60-10-124-00RE

ATLAS WIRELINE SERVICES
Western Atlas International

SEGMENTED BOND LOG

GR/CCL VDL MAP

FILE NO.

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD.
WELL: COLUMBIA ET AL KOTANEELEE I-48 YT
FIELD: KOTANEELEE
PROVINCE: YUKON

LOCATION:
60 07" 35.917" N. LAT
124 07" 36.45" W LONG

SEC ____ TWP ____ RGE ____

OTHER SERVICES
VERTILOG
MAGNELOG

PERMANENT DATUM: GROUND LEVEL ELEV. 827.34
LOGGING MEASURED FROM: K.B. 8.04 M ABOVE P.D.
DRILLING MEASURED FROM: KKKELLY BUSHING

ELEVATIONS
KB 834.95
DF N.A.
GL 827.34

DATE	18-JAN-90	
RUN	1	
SERVICE ORDER	953782	
DEPTH-DRILLER	4420.6	
DEPTH-LOGGER	3597.0	
BOTTOM LOGGED INTERVAL	3560.0	
TOP LOGGED INTERVAL	2500.0	
TYPE FLUID IN HOLE	MUD/KKCL	
SALINITY PPM CL.	N.A.	
DENSITY LB/GAL.	N.A.	
LEVEL	SURFACE	
MAX. REC. TEMP. DEG. C	168	
OPR. RIG TIME	10.0 HOURS	
EQUIP. NO. / LOC.	HL 6387	RED DEER
RECORDED BY	R. CHAPMAN/P. BRANCHT	
WITNESSED BY	H. RUGG	

BOREHOLE RECORD

NO.	BIT	FROM	TO
33	107.1/N-80	SURFACE	152.0
24	69.9/N-80	SURFACE	368.2
17	47.7/L-80	SURFACE	1110.0
17	43.2/N-80	1110.0	2591.0
17	47.6/N-80	2591.0	4420.0

CASING RECORD

SIZE	WGT	FROM	TO

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT, BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

FOLD HERE

REMARKS RUN (1)

CORRELATED TO LEE TOOL GR DATED 30-OCT-90
PURPOSE: TO CHECK INTEGRITY OF CEMENT JOB
PRESSURE PASS RECORDED WITH 7000 KPA PRESSURE

OPERATORS: N.BRUNET & R. OROM

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
1	1	SBT	113803	1424XA	CENTRALIZED
1	1	GR	47389	1309XA	CENTRALIZED
1	1	CCL	309138	2330NA	CENTRALIZED
1	1	TELE	117087	1633EA	CENTRALIZED
1	1	VDL	116790	1424PA	CENTRALIZED

CURVE DEFINITIONS

END

VDL	VARIABLE DENSITY
GR	GAMMA RAY
ATAV	AVERAGE OF 6 COMPENSATED ATTENUATION CURVES
ATMN	MINIMUM OF 6 COMPENSATED ATTENUATION CURVES
AMAV	COMPENSATED ATTENUATION (3 FT AMPLITUDE)
CCL	CASING COLLAR LOCATOR
RB	TOOL RELATIVE BEARING (LOW SIDE INDICATOR)
DEV	TOOL DEVIATION IN DEGREES
ATC6	COMPENSATED ATTENUATION IN SECTOR 6 (60 DEGREE DB/FT)
ATC5	COMPENSATED ATTENUATION IN SECTOR 5 (60 DEGREE DB/FT)
ATC4	COMPENSATED ATTENUATION IN SECTOR 4 (60 DEGREE DB/FT)
ATC3	COMPENSATED ATTENUATION IN SECTOR 3 (60 DEGREE DB/FT)
ATC2	COMPENSATED ATTENUATION IN SECTOR 2 (60 DEGREE DB/FT)
ATC1	COMPENSATED ATTENUATION IN SECTOR 1 (60 DEGREE DB/FT)

SBT CURVE DEFINITIONS

PASS THREE MAP SECTION
7000 KPA PRESSURE PASS

FILE: 5

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS
AAT4	3.4	METERS
AAT5	3.4	METERS
AAT6	3.4	METERS

PARAMETERS

*** NONE ***

DISPLAY SCALE CHANGES

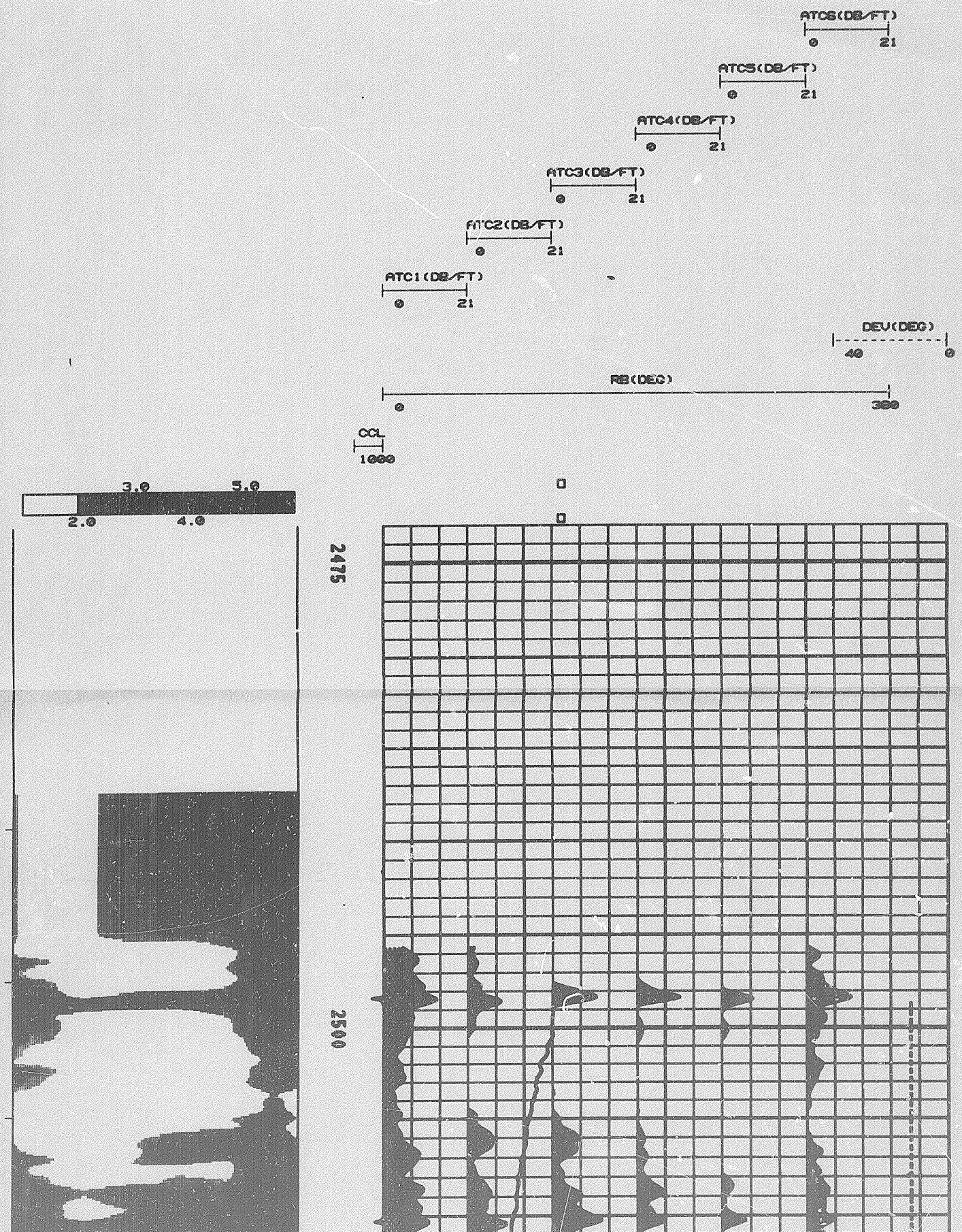
*** NONE ***

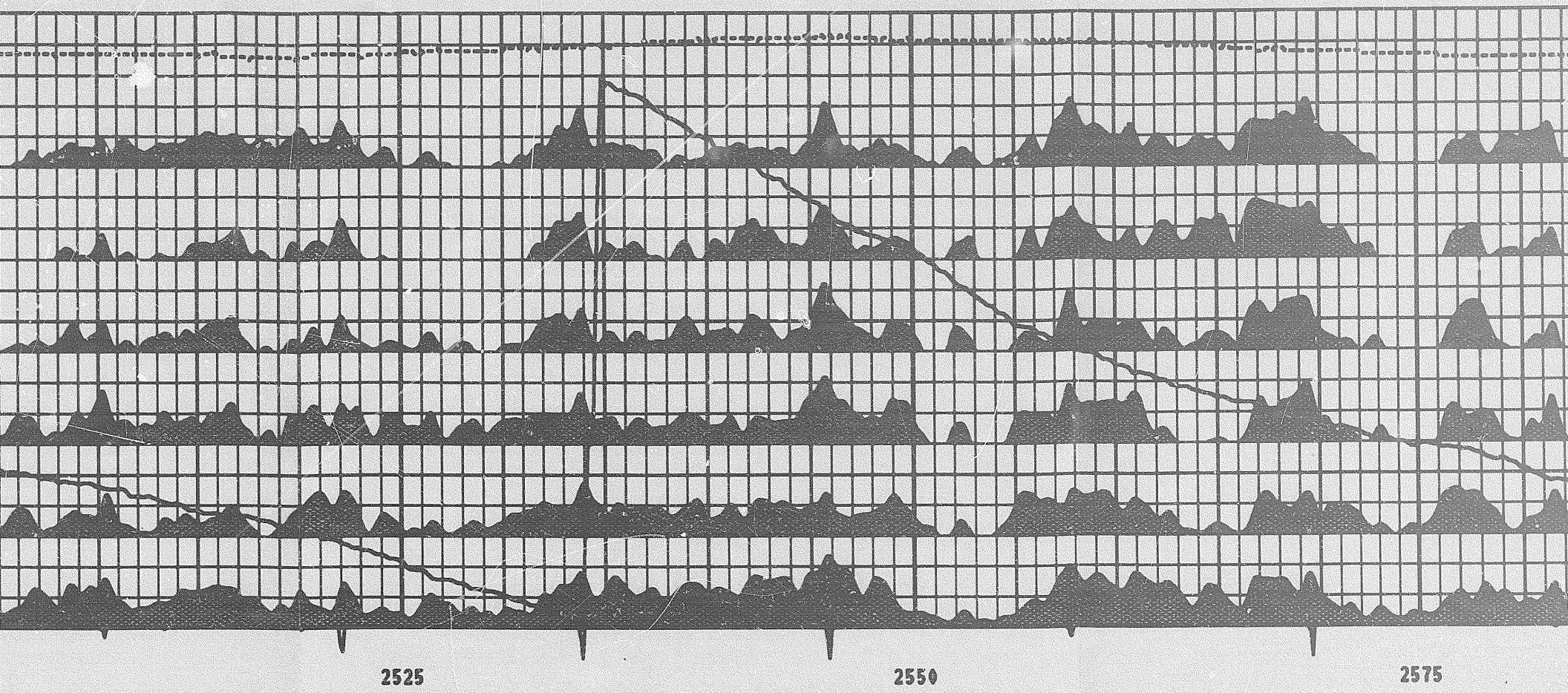
DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD.
WELL NAME: COLUMBIA ET AL KOTANEELEE I-48 YT
SERVICE: L 702A FILE: 5 DATE: 01/18/91
REVISION: FSYS256 REV:0002 VER:4.0

RUN: 1
TRIP: 1
TIME: 06:41:16
MODE: RECORD

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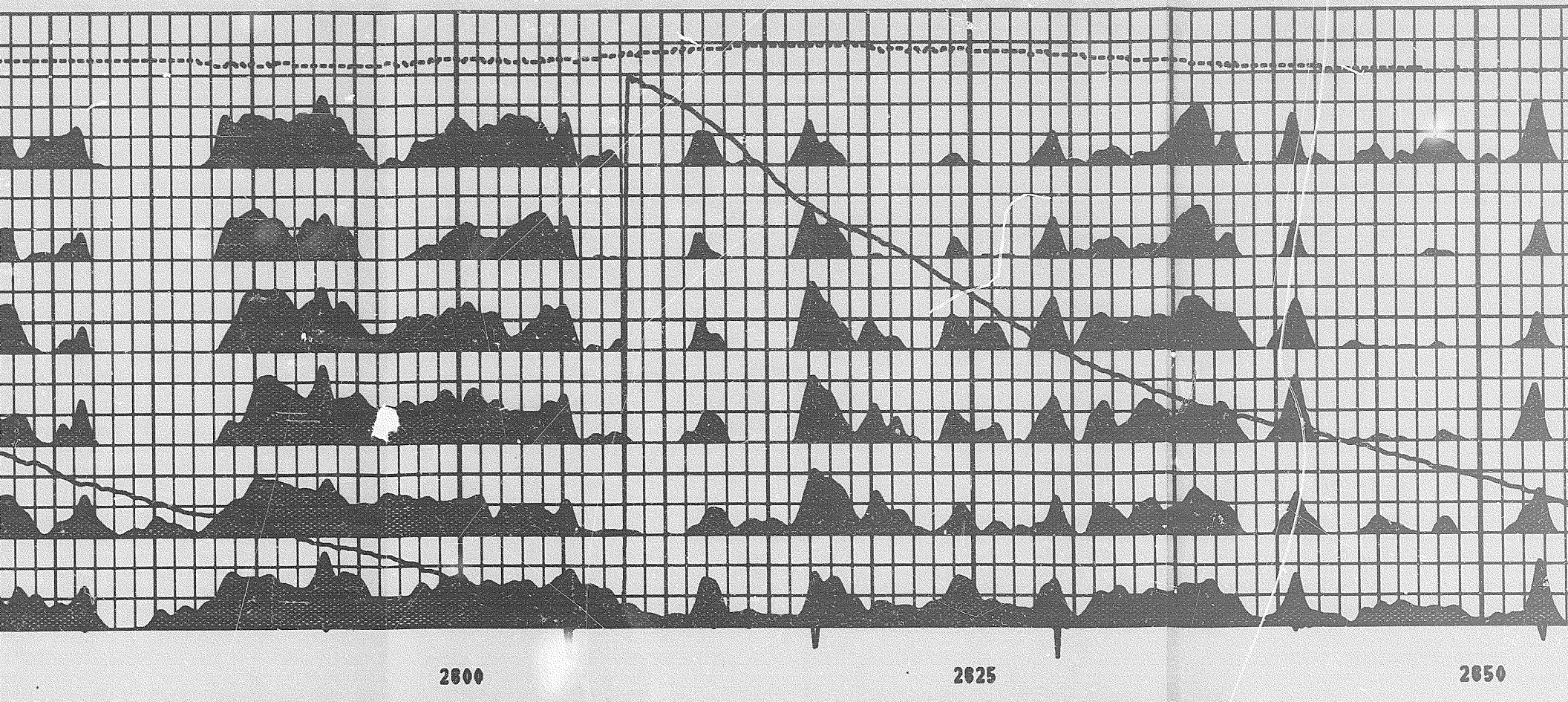
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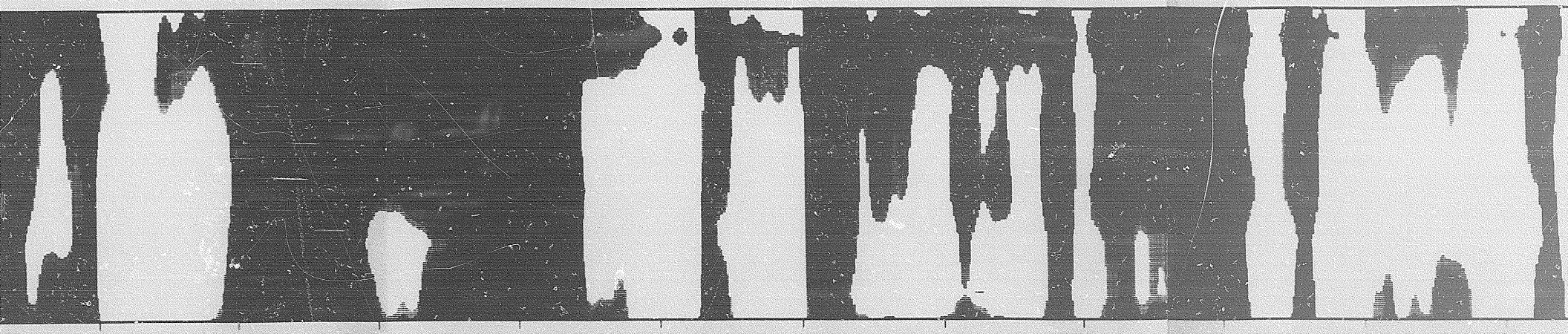

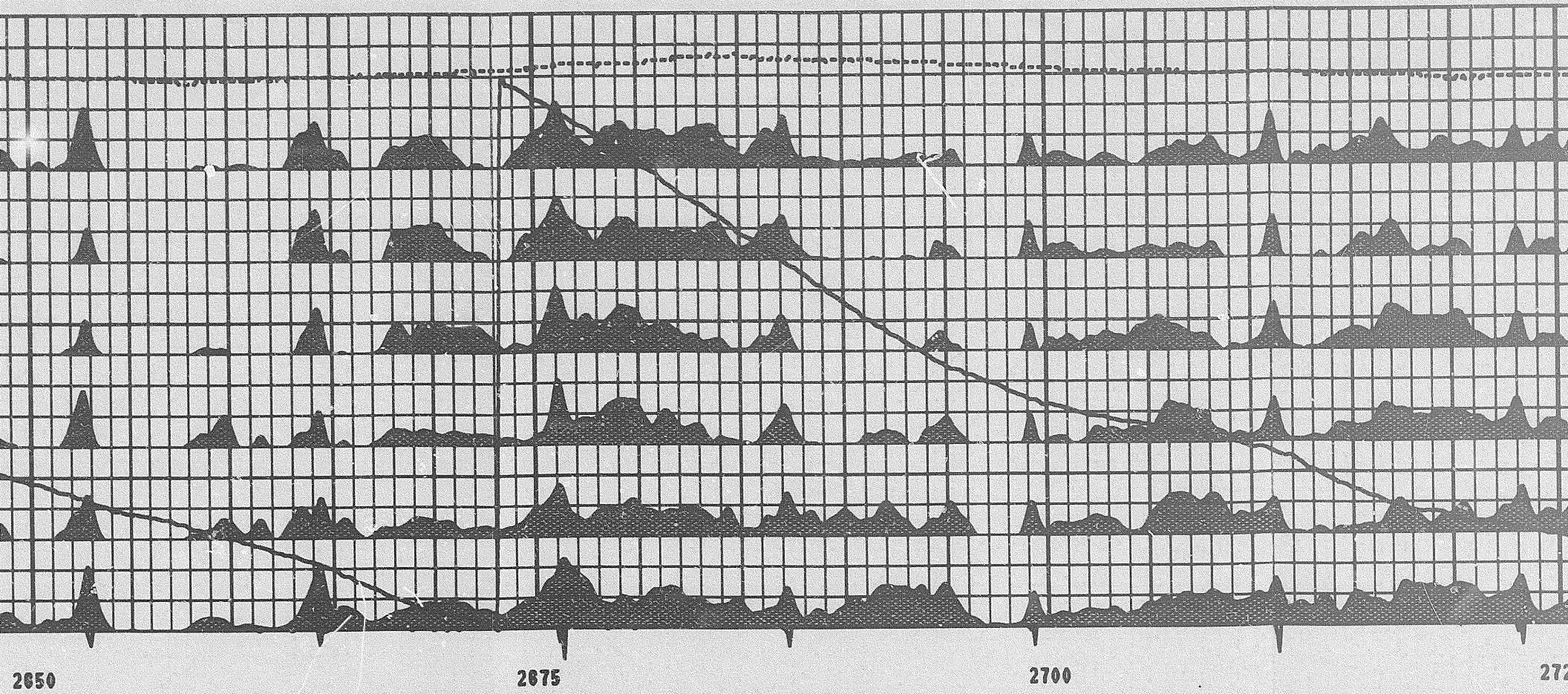
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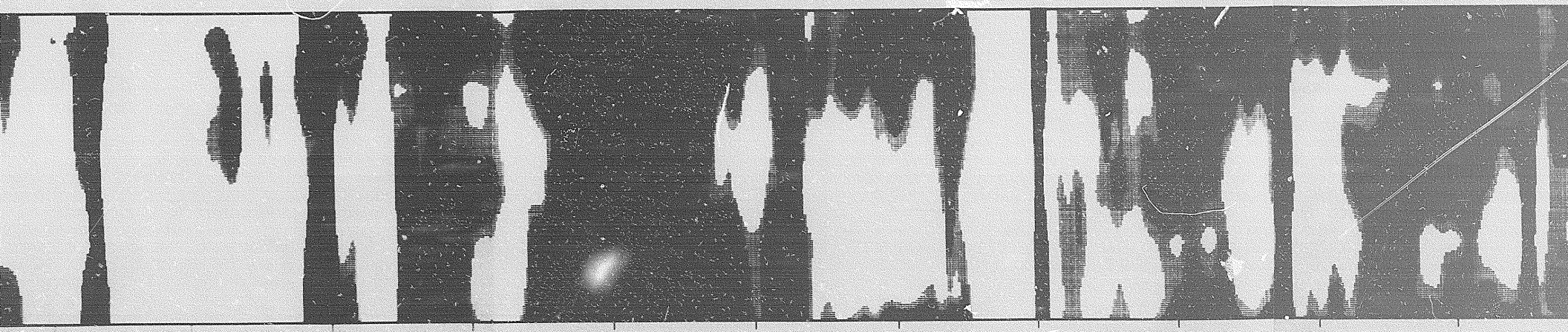

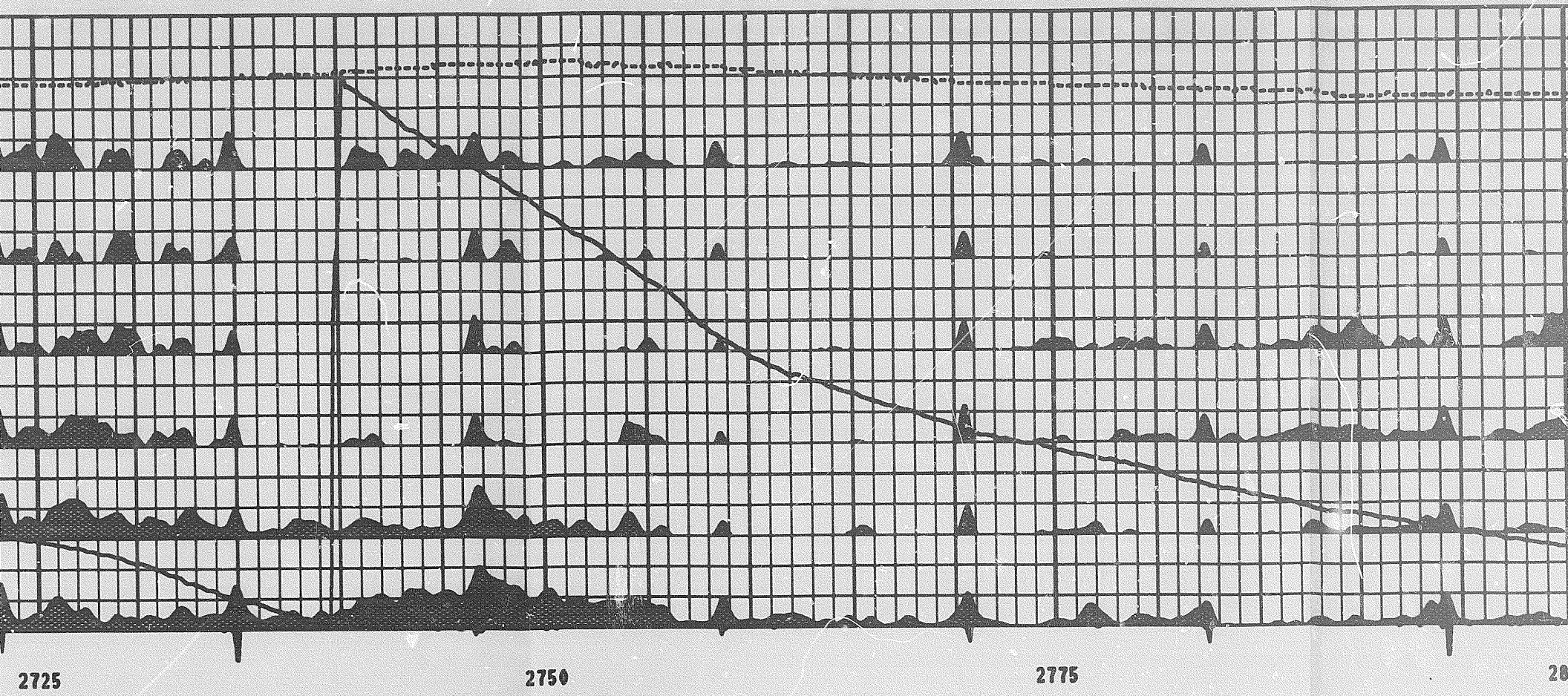
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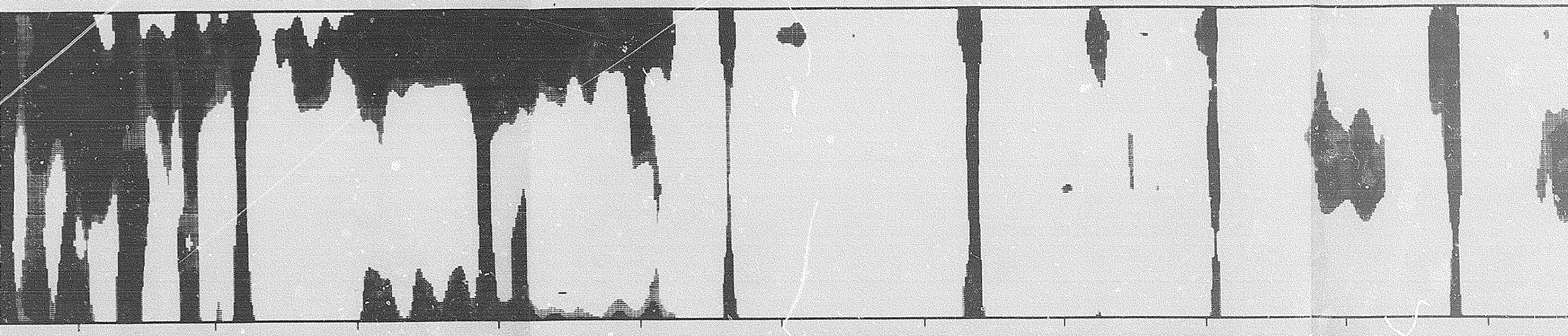

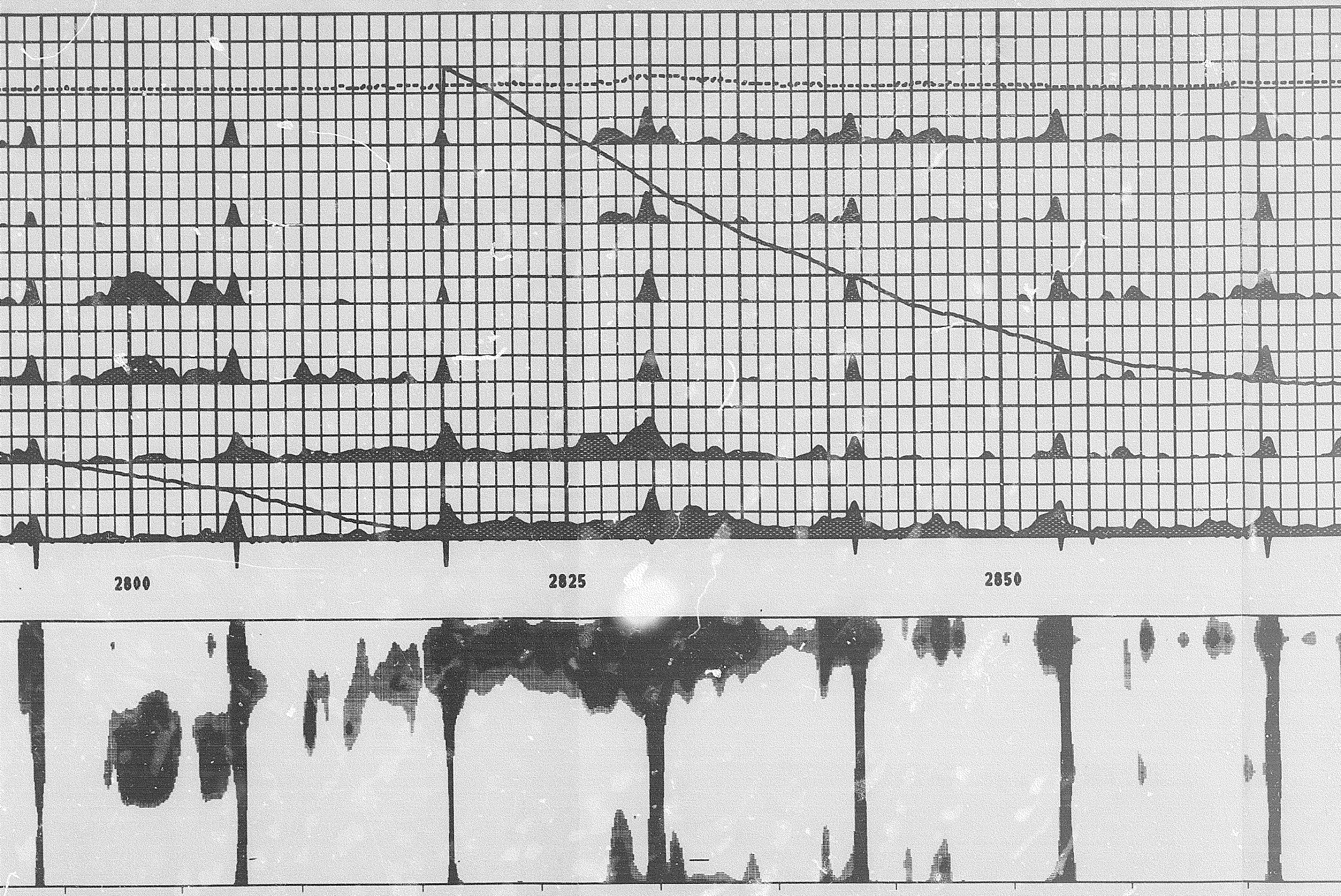
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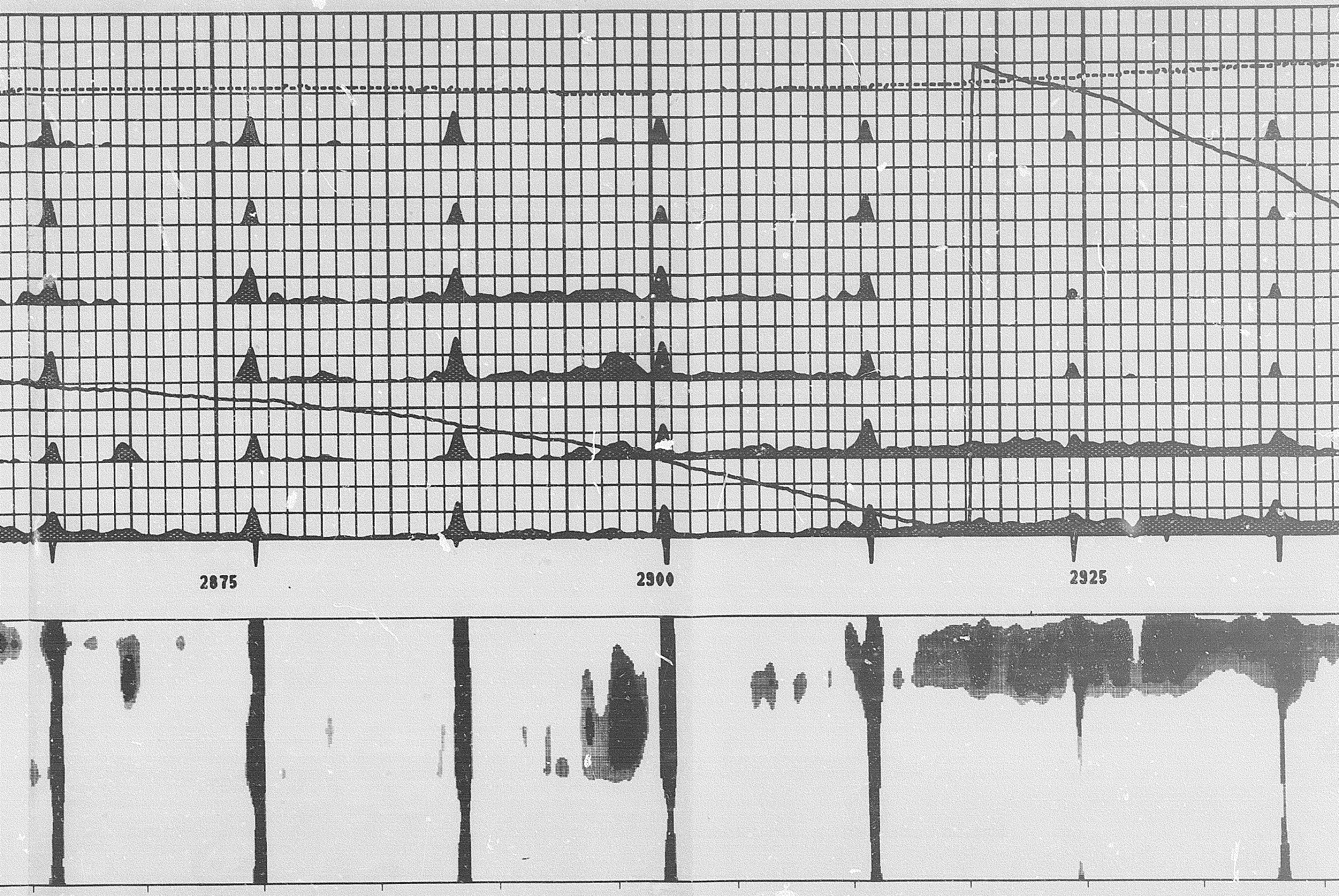
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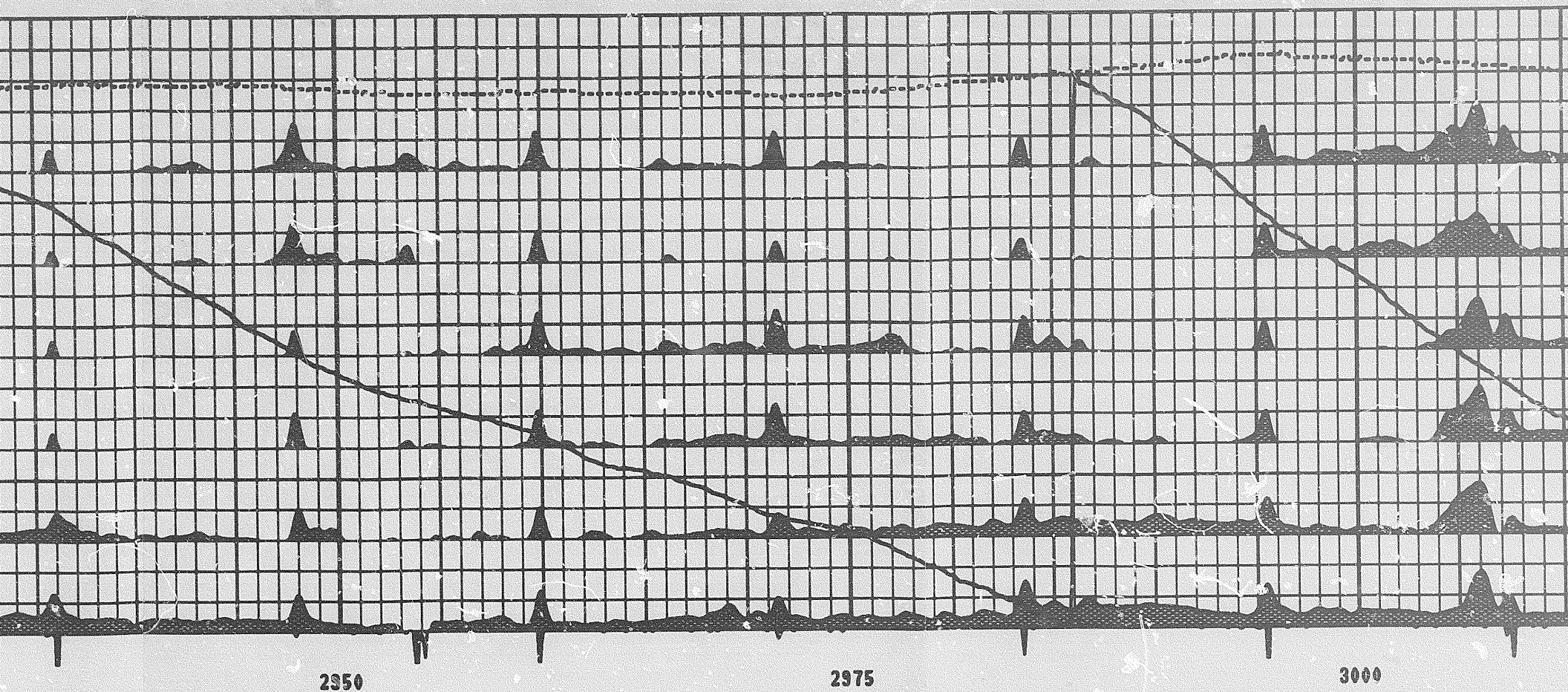
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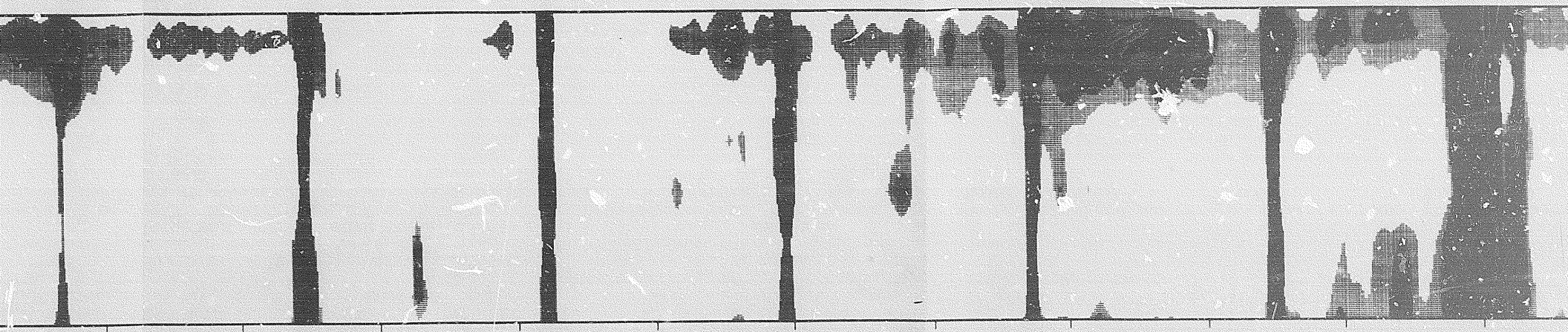

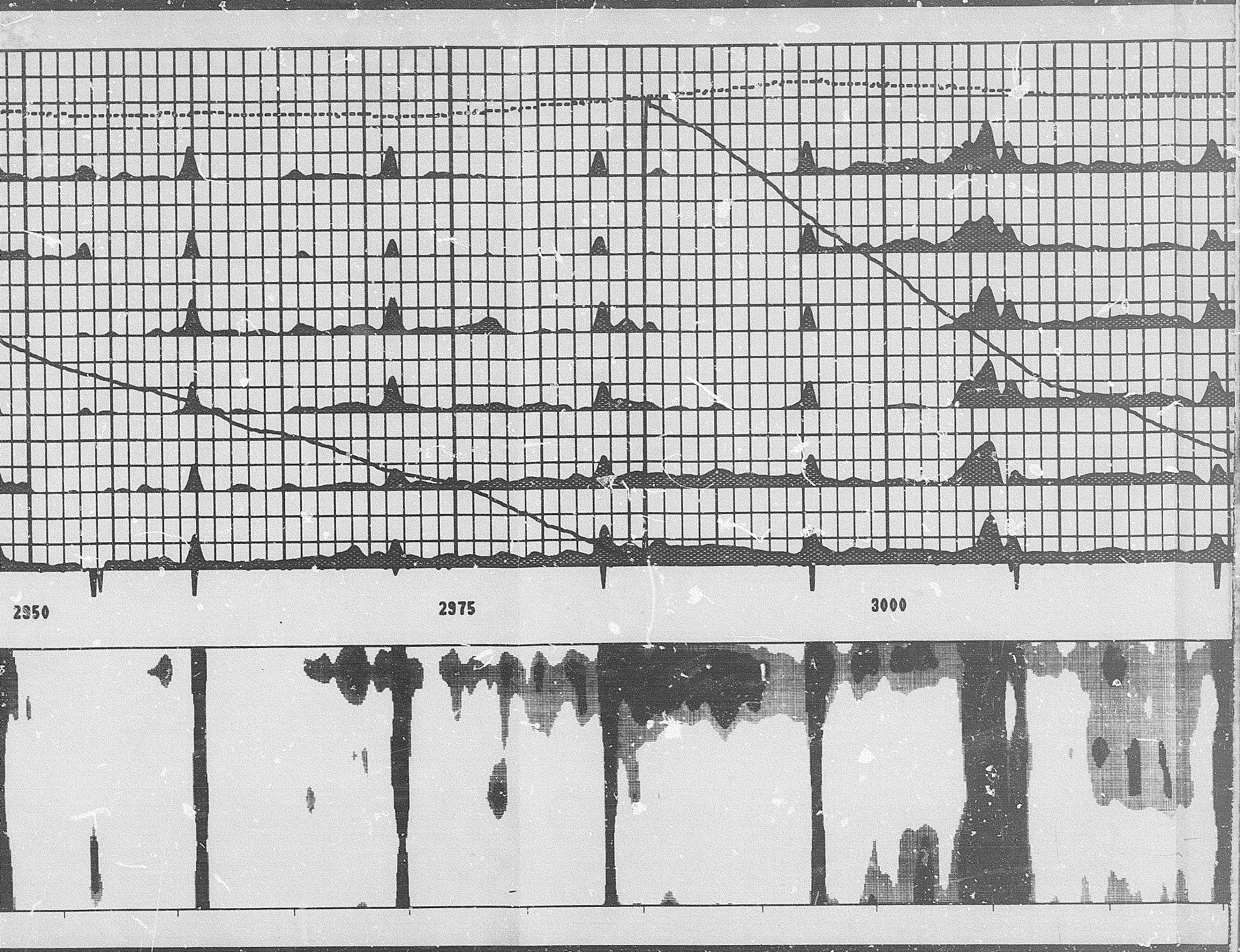
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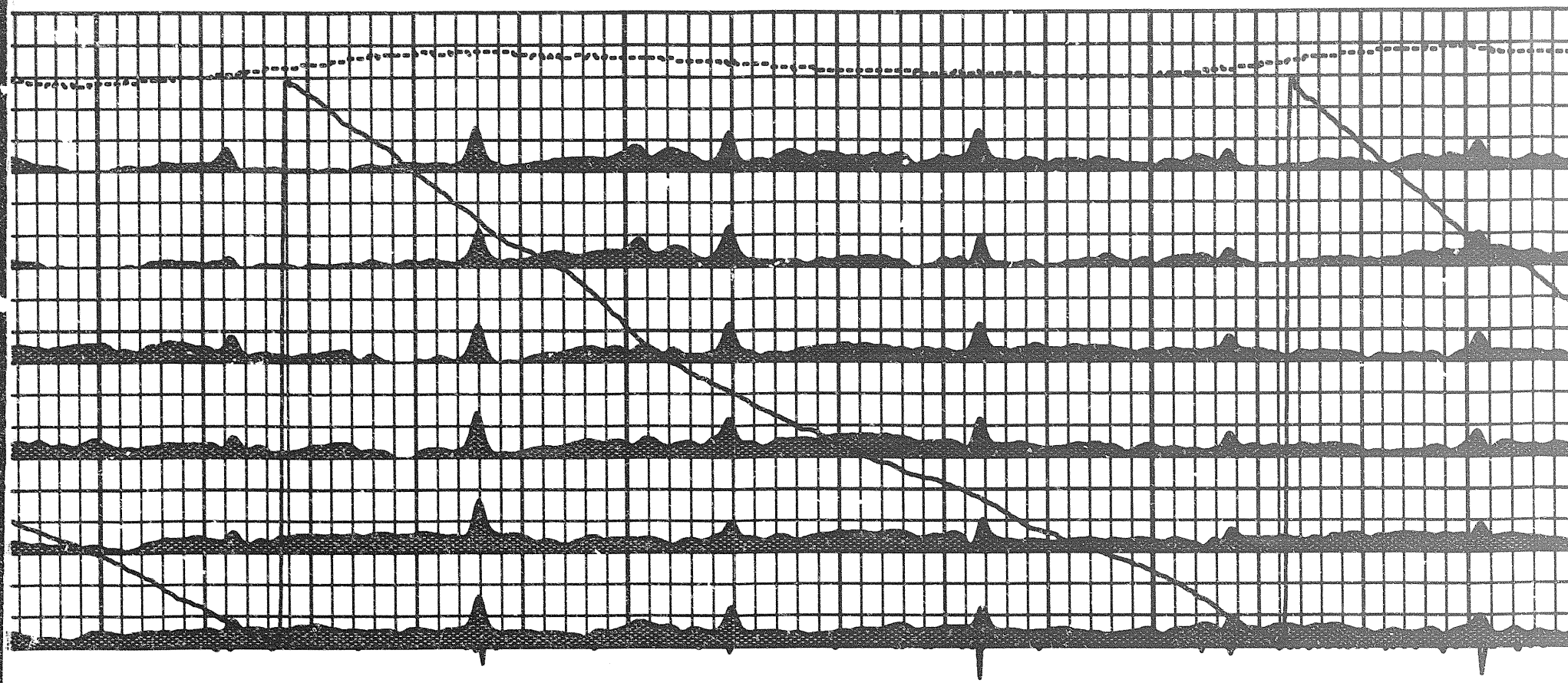
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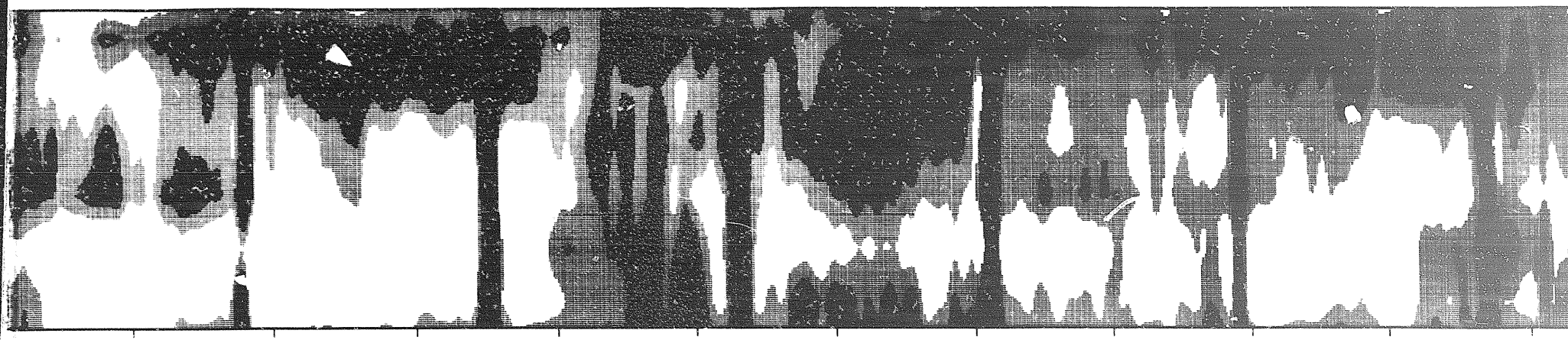

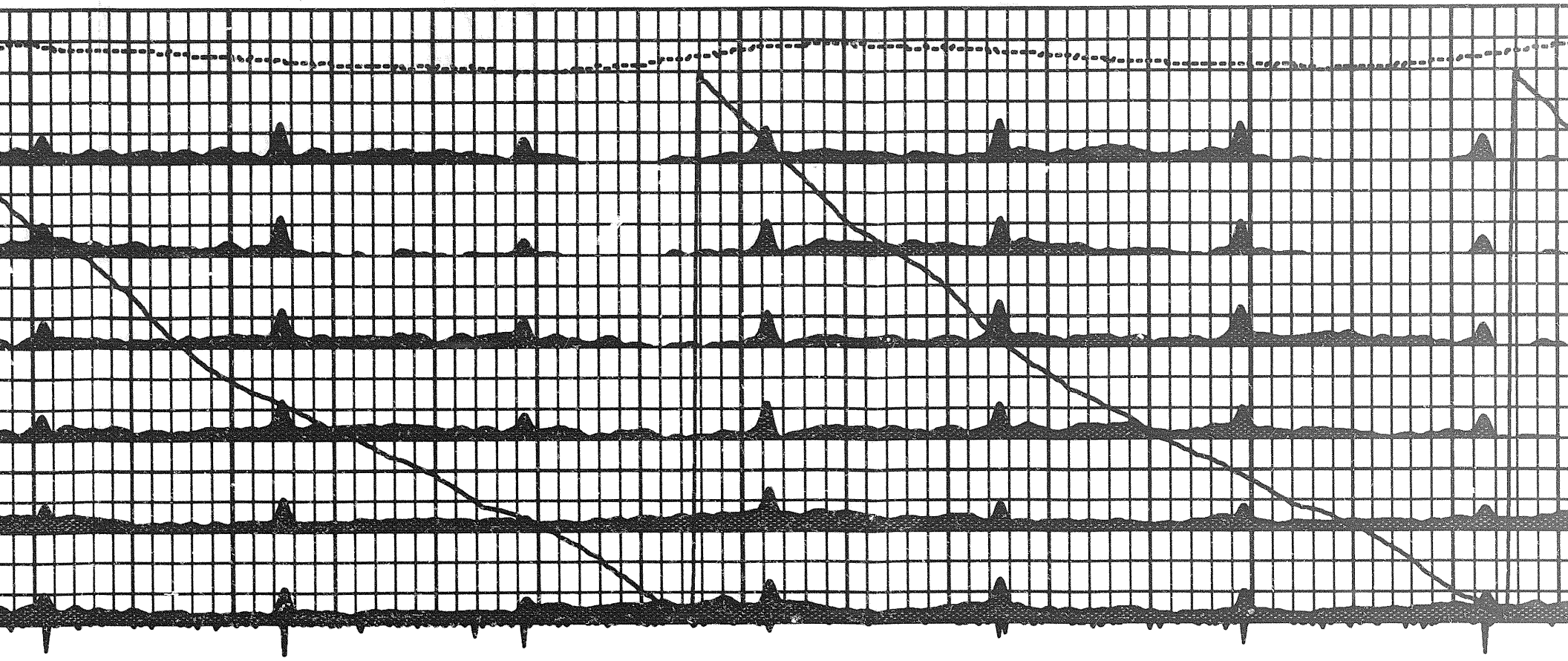
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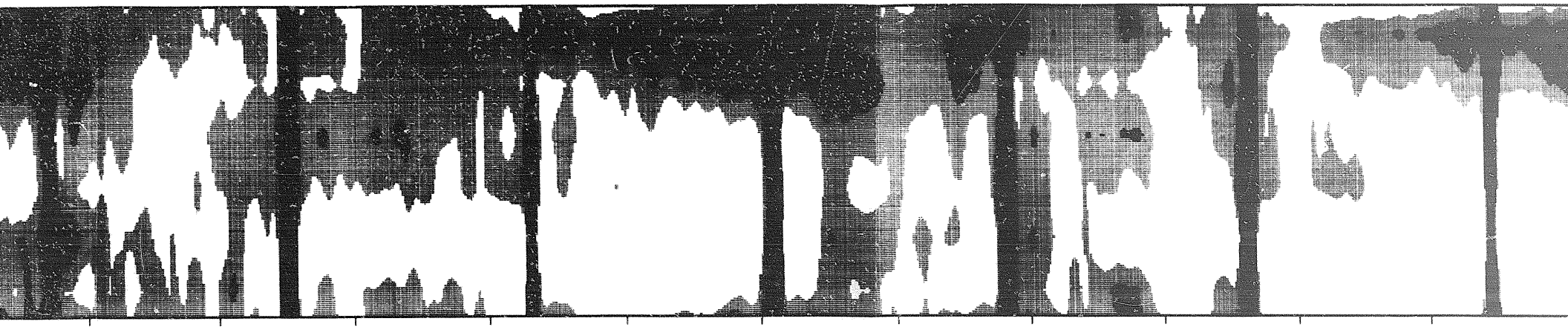

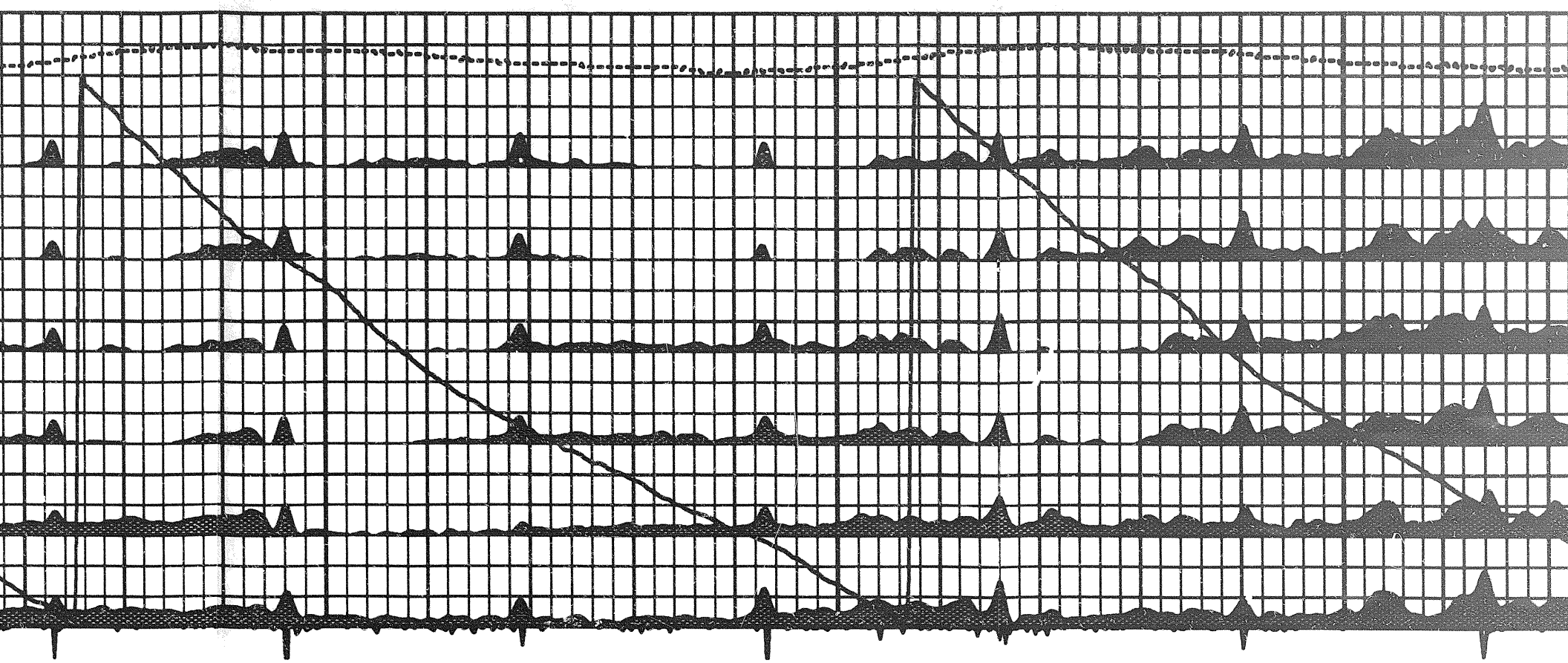
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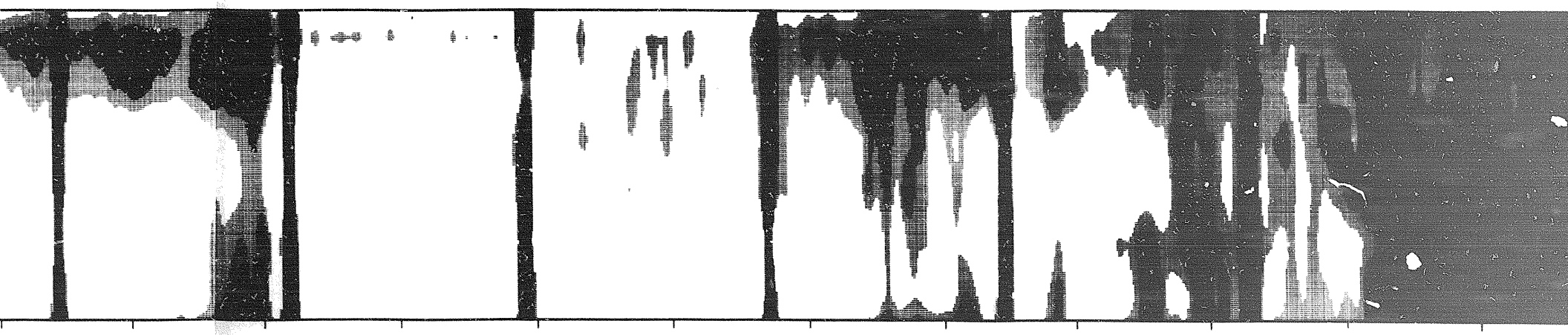

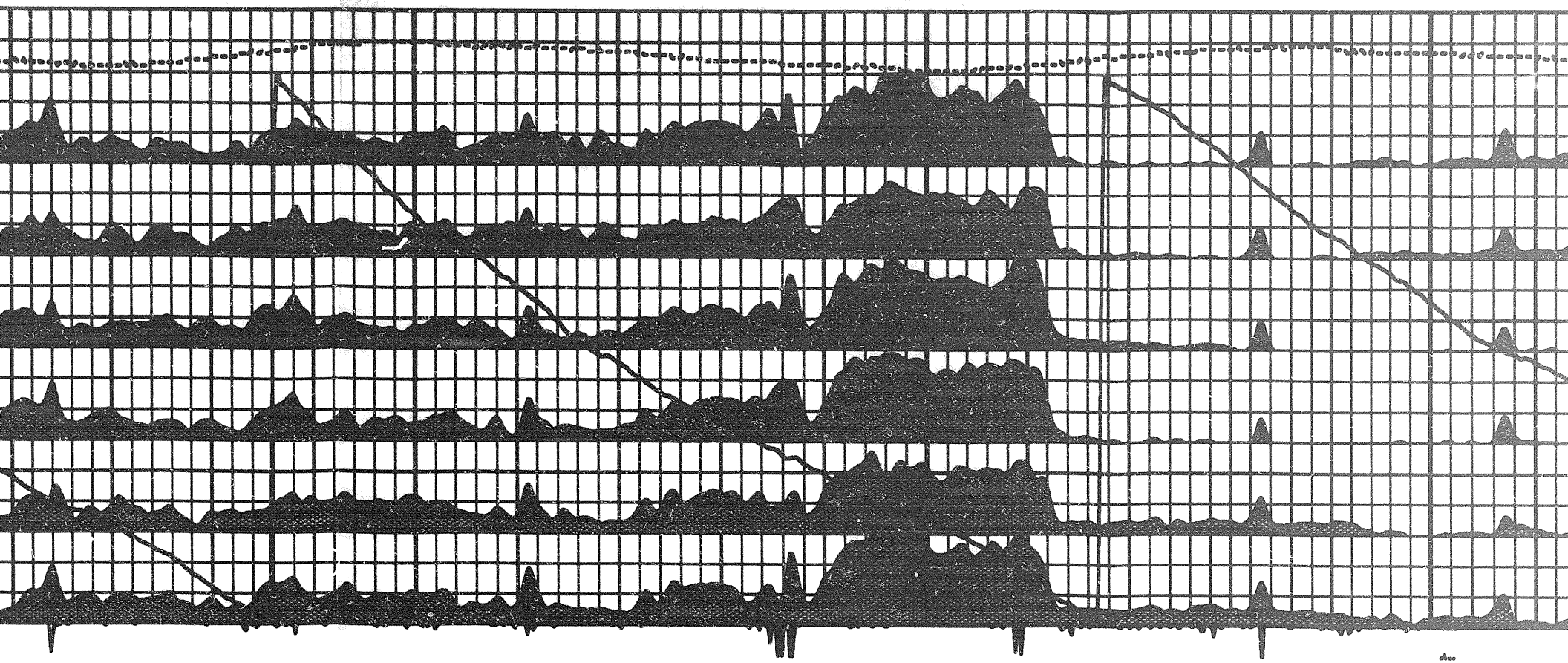
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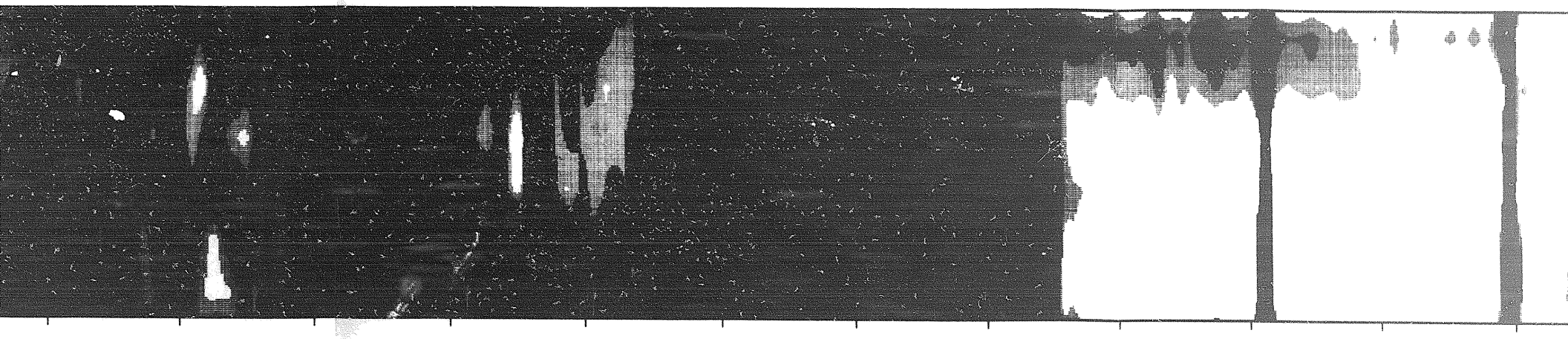
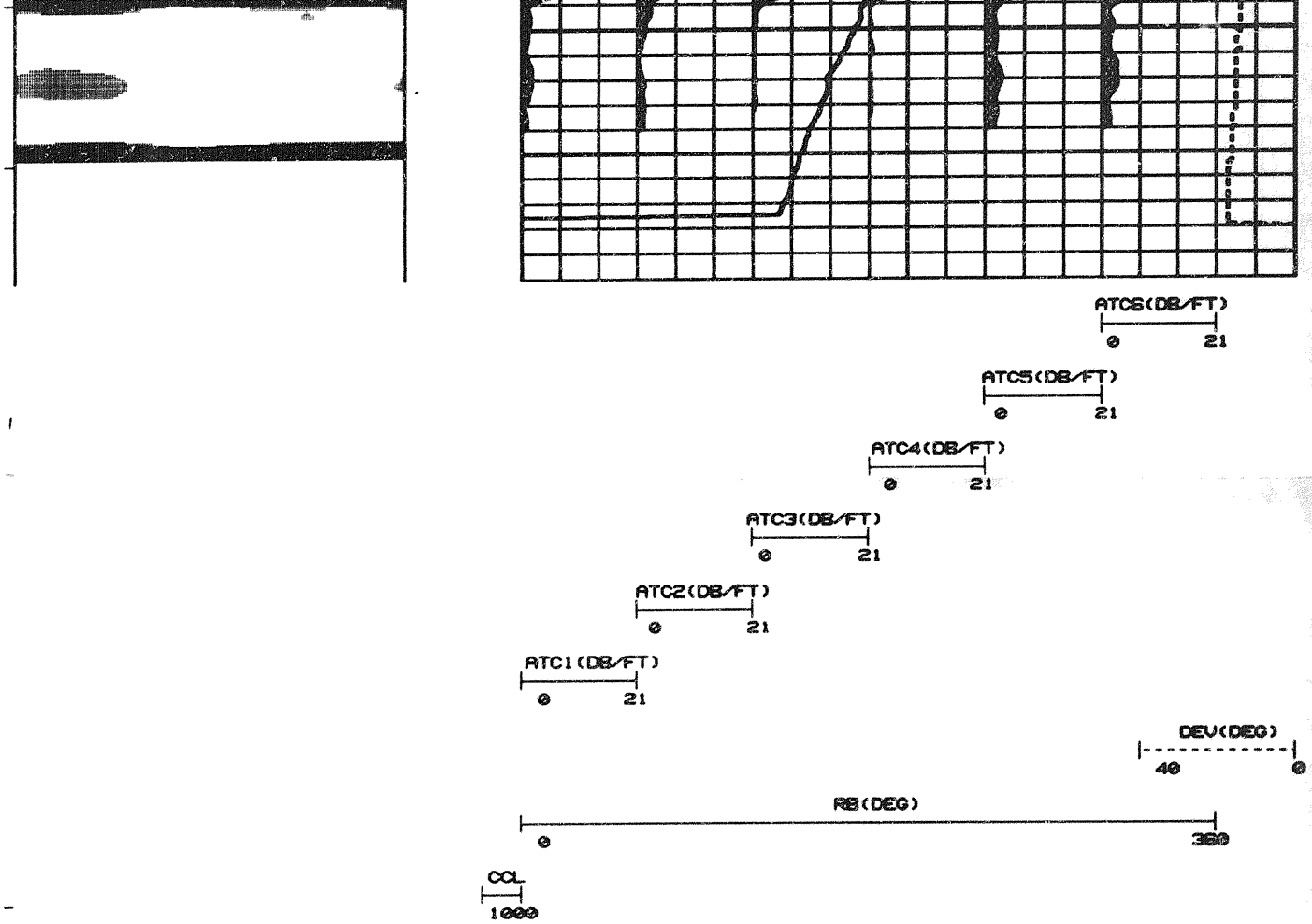




FILE: 5

PASS TWO MAP SECTION

FILE: 4

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS
AAT4	3.4	METERS
AAT5	3.4	METERS
AAT6	3.4	METERS

PARAMETERS

*** NONE ***

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD. RUN: 1

*** NONE ***

COMPANY:	COLUMBIA GAS DEVELOPMENT OF CANADA LTD.			RUN:	1
WELL NAME:	COLUMBIA ET AL KOTANEELEE I-48 YT			TRIP:	1
SERVICE:	L 702A	FILE: 4	DATE: 01/18/91	TIME:	04:02:32
REVISION:	FSYS256 REV:0002 VER:4.0			MODE:	RECORD

ATC6(DB/FT) 0 21

ATC5(DB/FT) 0 21

ATC4(DB/FT) 0 21

ATC3(DB/FT) 0 21

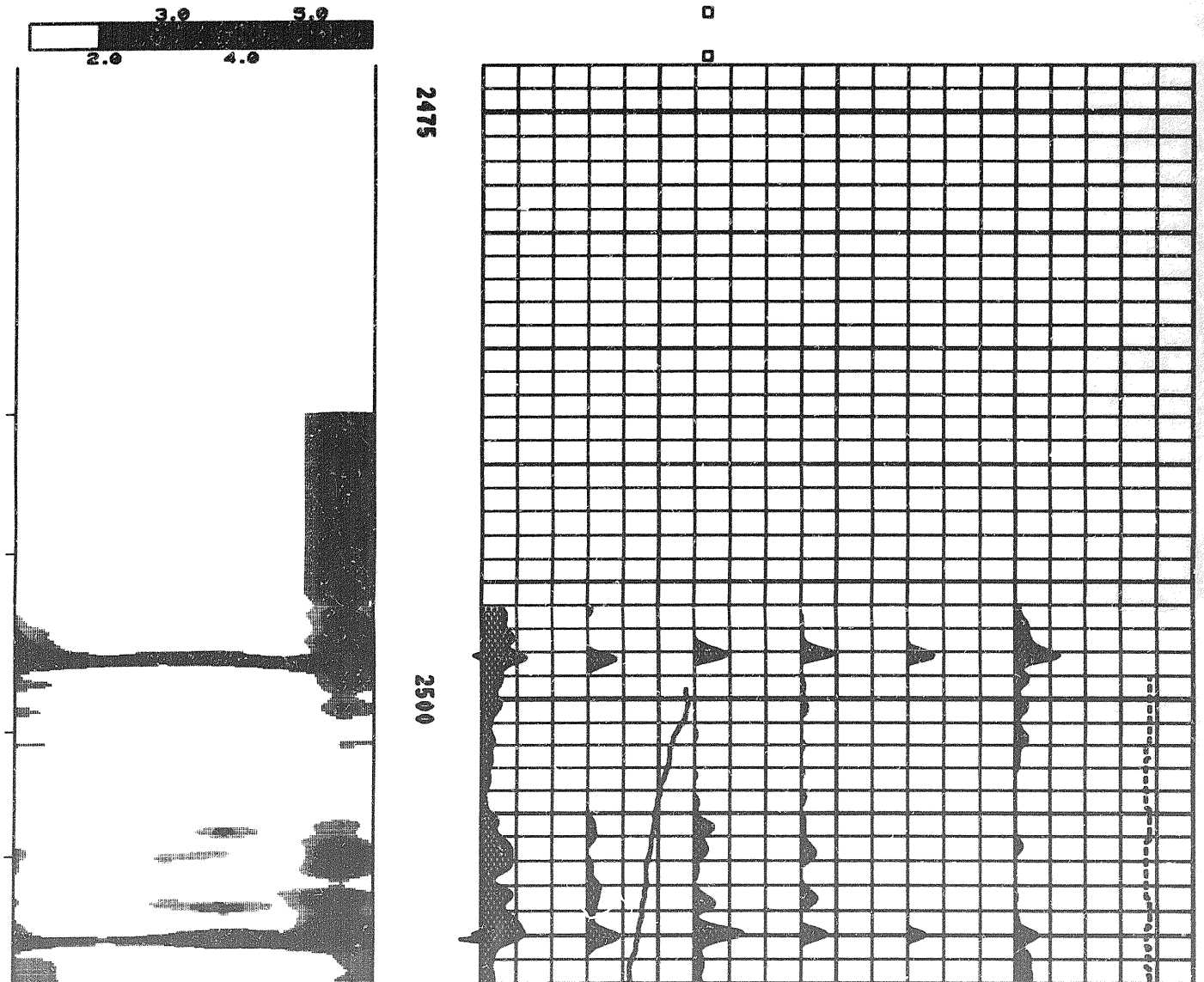
ATC2(DB/FT) 0 21

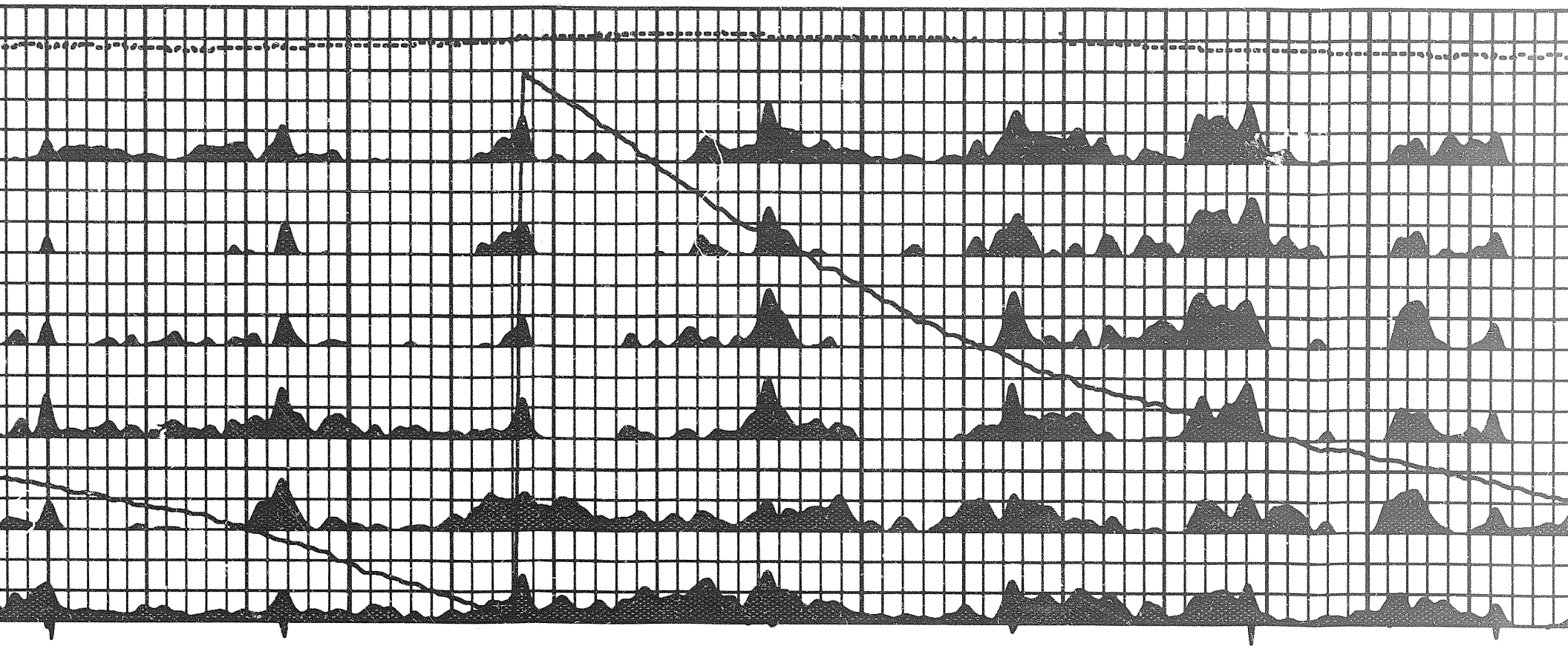
ATC1(DB/FT) 0 21

DEV(DEG) 40 0

RB(DEG) 0 360

CCL 1000





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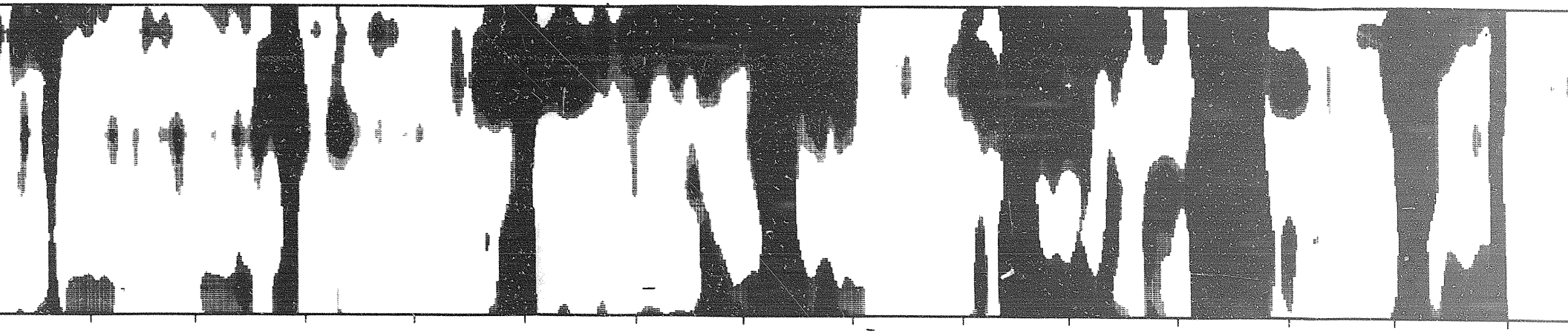

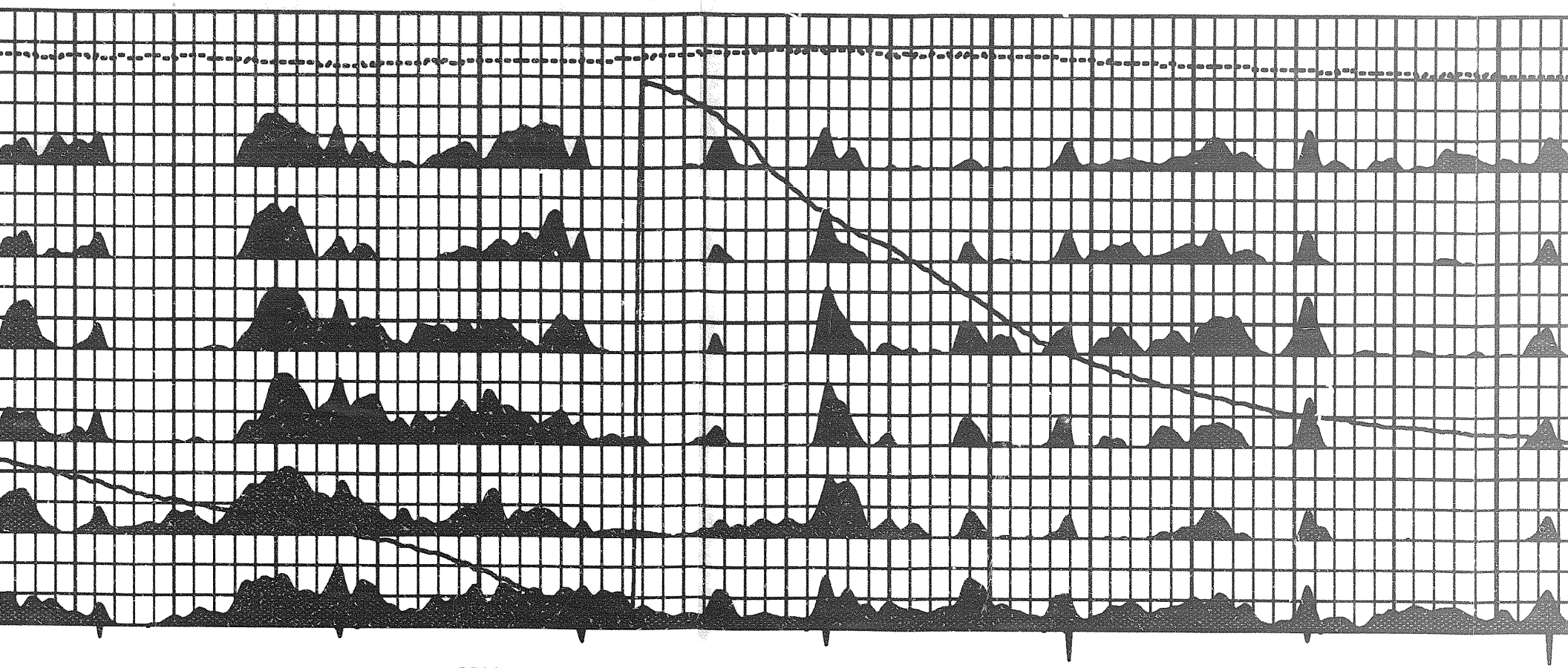
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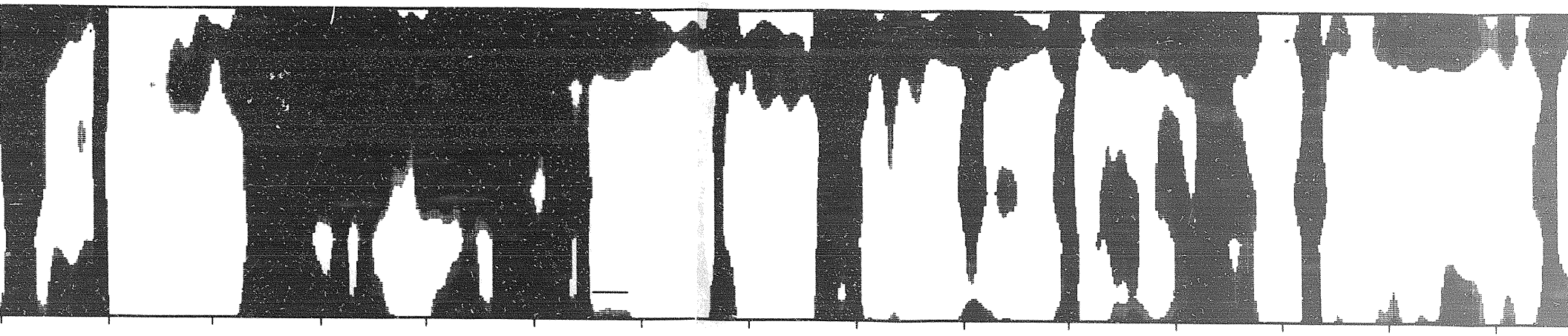

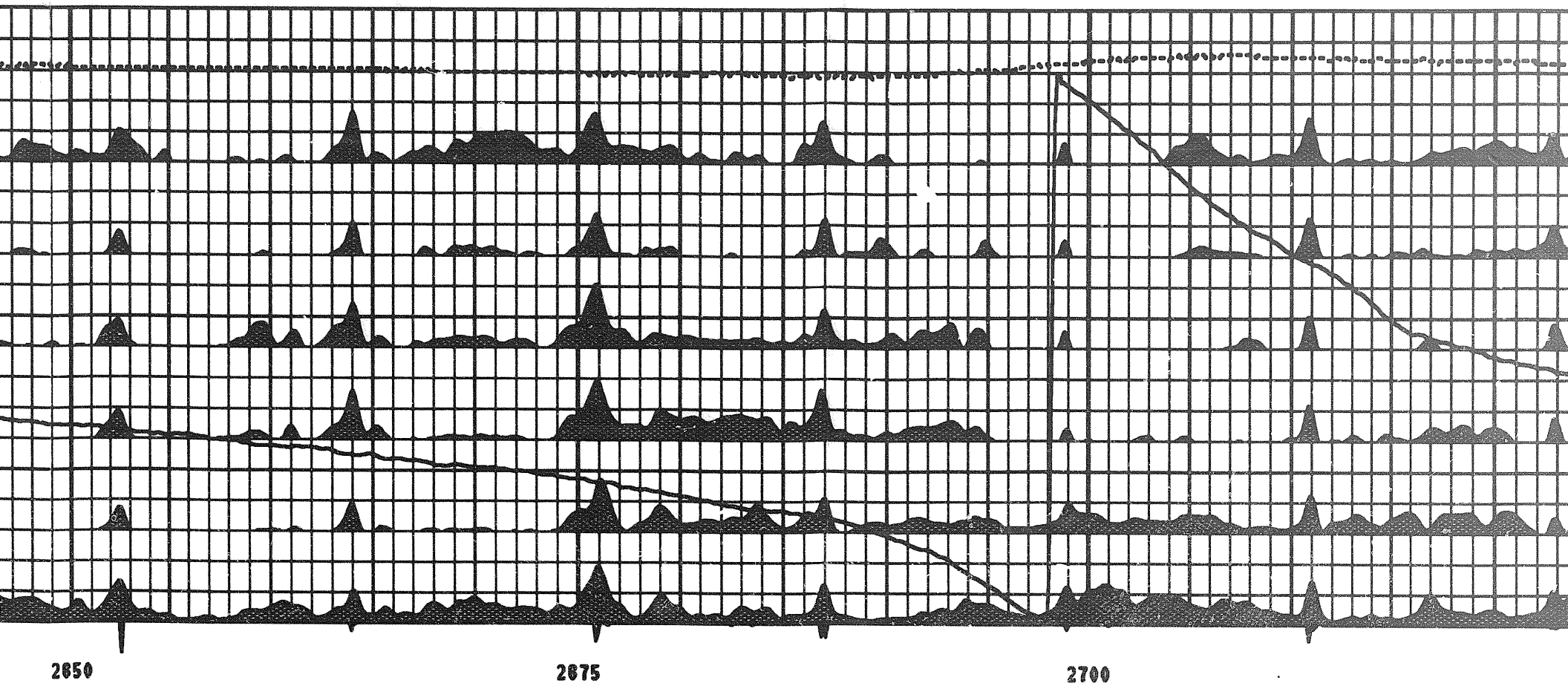
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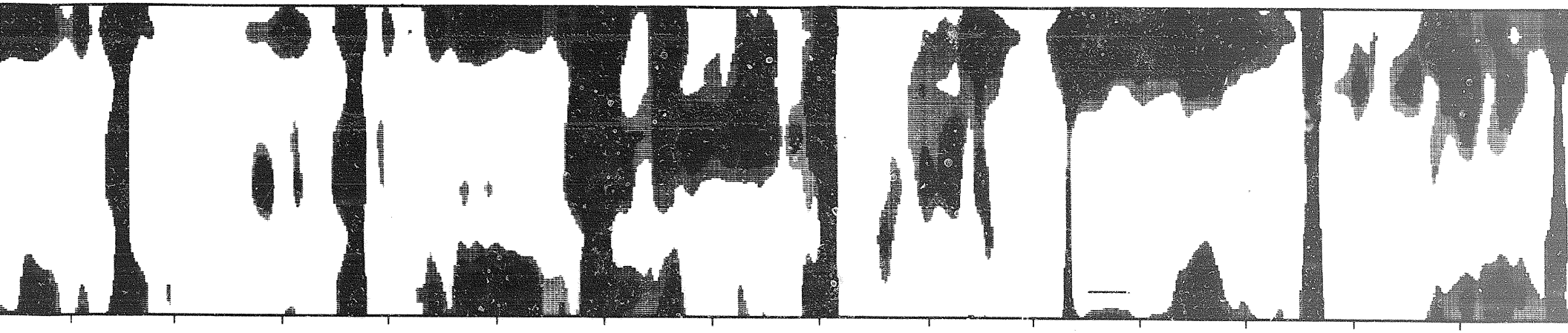

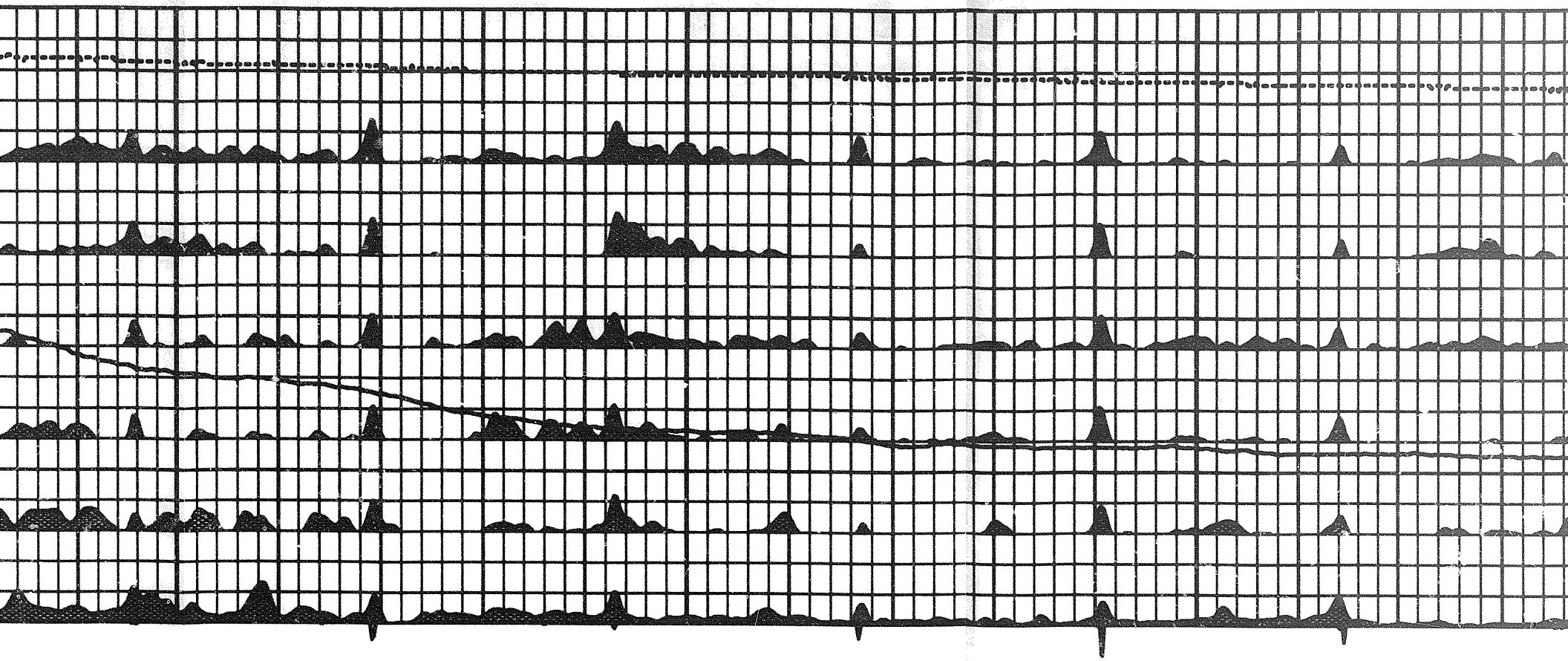
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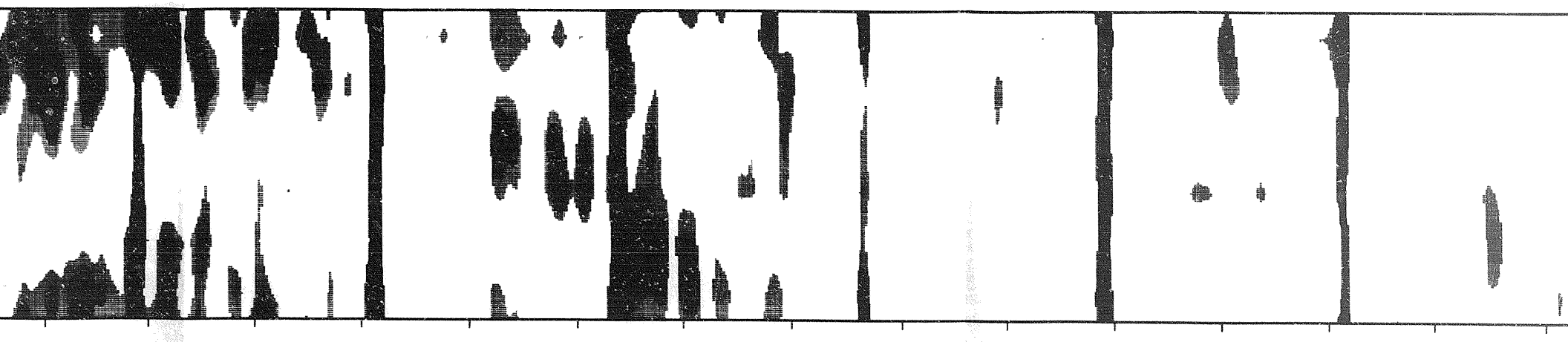

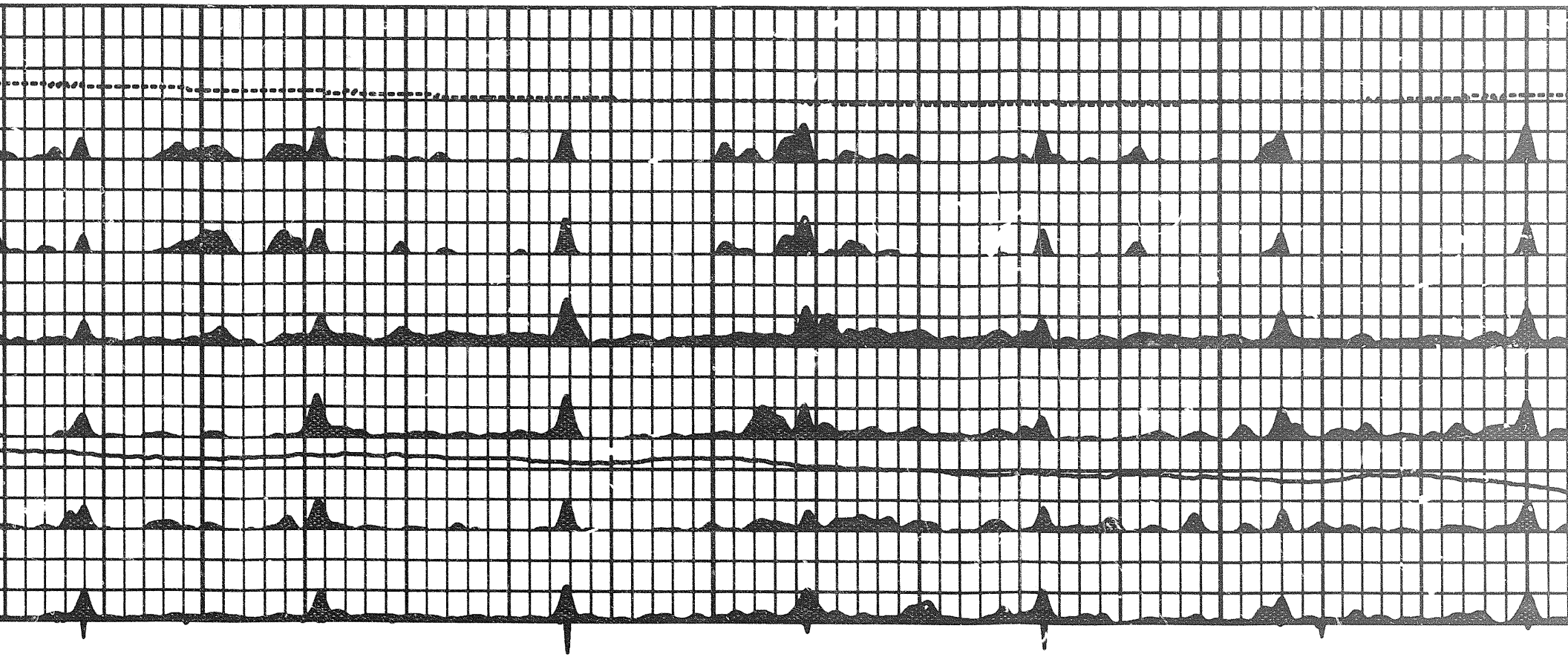
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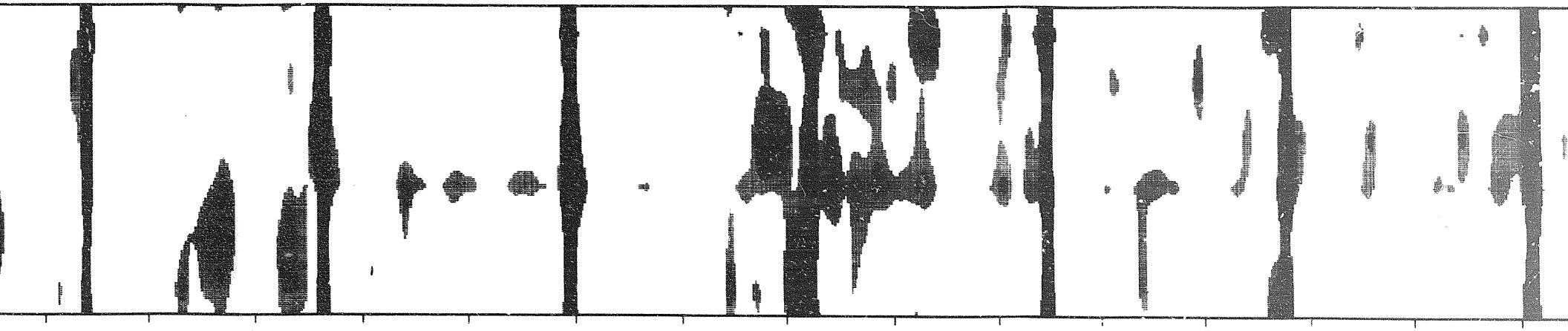

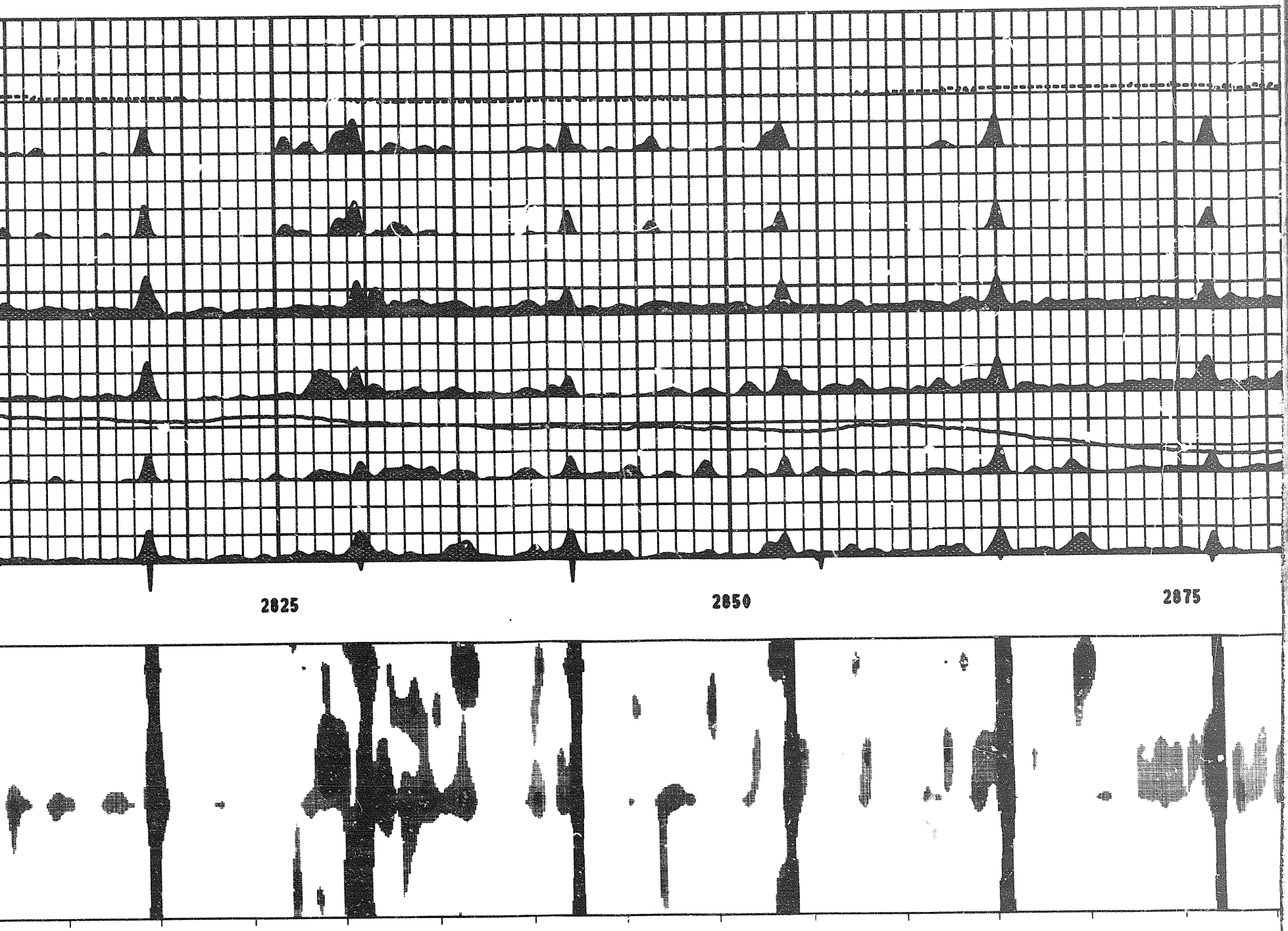
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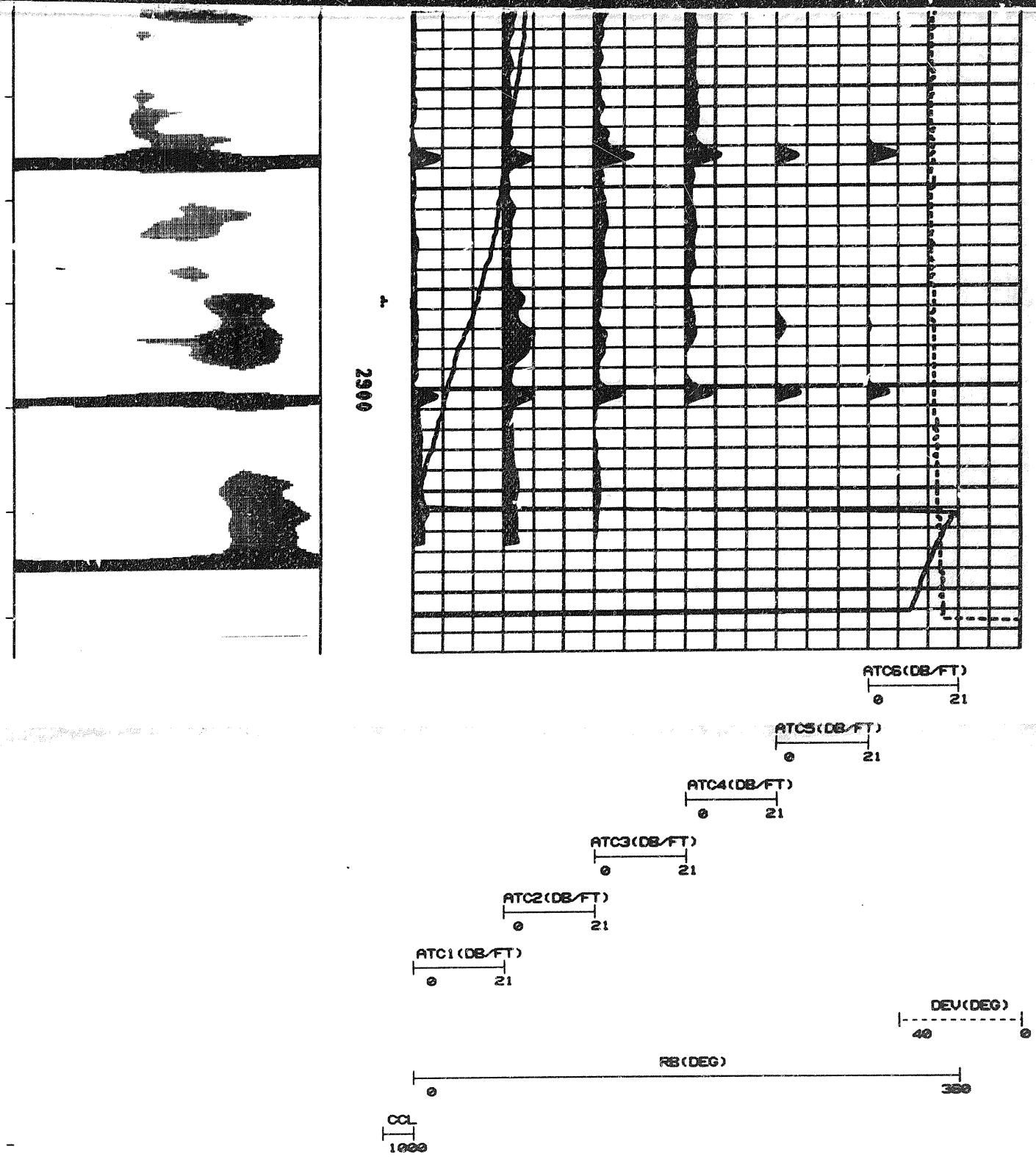


FILE: 4

PASS ONE MAP SECTION

FILE: 3

FILE: 3

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS
AAT4	3.4	METERS
AAT5	3.4	METERS
AAT6	3.4	METERS

PARAMETERS

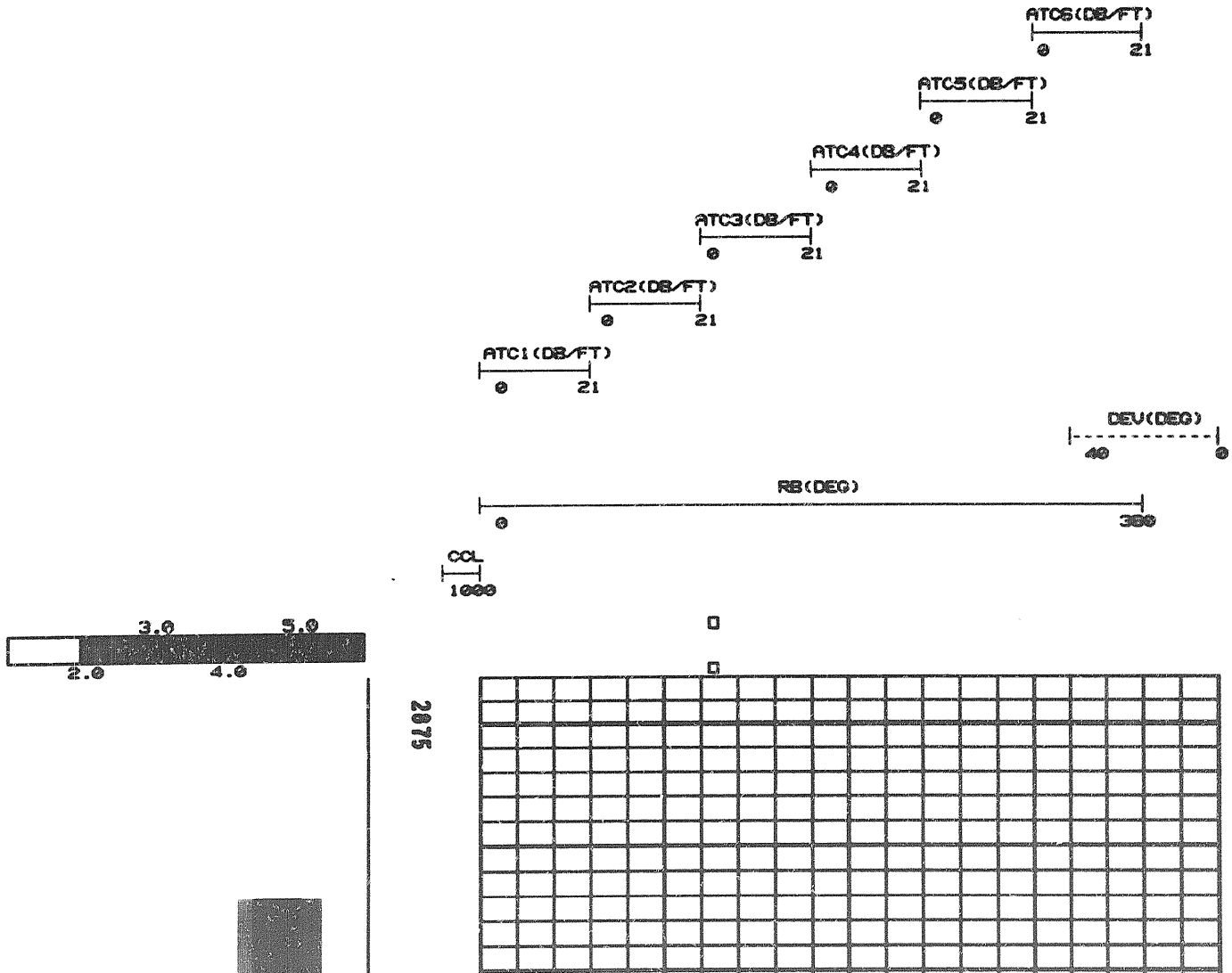
*** NONE ***

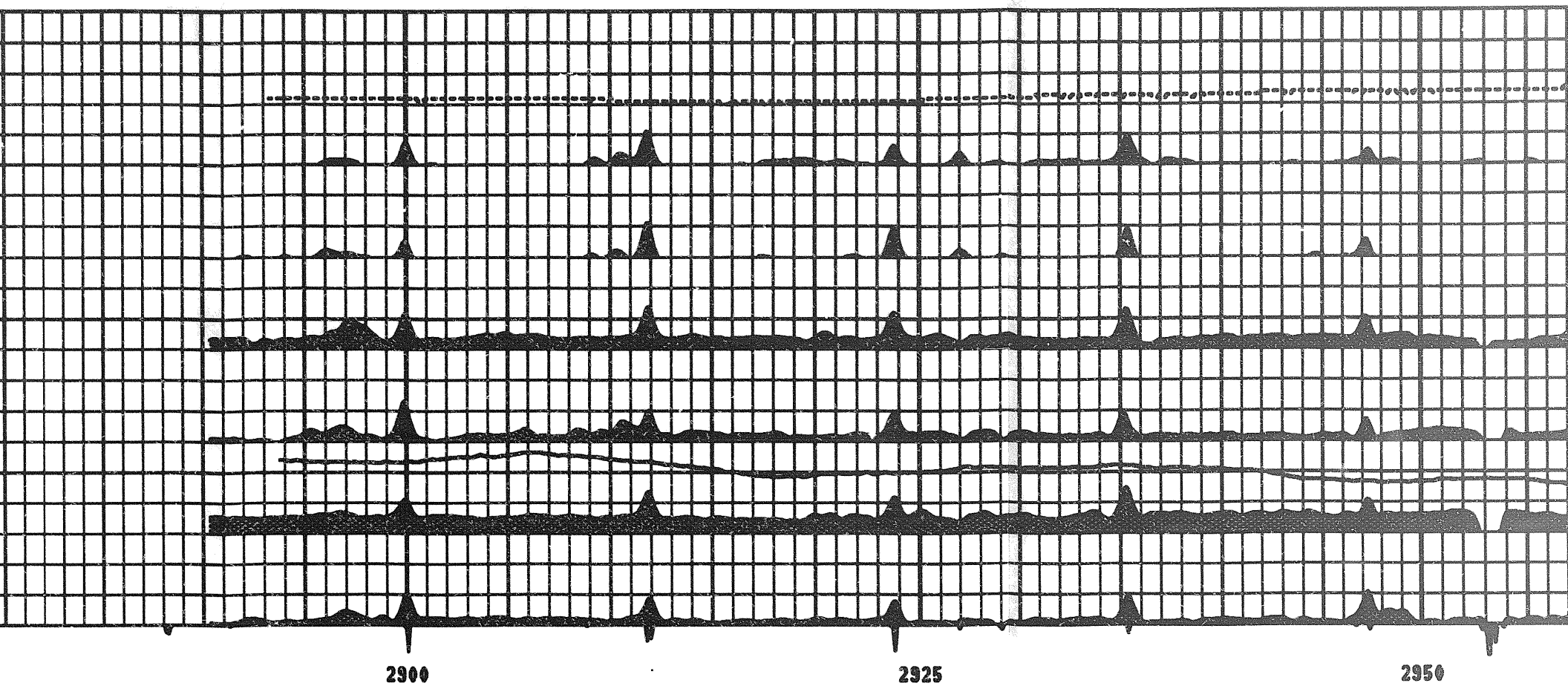
DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD.
WELL NAME: COLUMBIA ET AL KOTANEELEE I-48 YT
SERVICE: L 702A FILE: 3 DATE: 01/18/91
REVISION: FSYS256 REV:0002 VER:4.0

RUN: 1
TRIP: 1
TIME: 01:14:23
MODE: RECORD

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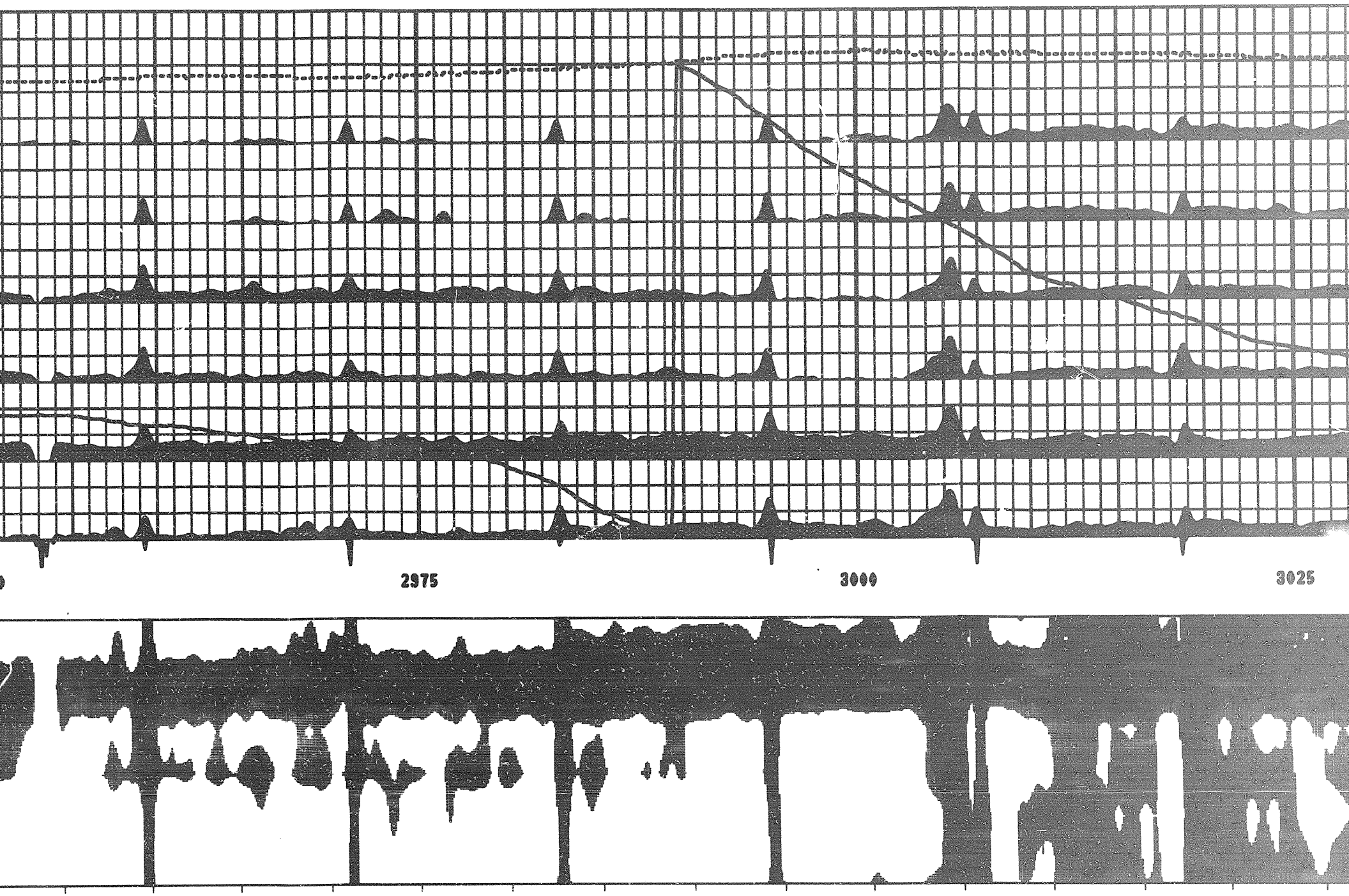
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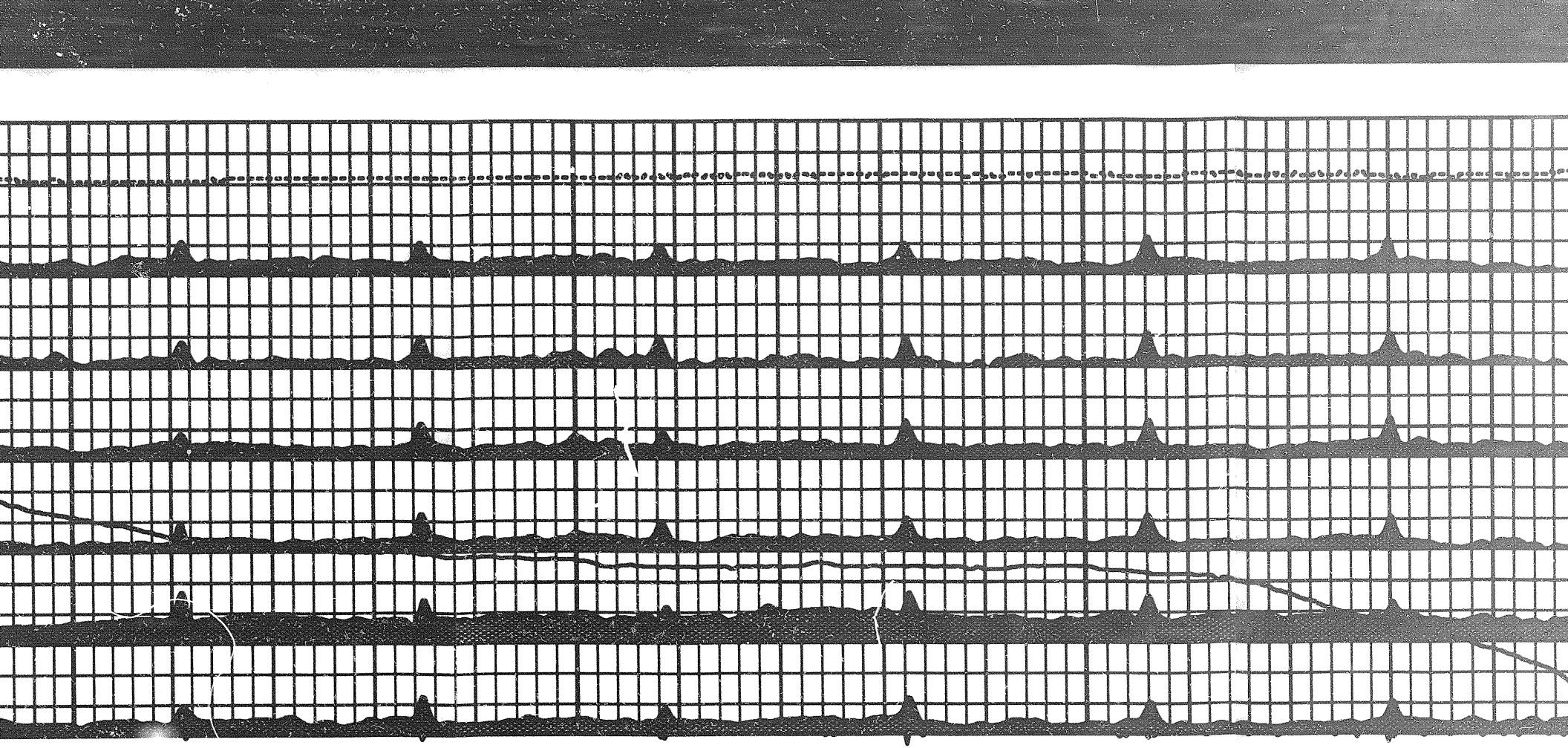

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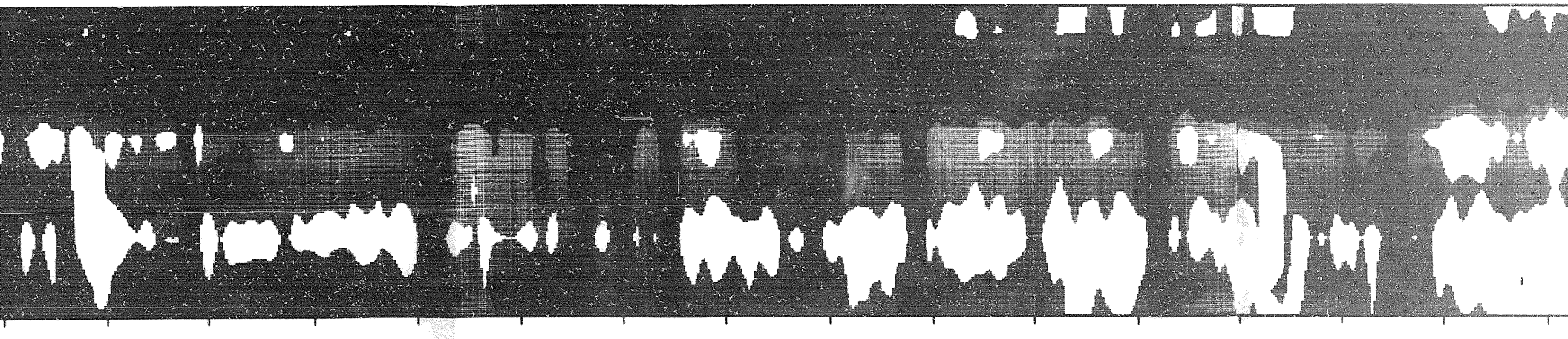

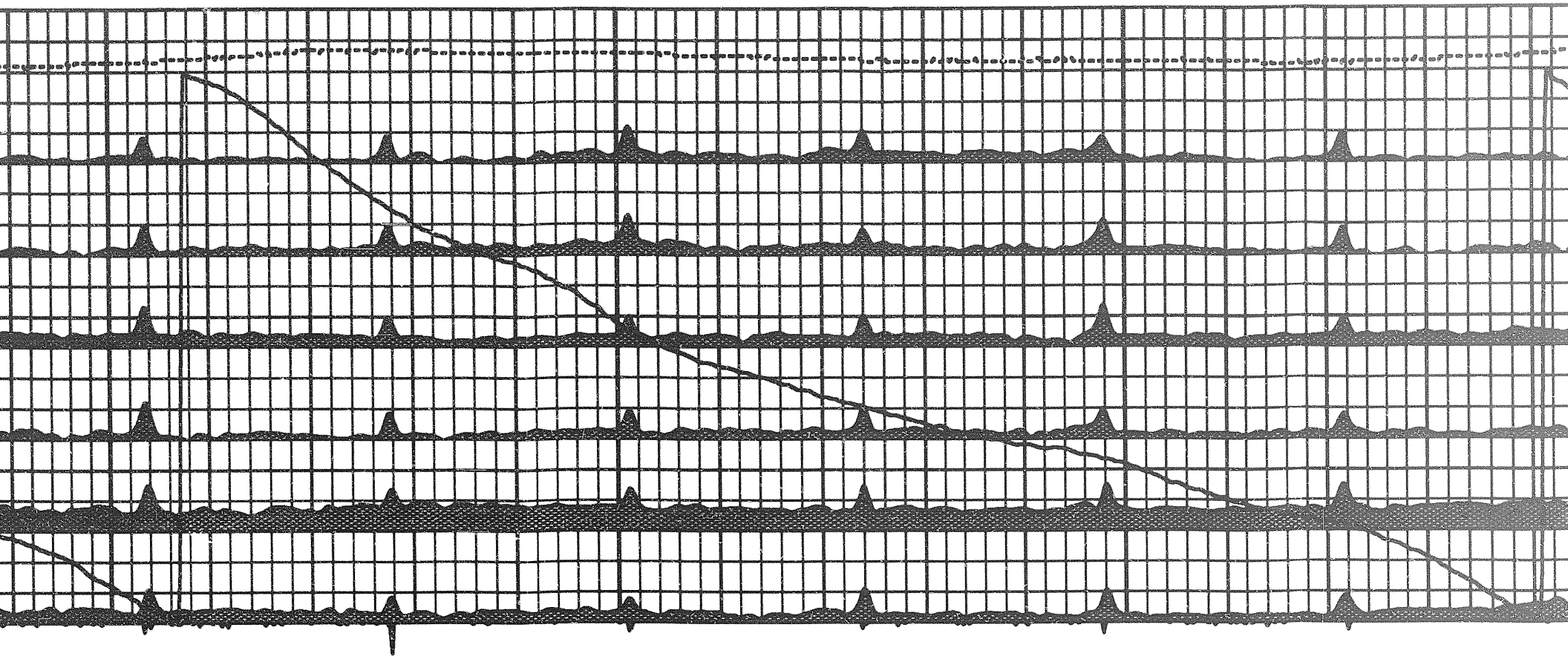
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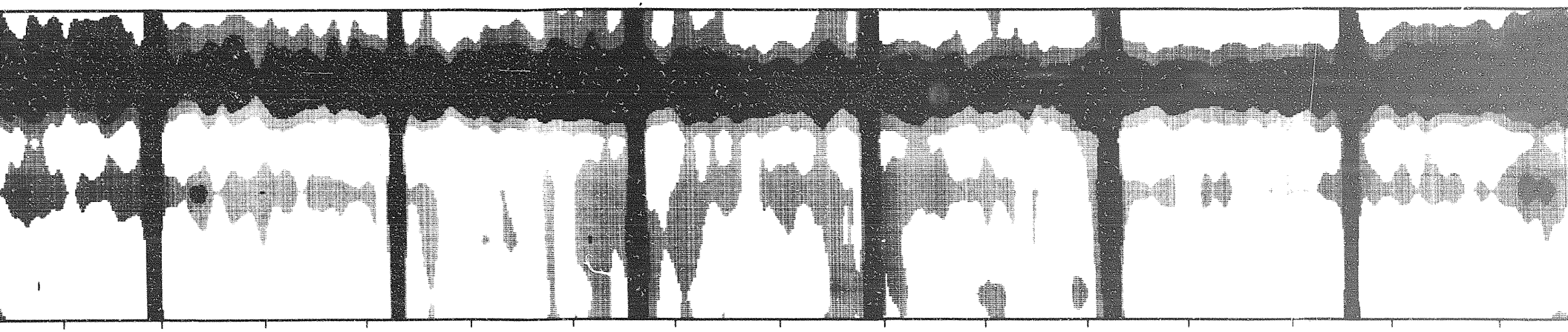

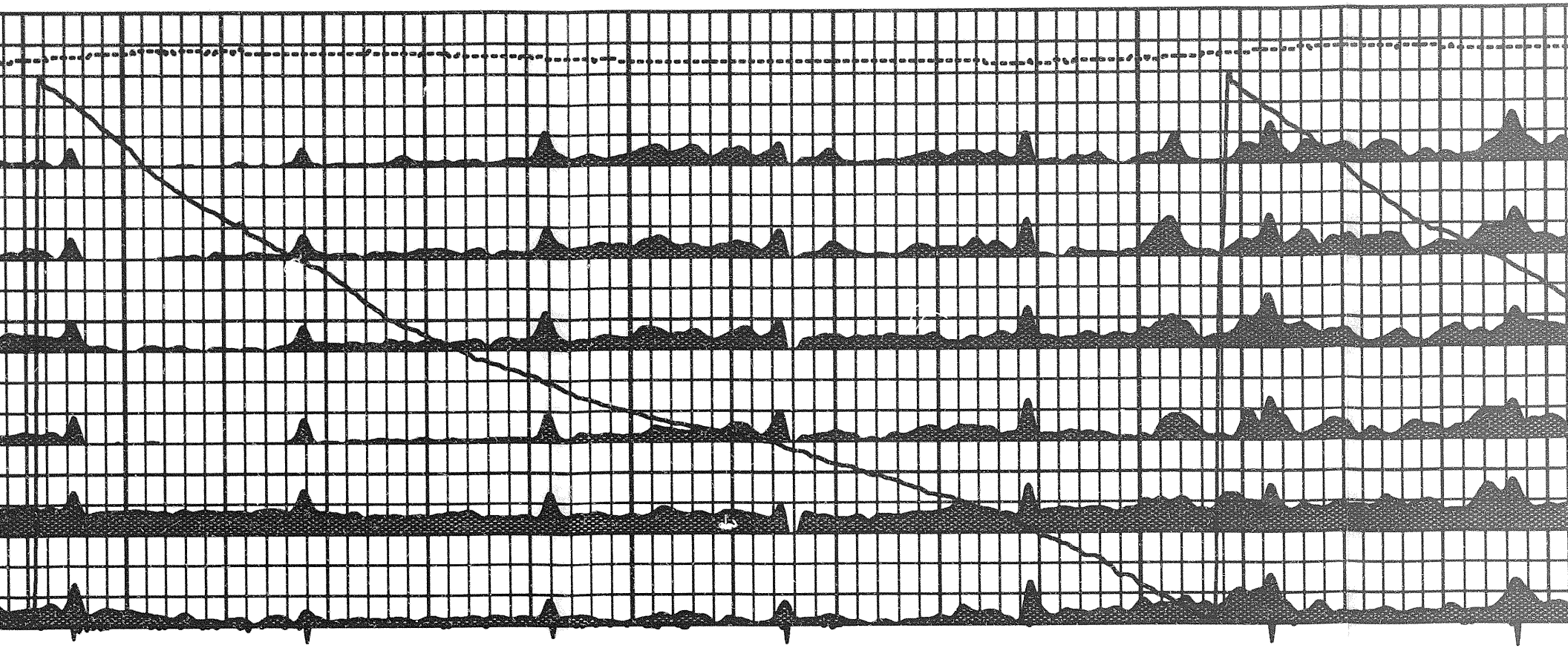
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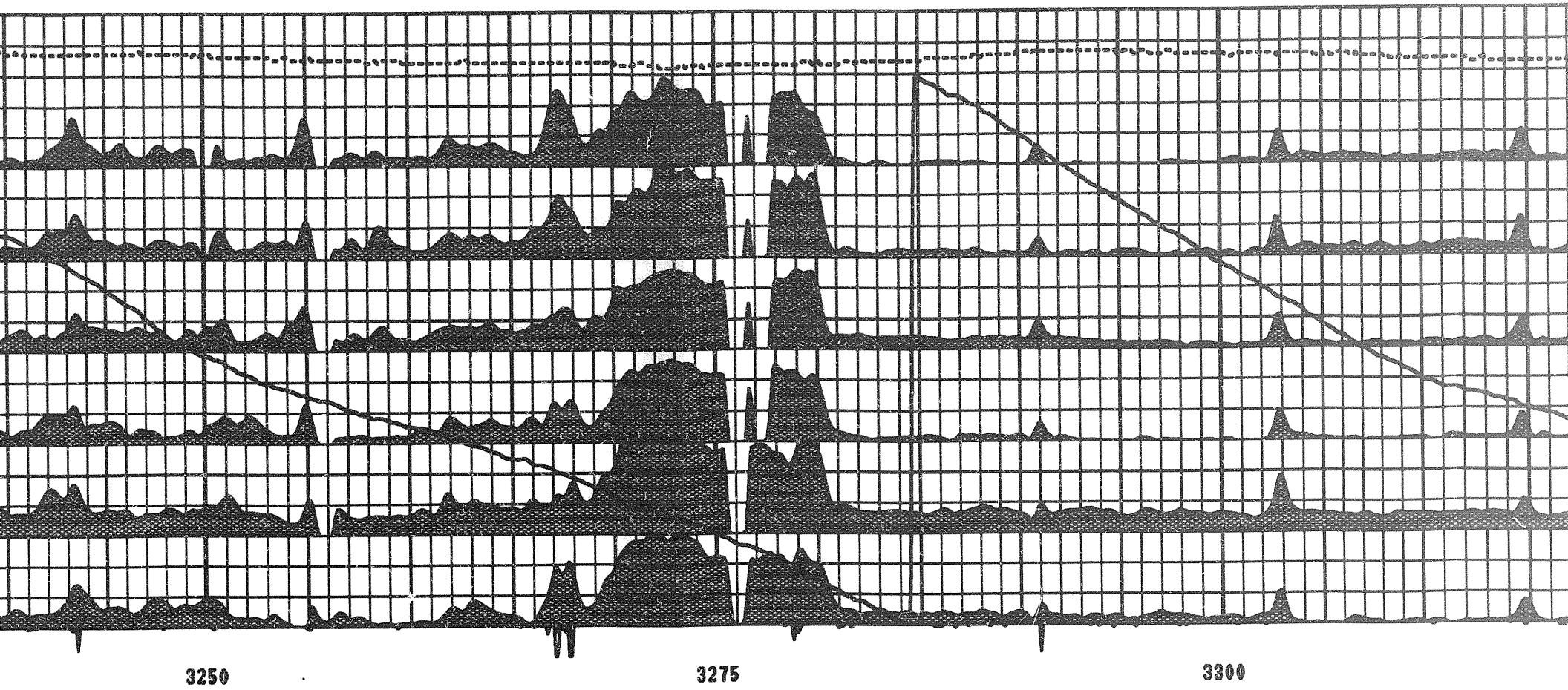
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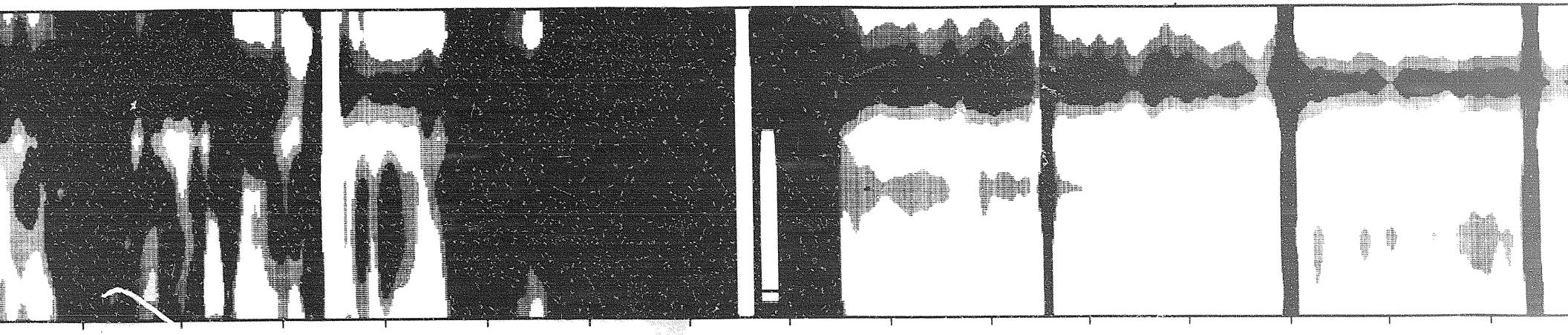

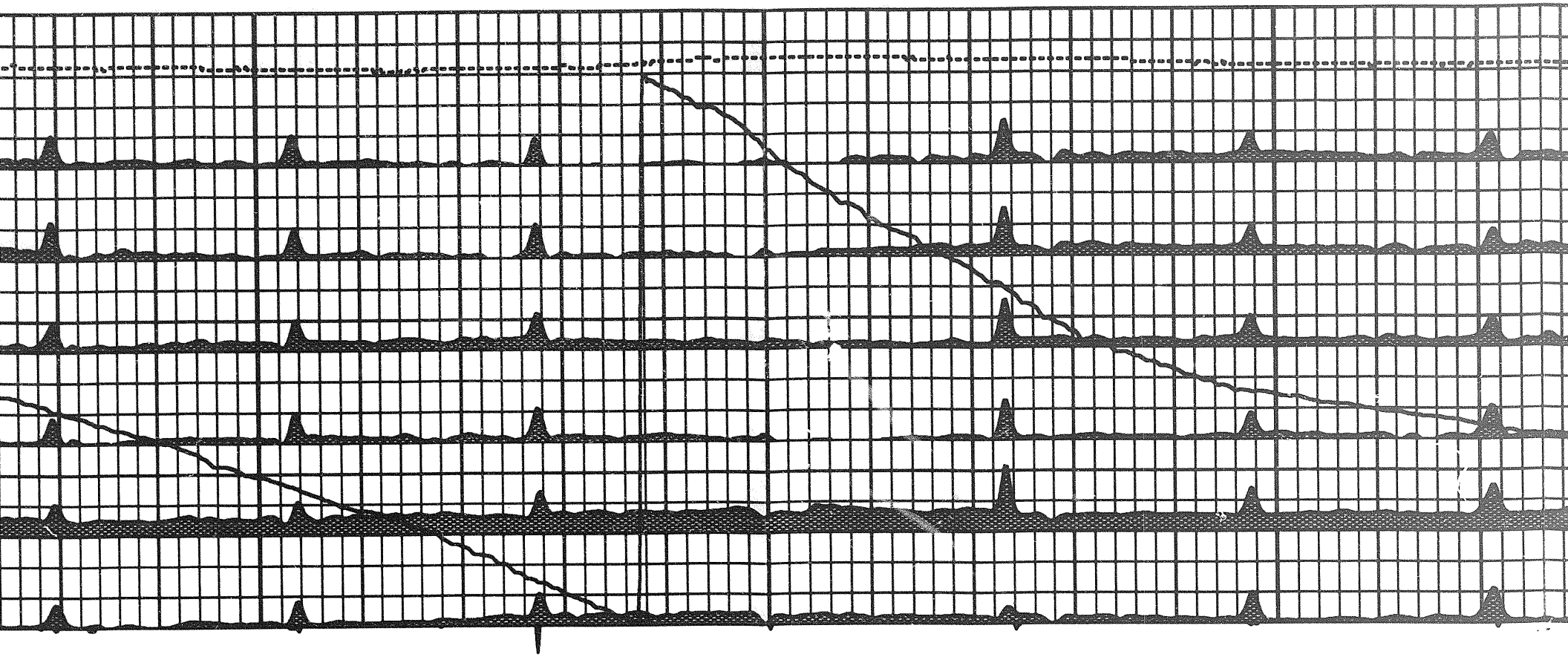
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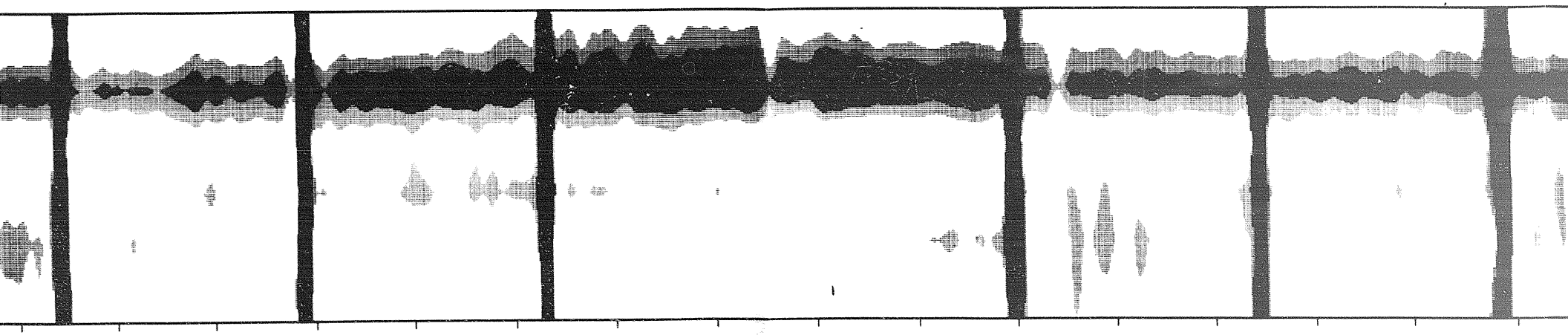

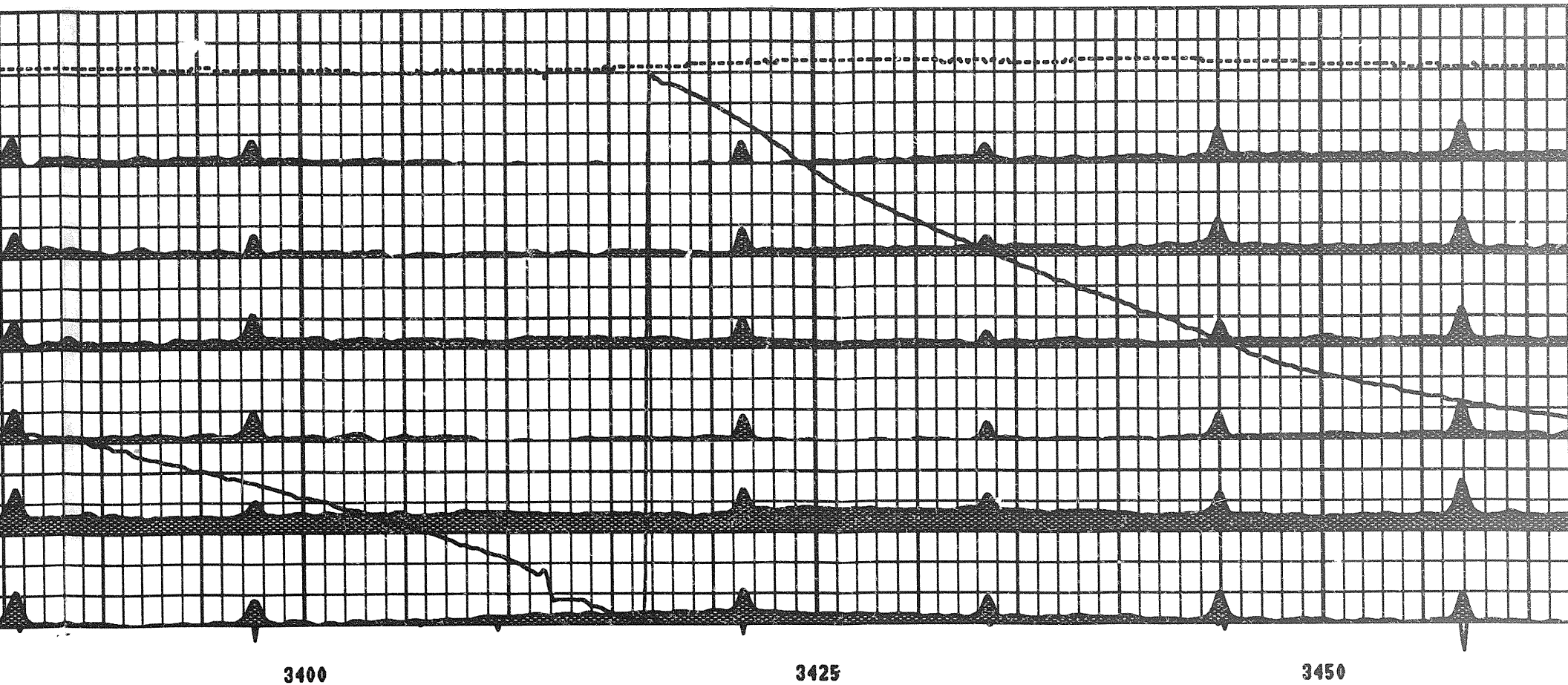
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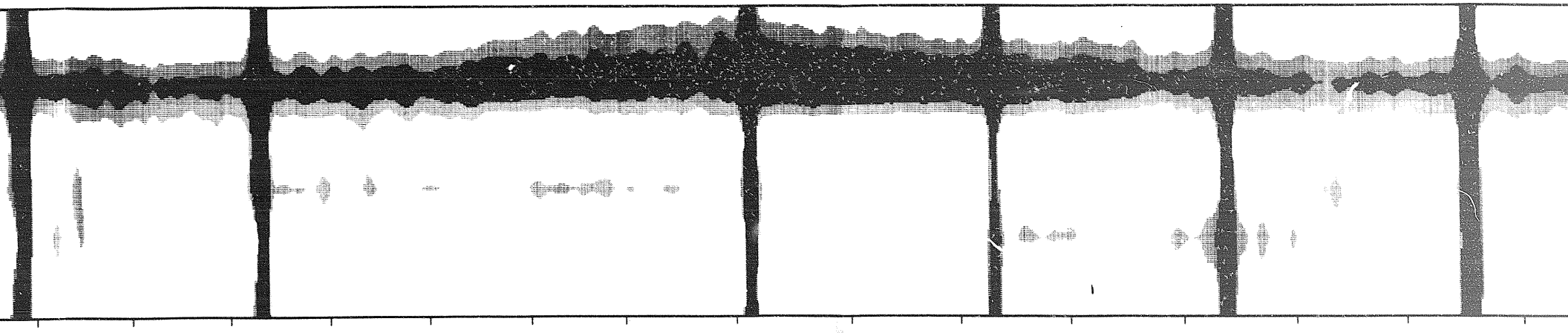


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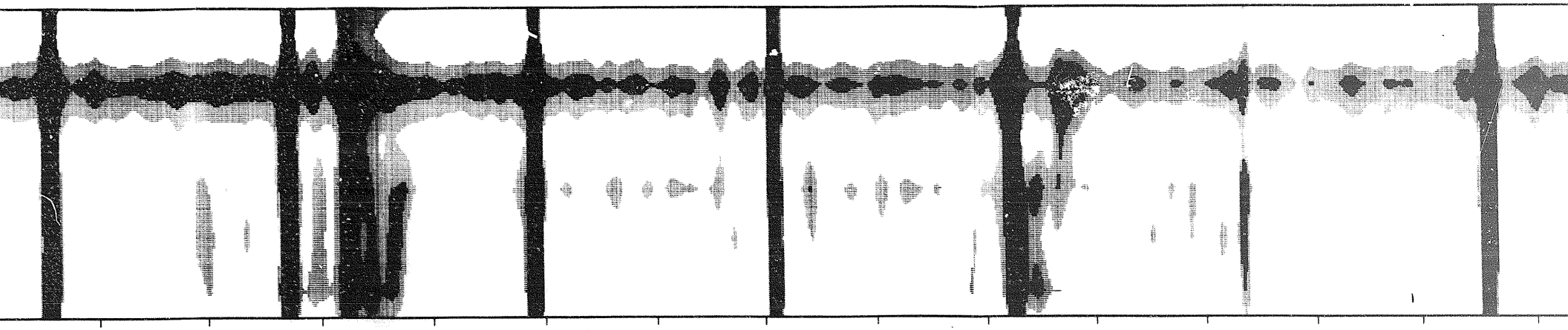

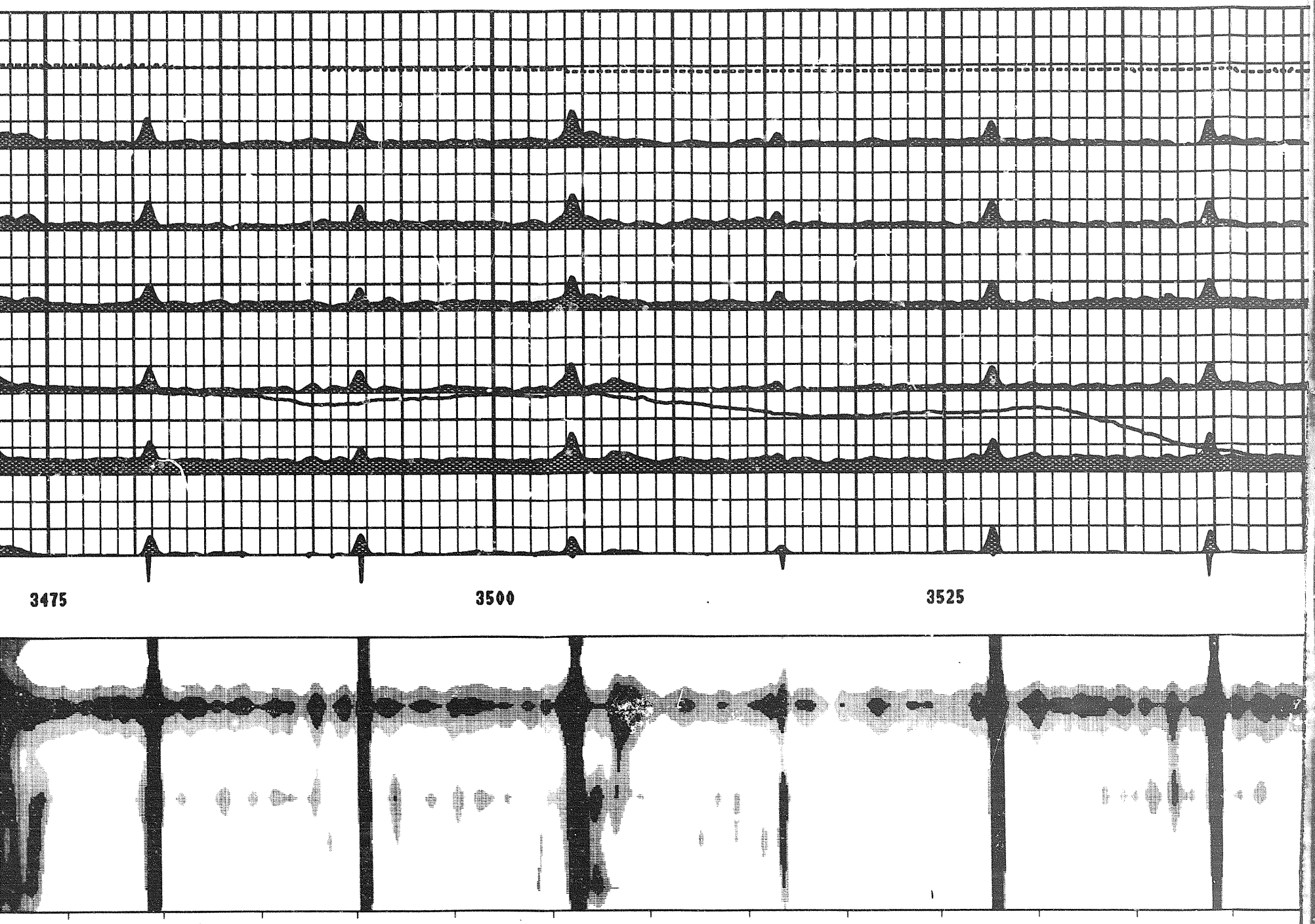
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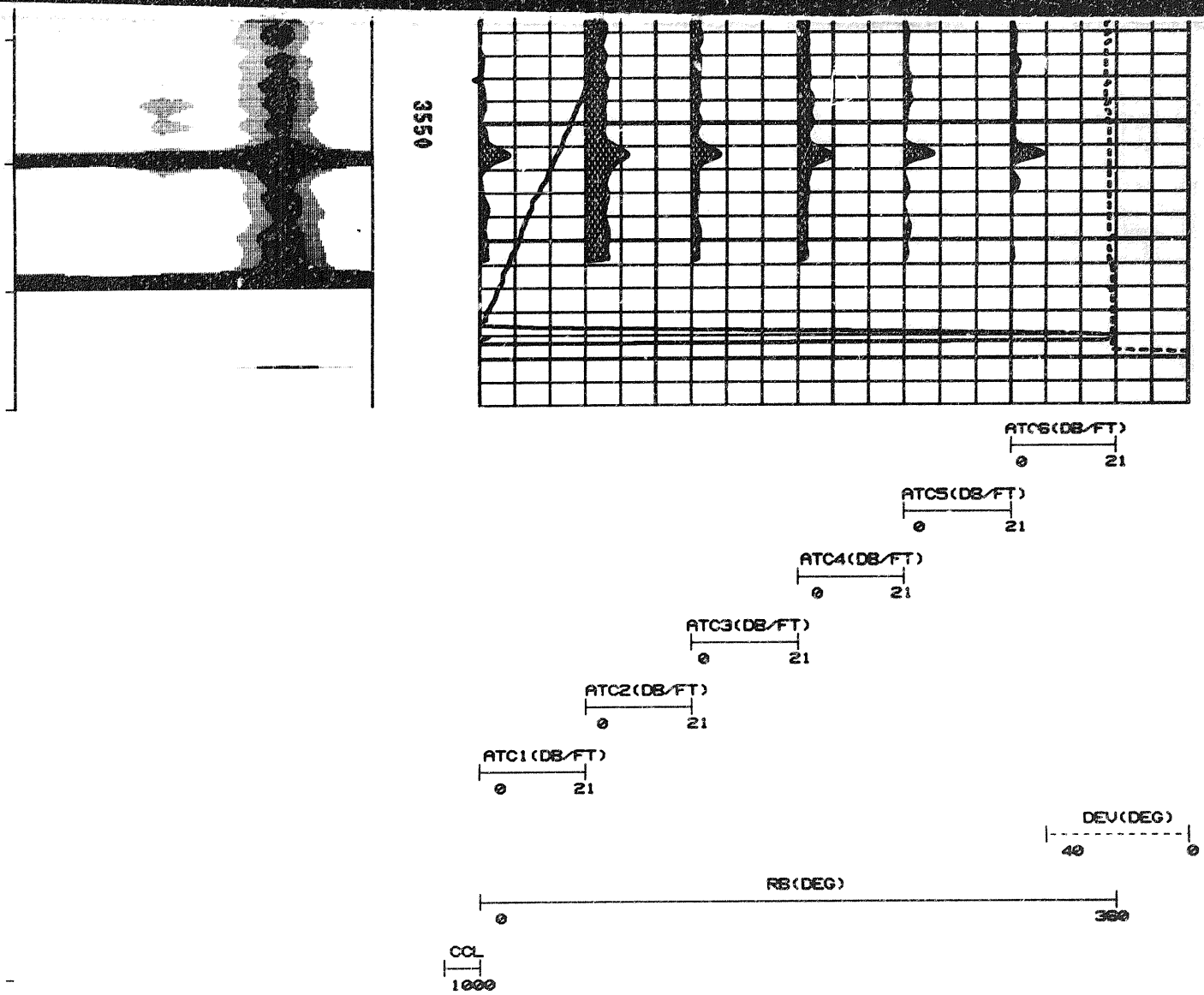


FILE: 3

****

PASS THREE VDL SECTION
7000 KPA PRESSURE PASS

****

FILE: 5

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS

GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS
AAT4	3.4	METERS
AAT5	3.4	METERS
AAT6	3.4	METERS

PARAMETERS

*** NONE ***

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD. RUN: 1

WELL NAME: COLUMBIA ET AL KOTANEELEE I-48 YT TRIP: 1

SERVICE: L 702A FILE: 5 DATE: 01/18/91 TIME: 06:41:16

REVISION: FSYS256 REV:G002 VER:4.0 MODE: RECORD

AMAV (MV)

0 100

ATMN (DB/FT)

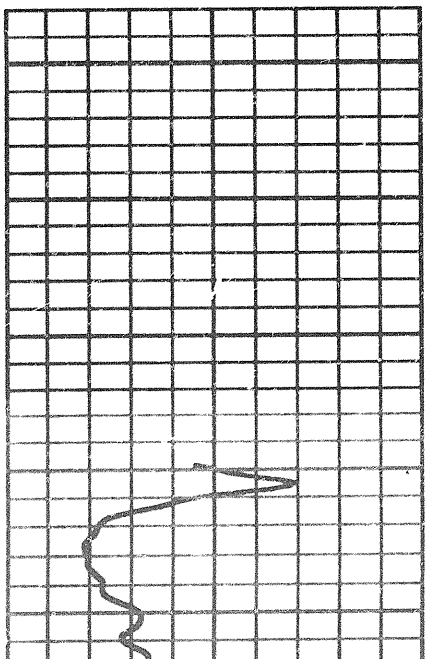
20 0

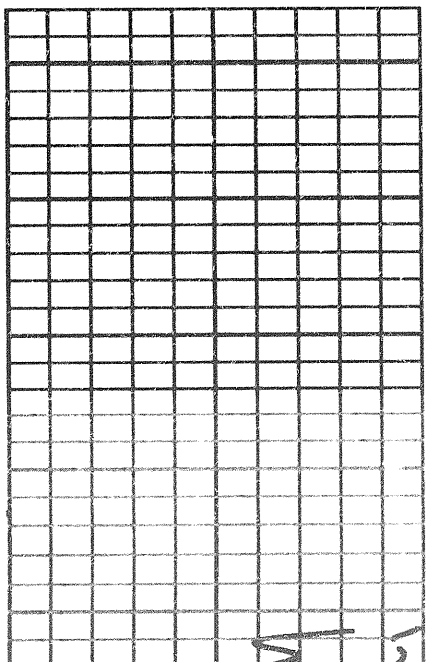
ATAV (DB/FT)

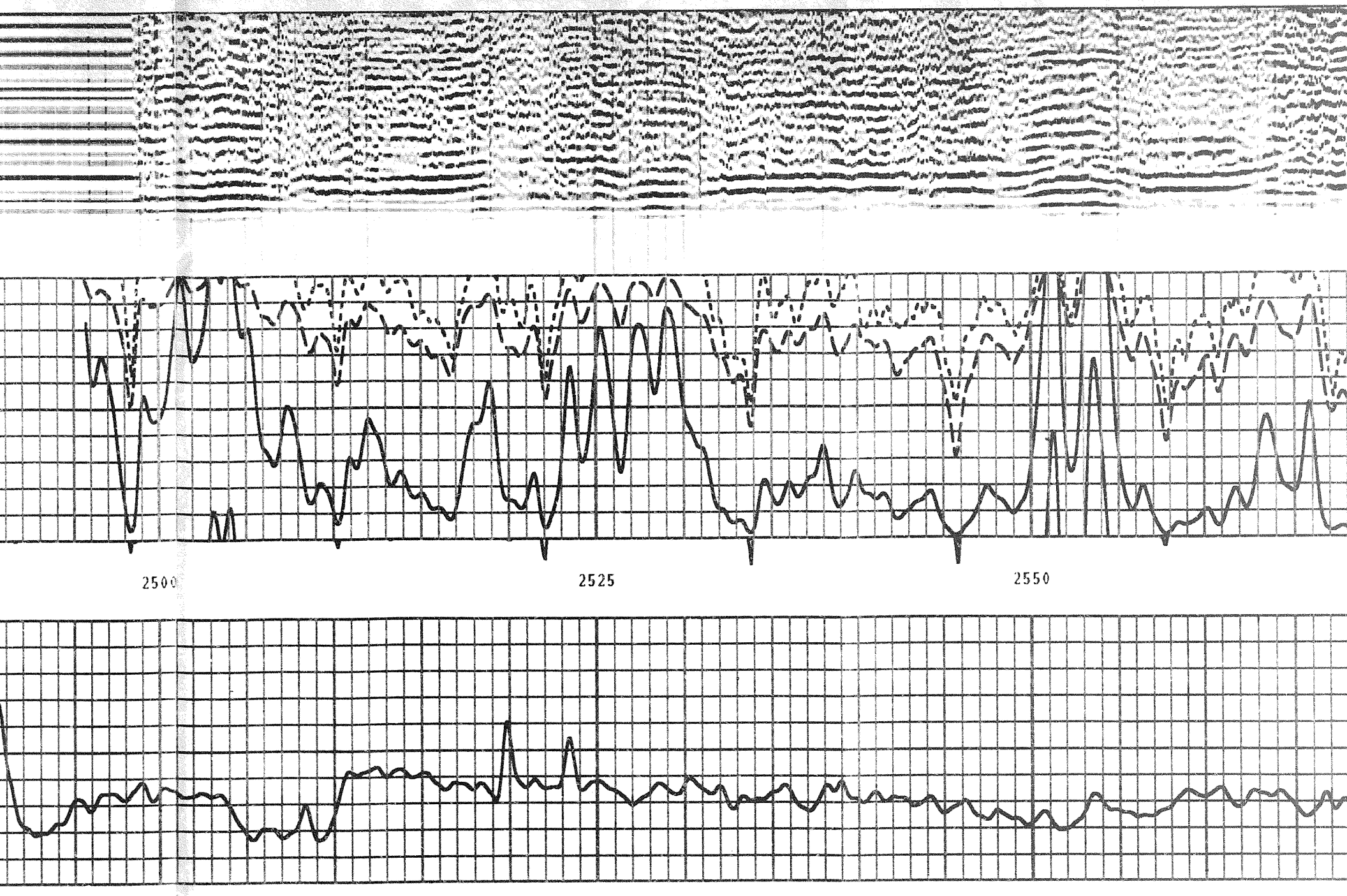
20 0

GR (API) CCL

0 150 1000



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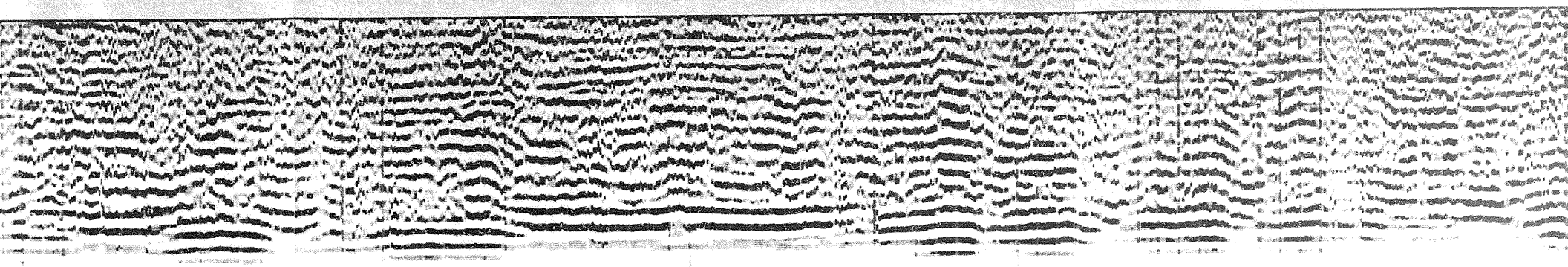

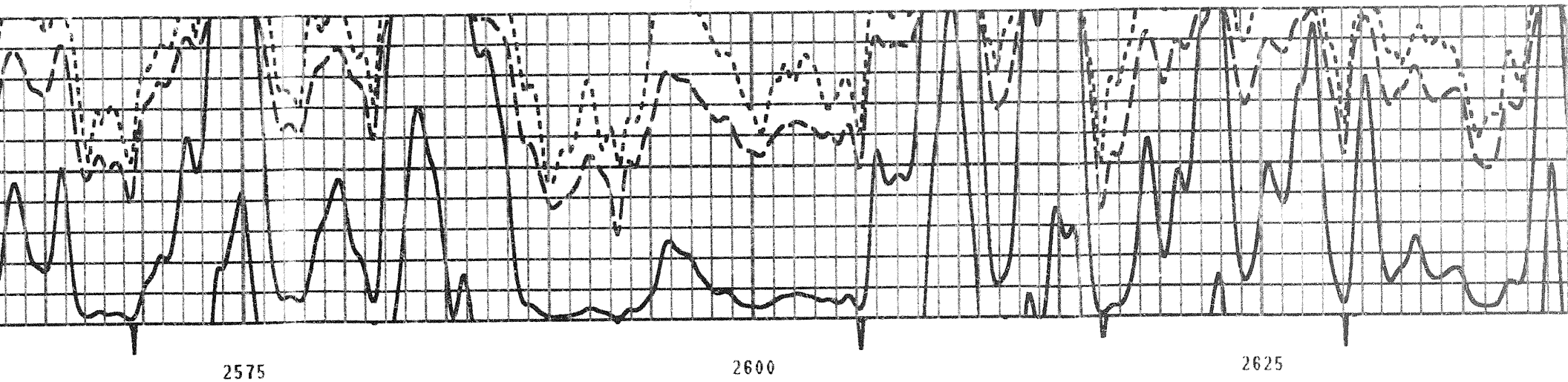
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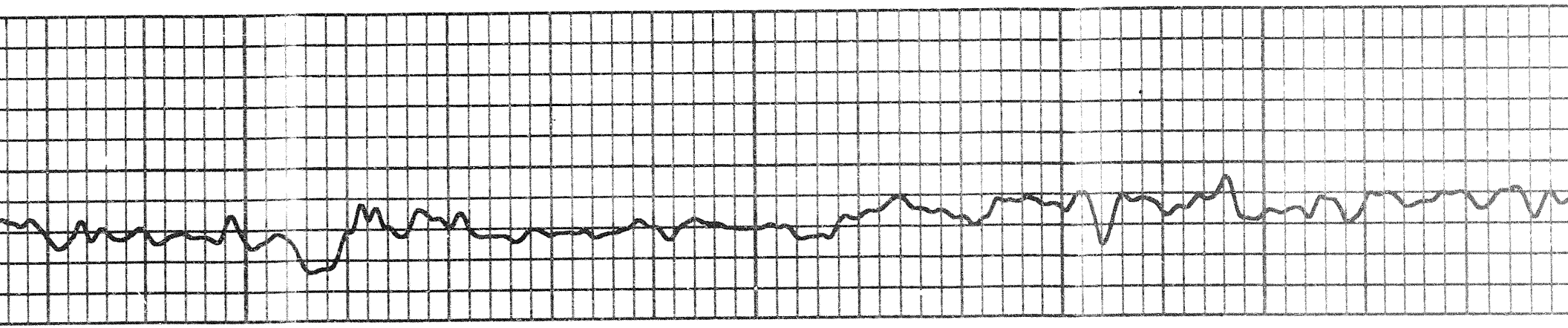
2600
2625



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2675
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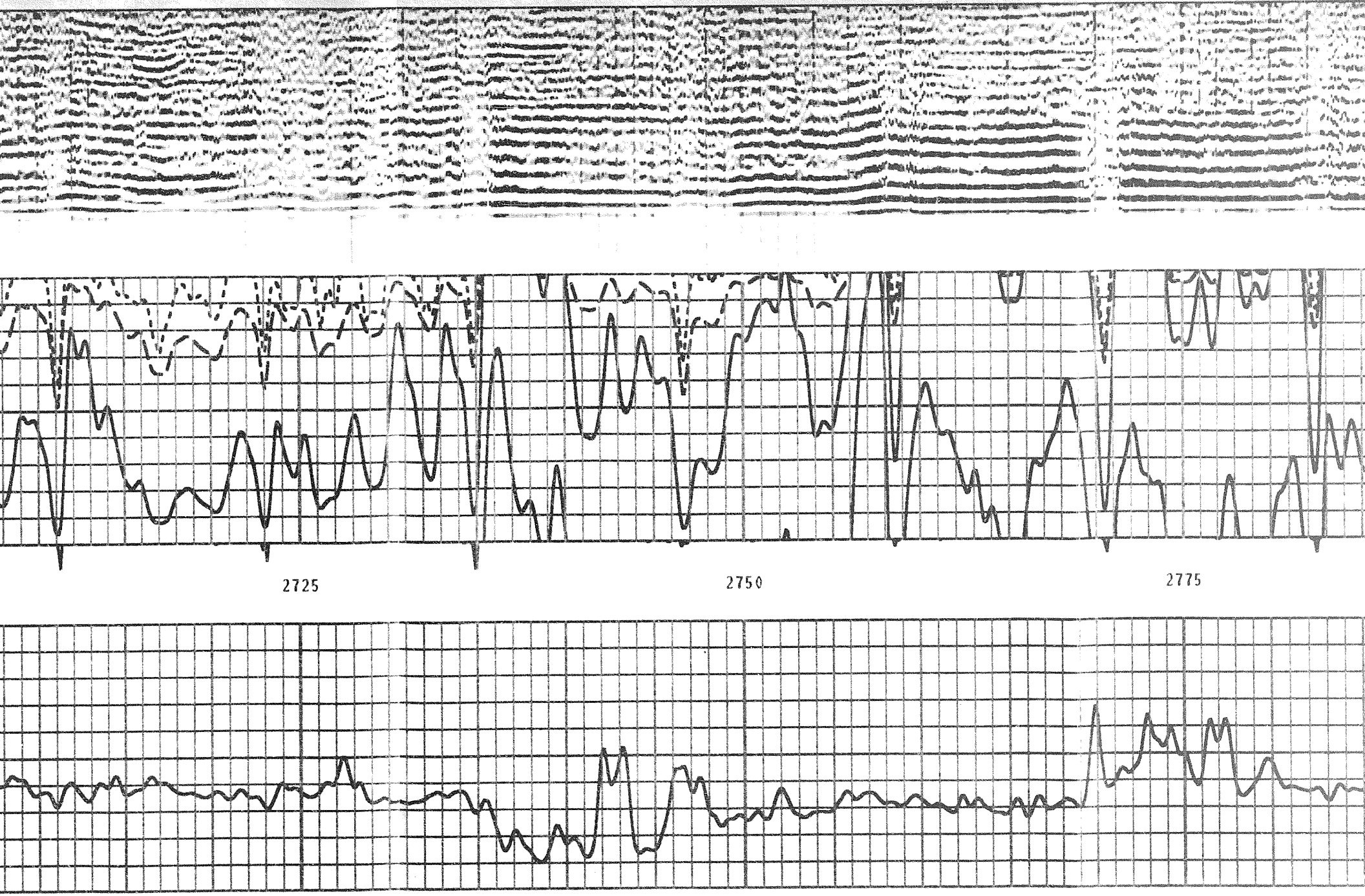
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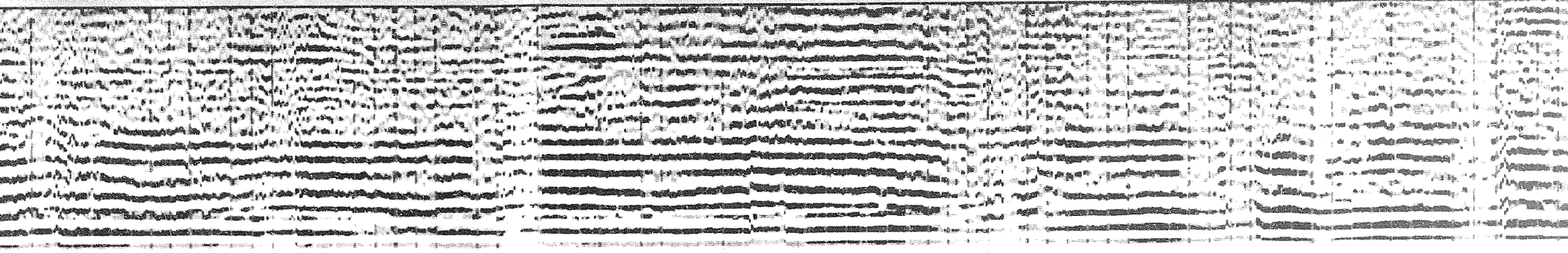
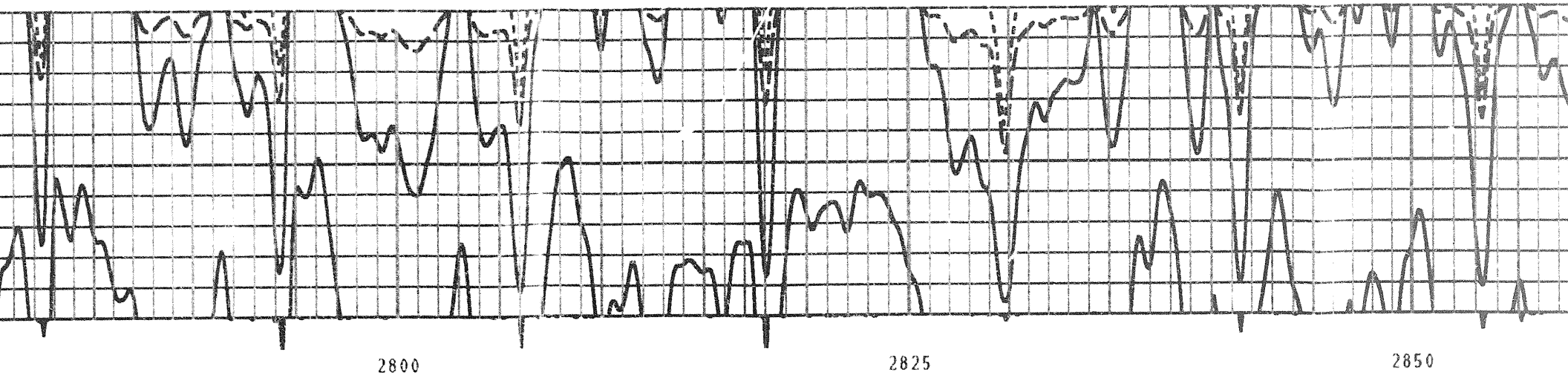
2750
2775

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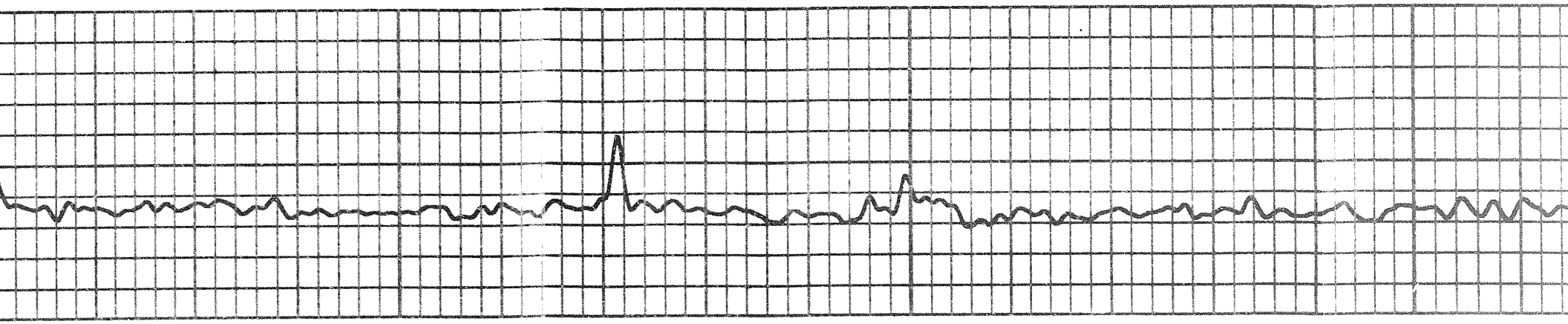

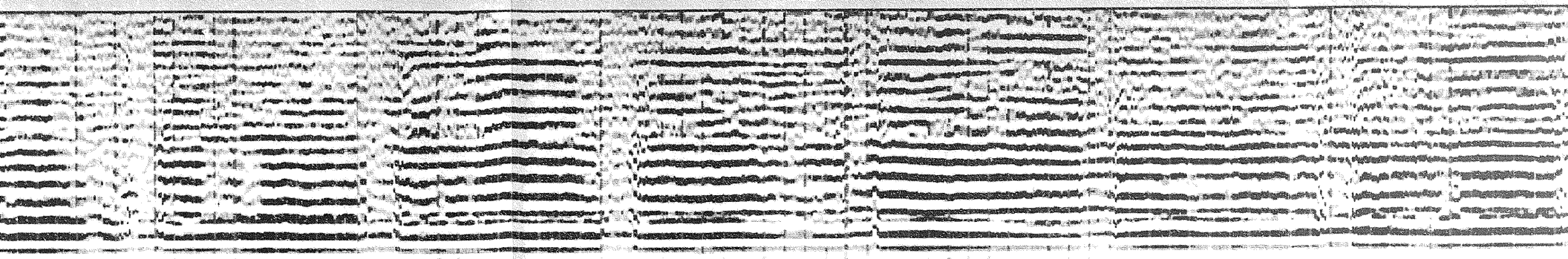

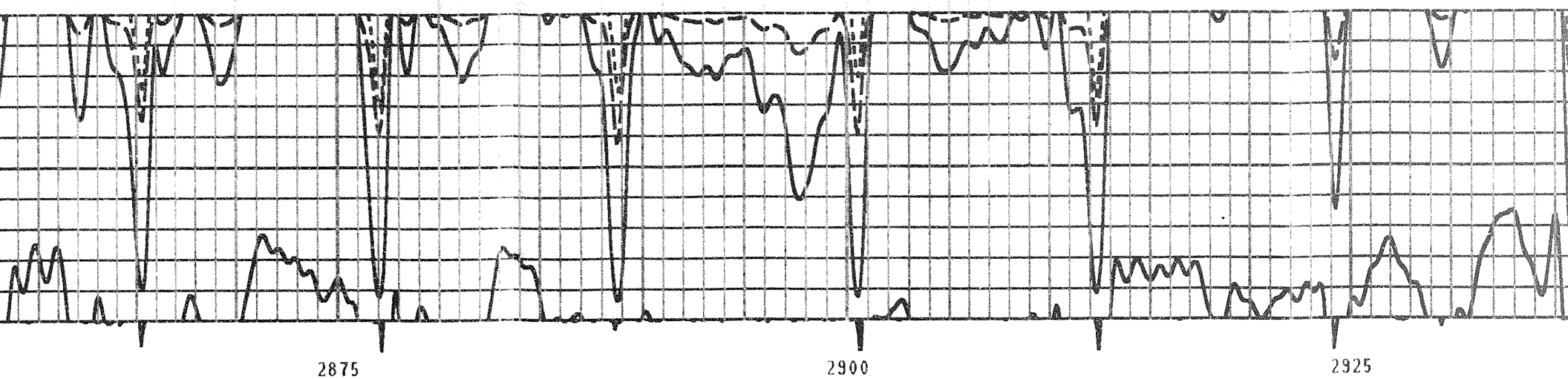
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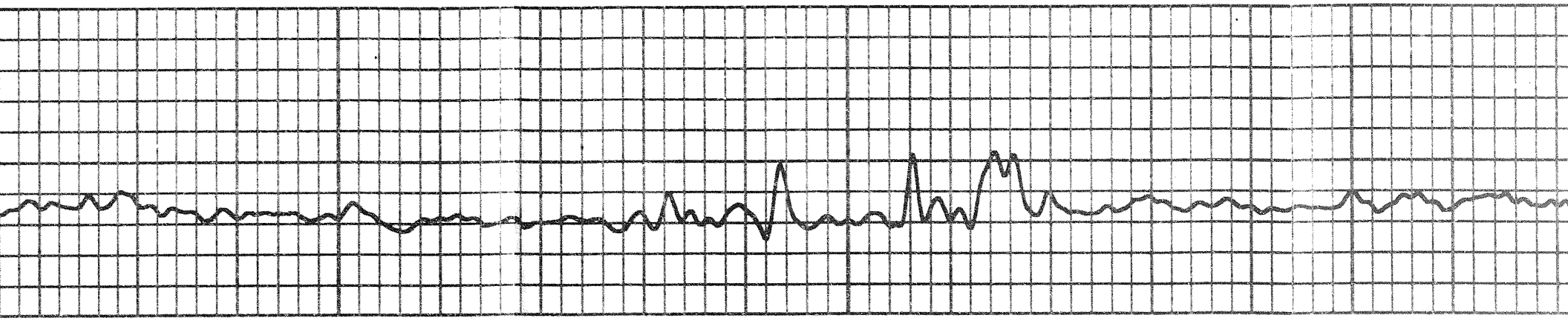

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2975
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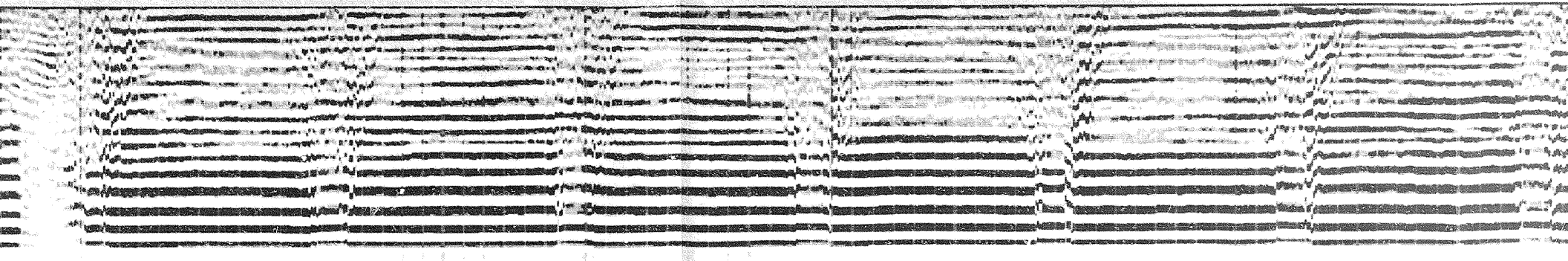
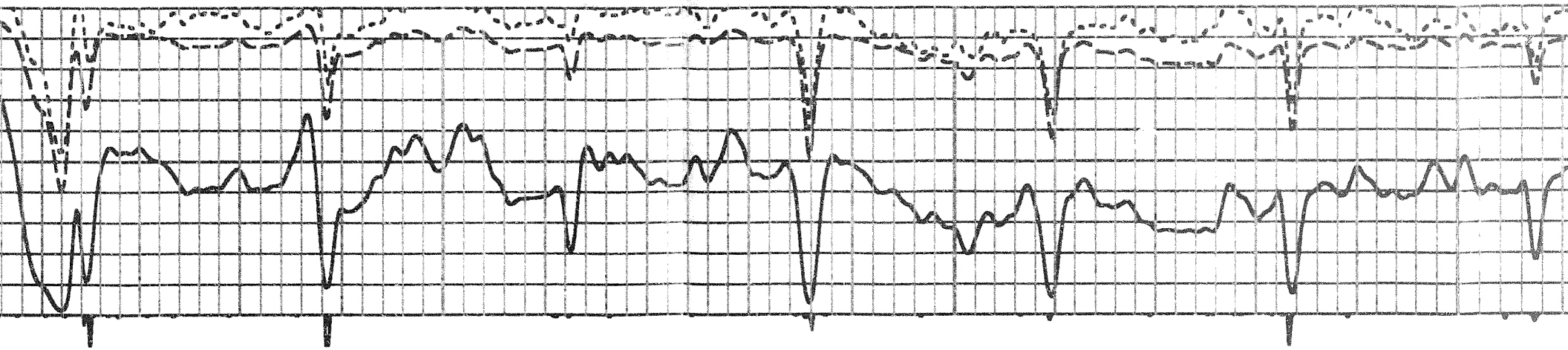
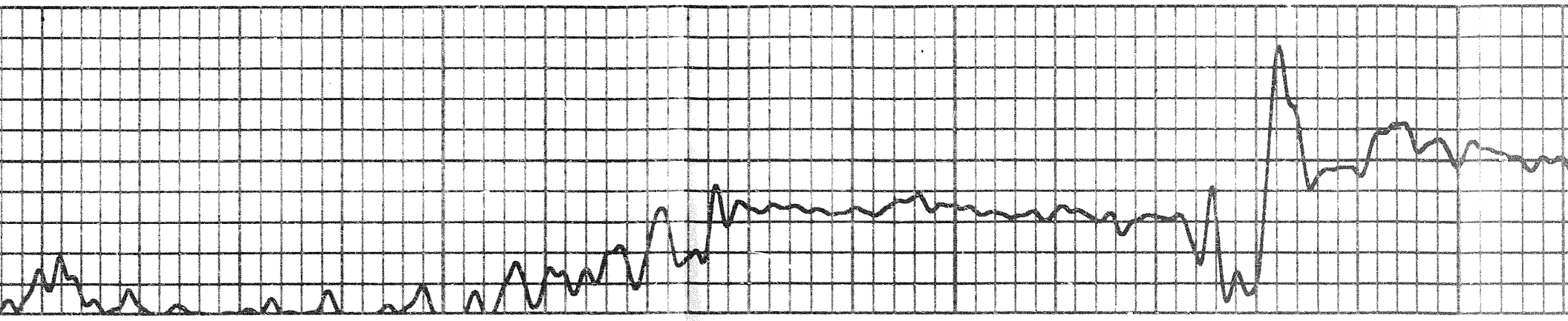
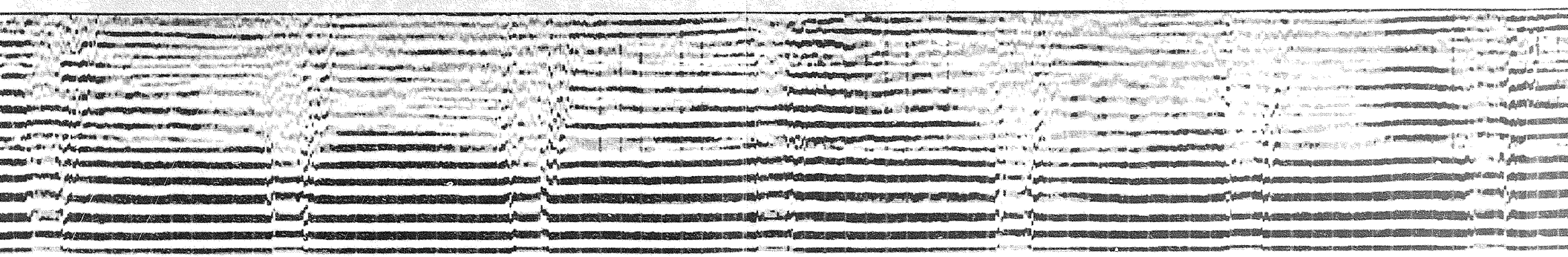
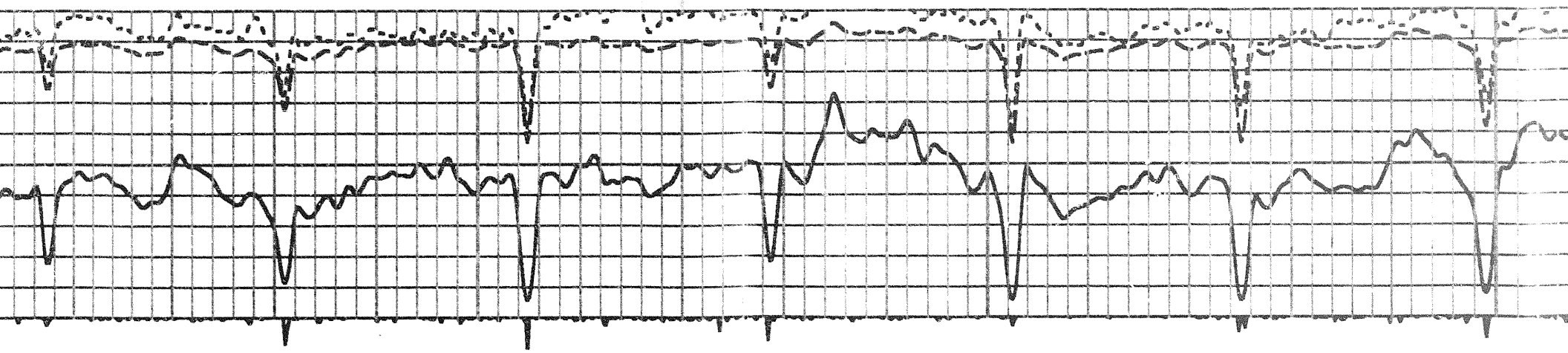




3025 3050 3075







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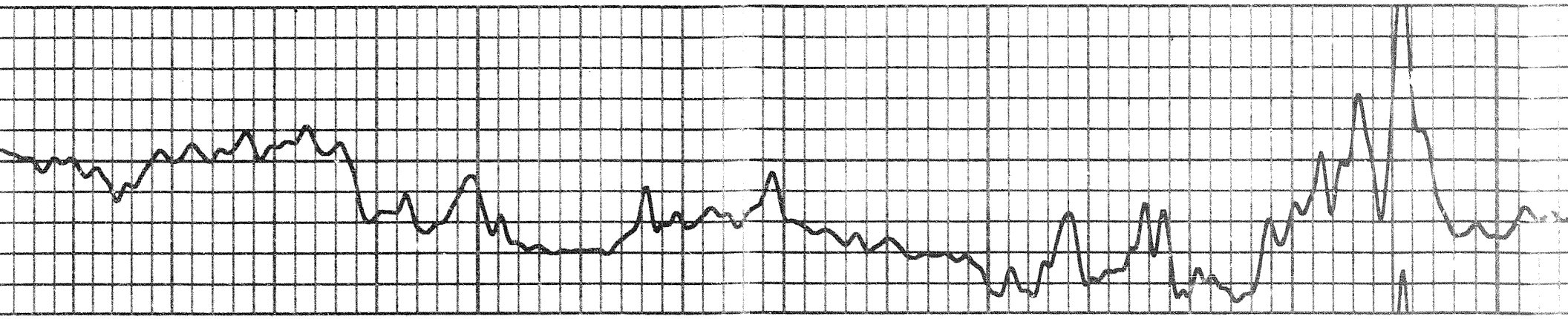

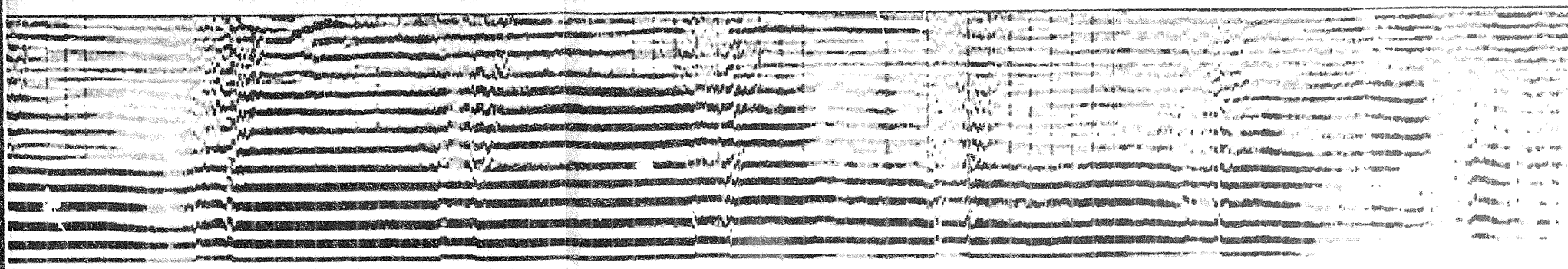

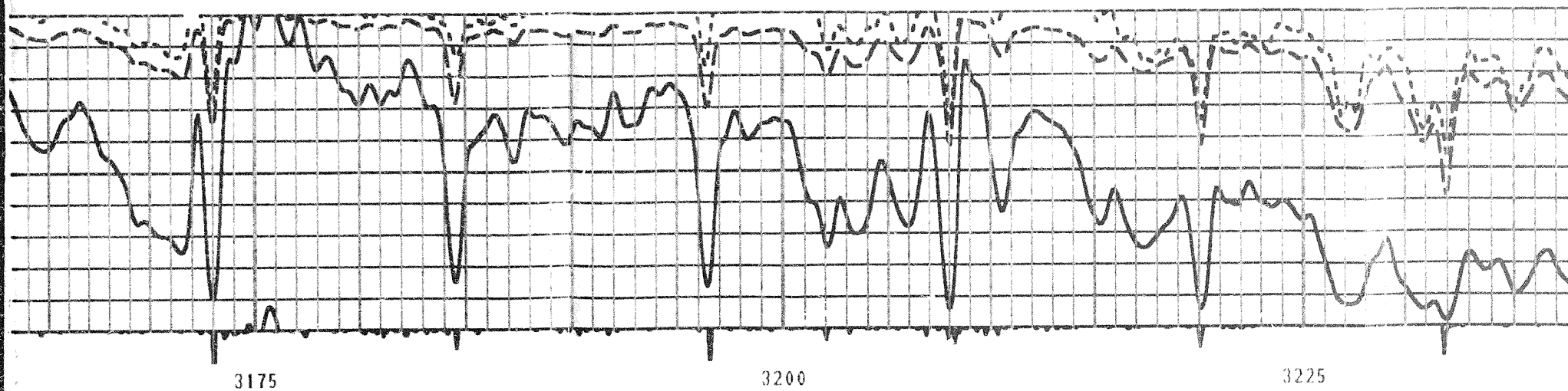
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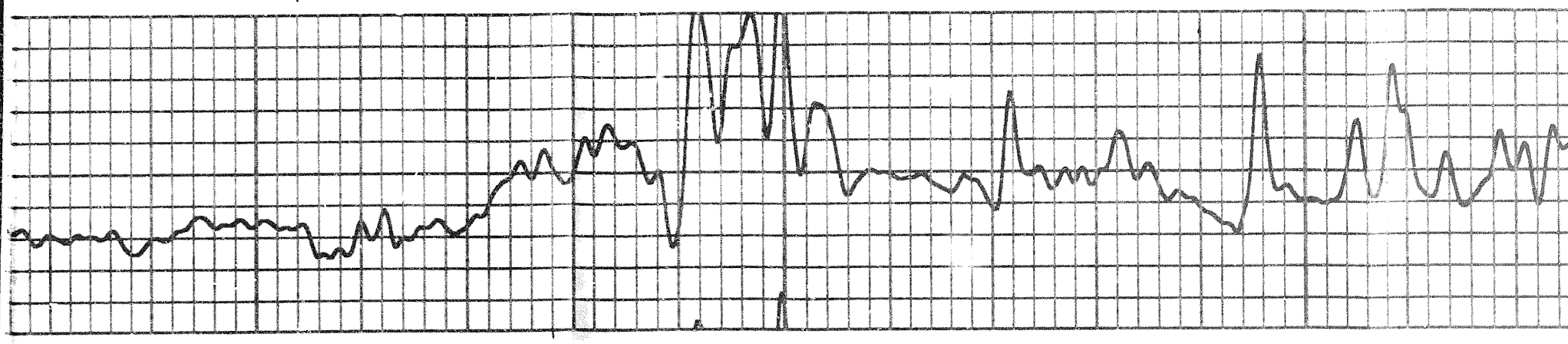
3225



3250
3275
3300
CCL
GR
AMP.
AVG. ATTN.
MIN. ATTN.

AMAV (MV)

0 100

ATMN (DB/FT)

20 0

ATAV (DB/FT)

20 0

GR (API) CCL

0 150 1000

FILE: 5

****

PASS TWO VDL SECTION

****

FILE: 4

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS
AAT4	3.4	METERS
AAT5	3.4	METERS
AAT6	3.4	METERS

PARAMETERS

*** NONE ***

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD. RUN: 1

WELL NAME: COLUMBIA ET AL KOTANEELEE I-48 YT TRIP: 1

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD. RUN: 1

WELL NAME: COLUMBIA ET AL KOTANEELEE I-48 YT TRIP: 1

SERVICE: L 702A FILE: 4 DATE: 01/18/91 TIME: 04:02:32

REVISION: FSYS256 REV:G002 VER:4.0 MODE: RECORD

AMAV (MV)

0 100

ATMN (DB/FT)

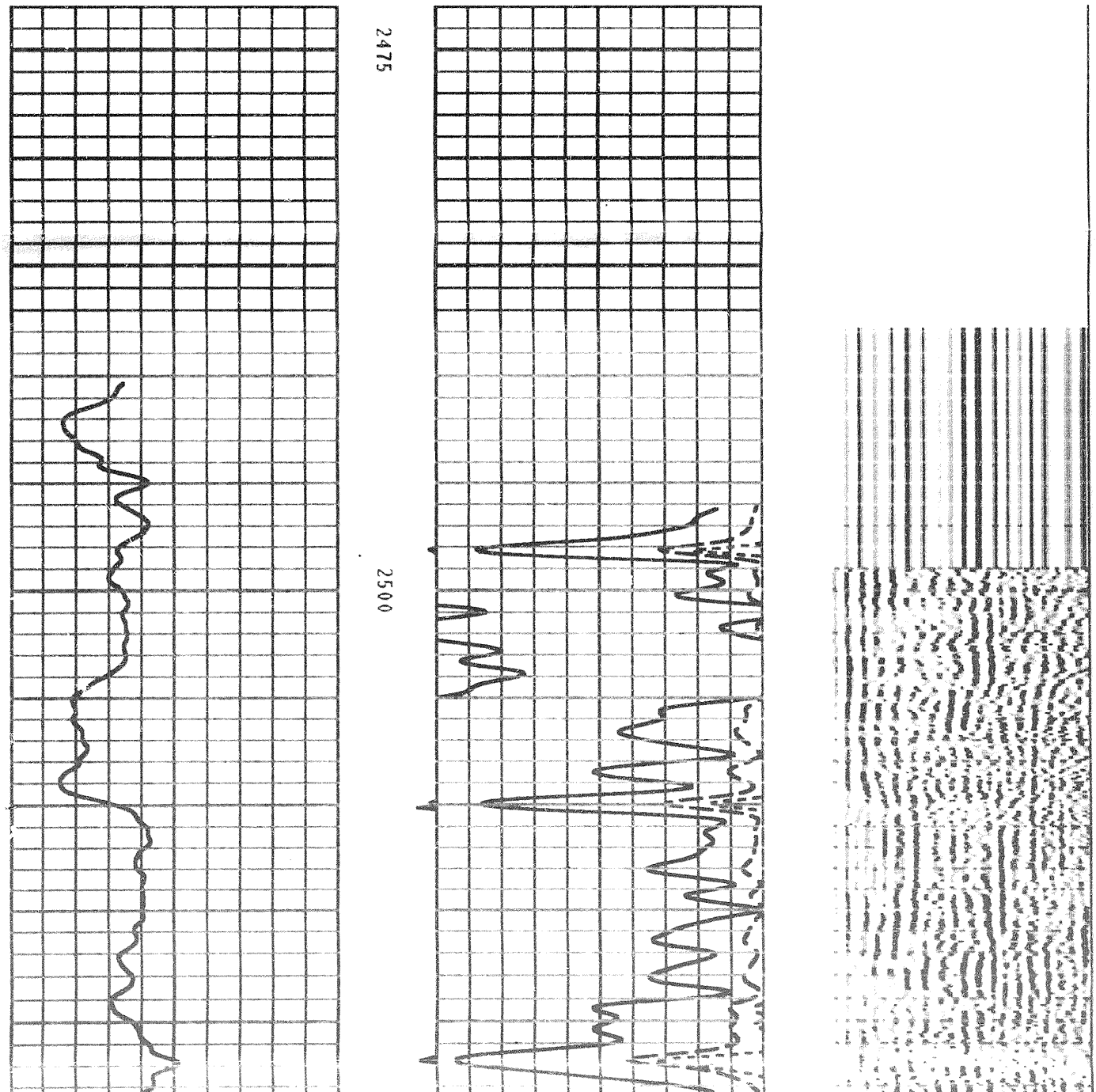
20 0

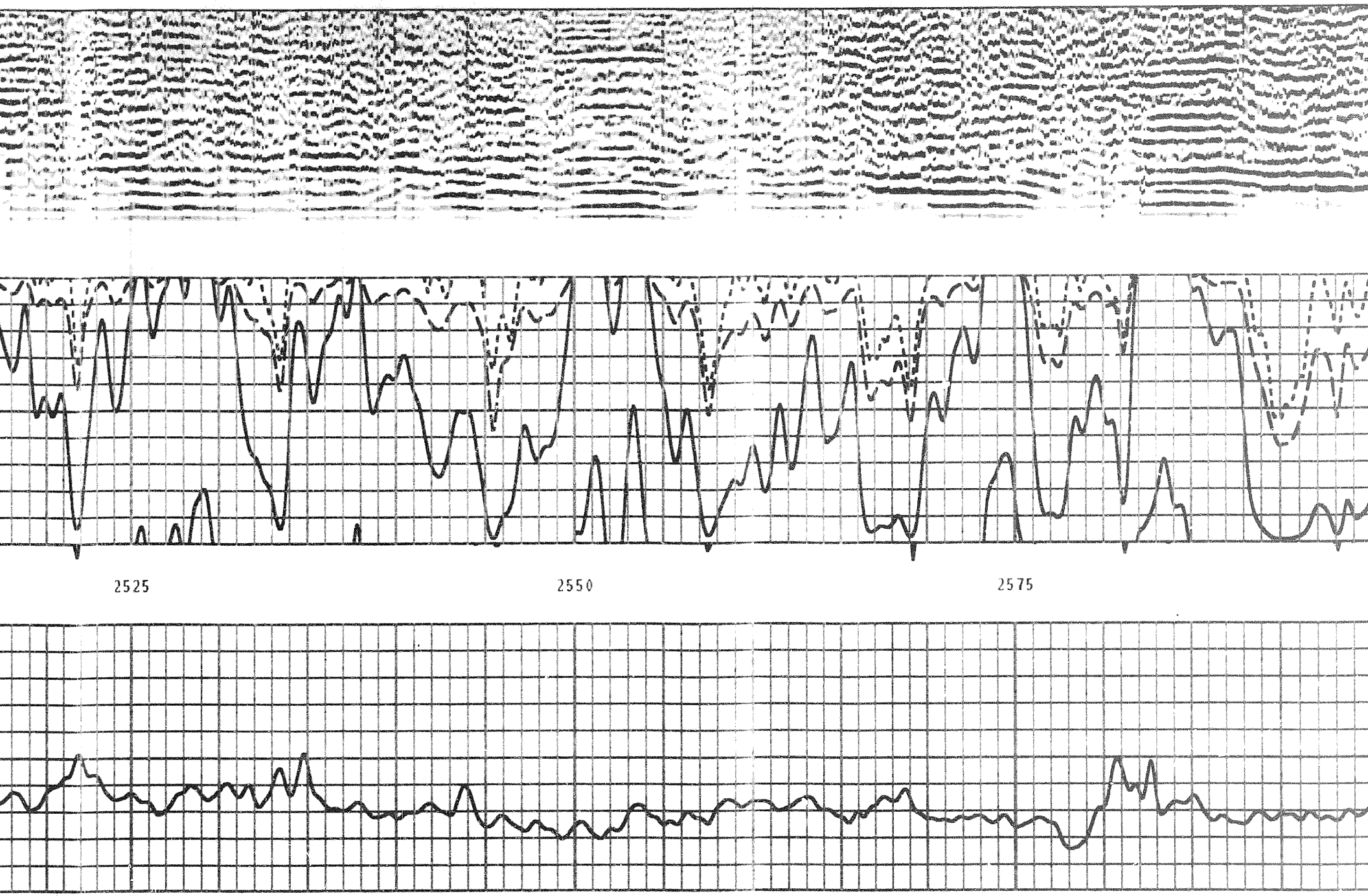
ATAV (DB/FT)

20 0

GR (API) CCL

0 150 1000

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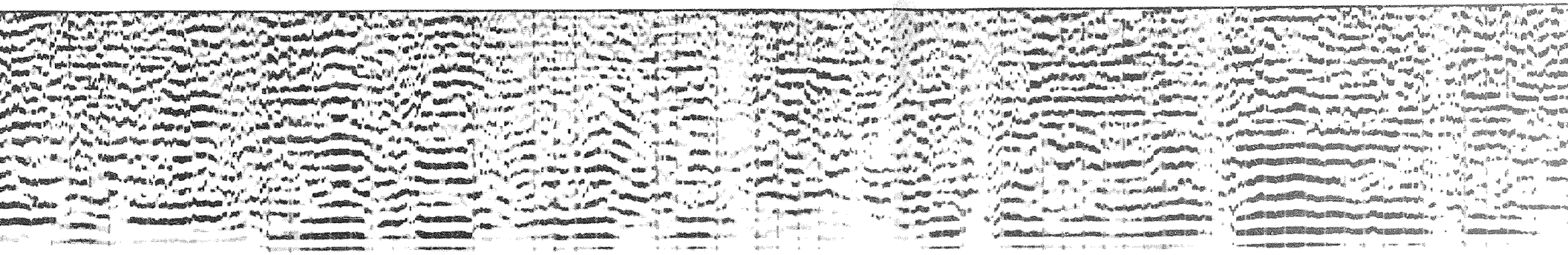

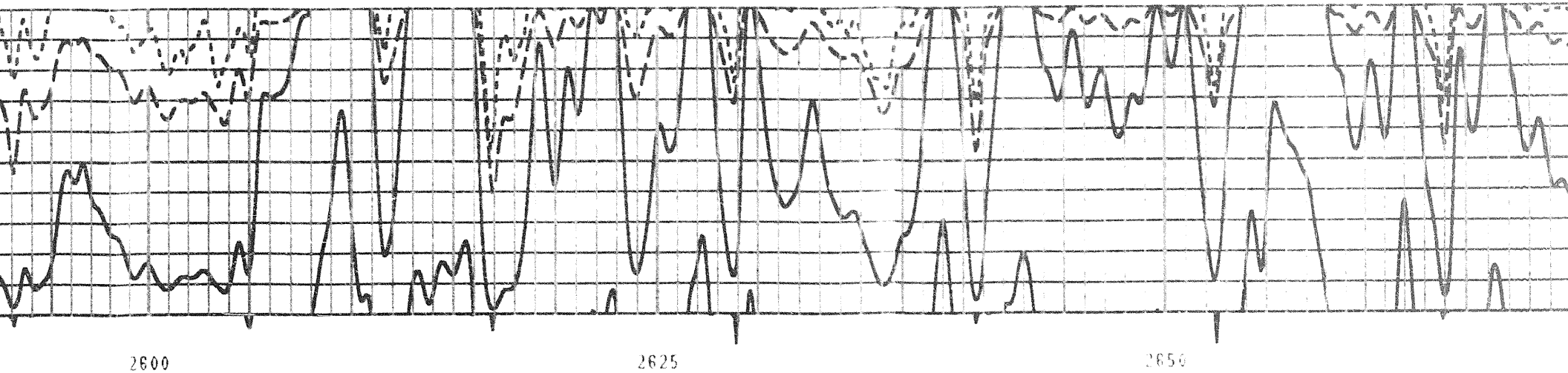
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2625
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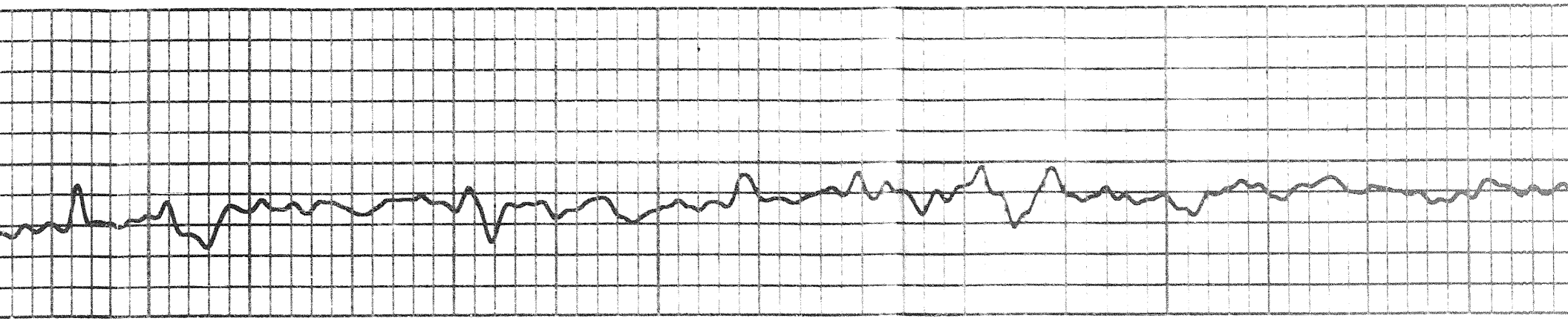

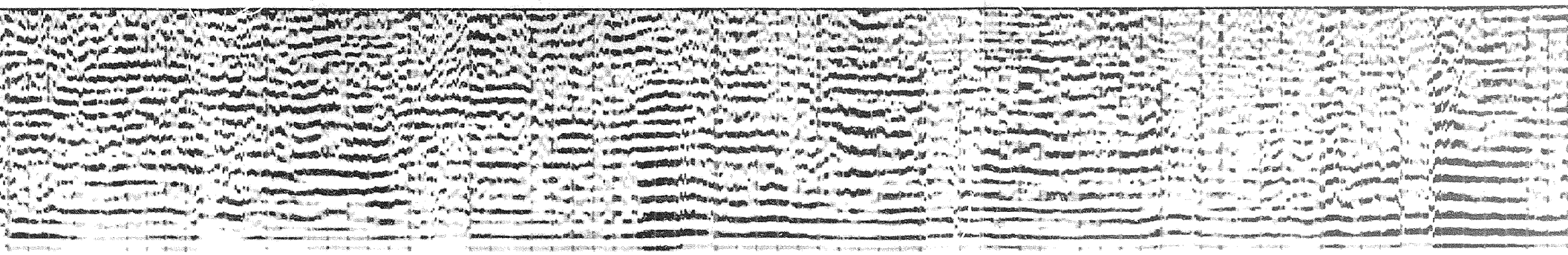

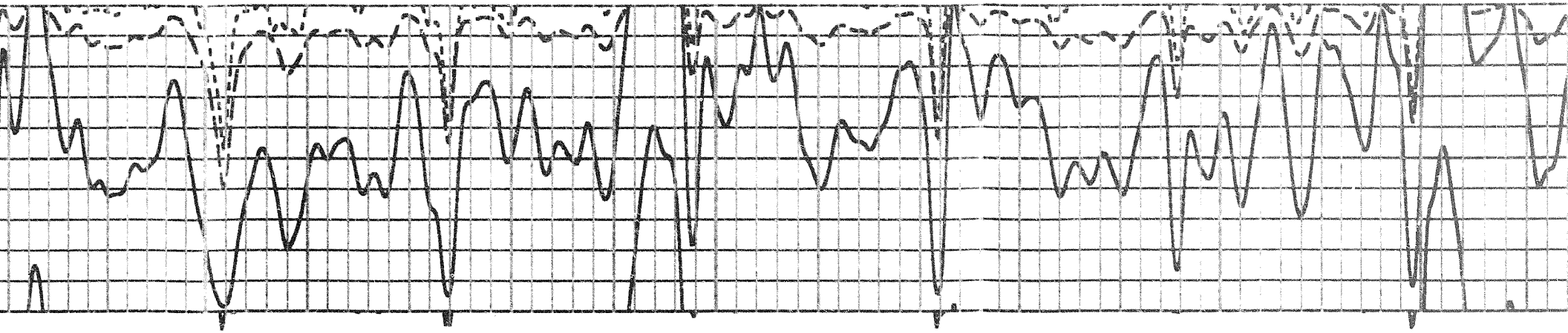
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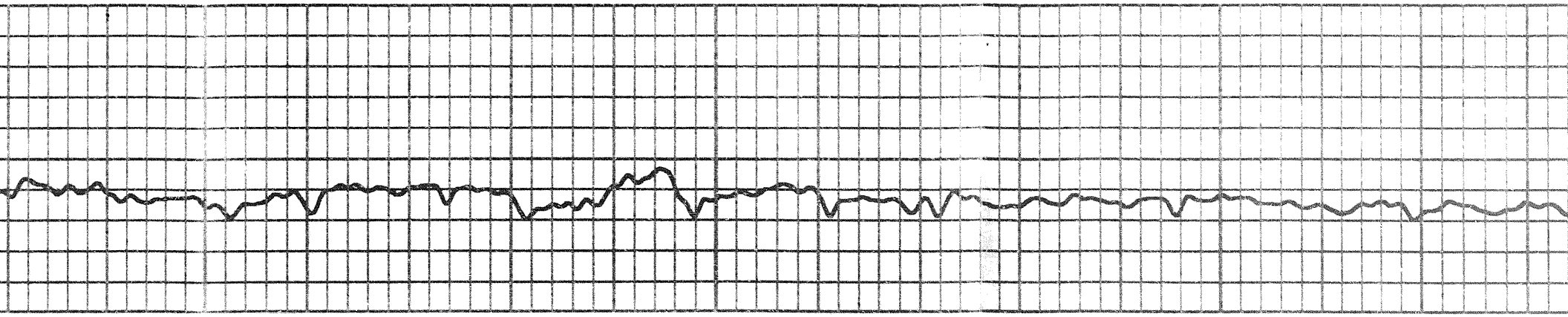
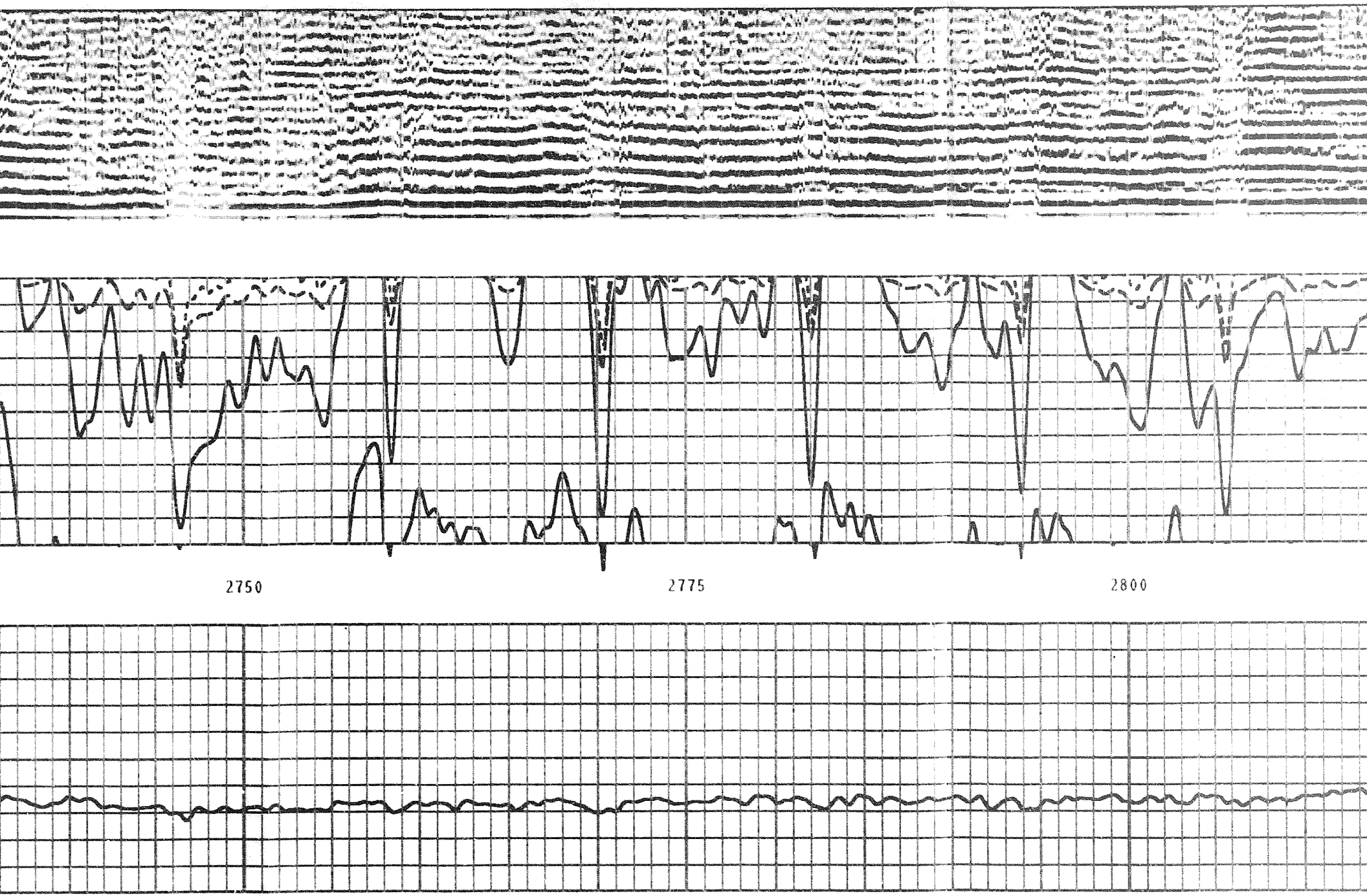
2700
2725

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2775
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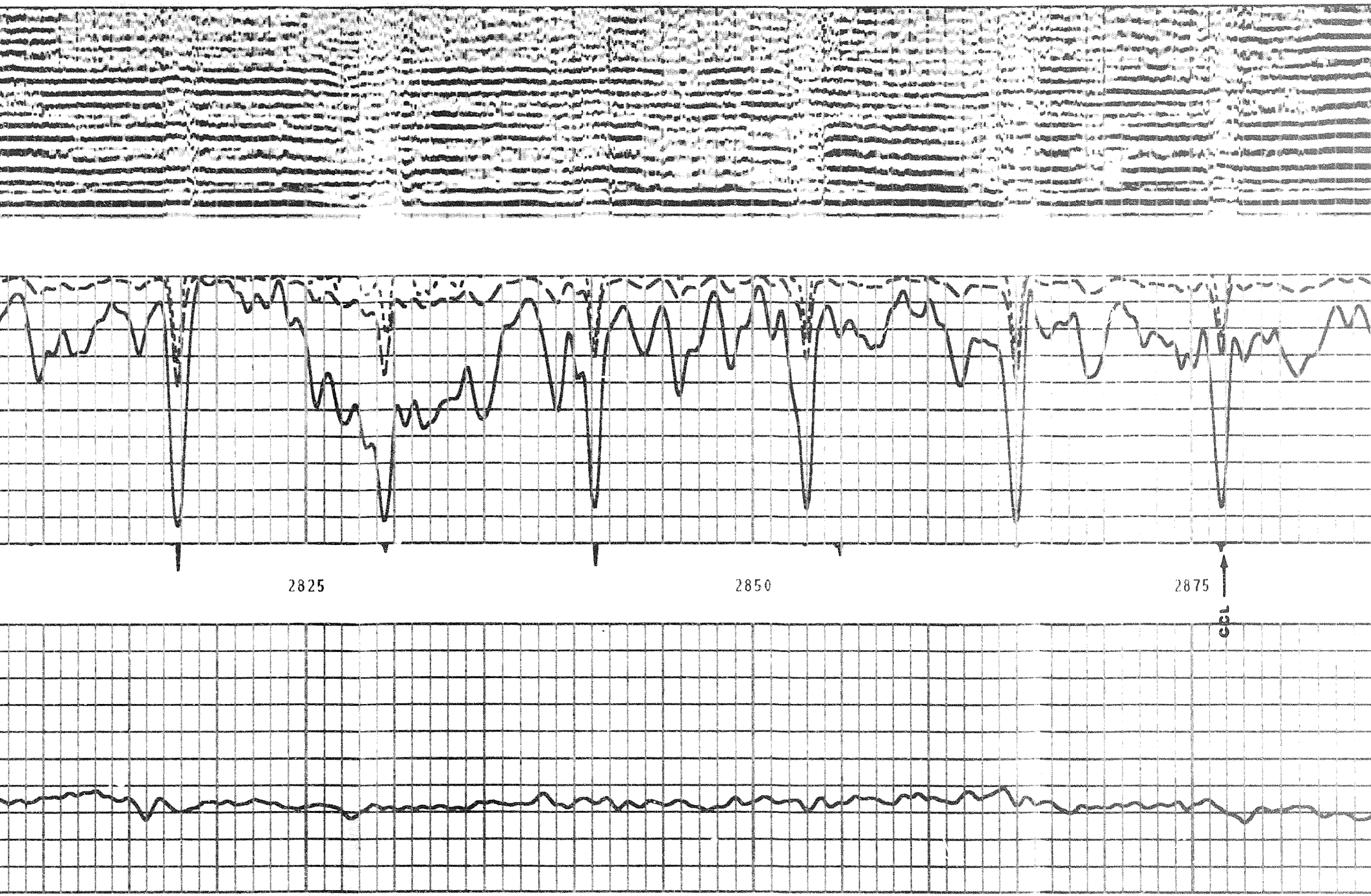
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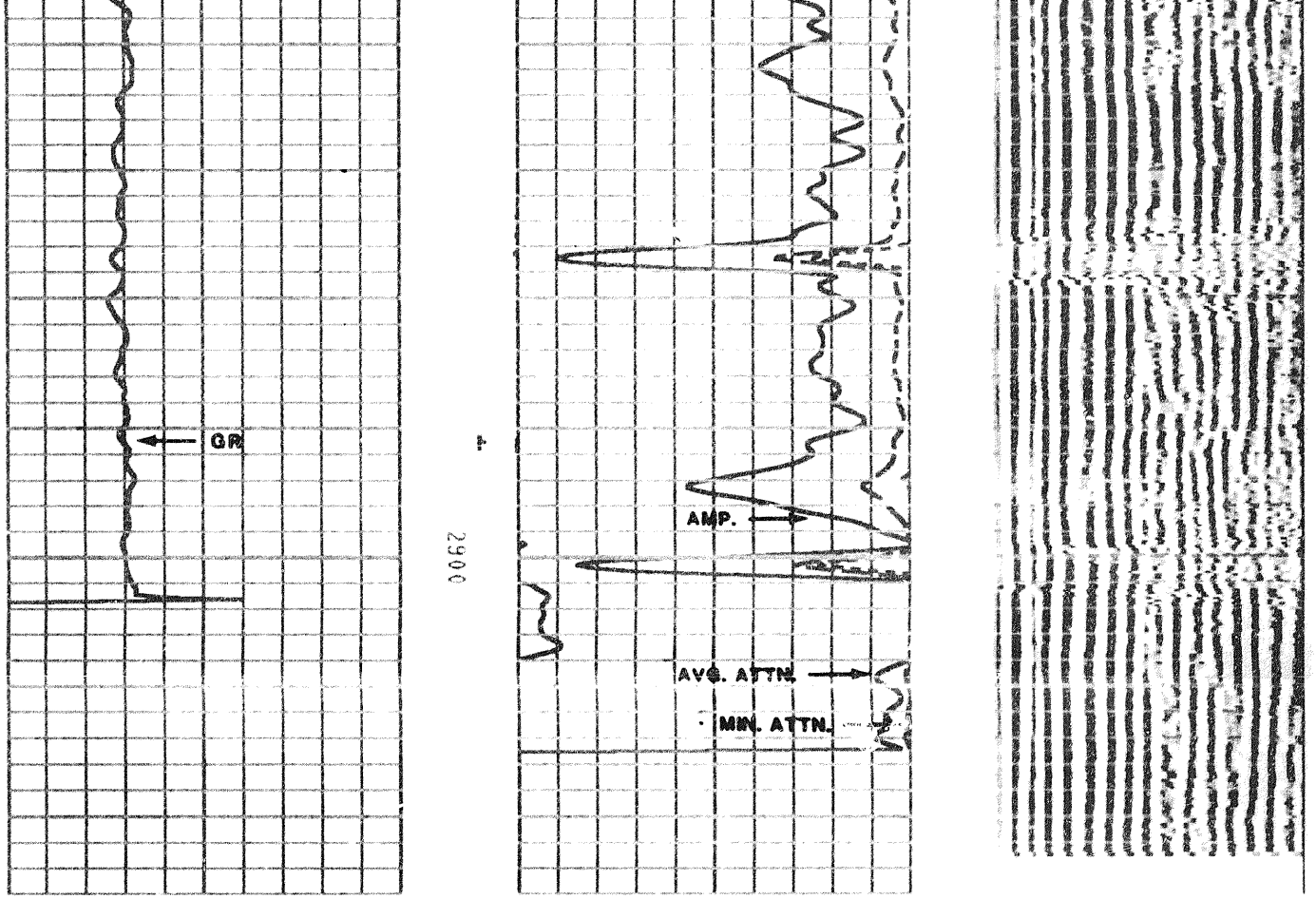
2850
2875
CCL



AMAV (MV)

0 100

ATMN (DB/FT)

20 0

ATAV (DB/FT)

20 0

GR (API) CCL

0 150 1000

FILE: 4

****

PASS ONE VDL SECTION

****

FILE: 3

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
GR	9.2	METERS
CCL	11.1	METERS

GR	9.2	METERS
CCL	11.1	METERS
RB	0	METERS
DEV	0	METERS
AAT1	3.4	METERS
AAT2	3.4	METERS
AAT3	3.4	METERS
AAT4	3.4	METERS
AAT5	3.4	METERS
AAT6	3.4	METERS

PARAMETERS

*** NONE ***

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: COLUMBIA GAS DEVELOPMENT OF CANADA LTD. RUN: 1

WELL NAME: COLUMBIA ET AL KOTANEELEE I-48 YT TRIP: 1

SERVICE: L 702A FILE: 3 DATE: 01/18/91 TIME: 01:14:23

REVISION: FSYS256 REV:G002 VER:4.0 MODE: RECORD

AMAV (MV)

0 100

ATMN (DB/FT)

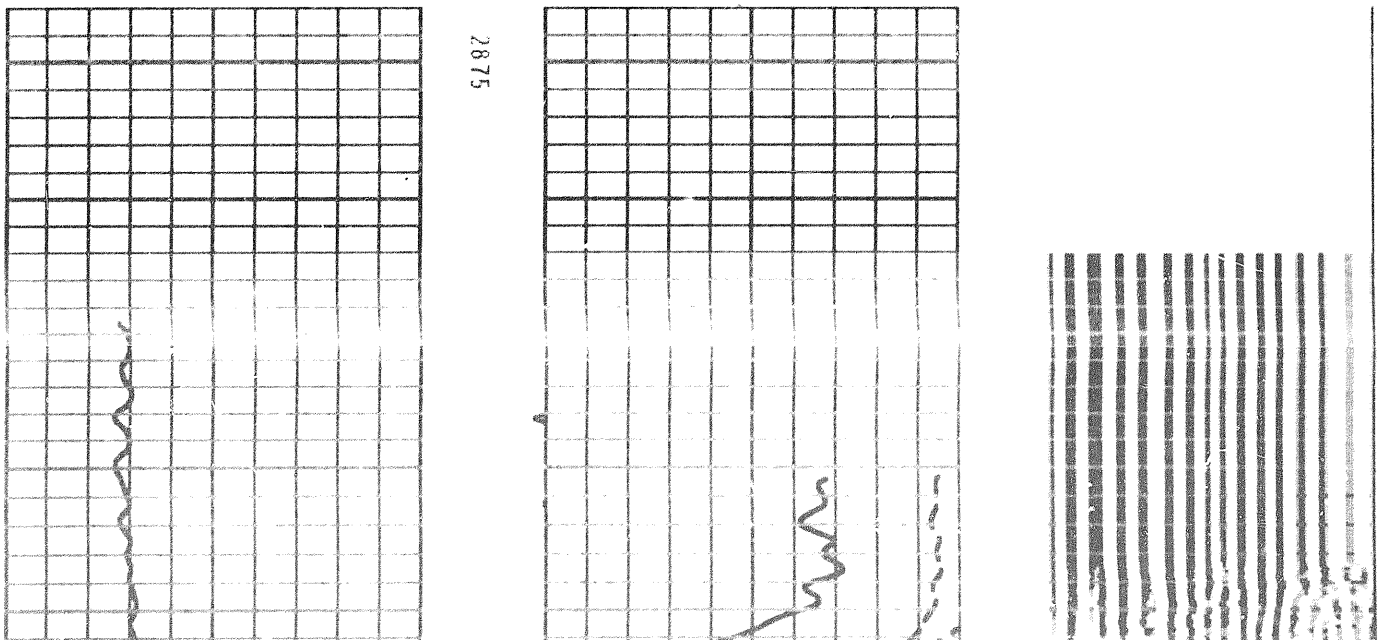
20 0

ATAV (DB/FT)

20 0

GR (API) CCL

0 150 1000



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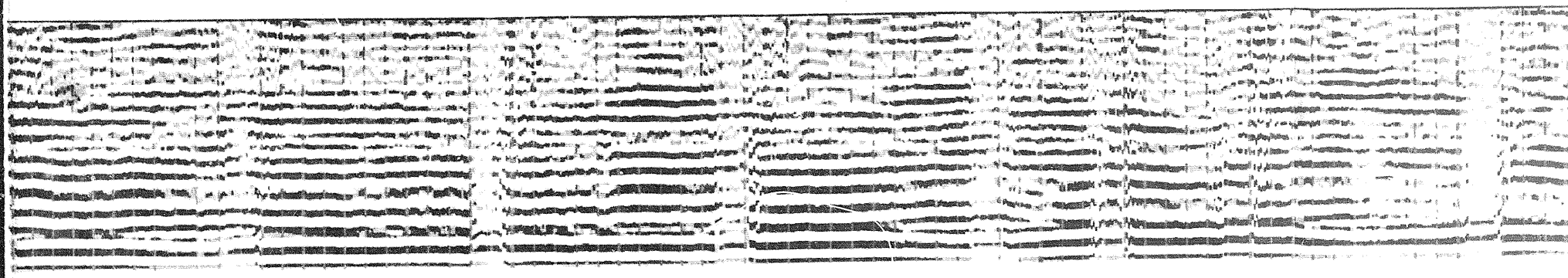

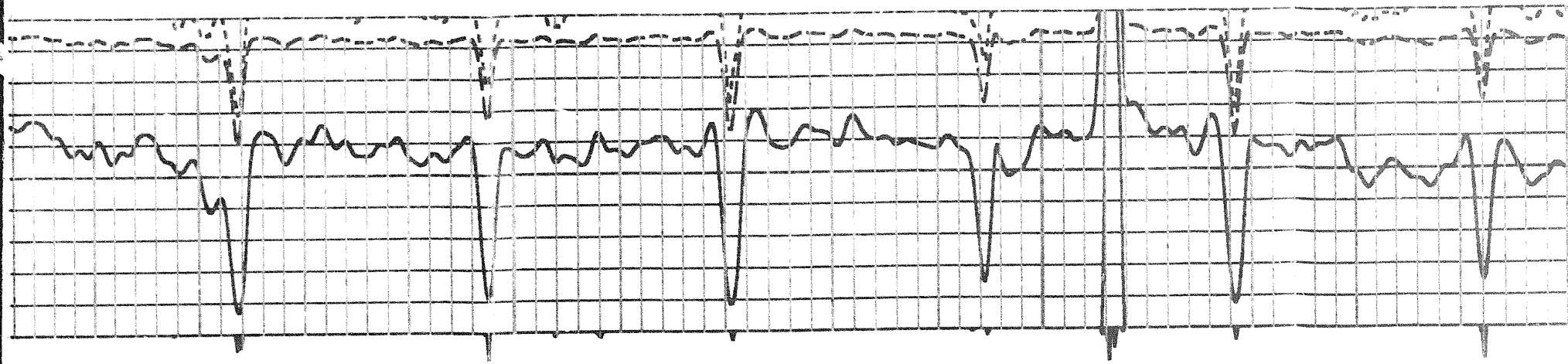
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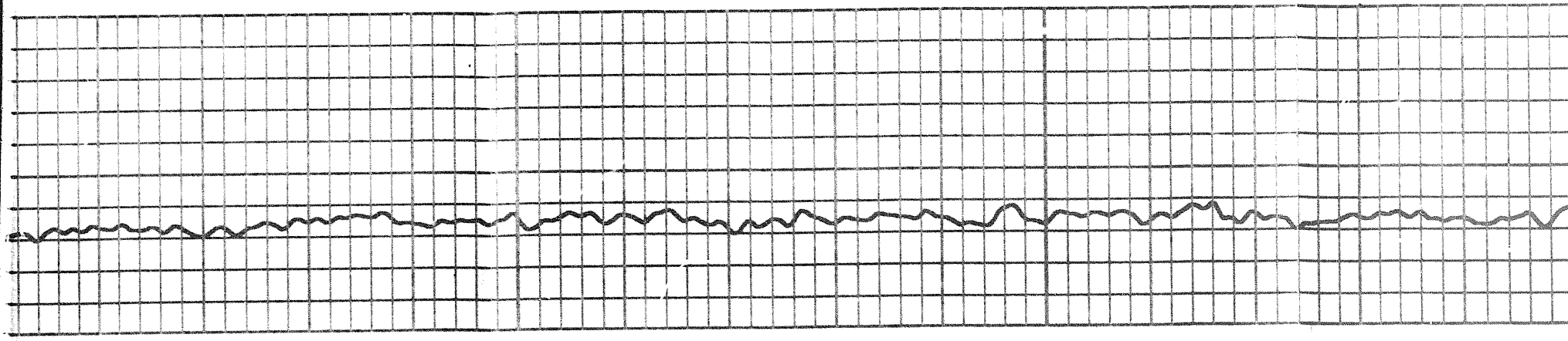
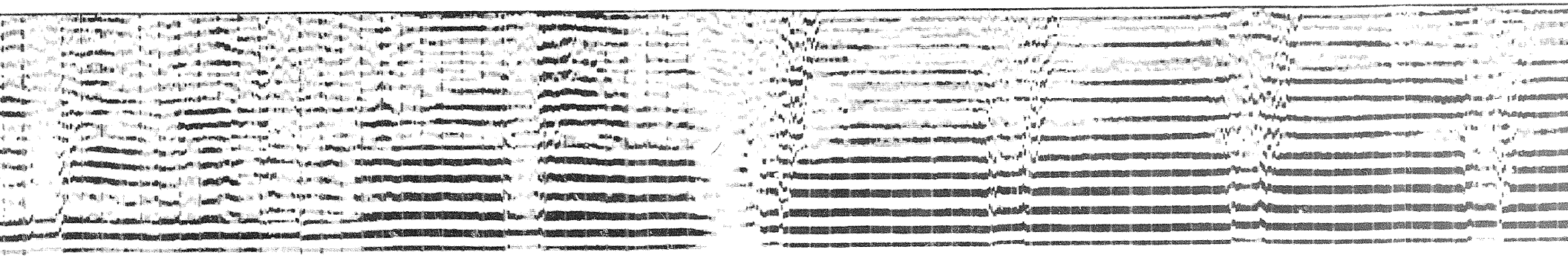
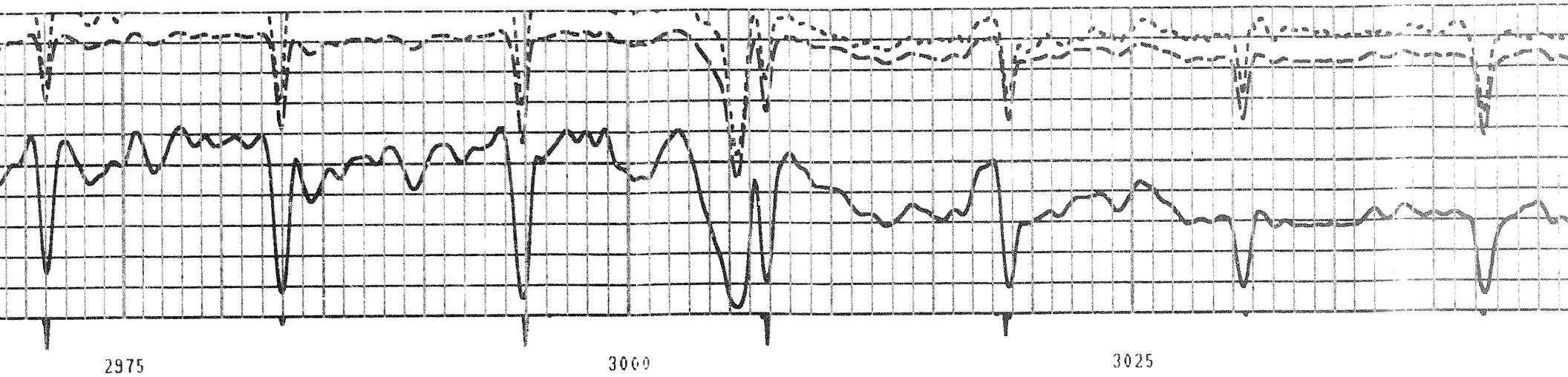
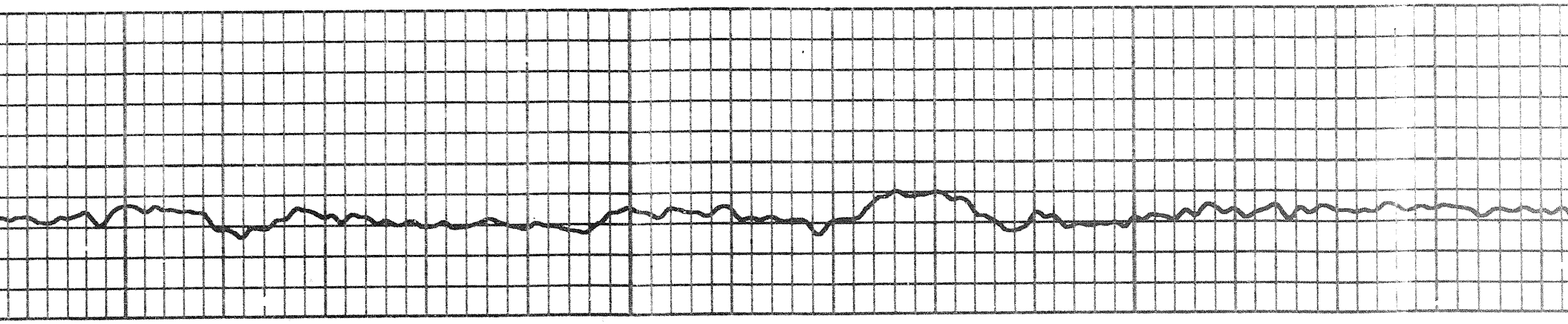
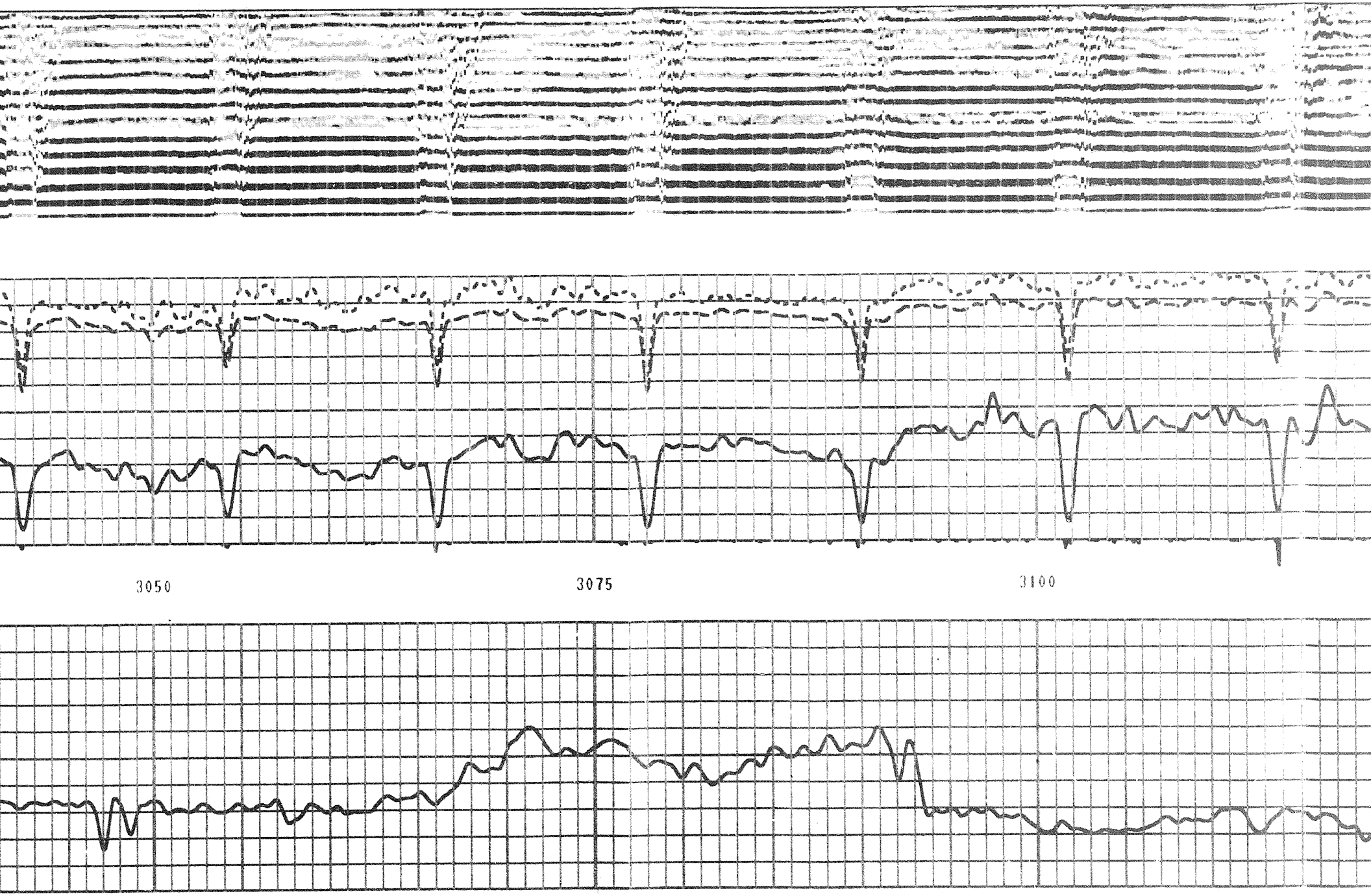





2975
3000
3025

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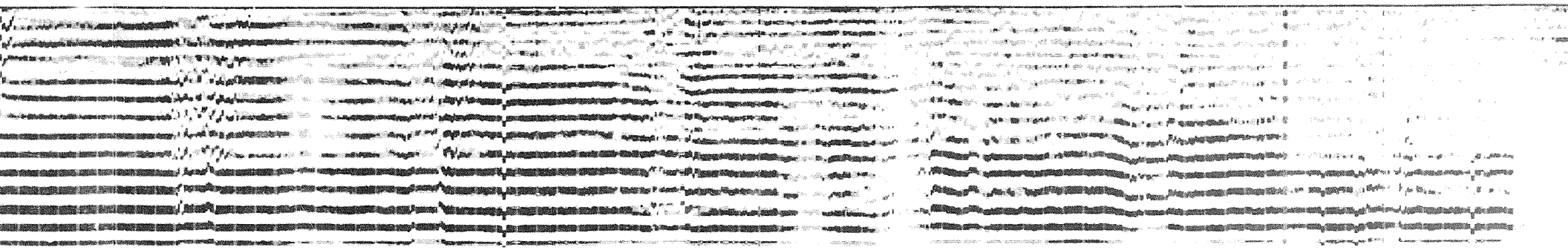
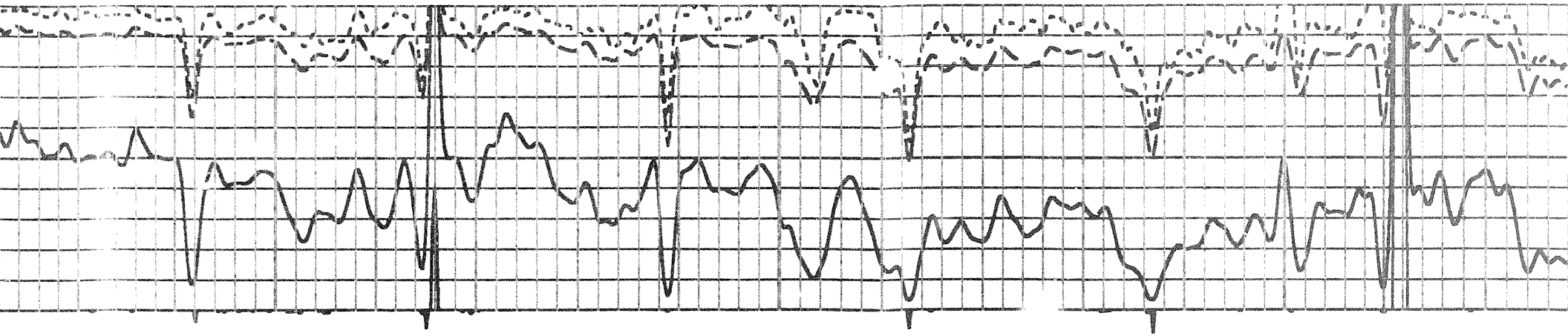
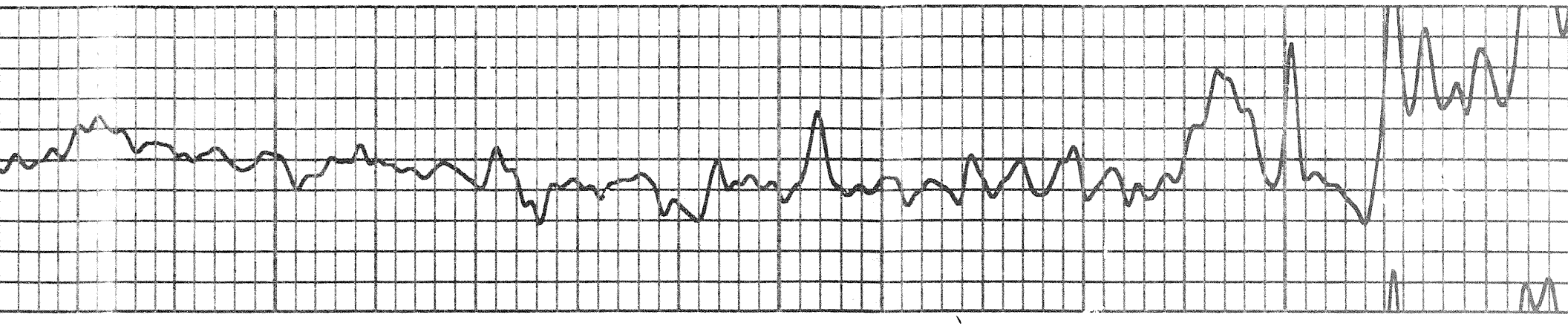




3200 3225 3250



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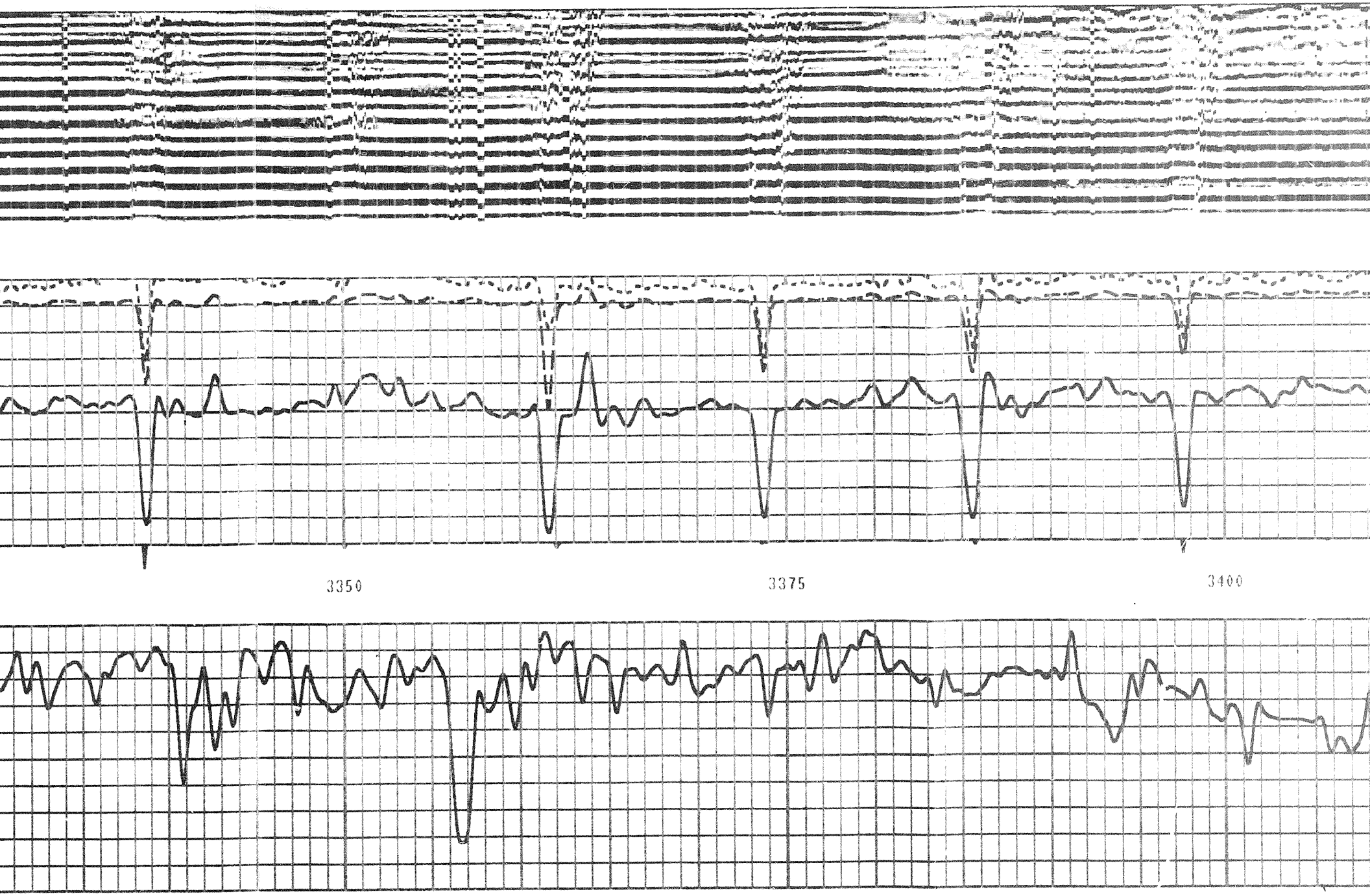
3300
3325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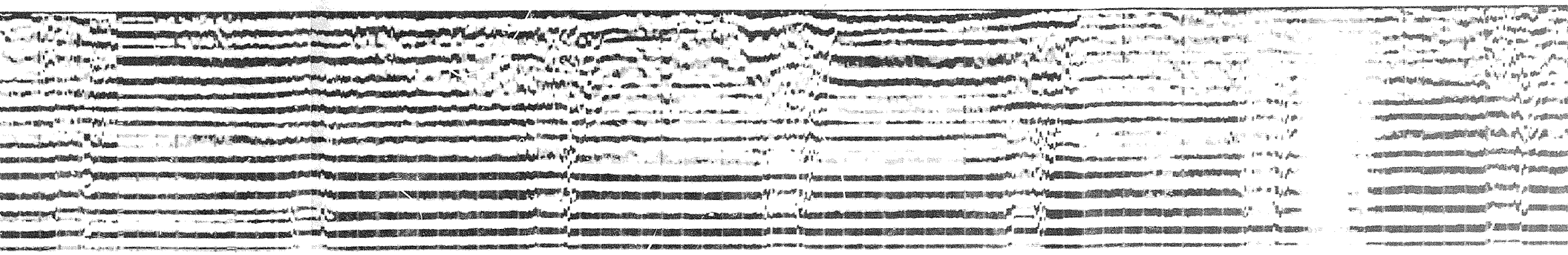

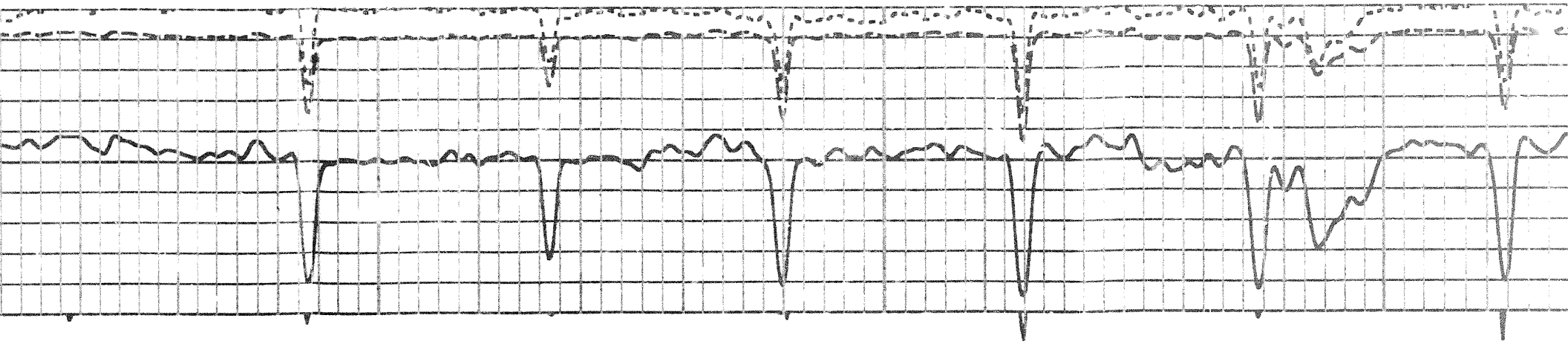
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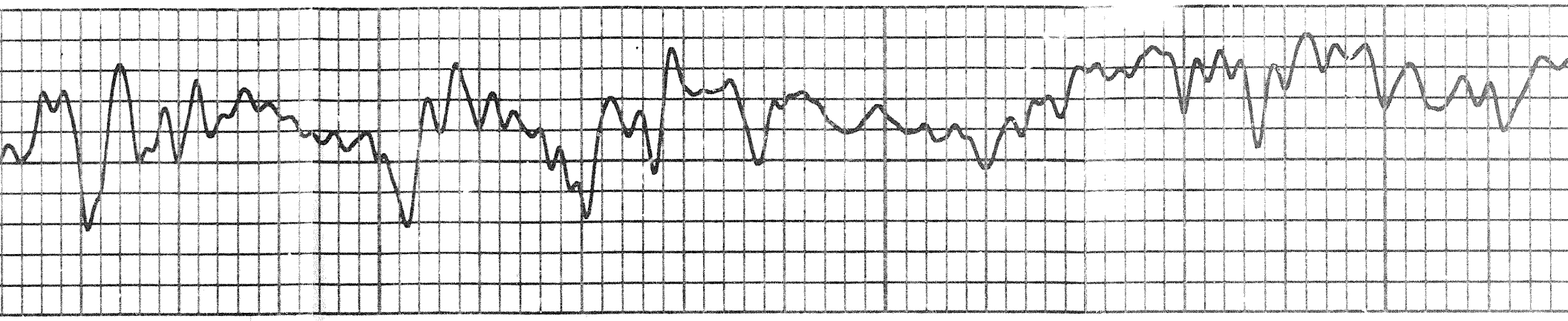
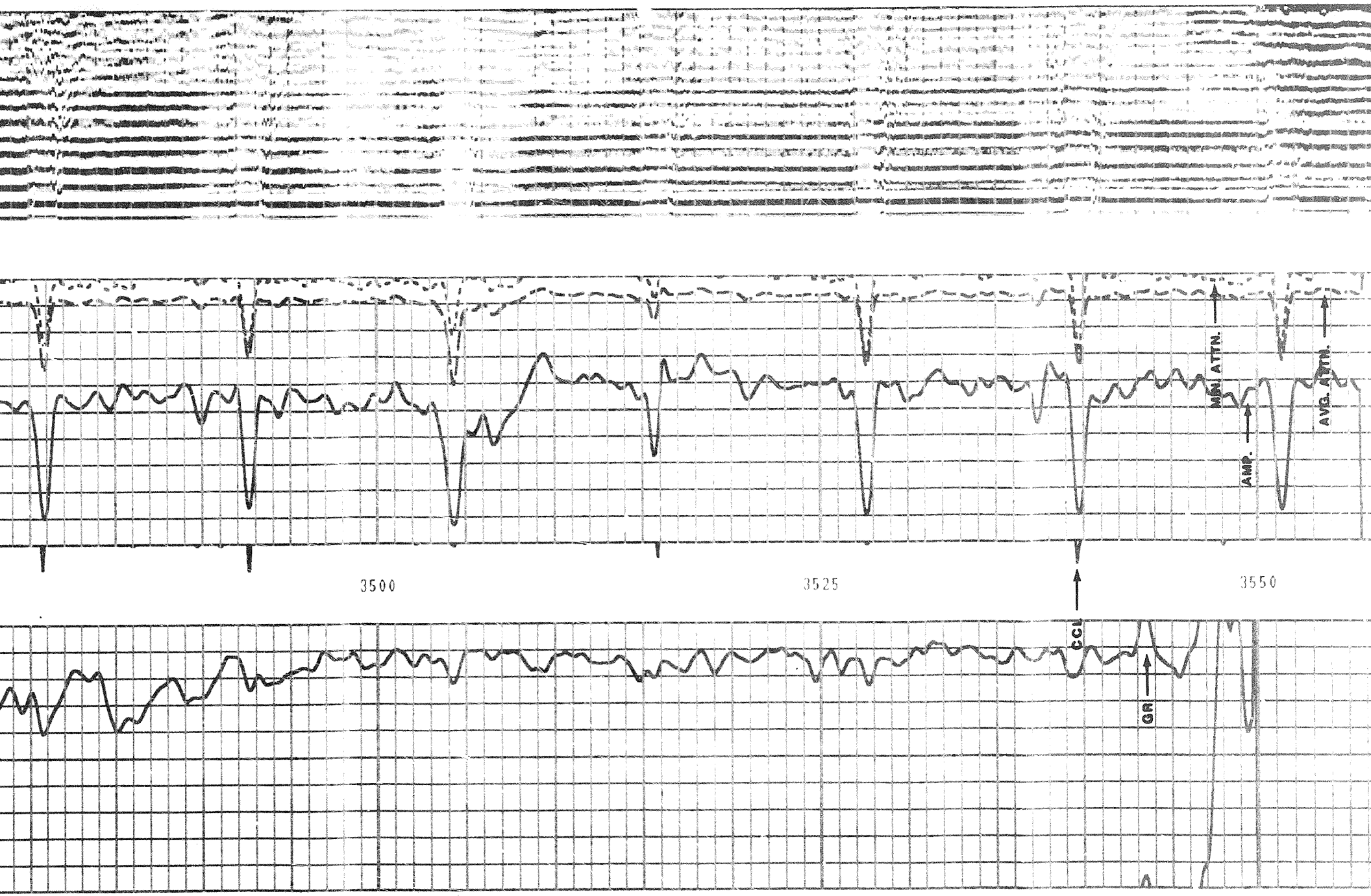
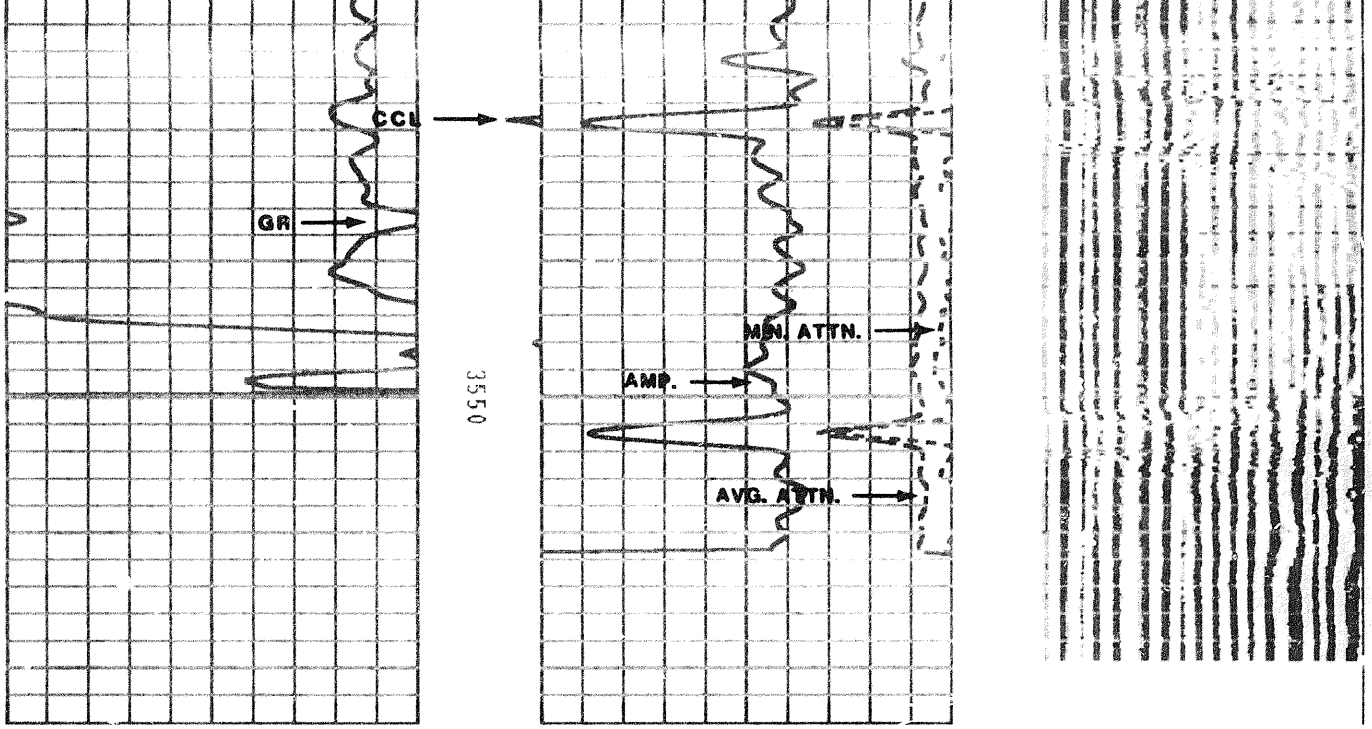



MN. ATTN.
AMP.
AVG. ATTN.
3500
3525
3550
CCL
GR



AMAV (MV)

0 100

ATMN (DB/FT)

20 0

ATAV (DB/FT)

20 0

GR (API) CCL

0 150 1000

FILE: 3

****

60-10-124-00/RE

~~9111-C8-3-1~~

Schlumberger

COMPLETION RECORD

COMPANY	COLUMBIA GAS DEVELOPMENT CO. LTD.
WELL	COLUMBIA ET AL KOTANEELEE Y.T. I-48
FIELD	KOTANEELEE
PROVINCE	YUKON
RIG	KENTING #7

PROVINCE: YUKON
FIELD: KOTANEELEE
LOCATION: COLUMBIA ET AL KOTANEELEE Y.T.
WELL: COLUMBIA ET AL KOTANEELEE Y.T.
COMPANY: COLUMBIA GAS DEVELOPMENT CO.

LOCATION: 60 07'35.917"N 124 07'36.45"N

FINAL LOG

API SERIAL NO.	SECT.	TWP.	RANGE

Other Services:
DDL
GAUGE R. & J
PLUG
CEMENT
PACKER
CIS

Permanent Datum	Ground Level	Elev.	851.7 M	Elev.: K.B.859.3 M
Log Measured From	Kelly Bushing	7.6 M	above Perm. Datum	D.F.
Drilling Measured From	Kelly Bushing			G.L.851.7 M

Date	17-MAY-1991		17-MAY-1991	
Run No.	PLUG		PACKER	
Depth Driller	4450.0 M		4450.0 M	
Depth Logger (Schl.)	3335.0 M		3271.4 M	
Btm. Log Interval	3325.0 M		3271.4 M	
Top Log Interval	3232.0 M		3217.0 M	
Type Fluid in Hole	DRILLING MUD			
Salinity NaCl				
Density	1190. K/M3			
Fluid Level	0.0 M			
Max. Rec. Temp.				
Deviation				
Logger on Bottom	00:30 17-MAY-1991		12:49 17-MAY-1991	
Equip. / Location	323	FRONTIER		
Recorded By	PAUL MANNING			
Witnessed By	HAROLD RUGG			

NATIONAL ENERGY BOARD
ENGINEERING BRANCH
OCT 1 8 1991

BOREHOLE RECORD

Bit Size	SURFACE	INTER.	INTER.	PRODUCTION
Depth				

CASING & TUBING RECORD

Size	540 MM	339 MM	244.5 MM	177.8 MM
Weight	140.000 KG/M	107.100 KG/M	69.9000 KG/M	43.1000 KG/M
Casing Top-Driller	0.0 M	0.0 M	0.0 M	0.0 M
Casing Top-Logger				
Casing Shoe-Driller	216.0 M	1052.0 M	3265.0 M	4428.0 M
Casing Shoe-Logger				

The well name, location and borehole reference data were furnished by the customer.

Run No.	PLUG	PACKER
Service Order No.	242159	242159
Logging Speed	550.0 M/HR	550.0 M/HR

EQUIPMENT DATA

Tool Number 1	PLUG	PACKER
Tool Number 2	CAL-B 2459	CAL-B 2459
Tool Number 3	SHM-AA 508	SHM-AA 508
Tool Number 4		
Tool Number 5		
Tool Number 6		
Tool Number 7		
Tool Number 8		
Tool Number 9		
Tool Number 10		
Tool Number 11		
Tool Number 12		

REMARKS:

Correlated to Lee Tool Gamma Ray Perforating Record dated 30-OCT-1990.
Run #1 : Collar log with 5.961" gauge ring and junk basket.
Run #2 : 177.8 mm Baker Model S Bridge Plug set at 3331.0 mK
Run #3 : Two cement dump bailer runs to set 8 m cement plug.
Run #4 : 5.961" gauge ring and junk basket.
Run #5 : Whipstock packer set at 3271.4 mKB

Record dated 30-OCT-1990.
Run #1 : Collar log with 5.961" gauge ring and junk basket.
Run #2 : 177.8 mm Baker Model S Bridge Plug set at 3331.0 mK
Run #3 : Two cement dump bailer runs to set 8 m cement plug.
Run #4 : 5.961 " gauge ring and junk basket.
Run #5 : Whipstock packer set at 3271.4 mKB
Run #6 : Run Sperry Sun tools.

PLUG-PACKER SUMMARY

DESCENT: 2 — 17 MAY 91

TYPE: PLUG — PRESSURE RATING: 101 KPAA

SIZE: 177.8 MM

DEVICE	STATUS	TOOL ZERO	TOP OF DEVICE	TIME
	SET	3333.8 m	3331.0 m	01:04

CP 32.4 FILE 6 17-MAY-1991 01:33 (UP)

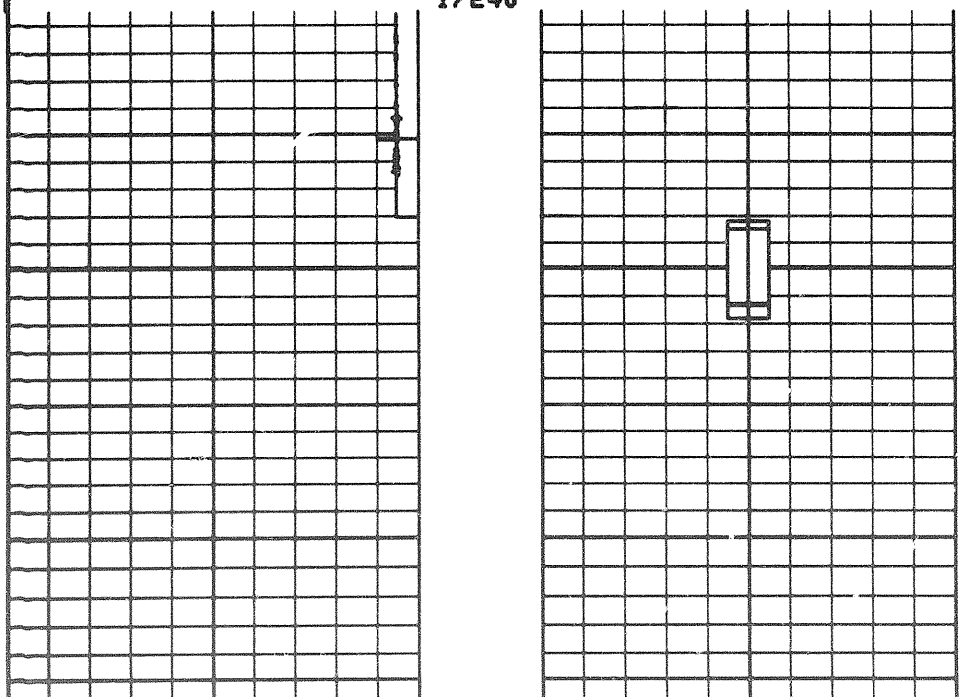
CHANGED PARAMETERS

NAME	VALUE	UNIT	DEPTH (M)	NAME	VALUE	UNIT	DEPTH (M)
CSIZ	139.700	MM	3311.8	CSIZ	177.800	MM	3223.3

CCL	
-10.00 1.0000	
CCL	

CP 32.4 FILE 6 17-MAY-1991 01:32 (UP)

1/240



PLUG
177.8 MM
SET
2.8 M FROM CCL
TO TOP OF PLUG

3333.8 m ZERO (CCL)

3331.0 m PLUG DEPTH

1/240

CP 32.4 FILE 6 17-MAY-1991 01:30 (UP)

CCL	
CCL -19.00 1.0000	

SENSOR MEASURE POINT TO TOOL ZERO

CCL 0.0 METER
SCCL 0.0 METER
TENS 0.0 METER

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
SDC	0.0	M	BS	200.000	MM
BHS	CASE		CSIZ	177.800	MM

AFTER SETTING PLUG CORRELATION LOG

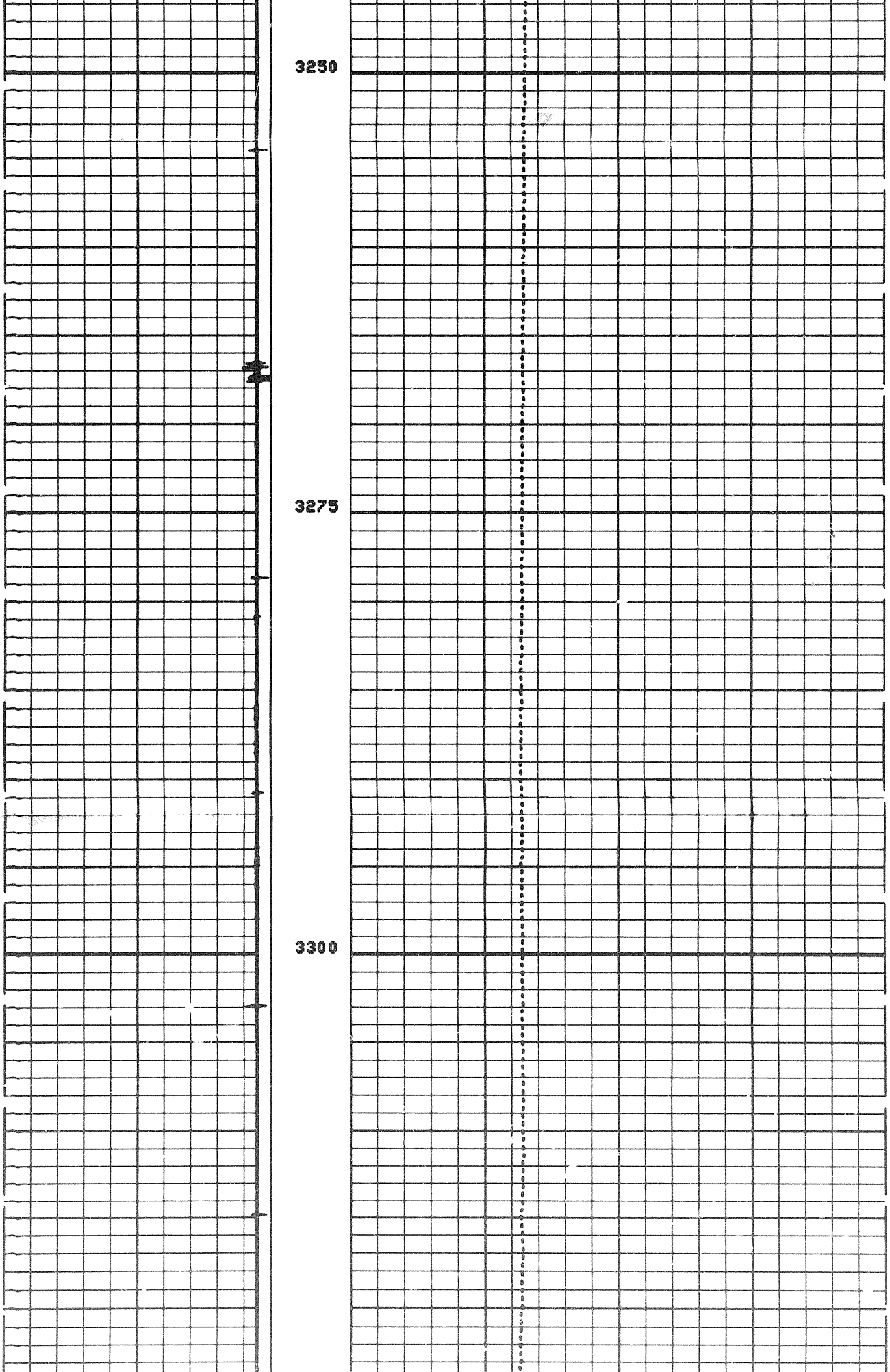
CSU

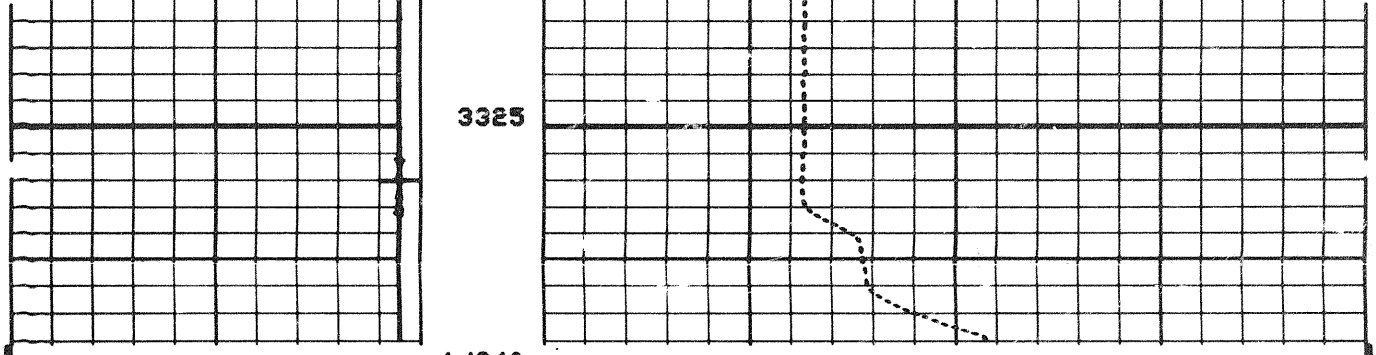
CCL		TENS(LBF)
-19.00 1.0000		5000.0 0.0

CP 32.4 FILE 4 17-MAY-1991 14:45

INPUT FILE(S) DATA ACQUIRED
5

1/240


3250
3275
3300



1/240

CP 32.4 FILE 4 17-MAY-1991 14:45

INPUT FILE(S) DATA ACQUIRED
5

CCL		TEN$(LBF)	
-19.00	1.0000	5000.0	0.0

PLUG-PACKER SUMMARY

DESCENT: 5 17 MAY 91

TYPE: PACKER PRESSURE RATING: 101 KPAA

SIZE: 177.8 MM

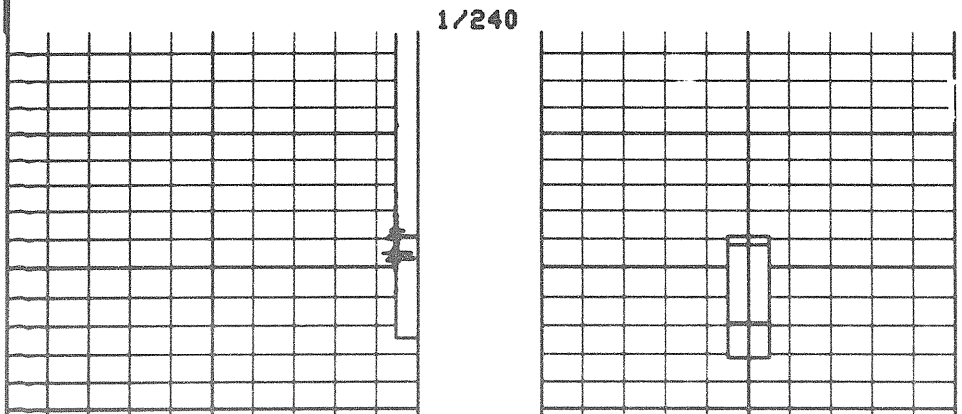
DEVICE	STATUS	TOOL ZERO	TOP OF DEVICE	TIME
	SET	3274.1m	3271.4m	13:02

CP 32.4 FILE 9 17-MAY-1991 13:25 (UP)

CCL	
-19.00	1.0000
CCL	

CP 32.4 FILE 9 17-MAY-1991 13:24 (UP)

1/240

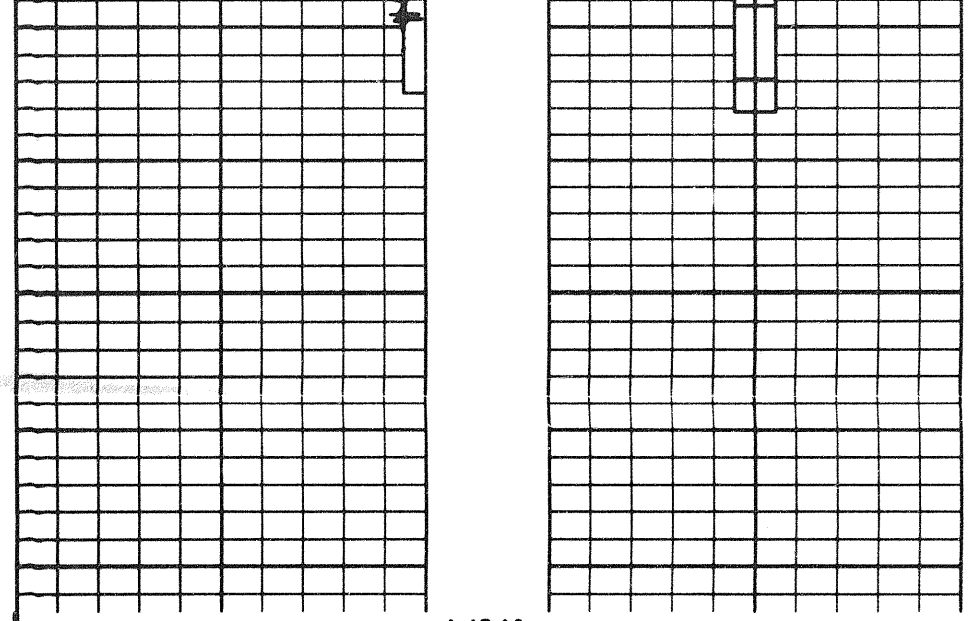


PACKER
177.8 MM
SET
2.7 M FROM CCL
TO TOP OF PACKER

3274.1 m ZERO (CCL)

3271.4m PLUG DEPTH

3271.4m PLUG DEPTH



1/240

CP 32.4 FILE 9 17-MAY-1991 13:23 (UP)

CCL	
CCL -10.00 1.0000	

AFTER SETTING PACKER CORRELATION LOG

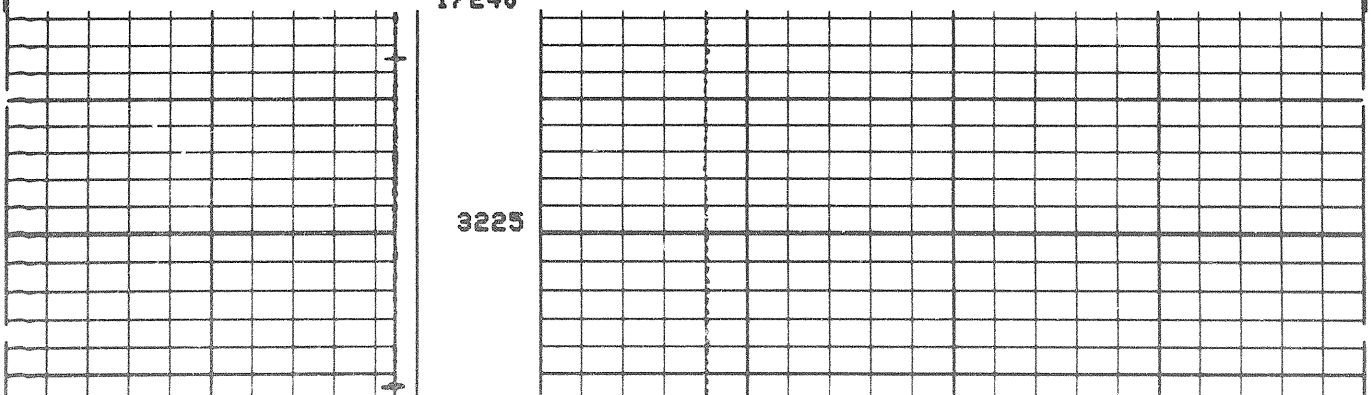
CSU

CCL -10.00 1.0000		TENS(LBF) 5000.0 0.0
CCL		

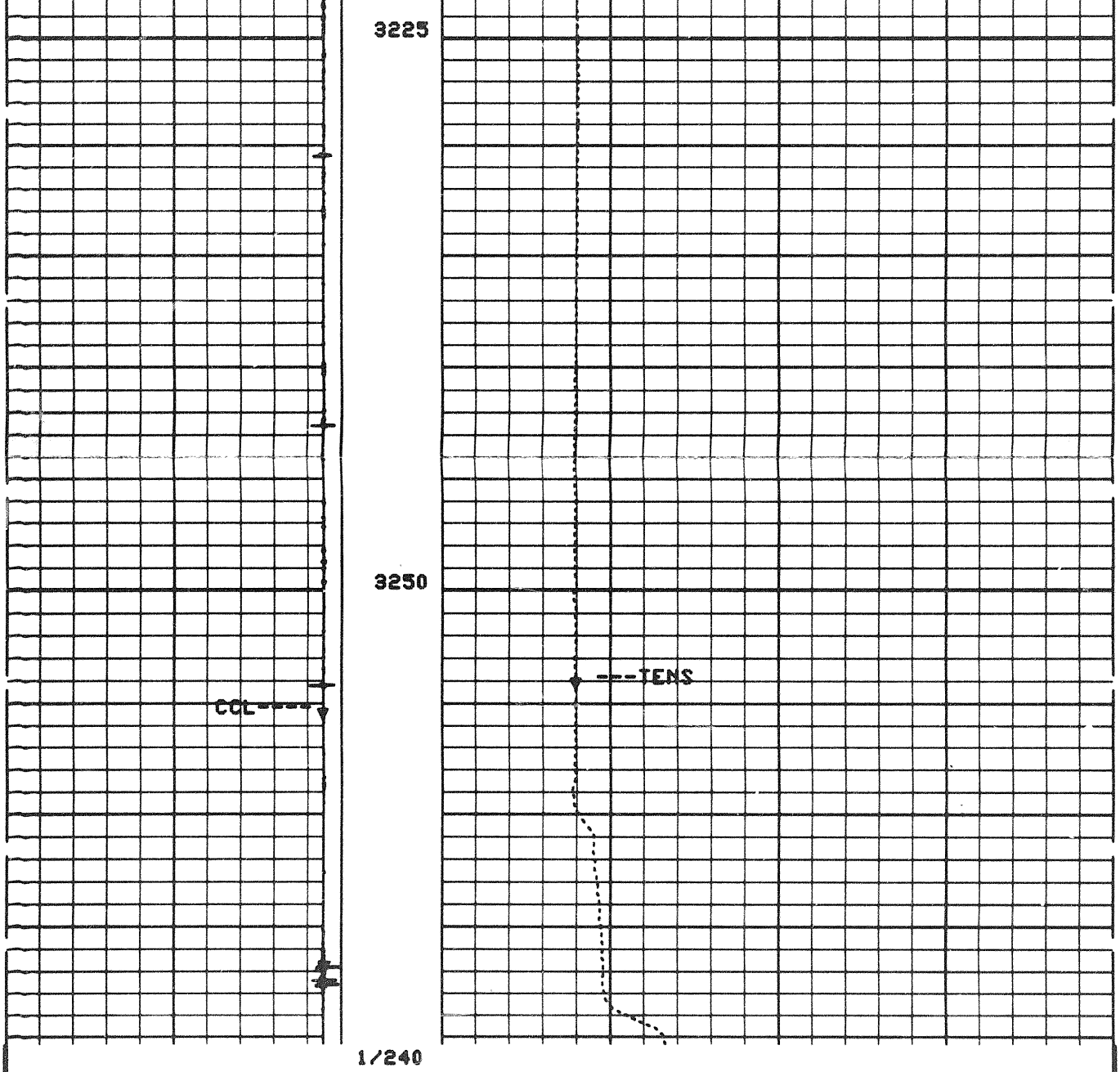
CP 32.4 FILE 1 17-MAY-1991 13:50

INPUT FILE(S) DATA ACQUIRED
8

1/240



3225



CP 32.4 FILE 1 17-MAY-1991 13:49

INPUT FILE(S) DATA ACQUIRED
8

CCL	
CCL	TENS(LBF)
-19.00 1.0000	5000.0 0.0

DEPTH DETERMINATION LOG

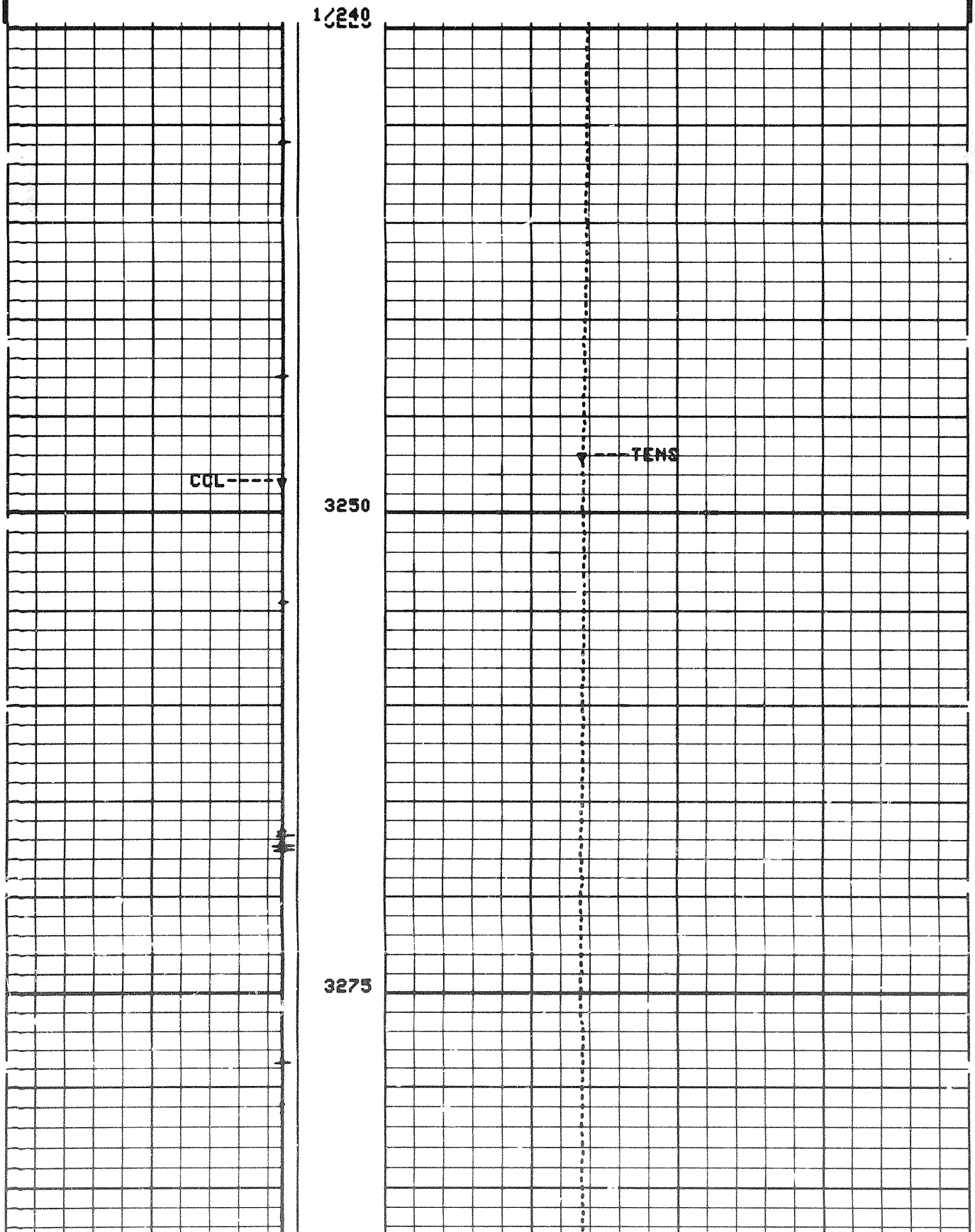
CSU

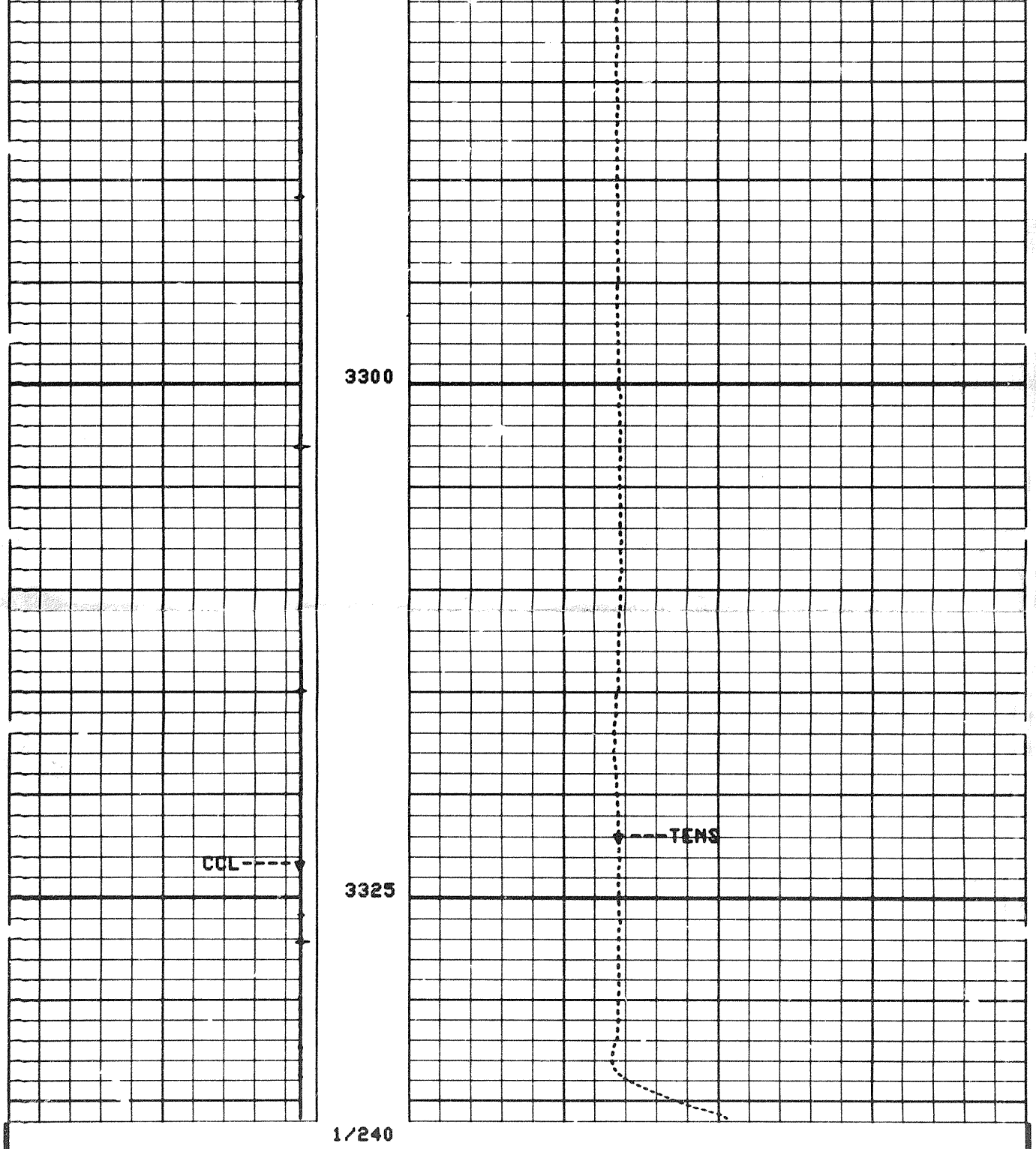
CCL	TENS(LBF)
-19.00 1.0000	5000.0 0.0

CCL		TENS(LBF)
-19.00	1.0000	5000.0 0.0

CP 32.4 FILE 2 17-MAY-1991 14:24

INPUT FILE(S) DATA ACQUIRED
2





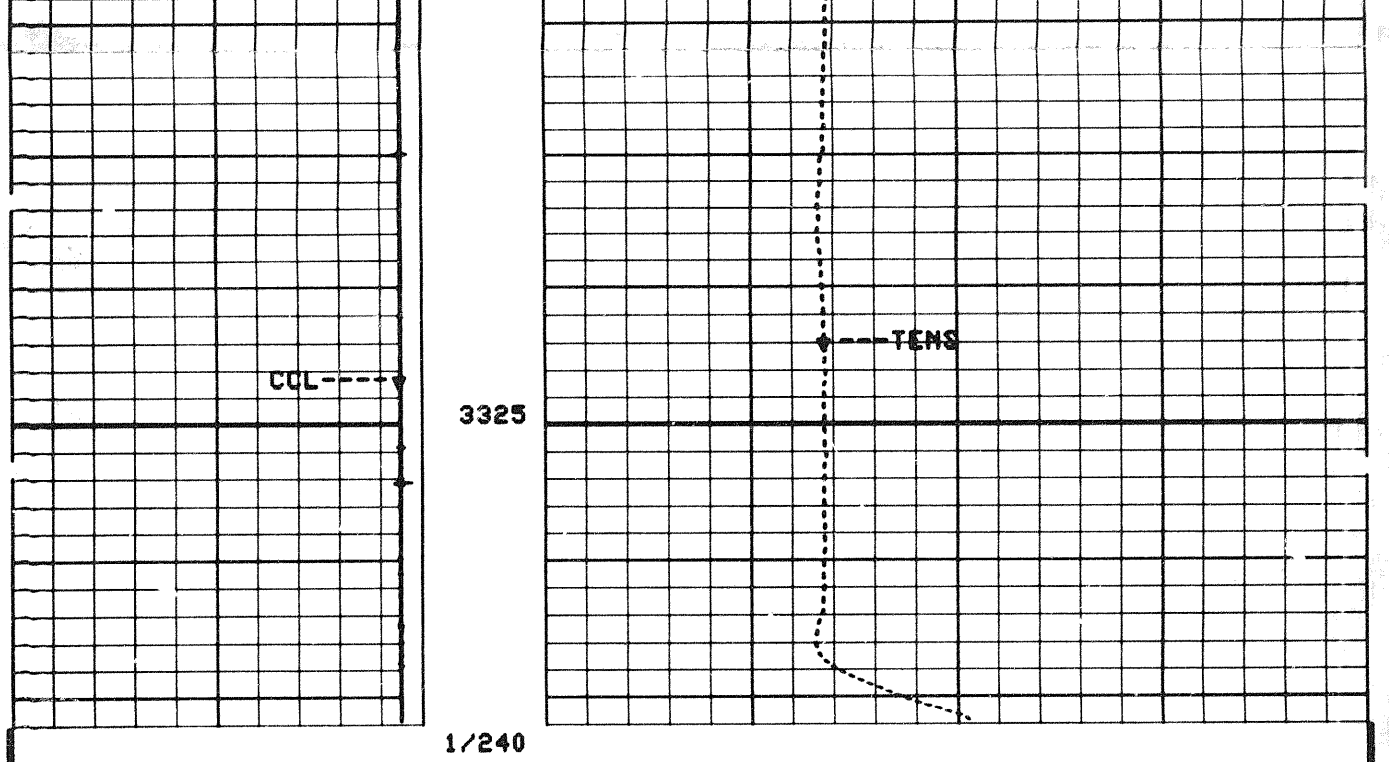
CP 32.4 FILE 2 17-MAY-1991 14:23

INPUT FILE(S) DATA ACQUIRED
2

CCL		TENS(LBF)	
-19.00	1.0000	5000.0	0.0

COMPANY	COLUMBIA GAS DEVELOPMENT CO. LTD.			SCHL.	FR	3325.0 M
				SCHL.	TD	3335.0 M
WELL	COLUMBIA ET AL KOTANEELEE Y.T. I-48			DRLR.	TD	4450.0 M
				Elev:	KB	859.3 M
FIELD	KOTANEELEE				DF	
PROVINCE	YUKON	RIG	KENTING #7		GL	851.7 M

COMPLETION RECORD



CP 32.4 FILE 2 17-MAY-1991 14:23

INPUT FILE(S) DATA ACQUIRED
2

CCL		TENS(LBF)	
-19.00	1.0000	5000.0	0.0

COMPANY	COLUMBIA GAS DEVELOPMENT CO. LTD.			SCHL. FR	3325.0 M
				SCHL. TD	3335.0 M
WELL	COLUMBIA ET AL KOTANEELEE Y.T. I-48			DRLR. TD	4450.0 M
				Elev: KB	859.3 M
FIELD	KOTANEELEE			DF	
PROVINCE	YUKON	RIG	KENTING #7	GL	851.7 M

Schlumberger

COMPLETION RECORD