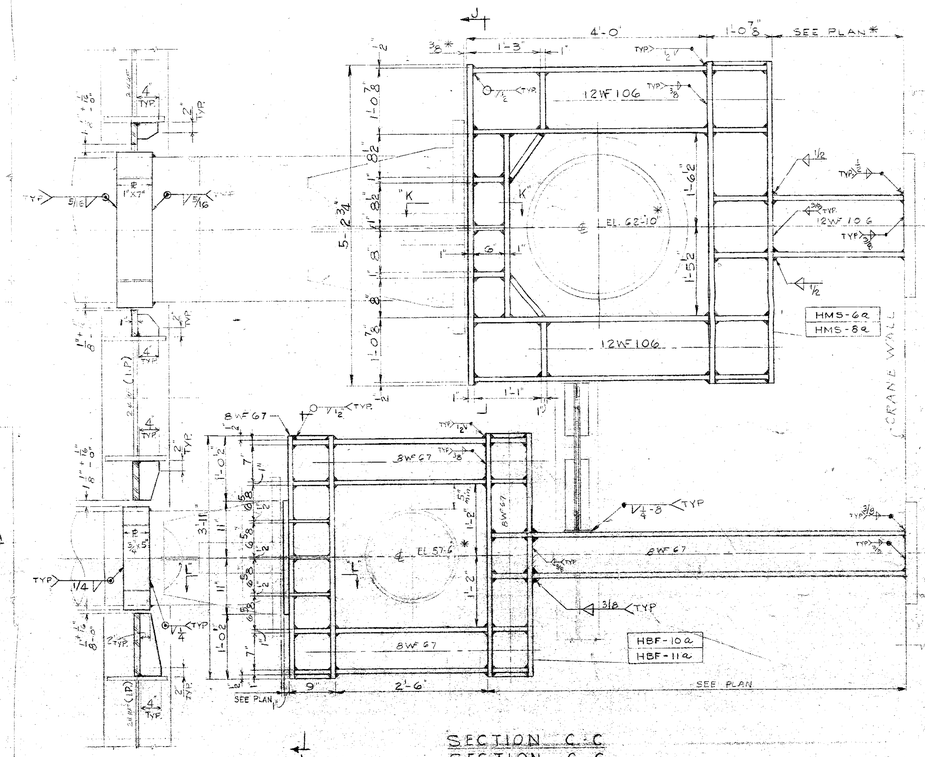
SECTION B - B
SCALE 1/2" = 1'-0"



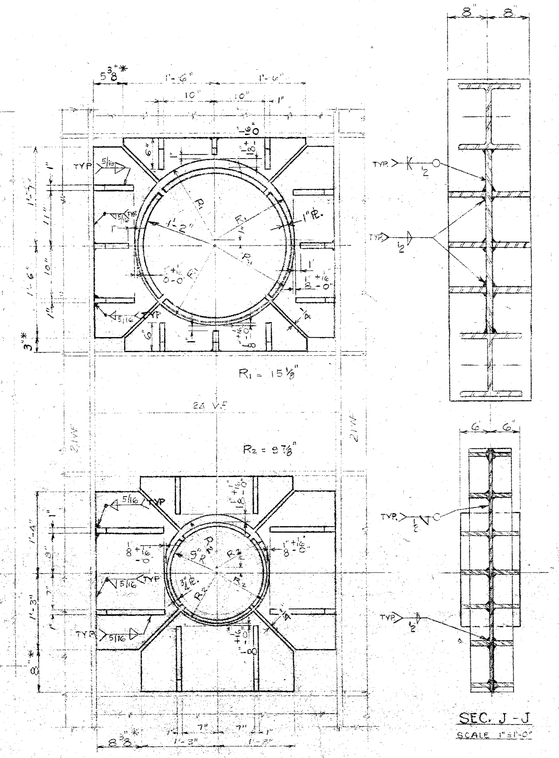
SECTION K-K



SECTION "L-L"

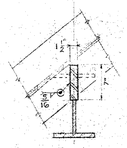


SECTION C-C
SECTION C-C
SCALE 1" = 1'-0"

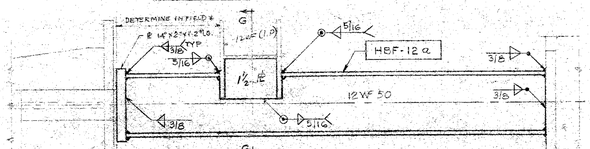


DETAIL 'A'
SCALE 1" = 1'-0"

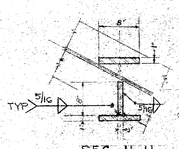
SEC. J - J
SCALE 1" = 1'-0"



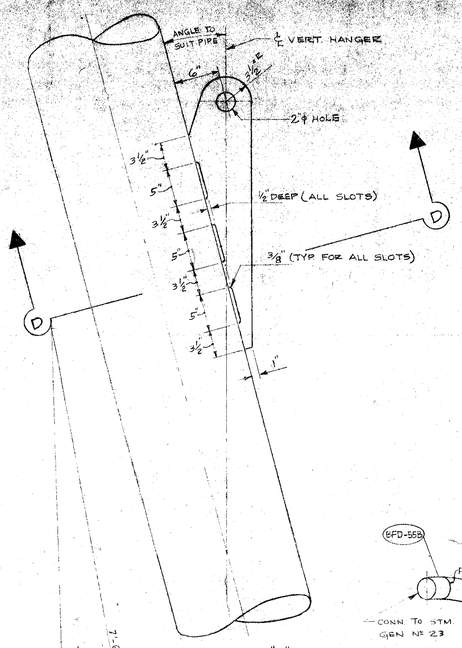
SEC. G-G
SCALE 1" = 1'-0"



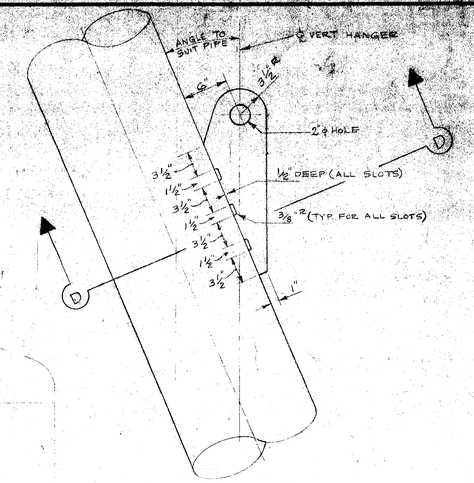
SECTION D-D
SCALE 1" = 1'-0"


8"
1'-1"
1'-0"
1'-2"
1'-2"
1'-0"
1'-0"
1'-0

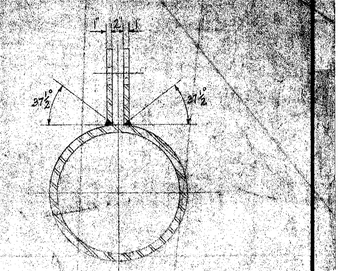
4200649
S. ON UNIT
INDIAN POINT
TITLE



DETAIL "2"
(LUG FOR SPRING HANGER # HBF-4)
SCALE: 1½"=1'-0"

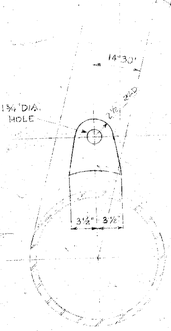


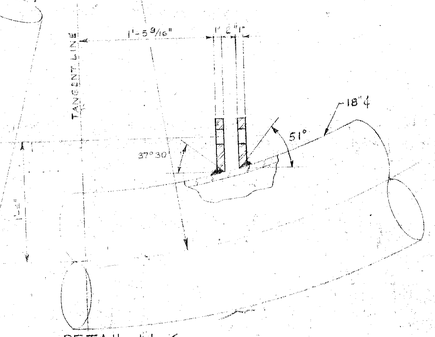
DETAIL "1"
(LUG FOR SPRING HANGER # HBF-3)
SCALE: 1½"=1'-0"



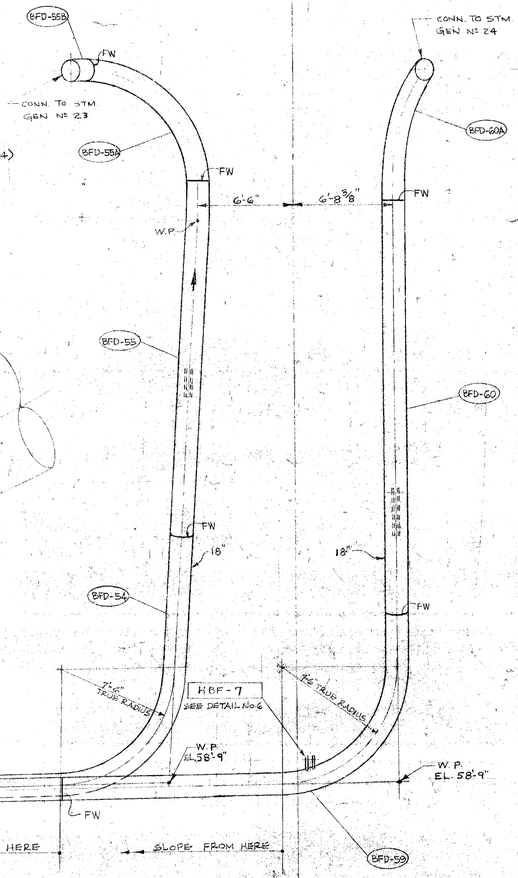
TYP. SECTION "D-D"

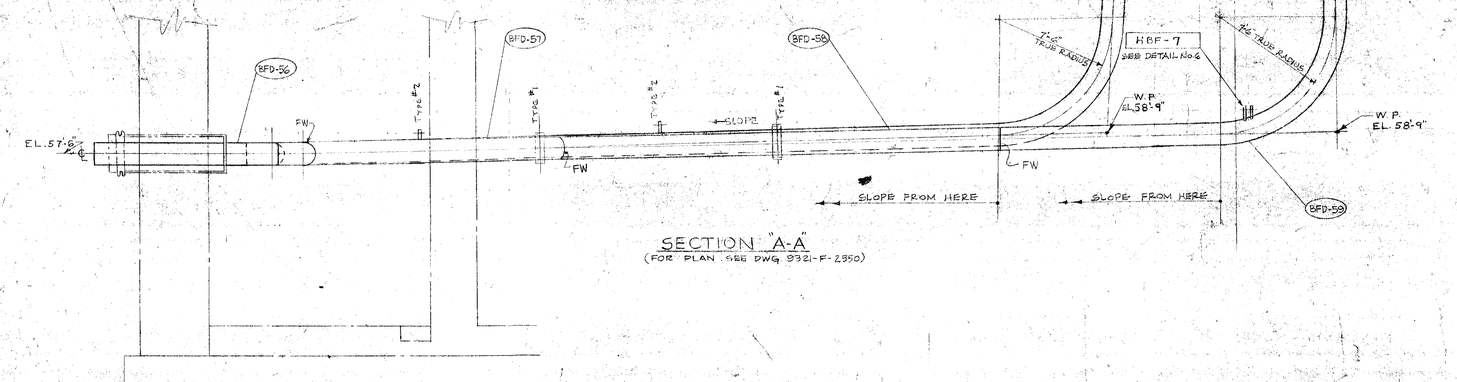
DETAIL No.5
LUGS FOR SPRING HANGER "HBF7"



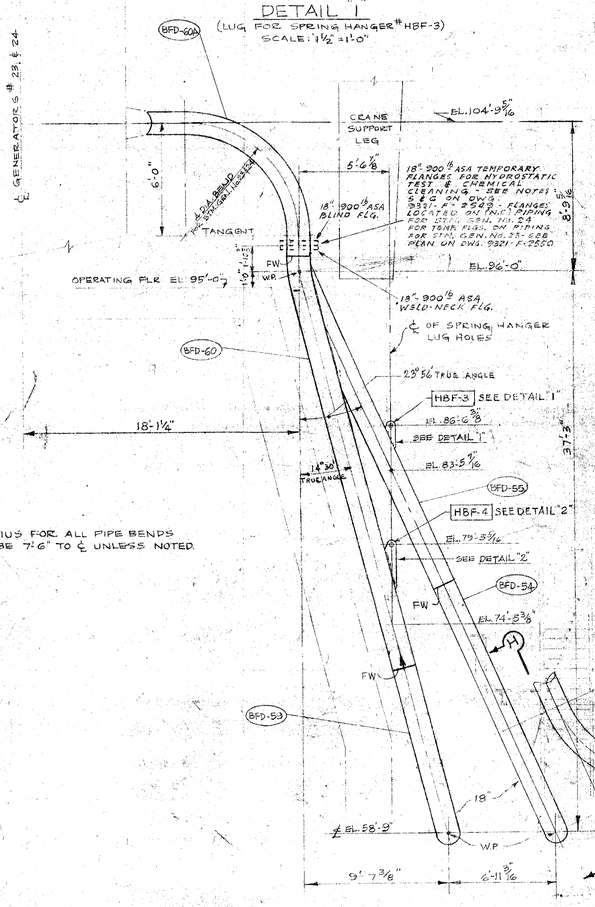


DETAIL No.6
LUGS FOR SPRING HANGER "HBF8"
SCALE: 1½"=1'-0"





SECTION "A-A"
(FOR PLAN SEE DWG 9321-F-2550)



SECTION "B-B"
(FOR PLAN SEE DWG 9321-F-2550)

NOTE: RADIUS FOR ALL PIPE BENDS TO BE 7'-6" TO ℄ UNLESS NOTED.

SCALE 1"=1'-0" (UNLESS NOTED)

INCHES 0 1 2 3 4 5 6

REFERENCE DRAWINGS

9321-F-2549 CONTAINMENT BLDG. B.F. PIPING, PLAN & SECT.
GEN'S Nº 21 & 22.
FOR OTHER REFERENCE DWGS. & GEN. NOTES, SEE DWG. 9321-F-2549.

NO.	DATE	DESCRIPTION	ENGR.	SUP. ENGR.	CO.
10	10/10/73	FINAL ISSUE	DHK	WPT	
9	7/11/73	REMOVED SR 14, 15, 20, 21 HBF-7 & 8	DHK	WPT	
8	4/11/73	ADDED SEISMIC Nº 4	DHK	WPT	
7	1/24/73	SECT B-B, 18-1¼ WAS 18-5"	DHK	WPT	
6	5/16/72	CONNECT TO P.V. Nº 6 DELETED SECT. Nº 5 & ANGLE LUGS ADDED PIPE SUPPORTS	DHK	WPT	
5	5/4/72	ADDED PIPE PIECE NOS. 2 & 4 & D WELDS	DHK	WPT	
4	3/1/72	DELETED SADDLES, ADDED SUPPORTS, NOTE 12 ADDED "FOUNDATION FLANGES"	DHK	WPT	
3	12/17/71	ADDED HOLE AT 5'-0" FROM ℄ ADDED SLOPE NOTE & REVISED SLOPES AS PER FIN. ENGR.	DHK	WPT	
2	7/16/71	REVISED POWER TRANS. RISER (A) REVISED 12" PIPE TO 18" PIPE CHANGED 12" VALVE TO 18" VALVE ADDED NOTE 11 REVISED DETAILS	DHK	WPT	
1	4/16/71	ADDED 18" P.V. Nº 6 & 12" VALVE ADDED NOTE 10	DHK	WPT	WPT
REV. NO.	DATE	FIRST ISSUE - DETAILS LAYOUT	ENGR.	SUP. ENGR.	CO.

ENGINEER [signature] DATE 4/16/71
STATE REG. NO. [signature] DATE 4/16/71

UNITED ENGINEERS & CONSTRUCTORS INC.

50-3|247
LR 6-18-79
RETURN TO REACTOR DOCKET FILES 7906210128

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
BOILER FEED PIPING
SECTIONS & DETAILS - STEAM GENERATORS NO. 23 & 24

FOR

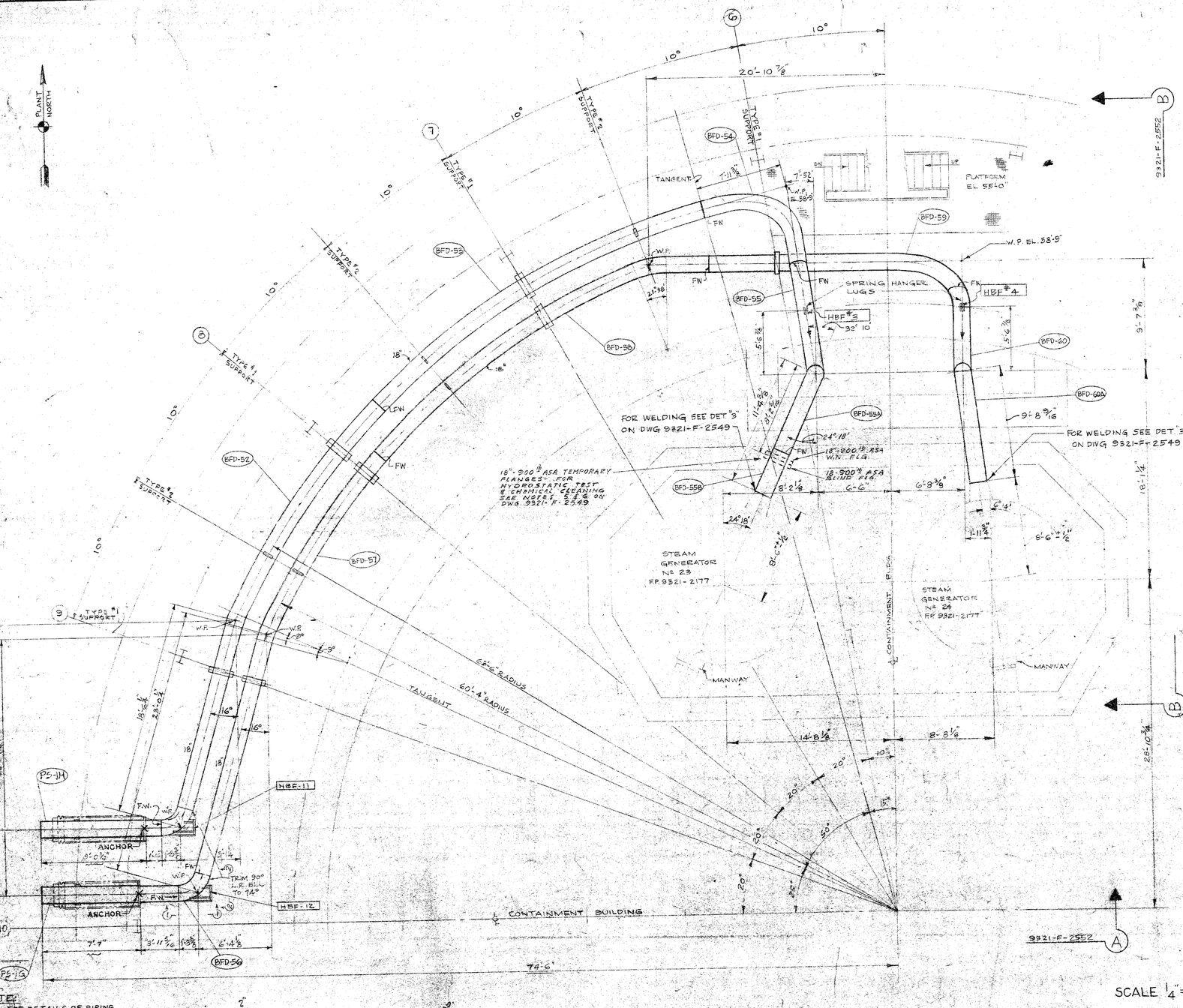
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

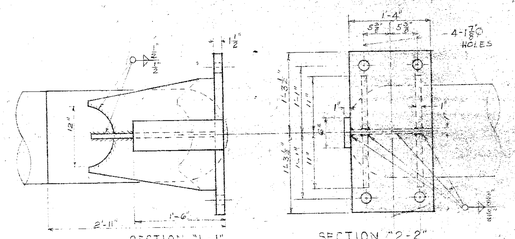
U. E. & C. DWG. NO. 9321-F-2552-10
CON. ED. CO. DWG. NO. 4200649

A200647

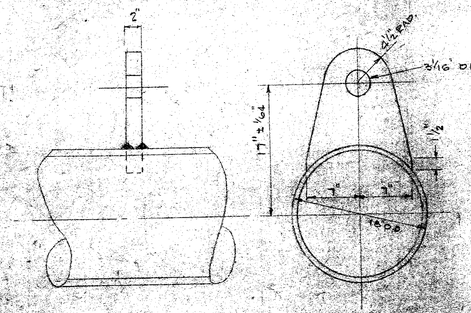
8010190 bt. 8-9 tac/3.05

50-3/247 6-18-79

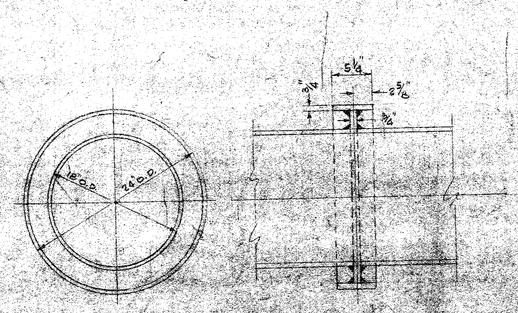




NOTE:
FOR DETAILS OF PIPING PENETRATION SLEEVES, ANCHORS & GUIDES SEE DWG. 9321-F-2712.



ENLARGED DETAIL OF TYPE "2" SUPPORT
SCALE 1" = 1'-0"



ENLARGED DETAIL OF TYPE "1" SUPPORT
SCALE 1" = 1'-0"

REFERENCE DWGS.

9321-F-2549 CONTAINMENT BLDG. BOILER FEED PIPING, PLAN - STM. GENS Nº 23 & 24.
FOR OTHER REFERENCE DRAWINGS & GENERAL NOTES SEE DWG. 9321-F-2549

SCALE 1/4"=1'-0" (UNLESS NOTED OTHERWISE)

8	12/3/79	REVISED PIECE NO'S & F.W.	DHP	WR1	
7	11/16/79	REMOVED LUGS FOR HANGER REF'S REMOVED DISCH.	JM	WR1	
6	10/22/79	ORIENTED SNUBBER, HBE'S ADDED PIECE NO'S FIELD WELD	DHP	WR1	
5	7/19/79	PIPE SUPPORT MARK NOS. & SUPPORT TYPE ADDED	DHP	WR1	
4	7/2/79	REVISED SNUBBER & PIPE SUPPORTS	JM	WR1	
3	6/26/79	REVISED SNUBBER & PIPE SUPPORTS	DHP	WR1	
2	5/24/79	REVISED PIECE LENGTHS, PIPE SUPPORTS & ADDED SNUBBERS	DHP	WR1	
1	5/4/79	ADDED SNUBBERS & REVISED PIPING	DHP	WR1	
0	4/6/79	ISSUED FOR CONSTRUCTION	DHP	WR1	
NO.	DATE	DESCRIPTION	DRN	CHK	APP'D

12	7/3/79	FINAL ISSUE	DHP	WR1	
11	7/3/79	Removed Seal Flow SR-21	DHP	WR1	
10	6/4/79	NOTED SEISMIC NO'S	DHP	WR1	
9	5/4/79	ADDED PIPE HANGER & TYPES SUPPORT	DHP	WR1	
8	4/6/79	DELETED	DHP	WR1	
NO.	DATE	DESCRIPTION	DRN	CHK	APP'D

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING BOILER FEED PIPING PLAN - STEAM GENERATORS NO. 23 & 24

FOR

CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

W & A DWG NO.	CONTRACT DWG NO.
9321-F-2550 12	A200647

50-3/247
Un 6-18-79
7902210128

RETURN TO REACTOR DOCKET FILES

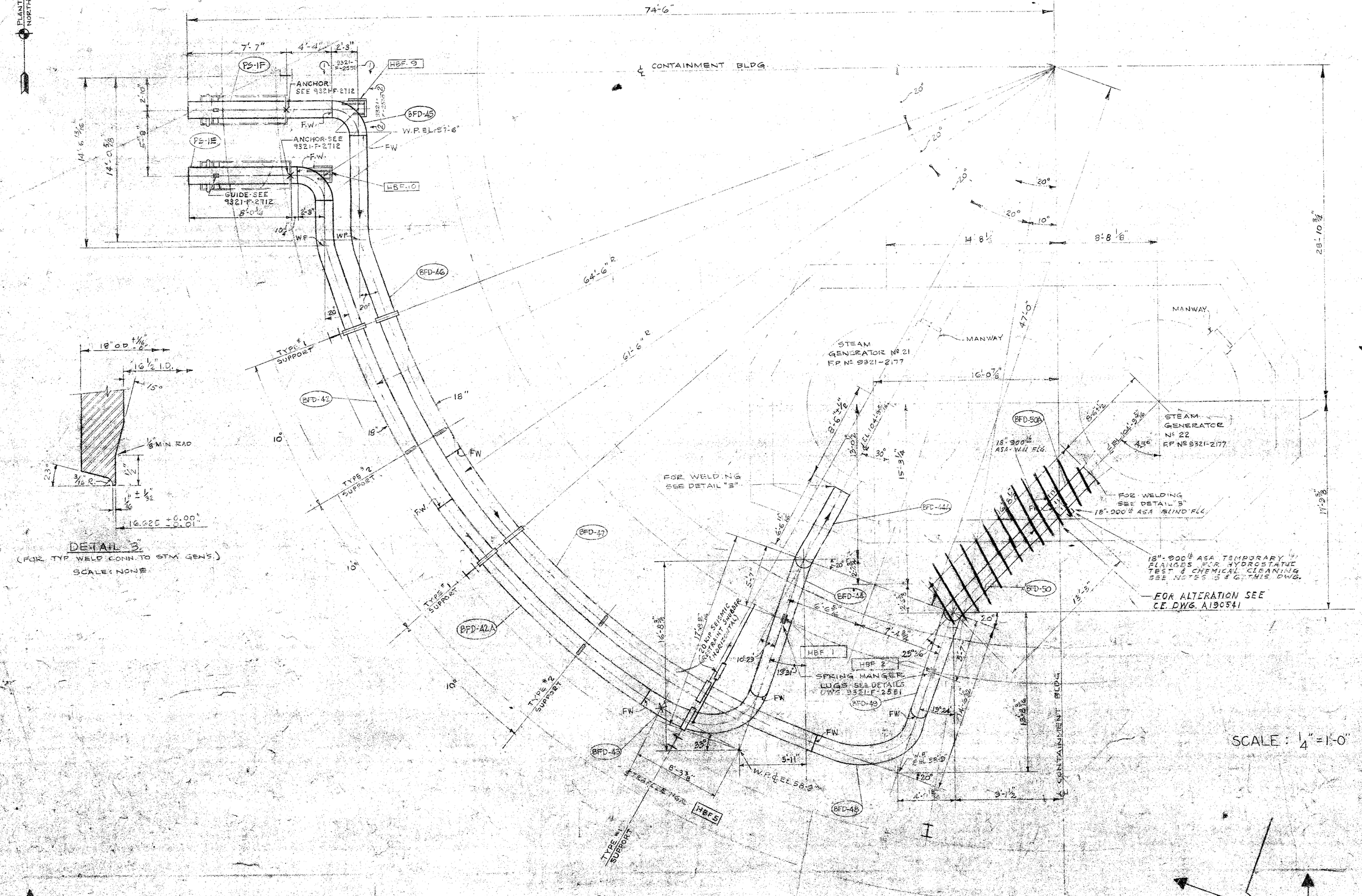
7902210128
6-18-79
50-3/247

9750027

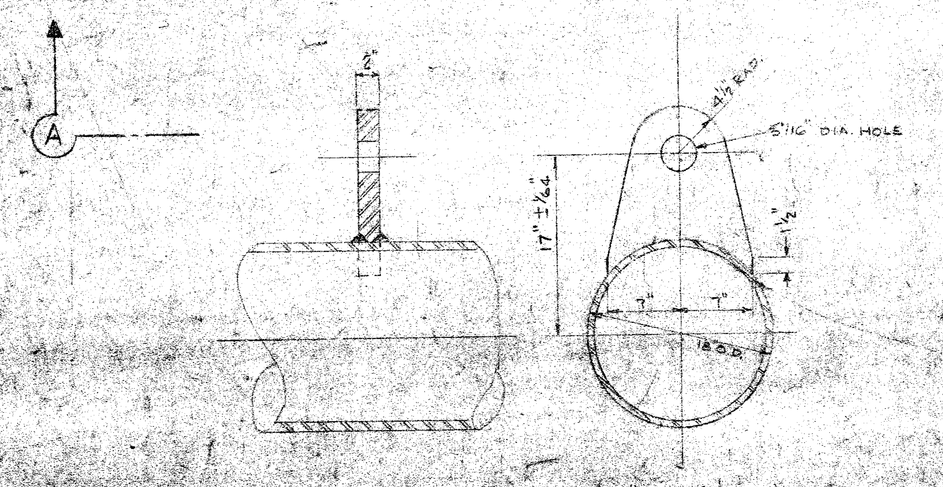
503/247
Ltr 6-18-79
9906210128

PLANT NORTH

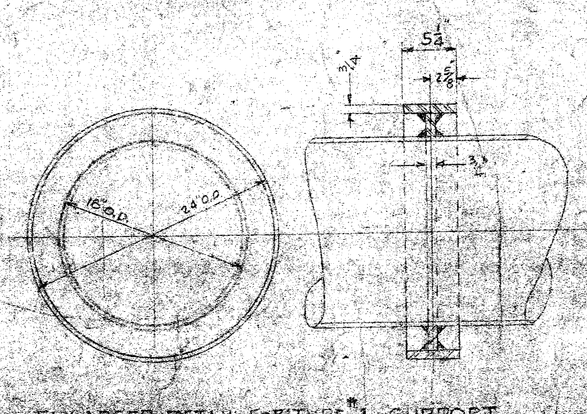
DETAIL 3
(FOR TYP. WELD CONN. TO STM. GENS.)
SCALE: NONE



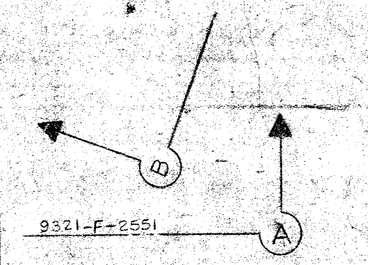
SCALE: 1/4" = 1'-0"



ENLARGED DETAIL FOR TYPE "2" SUPPORT
SCALE: 1 1/2" = 1'-0"



ENLARGED DETAIL FOR TYPE "1" SUPPORT
SCALE: 1 1/2" = 1'-0"



GENERAL NOTES

1- STRESS RELIEVE ALL WELDS PER ASA B31.1 POWER PIPING CODE (LATEST EDITION).
2- RADIUS FOR ALL PIPE BENDS TO BE 7'-6" TO ℄ UNLESS NOTED.
3- ELBOWS LONG RADIUS UNLESS NOTED.
4- ALL PIPING TO BE IN ACCORDANCE WITH U.E.&C. SPEC. 9321-01-248-18.
5- FLANGES THAT ARE INDICATED BY A DOTTED LINE SHALL BE SHOP INSTALLED. THEY WILL REMAIN IN PLACE FOR HYDROSTATIC TESTING & CHEMICAL CLEANING. AFTER CHEMICAL CLEANING IS COMPLETED THEY WILL BE REMOVED & THE PIPING WILL BE INSTALLED AS SHOWN ON THIS DRAWINGS.
6- FOR TEMPORARY CHEMICAL CLEANING & FLUSHING PIPING SEE U.E.&C. DRAWING No. 9321-F-2214

NOT FOR FABRICATION OR INSTALLATION

REFERENCE DWGS.

9321-F-2757	CONTAINMENT BLDG. PIPE SUPPORTS
9321-F-2747	CONTAINMENT BLDG. PIPE PENETRATIONS SCHEDULE
9321-F-2042	PIPE, VALVE & FITTING SCHEDULE
9321-F-2021	BOILER FEED PIPING, PLAN - OUTSIDE CONTAINMENT BLDG.
9321-F-2062	BOILER FEED PIPING, ELEVS. OUTSIDE CONTAINMENT BLDG.
9321-F-2550	CONTAINMENT BLDG. BOILER FEED PIPING, PLAN - STM. GEN'S.
9321-F-2551	CONTAINMENT BLDG. BOILER FEED PIPING, SECTS. & DETS. - STM. GEN'S.
9321-F-2552	CONTAINMENT BLDG. BOILER FEED PIPING, SECTS. & DETS. - STM. GEN'S.
9321-F-2019	FLOW DIAGRAM - BOILER FEED PIPING
9321-F-2712	CONTAINMENT BLDG. PIPING PENETRATIONS - DETAILS OF HOT LINES
9321-F-2758	CONTAINMENT BLDG. - ARRGT OF PIPE RESTRAINTS - M.S. & B.F. - NORTH HALF - SHEET 1
9321-F-2759	2 - SOUTH HALF - SHEET 1
9321-F-2760	3 - NORTH HALF - SHEET 2
9321-F-2761	4 - SOUTH HALF - SHEET 2
9321-F-2766	CONTAINMENT BLDG. - M.S. & B.F. PIPE RESTRAINTS DETAILS
9321-F-2766	
9321-F-2767	
9321-F-2770	

No.	Date	Description	Init.
8	5/24	REVISED PIECE Nº 5 & F.W.	DHK
7	5/22	REMOVED HANGER LUGS FOR HBF-1 & RELOCATE HBF-1 FOR CLEARANCE. HANGER LUGS SEE DWG. 9321-F-2551	DHK
6	5/14	ADDED PIPE PIECE & F.W.	DHK
5	5/3	ADDED BOILER FEED LINES & F.W.	DHK
4	4/27	ADDED PIPE PIECE & F.W.	DHK
3	4/26	ADDED PIPE PIECE & F.W.	DHK
2	4/25	ADDED 2 PIPE PIECES & F.W.	DHK
1	4/24	ADDED 2 PIPE PIECES & F.W.	DHK
0	4/23	ISSUED FOR CONSTRUCTION	DHK

THIS REVISION CONTAINS CLASS "A" ITEMS PERFORMED & INCORPORATED MODIFICATIONS TO BE COMPLETED ACCORDING TO TWUL-700653 MODIFICATION PROCEDURE DEVI-PS-22 FOR RECORD ONLY

ISSUED FOR CONSTRUCTION

RETURN TO REACTOR DOCKET FILES

WESTINGHOUSE ELECTRIC CORPORATION

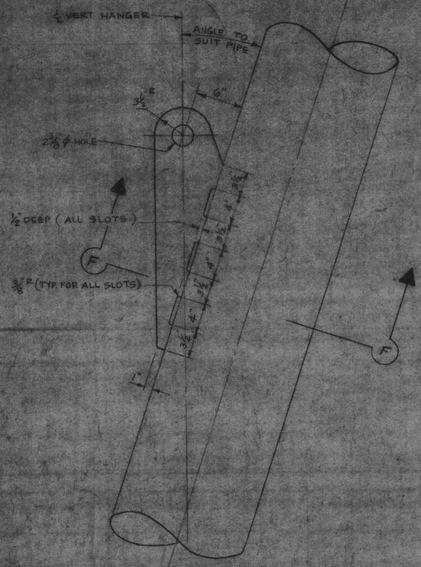
CONTAINMENT BUILDING
BOILER FEED PIPING
PLAN - STEAM GENERATORS NO. 21 & 22

503/247
Ltr 6-18-79
9906210128

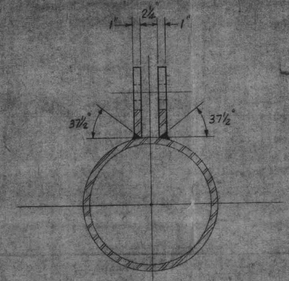
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

9321-F-2549-19 | 0

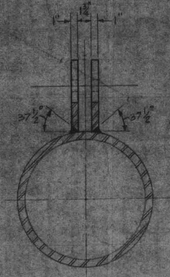
4200648



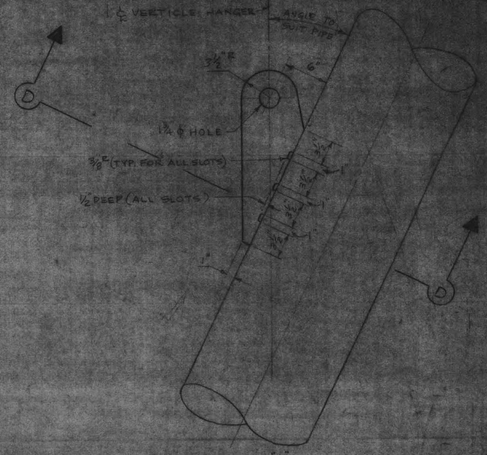
DETAIL "2"
(LUGS FOR SPRING HANGER* HBF-2)
SCALE: 1½" = 1'-0"



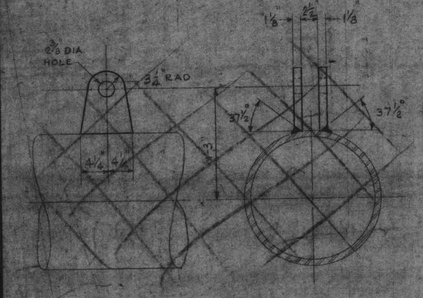
SECTION F-F



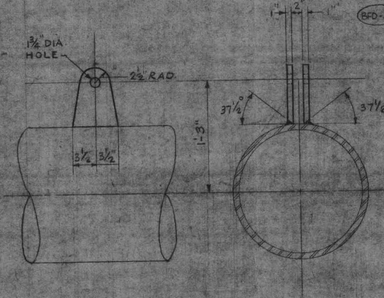
SECTION "D-D"



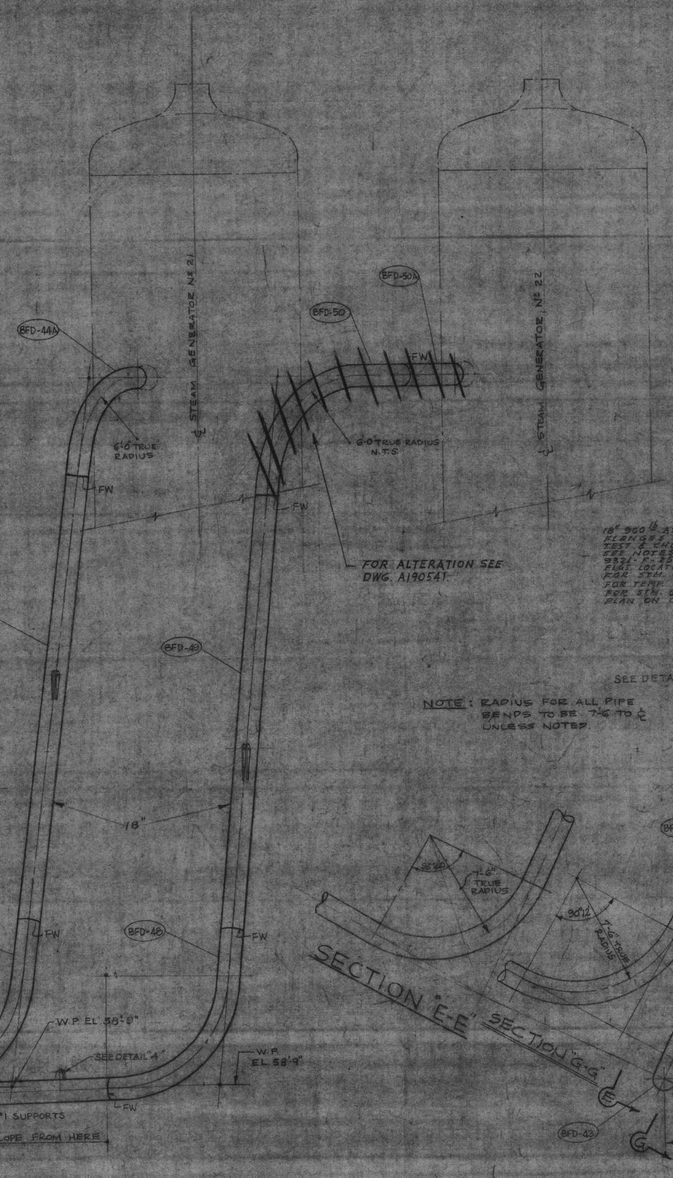
DETAIL "1"
(LUG FOR SPRING HANGER* HBF-1)
SCALE: 1½" = 1'-0"



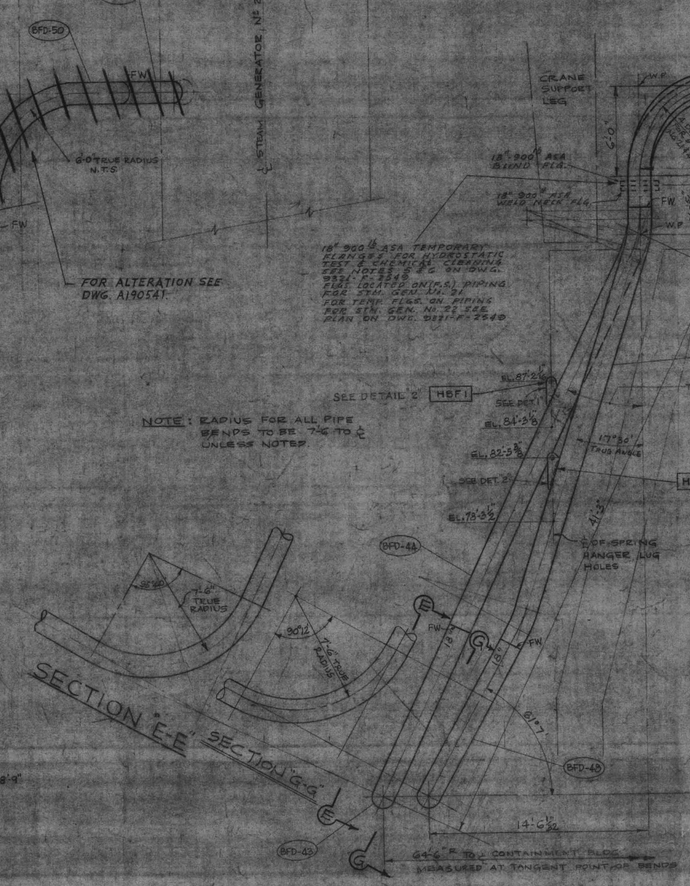
DETAIL "3"
LUGS FOR SPRING HANGER* HBF 5"



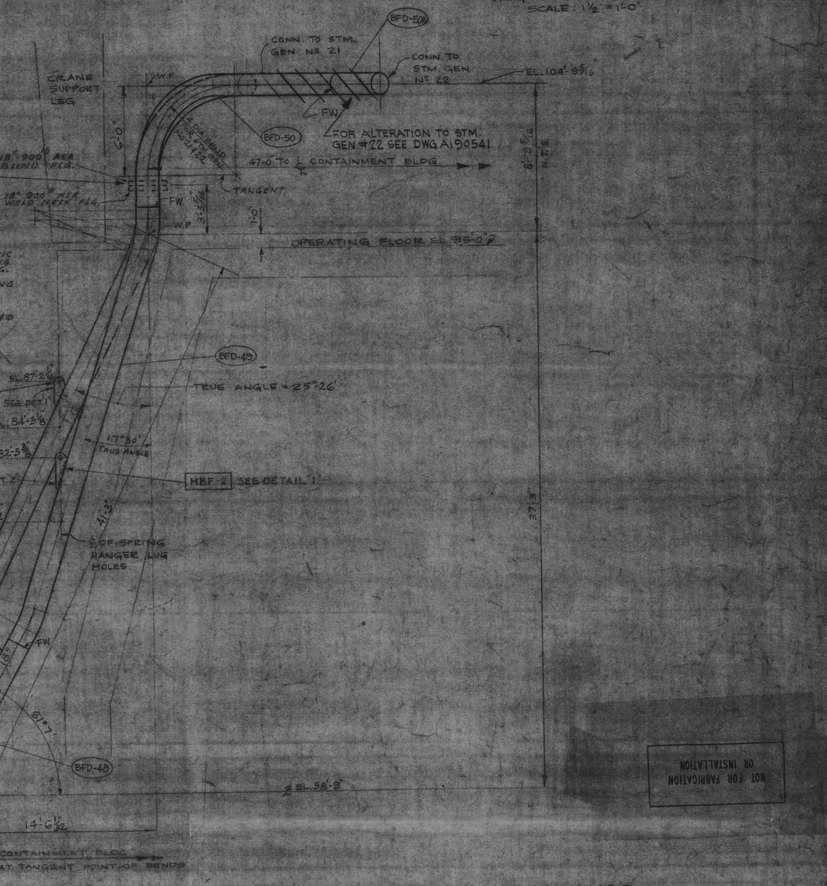
DETAIL "4"
LUGS FOR SPRING HANGER* HBF 6"



SECTION "A-A"
(FOR PLAN SEE DWG 9321-F-2549)



SECTION "B-B"
(FOR PLAN SEE DWG. 9321-F-2549)



NOTE: THIS DRAWING IS NOT TO BE USED FOR FABRICATION OR INSTALLATION

REFERENCE DRAWINGS

9321-F-2549 — CONTAINMENT BLDG., B.F.PIPING, PLAN-STM. GENS. # 21 & # 22
FOR OTHER REFERENCE DWGS & GENERAL NOTES, SEE DWG. 9321-F-2549

NO.	DATE	DESCRIPTION	BY	CHK'D	APP'D
10	7/31/74	FINAL ISSUE	M	[illegible]	[illegible]
9	7/31/74	REMOVED DR 4, 5, 9, 10, HBF5 & 6	[illegible]	[illegible]	[illegible]
8	7/24/74	#17259 SEISMIC No 4	[illegible]	[illegible]	[illegible]
7	[illegible]	ADDED TYPE "1 & 2 SUPPORTS	DHR	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	ADDED TYPE "1 & 2 SUPPORTS	DHR	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	ADDED DR 21822	DHR	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	DHR	[illegible]	[illegible]
0	DATE	DESCRIPTION	ENGR	SUPERVISOR	

ENGINEER
STRESS REP. NO.
UNITED ENGINEERS & CONSTRUCTORS INC.

THIS REVISION CONTAINS CLASS A ITEMS PER CH-2451 DATED 7/8/74. THIS WORK TO BE COMPLETED ACCORDING TO DNC-RCDT MODIFICATION PROCEDURE SEMMPS-22. FOR RECORD ONLY.
PA 4000

SCALE: ¼" = 1'-0" (UNLESS NOTED)

50-3/247
Ltr 6-18-79 7906210128
RETURN TO REGULATORY DOCKET FILES

"CLASS 1" INFORMATION ONLY

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
BOILER FEED PIPING
SECTIONS & DETAILS - STEAM GENERATORS NO. 21 & 22

FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

U.E. & C. DWG. NO. 9321-F-2551 11
SARGENT & LUNDY DWG. NO. A2-2510

50-3/247 Ltr 6-18-79 7906210128