



GE Nuclear Energy

GERIS 2000 Examination  
Summary Sheet

**Project:** TVA, Browns Ferry Nuclear Plant, Unit 3

**System:** Reactor Pressure Vessel

**Weld ID:** V-5-B

**ASME Code Category:** B-A

**Calibration Sheets:** C-004

**Supporting Data:** Examination Data Sheets E-18-00 thru E-18-04, Indication Data Sheets 18-001 thru 18-016, G-112, Indication Evaluation Sheets, Screen Prints, Exam Patch Location Map, Exam Coverage Plots, and GERIS 2000 Setup Records.

**Examination Summary**

The ultrasonic examination of weld V-5-B resulted in no recorded indications that exceed the allowable standards of IWB-3500, ASME Section XI, 1986 Edition, No Addenda.

The ASME Section XI required examination volume was examined with the GERIS 2000 System from the RPV inside surface utilizing Procedure No. GE-UT-700, Rev. 2. This examination was limited due to the N12-B Nozzle at 220°. The total examination coverage was calculated to be 99%.

The GERIS 2000 utilizes an array of search units arranged to effectively examine the weld and adjacent base material parallel and perpendicular to the weld axis in two directions. The transducer package consisted of 0° longitudinal, 45° and 60° shear wave, and 70° refracted longitudinal (RL) wave search units.

The GERIS 2000 recorded indications with the 70° RL, 45° and 60° shear wave scans that were evaluated and found to be acceptable per the referencing Code section. Geometric indications from the flange radius were recorded with the 60° shear wave scans.

No manual supplemental examination was performed from the RPV outside surface due to OD access restrictions.

Fabrication records and previous examination results were reviewed prior to the completion of this examination summary.

GERIS Analyst:

*Debra Kimball*

GE Reviewer:

*R.O. Zuman*

LEVEL:

*III*

DATE: *12-15-93*

LEVEL:

*II*

DATE: *12-15-93*

UTILITY Review:

*Spurlock*

ANII Review:

*Albat Sack*

TITLE:

*III*

DATE:

*1/26/94*

TITLE:

DATE:

*9/8/94*



# GERIS 2000 Examination Data Sheet

**Exam Data Sheet: E-18-00**

**FRR No.:** N/A

[illegible]

**Comments:** N/A

**Limitations:** Instrumentation Nozzle N12-B at 220°

Analyst: Ceresa Kimball

Level: III Date: 12-14-93

Reviewed By: R. O. Forman

Level: II Date: 12-15-93



**GE Nuclear Energy**

## GERIS 2000 Examination Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

Exam Data Sheet No.: E-18-01

**Patch ID: BF-042R**

**Ind. Data Sheet Series: 18-XXX**

[illegible]

**Comments:** N/A

Data Sheet Codes: G-XXX; "G" = Geometry ( may be typical), 6-XXX; "6" = Weld Sequence, XXX = Sheet Number

Indication Codes: 1 = Flaw, 2 = OD Surface, 3 = OD Attachment, 4 = Nozzle, 5 = Other

**Analyst:**

Analyst: Jesse Kimball

**Level:**

Level: III Date: 12-14-93

Reviewed By:

Reviewed By: R.O. Forman

**Level:**

Level: II Date: 12-15-93

R1170



**GE Nuclear Energy**

# GERIS 2000 Examination Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID: V-5-B**

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-02**

**Patch ID:** BF-043R

**Ind. Data Sheet Series: 18-XXX**

[illegible]

**Comments:** N/A

Data Sheet Codes: G-XXX; "G" = Geometry ( may be typical), 6-XXX; "6" = Weld Sequence, XXX = Sheet Number

Indication Codes: 1 = Flaw, 2 = OD Surface, 3 = OD Attachment, 4 = Nozzle, 5 = Other

**Analyst:**

Quesa Kimball

**Level:**

II

Date: 12-14-93

Reviewed By:

Randall O. Forman

**Level:**

72

Date: 12-15-93





# GERIS 2000 Examination Data Sheet

**Ind. Data Sheet Series: 18-XXX**

[illegible]

Indication Codes: 1 = Flaw, 2 = OD Surface, 3 = OD Attachment, 4 = Nozzle, 5 = Other

**Analyst:**

Dana Kimball

**Level:**

III

Date: 12-14-93

Reviewed By:

R.O. Forman

Level: II

Date: 12-15-93



## GERIS 2000 Indication Data Sheet

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## GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3

Weld ID: V-5-B

Patch: BF-042R

Exam Data Sheet No.: E-18-01

Ind. Data Sheet No.: 18-001

Indication: 18-001

Flaw Thruwall Dimension = 0.20

Flaw Length "l" = 0.50

Separation with clad "S" = 3.14

Surface Separation "S" = 2.95

T nominal = 6.38

Clad T nominal = 0.19

Flaw is acceptable by Table IWB-3510-1

ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	2.79	3.28 Y
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			Allowed	Allowed
			2.79	3.28

a = 0.099

a/l value = 0.198

Y = 1.000

Flaw is Subsurface

Allowed a/t = 3.28%

a/t = 1.55%

Comments:



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## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

Exam Data Sheet No.: E-18-01

**Patch ID:** BF-042R**Ind. Data Sheet No.: 18-002**

**Indication:** 18-002

**Channel: 8**

**Angle:** 45

**Direction: 90**

[illegible]

**Comments:** Recorded at less than ASME required levels due to apparent tip diffracted signals.

Thruwall size was determined by the SPOT technique.

**TW = 0.23**

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**L = 0.75**

---

**S = 1.47**

**Analyst:**

Deena Kimball

Reviewed By:

R.D. Forman

**Level:**

## II

Date: 12-14-93

**Level:**

 $\pi$ 

Date: 12-15-93

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# GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3  
Weld ID: V-5-B  
Patch: BF-42R

Exam Data Sheet No.: E-18-01  
Ind. Data Sheet No.: 18-002  
Indication: 18-002

Flaw Thruwall Dimension = 0.23  
Flaw Length "I" = 0.75  
Separation with clad "S" = N/A  
Surface Separation "S" = 1.47

T nominal = 6.38  
Clad T nominal = 0.19

Flaw is acceptable by Table IWB-3510-1

## ASME Section XI, 1986 Edition TABLE IWB-3510-1 for 4" to 12"

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	2.52	2.93 Y
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			Allowed	Allowed
			2.52	2.93

a = 0.115  
a/l value = 0.153  
Y = 1.000

Flaw is Subsurface

Allowed a/t = 2.93%  
a/t = 1.80%

Comments:



## R1170

**Ind. Data Sheet No.: 18-003**

**Direction: 0**



## GERIS 2000 Indication Data Sheet

**Cal. ID: C-004**

**Ind. Data Sheet No.: 18-004**

**Direction: 270**

00274


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# **GERIS 2000 Indication Evaluation Sheet**

**Project:** TVA, Browns Ferry Unit 3

**Weld ID:** V-5-B

**Patch:** BF-043R

**Exam Data Sheet No.:** E-18-02

**Ind. Data Sheet No.:** 18-004

**Indication:** 18-004

**Flaw Thruwall Dimension =** 0.13

**Flaw Length "I" =** 1.00

**Separation with clad "S" =** 0.00

**Surface Separation "S" =** 0.00

**T nominal =** 6.38

**Clad T nominal =** 0.19

Flaw is acceptable by Table IWB-3510-1

**ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"**

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	2.36	2.72 Y
0.15	2.50	2.9	~	~
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			<b>Allowed</b>	<b>Allowed</b>
			2.36	0.00

**a =** 0.127

**a/l value =** 0.127

**Y =** 0.000

Flaw is Surface

**Allowed a/t =** 2.36%

**a/t =** 1.99%

**Comments:** Evaluated to notch sensitivity assigned thruwall dimension = 2%T.





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## GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3  
Weld ID: V-5-B  
Patch: BF-045R

Exam Data Sheet No.: E-18-04  
Ind. Data Sheet No.: 18-005  
Indication: 18-005

Flaw Thruwall Dimension = 0.17  
Flaw Length "I" = 0.25  
Separation with clad "S" = 1.48  
Surface Separation "S" = 1.29

T nominal = 6.38  
Clad T nominal = 0.19  
% of Allowable: 0.27

Flaw is acceptable by Table IWB-3510-1

ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	~	~
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	4.28	4.96 Y
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			Allowed	Allowed
			4.28	4.96

a = 0.085  
a/l value = 0.340  
Y = 1.000

Flaw is Subsurface

Allowed a/t = 4.96%  
a/t = 1.33%

Comments:



## GERIS 2000 Indication Data Sheet

**Cal. ID: C-004**

**Ind. Data Sheet No.: 18-006**

**Direction:** 180

Date: 12-15-93

00278





## GERIS 2000 Indication Evaluation Sheet

**Exam Data Sheet No.: E-18-04****Ind. Data Sheet No.: 18-006**

**Indication:** 18-006

**$T_{nominal} = 6.38$**

**Clad T nominal = 0.19**

**% of Allowable: 0.96**

**% of Allowable: 0.96**

**ASME Section XI, 1986 Edition**  
**TABLE IWB-3510-1 for 4" to 12"**

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# GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3

Weld ID: V-5-B

Patch: BF-045R

Exam Data Sheet No.: E-18-04

Ind. Data Sheet No.: 18-007

Indication: 18-007

Flaw Thruwall Dimension = 0.34

Flaw Length "I" = 0.75

Separation with clad "S" = 1.24

Surface Separation "S" = 1.05

T nominal = 6.38

Clad T nominal = 0.19

% of Allowable: 0.75

Flaw is acceptable by Table IWB-3510-1

ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	~	~
0.20	2.80	3.3	3.07	3.57 Y
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			Allowed	Allowed
			3.07	3.57

a = 0.170  
a/l value = 0.227  
Y = 1.000

Flaw is Subsurface

Allowed a/t = 3.57%  
a/t = 2.66%

Comments:



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## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-04****Patch ID:** BF-045R**Ind. Data Sheet No.: 18-008**

**Indication:** 18-008

**Channel: 13**

**Angle:** 60

**Direction:** 180

[illegible]

**Comments:** No apparent tip signals.

**This Indication is located at the intersection of the C-5-FLG circumferential weld.**

Thruwall size was determined by the Reg. Guide 20% beam spread correction method.

TW = 0.00

$$L = 0.50$$

S = 1.26 with clad

with clad

**Analyst:**

Analyst: Gerisa Kimball

Reviewed By:

Reviewed By: R.O. Forman

**Level:**

Level: III Date: 12-15-93

**Level:**

Level: II Date: 12-5-93



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# **GERIS 2000 Indication Evaluation Sheet**

**Project:** TVA, Browns Ferry Unit 3

**Exam Data Sheet No.:** E-18-04

**Weld ID:** V-5-B

**Ind. Data Sheet No.:** 18-009

**Patch:** BF-045R

**Indication:** 18-009

**Flaw Thruwall Dimension =** 0.34

**T nominal =** 6.38

**Flaw Length "I" =** 0.50

**Clad T nominal =** 0.19

**Separation with clad "S" =** 1.09

**Surface Separation "S" =** 0.90

Flaw is acceptable by Table IWB-3510-1

**ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"**

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	~	~
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	4.28	4.96 Y
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			Allowed	Allowed
			4.28	4.96

**a =** 0.170

**a/l value =** 0.340

**Y =** 1.000

Flaw is Subsurface

**Allowed a/t =** 4.96%

**a/t =** 2.66%

**Comments:**



**GE Nuclear Energy**

## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-04**

**Patch ID:** BF-045R

Ind. Data Sheet No.: 18-010

**Indication:** 18-010

**Channel: 13**

**Angle:** 60

**Direction:** 180

[illegible]

**Comments:** Thruwall size was determined by the SPOT technique.

This Indication is located at the intersection of the C-5-FLG circumferential weld.

**TW = 0.28**

$$L = 0.25$$

**S = 1.65 with clad**

with clad

Analyst: Wesley Kimball

Reviewed By: R.O. Forman

Level: III Date: 12-14-93

Level: II Date: 12-15-93



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## GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3  
Weld ID: V-5-B  
Patch: BF-045R

Exam Data Sheet No.: E-18-04  
Ind. Data Sheet No.: 18-010  
Indication: 18-010

Flaw Thruwall Dimension = 0.28  
Flaw Length "I" = 0.25  
Separation with clad "S" = 1.65  
Surface Separation "S" = 1.46

T nominal = 6.38  
Clad T nominal = 0.19  
% of Allowable: 0.29

Flaw is acceptable by Table IWB-3510-1

ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	~	~
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	5.20	7.60 Y
			Allowed	Allowed
			5.20	7.60

a = 0.140  
a/l value = 0.500  
Y = 1.000

Flaw is Subsurface

Allowed a/t = 7.60%  
a/t = 2.19%

Comments:





**GE Nuclear Energy**

## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID: V-5-B**

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-04****Patch ID: BF-045R****Ind. Data Sheet No.: 18-011**

**Indication:** 18-011

**Channel: 13**

**Angle:** 60

**Direction: 180**

[illegible]

**Comments:** Thruwall size was determined by the SPOT technique.

This Indication is located at the intersection of the C-5-FLG circumferential weld.

**TW = 0.34**

$$L = 0.25$$

**S = 1.23 with clad**

Analyst: Wesley Kimball

Reviewed By: R.O. Forman

Level: III Date: 12-14-93

Level: II Date: 12-15-93

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GE Nuclear Energy

# GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3

Weld ID: V-5-B

Patch: BF-045R

Exam Data Sheet No.: E-18-04

Ind. Data Sheet No.: 18-011

Indication: 18-011

Flaw Thruwall Dimension = 0.34

Flaw Length "I" = 0.25

Separation with clad "S" = 1.44

Surface Separation "S" = 1.25

T nominal = 6.38

Clad T nominal = 0.19

Flaw is acceptable by Table IWB-3510-1

ASME Section XI, 1986 Edition  
TABLE IWB-3510-1 for 4" to 12"

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	~	~
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	~	~
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	5.20	7.60 Y
			Allowed	Allowed
			5.20	7.60

a = 0.170

a/l value = 0.500

Y = 1.000

Flaw is Subsurface

Allowed a/t = 7.60%

a/t = 2.66%

Comments:

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GE Nuclear Energy

# GERIS 2000 Indication Data Sheet

Project: TVA, Browns Ferry, Unit 3

Weld ID: V-5-B

Cal. ID: C-004

Exam Data Sheet No.: E-18-04

Patch ID: BF-045R

Ind. Data Sheet No.: 18-013

Indication: 18-013

Channel: 3

Angle: 70

Direction: 0

Amp.	X	20% Min Y	TOF	50% Min Y	TOF	@ Max Y	TOF	50% Max Y	TOF	20% Max Y	TOF	Remarks
17.3%	460.65	~	~	~	~	704.00	21.12	~	~	~	~	~
60.6%	460.90	~	~	~	~	704.00	21.12	~	~	~	~	~
77.9%	461.15	~	~	~	~	704.00	21.12	~	~	~	~	~
64.5%	461.40	~	~	~	~	704.00	21.12	~	~	~	~	~
41.6%	461.65	~	~	~	~	704.00	21.12	~	~	~	~	~
17.3%	461.90	~	~	~	~	704.00	21.12	~	~	~	~	~
22.3%	462.15	~	~	~	~	704.00	21.44	~	~	~	~	~
26.9%	462.40	~	~	~	~	704.25	19.68	~	~	~	~	~
57.0%	462.65	~	~	~	~	704.25	19.68	~	~	~	~	~
34.5%	462.90	~	~	~	~	704.25	19.68	~	~	~	~	~
57.0%	463.15	~	~	~	~	704.25	19.52	~	~	~	~	~
30.4%	463.40	~	~	~	~	704.25	19.68	~	~	~	~	~
15.3%	463.65	~	~	~	~	704.00	21.60	~	~	~	~	~
11.2%	463.90	~	~	~	~	703.75	23.92	~	~	~	~	~
13.5%	464.15	~	~	~	~	704.00	21.68	~	~	~	~	~
36.7%	464.40	~	~	~	~	703.75	23.68	~	~	~	~	~
39.1%	464.65	~	~	~	~	704.00	21.44	~	~	~	~	~
18.5%	464.90	~	~	~	~	703.75	23.68	~	~	~	~	~
13.5%	465.15	~	~	~	~	704.00	21.60	~	~	~	~	~
11.9%	465.40	~	~	~	~	704.25	19.20	~	~	~	~	~
11.9%	465.65	~	~	~	~	704.00	21.36	~	~	~	~	~
15.3%	465.90	~	~	~	~	703.75	23.68	~	~	~	~	~
~	~	~	~	~	~	~	~	~	~	~	~	~
~	~	~	~	~	~	~	~	~	~	~	~	~
~	~	~	~	~	~	~	~	~	~	~	~	~

Comments: No apparent tip signals.

This indication also seen with Ch. 5 (see 18-015 and 18-016) and 13 (see 18-007 thru 18-011).

Indication has no determinable thruwall and is acceptable to IWB-3510-1.

Analyst: Debra KimballLevel: IIIDate: 12-15-93Reviewed By: R.O. FoutmanLevel: IIDate: 12-15-93

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GE Nuclear Energy

# GERIS 2000 Indication Data Sheet

Project: TVA, Browns Ferry, Unit 3

Weld ID: V-5-B

Cal. ID: C-004

Exam Data Sheet No.: E-18-04

Patch ID: BF-045R

Ind. Data Sheet No.: 18-013

Indication: 18-013

Channel: 3

Angle: 70

Direction: 0

Amp.	X	20% Min Y	TOF	50% Min Y	TOF	@ Max Y	TOF	50% Max Y	TOF	20% Max Y	TOF	Remarks
17.3%	460.65	~	~	~	~	704.00	21.12	~	~	~	~	~
60.6%	460.90	~	~	~	~	704.00	21.12	~	~	~	~	~
77.9%	461.15	~	~	~	~	704.00	21.12	~	~	~	~	~
64.5%	461.40	~	~	~	~	704.00	21.12	~	~	~	~	~
41.6%	461.65	~	~	~	~	704.00	21.12	~	~	~	~	~
17.3%	461.90	~	~	~	~	704.00	21.12	~	~	~	~	~
22.3%	462.15	~	~	~	~	704.00	21.44	~	~	~	~	~
26.9%	462.40	~	~	~	~	704.25	19.68	~	~	~	~	~
57.0%	462.65	~	~	~	~	704.25	19.68	~	~	~	~	~
34.5%	462.90	~	~	~	~	704.25	19.68	~	~	~	~	~
57.0%	463.15	~	~	~	~	704.25	19.52	~	~	~	~	~
30.4%	463.40	~	~	~	~	704.25	19.68	~	~	~	~	~
15.3%	463.65	~	~	~	~	704.00	21.60	~	~	~	~	~
11.2%	463.90	~	~	~	~	703.75	23.92	~	~	~	~	~
13.5%	464.15	~	~	~	~	704.00	21.68	~	~	~	~	~
36.7%	464.40	~	~	~	~	703.75	23.68	~	~	~	~	~
39.1%	464.65	~	~	~	~	704.00	21.44	~	~	~	~	~
18.5%	464.90	~	~	~	~	703.75	23.68	~	~	~	~	~
13.5%	465.15	~	~	~	~	704.00	21.60	~	~	~	~	~
11.9%	465.40	~	~	~	~	704.25	19.20	~	~	~	~	~
11.9%	465.65	~	~	~	~	704.00	21.36	~	~	~	~	~
15.3%	465.90	~	~	~	~	703.75	23.68	~	~	~	~	~
~	~	~	~	~	~	~	~	~	~	~	~	~
~	~	~	~	~	~	~	~	~	~	~	~	~
~	~	~	~	~	~	~	~	~	~	~	~	~

Comments: No apparent tip signals.

This indication also seen with Ch. 5 (see 18-015 and 18-016) and 13 (see 18-007 thru 18-011).

Indication has no determinable thruwall and is acceptable to IWB-3510-1.

Analyst:

Jenna Kimball

Reviewed By:

R.O. Forman

Level: II

Date: 12-14-93

Level: II

Date: 12-15-93

R1170



**GE Nuclear Energy**

## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-04**

**Patch ID:** BF-045R

**Ind. Data Sheet No.: 18-014**

**Indication:** 18-014

**Channel: 5**

**Angle:** 70

**Direction:** 180

[illegible]

**Comments:** No apparent tip signals.

Indication has no determinable thruwall and is acceptable to IWB-3510-1.

**Analyst:**

Deysa Kimball

**Level:**

### III

Date: 12-14-93

Reviewed By:

R.O. Forman

**Level:**

II

Date: 12-15-93

R1170



**GE Nuclear Energy**

## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-04****Patch ID:** BF-045R**Ind. Data Sheet No.: 18-015**

**Indication:** 18-015

**Channel: 5**

**Angle:** 70

**Direction:** 180

[illegible]

**Comments:** No apparent tip signals.

Indication has no determinable thruwall and is acceptable to IWB-3510-1.

**Analyst:**

Jessa Kimball

**Level:**

## II

Date: 12-14-93

Reviewed By:

R.O. Forman

**Level:**

II

Date: 12-15-93



## R1170

Exam Data Sheet No.: E-18-04

**Patch ID:** BF-045R**Ind. Data Sheet No.: 18-016**

**Channel: 5**

**Angle:** 70

**Direction:** 180

**Comments:** No apparent tip signals.

Indication has no determinable thruwall and is acceptable to IWB-3510-1.

Jerusa Kimball

### III

Date: 12-15-93

Reviewed By:

R.O. Forman

**Level:**

II

Date: 12-15-93



**GE Nuclear Energy**

## GERIS 2000 Indication Data Sheet

**Project:** TVA, Browns Ferry, Unit 3

**Weld ID:** V-5-B

**Cal. ID: C-004**

**Exam Data Sheet No.: E-18-04****Patch ID:** BF-045R**Ind. Data Sheet No.: G-112**

**Indication:** G-112

**Channel: 13**

**Angle:** 60

**Direction:** 180

[illegible]

**Comments:** Geometric indication due to flange radius.

Analyst: Jessie Kimball

Level: III Date: 12-14-93

Reviewed By: R. D. Forman

Level: IV Date: 12-15-93

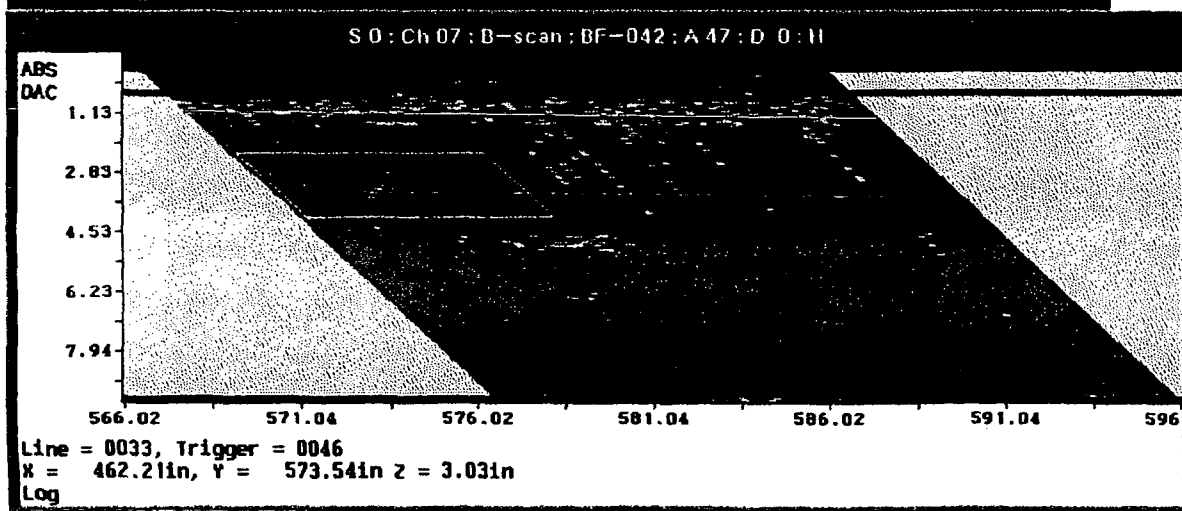
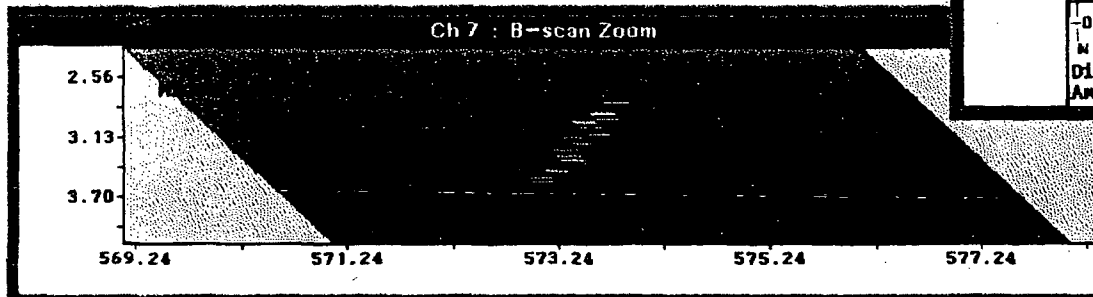
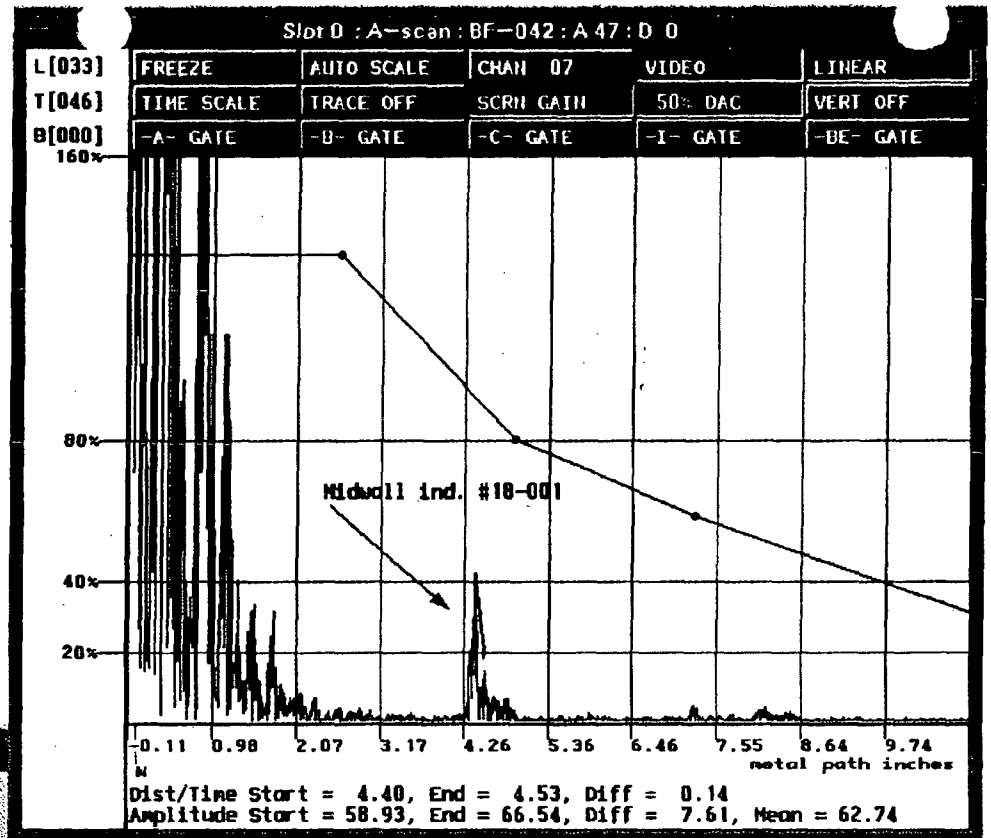
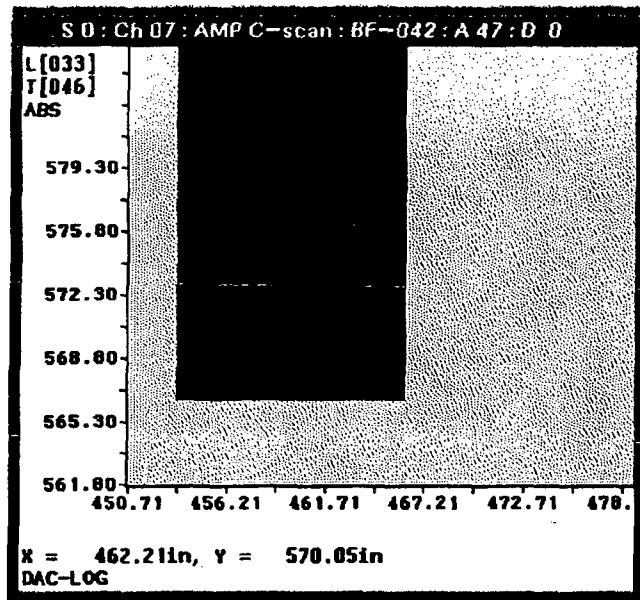


S 0 : Scale

32.3  
36.6  
41.0  
45.3  
49.7  
54.0  
58.5  
62.7  
67.1  
71.4  
75.8  
80.1  
84.5  
88.8  
93.2

100%  
50%  
20%

DAC



Lower Ten  
/test>dump /max  
tor3/18-001

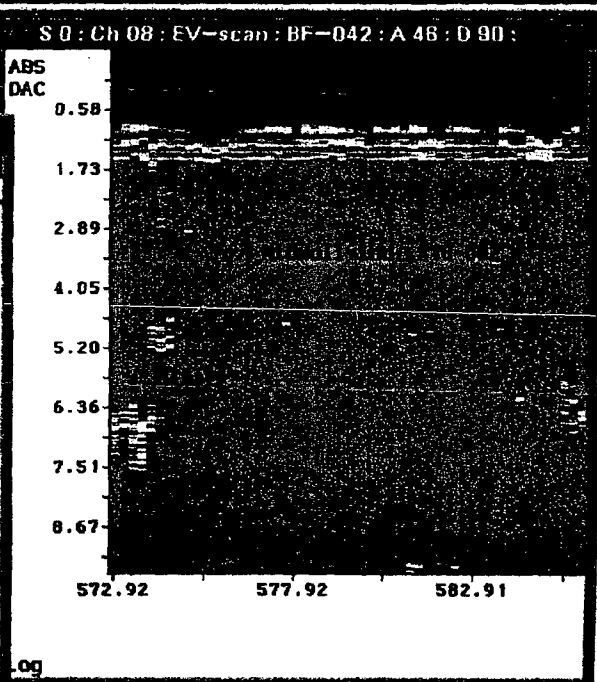
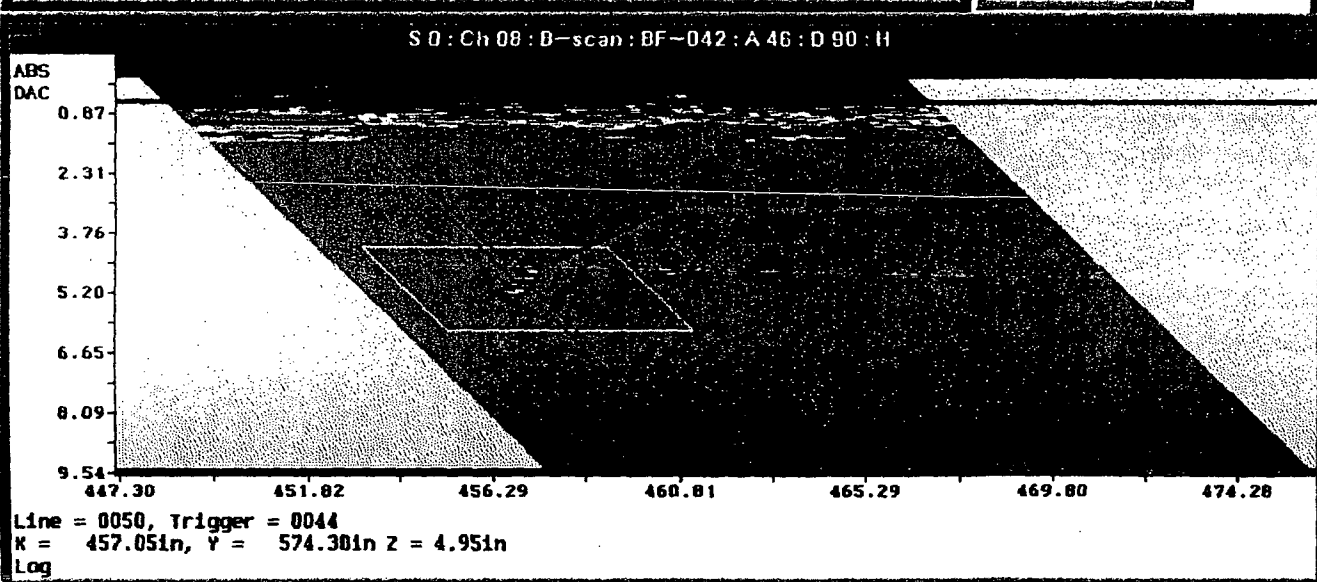
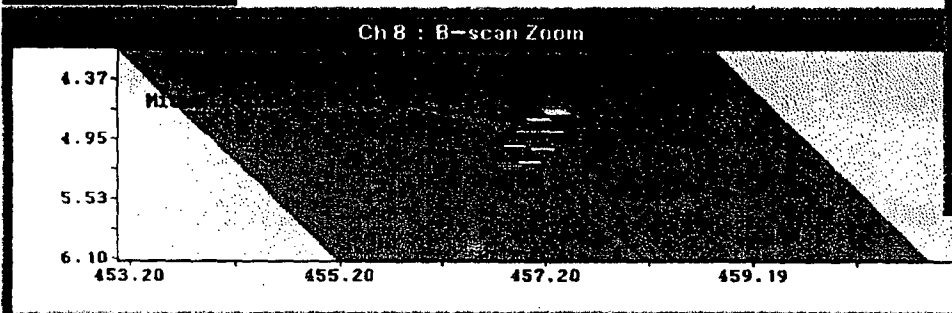
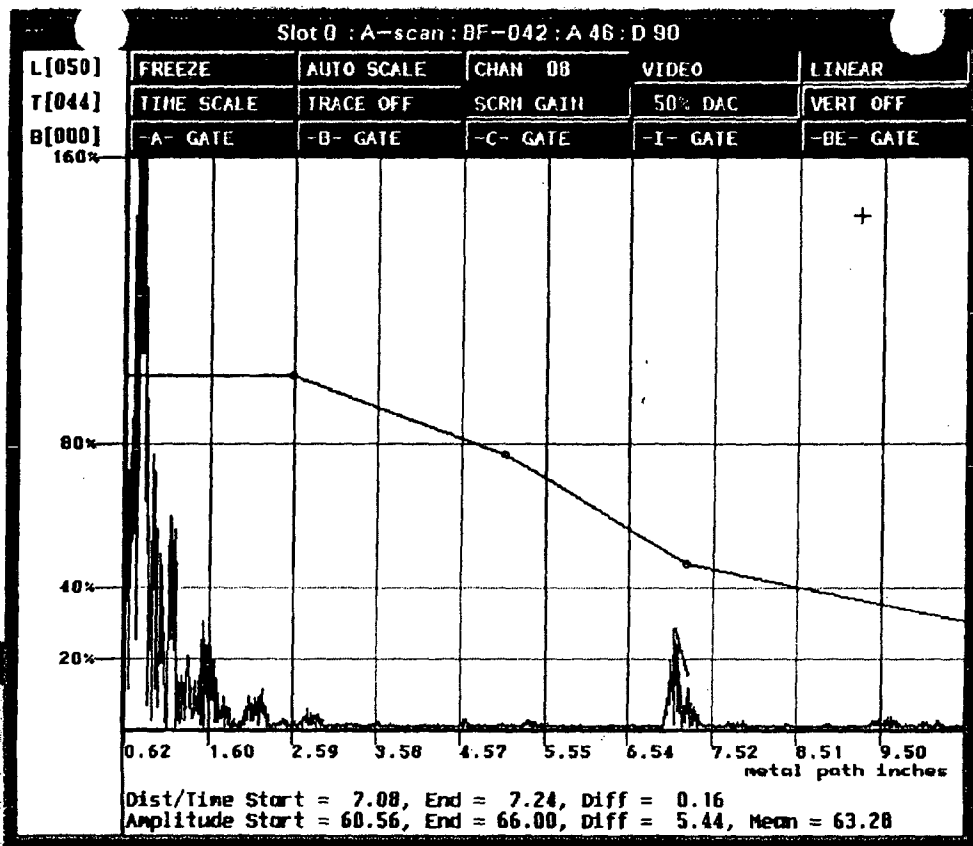
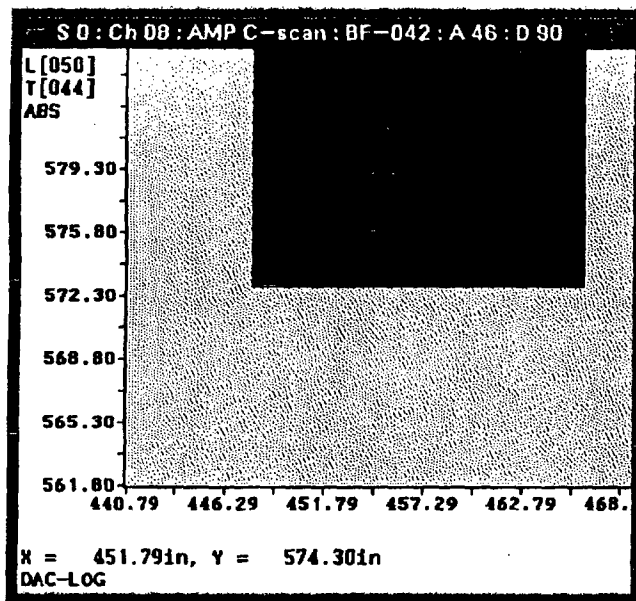
33 of 52  
R1170  
00295

S 0 : Scale

32.3  
36.6  
41.0  
45.3  
49.7  
54.0  
58.4  
62.7  
67.1  
71.4  
75.8  
80.1  
84.5  
88.8  
93.2

100%  
50%  
20%

DAC

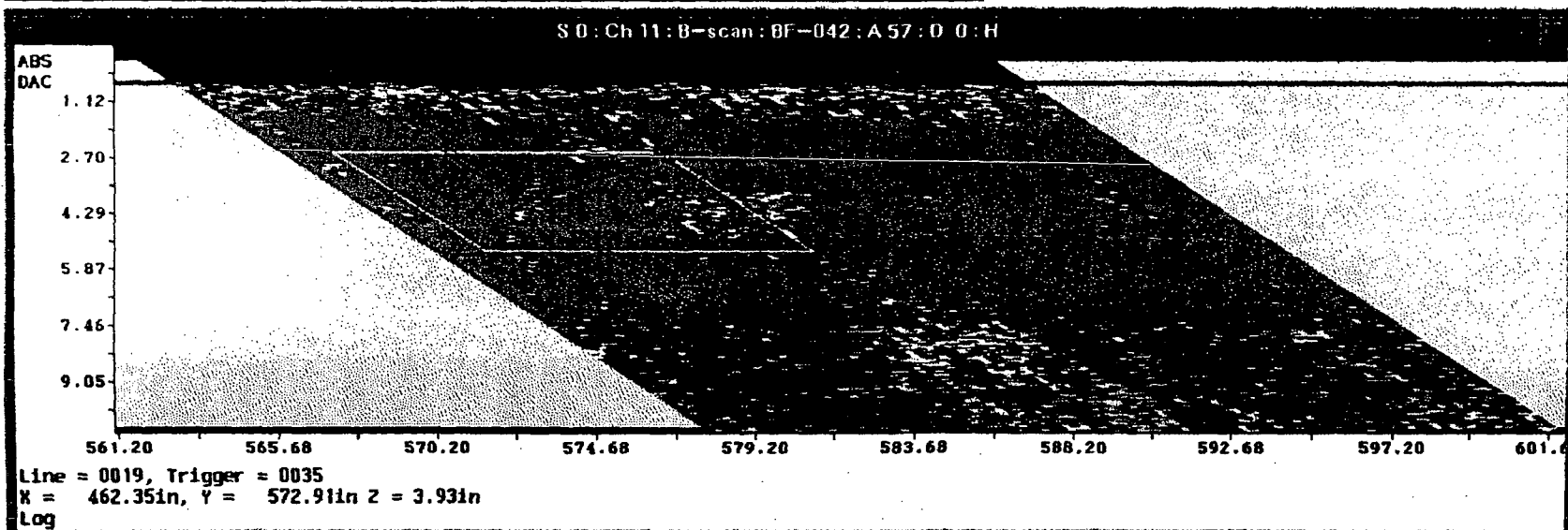
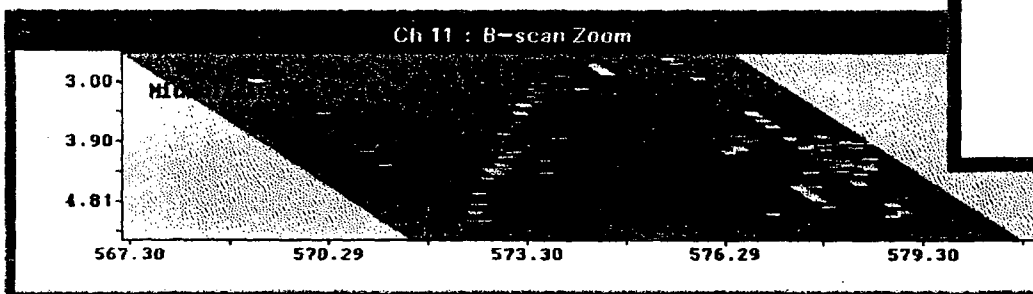
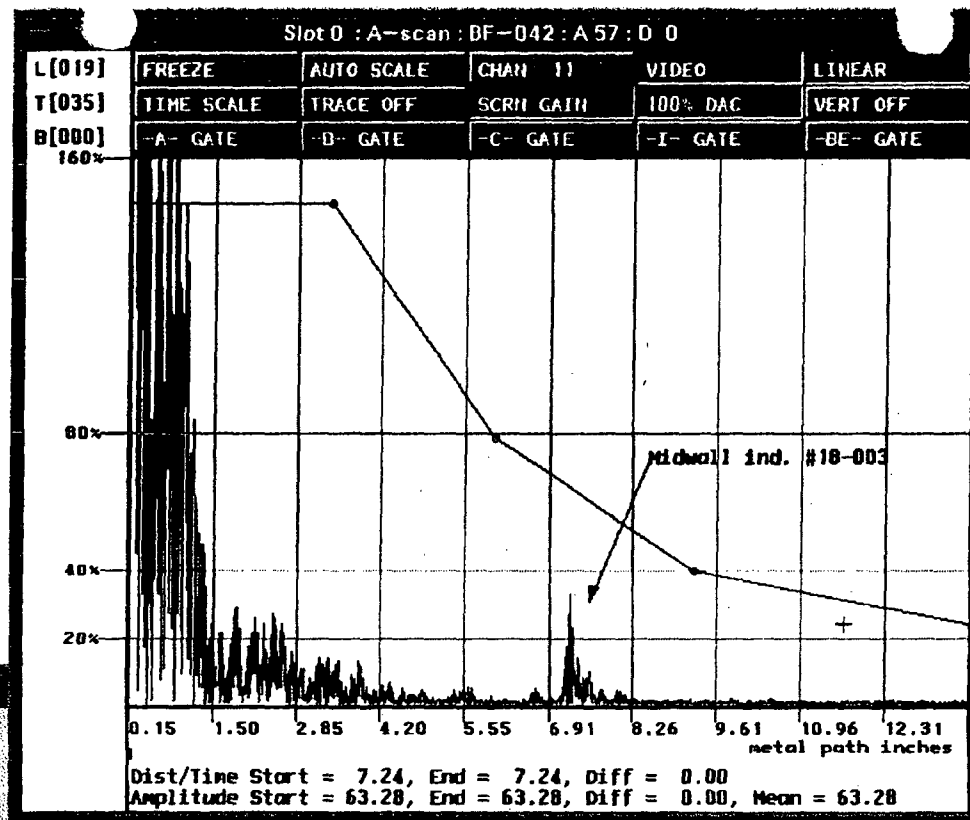
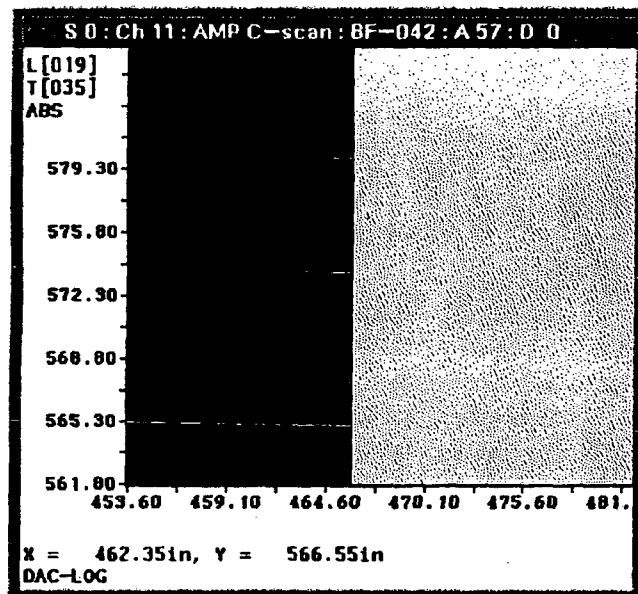


34 OF 52  
00296

S 0 : Scale

32.3  
36.6  
41.0  
45.3  
49.7 100%  
54.0 50%  
58.4  
62.7 20%  
67.1  
71.4  
75.8  
80.1  
84.5  
88.0  
93.2

DAC



Lower Ten  
for 3/18-003

K1110  
350-52  
00297

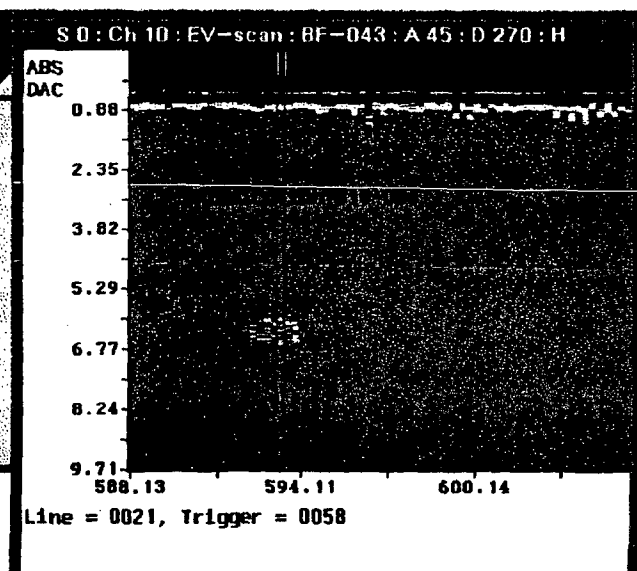
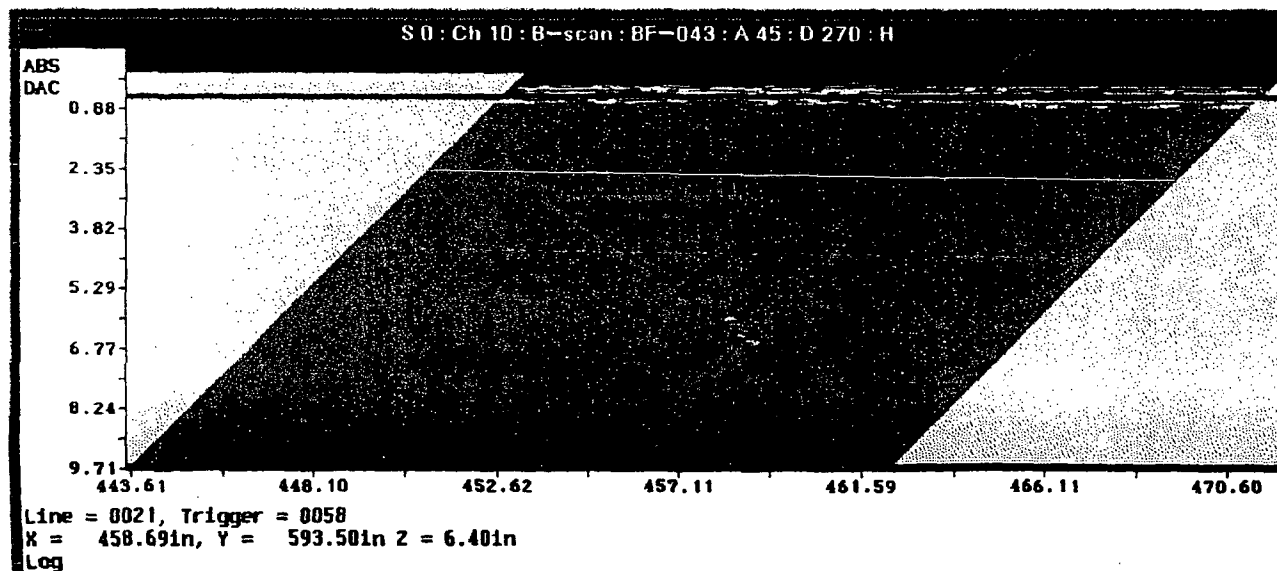
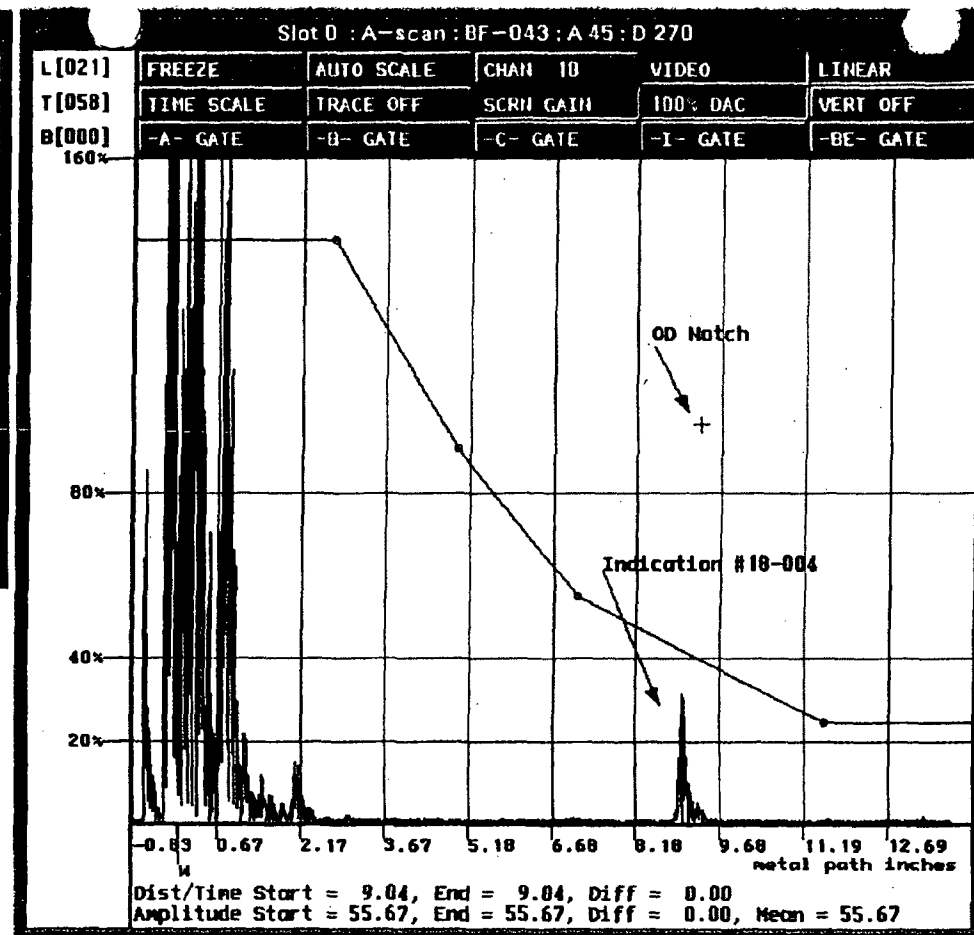
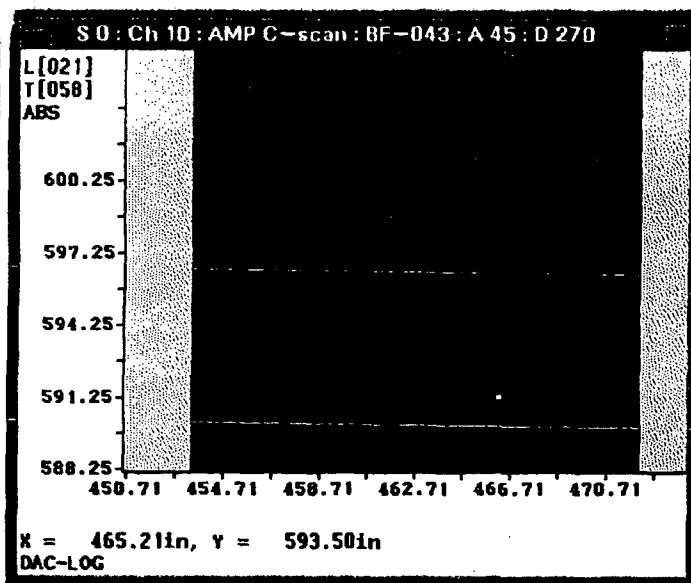
S 0 : Scale

32.3  
36.6  
41.0  
45.3  
49.7  
54.0  
58.4  
62.7  
67.1  
71.4  
75.8  
80.1  
84.5  
88.0  
93.2

100%  
50%  
20%

DAC

Lower Ten  
tor3/18-004



00000 0792

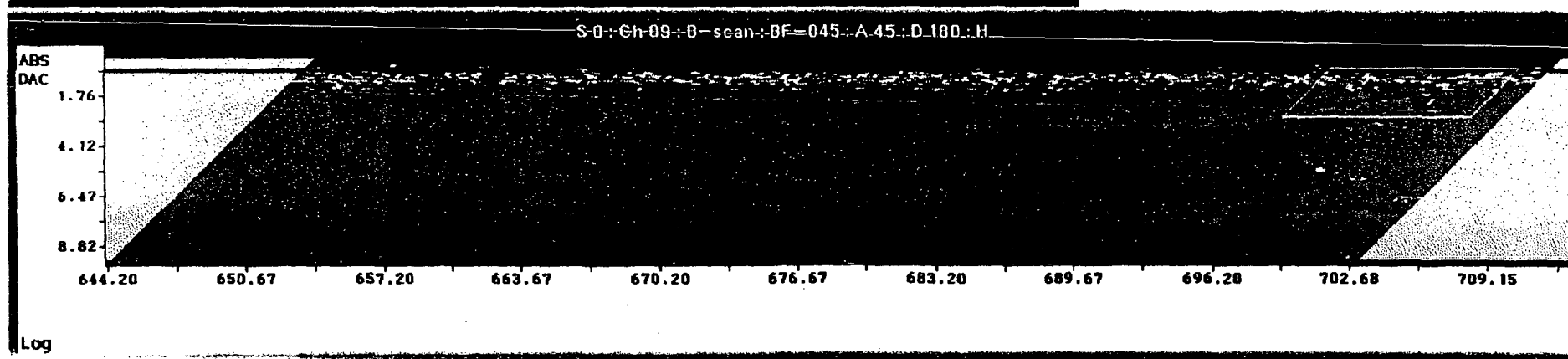
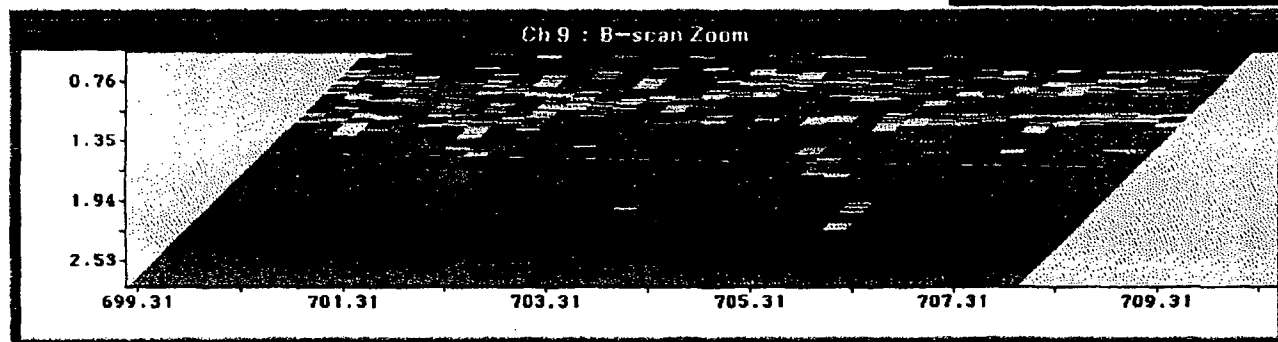
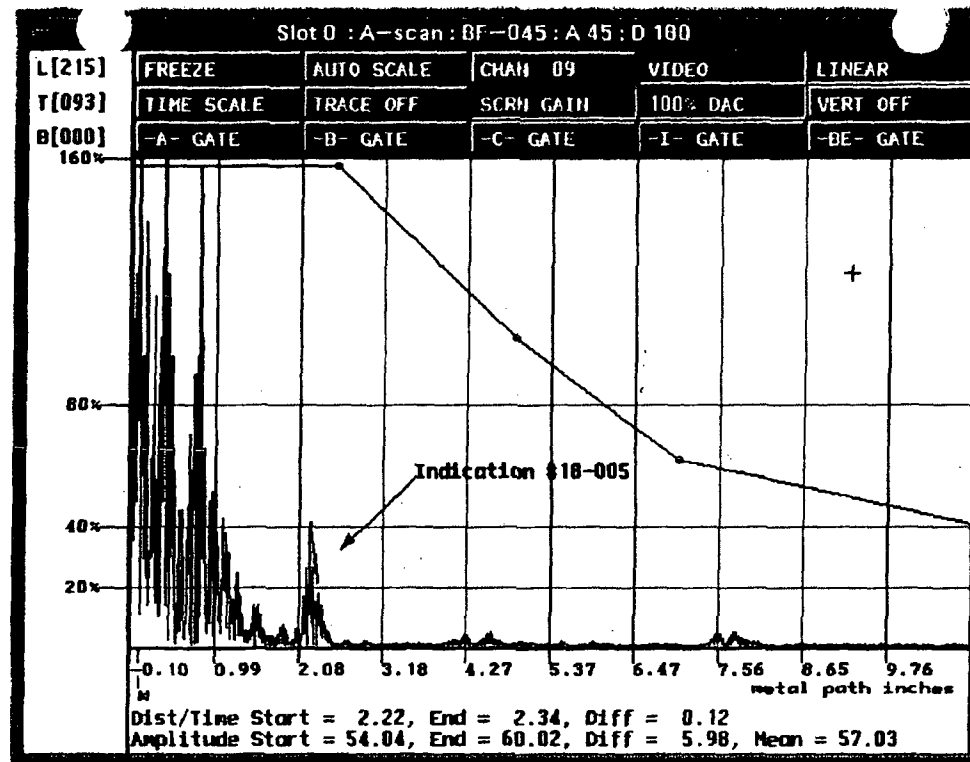
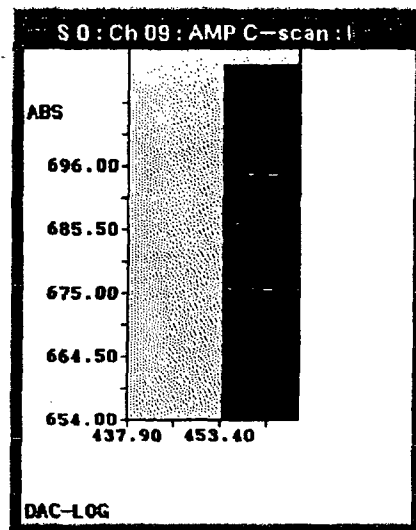
00298  
360552  
K1110

S 0 : Scale

32.3	
36.6	
41.0	100%
45.3	50%
49.7	
54.0	20%
58.4	
62.7	
67.1	
71.4	
75.8	
80.1	
84.5	
88.8	
93.2	

DAC

Lower Ten  
or 3/B-005



370552  
80299

Slot 0 : A-scan : BF-045 : A 57 : D 180

L[216]	FREEZE	AUTO SCALE	CHAN 13	VIDEO	LINEAR
T[071]	TIME SCALE	TRACE OFF	SCRN GAIN	100% DAC	VERT OFF
B[000]	-A- GATE	-B- GATE	-C- GATE	-I- GATE	-BE- GATE

160%

Indication #18-006

80%

40%

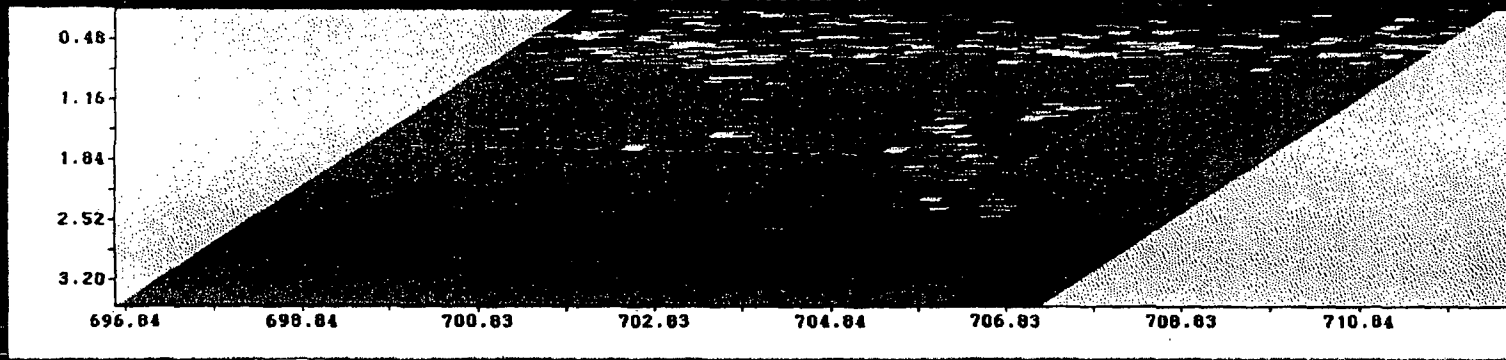
20%

0.15 1.50 2.85 4.20 5.55 6.91 8.26 9.61 10.96 12.31

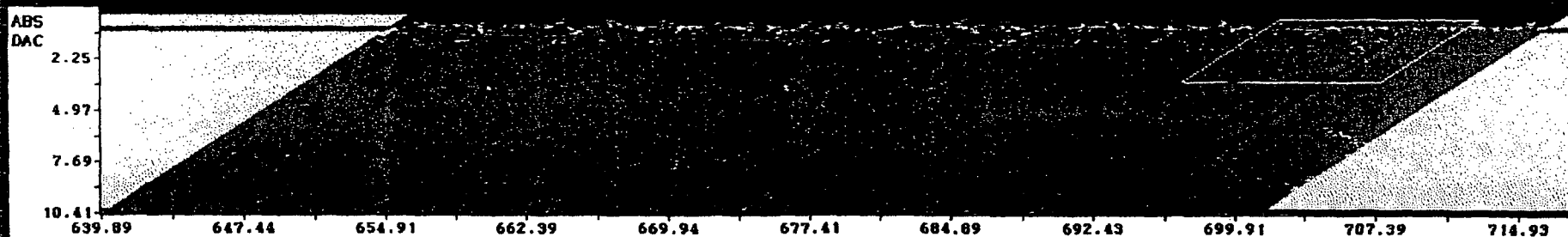
netal path inches

Dist/Time Start = 3.96, End = 4.13, Diff = 0.17  
 Amplitude Start = 54.04, End = 64.91, Diff = 10.87, Mean = 59.48

## Ch 13 : B-scan Zoom

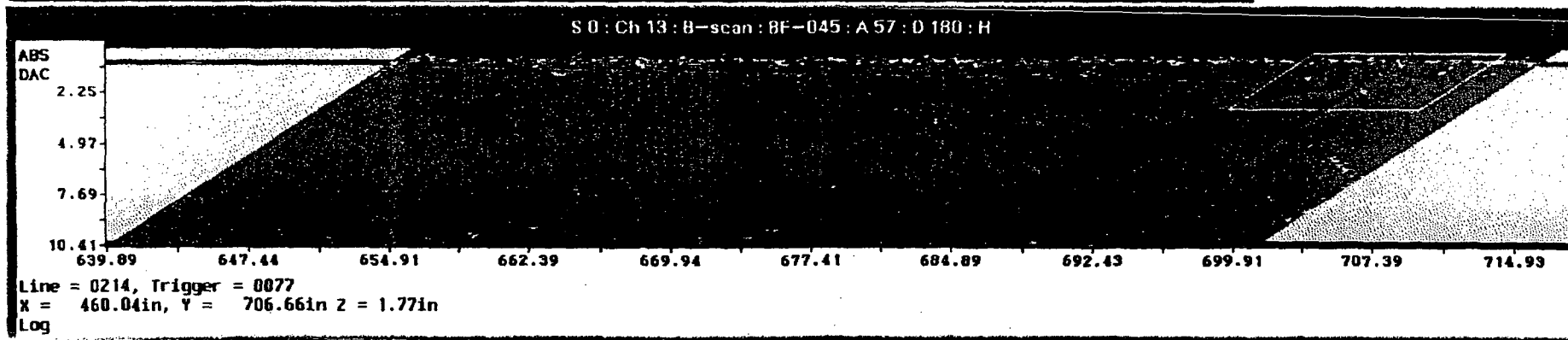
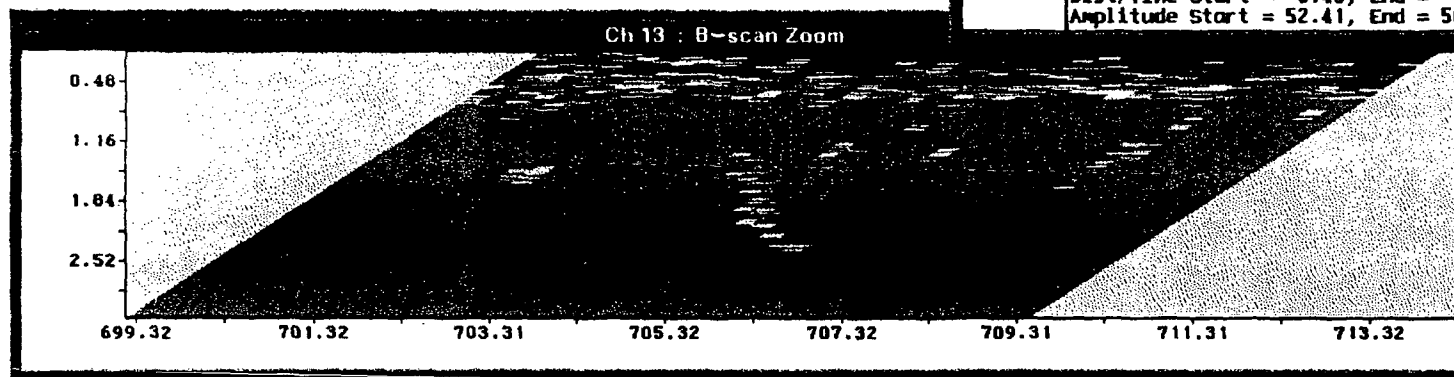
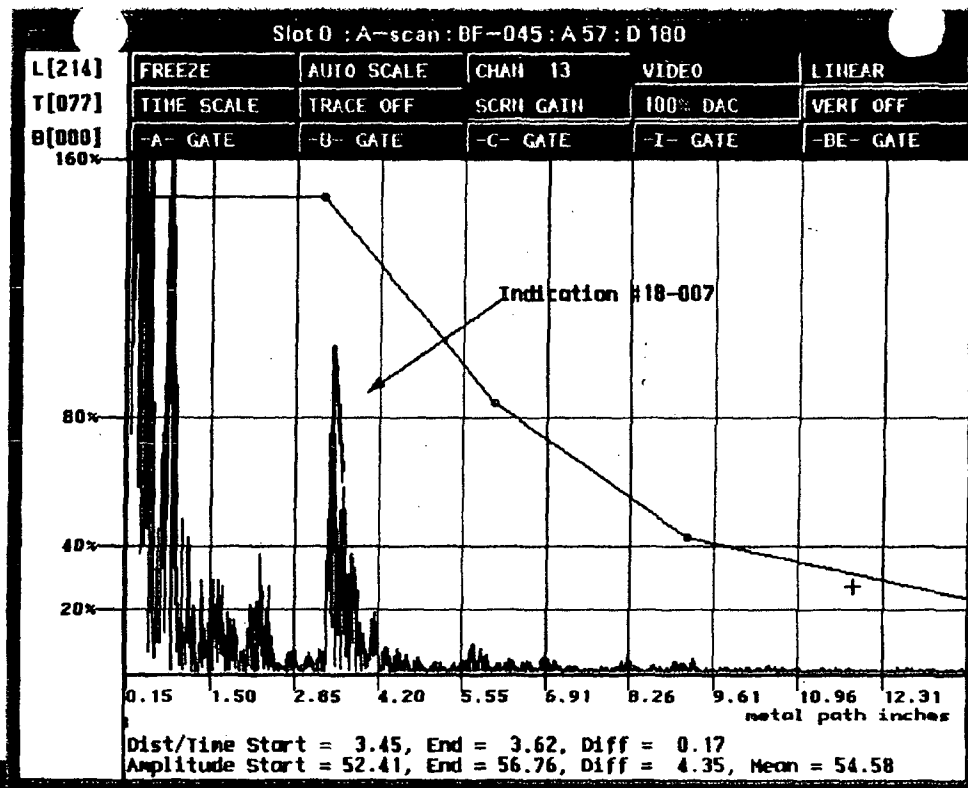
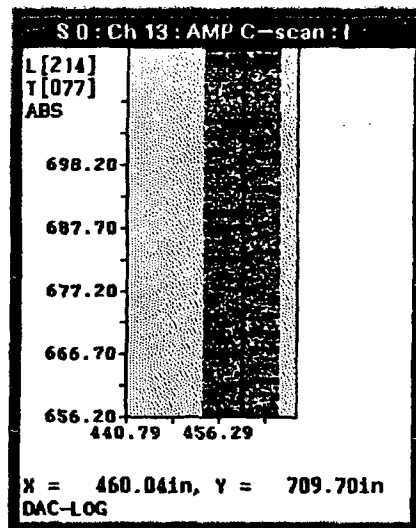
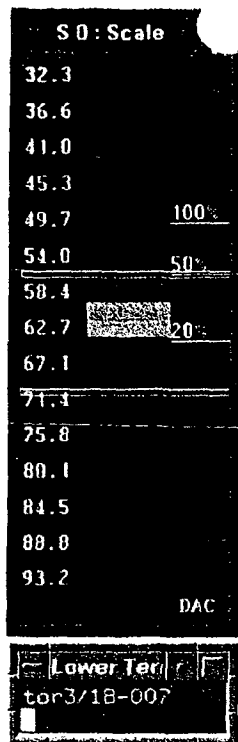


S O : Ch 13 : 8-scan : BF-045 : A 57 : D 180 : H



Line = 0216, Trigger = 0071  
X = 458.54in, Y = 706.66in Z = 2.13in  
log

21110  
38 of 52  
: 00300



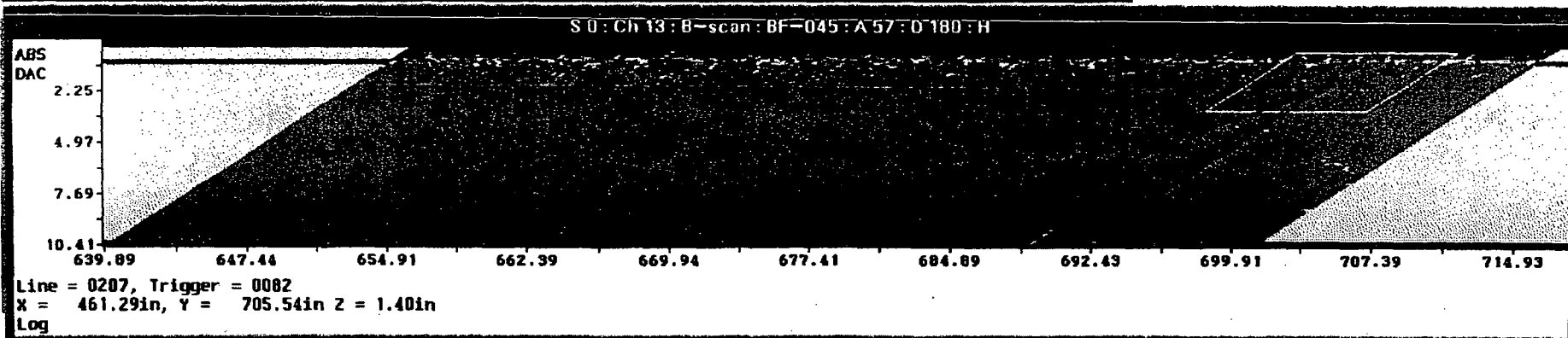
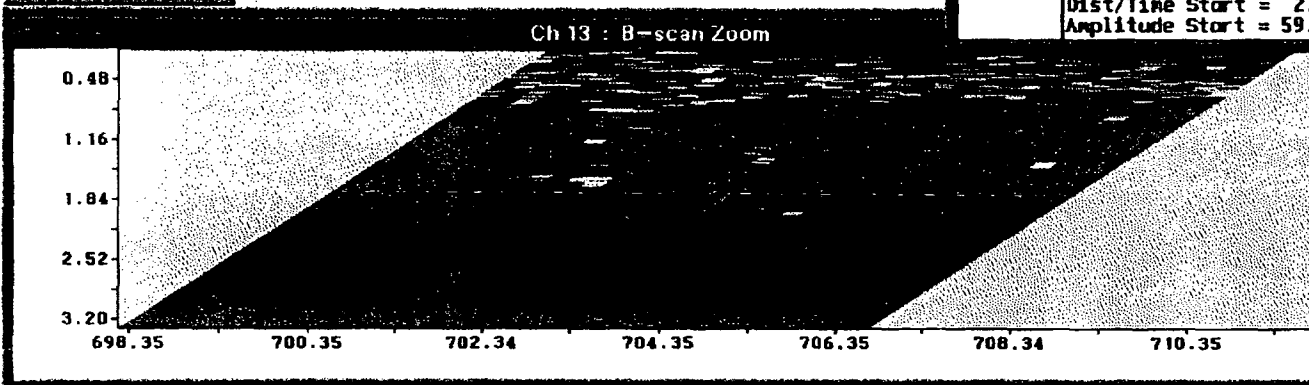
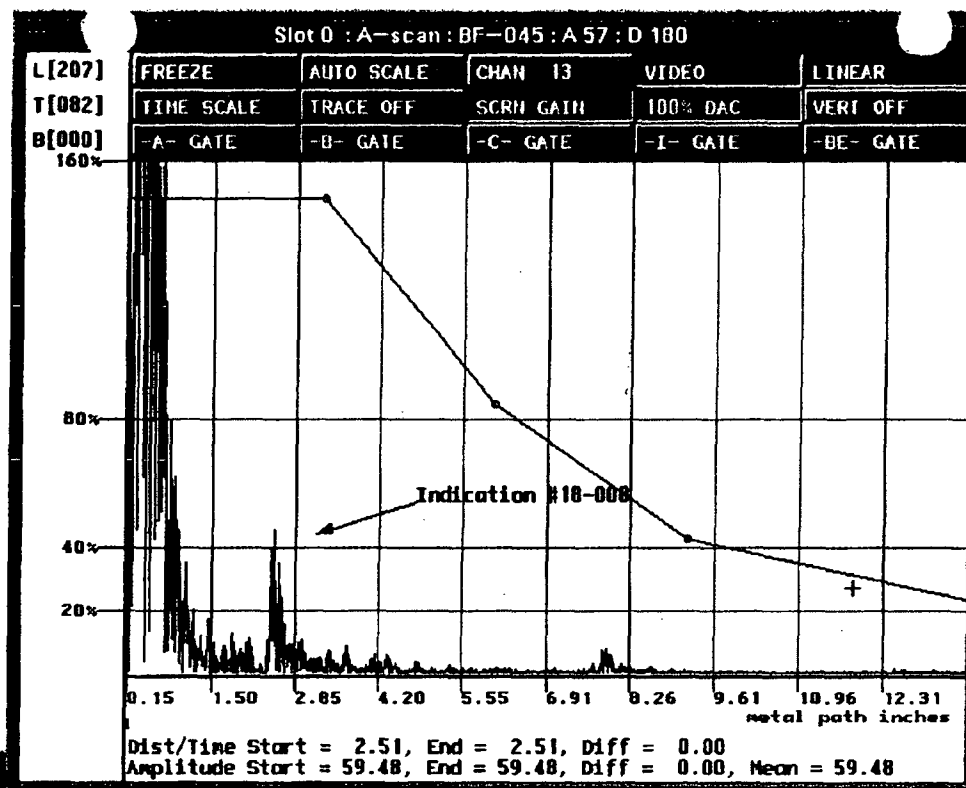
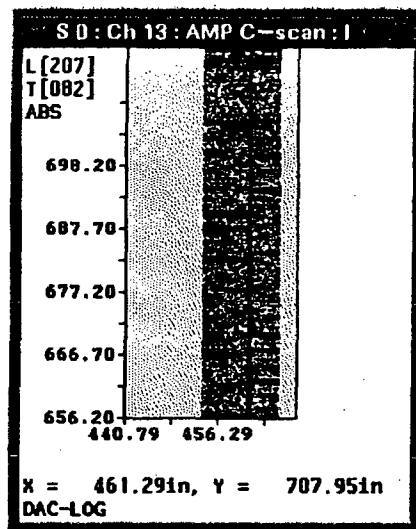
121170  
39 05 52  
00301

S D: Scale

32.3
36.6
41.0
45.3
49.7
54.0
58.4
62.7
67.1
71.4
75.8
80.1
84.5
88.8
93.2

DAC

Lower Ten  
tor3/18-008



400552  
00302

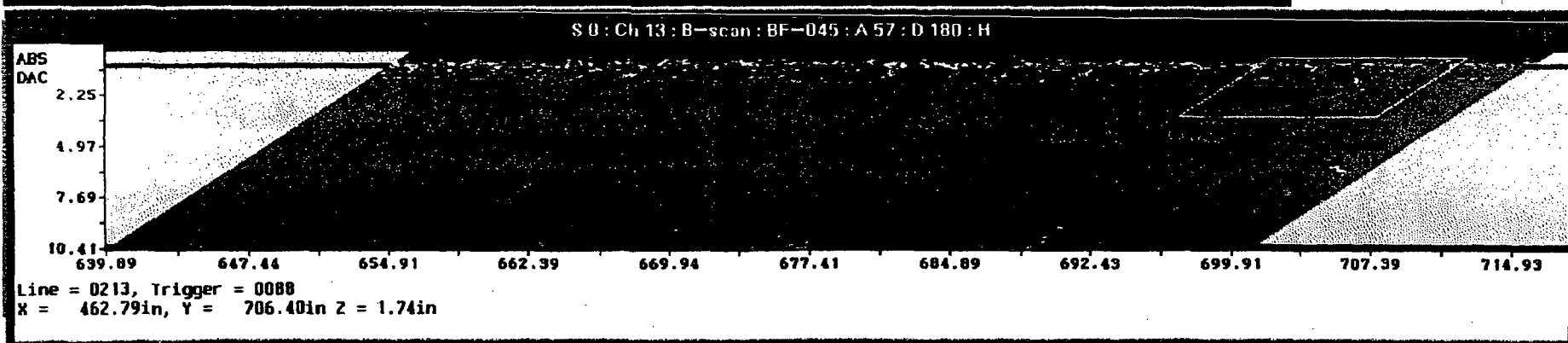
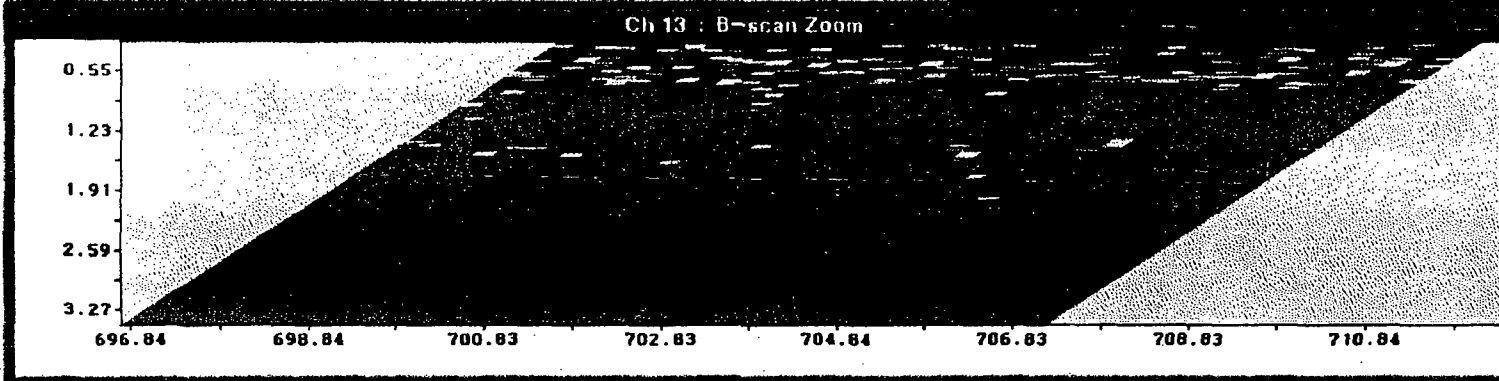
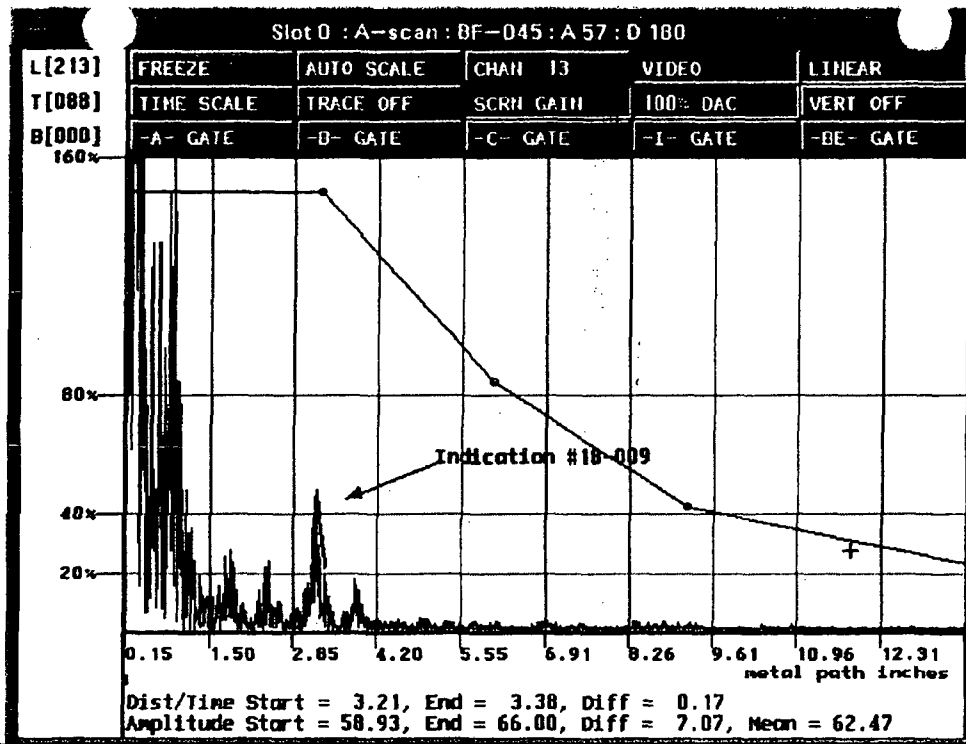
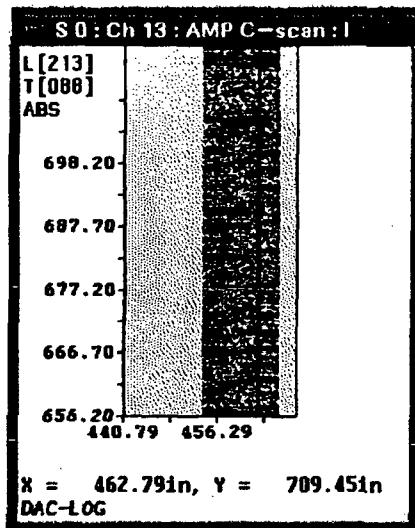


S0: Scale

32.3
36.6
41.0
45.3
49.7
54.0
58.4
62.7
67.1
71.4
75.8
80.1
84.5
88.0
93.2

DAC

Lower Ter  
tor3/18-009



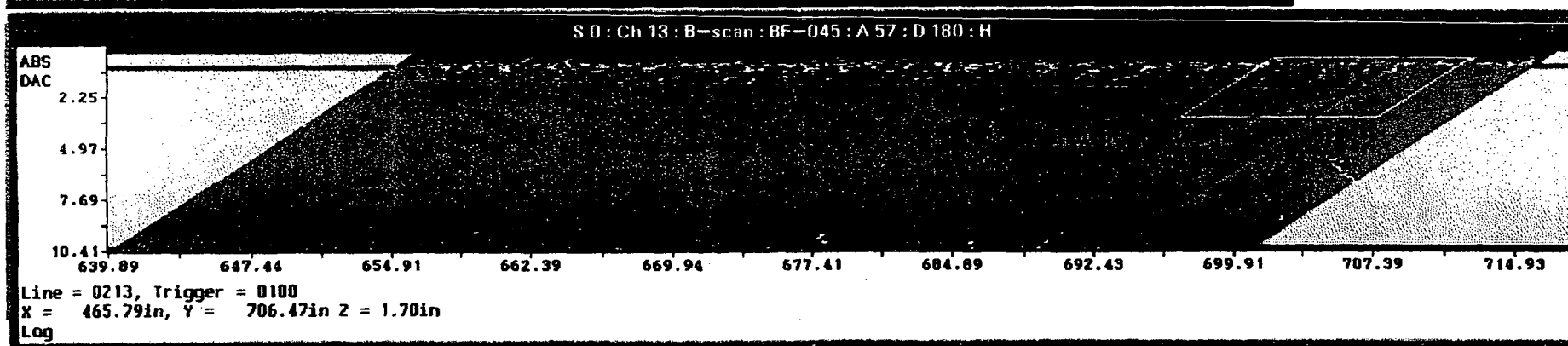
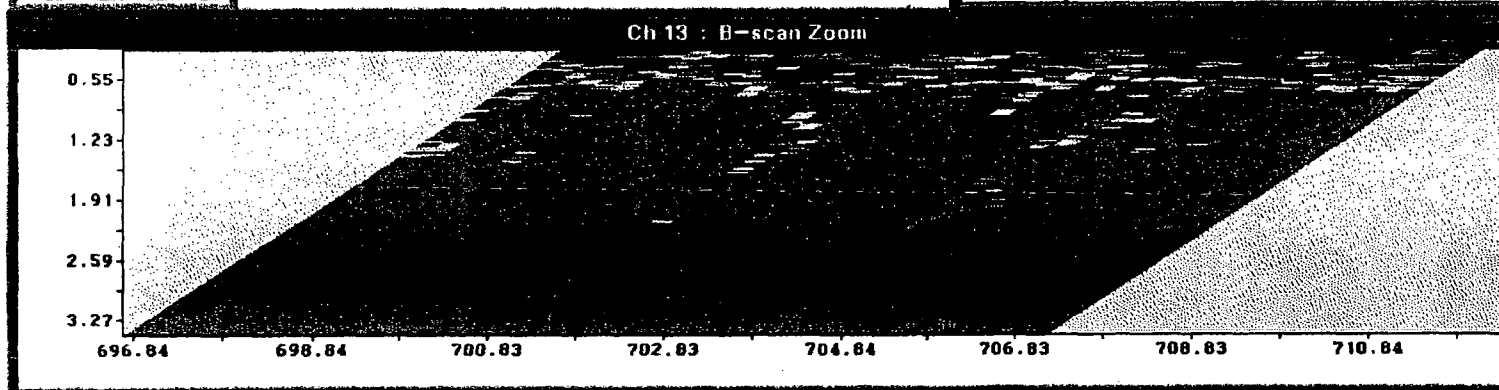
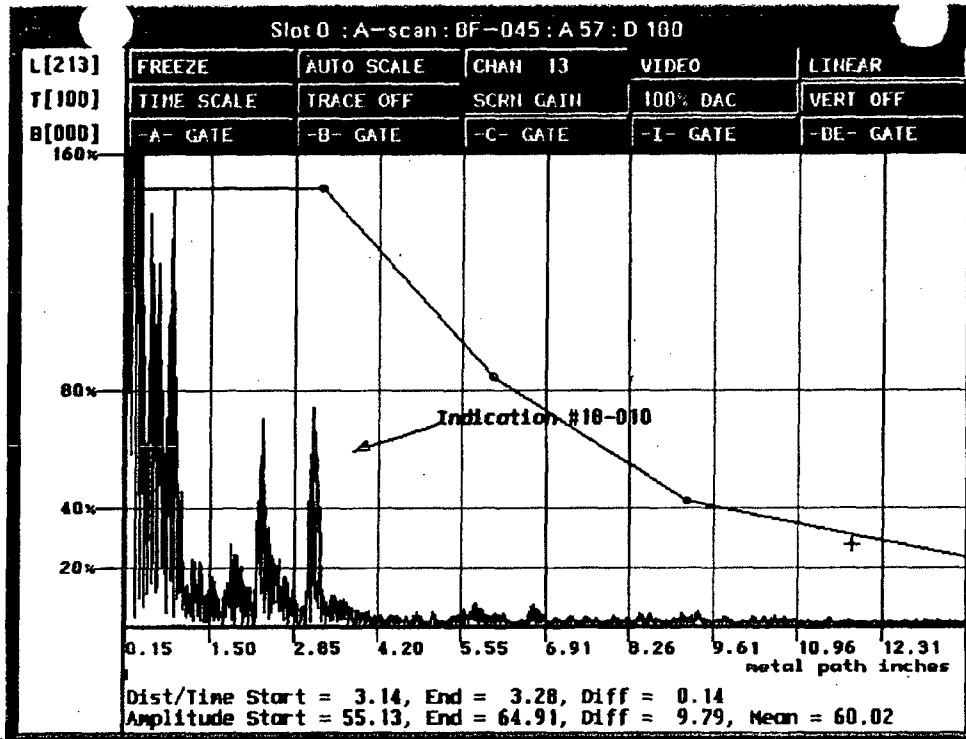
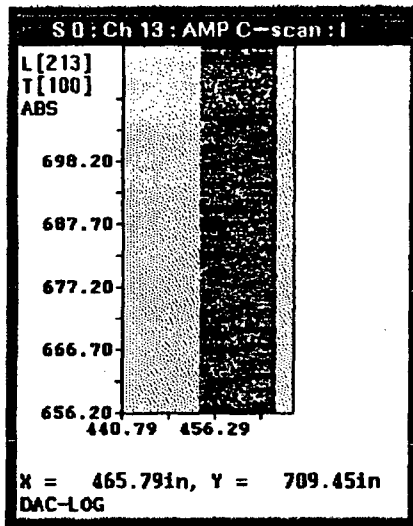
00000000

21170  
410F52  
00303

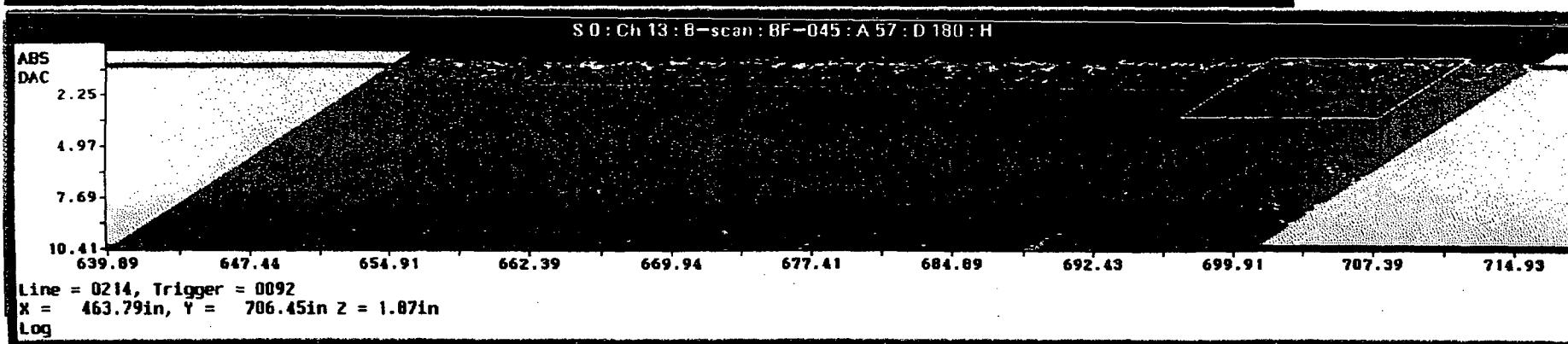
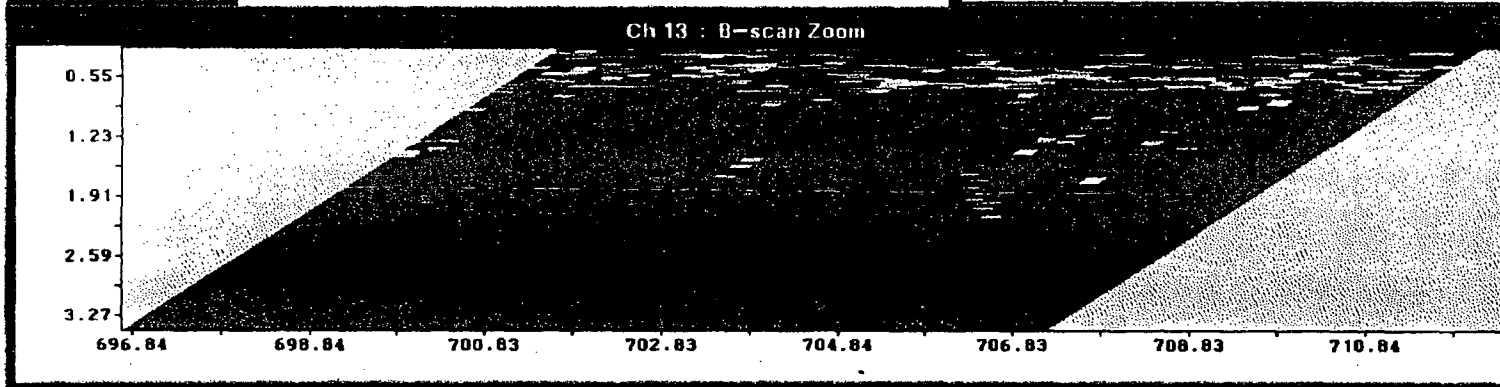
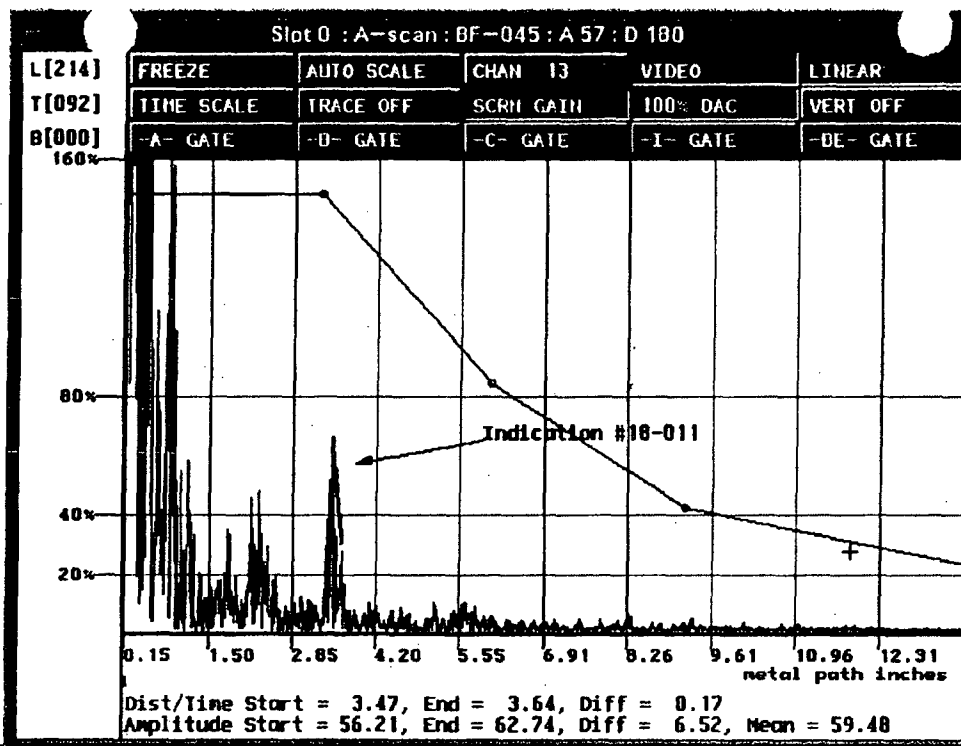
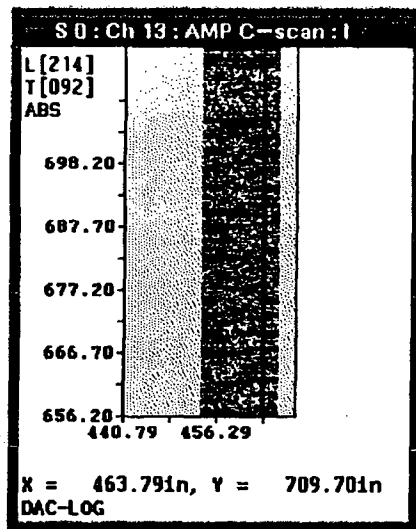
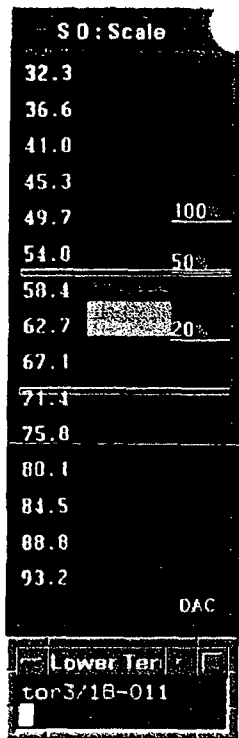
S 0 : Scale

32.3  
36.6  
41.0  
45.3  
49.7 100%  
54.0 50%  
58.4  
62.7 20%  
67.1  
71.1  
75.8  
80.1  
84.5  
88.8  
93.2

DAC



420552  
00304



00000000

R1170  
430F52  
00305

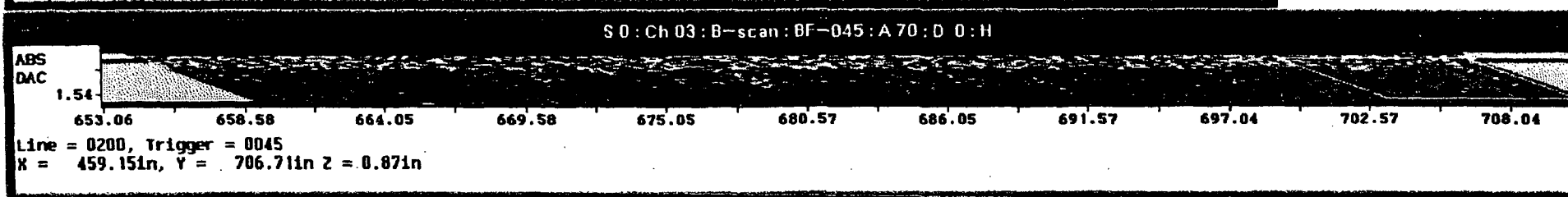
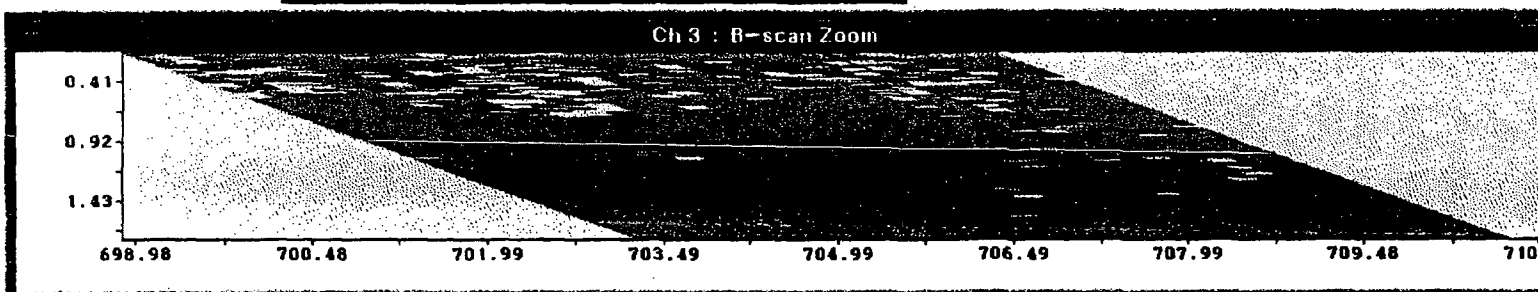
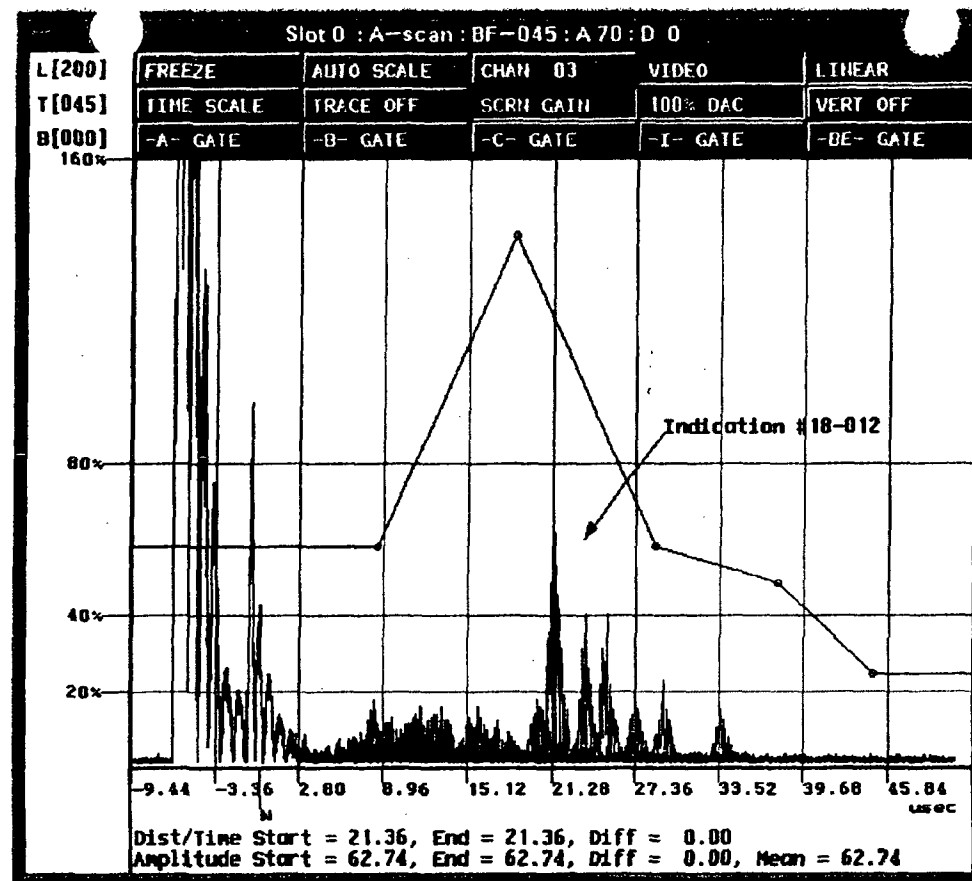
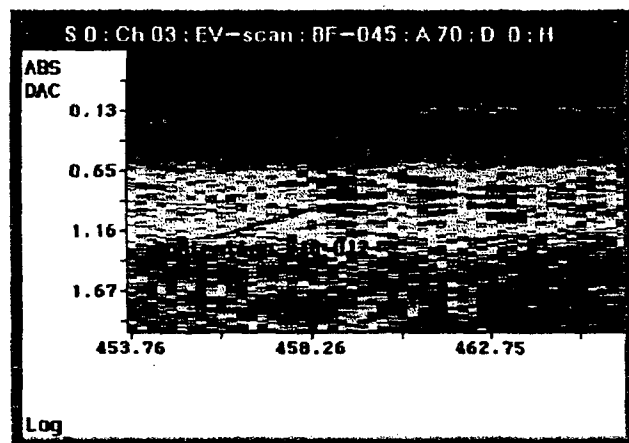
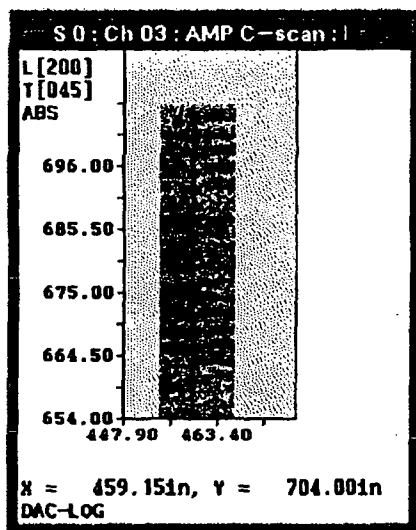
S 0 : Scale

32.3
36.6
41.0
45.3
49.7
54.0
58.4
62.7
67.1
71.4
75.8
80.1
84.5
88.8
93.2

100%  
50%  
20%

DAC

Lower Ten  
ton 3/18-012



00000 00000

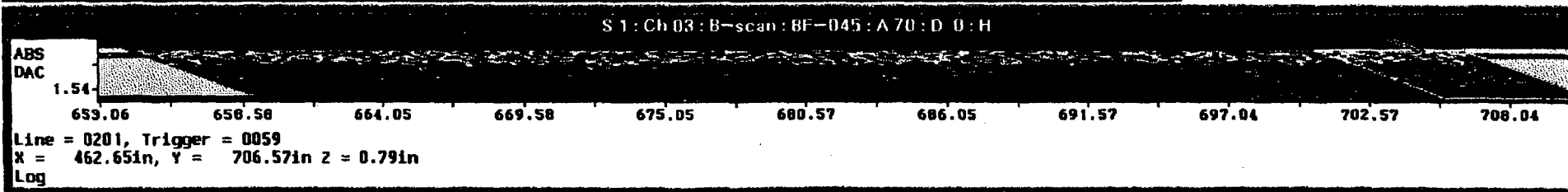
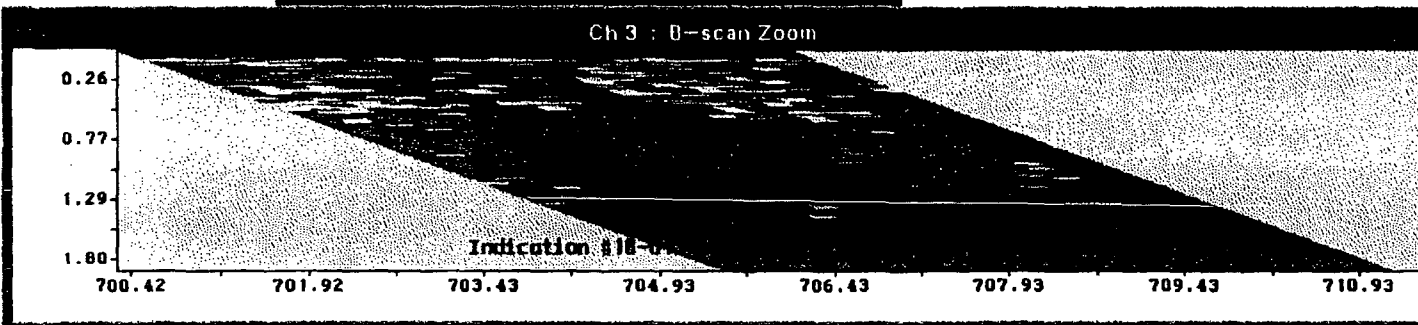
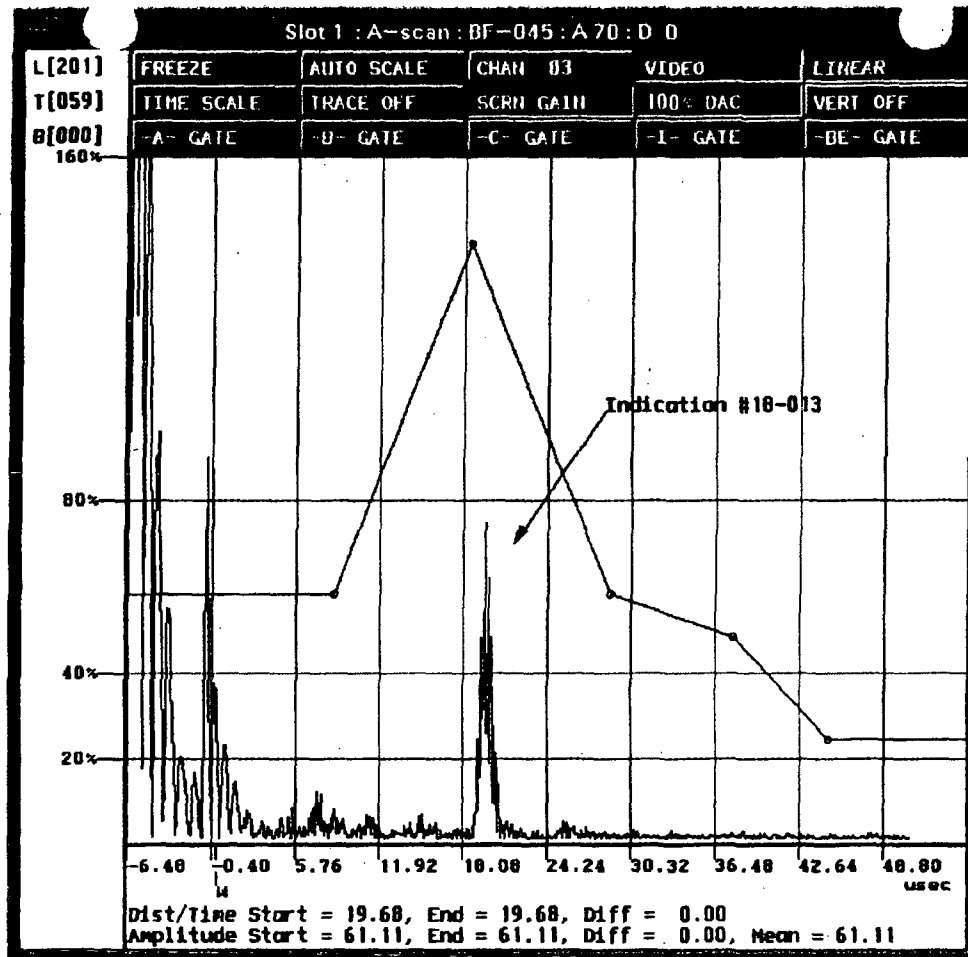
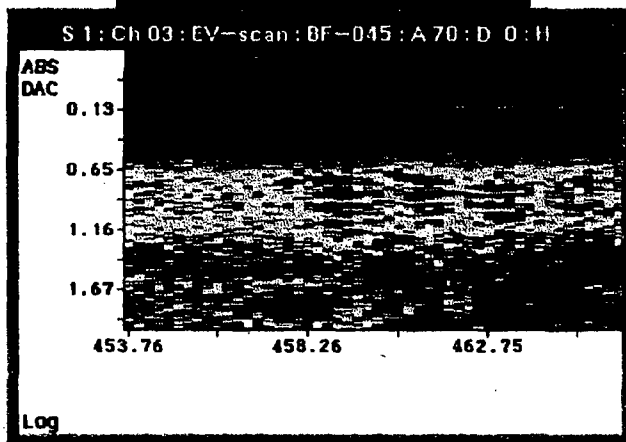
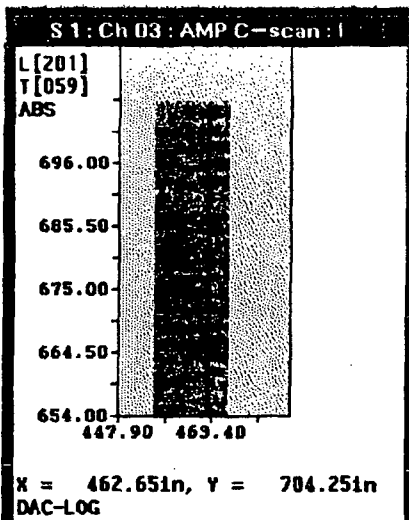
21170  
440552  
00306

S 1 : Scale

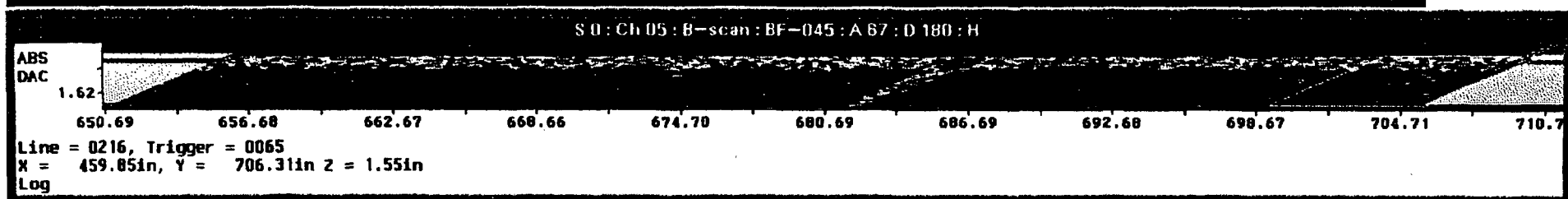
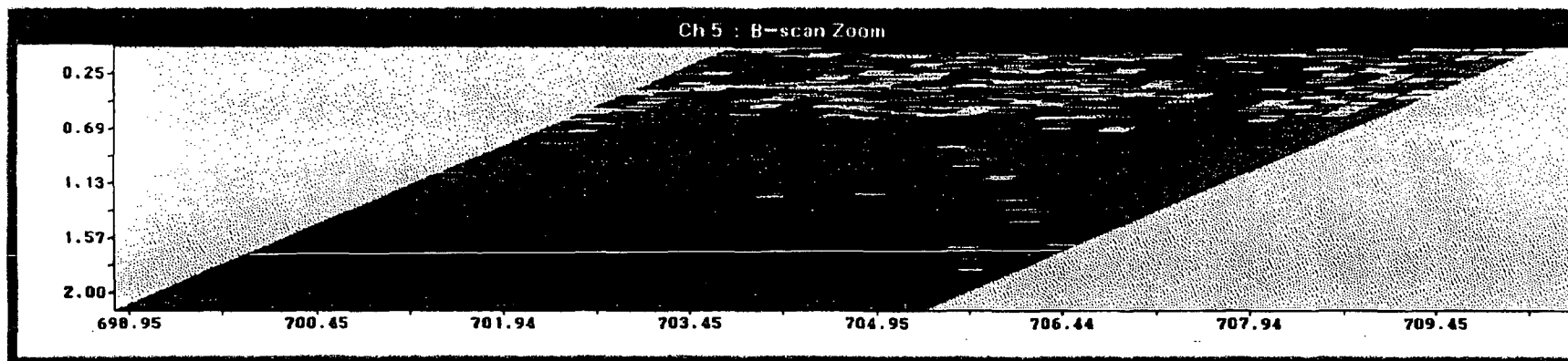
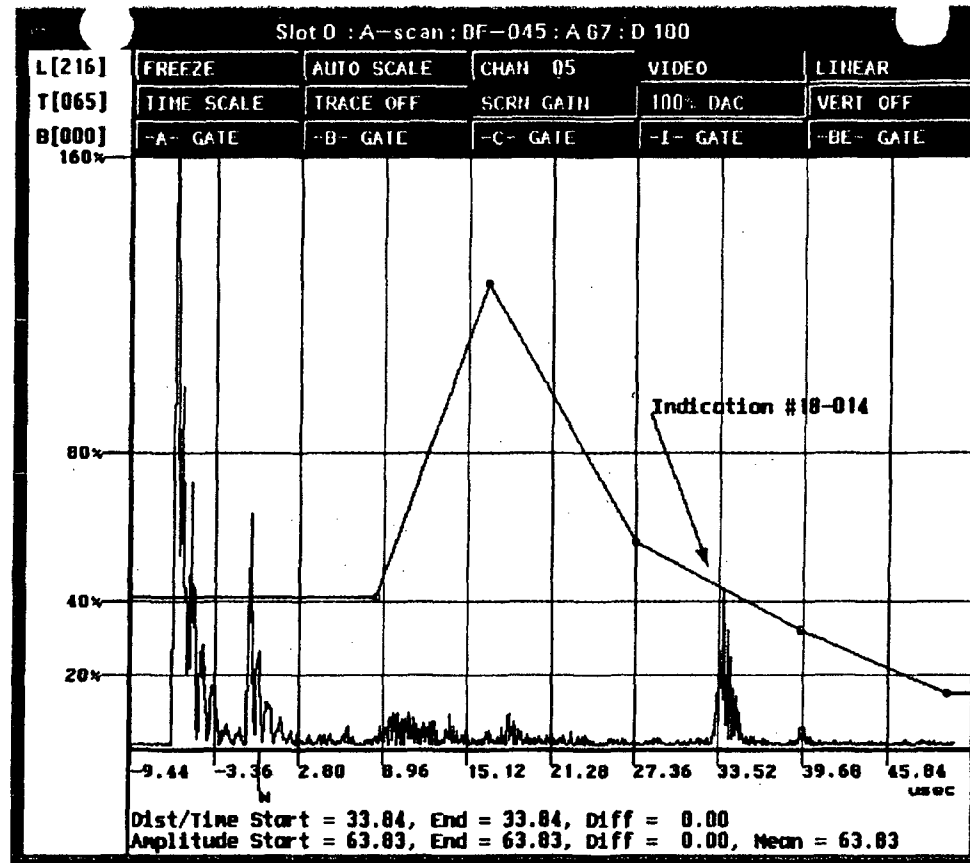
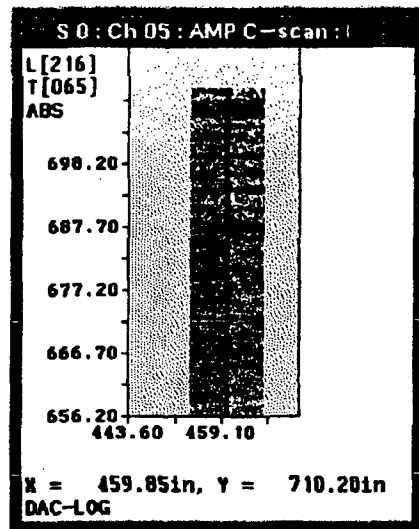
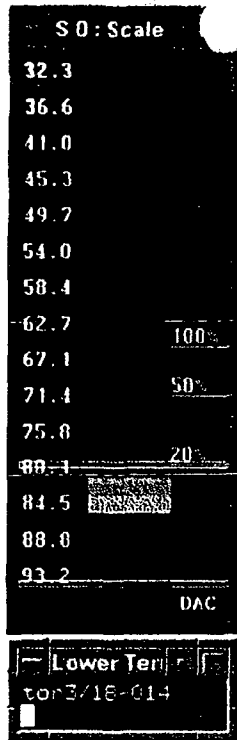
32.3	
36.6	
41.0	
45.3	
49.7	
54.0	
58.4	
62.7	100%
67.1	50%
71.4	
75.8	20%
80.1	
84.5	
88.0	
93.2	

DAC

Lower Tern  
ton3/18-013



21170  
450F52  
# 00307



4160552  
00308

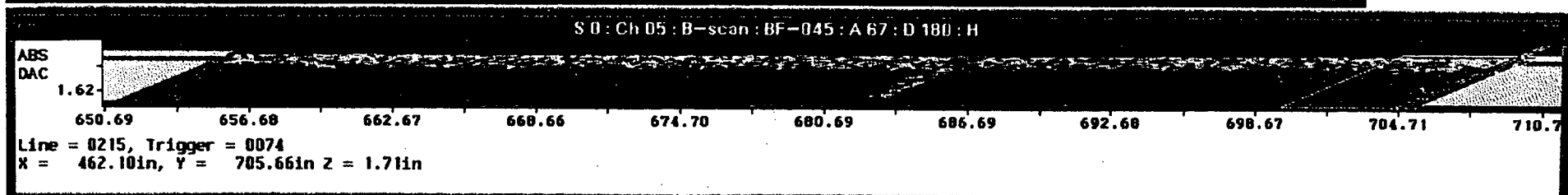
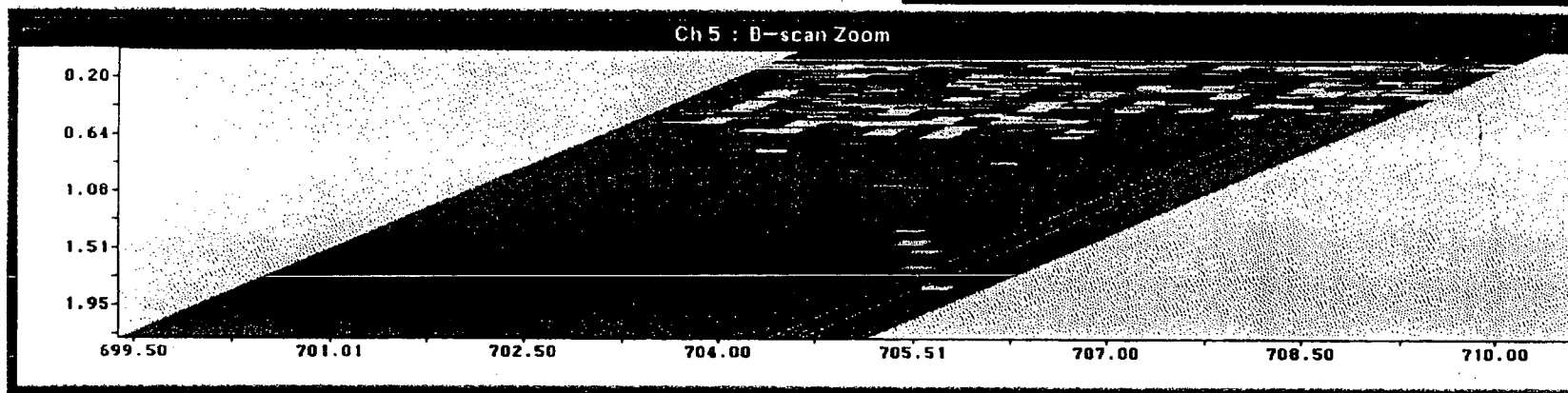
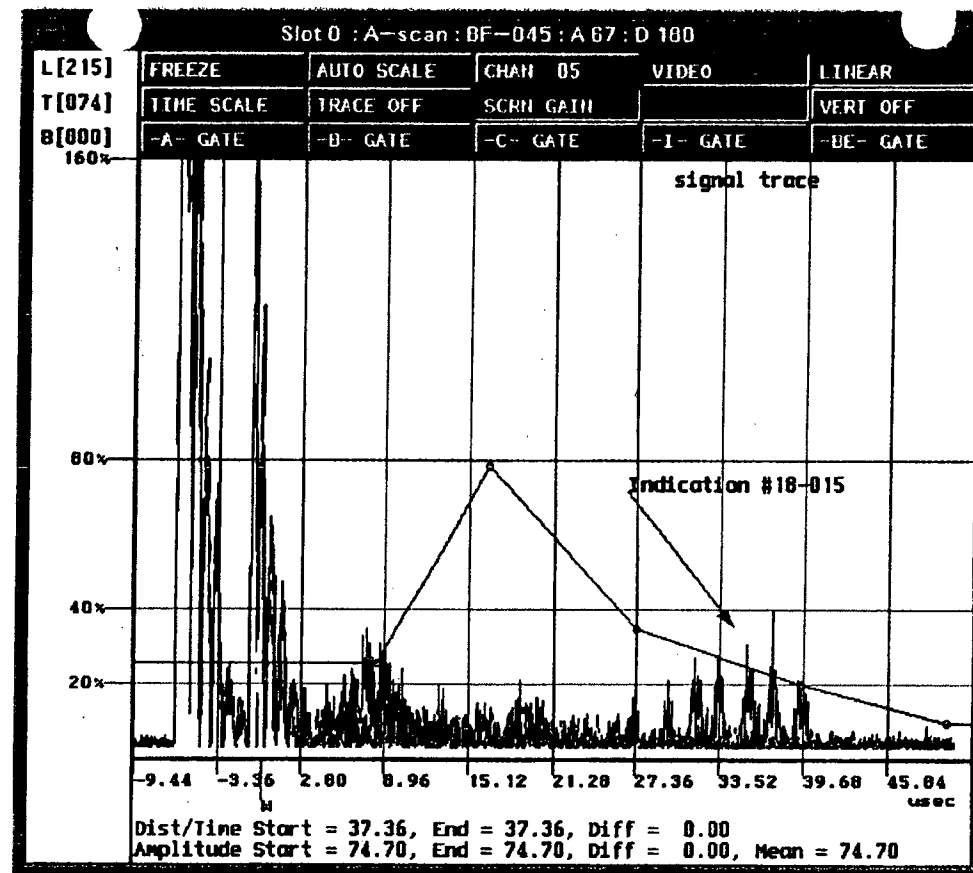
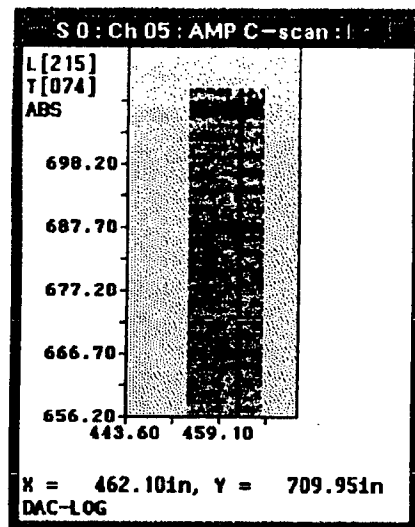
S 0 : Scale

32.3  
36.6  
41.0  
45.3  
49.7  
54.0  
58.4  
62.7  
67.1  
71.4  
75.8  
80.1  
84.5  
88.8  
93.2

100%  
50%  
20%

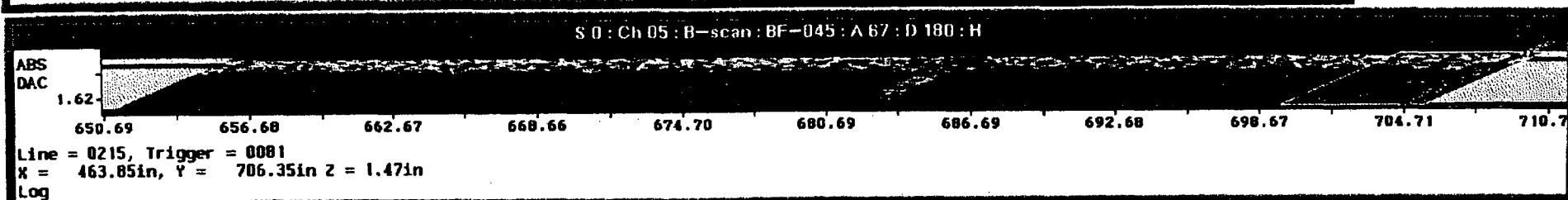
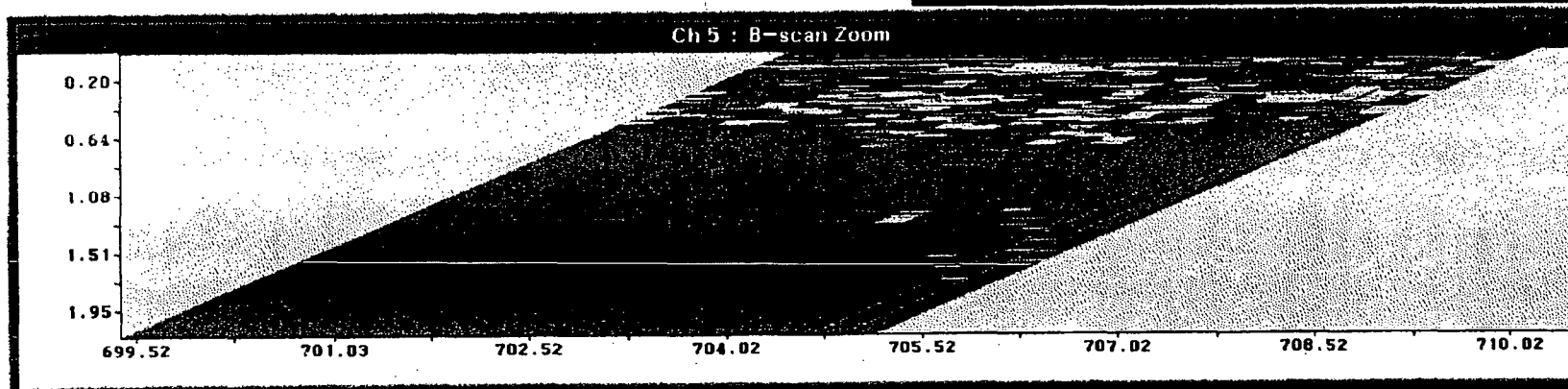
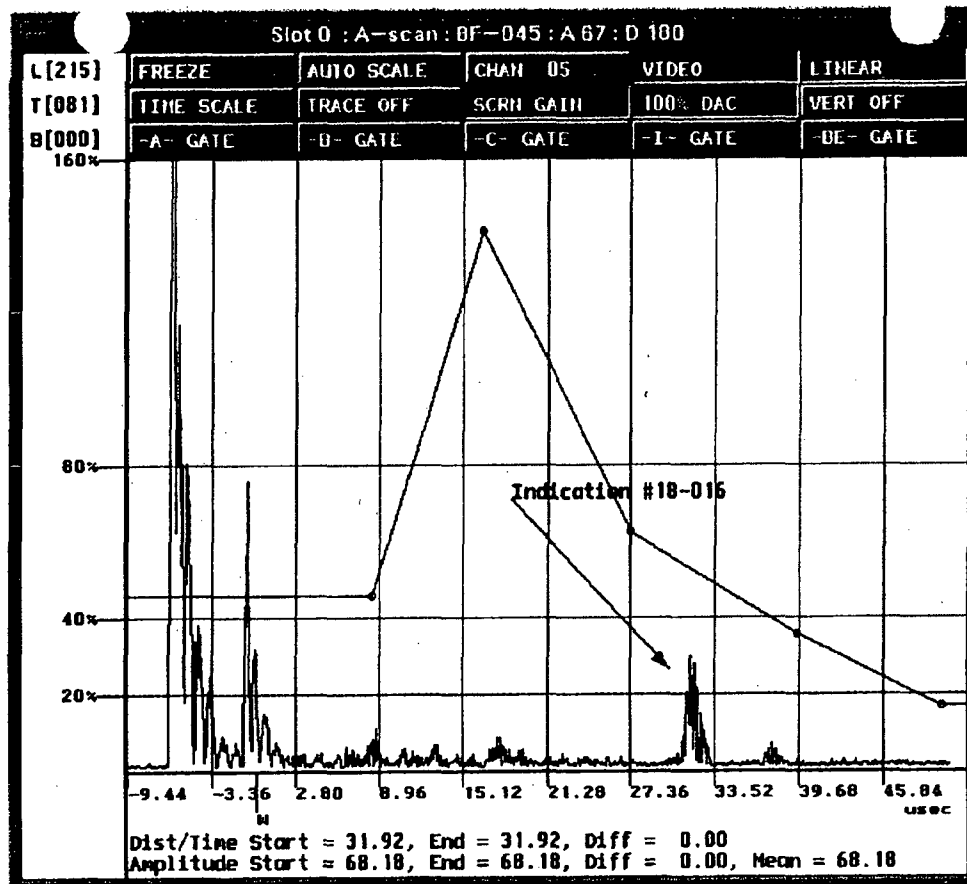
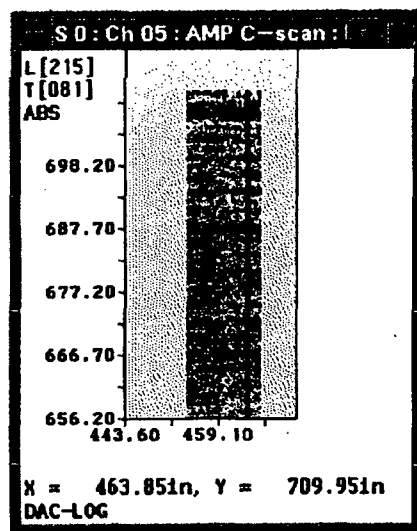
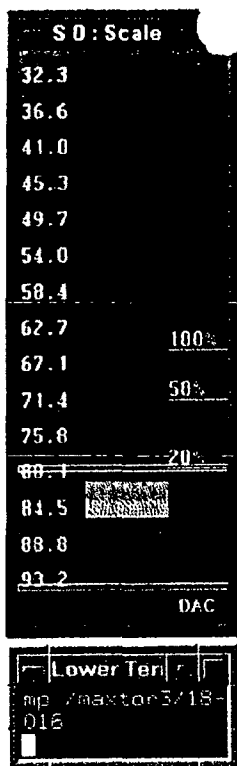
DAC

Lower Ter  
/test>dump /max  
tor3/18-015



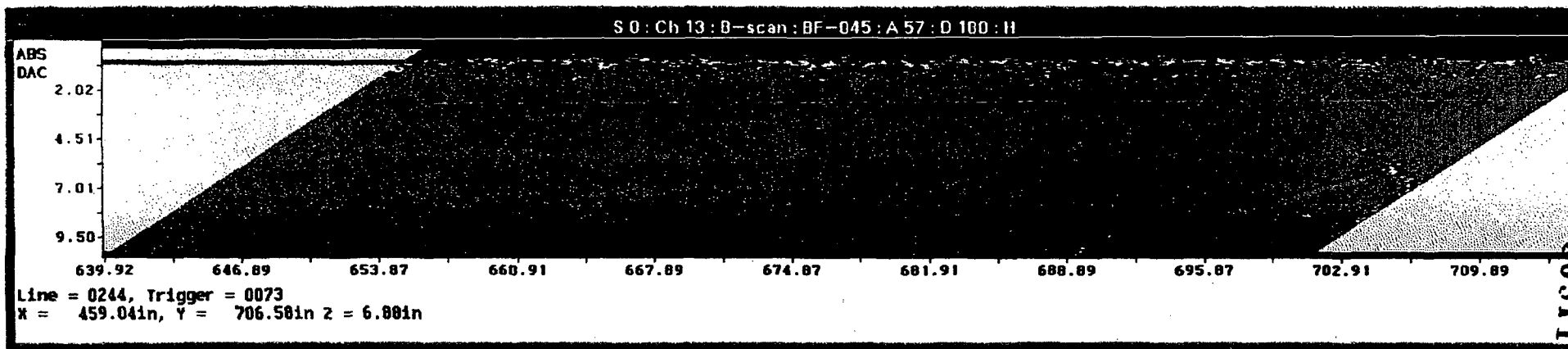
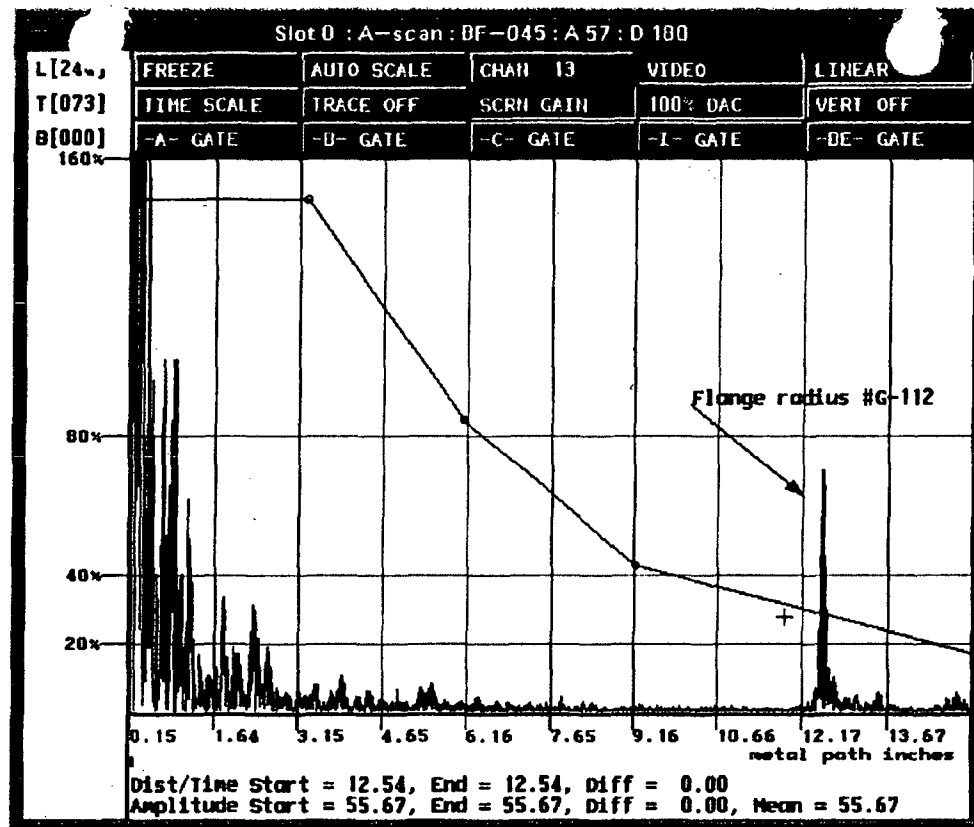
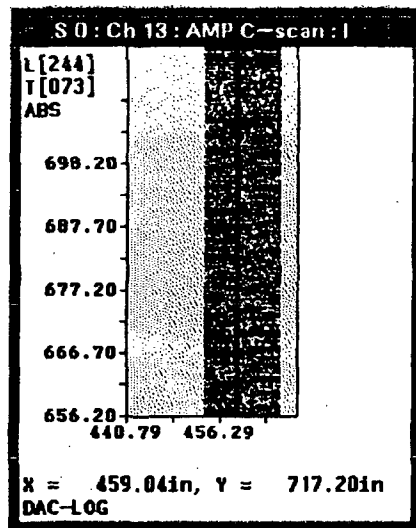
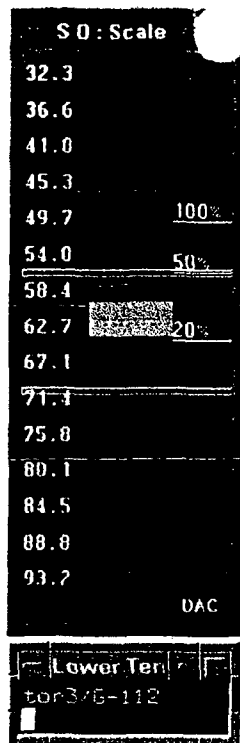
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21170  
470F52  
00309



K1170  
48 of 52  
# 00310

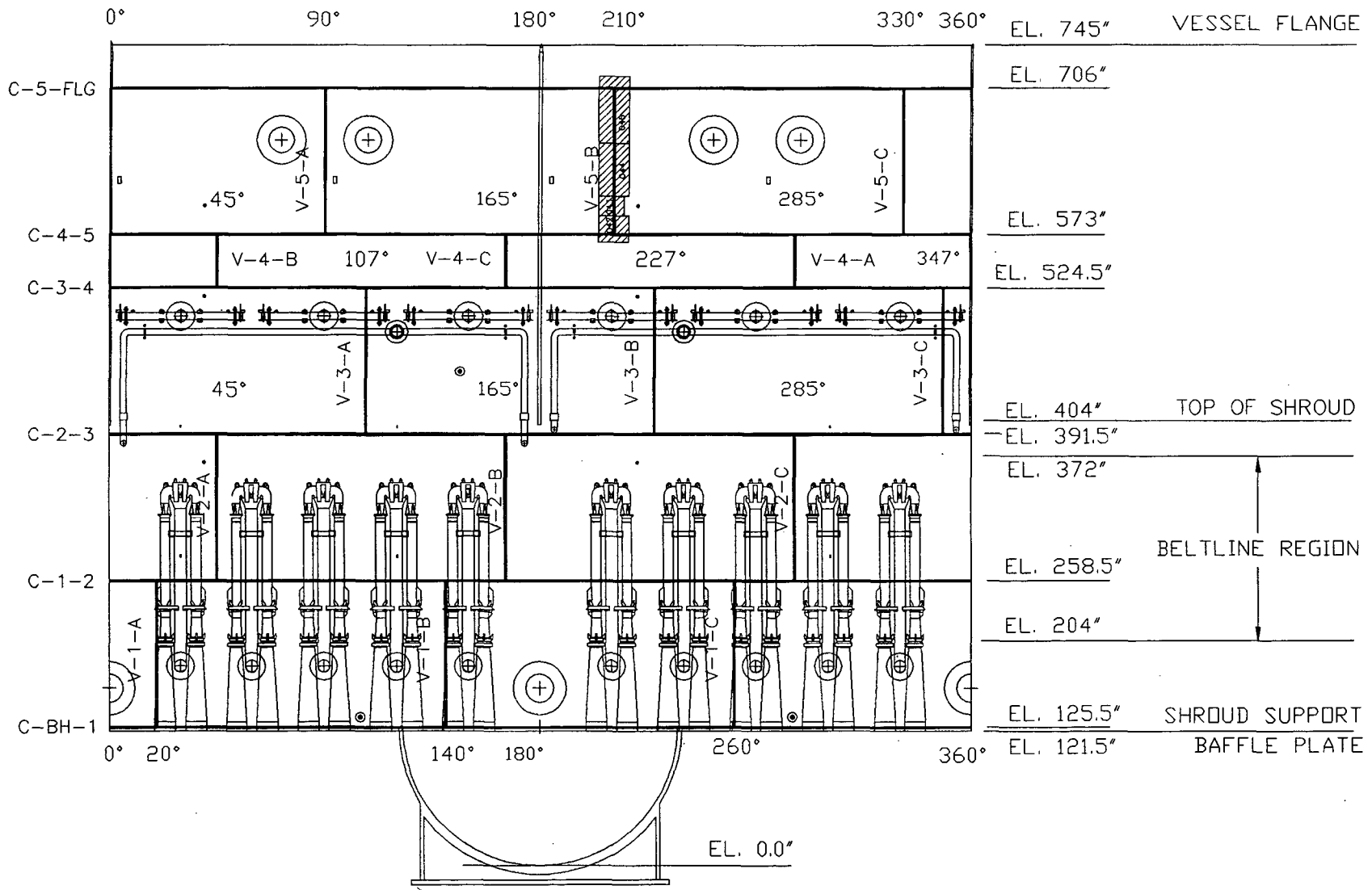


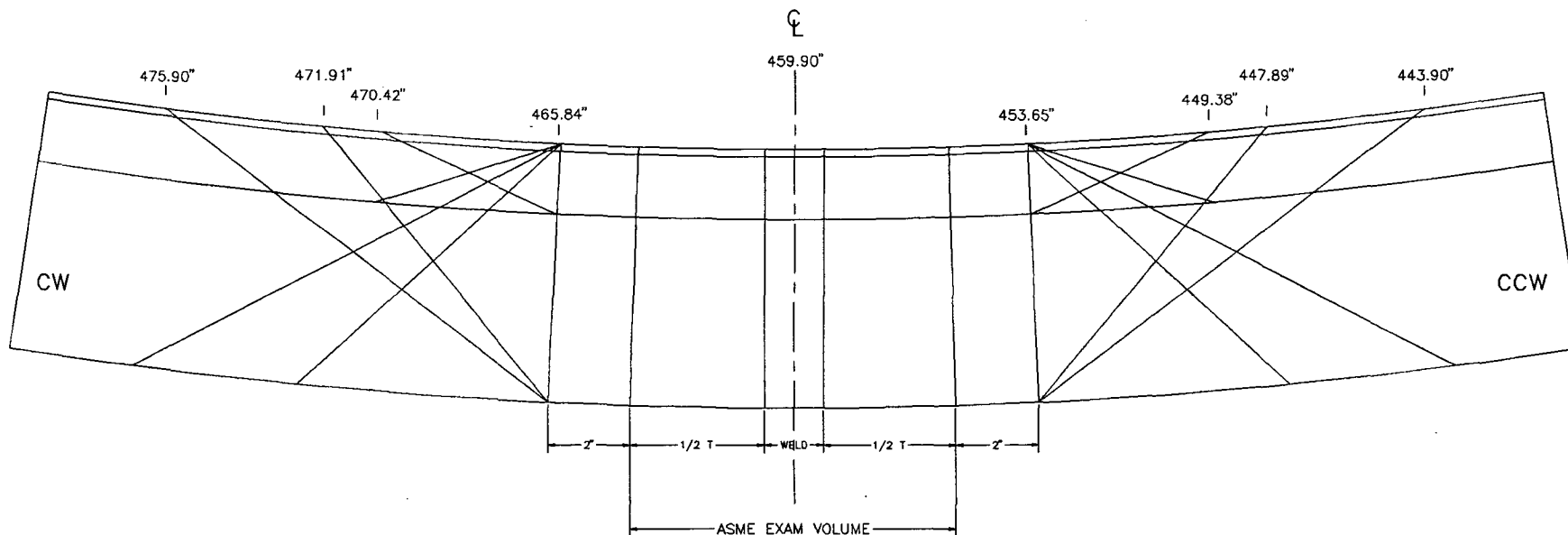


0000 0800

R1170  
49 of 52  
00311

# BROWNS FERRY UNIT-3 WELD LOCATIONS



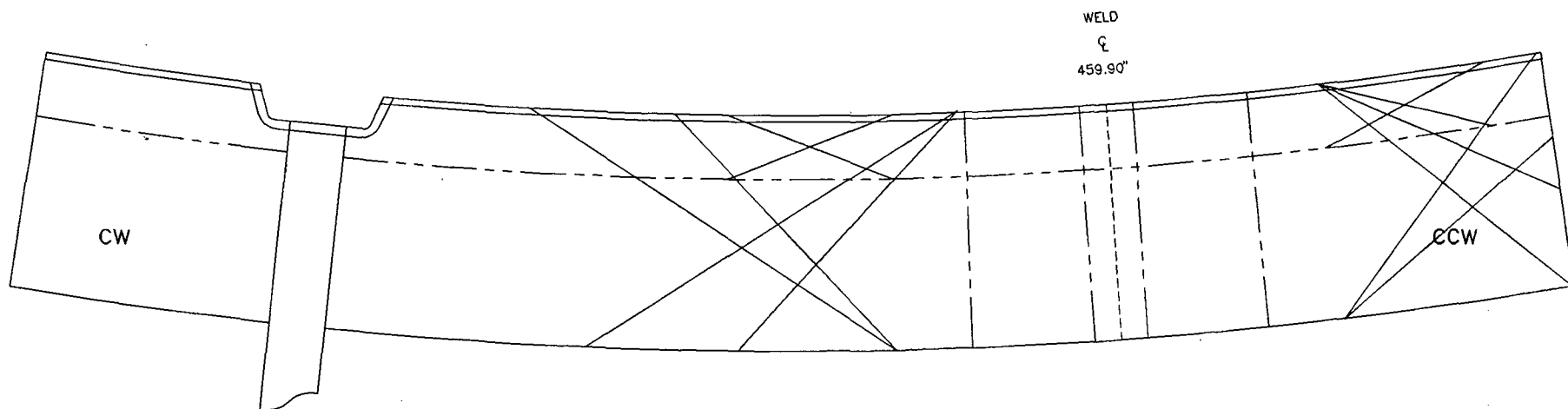


Nominal Clad T = 3/16"  
 Nominal Base Metal T = 6 3/8"  
 1 Degree = 2.19"

CH.	ANGLE	DIR.	MIN X	MAX X
1	0 W	0	453.65	465.84
2	0 W	90	453.65	465.84
3	70 UP	0	453.65	465.84
4	70 CW	90	449.38	465.84
5	70 DN	180	453.65	465.84
6	70 CCW	270	453.65	470.42
7	45 UP	0	453.65	465.84
8	45 CW	90	447.89	465.84
9	45 DN	180	453.65	465.84
10	45 CCW	270	453.65	471.91
11	60 UP	0	453.65	465.84
12	60 CW	90	443.90	465.84
13	60 DN	180	453.65	465.84
14	60 CCW	270	453.65	475.90
15	0 BM	0	453.65	475.90
16	0 BM	90	443.90	465.84

0000 0000

R1170  
52 OF 52



Nominal Clad T = 3/16"  
Nominal Base Metal T = 5 3/8"  
1 Degree = 2.19"

00314

GE NUCLEAR ENERGY

BROWNS FERRY UNIT 3

N12B NOZ. AUTOMATED SCAN LIMIT

SCALE: NONE

DWG. V-5BN12B

REV. 0