Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690 - 0767

September 21, 1988

Mr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC. 20555

ATTN: Document Control Desk

Subject: Byron Station Units 1 and 2
Braidwood Station Units 1 and 2
Containment Leak Chase Channels
NRC Docket Nos. 50-454/455 and 50-456/457

References (a): NRC Inspection Report Nos. 50-454/86035; 50-455/86022 dated October 2, 1986 (Byron Station)

(b): NRC Inspection Report No. 50-456/86023; dated February 13, 1986 (Braidwood Station)

(c): April 29, 1987 S.C. Hunsader letter to T.E. Murley

(d): February 2, 1988 S.C. Hunsader letter to T.E. Murley

Dear Sir:

Reference (a) provided the results of the NRC Region III inspection of containment integrated leak rate testing (CILRT) performed at Byron Station Units 1 and 2. Reference (b) provided the results of the same kind of inspection at Braidwood Unit 1.

Open Items 50-454/86035-02; 50-455/86022-03 and 456/86023-01 required Commonwealth Edison Company to submit to NRR the justification for performing Type A tests with the leak chase channel plugs installed. Reference (c) provided that justification for Braidwood Units 1 and 2. Reference (d) applied that justification to Byron Station Units 1 and 2.

On September 16, 1988, the NRC staff provided comments via a teleconference in regard to reference (d). At the conclusions of the teleconference additional information was determined to be required by the NRC

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staff to facilitate their review. The purpose of this letter is to provide that information. Specifically you will find the following:

(1) Attachment A provides the S&L and CBI drawings that show the location of the leak chase channels. Byron Unit 1 has the most channel installed that covers approximately 40% of the containment liner seam welds. Of this 40%, approximately 20% is under concrete, meaning that about 20% of the channel sees the containment air environment. The amount of channel installed per unit decreases, accordingly, for Byron Unit 2, Braidwood Unit 1 and Braidwood Unit 2. For Braidwood Unit 2 approximately 20% of the containment liner seam welds are covered by the leak chase channel and all of these are under concrete.

(2) Attachment B provides an example of the CBI welders who installed the leak chase channel to the containment liner. All CBI welders who worked on the containment liner were qualified in accordance with ASME Section IX for overhead, horizontal and vertical position butt welds. As indicated on the qualification record, qualification on butt welds also qualified the welder for fillet welds. such as those used to weld the channel to the liner.

(3) Attachment C provides an example of the solution film visual examination reports that document the acceptance of the channel fillet welds.

(4) Attachment D provides the analysis that demonstrates that the channels will maintain their integrity when subjected to the loading conditions of a postulated design basis accident.

Concerns about degradation of the containment liner welds have been addressed by the performance of the CILRTs which have been witnessed by NRC Region III personnel. No degradation has been identified during these tests and to the best of our knowledge, the CILRTs at Byron and Braidwood have been performed acceptably to the NRC staff's satisfaction.

Commonwealth Edison believes this information addresses the concerns and questions discussed during the September 16, 1988 teleconference and supports the information presented in reference (d). This is being provided for NRC review and acceptance in conjunction with your review of reference (d). Please address any questions you may have concerning this matter to this office.

Very truly yours,

S. C. Hunsader

S. C. Hunsader
Nuclear Licensing Administrator

Att.
cc: L. N. Olshan - NRR
S. Sands - NRR
NRC Resident Inspector - Braidwood
NRC Resident Inspector - Byron
Regional Administrator - RIII

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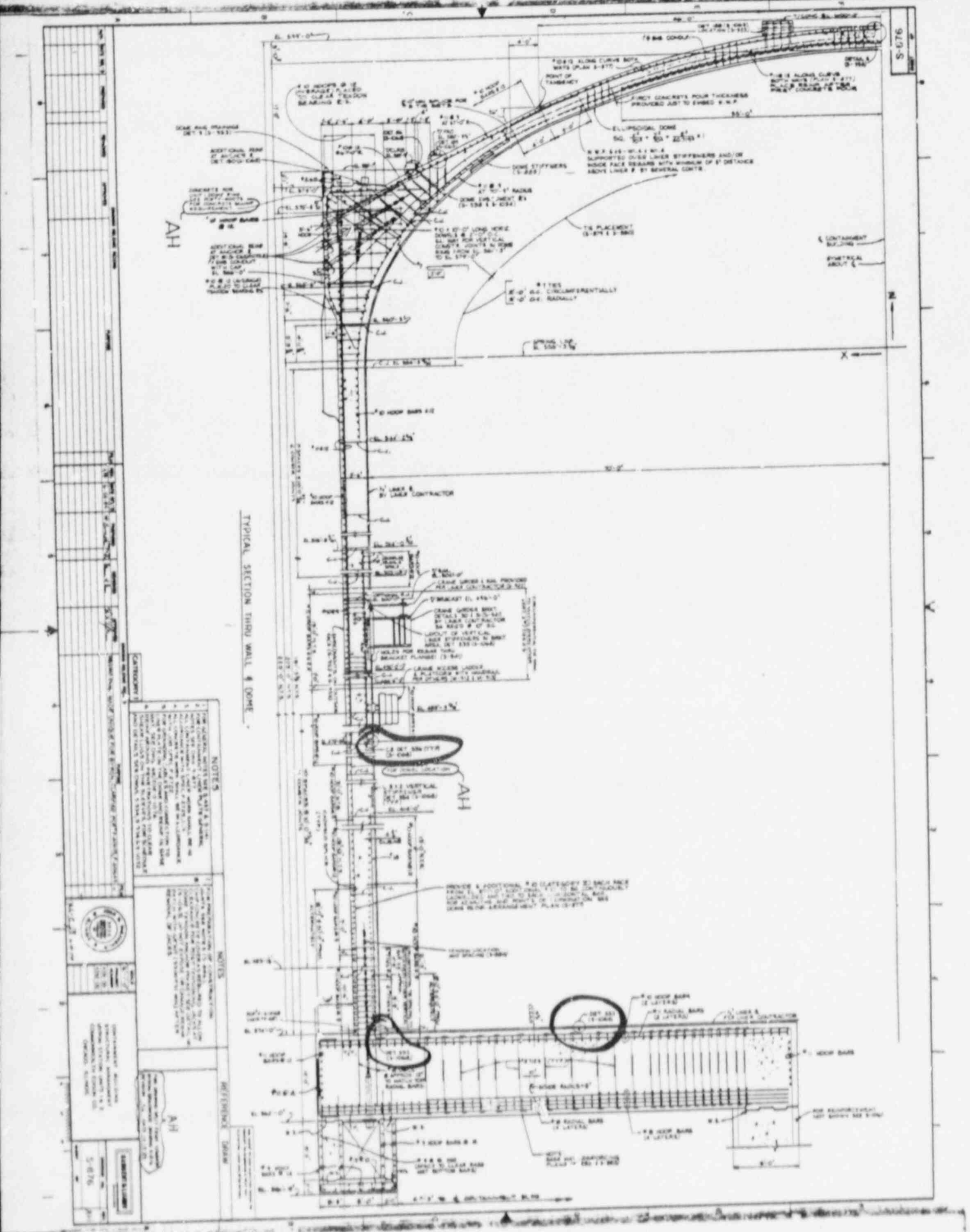
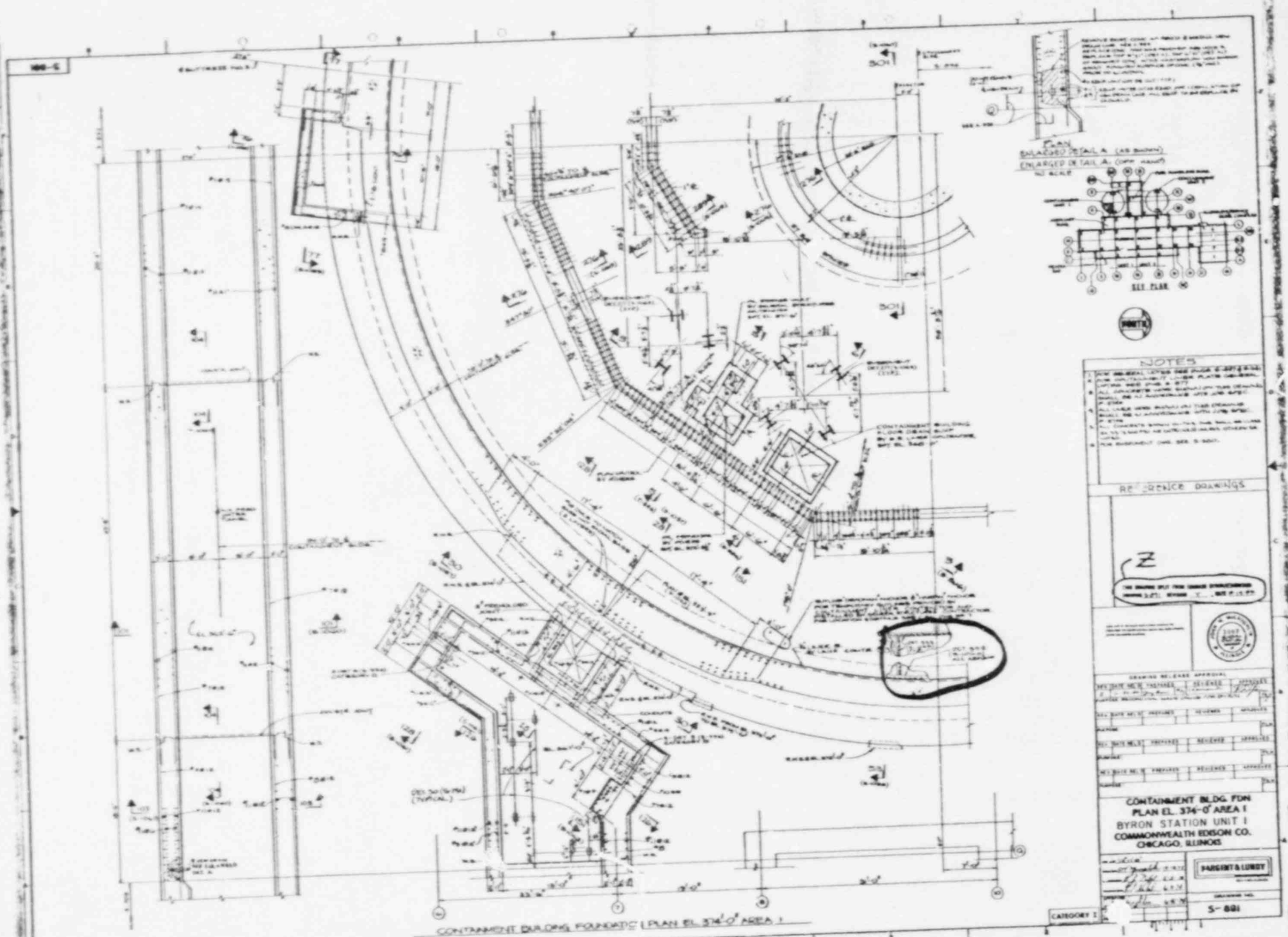
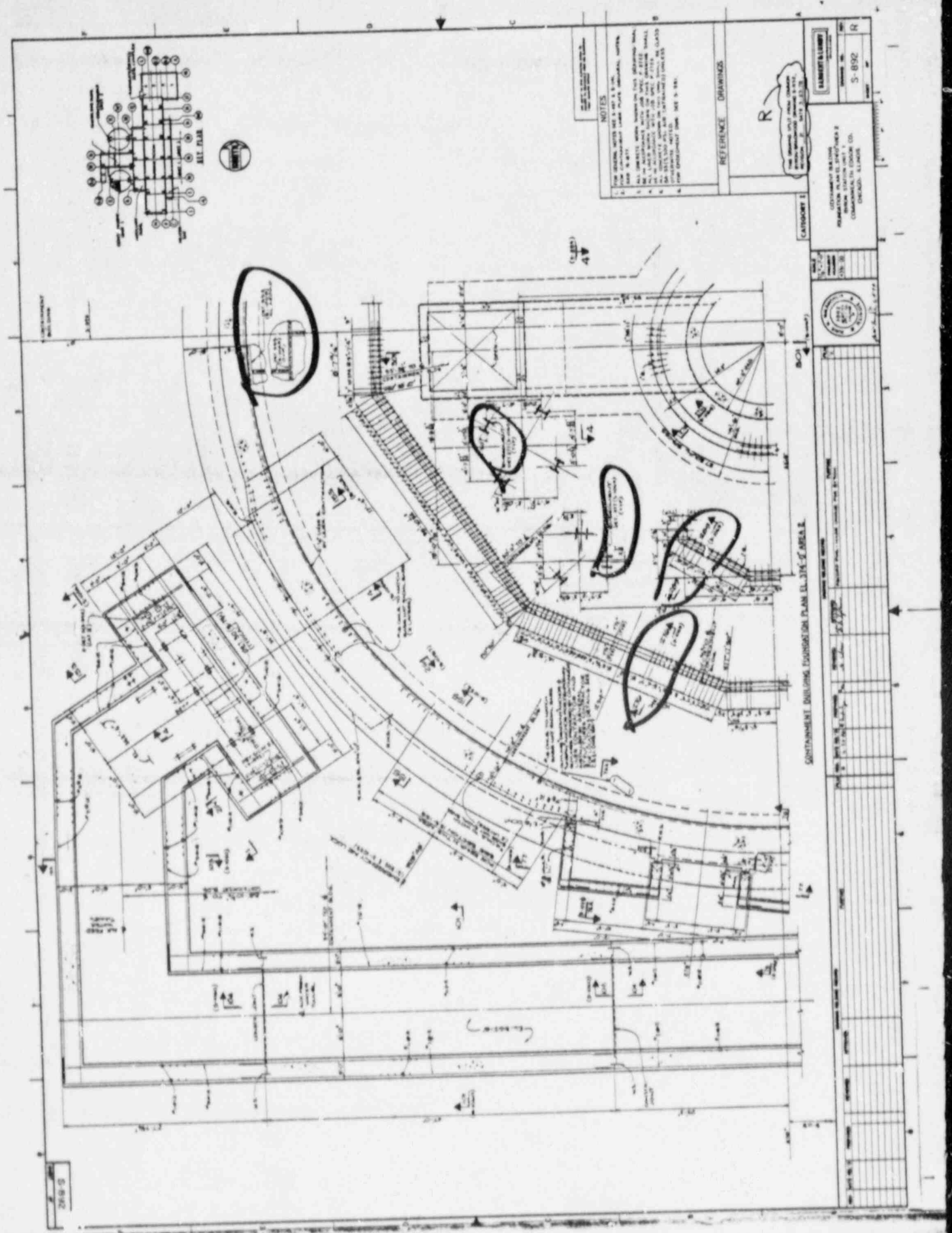
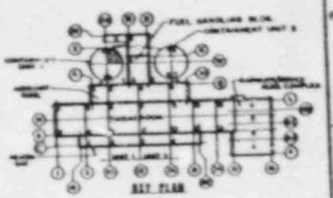
Attachment "A"




PLAN
BALANCED DETAIL A (AS SHOWN)
ENLARGED DETAIL A (OPPOSITE HAND)
KEY PLAN
NOTES
REFERENCE DRAWINGS
CONTAINMENT BLDG. FDN
PLAN EL. 374'-0" AREA I
BYRON STATION UNIT 1
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS
PARSONS & LUNDY
S-881
CATEGORY I
CONTAINMENT BUILDING FOUNDATION PLAN EL. 374'-0" AREA I


KEY PLAN
NOTES
REFERENCE DRAWINGS
CATEGORY I
S-892
CONTAINMENT BUILDING FOUNDATION PLAN EL. 375'-0" AREA 2

S-893



KEY PLAN

NOTES

REFERENCE DRAWINGS

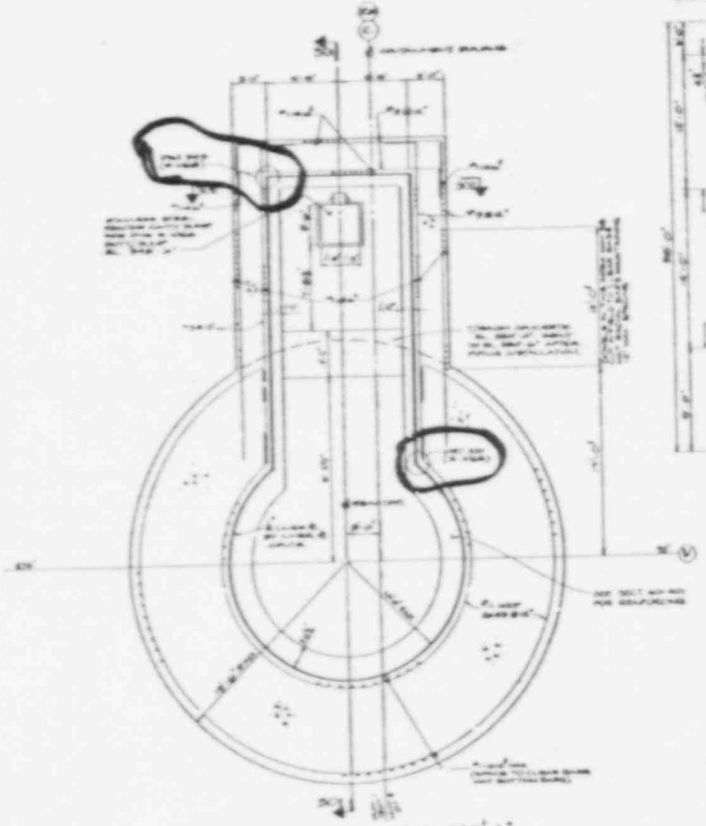
CONTAINMENT BUILDING FOUNDATION PLAN EL 374'-0" AREA 3

CATEGORY I

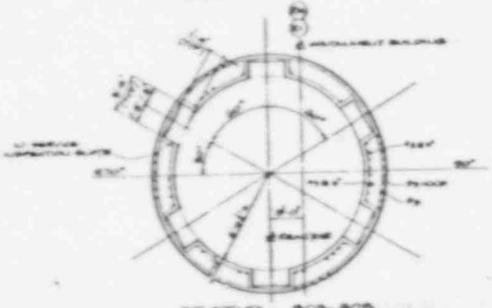
CONTAINMENT BLDG. FOUNDATION
PLAN EL. 374'-0" AREA 3
BYRON STATION UNIT 1
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS

SARGENT & LUNDY

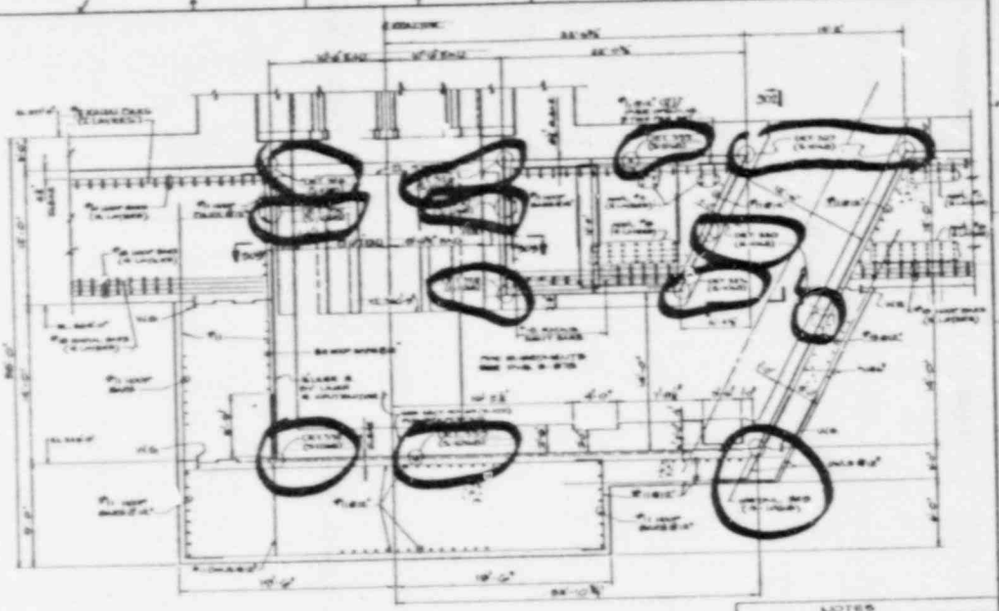
S-893 S



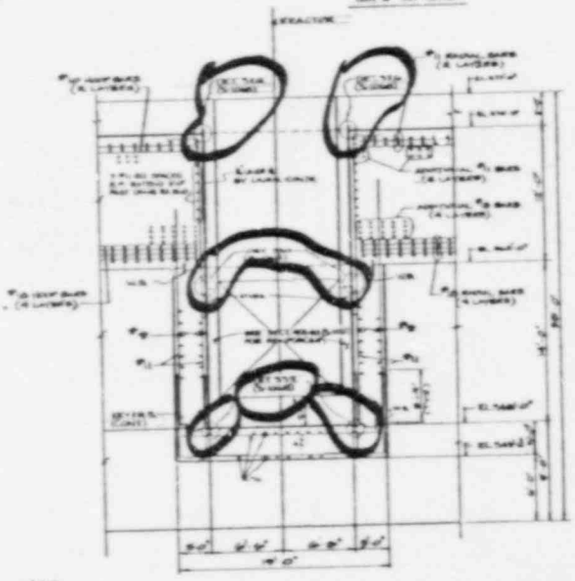
SECTIONAL PLAN AT EL. 350'-0"



SECTION 303-303



SECTION 201-301



SECTION 302-302

NOTES

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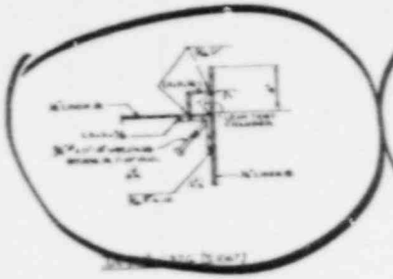
CONTAINMENT BUILDING FOUNDATION
SECTIONAL PLAN AT EL. 350'-6" & SECTS
BYRON STATION UNIT 1 & 2
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS

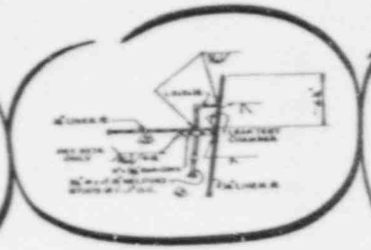
SARGENT & LUNDY

S-1087

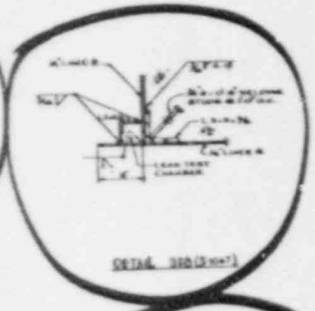
CATEGORY I

S-1068





DETAIL 327 AS SHOWN(S-1067)
DETAIL 327A AS NOTED(S-1067)



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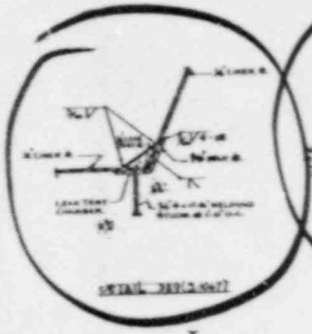

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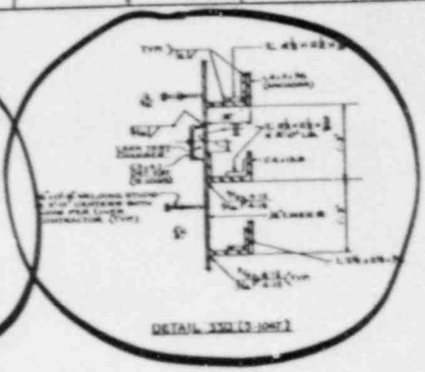

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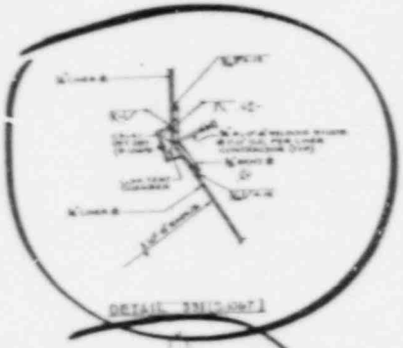

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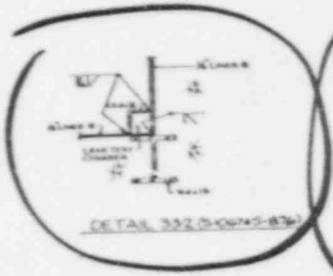
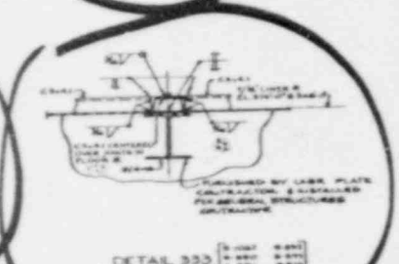
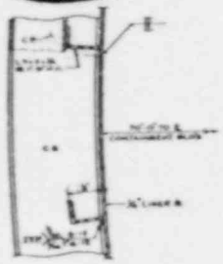


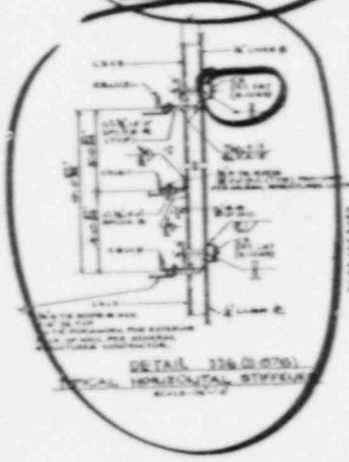
DETAIL 332(S-1067 & S-1075-87)



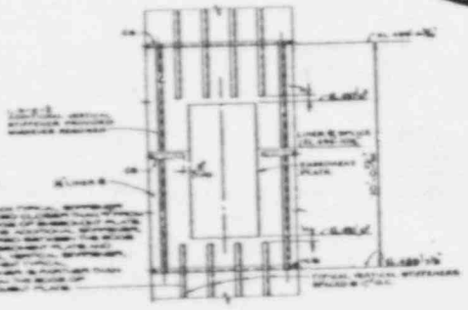
DETAIL 333
TYPICAL FLOOR & ANCHOR



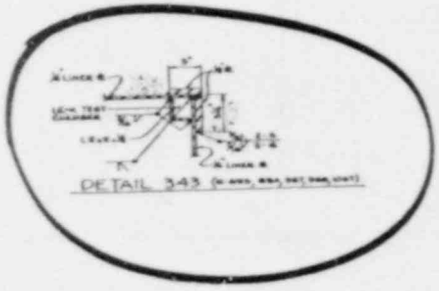
DETAIL 334(S-1076)
TYPICAL VERTICAL STIFFENERS



DETAIL 336(S-1070)
TYPICAL HORIZONTAL STIFFENER



DETAIL 335(S-1076)
TYPICAL LAYOUT OF VERTICAL STIFFENERS AT LARGE PENETRATION REINFORCEMENT



DETAIL 343

NOTES

REFERENCE DRAWINGS

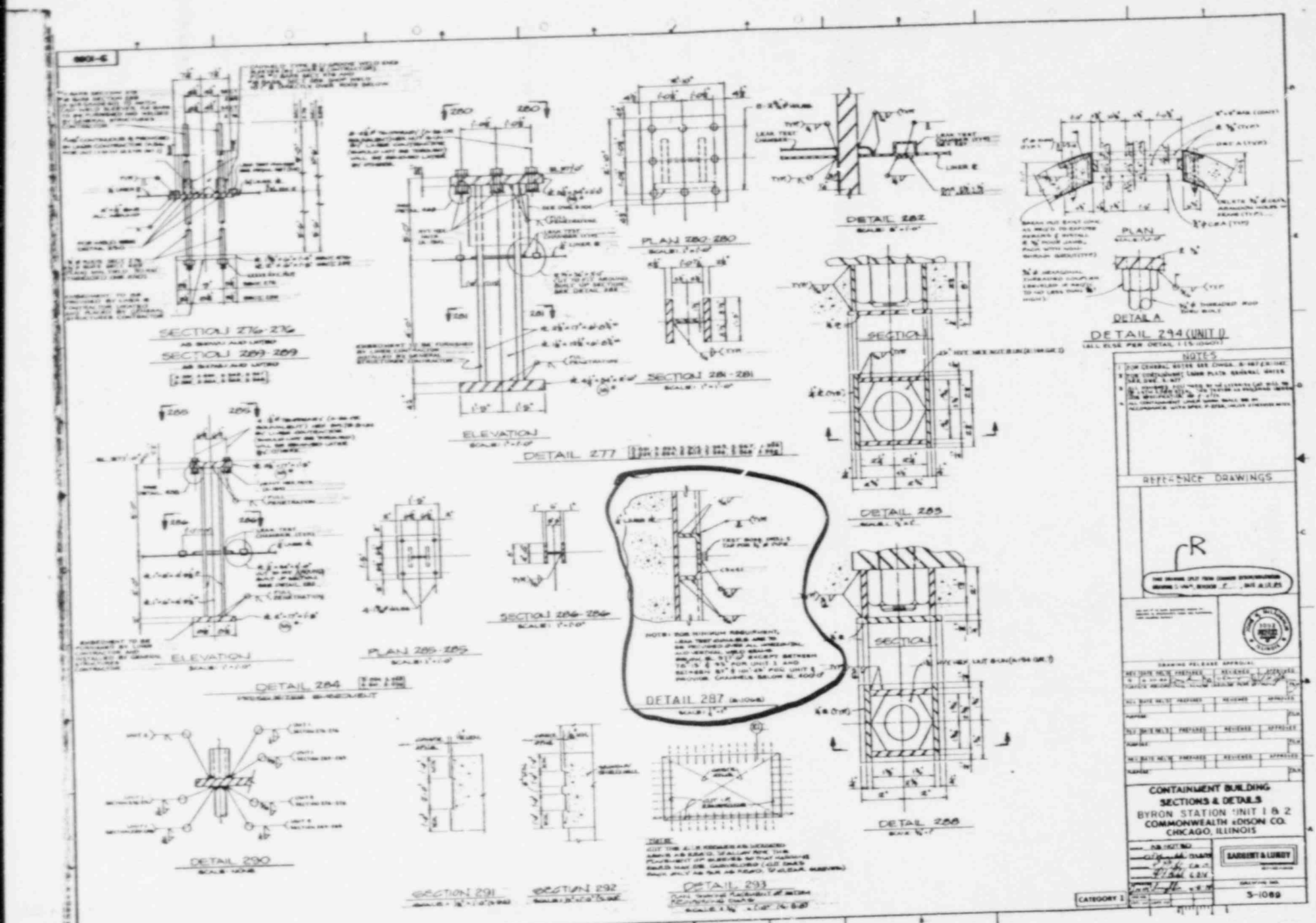
CATEGORY I

CONTAINMENT BUILDING
LINER PLATE SECTIONS & DETAILS
BYRON STATION UNITS 1 & 2
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS

SARGENT & LUNDY

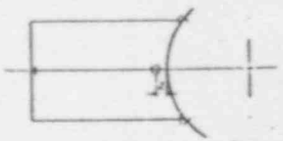
S-1068

N

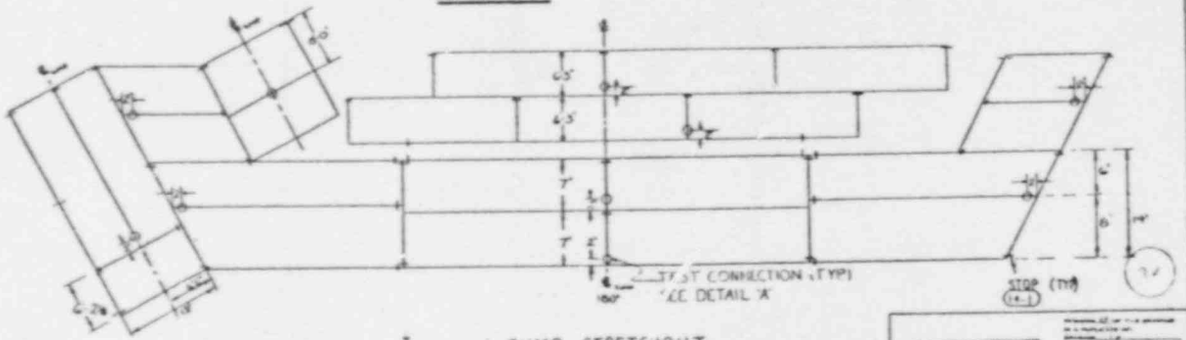

SECTION 276-276
SECTION 289-289
ELEVATION
DETAIL 277
PLAN 280-280
SECTION 281-281
DETAIL 282
SECTION
DETAIL 283
PLAN
DETAIL A
DETAIL 294 (UNIT 1)
NOTES
REFERENCE DRAWINGS
ELEVATION
DETAIL 284
PLAN 285-285
SECTION 286-286
DETAIL 287
SECTION
DETAIL 288
DETAIL 290
SECTION 291
SECTION 292
DETAIL 293
CONTAINMENT BUILDING
SECTIONS & DETAILS
BYRON STATION UNIT 1 & 2
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS
SARGENT & LUNDY
3-1089
CATEGORY I

NOTES

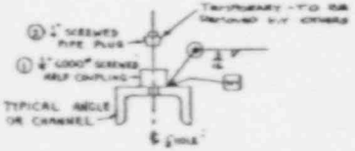
1 TEST ZONES NOT TO EXCEED 100 FT. EACH IN SEAM COVERAGE.



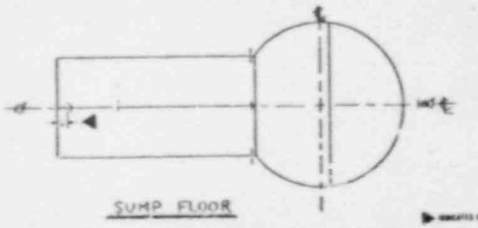
SUMP ROOF



SUMP STRETCHOUT



DETAIL 'A'



SUMP FLOOR

Chicago Bridge & Iron Company

REACTOR CAVITY SUMP - TEST ZONES (FITTING LOCATIONS

74-2256

REVIEWED FOR

BYRON UNIT 1

SPEC. NO. F-2725 PROJ. NO. 4331

COMMONWEALTH EDISON CO.

SARGENT & LUNDY ENGINEERS

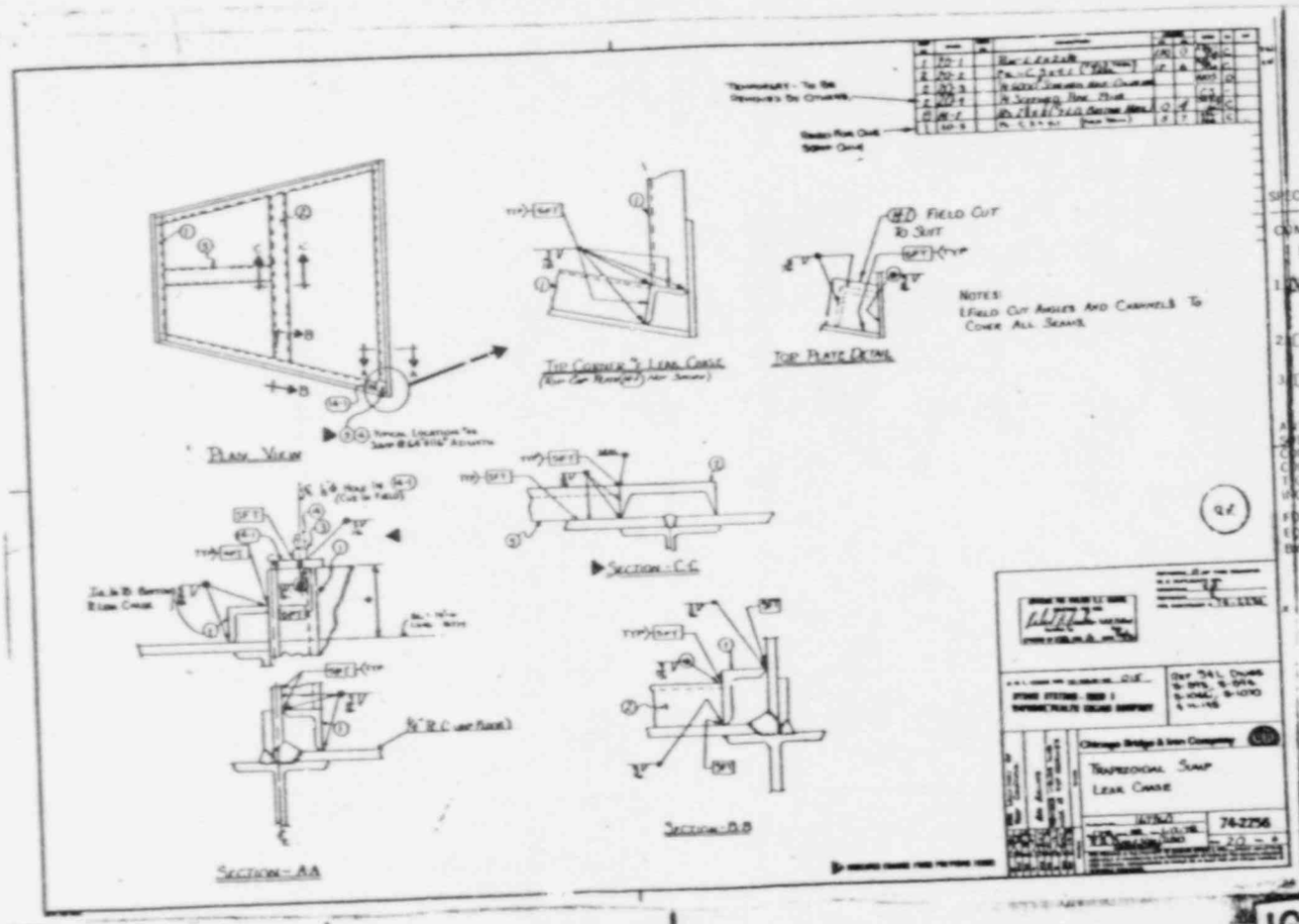
1. [X] NO EXCEPTION TAKEN. CONSTRUCTION CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONFORMED CAN PROCEED BASED ON NOTED REVISIONS. RESUBMIT AS NOTED.
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER

BY R. K. TSO DATE JUL 15 1975

16X



Rec. AUG 02 1979

REVIEWED FOR

BYRON
UNIT 1

SPEC. NO. F-2725 PROJ. NO. 4391

COMMONWEALTH EDISON CO.

SARGENT & LUNDY
ENGINEERS

1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT.
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.

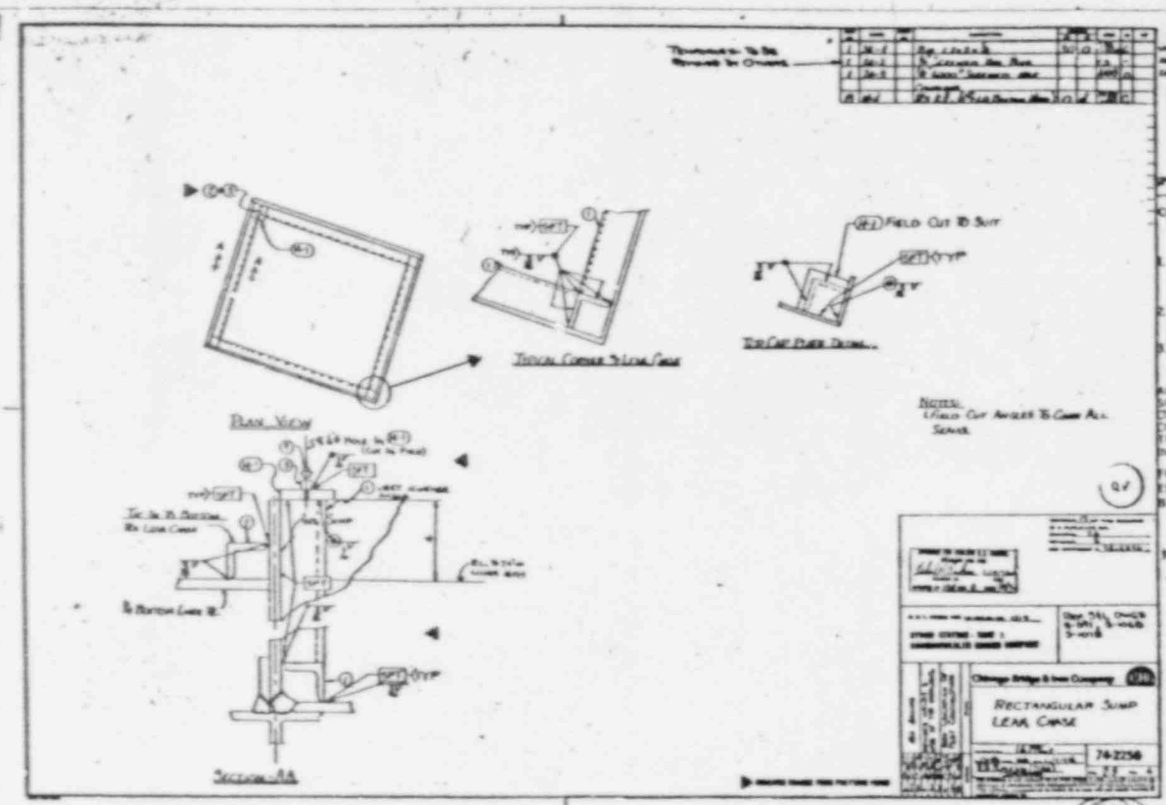
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER

EQUIPMENT NO. [redacted]

BY R. K. TSO DATE [redacted]

16X


PLAN VIEW
SECTION AA
FIELD CUT TO SUIT
NOTES:
1. FIELD CUT ANGLES TO CLEAR ALL SEAMS.
REVIEWED FOR
BYRON
COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS
1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT.
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.
FOR CONTAINMENT LINER
EQUIPMENT NO.
BY
DATE
RECTANGULAR SUMP LEAK CHASE
74-2256

16X

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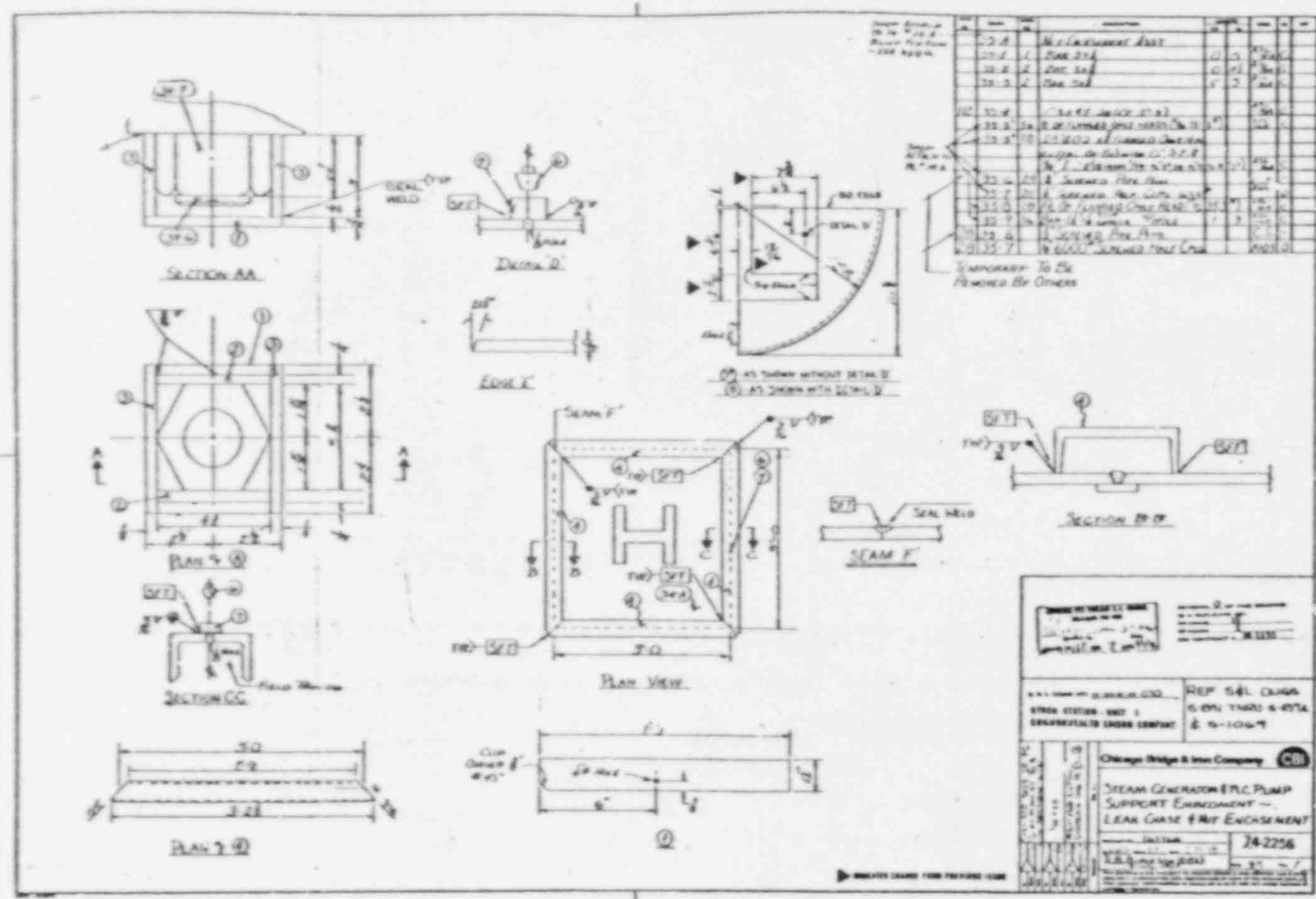

REVIEWED FOR

BYRON
UNIT 1

SPEC NO. F-2725 PROJ. NO. 4391

COMMONWEALTH EDISON CO.

SARGENT & LUNDY
ENGINEERS

1. ☒ NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
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3. ☐ REVISE AS NOTED AND RESUBMIT HOLD FABRICATION

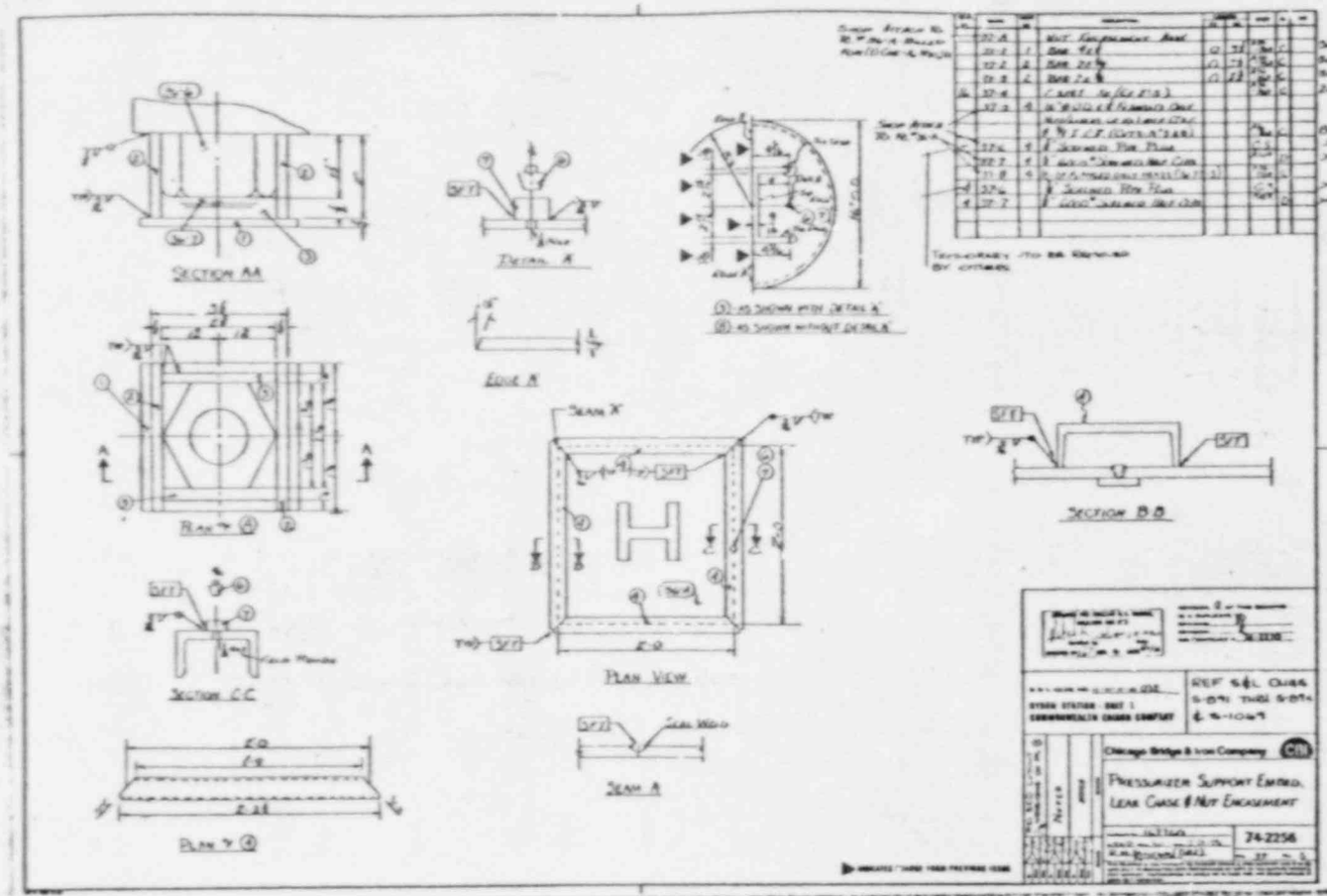
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER

EQUIPMENT NO. ______

BY R. K. TWO DATE MAY 12 1978

16X



REVIEWED FOR

BYRON
UNIT 1
SPEC NO. F-2725 PROJ NO. 4391

COMMONWEALTH EDISON CO.

SARGENT & LUNDY
ENGINEERS

1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
2. [ ] CONTRACTOR CAN PROCEED BASED ON MARK REVISIONS NOTED AND RESUBMIT
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER
EQUIPMENT NO. _____
BY R.K. TSQ. DATE MAY 12 1978

BYRON STATION - UNIT 1
COMMONWEALTH EDISON COMPANY

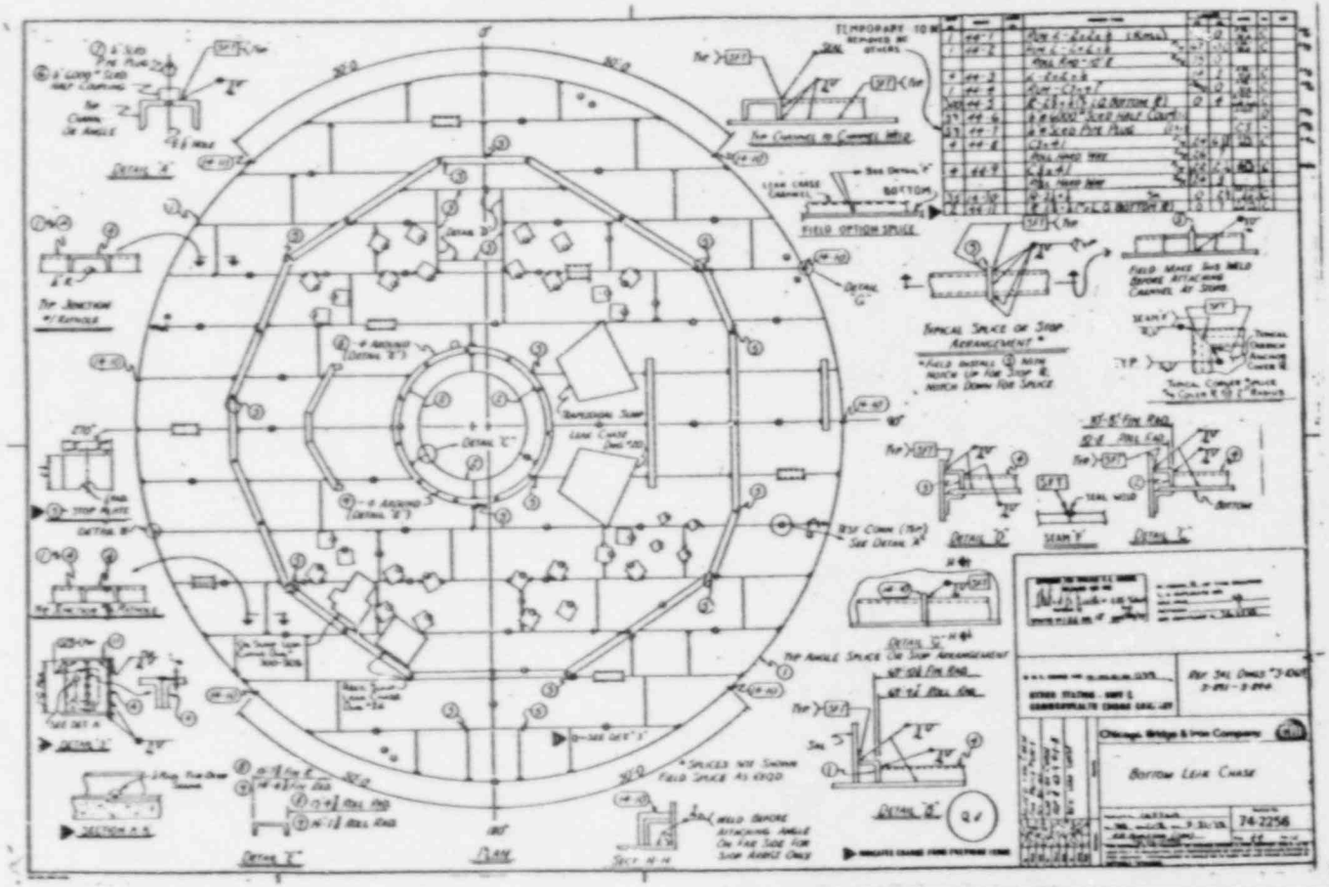
REF S&L DWGS
S-874 THRU S-874
& M-1049

Chicago Bridge & Iron Company (CBI)

PRESSURIZER SUPPORT EMBED. LEAK CHASE & NUT ENCASEMENT

74-2256

16X



RECEIVED
JUN - 6 1977
SARGENT & LUNDY

REVIEWED FOR
BYRON
UNIT 1
SPEC NO F-2725 PROJ NO 4391

COMMONWEALTH EDISON CO.

SARGENT & LUNDY ENGINEERS

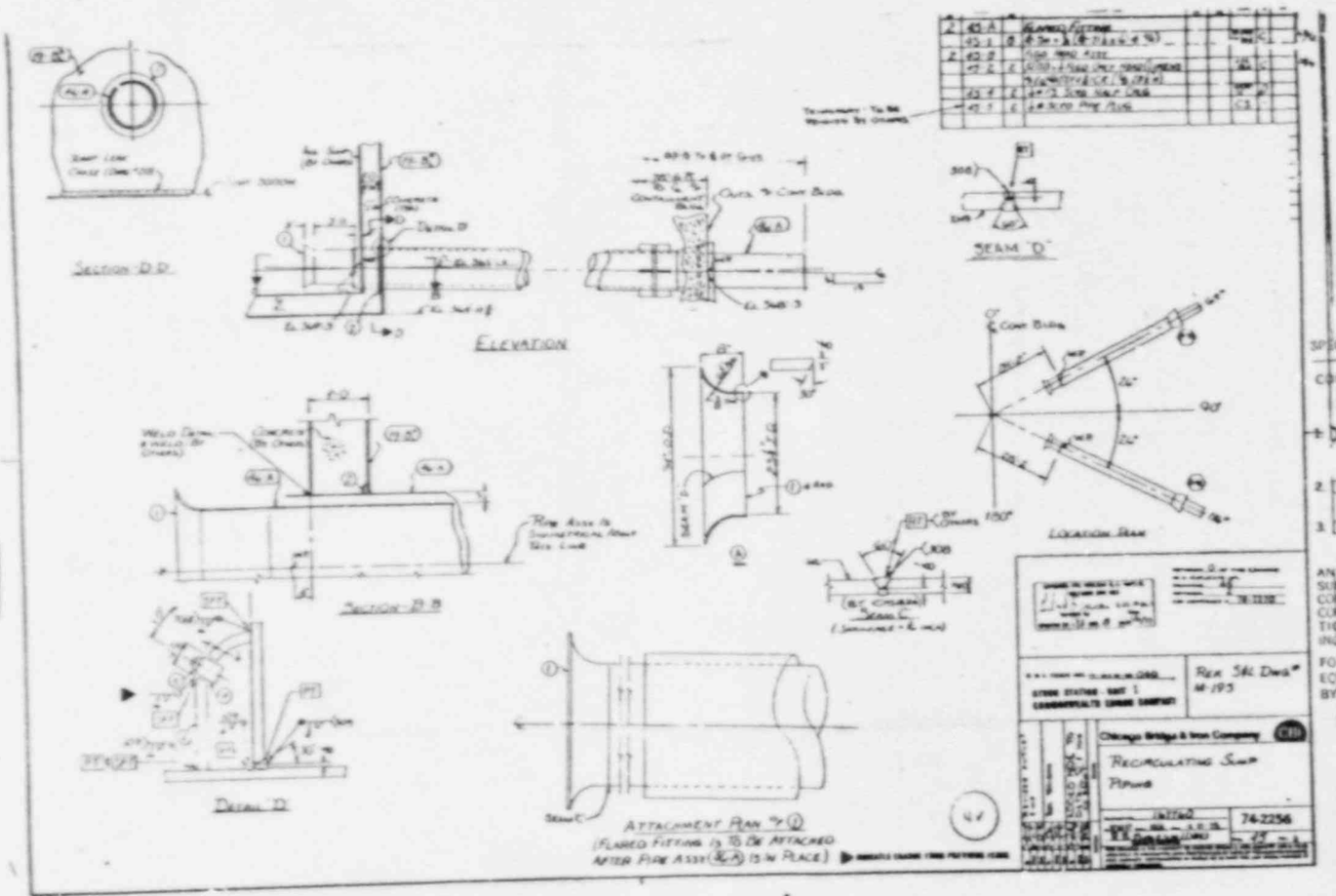
1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILING

FOR CONTAINMENT LINER
EQUIPMENT NO
BY R. K. TSO DATED 2-9-1977

CAMERA PREPARATION N. Cooper

15X

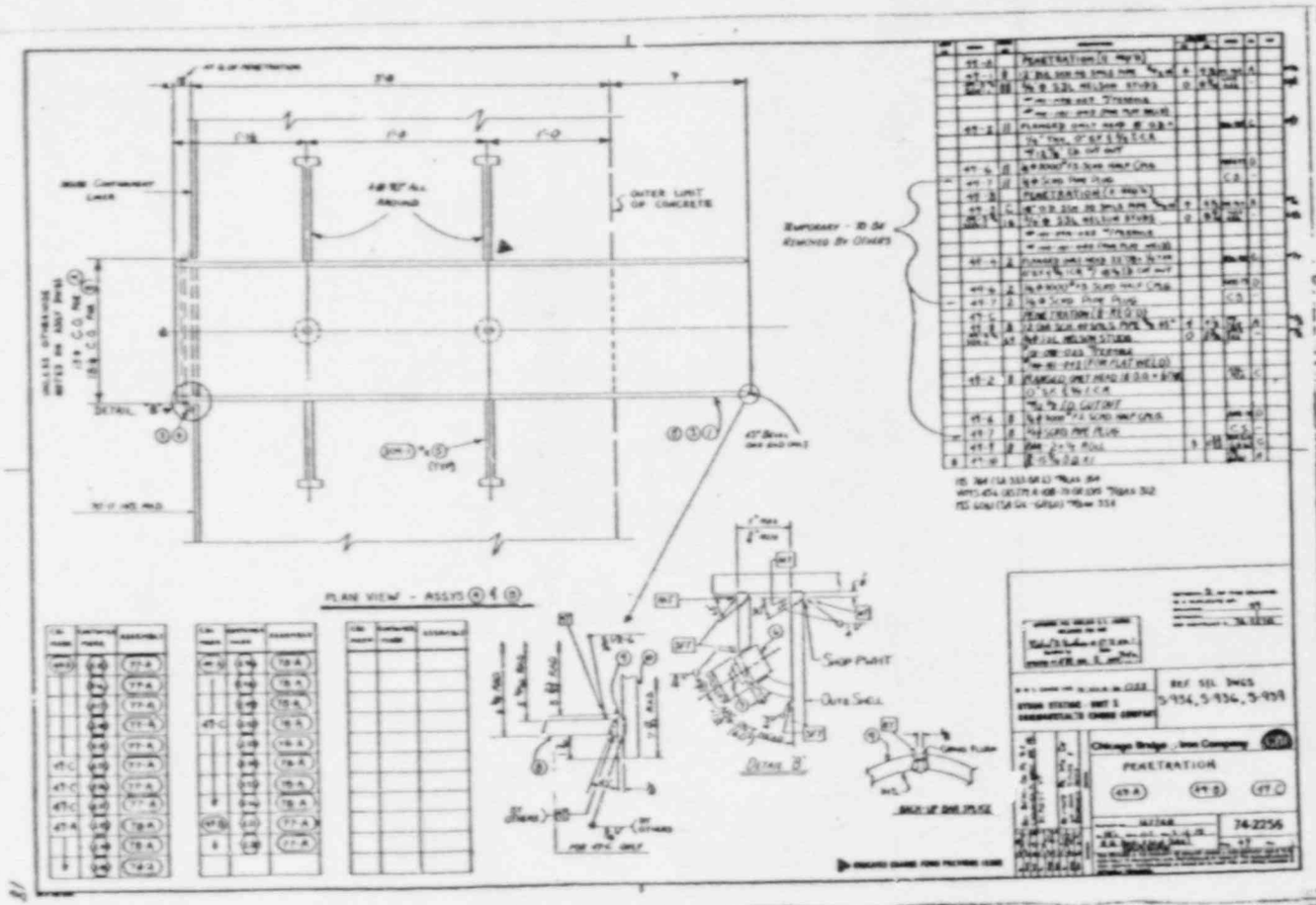


RECEIVED
FEB - 2 1977
SARGENT & LUNDY

REVIEWED FOR
BYRON
UNIT 1
SPEC. NO. F- 2725 PROJ NO. 4391
COMMONWEALTH EDISON CO.
SARGENT & LUNDY ENGINEERS
1. ☒ NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
2. ☐ CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT
3. ☐ REVISE AS NOTED AND RESUBMIT
HOLD FABRICATION
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILS
FOR CONTAINMENT LINER
EQUIPMENT NO.
BY M. K. TSO DATE 1-19-77

Chicago Bridge & Iron Company
Recirculating Sump Piping
74-2256

16X



Rec'd
AUG 02 1978

REVIEWED FOR

BYRON
UNIT 1

SPEC. NO. F-2725 PROJ. NO. 4351

COMMONWEALTH EDISON CO.

SARGENT & LUNDY
ENGINEERS

3. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT.
8. [ ] REVISE AS NOTED AND RESUBMIT.
1. HOLD FABRICATION.

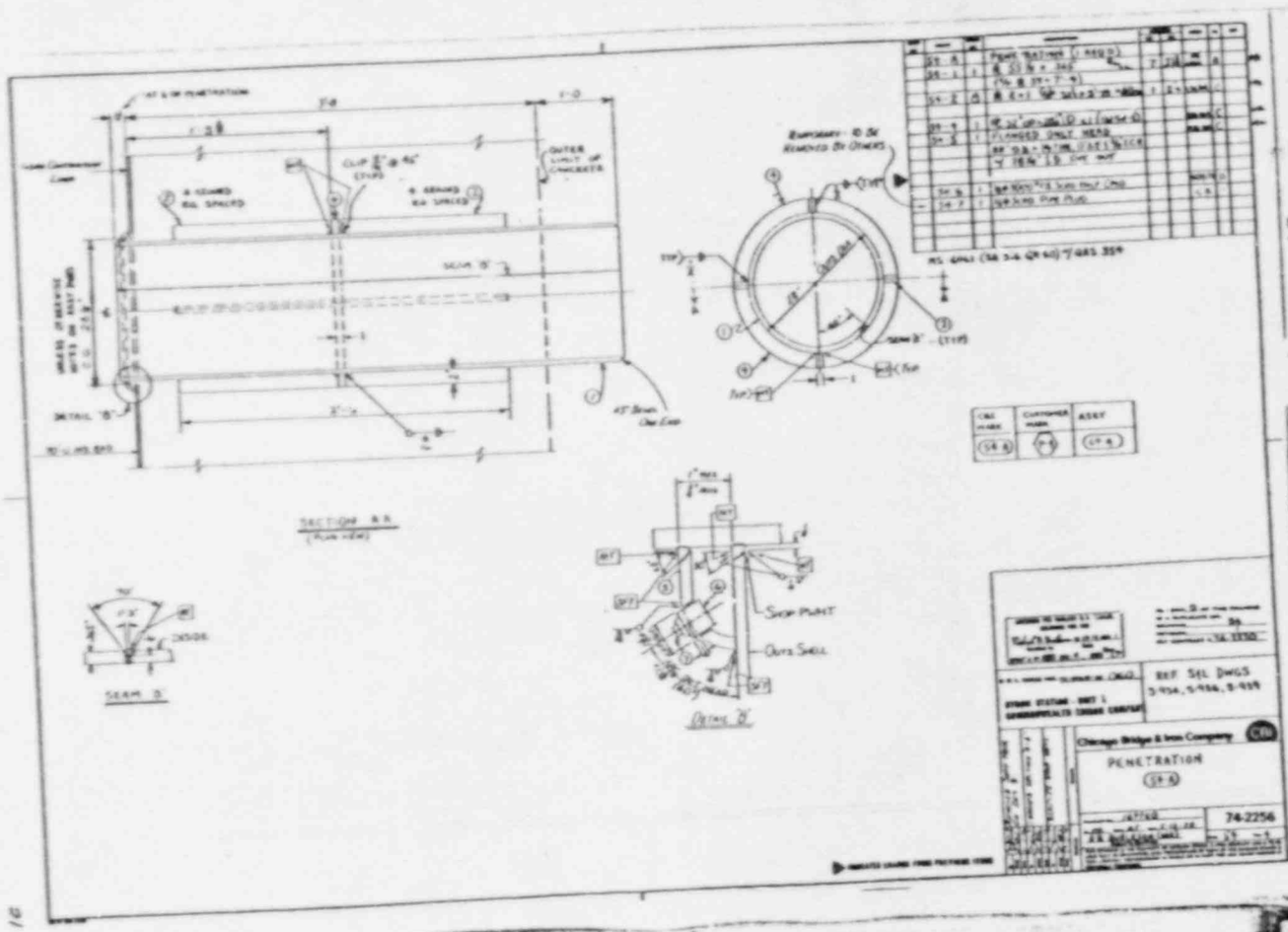
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT, AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER

EQUIPMENT NO.

BY R. K. TSO DATE SEP 02 1978

16X



Rec'd
AUG 02 1979

REVIEWED FOR
EYRON
UNIT 1
SPEC. NO. F-2725 PROJ. NO. 4391

COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS

1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT.
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILING.

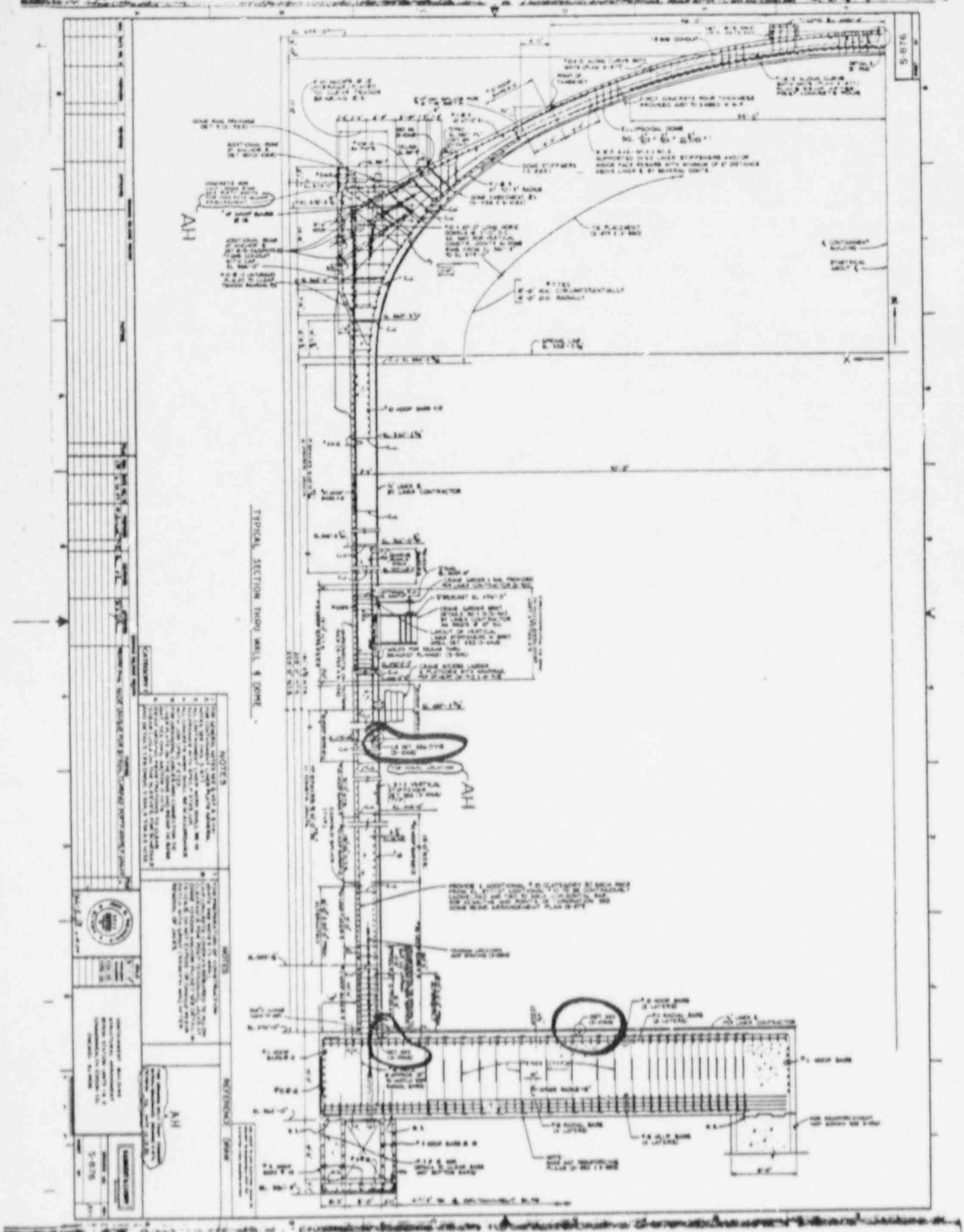
FOR CONTAINMENT LINER

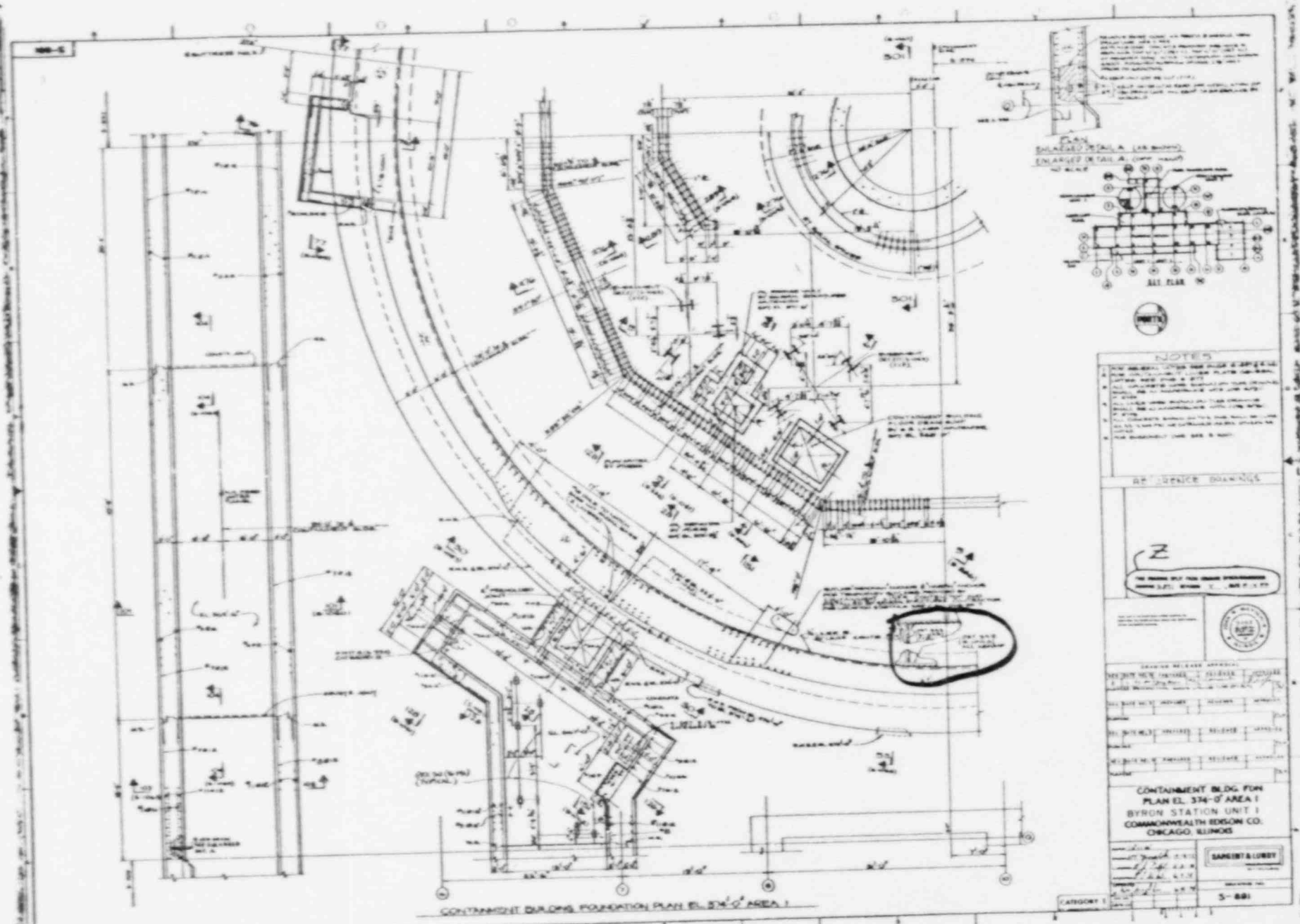
EQUIPMENT NO.

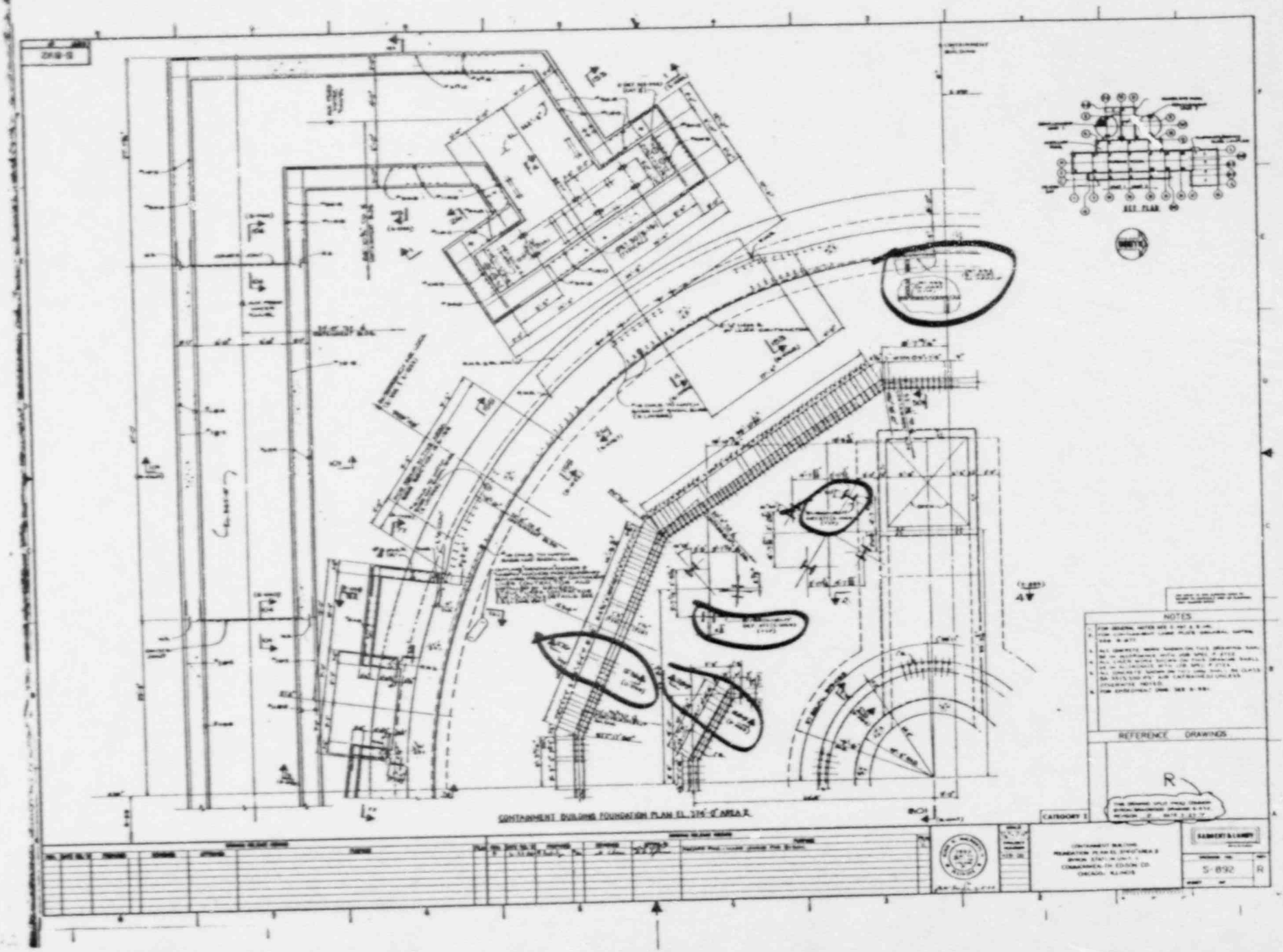
BY R. K. TSO DATE SEP 02 1979

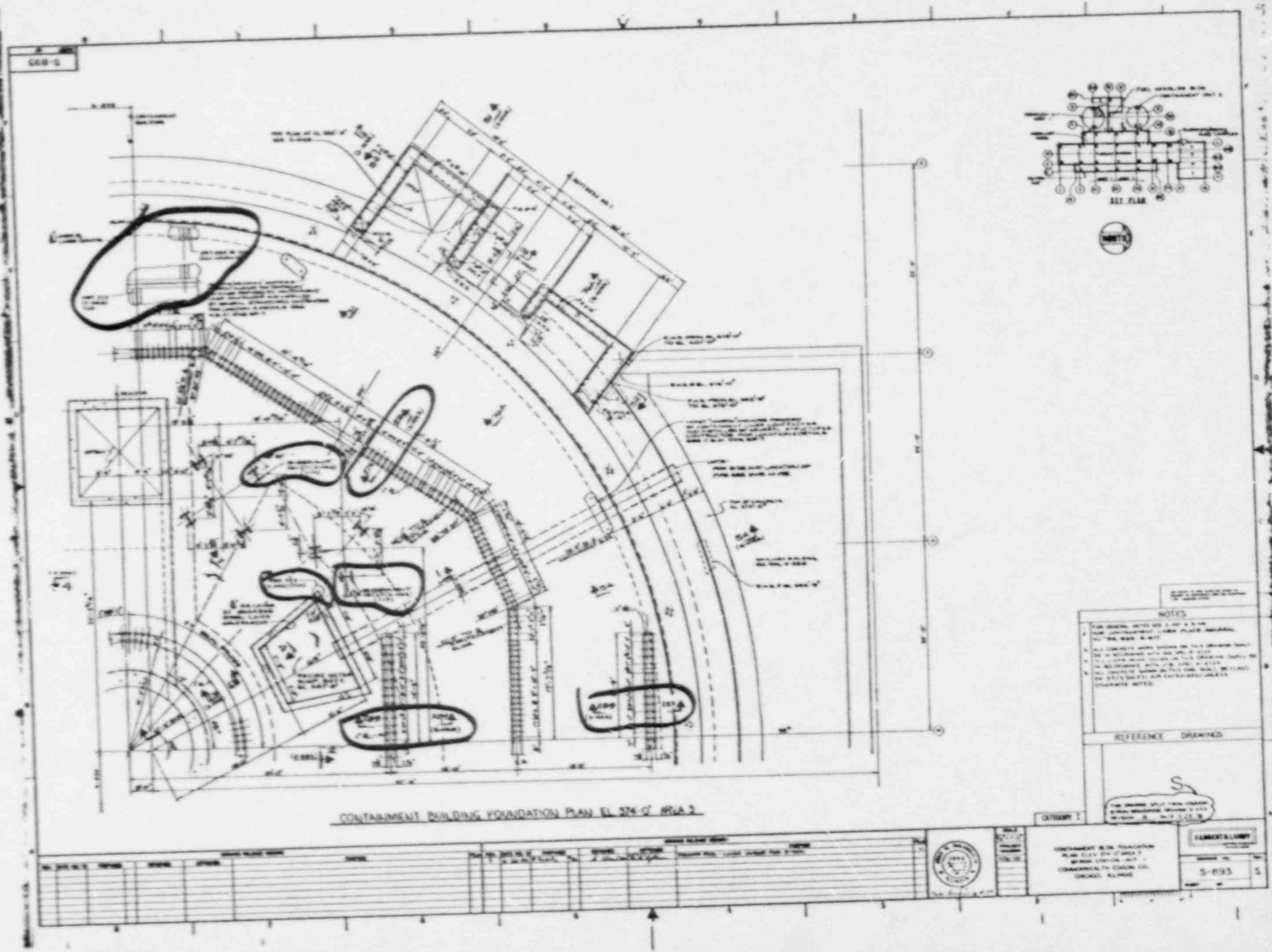
16X

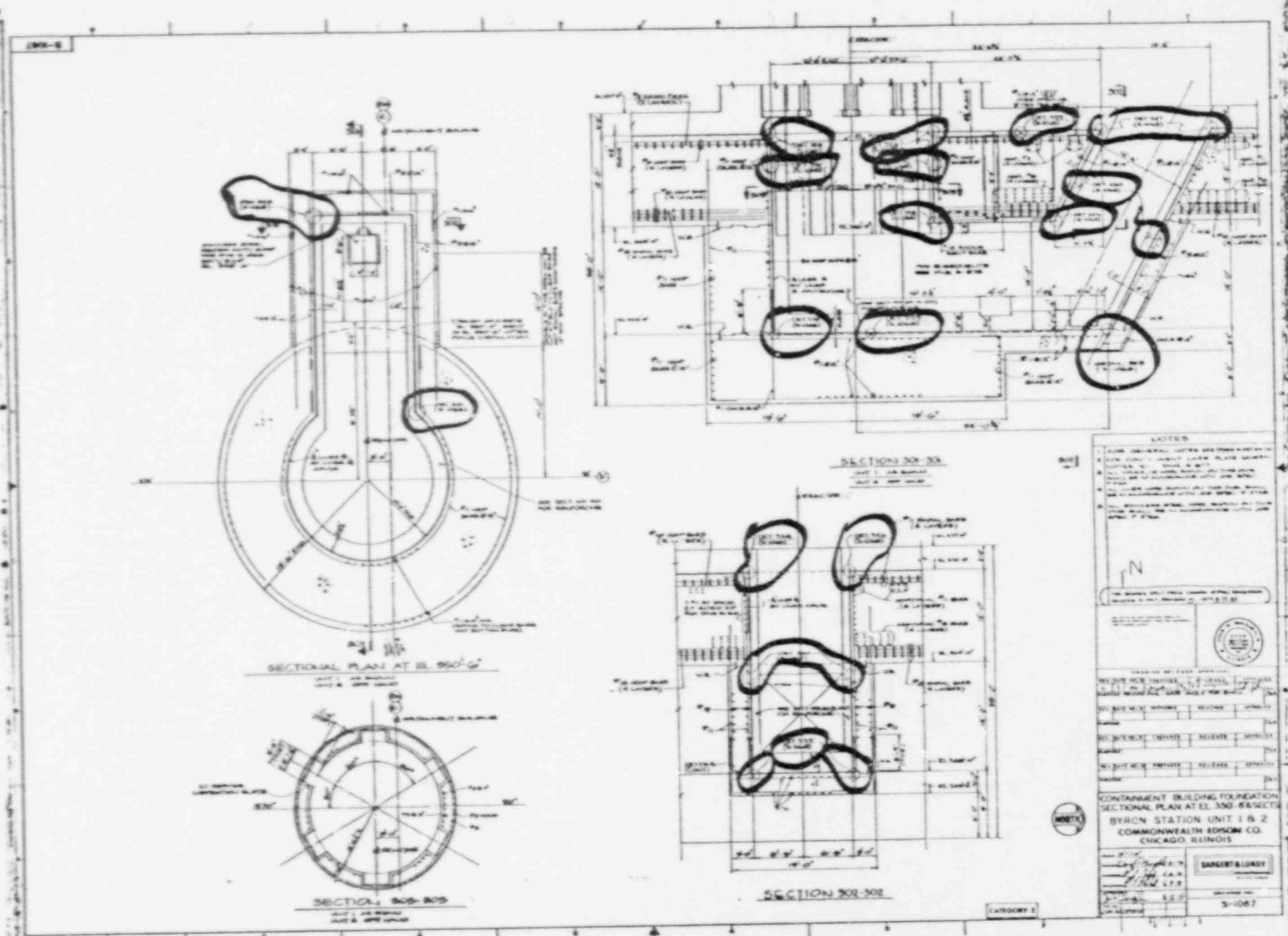
Attachment "A"

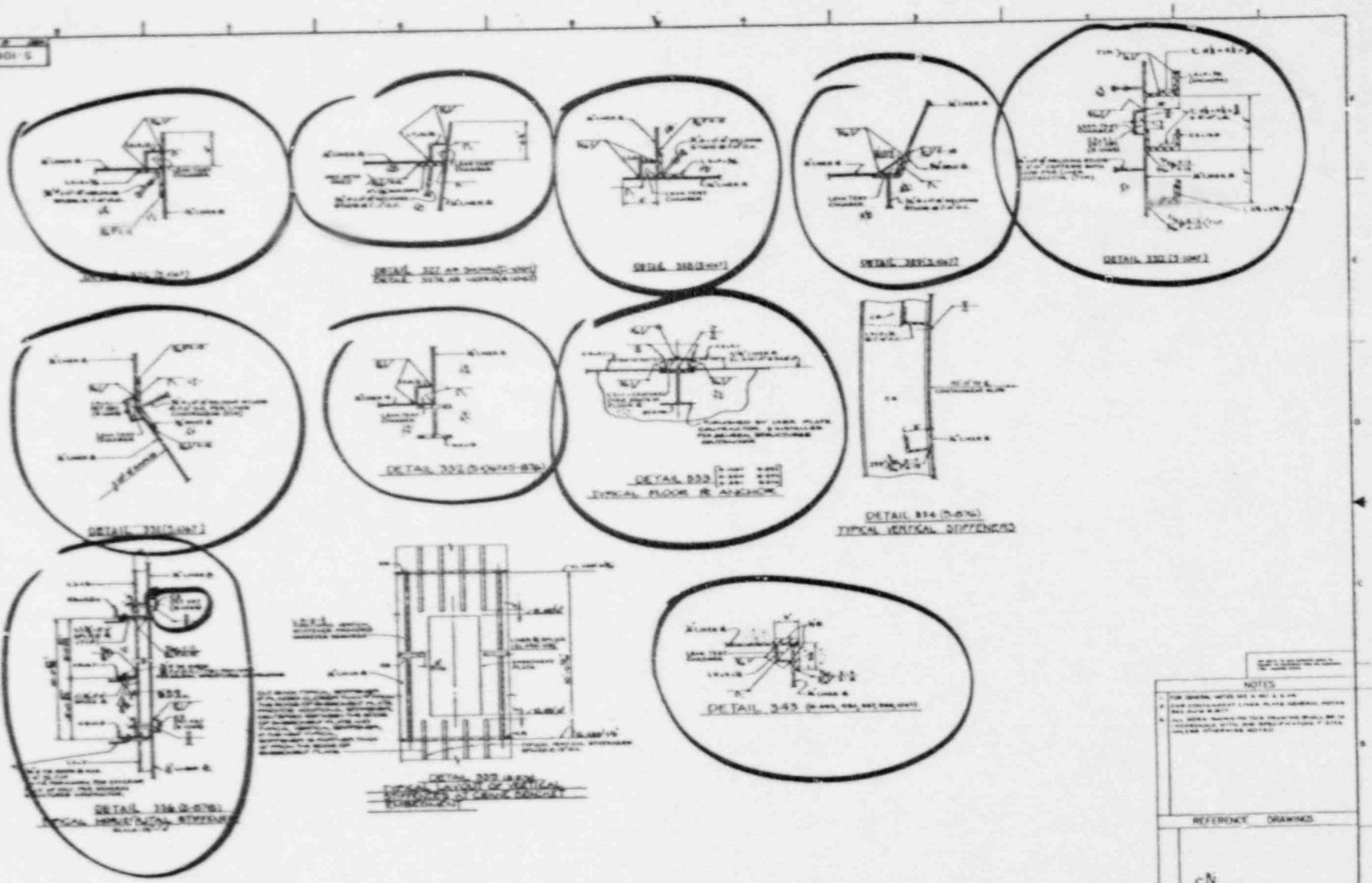


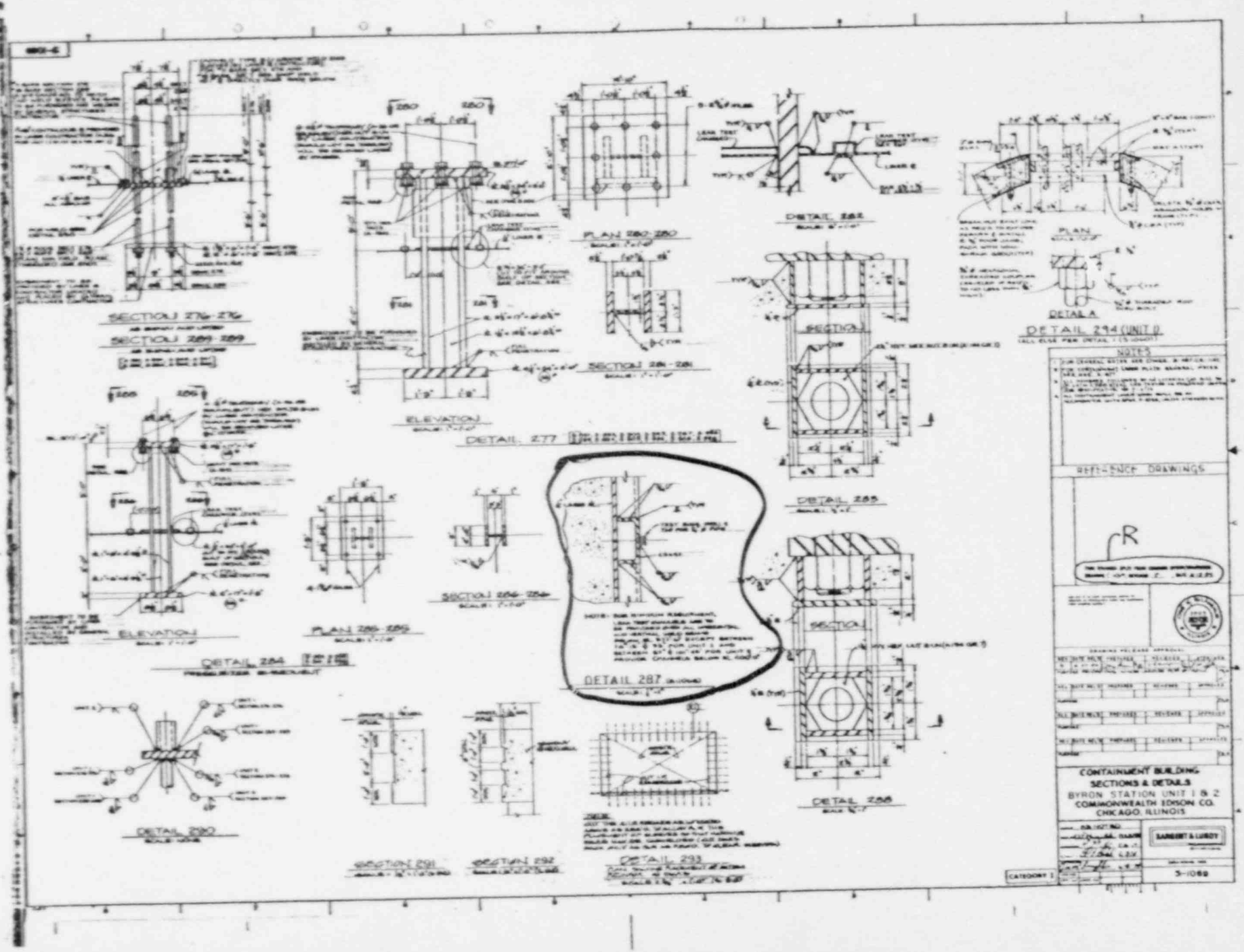

NOTES
CONTAINMENT BUILDING FOUNDATION PLAN EL. 374'-0" AREA 1
CONTAINMENT BLDG. FDN PLAN EL. 374'-0" AREA 1
BYRON STATION UNIT 1
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS
SARGENT & LUNDY
3-881
CATEGORY I

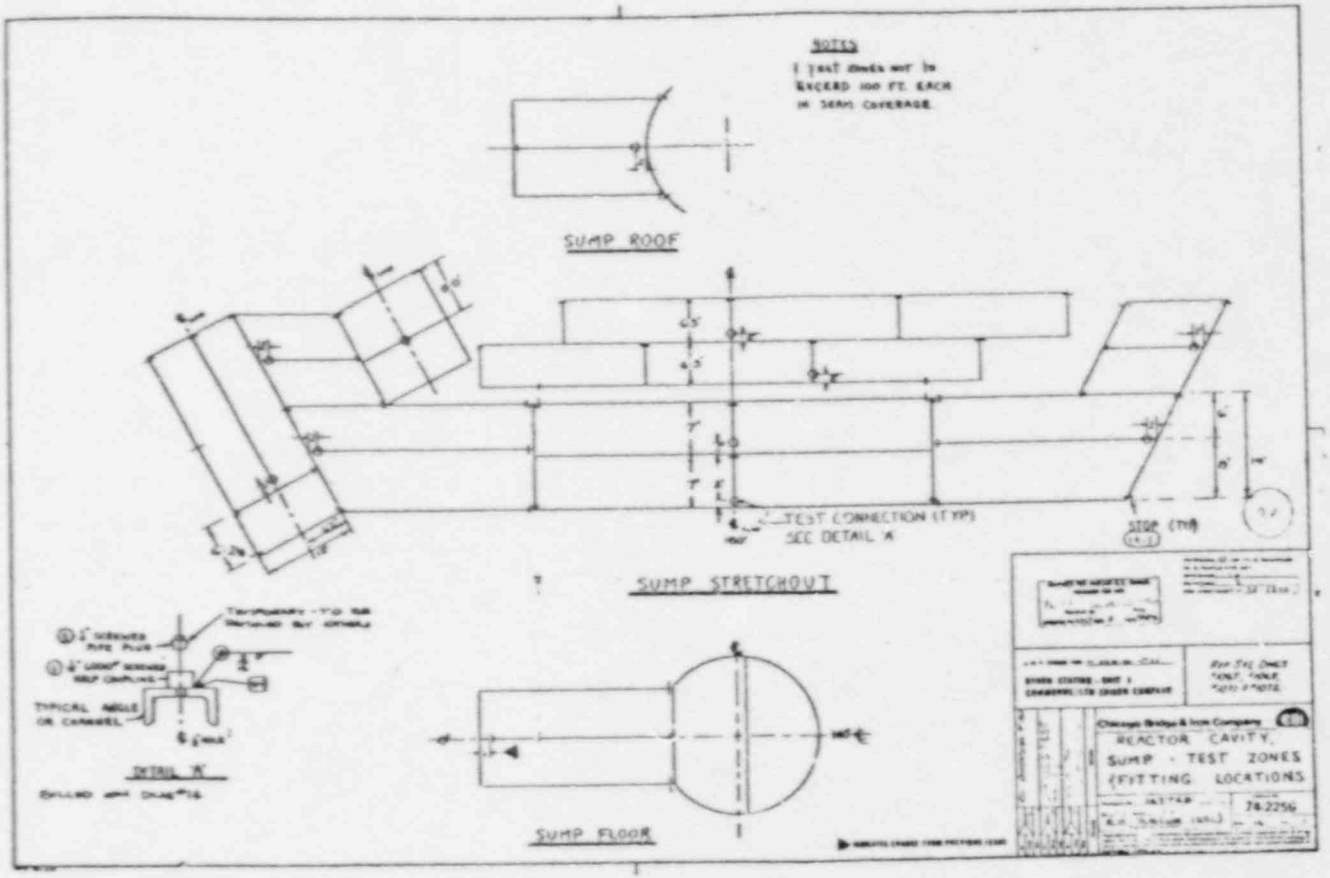

CONTAINMENT BUILDING FOUNDATION PLAN EL. 594'-0" AREA 2
NOTES
REFERENCE DRAWINGS
CATEGORY I
S-892


CONTAINMENT BUILDING FOUNDATION PLAN EL 374'-0" AREA 2
KEY PLAN
NOTES
REFERENCE DRAWINGS
CONTAINMENT BLDG FOUNDATION
PLAN EL 374'-0" AREA 2
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS
S-693


SECTIONAL PLAN AT EL 350'-0"
SECTION 308-309
SECTION 302-303
NOTES
N
CONTAINMENT BUILDING FOUNDATION
SECTIONAL PLAN AT EL 350'-6" & SECTS
BYRON STATION UNIT 1 & 2
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS
SARGENT & LUNDY
3-1067

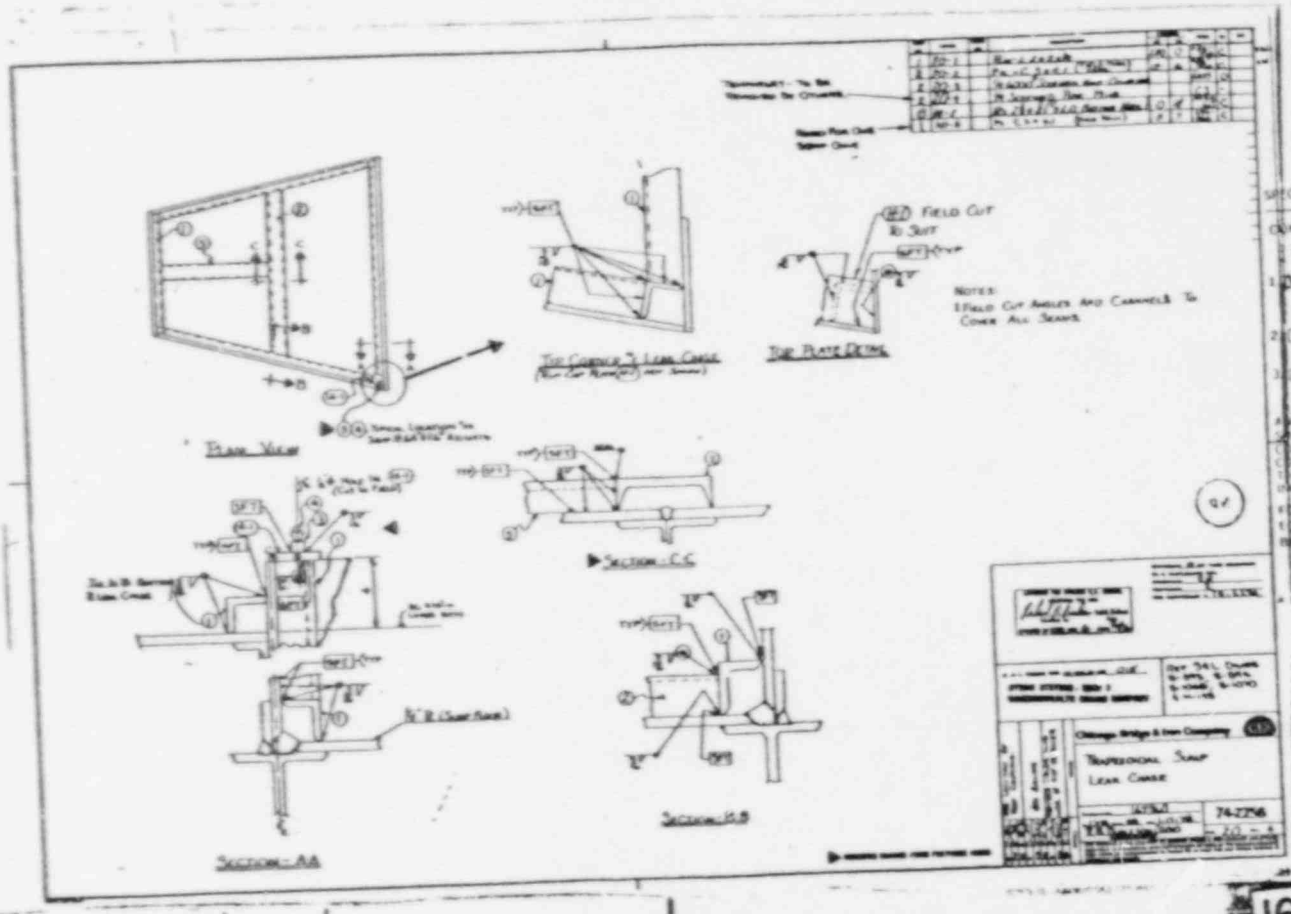

DETAIL 332 (3 UNIT)
DETAIL 333
TYPICAL FLOOR & ANCHOR
DETAIL 334 (3-0")
TYPICAL VERTICAL DIFFERENCE
DETAIL 335
DETAIL 343
NOTES
REFERENCE DRAWINGS
CONTAINMENT BUILDING
LINER PLATE SECTIONS & DETAILS
S-1068

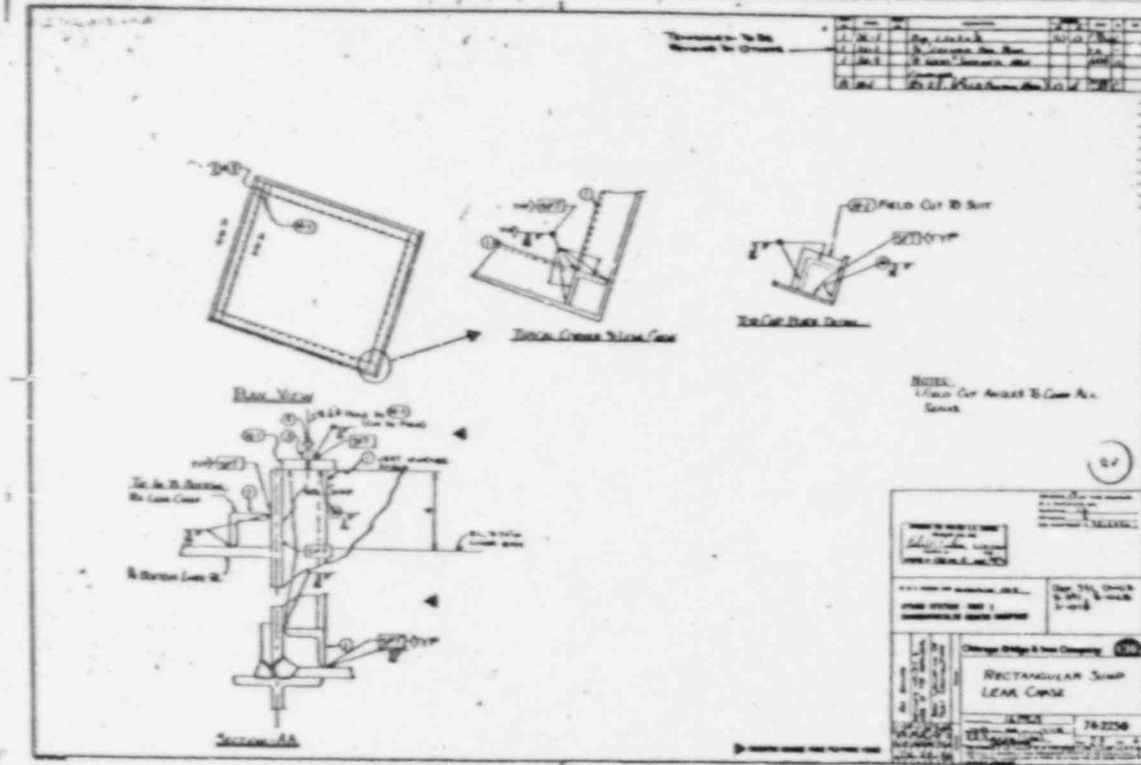

SECTION 276-276
SECTION 289-289
ELEVATION
DETAIL 277
SECTION 280-280
SECTION 281-281
DETAIL 282
PLAN
DETAIL A
DETAIL 294 (UNIT 0)
NOTES
REFERENCE DRAWINGS
SECTION
DETAIL 285
DETAIL 287
DETAIL 288
ELEVATION
DETAIL 284
PLAN 286-286
SECTION 284-284
DETAIL 290
SECTION 291
SECTION 292
DETAIL 293
CONTAINMENT BUILDING
SECTIONS & DETAILS
BYRON STATION UNIT 1 & 2
COMMONWEALTH EDISON CO.
CHICAGO, ILLINOIS
SARGENT & LUNDY
CATEGORY I
5-1069



REVIEWED FOR
BYRON
UNIT 1
SPEC NO. F-2725 PPDI NO 4391
COMMONWEALTH EDISON CO.
SARGENT & LUNDY ENGINEERS
1 [X] NO EXCEPTIONS TAKEN
2 [ ] MAKE CORRECTIONS NOTED
3 [ ] REVISE AS NOTED AND RESUBMIT
HOLD FABRICATION
ANY ACTION SHOWN ON THIS IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS UNDER THE CONTRACT, INCLUDING COLOR AND DETAILING
FOR CONTAINMENT LINER
BY R. K. TSO DATE JUL 1 1975

16X


REVIEWED FOR
BYRON
UNIT 1
SPEC NO. F- 2725 PROJ NO. 4191
COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS
1. NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. CONTRACTOR CAN PROCEED BASED ON MARKING REVISIONS NOTED AND RESUBMIT.
3. REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILING.
FOR CONTAINMENT LINER
EQUIPMENT NO.
BY B. K. TNO DATE
Plan View
Section - C-C
Section - A-A
Section - B-B
Typical Sump Leak Chase
74-2756
16X



REVIEWED FOR
BYRON
UNIT 1
SPEC NO. F-2725 PROJ. NO. 4391
COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS

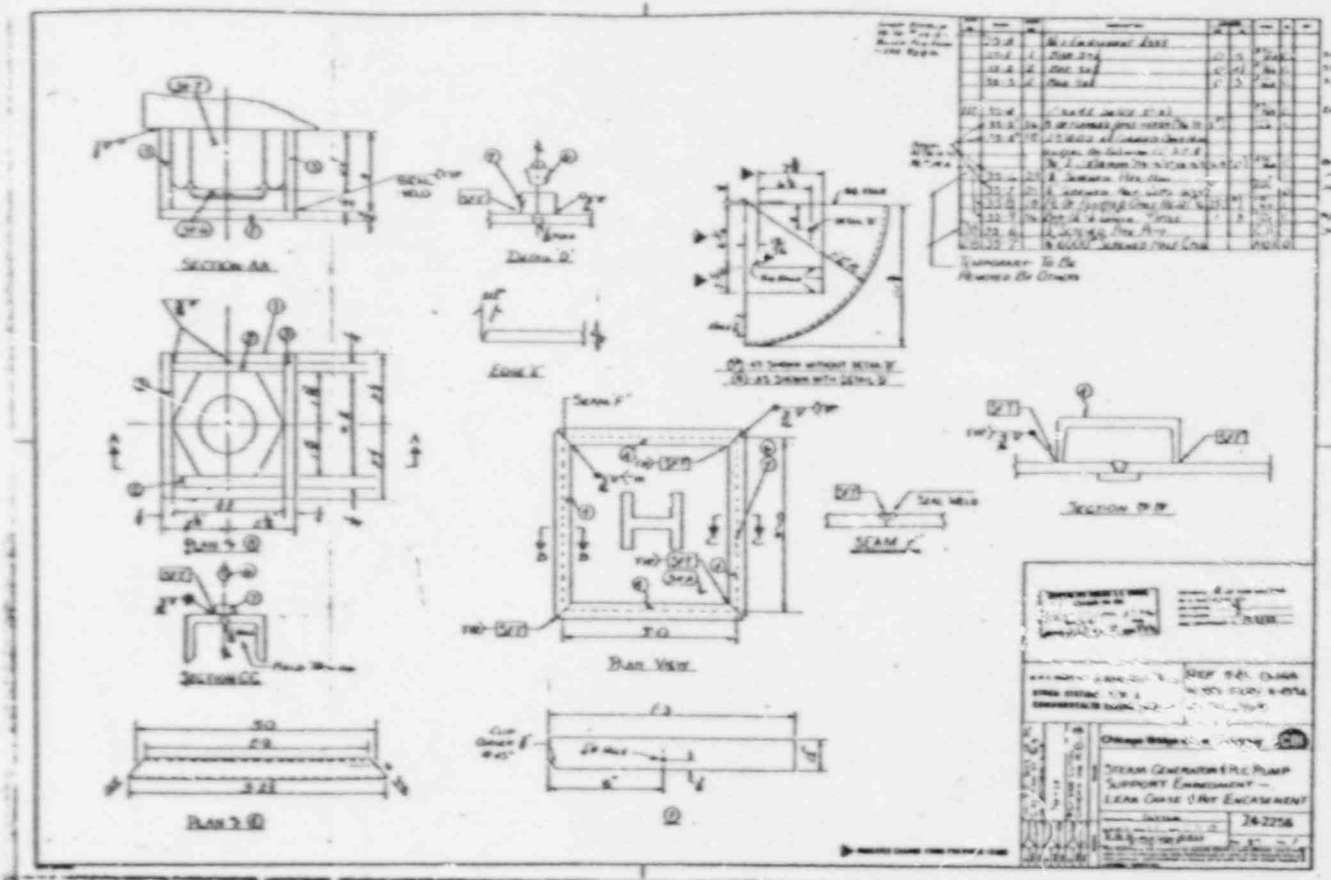
1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILING

FOR CONTAINMENT LINER
EQUIPMENT NO.
BY D.B.TPO DATE [redacted]

24

16X



REVIEWED FOR

BYRON

UNIT 1

SPEC NO. F-2725 PROJ. NO. 4393

COMMONWEALTH EDISON CO.

SARGENT & LUNDY

ENGINEERS

1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON CHANGES/REVISIONS NOTED AND MUST RESUBMIT.
3. [ ] REVISE AS INDICATED AND RESUBMIT. HOLD FABRICATION.

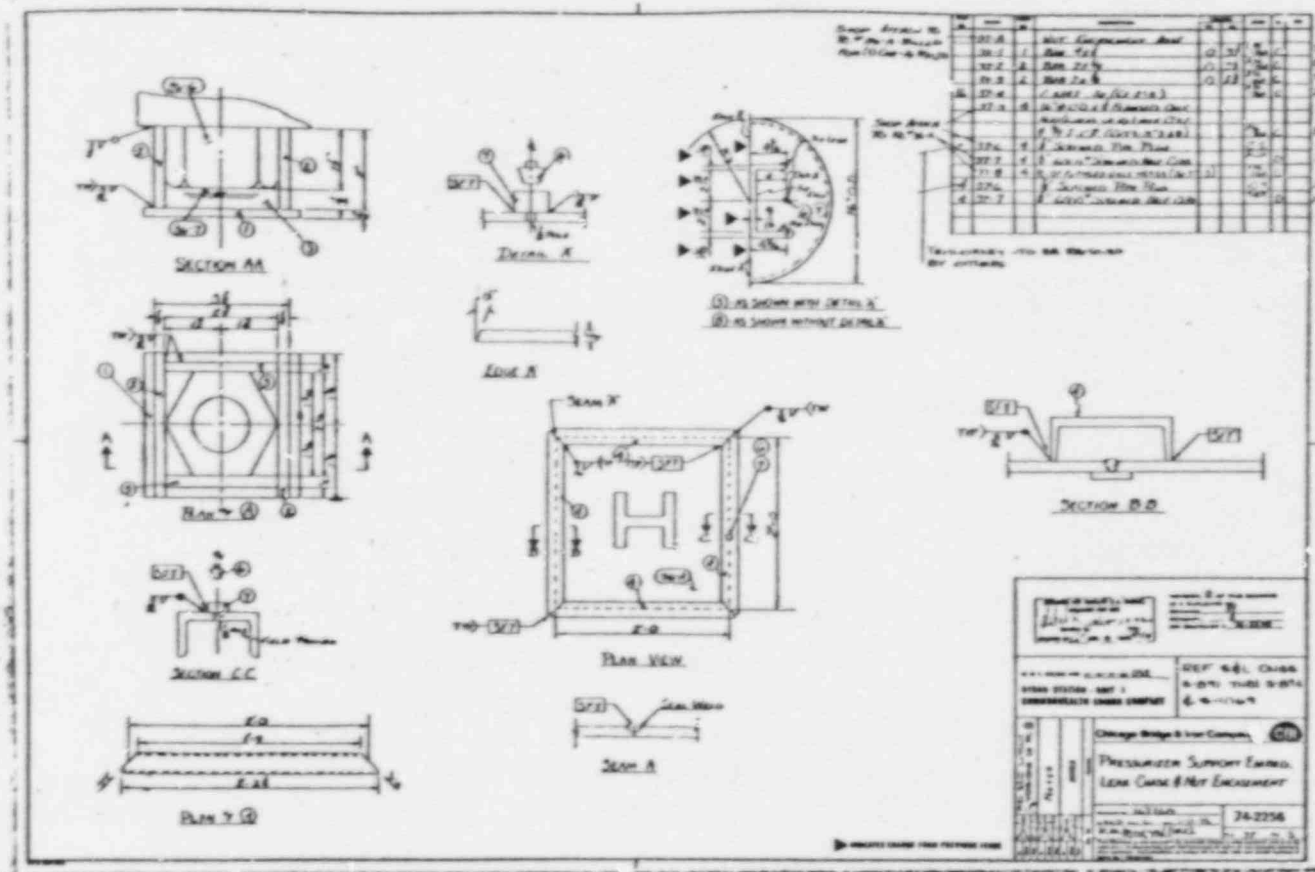
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER

EQUIPMENT NO.

BY N. K. TRO DATE MAY 12 1978

16X



REVIEWED FOR

BYRON
UNIT 1
SPEC NO. F-2725 PROJ NO. 4393

COMMONWEALTH EDISON CO.

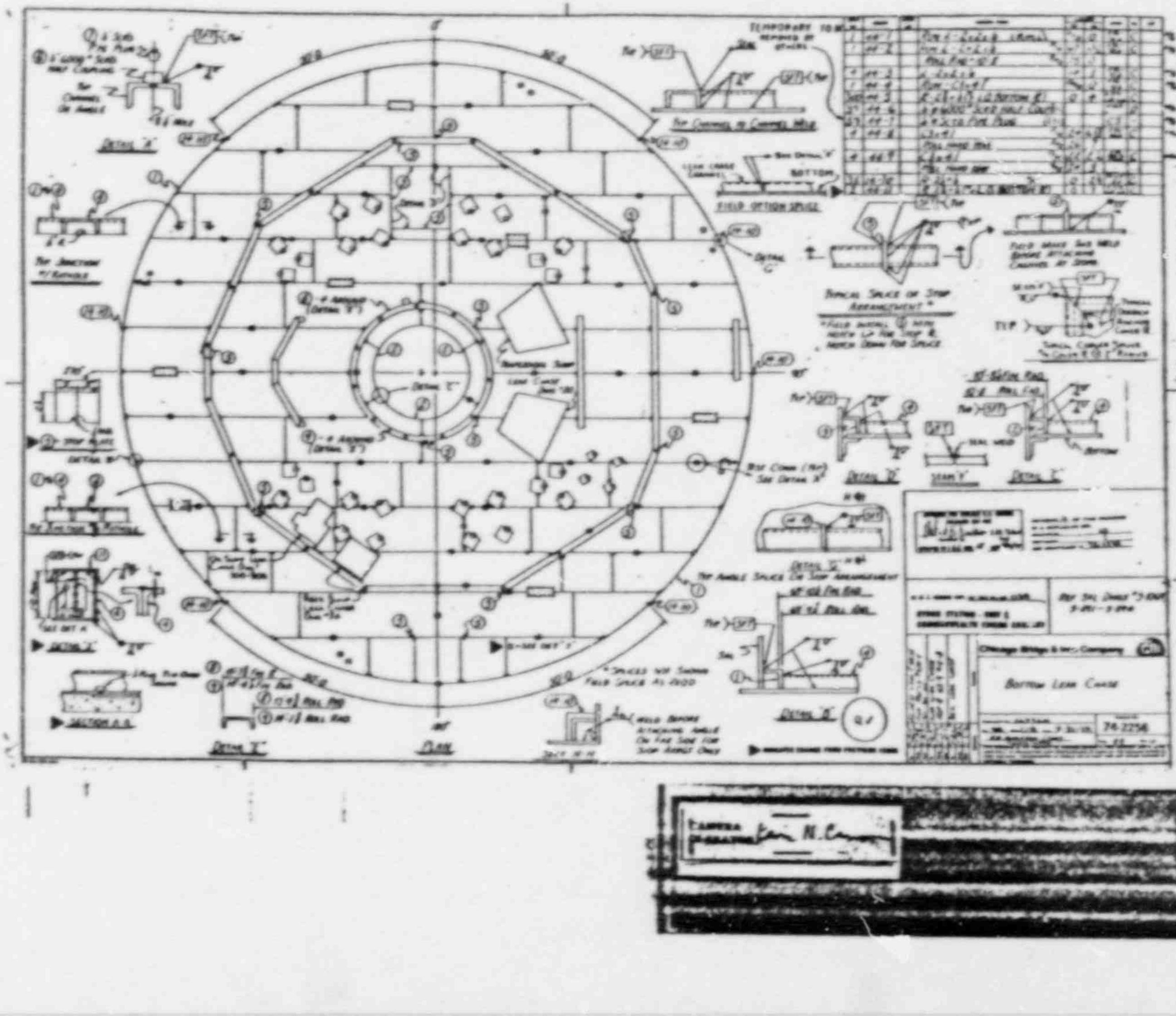
SARGENT & LUNDY
ENGINEERS

1. [X] NO EXCEPTION TAKEN CONTRACTOR MAY PROCEED WITH FABRICATION OR CONSTRUCTION
2. [ ] CONTRACTOR MAY PROCEED BASED ON NOTED CHANGES NOTED AND RESUBMIT
3. [ ] REVISE AS NOTED AND RESUBMIT
HOLD FABRICATION

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT. DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER
EQUIPMENT NO. _____ MAY 12 1978
BY M. S. TAO DATE

16X



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JUN - 6 1977
SARGENT & LUNDY

REVIEWED FOR

BYRON
UNIT 1
SPEC NO F-2725 PROJ NO 4391

COMMONWEALTH EDISON CO.

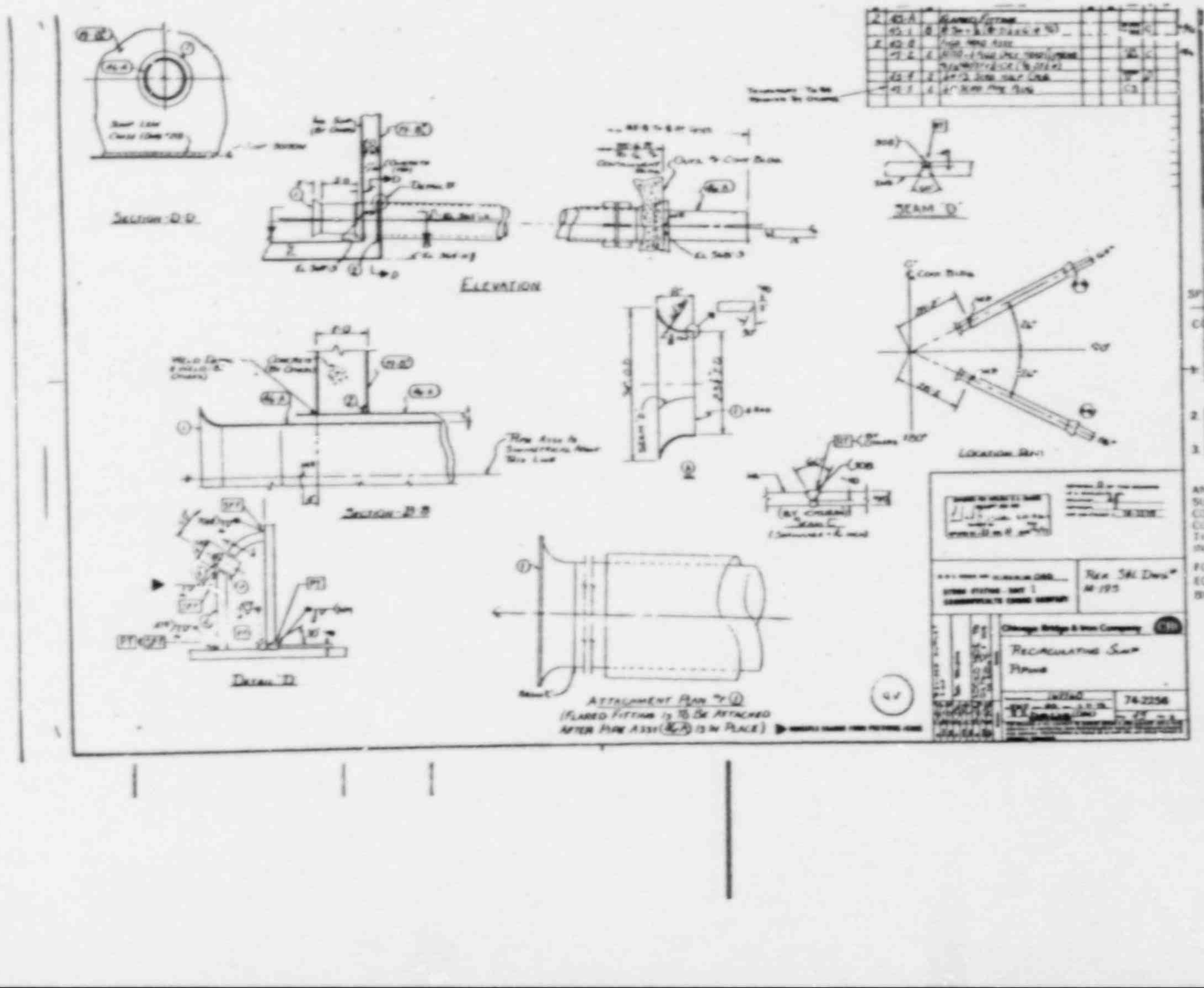
SARGENT & LUNDY
ENGINEERS

1. ☒ NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
2. ☐ CONTRACTOR CAN PROCEED BASED ON DRAWING REVISIONS NOTED AND RESUBMIT
3. ☐ REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER
EQUIPMENT NO.
BY R. K. 750 DATED 2.9.1977

15X



RECEIVED
FEB - 2 1977
SARGENT & LUNDY

REVIEWED FOR
BYRON
UNIT 1
SPEC. NO. F- 2725 PROJ. NO. 4391

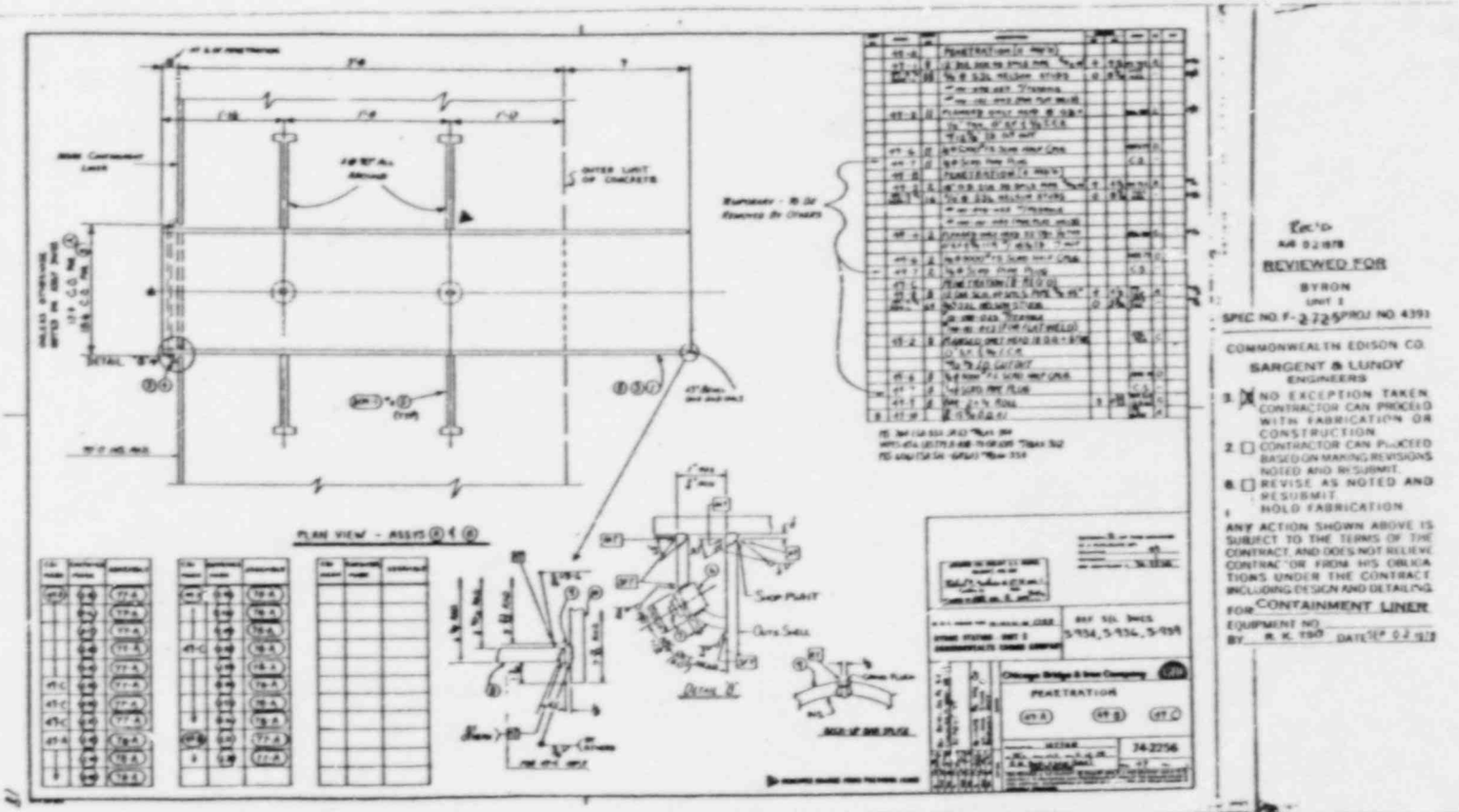
COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS

1. ☒ NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION
2. ☐ CONTRACTOR CAN PROCEED BASED ON MARKING REVISIONS NOTED AND RESUBMIT
3. ☐ REVISE [illegible] OTED AND RESUBMIT. HOLD FABRICATION

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILS

FOR CONTAINMENT LINER
EQUIPMENT NO.
BY R. K. TSO DATE [illegible]-77

16X



Rec'd
AR 02878

REVIEWED FOR
BYRON
UNIT 1
SPEC NO. F-2725 PROJ NO. 4391

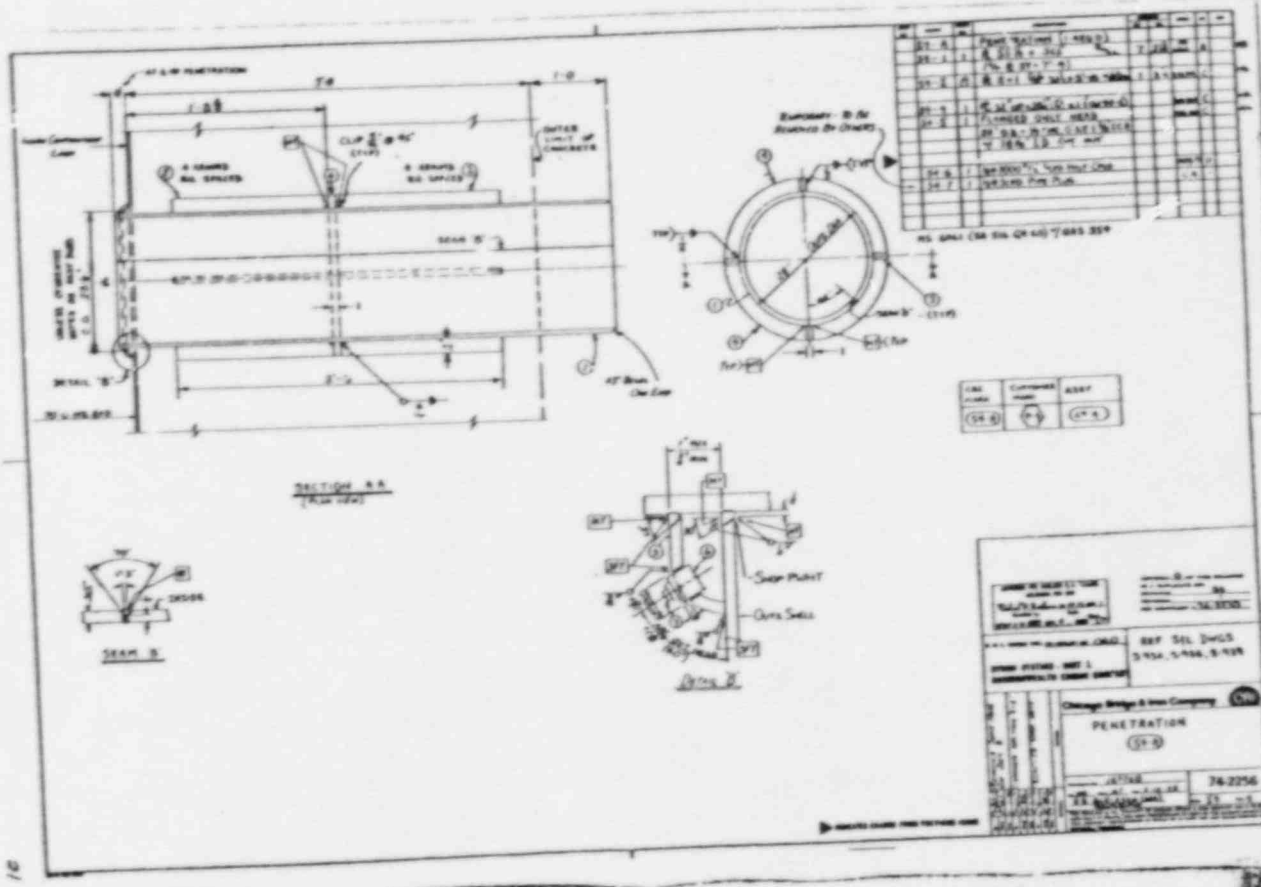
COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS

3. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MARKING REVISIONS NOTED AND RESUBMIT.
6. [ ] REVISE AS NOTED AND RESUBMIT.
1. [ ] HOLD FABRICATION.

ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT, AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR CONTAINMENT LINER
EQUIPMENT NO.
BY R. K. TSO DATE SEP 02 1981

16X



REVIEWED FOR
ENVIRON
SPEC NO. F 2725 PROJ. NO. 4391
COMMONWEALTH EDISON CO.
SARGENT & LUNDY
ENGINEERS
1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT.
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.
ANY ACTION SHOWN ABOVE IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAILING.
FOR CONTAINMENT LINER
EQUIPMENT NO.
BY M. K. TRO DATE SEP 12 1974

16X

Attachment "B"

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

SARGENT & LUNDY

1. [illegible]

APPROVAL SHOWN DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT.

LORETTA A. MESSEX 1-15-82
BY DATE

SPEC. NO. F2225 PROJ. NO. 4391-05

DESCRIPTION Welder Qualifications
Name, Process & Filler Metal (F. No.)

Document Number	Number of Pages		
1	2	Verlon L. Trickle	VLT
		SMA	
		P4	
2	1	Hulon J. Dykes	HJD (Transfered)
		SMA	
		P4	
3	1	Maurice D. Jones	MDJ (Transfered)
		SMA	
		P4	
4	2	Thomas E. Bowen	TEB (Transfered)
		SMA	
		P4	
5	3	Joseph M. Graham	JMG (Transfered)
		SMA	
		P4	
6	1	Charles R. Kindred	CRK (Transfered)
		SMA	
		P4	
7	1	Thomas J. Poston	TJP (Transfered)
		SMA	
		P4	
8	1	Juan A. Orellana	JAO (Transfered)
		SMA	
		P4	

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Signature Verlon Trickle

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Office Code

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Classification

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Contract Number

Page 1 of 16

Folder 1 of 4

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FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)		
9	2	Richard E. Saffeels	RES	(Transfered)
		SMA		
		F4		
10	1	Hipolito G. Silva	HGS	(Transfered)
		SMA		
		F4		
11	2	Daniel J. McCarty	DJM	Transferred
		SMA		
		F4		
		F5		
12	1	Steven R. Bauer	SRB	
		SMA		
		F4		
13	2	Michael L. Enoch	MLE	
		SMA		
		F4		
		F5		
14	2	Jack N. Curley	JNC	Quit
		SMA		
		F4		
15	1	Maurice D. Jones	MDJ	(Transfered)
		SMA		
		F4		
16	1	Gary L. Mitchell	GLM	(Transfered)
		SMA		
		F4		

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Page 2 of 10

Folder 1 of 4

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Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)		
17	2	Fred A. Lusch	FAL	(Transfered)
		SMA		
		F4		
		F5		
18	1	Charles F. Shonkwiler	CFS	
		SMA		
		F4		
19	2	Frank H. Neukirchner	FHN	
		SMA		
		F4		
20	2	Donald L. Peterson	DLP	
		SMA		
		F4		
		F5		
21	1	Larry G. Poppel	LGP	Quit
		SMA		
		F4		
22	1	Gary J. Becker	GJB	Quit
		SMA		
		F4		
23	3	Heino Witt	HW	Transferred
		SMA		
		F4		
24	1	Charles E. Pigg	CEP	Transferred
		SMA		
		F4		

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Contract Number

Page 3 of 10

Folder 1 of 1

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CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)	
25	1	Michael L. Thomas	MLT (Transfered)
		SMA	
		P4	
26	2	Danny G. Reed	DGR Quit
		SMA	
		P4	
27	1	Thomas A. Puruis	TAP (Transfered)
		SMA	
		P4	
28	2	Robert S. Boyd	RSB Quit
		SMA	
		P4	
29	1	G. William Pierce	CWP Quit
		SMA	
		P4	
30	1	Donald E. Nelson	DEN Quit
		SMA	
		P4	
31	2	Rodney J. Holliday	RJH
		SMA	
		P4	
32	1	Stanley L. Stewart	SLS Transferred
		SMA	
		P4	

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Contract Number

Page 4 of 10

Folder 1 of 4

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FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)	
33	1	Carl R. White	CRW Transferred
		SMA	
		F4	
34	3	Gerold Gene Jouett	GGJ (Transfered)
		SMA	
		F4	
		F5	
35	1	Robert Roy Stewart	RRS Transferred
		SMA	
		F4	
36	1	Dennis W. Jacobson	DWJ Quit
		SMA	
		F4	
37	1	Peter J. Hackett	PJH
		SMA	
		F4	
38	1	William B. Squires Jr.	WBS
		SMA	
		F4	
39	1	Clifford Leroy Schulze	CLS
		SMA	
		F4	
40	1	Dennis N. Robertson	DNR (Transfered)
		SMA	
		F4	

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Contract Number

Page 5 of 10

Folder 1 of 4

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FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. Nc.)		
41	1	Gary W. Dixon	GWD	
		SMA		
		F4		
42	2	Wesley T. Enloe	WTE	
		SMA		
		F4		
		F5		
43	1	Edd G. Chilsom	EGC	Quit
		SMA		
		F4		
44	1	Curtis D. Richards	CDR	
		SMA		
		F4		
45	2	Vancel R. Absher	VRA	Quit
		SMA		
		F4		
		F5		
46	1	Rolland G. Jensen	RGJ	Transferred
		SMA		
		F4		
47	2	Ernest L. Bankston	ELB	
		SMA		
		F4		
48	1	Larry R. Hostetler	LRH	Transferred
		SMA		
		F4		

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Contract Number

Page 6 of 10

Folder 1 of 4

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FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)		
49	1	Perry J. Need	PJN	Transferred
		SMA		
		F4		
50	1	Steve E. Hopkins	SEH	Quit
		SMA		
		F4		
51	1	Eugene J. Wapniarski	EJW	Quit
		SMA		
		F4		
52	2	Tommy W. Cochran	TWC	Transferred
		SMA		
		F4		
53	1	James H. Haney	JHH	Quit
		SMA		
		F4		
54	1	James M Buchanan	JMB	
		SMA		
		F4		
55	1	James D. Armoto	JDA	Transferred
		SMA		
		Tacker Only		
56	1	Frank L. Marsh	FLM	
		SMA		
		F4		

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Signature Walter Trickle

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Classification

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Page 7 of 10

Folder 1 of 4

QO 1152 JAN 75

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)		
57	1	Gregory B. Glidden	GBG	Quit
		SMA		
		F4		
58	1	Dennis Rhodes	DR	Quit
		SMA		
		F4		
59	1	Charles A. Uhing	CAU	
		SMA		
		F4		
60	1	Emmett O. White	EOW	
		SMA		
		F4		
61	1	Robert B. Reed	RBR	
		SMA		
		F4		
62	1	Roy L. Byrant	RLB	
		SMA		
		F4		
63	1	Earl J. Davis	EJD	Quit
		SMA		
		F4		
64	1	Tim M. Carlin	TMC	Quit
		SMA		
		F4		

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Signature Marlon Friehl

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74-2256
Contract Number

Page 8 of 10

Folder 1 of 4

GO 1152 JAN 75

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)		
65	1	Jasper J. Mitchell	JJM	
		SMA		
		F4		
66	1	Keith W. McCarty	KWM	
		SMA		
		F4		
67	1	Robert S. Smith	RSS	Transferred
		SMA		
		F4		
68	1	Robert G. Henson	RGH	Transferred
		SMA		
		F4		
69	1	Alvin T. Hooks	ATH	Quit
		SMA		
		F4		
70	1	Robert L. Hunker	RLH	Quit
		SMA		
		F4		
71	1	Ervin J. Borgheiinck	EJB	Quit
		SMA		
		F4		
72	1	Robert C. Schmick	RCS	Transferred
		SMA		
		F4		

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Date 12-15-76

Signature Vaden Trickl

CCC
Office Code

8.10
Classification

74-2256
Contract Number

Page 9 of 10

Folder 1 of 4

GO 1152 JAN 75

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION Welder Qualifications Name, Process & Filler Metal (F. No.)	
73	1	Wayne E. Morgan	WEM
		SMA	
		F4	
74	1	John L. Serigne	JLS Quit
		SMA	
		F4	
75	1	Charles E. McDuffie	CEM
		SMA	
		F4	
76	1	Clarence A. Freeman	CAF
		SMA	
		F4	
77	1	Richard D. Hines	RDH Transferred
		SMA	
		F4	
78	1	James R. Gossett	JRG Transferred
		SMA	
		F4	
79	2	Larry C. Wagner	LCW Transferred
		SMA	
		F4	
80	1	Jack K. Cawood	JKC Transferred
		SMA	
		F4	

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Date 4-11-77

Signature Vernon Trivett

CCC
Office Code

8.10
Classification

74-2256
Contract Number

Page 10 of 10

Folder 1 of 4

GO 1152 JAN 75

WL 111 A REV 9-71

WELDERS QUALIFICATION TEST

CHICAGO BRIDGE & IRON COMPANY

In Accordance With Section IX of the ASME Code - Latest Edition

FOR LOW HYDROGEN ELECTRODES ONLY

THIS WELDER WAS MAINTAINED HIS QUALIFICATION IN THE LISTED PROCESS.

DEAR 11/23/76

3/16" to Max

Material (PL or Pipe) PLATE

Process SMAW

Material Specification A36 to A36

Of P No. 1 to 1

Material Thickness 3/16 to 13/32"

Filler Metal (F #) F. 4

Filler Metal WPS E7018 74-2256/7 Rev. 1

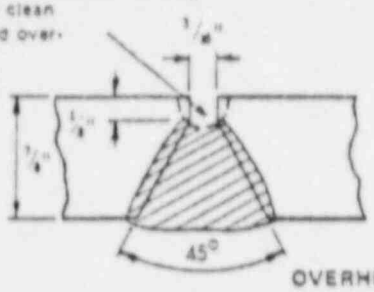
(SA) Specification SA. SFA-5.1

Filler Metal (A #) A. 1

RECORD OF UTILIZATION

Month Year	Type Insp.	Initials
REQUALIFICATION		
11/4/75	X	QSC
4/75	V	QSC
7/75	X	QSC
10/75	V	QSC
12/75	X	QSC
3/76	V	QSC
5/76	V	QSC
8/76	V	QSC
11/76	V	QSC P
2/76	V	VLT
1/77	V	DLP
2/77	V	DLP
3/77	V	VLT
4/77	V	VLT

Back gouge to clean metal and weld overhead



Use 1/8" ϕ electrode, first pass both sides. Remainder 5/32" ϕ electrode.

Last layer may be a single weave pass or made with several stringer beads

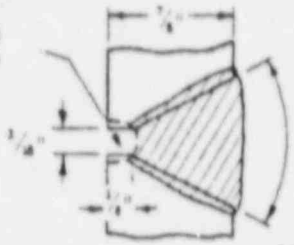
This test qualifies range 3/16" to max. to be welded.

OVERHEAD – BOTH SIDES

TEST METHOD

Two side bends per Fig Q-7.1	Radiography of 6".
Result 1: OK	Result: NA
Result 2: OK	

Back gouge to clean metal and weld horizontal



Use 5/32" ϕ electrode, first and last pass, both sides. Remainder 3/16" ϕ electrode

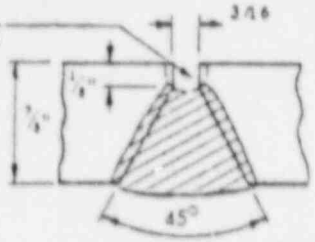
This test qualifies range 3/16" to max. to be welded.

HORIZONTAL – BOTH SIDES

TEST METHOD

Two side bends per Fig Q-7.1	Radiography of 6".
Result 1: OK	Result: NA
Result 2: OK	

Back gouge to clean metal and weld vertical



Use all 5/32" ϕ electrode

All passes uphill except first and wash passes which may be run downhill.

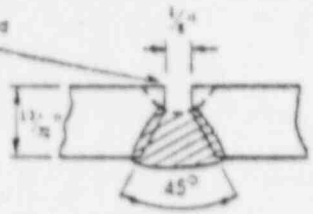
This test qualifies range 3/16" to max. to be welded.

VERTICAL – BOTH SIDES

TEST METHOD

Two side bends per Fig Q-7.1	Radiography of 6".
Result 1: OK	Result: NA
Result 2: OK	

Back gouge to clean metal and weld vertical



Use all 1/8" electrode. All passes are to be run downhill.

This test qualifies range 1/16" to 3/4".

13/32" SINGLE BEVEL BUTT VERTICAL

TEST METHOD

Two side bends per Fig Q-7.1	Radiography of 6".
Result 1: OK	Result: NA
Result 2: OK	

1. Qualification on butt welds also qualifies operator for fillet welds.
2. Qualification on F-4 electrodes qualifies welder to use F-3, F-2 and F-1 electrodes.
3. Tests on 7/8" steel were made in accordance with welding procedure specification #50 and the 13/32" test is per welding procedure specification 1169 or 888-360.

Line No. 66

Folder No. 1

Plates Tested	Date	Location	Social Security	Birth Date	Started CB&I	Specimen Mark
4	1-12-73	ALTON	342-46-0908	9-14-51	Year	KHM

WE CERTIFY THAT THE STATEMENTS MADE IN THIS RECORD ARE CORRECT AND THAT THE TEST WELDS WERE PREPARED, WELDED AND TESTED IN ACCORDANCE WITH SECTION IX OF THE ASME CODE – LATEST EDITION.

CHICAGO BRIDGE & IRON COMPANY

By [signature]

CB&I Representative

Home Address 616 MAURICE ST

City ALTON State ILL

Full Name KEITH H. McCARTY

First Middle Last

X = X-Ray
P = Plugs
V = Visual

FOR REFERENCE

WL 111A

CHICAGO BRIDGE & IRON COMPANY
WELDERS QUALIFICATION TEST

In Accordance With Section IX of the ASME Code - Latest Edition

FOR LOW HYDROGEN ELECTRODES ONLY

Give Renewal

MATERIAL (PL or PIPE) PLATE

MATERIAL SPECIFICATION A-283-C TO A-283-C

OF P NO. 1 TO 1

MATERIAL THICKNESS 7/8 13/32"

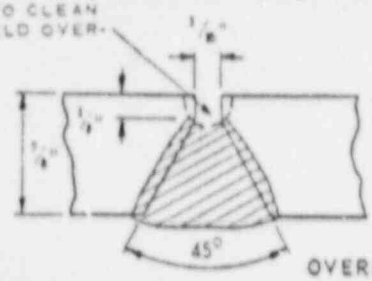
FILLER METAL (Fa) F. 4

FILLER METAL WPS E7018 74-225 Rev 1

(SA) SPECIFICATION SA. 233 SFA5.1

FILLER METAL (An) A. 1

BACK GOUGE TO CLEAN METAL AND WELD OVERHEAD



USE 1/8" ϕ ELECTRODE, FIRST PASS BOTH SIDES. REMAINDER 5/32" ϕ ELECTRODE.

LAST LAYER MAY BE A SINGLE WEAVE PASS OR MADE WITH SEVERAL STRINGER BEADS

THIS TEST QUALIFIES RANGE 3/16" TO MAX. TO BE WELDED.

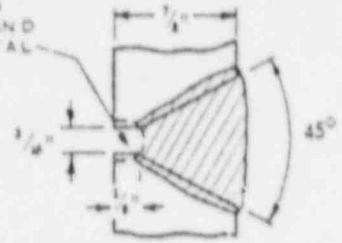
OVERHEAD - BOTH SIDES

TWO SIDE BENDS Fig Q-7.1

RESULT 1 Ok

RESULT 2 Ok

BACK GOUGE TO CLEAN METAL AND WELD HORIZONTAL



USE 5/32" ϕ ELECTRODE, FIRST AND LAST PASS, BOTH SIDES. REMAINDER 3/16" ϕ ELECTRODE.

THIS TEST QUALIFIES RANGE 3/16" TO MAX. TO BE WELDED.

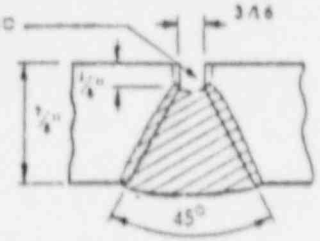
HORIZONTAL - BOTH SIDES

TWO SIDE BENDS Fig Q-7.1

RESULT 1 Ok

RESULT 2 Ok

BACK GOUGE TO CLEAN METAL AND WELD VERTICAL



USE ALL 5/32" ϕ ELECTRODES

ALL PASSES UPHILL EXCEPT FIRST AND WASH PASSES WHICH MAY BE RUN DOWNHILL.

THIS TEST QUALIFIES RANGE 3/16" TO MAX. TO BE WELDED.

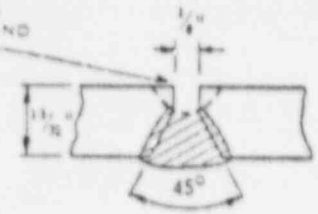
VERTICAL - BOTH SIDES

TWO SIDE BENDS Fig Q-7.1

RESULT 1 Ok

RESULT 2 Ok

BACK GOUGE TO CLEAN METAL AND WELD VERTICAL



USE ALL 1/8" ELECTRODE. ALL PASSES ARE TO BE RUN DOWNHILL.

THIS TEST QUALIFIES RANGE 1/16" TO 3/4".

11/2" SINGLE BEVEL BUTT VERTICAL

TWO SIDE BENDS Fig Q-7.1

RESULT 1 Ok

X-RAY

RESULT 2 Ok

1. QUALIFICATION ON BUTT WELDS ALSO QUALIFIES OPERATOR FOR FILLET WELDS.
2. QUALIFICATION ON F-4 ELECTRODES QUALIFIES WELDER TO USE F-3, F-2 AND F-1 ELECTRODES.

PLATES TESTED	DATE	LOCATION	SOCIAL SECURITY	BIRTH DATE	STARTED CB&I	SPECIMEN MARK
4	5-5-71	CHICAGO Ohio	453-28-0809	4-21-24	Year 1966	J.J.M

WE CERTIFY THAT THE STATEMENTS MADE IN THIS RECORD ARE CORRECT AND THAT THE TEST WELDS WERE PREPARED, WELDED AND TESTED IN ACCORDANCE WITH SECTION IX OF THE ASME CODE - LATEST EDITION.

WPS Dated 11-4-72.

CHICAGO BRIDGE & IRON COMPANY

By [illegible]

D. William F. Hines

CB&I REPRESENTATIVE

HOME ADDRESS Rt #2, Box 47

CITY STELLA STATE MO.

FULL NAME JASPER JOSEPH MITCHELL

FIRST MIDDLE LAST

IA

Line No. 65

Folder No. 1

RECORD OF UTILIZATION		
MONTH YEAR	TYPE INSP.	INITIALS
11-72	X	VLEE
2/73	X	GMP
5/73	X	GMP
8/73	X	GMP
11/73	V	GJC
2/74	V	GJC
5/74	V	GJC
8/74	V	GJC
11/74	V	GJC
2/75	V	GJC
4/75	V	GJC
7/75	V	GJC
10/75	X	GJC
1/76	X	GJC
4/76	X	GJC
7/76	X	GJC
10/76	V	GJC
10/76	V	VET
1/77	V	DLP
2/77	X	DLP
3/77	X	VET
4/77	X	VET

X = X-RAY
P = PLUGS
V = VISUAL

FOR REFERENCE

THIS WELDER HAS MAINTAINED HIS QUALIFICATION IN THE LISTED PROCESS.
JDM 1/6/77

WL 111 A REV 9-71

WELDERS QUALIFICATION TEST

CHICAGO BRIDGE & IRON COMPANY

In Accordance With Section IX of the ASME Code - Latest Edition

FOR LOW HYDROGEN ELECTRODES ONLY

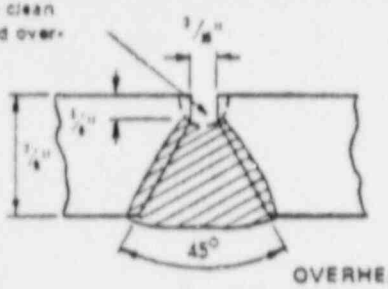
Material (PL or Pipe) PLATE
Process SMA
Material –
Specification A 283 C to A 283 C
Of P No. 1 to 1
Material Thickness 7/8"

Filler Metal (F #) F. 4
Filler Metal WPS E7018
(SA) Specification SA. 233 (SFA 5.1)
Filler Metal (A #) A. 1

RECORD OF UTILIZATION

Month Year	Type Insp.	Initials
6/13/72	✓	JDM. B.
9/72	V	JDM
12/72	V	JDM
4/73	X	WEE
7/73	V	JDM
10/73	V	JDM
1/74	V	JDM
4/74	V	JDM
7/74	V	JDM
10/74	V	JDC
1/75	V	JDC
4/75	V	JDC
7/75	X	JDC
10/75	X	JDC
1/76	V	JDC
4/76	V	JDC
5/76	X	JDC
9/76	X	JDC
11/76	X	JDC

Back gouge to clean metal and weld overhead



Use 1/8" ϕ electrode, first pass both sides. Remainder 5/32" ϕ electrode.

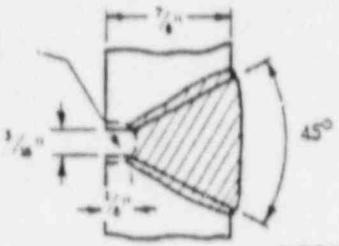
Last layer may be a single weave pass or made with several stringer beads

This test qualifies range 3/16" to max. to be welded.

OVERHEAD – BOTH SIDES

TEST METHOD	Two side bends per Fig Q-7.1	Radiography of 6".
Result 1	α	
Result 2	α	
Result		

Back gouge to clean metal and weld horizontal



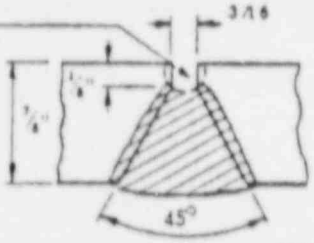
Use 5/32" ϕ electrode, first and last pass, both sides. Remainder 3/16" ϕ electrode

This test qualifies range 3/16" to max. to be welded.

HORIZONTAL – BOTH SIDES

TEST METHOD	Two side bends per Fig Q-7.1	Radiography of 6".
Result 1	α	
Result 2	α	
Result		

Back gouge to clean metal and weld vertical



Use all 5/32" ϕ electrode

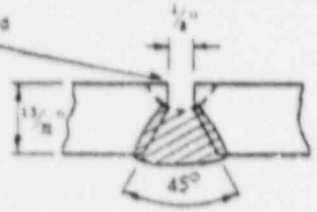
All passes uphill except first and wash passes which may be run downhill.

This test qualifies range 3/16" to max. to be welded.

VERTICAL – BOTH SIDES

TEST METHOD	Two side bends per Fig Q-7.1	Radiography of 6".
Result 1	α	
Result 2	α	
Result		

Back gouge to clean metal and weld vertical



Use all 1/8" electrode. All passes are to be run downhill.

This test qualifies range 1/16" to 3/4".

13/32" SINGLE BEVEL BUTT VERTICAL

TEST METHOD	Two side bends per Fig Q-7.1	Radiography of 6".
Result 1		
Result 2		
Result		

1. Qualification on butt welds also qualifies operator for fillet welds.
2. Qualification on F-4 electrodes qualifies welder to use F-3, F-2 and F-1 electrodes.
3. Tests on 7/8" steel were made in accordance with welding procedure specification #50 and the 13/32" test is per welding procedure specification 1169 or 888-360.

Line No. 77
Folder No. 1

Plates Tested	Date	Location	Social Security	Birth Date	Started CB&I	Specimen Mark
3	7/22/68	LEBANON, IND.	306-36-6080	2/29/36	Year 1958	R.D.H.

WE CERTIFY THAT THE STATEMENTS IN THIS RECORD ARE CORRECT AND THAT THE TEST WELDS WERE PREPARED, WELDED AND TESTED IN ACCORDANCE WITH SECTION IX OF THE ASME CODE – LATEST EDITION UPDATED - 4/14/72

CHICAGO BRIDGE & IRON COMPANY

By J W Kissel
CB&I Representative

Home Address FRANKFORT 1606 Lincoln
City FRANKFORT State IND

Welder's Signature

RICHARD D HINES
First Middle Last

X = X Ray
P = Print
V = Visual

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION
		RECORD DRAWINGS
1	11	Dwgs No. R1 Thru R11

SARGENT & LUNDY
1. REVISED & UPDATED
LORETTA A. MESSEX 1-15-82
BY DATE
SPEC NO F2725 PROJ NO 4397.05

COPIES of documents covered by this index are certified to be true copies

Date 1-23-78

Signature Garland Mahan

CCC
Office Code

8.5
Classification

74-2256
Contract Number

Page 1 of 1

Folder 2 of 19

GO 1152 JAN 75

NDE Procedures

Welders I.D. for Permanent and Temporary Attachment Welds

BREY, SPACH, HOREY, EDEY, ENGEL

Welding Procedures

NDE Procedures

FOR REFERENCE

Welding Procedures

NDE Procedures

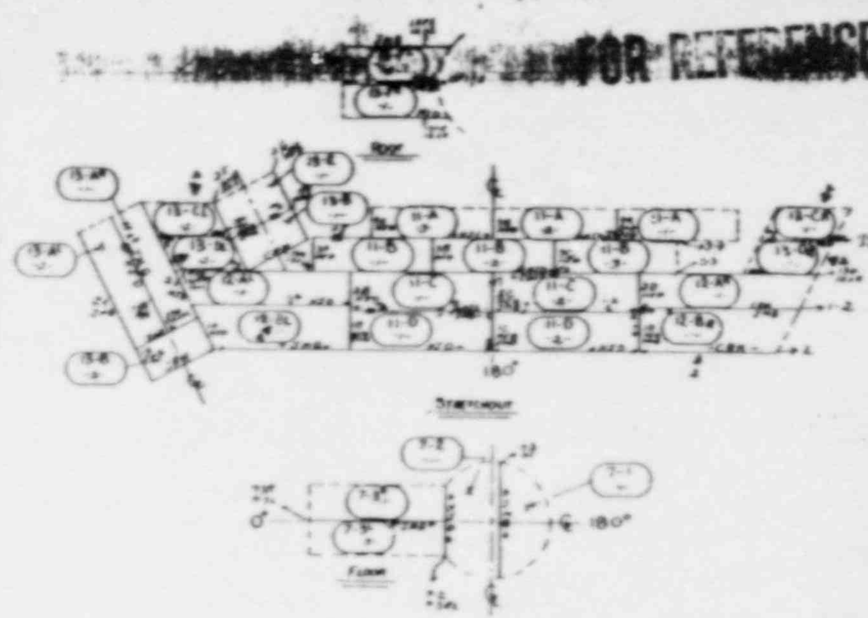
Welders I.D. for Temporary and Permanent Attachment Welds

Chicago Bridge & Iron Company

RECORD DRAWING INSTRUCTIONS

74-2256

FOR REFERENCE



INSTRUCTIONS FOR FILLING OUT THIS "R" DRAWING ARE ON "RC"

BYRON STATION - UNIT 1
COMMONWEALTH EDISON COMPANY

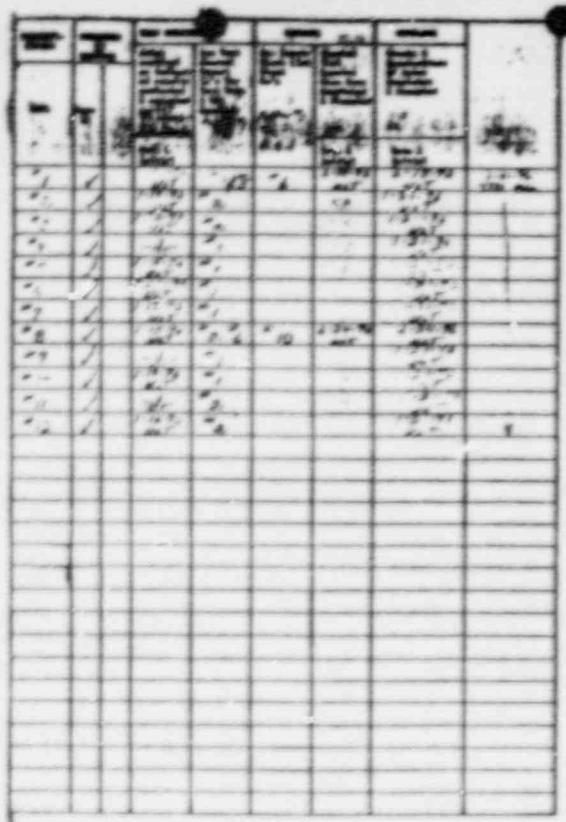
Chicago Bridge & Iron Company CBI

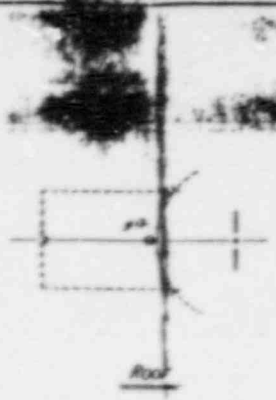
RECORD DRAWING FOR REACTOR CAVITY

74-2256

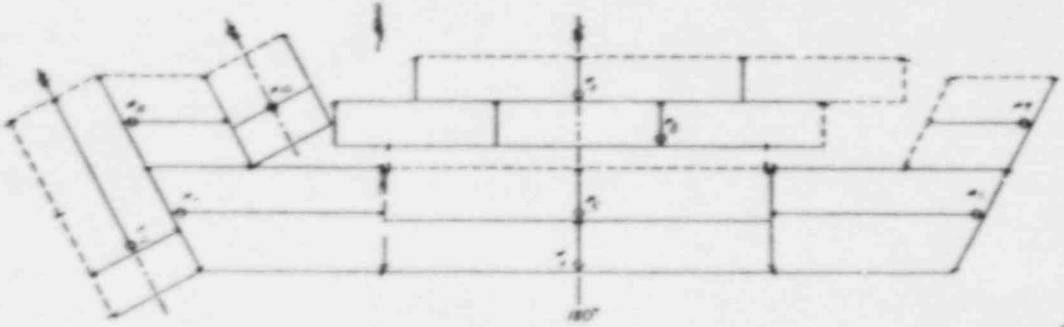
RZ

INDICATES CHANGE FROM PREVIOUS ISSUE

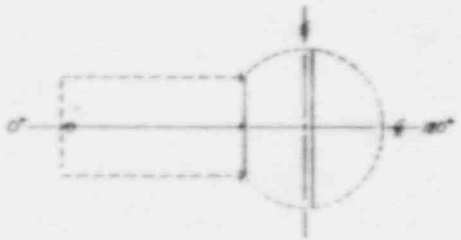




FOR REFERENCE



STRETCHOUT



FLOOR

INSTRUCTIONS
1. JOBSITE QA TO NUMBER EACH TEST ZONE
2. JOBSITE QA TO ENTER I.D. & REV OF PROCEDURE TO BE USED
3. HOLD THIS DWG WITH DWGS 14415

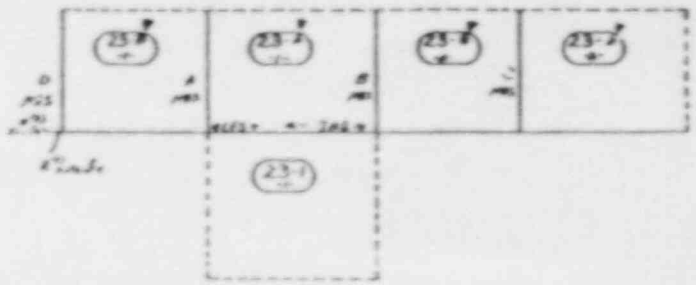
NOTE
See Sheet No. 2 for Legend and Miscellaneous Notes

STEAM SYSTEMS - UNIT 1
COMMONWEALTH EDISON COMPANY

Chicago Bridge & Iron Company

RECORD DRAWING
REACTOR CAVITY
LEAK CHASE

74-2256



STRETCHOUT

FOR RESIDENCE

INSTRUCTIONS FOR FILLING OUT THIS "R" DRAWING ARE ON "R1"
(WORK THIS DWG WITH DWGS #22 & 23.

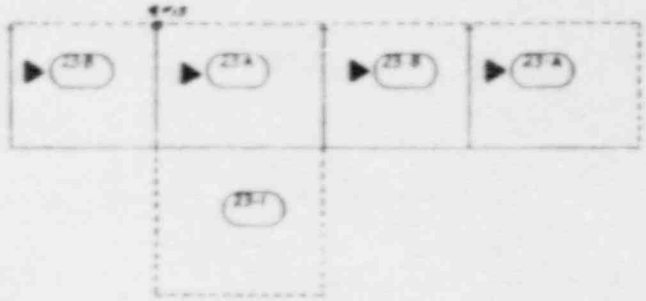
Chicago Bridge & Iron Company

RECORD DRAWING
FOR RECTANGULAR SUMP

74-2256

2	1			45					

FOR REFERENCE



STRETCHOUT

INSTRUCTIONS:
1. JOBSITE Q.A. TO NUMBER EACH TEST ZONE
2. JOBSITE Q.A. TO ENTER ID# REV OF PROCEDURE TO BE USED
3. ADD A TAG DWG WITH DWG # 24

INDICATES CHANGE FROM PREVIOUS ISSUE

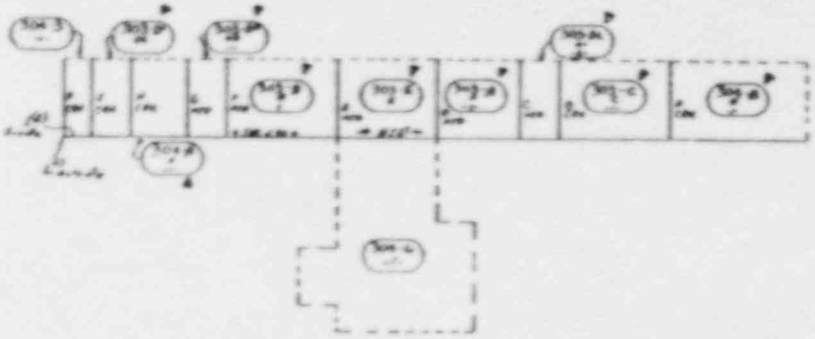
BYRON STATION - UNIT 1
COMMONWEALTH EDISON CO.

Chicago Bridge & Iron Company

RECORD DRAWING
"A" RECTANGULAR SUMP
LEAK CHASE

24-2256

FOR REFERENCE



STRETCHOUT

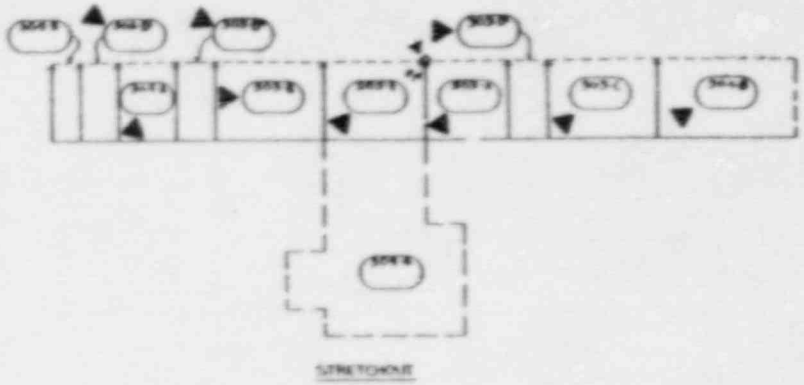
INSTRUCTIONS FOR FILLING OUT THIS "M" DRAWING ARE ON "M" FROM THIS DWG. WITH DWGS "M" THRU "M"

Chicago Bridge & Iron Company

RECORD DRAWING

OIL SUMP

74-2258



STRETCHOUT

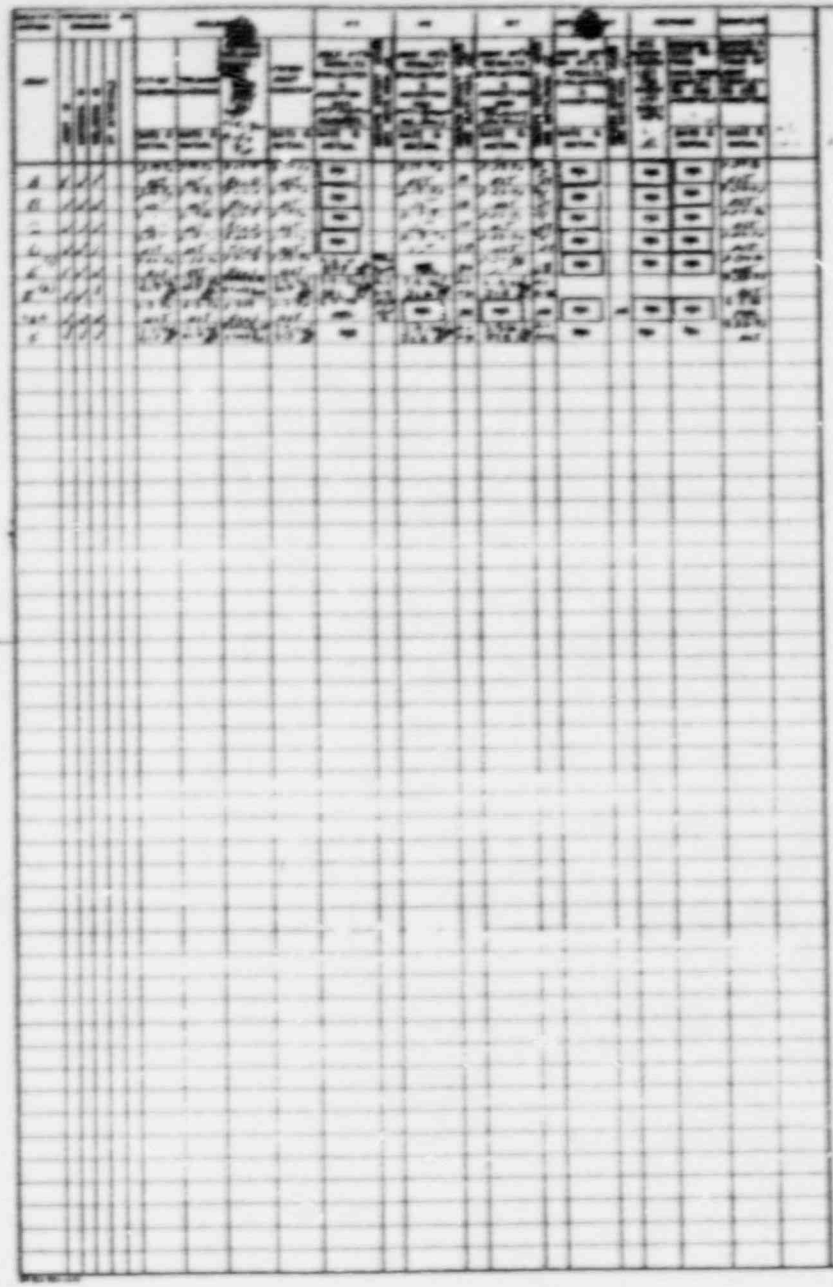
FOR REFERENCE

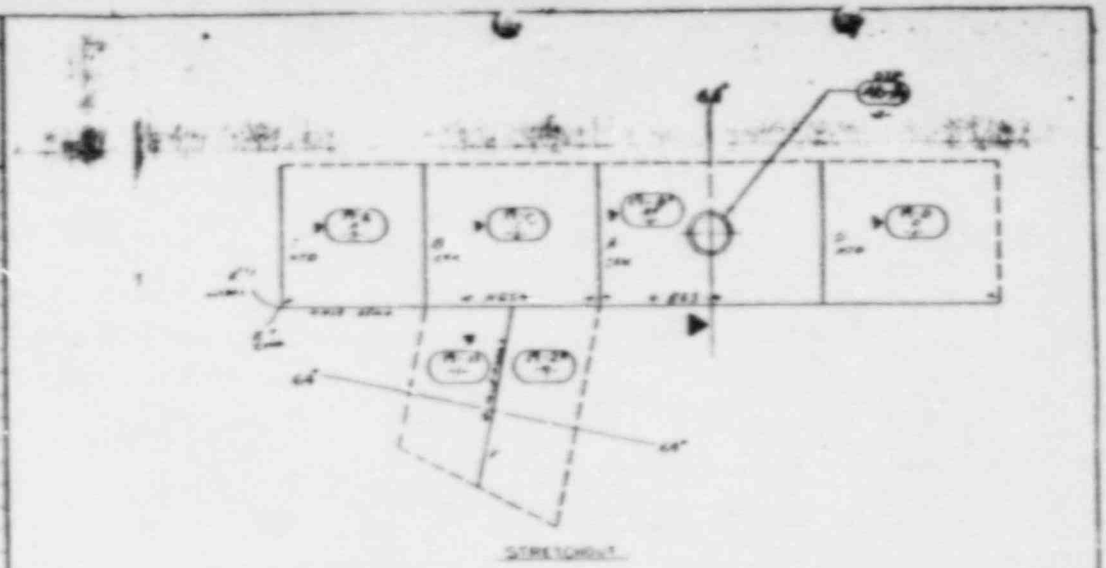
Chicago Bridge & Iron Company

RECORD DRAWING

TK OIL SUMP

LEAK CHASE





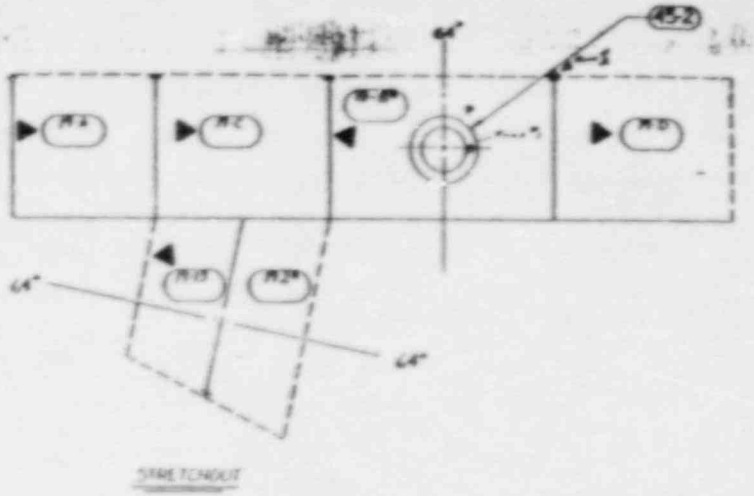
STRETCHOUT

FOR REFERENCE

Chicago Bridge & Iron Company

RECORD DRAWING

74-2256



STRETCHOUT

FOR REFERENCE

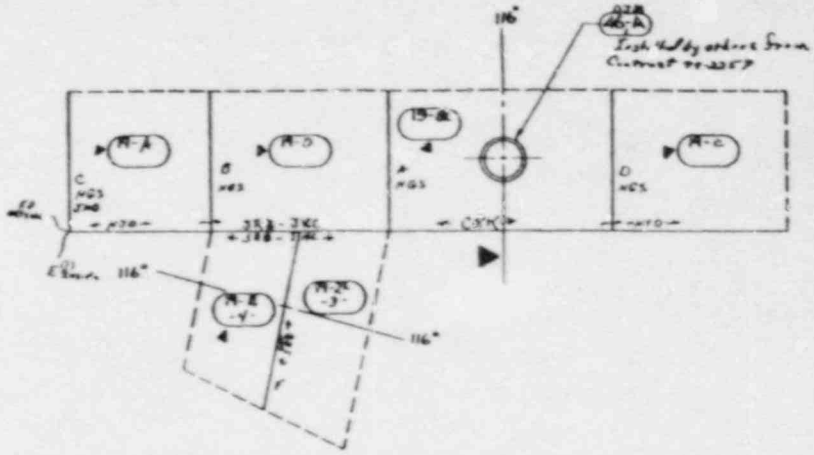
INSTRUCTIONS:
1. JOBSITE QA TO NUMBER EACH TEST ZONE
2. JOBSITE QA TO ENTER ID # REV. OF PROCEDURE TO BE USED
3. ALIGN THIS DWG WITH DWG #20

Chicago Bridge & Iron Company

RECORD DRAWING

TRAPEZOIDAL SUMP @ 64" LEAK CHASE

74-2256



FOR REFERENCE

INSTRUCTIONS FOR FILLING OUT THIS "R" DRAWING ARE ON "R0" WORK THIS DWG WITH DWGS "18 & 19

▶ INDICATES CHANGE FROM PREVIOUS ISSUE

BYRON STATION - UNIT 1
COMMONWEALTH EDISON COMPANY

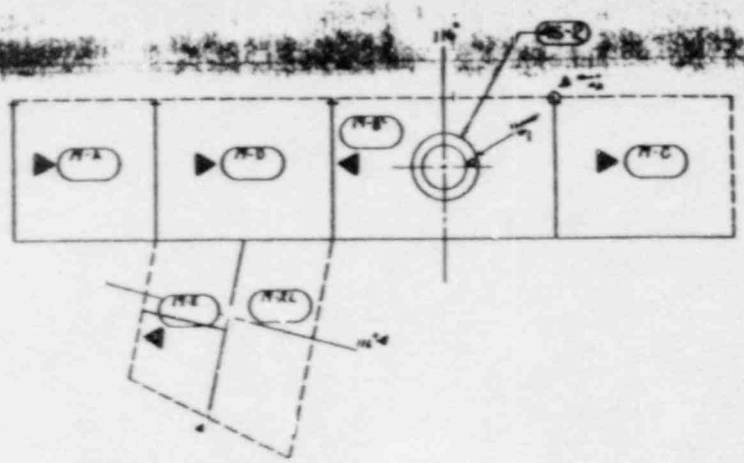
Chicago Bridge & Iron Company

RECORD DRAWING

"A" TRAPEZOIDAL SUMP @ 116'

74-2256

R10 - 3



FOR REFERENCE

INSTRUCTIONS:
1. JOBSITE QA TO NUMBER EACH TEST ZONE.
2. JOBSITE QA TO ENTER ID. & REV. OF PROCEDURE TO BE USED.
3. WORK THIS DWG. WITH DWG. "20.

Chicago Bridge & Iron Company

RECORD DRAWING

TRAPEZOIDAL SUMP @ 116' LEAK CHASE

74-2264

Attachment "C"

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

SARGENT & LUNDY

1. REVIEWED & ACCEPTED

ACTION SHOWN DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT.

LORETTA A. MESSEX

BY

DATE 1-25-82

SPEC NO. E2725 PROJ NO. 4391-05

Document Number	Number of Pages	DESCRIPTION Test Channel Reports - Seam I.D. Traceable to Record Drawings
1	1	Test Zones 9, 5, 10, 7, 6, 4 , 1
2	1	Test Zones 8, 12, 11, 2, 3,
3	1	Test Zone 1 - Trapezoidal Sump @ 116 Dg.
4	1	Test Zone 1 - Trapezoidal Sump @ 64 Dg.
5	1	Reactor Cavity Bottom Test Zone 1 - Retest after relocation of Test Coupling
6	1	Reactor Cavity Bottom Test Zone 8 - Retest after relocation of Test Coupling
7	1	Test Zones 74,91,83,38,44,80,75,27,28,31,35,53
8	1	Test Zones 68,37,24,26,30,46,16,45,50,52,62,67
9	1	Test Zones 84,58,41,25,36,49,65,84,98,102,134,
10	1	Test Zones 5[illegible]3,79,22,39,40,56,48,57,59, 2-Sump @ 64 Dg.
11	1	Test Zones 2, [illegible]4,85,87
12	1	Test Zones 81,17,18,20,47,51,90,14-Oil Sump,77A,92A,37C
13	1	Test Zones 33,23,21,34,42,43,66,71,86,88,89,92,116,119,120,136
14	1	Test Zones 15,19,82A, 103,126,129,
15	1	Test Zones 59,60,63,13-Rectangular Sump,60A,55,105,106,108,111
16	1	Test Zones 61,69,72,74,75,82,60B,60C,77,32,94,96,104,
17	1	Test Zones 68,70,73,76,78,2-Sump @ 116 Dg.,
18	1	92B,37D, 95,121,109,113,122,124 133
19	1	Test Zones 54,97,100,125,99,101,110,112,114,117,128,132
20	1	Test Zones 107,118,127,131
21	1	Test Zones 115,123
22	1	Test Zones 37B,110,109B,93,120,135
23	1	Test Zones 37A, 62 Retest,
24	1	Test Zones 109A,109,119

COPIES of documents covered by this index are certified to be true copies

Date 6-22-77

Signature Verlon Frisch

CCC
Office Code

7.9
Classification

74-2256
Contract Number

Page 1 of 2

Folder 1 of 1

QO 1152 JAN 75

FOR REFERENCE

CBI NUCLEAR RECORD INDEX

Document Number	Number of Pages	DESCRIPTION
		Test Channel Reports - Seam I.D. Traceable to Record Drawings
25	1	Double Gasket Interspace Test for Equipment Hatch
26	1	Test Zones 36,19, N-C #44

COPIES of documents covered by this index are certified to be true copies

Date 6-22-77

Signature Victor Friedb

CCC
Office Code

7.9
Classification

74-2256
Contract Number

Page 2 of 2

Folder 1 of 1

QO 1152 JAN 75

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-225[illegible] Customer [illegible] Report or Sequence # 1

Job Location Byron [illegible] Proc. No. T-[illegible]-5B Rev. 2

Pressure Gauge Manufacturer [illegible] Model [illegible]

Pressure Gauge 4" Ø Range [illegible] S/N or ID [illegible]

Last Calibration Date 12-15-75 Recalibration Due [illegible]

Leak Detector Solution [illegible]

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
#7	[illegible]	[illegible]	[illegible]	1/5/76	[illegible]	[illegible]	1/5/76	[illegible]	[illegible]
#5	1/15/76	[illegible]	II	1/15/76	[illegible]	II	1/15/76	[illegible]	II
#10	1/15/76	[illegible]	II	1/15/76	[illegible]	II	1/19/76	[illegible]	II
[illegible]									
#[illegible]	1/20/76	[illegible]	II	1/20/76	[illegible]		1/22/76	[illegible]	II
[illegible]							1/30/76	[illegible]	
#[illegible]			II				1/20/76	VFY	II

REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS VLT

Examination and evaluations have been performed to my satisfaction

Foreman

Witnessed and Accepted By

CEC. Customer 1/20/76

Witnessed By

N/A

Authorized Inspector

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer Commonwealth Edison Co. Report or Sequence # 2

Job Location Byron Station Proc. No. TCP(74-2254/57)5B Rev. 2

Pressure Gauge Manufacturer Ashcroft Model # 1082A

Pressure Gauge 4" ø Range 0-100 PSIG S/N or ID 1-3-[illegible]

Last Calibration Date 12-15-75 Recalibration Due [illegible]

Leak Detector Solution Snoop Leak Test

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
#8	1/15/76	[illegible]	II	1/15/76	[illegible]	II	1/15/76	[illegible]	II
#12	1/16/76	[illegible]	II	1/16/76	[illegible]	II	1/16/76	[illegible]	II
#[illegible]	1/[illegible]	[illegible]	[illegible]	1/[illegible]	[illegible]	[illegible]	1/19/76	[illegible]	II
#[illegible]	1/[illegible]	[illegible]	[illegible]	1/[illegible]	[illegible]	[illegible]	1/[illegible]	[illegible]	[illegible]
#[illegible]	1/[illegible]	[illegible]	[illegible]	1/[illegible]	[illegible]	[illegible]	1/[illegible]	[illegible]	[illegible]

REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
Michael K. Adams	Timothy Greene 1/16/76	N/A
Foreman	CE Co. / Customer	Authorized Inspector

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 3

Job Location Byron Dk. Proc. No. TCP(74-2256)2/5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-10

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-10

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Sanitet

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
116° Z-1	6-5-76	DCL	II	6-5-76	DCL	II	6-5-76	DCL	II

REVIEWED AND ENTERED ON APPLICABLE, R
DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Line No. 3
Folder No. 1

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted by	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 4

Job Location Byron IIL Proc. No. TCP(74-2254/2) 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-9

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100 9

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamitest

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
64° Z-1	6-5-76	DEL	II	6-5-76	DEL	II	6-5-76	DEL	II

REVIEWED AND ENTERED ON APPLICABLE, R DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Line No. 4
Folder No. 1

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

CBI

TEST CHANNEL TEST REPORT

FOR REFERENCE

Contract No. 74-2256 Customer CECO Report or Sequence # 5

Job Location Byron Ill. Proc. No. TE(BY-225,2)5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-P

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-P

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seaquest

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Prossure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
1	6-15-76	[illegible]	II	6-15-76	[illegible]	II	6-15-76	[illegible]	II

REVIEWED AND ENTERED ON APPLICABLE, R
DRAWING OR CHECKLIST FAL

NO UNACCEPTABLE INDICATIONS

Line No. 5
Folder No. 1

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 6

Job Location Byron IL Proc. No. TCP(74225&7)5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-9

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-9

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
8	6-24-76	DCL	II	6-24-76	DCL	II	6-24-76	DCL	II

REVISED AND ENTERED ON DRAWING OR CHECKLIST UT

NO UNACCEPTABLE INDICATIONS

R APPLICABLE.

Line No. 6
Folder No. 1

Examination and evaluations have been performed to my satisfaction N/A — Foreman

Witnessed and Accepted by N/A — Customer

Witnessed by N/A — Authorized Inspector

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 7

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-9

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-9

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
74	illegible	JLA	II	8/5/76	JLA	II	illegible	illegible	illegible
71	8/11/76	JLA	II	8/illegible	JLA	II	illegible	illegible	II
83	8/illegible/76	illegible	II	8/illegible	illegible	II	8/11/76	illegible	II
38	8/3/76	JLA	II	illegible	illegible	II	illegible	JLA	II
44	8/13/76	JLA	II	illegible	illegible	II	illegible	illegible	II
illegible	illegible	illegible	II	illegible	illegible	II	illegible	illegible	II
15	illegible	illegible	II	illegible	illegible	II	illegible	illegible	II
27	illegible	illegible	II	illegible	JLA	II	illegible	JLA	II
25	illegible	illegible	II	illegible	illegible	II	illegible	illegible	II
31	8/24/76	JLA	II	8/24/76	JLA	II	8/24/76	JLA	II
35	8/23/76	JLA	II	8/23/76	JLA	II	8/23/76	JLA	II
53	8/30/76	JLA	II	8/30/76	JLA	II	8/30/76	JLA	II

Line No. 7
Folder No. 1

Examination and evaluations have been performed to my satisfaction

N/A

Foreman

Witnessed and Accepted By

N/A

Customer

Witnessed By

N/A

Authorized Inspector

REVIEWED AND ENTERED ON APPLICABLE R IND UNACCEPTABLE INDICATIONS DRAWING OR CHECKLIST

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 8

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-10

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-10

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
28	5/11-76	JLA	II	[illegible]	[illegible]	II	8/11/76	JLA	II
37	8/5/76	JLA	II	[illegible]	[illegible]	[illegible]	8/5/76	JLA	II
24	8/11/76	JLA	II	8/11/76	JLA	II	8/11/76	JLA	II
26	8/18/76	CEI	II	8/13/76	CEI	II	8/13/76	CEI	II
30	8/17/76	JLA	II	8/17/76	JLA	II	[illegible]	[illegible]	[illegible]
46	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	II
16	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
45	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
50	8/23/76	JLA	II	8/23/76	JLA	II	8/23/76	JLA	II
52	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
62	8/23/76	JLA	II	8/20/76	JLA	II	8/23/76	JLA	II
67	8/18/76	JLA	II	8/18/76	JLA	II	8/18/76	JLA	II

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NO UNACCEPTABLE INDICATIONS

Line No. 8
Folder No. 1

Examination and evaluations have been performed to my satisfaction

N/A

Foreman

Witnessed and Accepted By

N/A

Customer

Witnessed By

N/A

Authorized Inspector

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 9

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-11

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-11

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
84	8/11/76	DEL	II	8/11/76	DEL	II	8/11/76	DEL	II
58	8/12/76	JLA	II	8/12/76	JLA	II	8/12/76	JLA	II
41	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	II
25	8/10/76	JLA	II	8/10/76	JLA	II	8/10/76	JLA	II
36	8/16/76	DEL	II	8/16/76	DEL	II	8/16/76	DEL	II
49	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
65	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
84	8/11/76	DEL	II	8/11/76	DEL	II	8/11/76	DEL	II
98	9/23/76	JLA	II	9/23/76	JLA	II	9/23/76	JLA	II
102	10/7/76	JLA	II	10/7/76	JLA	II	10/7/76	JLA	II
134	10/6/76	JLA	II	10/6/76	JLA	II	10/6/76	JLA	II

REVIEWED AND ENTERED ON APPLICABLE R
DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Line No. 4
Folder No. 1

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 10

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-12

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-12

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
E6	8/5/76	JLA	II	8/5-6	JLA	II	8/5-6	JLA	II
63	8/11/76	JLA	II	8/11-12	JLA	II	8/11-12	JLA	II
79	8/10/76	JLA	II	8/10/76	JLA	II	8/10-11	JLA	II
22	8/16/76	JLA	II	8/16/76	JLA	II	8/16-17	JLA	II
39	8/18/76	DEL	II	8/18-19	DEL	II	8/18-19	DEL	II
40	8/13/76	JLA	II	8/13-14	JLA	II	8/13-14	JLA	II
2 Sump 364°	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
48	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
56	8/5/76	JLA	II	8/5/76	JLA	II	8/5/76	JLA	II
57	8/23/76	DEL	II	8/23/76	DEL	II	8/23/76	DEL	II
59	8/30/76	JLA	II	8/30/76	JLA	II	8/30/76	JLA	II

RECEIVED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST

Line No. 13
Folder No. 1

NO UNACCEPTABLE INDICATIONS

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted by	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

CBI FOR REFERENCE

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 11

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-13

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-13

Last Calibration Date 8-4-76 Recalibration Due 2-4-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
29	8/16/76	JLA	II	8/17/76	JLA	II	8/23/76	JLA	II
64	8/30/76	JLA	II	8/30/76	JLA	II	8/30/76	JLA	II
85	8/30/76	JLA	II	8/30/76	JLA	II	8/30/76	JLA	II
87	8/24/76	JLA	II	8/24/76	JLA	II	8/24/76	JLA	II
116	9/27/76	JLA	II	9/27/76	JLA	II	10/27/76	JLA	II
119	10/27/76	JLA	II	10/27/76	JLA	II	10/27/76	JLA	II
120	11/1/76	JLA	II	11/1/76	JLA	II	11/1/76	JLA	II
136	10/5/76	JLA	II	10/5/76	JLA	II	10/5/76	JLA	II

REVIEWED AND ENTERED ON APPLICABLE TRAVELER OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Line No. 11
Folder No. 1

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 12

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-15

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-15

Last Calibration Date 8-4-76 Recalibration Due 2-4-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
21	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
17	8/17/76	JLA	II	8/17/76	JLA	II	8/17/76	JLA	II
18	8/24/76	JLA	II	8/24/76	JLA	II	8/24/76	JLA	II
20	8/24/76	JLA	II	8/24/76	JLA	II	8/24/76	JLA	II
47	8/18/76	JLA	II	8/18/76	JLA	II	8/18/76	JLA	II
51	8/23/76	JLA	II	8/23/76	JLA	II	8/23/76	JLA	II
14 Oil Sump	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
90	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
77A	9/1/76	JLA	II	9/1/76	JLA	II	9/1/76	JLA	II
92A	9/1/76	JLA	II	9/1/76	JLA	II	9/1/76	JLA	II
37C	9/1/76	JLA	II	9/1/76	JLA	II	9/1/76	JLA	II

REVISED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST 2

Line No. 12
Folder No. 1

NO UNACCEPTABLE INDICATIONS

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

CBI

FOR REFERENCE

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 13

Job Location Byron, Ill. Proc. No. TCP74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-16

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-16

Last Calibration Date 8-4-76 Recalibration Due 2-4-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
33	8/17/76	JLA	II	8/17/76	JLA	II	8/17/76	JLA	II
23	8/11/76	JLA	II	8/11/76	JLA	II	8/11/76	JLA	II
21	8/4/76	JLA	II	8/4/76	JLA	II	8/4/76	JLA	II
34	8/3/76	JLA	II	8/3/76	JLA	II	8/3/76	JLA	II
42	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	II
43	8/12/76	JLA	II	8/12/76	JLA	II	8/12/76	JLA	II
66	8/12/76	JLA	II	8/12/76	JLA	II	8/12/76	JLA	II
71	8/12/76	JLA	II	8/12/76	JLA	II	8/12/76	JLA	II
86	8/23/76	JLA	II	8/23/76	JLA	II	8/23/76	JLA	II
88	8/23/76	JLA	II	8/23/76	JLA	II	8/23/76	JLA	II
REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST NO UNACCEPTABLE INDICATIONS							Line No. 13 Folder No. 1		
89	8/24/76	JLA	II	8/24/76	JLA	II	8/24/76	JLA	II
92	8/20/76	JLA	II	8/20/76	JLA	II	8/20/76	JLA	II

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 14

Job Location Byron, Ill. Proc. No TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-14

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-14

Last Calibration Date 8-4-76 Recalibration Due 2-4-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
15	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
19	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
82A	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
103	9/2/76	JLA	II	9/2/76	JLA	II	9/2/76	JLA	II
126	12/6/76	JLA	II	12/6/76	JLA	II	12/6/76	JLA	II
129	12/6/76	JLA	II	12/6/76	JLA	II	12/6/76	JLA	II

REVIEWED AND ENTERED ON APPLICABLE R DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Line No. 14
Folder No. 1

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 15

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-12

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-12

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution-Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
59	8/30/76	JLA	II	8/30/76	JLA	II	8/30/76	JLA	II
60	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
63	9/11/76	JLA	II	9/11/76	JLA	II	9/11/76	JLA	II
13 Bac T. Sump	8/30/76	JLA	II	8/30/76	JLA	II	8/20/76	JLA	II
60A	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
55	9/21/76	JLA	II	9/21/76	JLA	II	9/21/76	JLA	II
105	9/23/76	DEL	II	9/23/76	DEL	II	9/23/76	DEL	II
106	9/17/76	JLA	II	9/17/76	JLA	II	9/17/76	JLA	II
108	9/28/76	JLA	II	9/28/76	JLA	II	9/28/76	JLA	II
111	8/31/76	DEL	II	8/31/76	DEL	II	8/31/76	DEL	II
REVIEWED AND ENTERED ON APPLICABLE R DRAWING OR CHECKLIST									
NO UNACCEPTABLE INDICATIONS									

Examination and evaluations have been performed to my satisfaction

N/A

Foreman

Witnessed and Accepted By

N/A

Customer

Witnessed By

N/A

Authorized Inspector

Line No. 15
Folder No. 1

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 16

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5 Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-9

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-9

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
67	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
69	8/25/76	DEL	II	8/25/76	DEL	II	8/25/76	FAILED	
69 Retest	8/25/76	DEL	II	8/25/76	DEL	II	8/25/76	DEL	II
72	8/19/76	JLA	II	8/19/76	JLA	II	8/19/76	JLA	II
74	8/5/76	JLA	II	8/5/76	JLA	II	8/5/76	JLA	II
75	8/12/76	JLA	II	8/10/76	JLA	II	8/10/76	JLA	II
82	8/31/76	JLA	II	8/31/76	JLA	II	8/31/76	JLA	II
60B	9/16/76	JLA	II	9/16/76	JLA	II	9/16/76	JLA	II
60C	9/16/76	JLA	II	9/16/76	JLA	II	9/16/76	JLA	II
77	9/16/76	JLA	II	9/16/76	JLA	II	9/16/76	JLA	II
32	9/15/76	JLA	II	9/15/76	JLA	II	9/15/76	JLA	II
94	9/27/76	JLA	II	9/27/76	JLA	II	9/27/76	JLA	II
96	9/27/76	DEL	II	9/27/76	DEL	II	9/27/76	DEL	II
104	9/27/76	JLA	II	9/27/76	JLA	II	9/27/76	JLA	II

Examination and evaluations have been performed to my satisfaction

N/A

Foreman

Witnessed and Accepted By

N/A

Customer

Witnessed By

N/A

Authorized Inspector

REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST

R

NO UNACCEPTABLE INDICATIONS

Line No. 1a

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256/7 Customer CECO Report or Sequence # 17

Job Location Byron, Ill. Proc. No TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-10

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-10

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
68	8/11/76	JLA	II	8/11/76	JLA	II	8/11/76	JLA	II
70	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	II
73	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	II
76	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	II
78	8/13/76	JLA	II	8/13/76	JLA	II	8/13/76	JLA	I
2 @116°	8/14/76	JLA	II	8/14/76	JLA	II	8/14/76	JLA	II
REVISED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST 2									
NO UNACCEPTABLE INDICATIONS									

Examination and evaluations have been performed to my satisfaction

N/A
Foreman

Witnessed and Accepted By
N/A
Customer

Witnessed By
N/A
Authorized Inspector

Line No. 17
Folder No. 1

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 18

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-16

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-16

Last Calibration Date 8-4-76 Recalibration Due 2-4-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
92B	9/14/76	JLA	II	9/14/76	JLA	II	9/16/76	JLA	II
37D	9/16/76	JLA	II	9/16/76	JLA	II	9/16/76	JLA	II
95	9/22/76	JLA	II	9/22/76	JLA.	II	9/22/76	JLA	II
121	9/2/76	JLA	II	9/2/76	JLA	II	9/2/76	JLA	II
109	10/29/76	JLA	II	10/29/76	JLA	II	10/29/76	JLA	II
113	9/30/76	JLA	II	9/30/76	JLA	II	9/30/76	JLA	II
122	10/1/76	JLA	II	9/1/76	JLA	II	10/1/76	JLA	II
124	11/2/76	JLA	II	11/2/76	JLA	II	11/2/76	JLA	II
133	10/25/76	JLA	II	10/25/76	JLA	II	10/29/76	JLA	II
REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST									
NO UNACCEPTABLE INDICATIONS									

Examination and evaluations have been performed to my satisfaction N/A — Foreman

Witnessed and Accepted By N/A — Customer

Witnessed By N/A — Authorized Inspector

Line No. 18
Folder No. 1

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 19

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-15

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-15

Last Calibration Date 8-4-76 Recalibration Due 2-4-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
54	9/22/76	JLA	II	9/22/76	JLA	II	9/22/76	JLA	II
97	9/1/76	JLA	II	9/1/76	JLA	II	9/1/76	JLA	II
130	9/27/76	JLA	II	9/27/76	JLA	II	9/27/76	JLA	II
125	8/31/76	DEL	II	8/31/76	DEL	II	8/31/76	DEL	II
99	9/30/76	JLA	II	9/30/76	JLA	II	9/30/76	JLA	II
101	10/5/76	JLA	II	10/5/76	JLA	II	10/5/76	JLA	II
110	11/1/76	JLA	II	11/1/76	JLA	II	11/1/76	JLA	II
112	9/30/76	JLA	II	9/30/76	JLA	II	9/30/76	JLA	II
111	9/30/76	JLA	II	9/30/76	JLA	II	9/30/76	JLA	II
117	10/5/76	JLA	II	9/5/76	JLA	II	10/5/76	JLA	II
128	10/8/76	JLA	II	10/8/76	JLA	II	10/8/76	JLA	II
132	10/5/76	JLA	II	10/5/76	JLA	II	10/5/76	JLA	II
REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST									
NO UNACCEPTABLE INDICATIONS									

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted by	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

Line No. 12
Folder No. 1

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 20

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-9

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-9

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
107	9/30/76	JLA	II	9/30/76	JLA	II	9/30/76	JLA	II
118	10/1/76	JLA	II	10/1/76	JLA	II	10/1/76	JLA	II
127	10/18/76	JLA	II	10/18/76	JLA	II	10/18/76	JLA	II
131	10/18/76	JLA	II	10/18/76	JLA	II	10/18/76	JLA	II
	REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST								
	NO UNACCEPTABLE INDICATIONS								

Examination and evaluations have been performed to my satisfaction N/A — Foreman

Witnessed and Accepted By N/A — Customer

Witnessed By N/A — Authorized Inspector

Line No. 20
Folder No. 1

CBI **FOR REFERENCE**

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 21

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-12

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-12

Last Calibration Date 5-13-76 Recalibration Due 11-13-76

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
115	9/30/76	JLA	II	9/30/76	JLA	II	9/30/76	JLA	II
123	10/1/76	JLA	II	10/1/76	JLA	II	10/1/76	JLA	II

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DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted by	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

Line No. 21
Folder No.

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 22

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-11

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-11

Last Calibration Date 10-28-76 Recalibration Due 4-28-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
378	2/2/77	DEL	II	2/2/77	DEL	II	2/2/77	DEL	II
1012	2/21/77	JLA	II	2/22/77	JLA	II	2/24/77	JLA	II
110	2/24/77	JLA	II	2/11/77	JLA	II	2/24/77	JLA	II
93	2/25/77	JLA	II	2/25/77	JLA	II	2/25/77	JLA	II
REJ 120	2/22/77	JLA	"	2/22/77	JLA	"	2/24/77	JLA	"
135	2/23/77	JLA	II	2/23/77	JLA	II	2/23/77	JLA	II
	REVIEWED AND ENTERED ON APPLICABLE R DRAWING OR CHECKLIST								
	NO UNACCEPTABLE INDICATIONS								

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted by	Witnessed By
N/A	N/A	N/A
Foreman	Customer	Authorized Inspector

Line No. 3
Sheet No. 1

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 23

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-12

Pressure Gauge 4" ø Range 0-100 S/N or ID 4-0-100-12

Last Calibration Date 10-28-76 Recalibration Due 4-28-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
37A	2/2/77	DEL	II	2/2/77	DEL	II	2/3/77	DEL	II
RETEST 62	3/12/77	DEL	II	3/12/77	DEL	II	3/12/77	DEL	II
REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST R									
NO UNACCEPTABLE INDICATIONS									

Examination and evaluations have been performed to my satisfaction

Witnessed and Accepted by

Witnessed By

NA

Foreman

NA

Customer

NA

Authorized Inspector

Folder No.

FOR REFERENCE

CBI

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 24

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-9

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-9

Last Calibration Date 10-28-76 Recalibration Due 4-28-77

Leak Detector Solution

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
109A	2/24/77	JLA	II	2/24/77	JLA	II	2/24/77	JLA	II
109	2/24/77	JLA	II	2/24/77	JLA	II	2/24/77	JLA	II
Recst 119	2/25/77	JLA	II	2/25/77	JLA	II	2/25/77	JLA	II

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DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted By	Witnessed By
NA	NA	NA
Foreman	Customer	Authorized Inspector

DOUBLE GASKET INTERSPACE TEST REPORT

CONTRACT NO. 74-2256 CUSTOMER CECO

JOB LOCATION Byron Ill PROC. NO. APP-74-2256/7 REV. 0

PRESSURE GAUGE MANUFACTURER Ashcroft MODEL CE-205857

PRESSURE GAUGE 6" ø RANGE 0-100 S/N OR I.D. CE-205857

LAST CALIBRATION DATE 2-18-77 RECALIBRATION DUE 8-18-77

ASSEMBLY IDENTIFICATION Equipment Hatch

1. Strength Test
   - By: DEL
   - Date: 3-18-77
   - A. Pressure 57.5 PSIG
   - B. Held 10 Min.
   - C. Results OK

2. Pressure Decay Test
   - By: DEL
   - Date: 3-18-77
   - A. Time
     - Start Hold 1:00
     - End Hold 2:05
   - B. Pressure
     - Start Hold 50 PSIG
     - End Hold 48.5 PSIG
   - C. Pressure Difference -1.5
   - D. Results OK

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NO UNACCEPTABLE INDICATIONS

Remarks:

witness:
J J Tulon
CECO QA

Unit No. 25
Folder No. 1

Report # _____

Page _____ of _____

CBI FOR REFERENCE

TEST CHANNEL TEST REPORT

Contract No. 74-2256 Customer CECO Report or Sequence # 26

Job Location Byron, Ill. Proc. No. TCP 74-2256/7 5B Rev. 3

Pressure Gauge Manufacturer Ashcroft Model 4-0-100-12

Pressure Gauge 4" Ø Range 0-100 S/N or ID 4-0-100-12

Last Calibration Date 10-28-76 Recalibration Due 4-28-77

Leak Detector Solution Seamtest Low Temp

Test Zone No.	Acceptable Performance								
	Pressure Strength			Solution Film			Pressure Decay		
	Date	Evaluator	Level	Date	Evaluator	Level	Date	Evaluator	Level
R-36	4/5/77	J.A.	II	4/5/77	J.A.	II	4/5/77	J.A.	II
R-19	4/5/77	J.A.	II	4/5/77	J.A.	II	4/5/77	J.A.	II
WC #44	4/5/77	D.E.	II	4/5/77	D.E.	II	4/5/77	D.E.	II

REVIEWED AND ENTERED ON APPLICABLE DRAWING OR CHECKLIST

NO UNACCEPTABLE INDICATIONS

Examination and evaluations have been performed to my satisfaction	Witnessed and Accepted by	Witnessed By
N A	N A	N A
Foreman	Customer	Authorized Inspector

Attachment "D"

SARGENT & LUNDY ENGINEERS

Calcs. For Containment Liner Leak chase channel		Calc. No. S.2.6.1
		Rev. 6 Date
X Safety-Related	Non-Safety-Related	Page 111 of

Client CECO	Prepared by K V. Patel	Date 2/10/87
Project BYRON / Braidwood	Reviewed by S Mallo	Date 2/11/87
Proj. No. 4391, 4392 4683, 4684 Equip. No.	Approved by S R Brewer	Date 2-10-87

Objective: To prepare the technical basis for plugging Leak chase channel

References: (1) C.B.&I Drawing 339
(2) S & L Drawing S-1069, Detail 287

Leak chase channels are fillet welded over a number of liner seam welds for leak testing the seam welds during construction. The channel creates a volume which is pressurized to the design pressure during construction to demonstrate leak tightness of the liner seam welds. After the tests, plugs may be installed in the test tap to seal this volume.

Plugging the leak chase channels is acceptable during the ILRT test and during operation of the plant based on the following:

1. The channels and the 3/16" continuous fillet welds between the channel and the liner are designed to withstand accident pressure and accident temperature. Stresses due to SSE on the channel and its weld are negligible compared to the magnitude of the accident pressure and temperature stresses. The channel and the weld have a safety margin of 3.2 against allowables under the most severe loads. Refer to accompanying calculations

2. As required by Sargent and Lundy Drawing S-1069, the leak chase channel assembly is a Category I structure.

3. The liner seam weld was tested by partial radiography and 100% liquid penetrant or magnetic particle test. Furthermore, the leak test channels and the liner weld underneath have been tested at 50 psig (containment deign pressure) during construction and the leak tightness was established at that time.

4. The welded steel plate liner, attached to the entire inside surface of the containment, serves as leaktight membrane but not as a structural load carrying element. The liner seam weld is always in compression due to prestress in the containment wall even though the ILRT pressure will relieve this compression force to some extent. Therefore, the liner seam weld can be considered non-structural.

5. Venting the leak test channels during the ILRT will not provide information on the leak tightness of the liner weld, since the liner is backed by prestressed concrete and is an integral part of the containment wall which will act as a leak tight membrane. The most effective procedure for performing the test on the liner weld is to test when it is not backed by concrete, and this has been done during liner construction. In fact, most of the leakage during containment Integrated Leak Rate Tests is due to penetrations and valves and not due to the containment structure itself.

Based on above discussion, it is concluded that installing leak chase channel plugs during ILRT or plant operation is not significant to the test or operation of the plant.

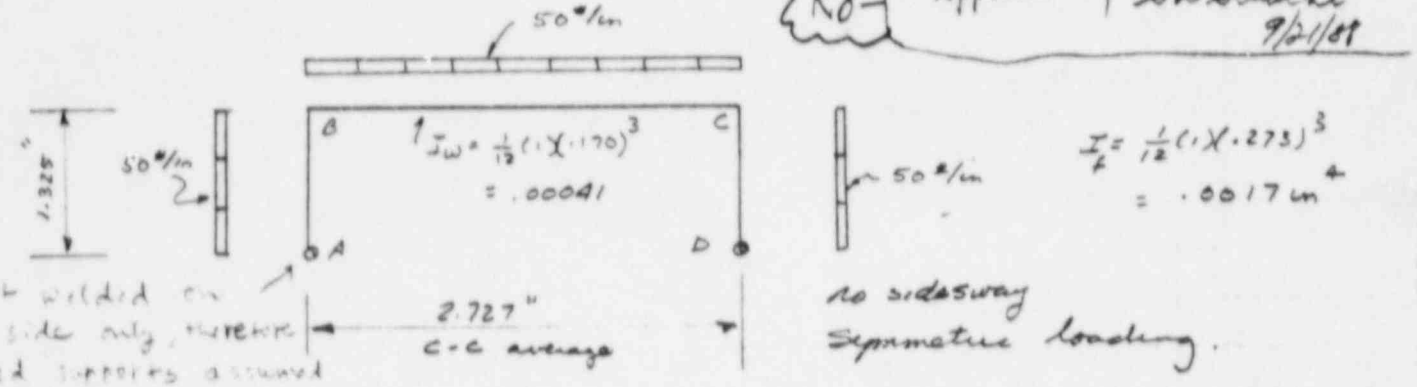
SARGENT & LUNDY ENGINEERS

Calcs. For CONTAINMENT LINER LEAK CHASE		Calc. No. S.2.6.1
		Rev. 6 / Date
x Safety-Related	Non-Safety-Related	Page 113 of

Client CECo	Prepared by R. Bartczak	Date 10-22-86
Project Byron/Braidwood	Reviewed by K.V. Patel	Date 2/10/87
Proj. No. 4391, 4392, 4483, 4684 Equip. No.	Approved by [signature]	Date 2-11-87

Prepared by Jeder Kaul 9-21-88
Reviewed by Hisham Mo 9/21/88
Approved by SD Schacht 9/21/88
R8

Load combination 1 - Accident Pressure 50 psi



right welded on one side only, otherwise pinned supports assumed

no sidesway
Symmetric loading.

for flange $\frac{I}{c} = \frac{.0017}{1.325"} = .001283 \text{ in}^3$ $D.F. = \frac{(.001283).75}{(.001283).75 + .000150} = .86$

for web $\frac{I}{c} = \frac{.00041}{2.727} = .000150 \text{ in}^3$ $D.F. = \frac{.000150}{(.001283).75 + .000150} = .14$

FIXED END MOMENTS

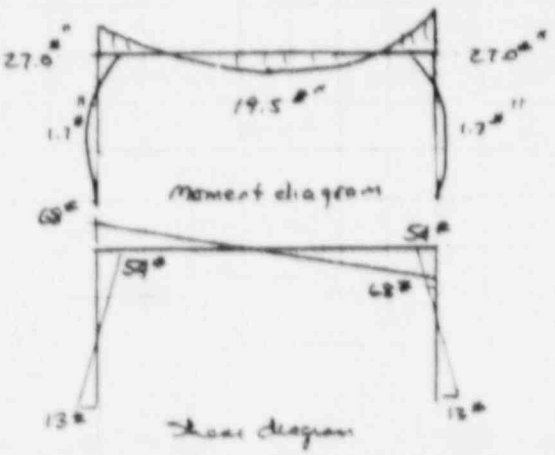
$M_{BC}, M_{CB} = \frac{1}{12}(50)(2.727)^2 = 31 \text{ in-#}$

$M_{AB} = M_{CD} = \frac{50(1.325)^2}{8} = 11 \text{ in-#}$

Moment Distribution

	BA	BC
DF	.86	.14
FEM	11	-31
D1	17.2	2.8
CO1		1.4
D2	-1.2	-.2
	27.0	-27.0

This number should have a minus sign. But the effect of this error is negligible since large margin exists as shown on page 115 therefore no change is necessary
R8



Form GO-3.08.1 Rev. 2 SL-4847 10-86 KPS

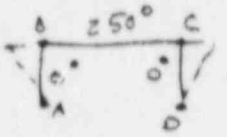
SARGENT & LUNDY ENGINEERS

Calcs. For CONTAINMENT LINER LEAK CHASE		Calc. No. S 2.6.1
		Rev. 6 Date
✓ Safety-Related	Non-Safety-Related	Page 114 of

Client CECo	Prepared by R. Carlozzi	Date 10-22-86
Project BYRON/BRAIDWOOD	Reviewed by [illegible]	Date 2/10/87
Proj. No. 9391/9392 9683/9684 Equip. No.	Approved by [illegible]	Date 2/11/87

Load Combination - 2 Accident temperature from 70° to 320° (Ref Kennedy pg 138)

$$K = \frac{I_2}{I_1}\frac{h}{L} = \left(\frac{.0017}{.0004}\right)\left(\frac{1.325}{2.727}\right) = \frac{2.0}{1.119}$$



$$N = 2.0(2) + 3 = \underset{3.23}{7}$$

$$M_B = M_C = -\frac{3EI\varepsilon t}{hN} = \frac{-3(29\times10^6)(.0041)(.0017)(6.5)(6.9\times10^{-6})(320^\circ - 70^\circ)}{1.325(7)}$$

$$= \frac{39.5}{13.54}\ \#''$$

$$H_A = H_B = \frac{39.5}{1.325} = \underset{10.22}{29}\ \#$$

for flange

$$M_{max} = 39.5 + 27.0 = \underset{40.5}{66.5}\ \#\text{-in}$$

$$V_{max} = 54\# + \underset{10.22}{29\#} = \underset{64.22}{68\#}$$

allowable moments

$$M_{allow} = Sf_b = \frac{1}{6}(1)(.273)^2 \cdot \underset{0.75}{.6}(36{,}000) = \underset{33.5}{26.8}\ \#\text{-in} > 66.5\ \#\text{-in}$$

$$V_{allow} = td \cdot .4f_y = .273(1)(.4\times36000) = 3931\# > \underset{64.22}{68\#}$$

for web.

$$M_{max} = \underset{40.5}{66.5}\ \#\text{-in}$$

$$V_{max} = 68\#$$

$$M_{allow} = Sf_b = \frac{1}{6}(1)(.170)^2(.6)(36000) = \underset{130}{104}\ \#\text{-in} > 66.5\ \#\text{-in}$$

$$V_{allow} = td \cdot .4f_y = .170(1)(.4)(36000) = 2448\# > 68\#$$

∴ leak chase channels have margin factor of

$$\frac{66.5}{104}\ \underset{130}{\underset{40.5}{}} = .64 \text{ against bending}$$

$$\frac{68}{\quad} = .03 \text{ against shear}$$

SARGENT & LUNDY ENGINEERS

Calcs. For Containment- Liner Leak chase channel	Calc. No. S.2.6.1
X Safety-Related / Non-Safety-Related	Rev. 6 Date
	Page 115 of

Client CECO	Prepared by K V Patel	Date 2/10/87
Project Braidwood	Reviewed by [illegible]	Date 2/11/87
Proj. No. 4683/34 4691/32 Equip. No.	Approved by [illegible]	Date 2/11/87

For Weld : $\frac{3}{16}$" size of fillet weld

Weld capacity = $(0.707)(\frac{3}{16})(0.3 * 70000)$ .. base am.

= 2784 #/in

Weld shear = 13 + 10.22

= 23.22 #/in < 2784 #/in O.K.

Weld Margin factor

$$= \frac{23.22}{2784}$$

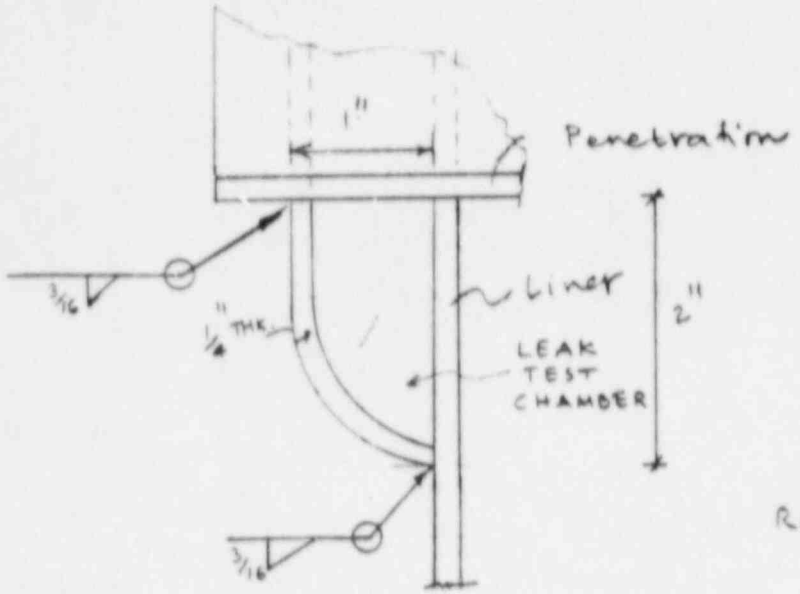
= 0.008 against shear in weld

Based on the maximum margin factor against failure either in Leak chase channel or in its weld, the Leak chase assembly has a minimum safety margin of 3.2 .

SARGENT & LUNDY ENGINEERS

Calcs. For Containment Liner Leak Chase Assembly		Calc. No. S.2.6.1
		Rev. 6 Date
X Safety-Related	Non-Safety-Related	Page 116 of

Client CECO	Prepared by K. V. Patel	Date 2/12/87
Project BYRON / Braidwood	Reviewed by S Malla	Date 2/12/87
Proj. No. 4341, 4342, 4683, 4684 Equip. No.	Approved by	Date 2-12-87



Ref. CBI Drwg 55 & 56

The Typical leak Test chamber around the penetration is shown in above. The chamber is made of 1/4" thick A-36 material.

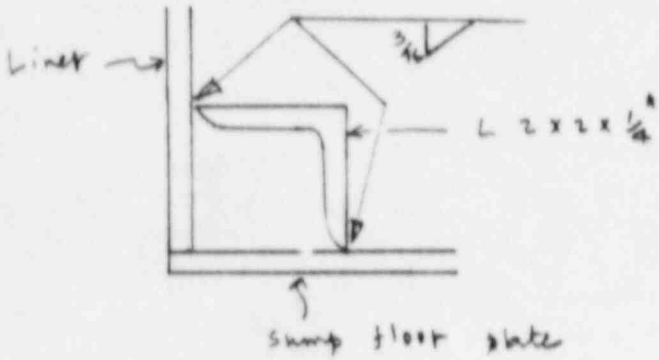
By engineering judgement this assembly is judged stronger than the leak chase channel assembly based on the following arguments.

1. Above shown leak test chamber will act as shell and the forces will be carried primarily as a membrane action
2. The 3/16" fillet welds will not govern the design.

SARGENT & LUNDY ENGINEERS

Calcs. For Containment Liner Leak chase assembly	Calc. No. S L.6.1
X Safety-Related / Non-Safety-Related	Rev. 6 / Date
	Page 117 of

Client CECO	Prepared by K V. Patel	Date 2/12/87
Project Byr-N / Braidwood	Reviewed by S. Malle	Date 2/12/87
Proj. No. 4391 / 4393 4683 / 4684 Equip. No.	Approved by	Date 2-12-87



Ref: C B & I Drwg. 24

The typical leak test chamber at junction of sump floor plate and containment liner is shown above.

By engineering judgement this assembly is stronger than the leak chase channel assembly

Therefore safety margin determined for the leak chase channel will be the controlling one.