

INDIAN RESERVATION

SACATON MOUNTAINS

387

93

187

1567

1545

1533

19

20

21

22

23

150

1496

1508

1528

27

26

25

30

29

28

27

26

1427

1437

1470

1456

1462

1447

1467

1470

34

35

36

31

32

33

34

35

1379

1394

1403

1401

BM 1419

1426

1435

*Rough Log furnished by ASER
© ASER says "mineralized hole!"*

HEINRICH'S GEOEXPLORATION CO.
Phone: (Area 602) 623-0578
(Cable: GEOEX)
BOX 5964 - TUCSON, ARIZONA 85763

RESERVE

SACATON ROAD

Nunez

BM 1224

1400

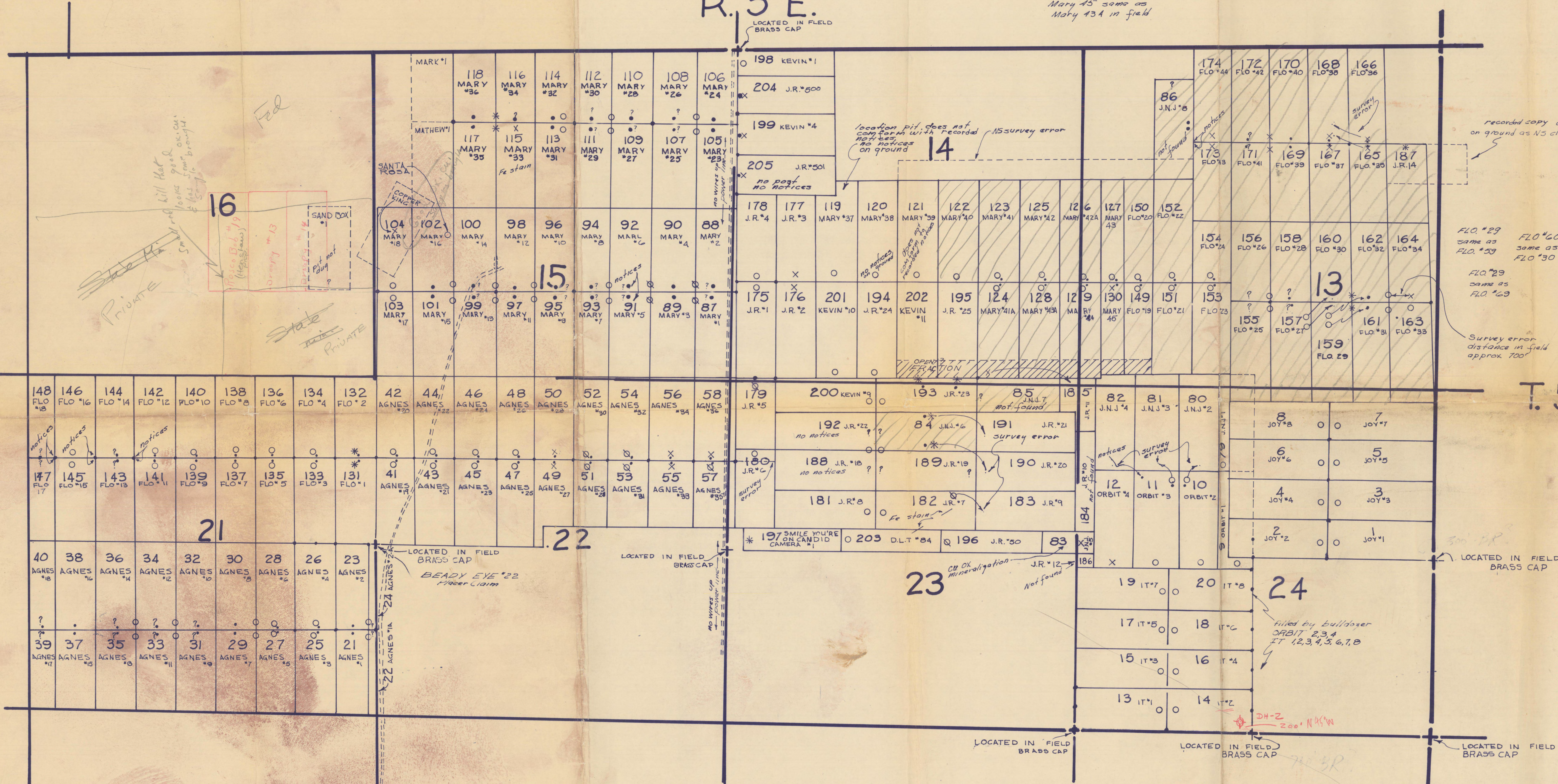
R. 5 E.

Mary 45 same as Mary 43A in field

R. 5 E.

T. 6 S.

T. 5 S.



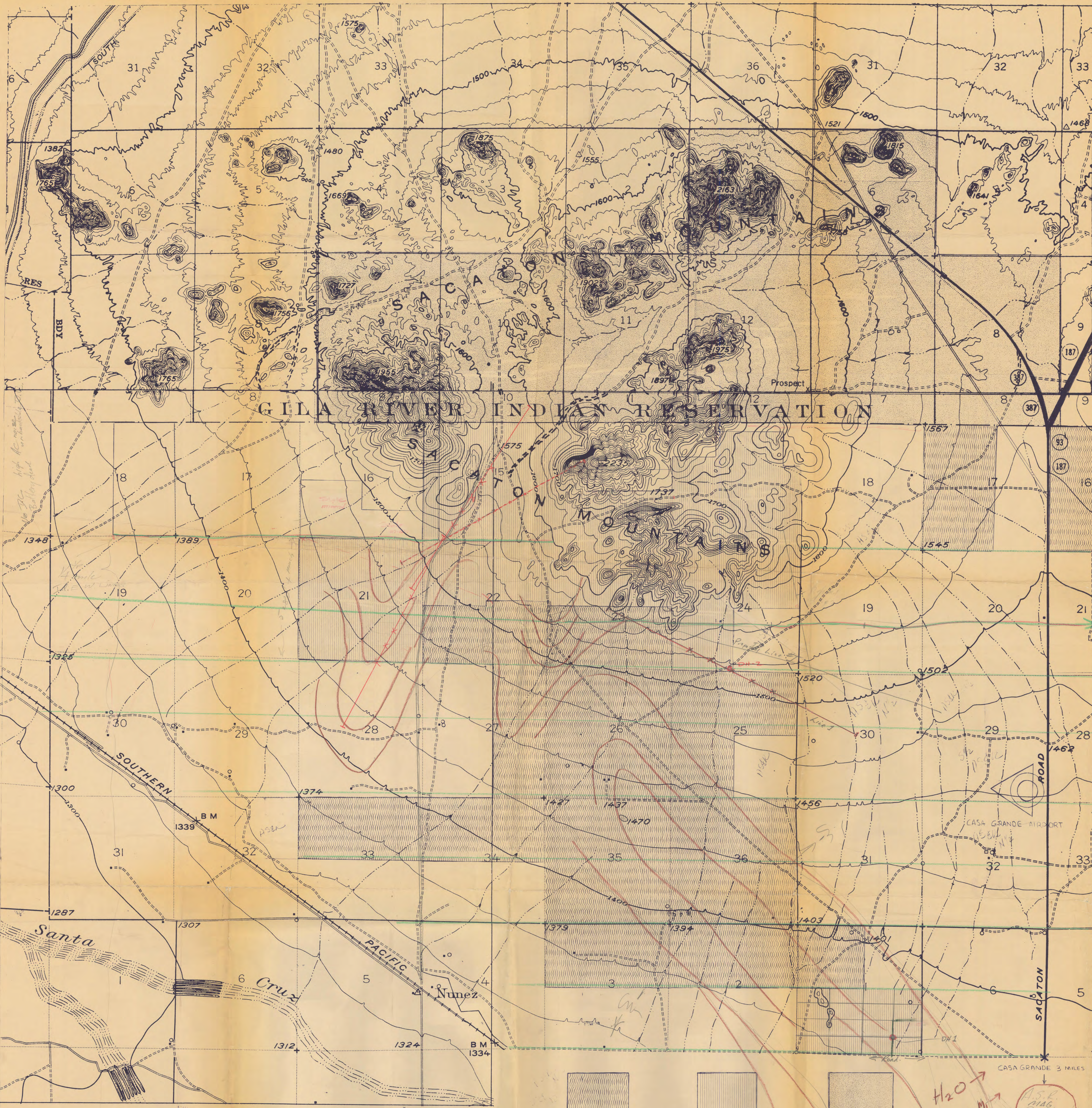
EXPLANATION

- O — PIT LOCATED LEGAL DIMENSION
- — PIT LOCATED IN BEDROCK LEGAL DIMENSION
- * — PIT LOCATED IN ALLUVIUM INSUFFICIENT DEPTH
- X — PIT LOCATED IN BEDROCK INSUFFICIENT DEPTH
- BOUNDARY APPROXIMATE
- POST RECOVERED IN FIELD

HEINRICH'S GEOEXPLORATION COMPANY P.O. Box 5671 Tucson, Arizona		
CLAIM VALIDITY FOR MINERALS EXPLORATION COMPANY		
SACATON PROJECT PINAL COUNTY, ARIZONA		
SCALE: 1" = 780	CONTOUR INTERVAL:	REVISIONS
DATE: JULY 1963	DATA BY: E.G.H.	
DRAWN BY: G.D.P.	SHEET OF	FILE:
	DRAWING NO.:	

Claims located after Sept. 1, 1962 Total 39 claims.

Field Copy



GILA RIVER INDIAN RESERVATION

CONTOUR INTERVAL @ 25 FEET
 SCALE
 1/4 1/8 0 1/4 1/2 3/4 1
 1 INCH TO 1/4 MILE
 4 INCH TO 1 MILE
 (ASR I.P.)
 Gravit Inls (ASR)
 2 MM

AMERICAN SMELTING AND REFINING CO. CLAIMED AREA. BESSUL MINING AND DEVELOPMENT

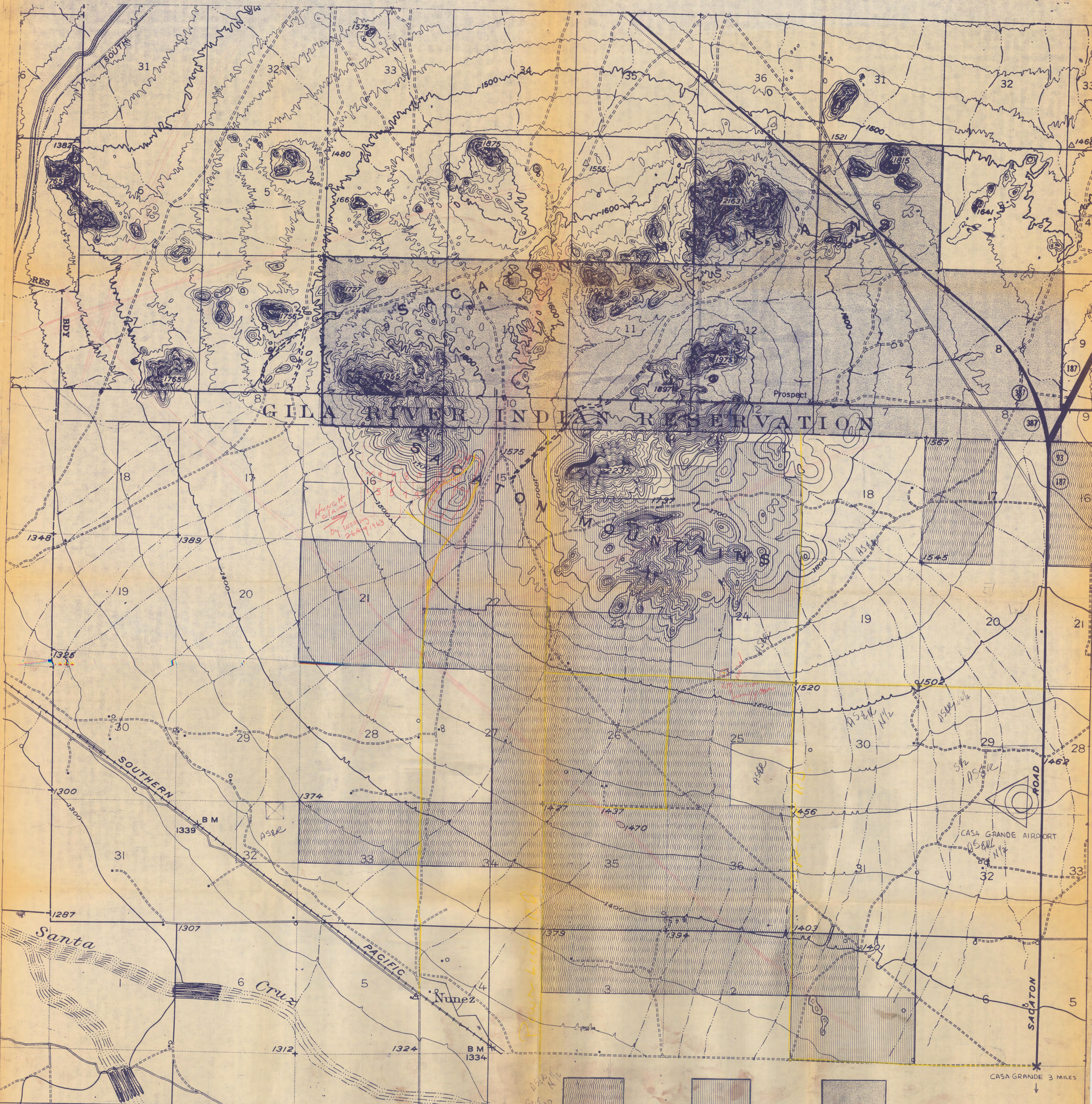
ASR I.P. NIAG GRAVITY I.P.

NO H₂O H₂O →

← H₂O

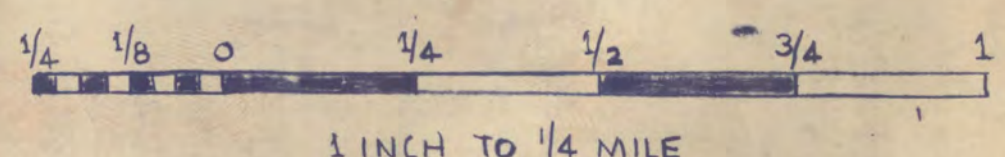
CASA GRANDE 3 MILES

BY J.L. SULLIVAN - AUGUST 1962



CONTOUR INTERVAL @ 25 FEET

SCALE



TRUE NORTH
MAGNETIC NORTH
DECLINATION

AMERICAN SMELTING AND REFINING CO. CLAIMED AREA. BESSUL MINING AND DEVELOPMENT CO.

LF

DOC- 1

PAGE- 423

LF

DOC- 1

PAGE- 424

LF

DOC- 1

PAGE- 425

Use for only
one type of film

Responsibility for loss
or damage limited to
cost of film before exposure

STORE
NO.

DATE

PHONE

NAME

Herricks

*Call when ready
m - 24202*

ADDRESS

CHECK FILM



BLACK
AND
WHITE

KODACOLOR

KODACHROME

EKTACHROME

OTHER

COLOR PRINT
FROM SLIDE

DEVELOP
AND
PRINT
ORDERS

FILM SIZE

NO. OF ROLLS

NO. OF PRINTS
FROM EACH NEG.

REPRINT
ORDERS

NO. OF NEGATIVES
OR SLIDES

NO. OF PRINTS FROM
EACH SLIDE OR NEG.

ENLARGEMENT SIZE

INSTRUCTIONS

*Call when thru 12/45
with transparencies*



PRINTS
MADE

▼ PRICE ▼

DEV.

PRINT

TOTAL

TAX

TOTAL

5 40

COLOR CLASSICS
2713 N. CAMPBELL AVE.
TUCSON, ARIZ.

J700



**Don't put the camera away
when the sun goes down—**

get the snapshots you want—with flash! Always keep flashbulbs handy for those indoor shots you don't want to miss. They can be the very best pictures you've ever taken. Let us show you why—and how!

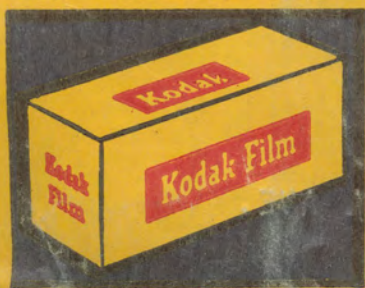
NOV 22 1963

A 364

A 353

Handwritten scribbles

Handwritten scribbles



Your Assurance of Quality

1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900

1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930

1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960

1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990

1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020

2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050





A 433





















FOR THE PICTURES ADD IT BE MYTHING LOWDOWN

100VA.2 THE DVA NOBEL MORE LITV

100VA.3 THE DVA NOBEL MORE LITV

FOR PICTURES ADD IT BE MYTHING

100VA.3 THE DVA NOBEL MORE LITV

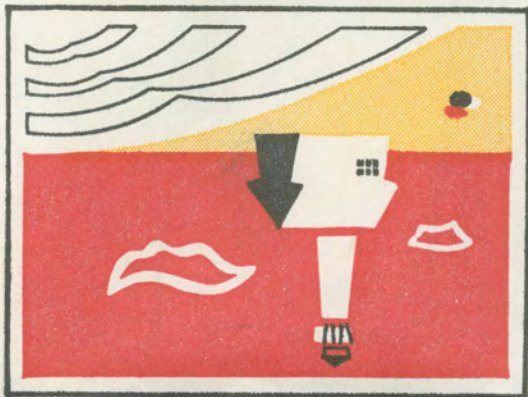
ORDER EXTRA PRINTS AND ENLARGEMENTS

Share your picture-taking pleasures with friends and family. Have extra prints—or enlargements—made of your most interesting snapshots. We'll do our part—with prompt, quality service!

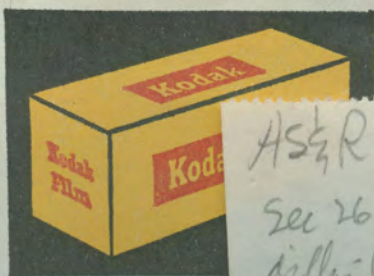
Sacaton Mts
ASHROO Project, Casaleville Dist
19 Feb 63 *Prints sent, ARIZ*

COLOR CLASSICS LABORATORIES
2713 North Campbell Avenue
TUCSON, ARIZONA

LET US MAKE THRILLING ENLARGEMENTS OF YOUR FAVORITE SNAPSHOTS



the **BETTER!**
the picture
the **BIGGER**



TODAY!
FOR THE PICT

AS $\frac{1}{2}$ R - 2/19/63
Sec 26-33 NE 3.170.
dilling (core) - 0.6 mi S =
35-1 (?)

T 55 - R 5E
dilling

arkle!

TOMORROW!









3

ASARCO - CASA GRANDE
February 1963



(2)

ASARCO - CASA GRANDE

February 1963



ASARGO - CASA GRANDE
February 1963



ASARCO - CASA GRANDE
February 1963



ASARCO - CASA GRANDE
February 1963



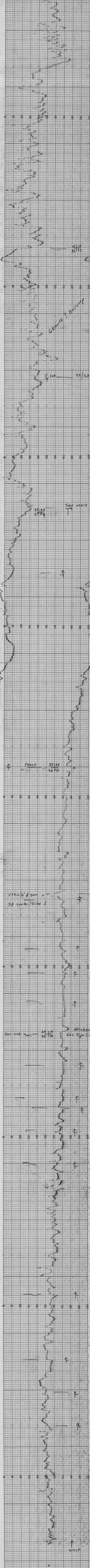
A 422

①

ASARCO - CASA GRANDE

February 1963

Reservation Boundary, Fence - 10/15/14



MO MAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORDED NO. 50 DATE Aug. 1963
 SENSITIVITY 50 GAMMAS 1/10 60
 HORIZONTAL SCALE 400 FT/M
 LOCATION SACATON MTS.
 PINAL CO., ARIZONA
 West from Sacaton Road at
 Sec. cor. 20/21 T5S, R6E to
 sec. cor. 22/33 27/26 T5S, R5E, then
 north to the northeast corner of
 sec. 15, T5S, R5E

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S. CHART NO. 17491X

Fence ¹⁰/_{15/14}

INDIANAPOLIS, IND., U.S.A. E.S.

THE ESTERLINE-ANGUS CO.

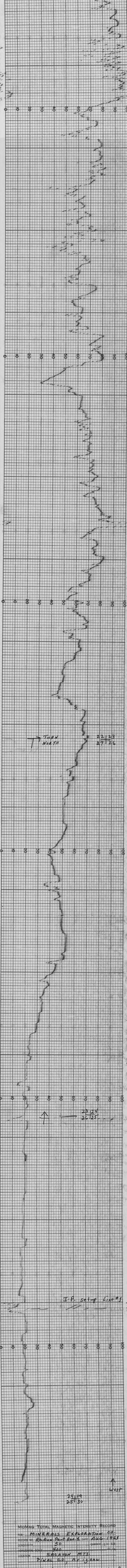
INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

MADE IN U.S.A. THE ESTERLINE-ANGUS CO.

INDIANAPOLIS, IND., U.S.A. E.S.

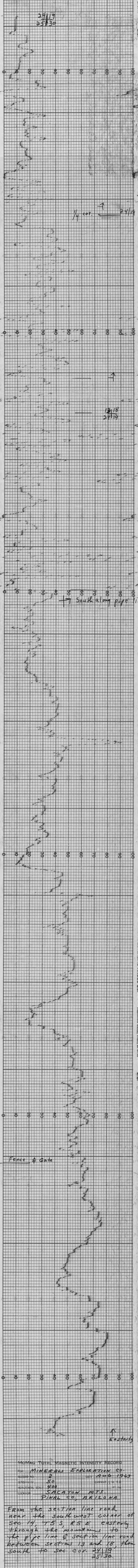
THE ESTERLINE-ANGUS CO.

INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. Re-Run Part Rec. 5 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS 1/11 SD
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SACATON MTS.
PINAL CO., ARIZONA

Rerun of Rec. No. 1 except for first portion of Rec. 1.



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 2 DATE AUG 1963
 SENSITIVITY 50 GAMMAS 1/3 IN. S.O.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SACATON MTS.
 PINAL CO., ARIZONA

From the section line road near the southwest corner of sec. 14, T5S, R5E easterly through the mountains to the pipe line & section line road between sections 13 and 18, then south to sec. cor. 24/19, 25/30

20/21 Sec. COR.
29/28

1/4 COR.

21/28

21/22
28/27

1/4 COR 22/27

↑
West

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: MINERALS EXPLORATION CO.
RECORD NO. 3 DATE AUG. 1963

SENSITIVITY 50 GAMMAS 1/2 in S.D.
HORIZONTAL SCALE 400 FT./In.

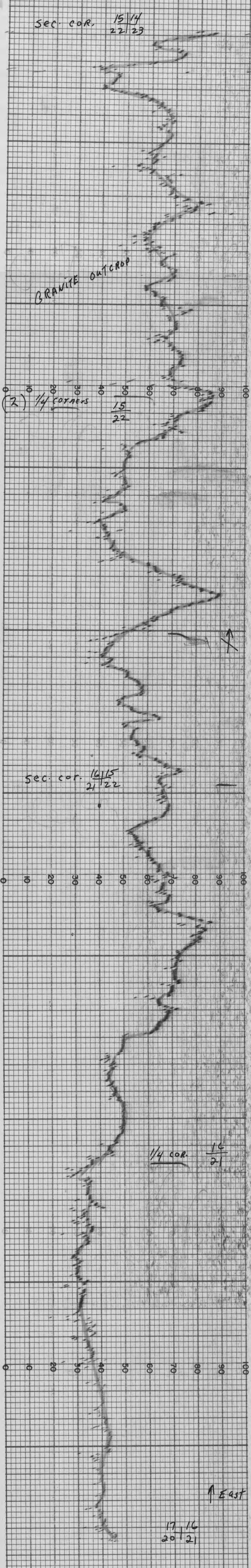
LOCATION SACATON MTS.
PINAL CO., ARIZONA

West from 22/23 to 20/21
27/26 29/28

T55, R5E

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.

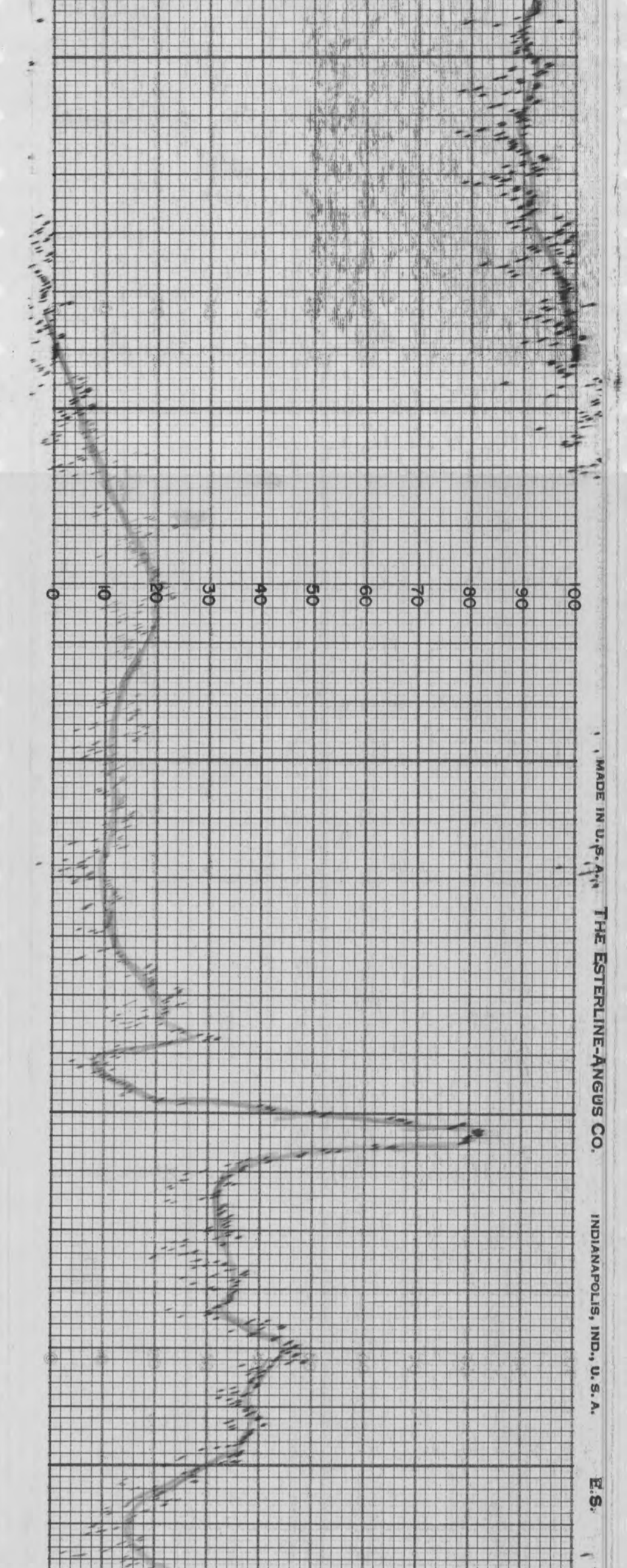
THE ESTERLINE-ANGUS



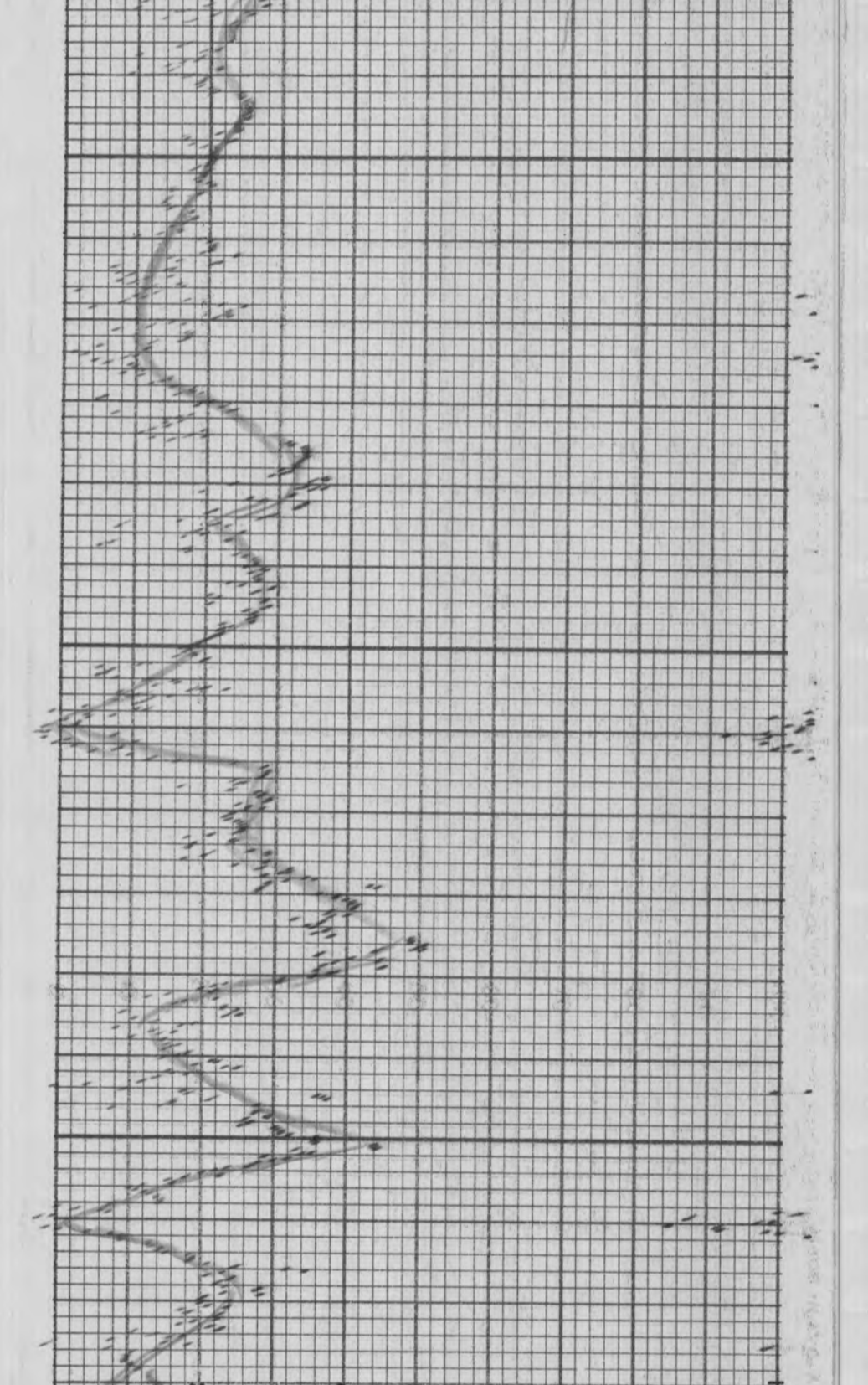
MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION Co.
 RECORD NO. 5 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS 1/3 in S.D.
 HORIZONTAL SCALE 400 FT./in.
 LOCATION SACATON MTS.
PINAL CO., ARIZONA

East from Sec. cor. 17/16 20/21 to 15/14 22/23
 T5S, R5E

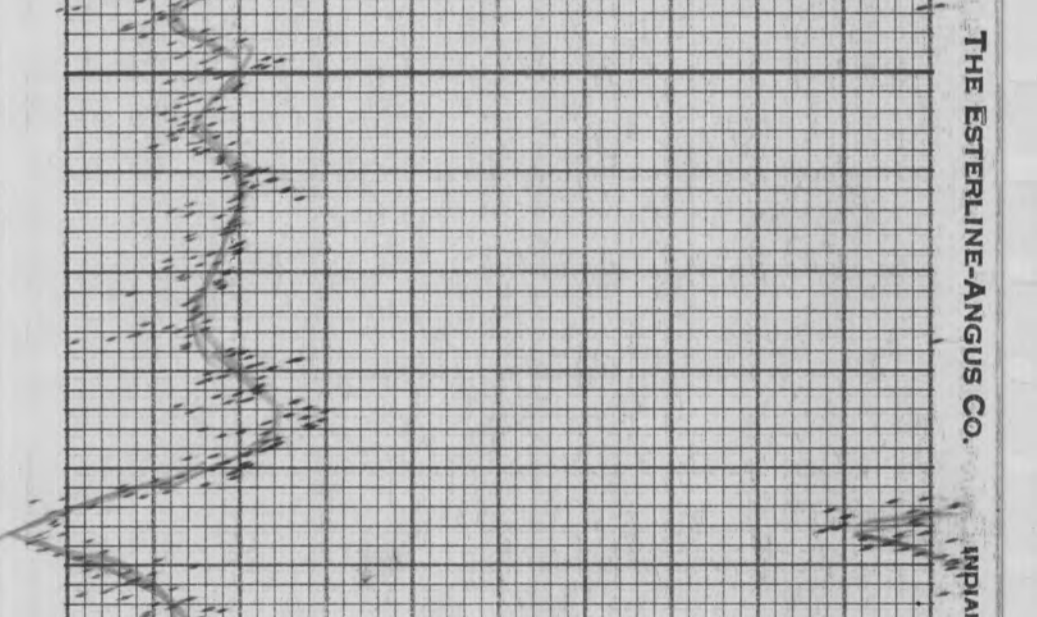
1/4 cor. 20/21



1/4 cor. 21/22



1/4 cor. 22/23



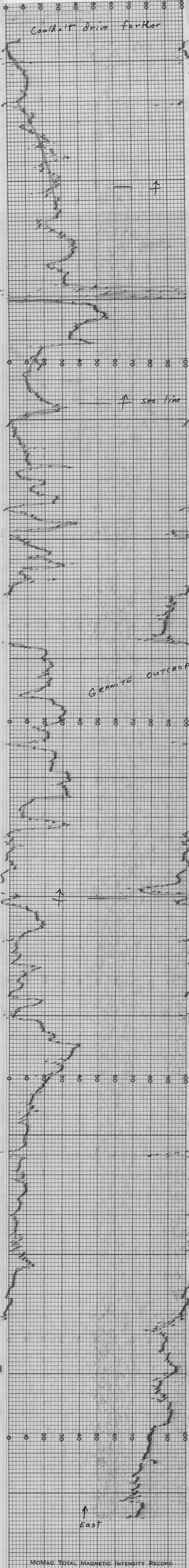
↑ west

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: MINERALS EXPLORATION CO.
 RECORD NO. 6 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS / 1/2 In. S.D.
 HORIZONTAL SCALE 400 FT./In.
 LOCATION SACATON MTS.
PINAL CO., ARIZONA

WEST from 1/4 cor 22/23 to 1/4 cor. 20/21 T55 R5E

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X



MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: MINERALS EXPLORATION CO.
 RECORD NO. 7 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS 3 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.

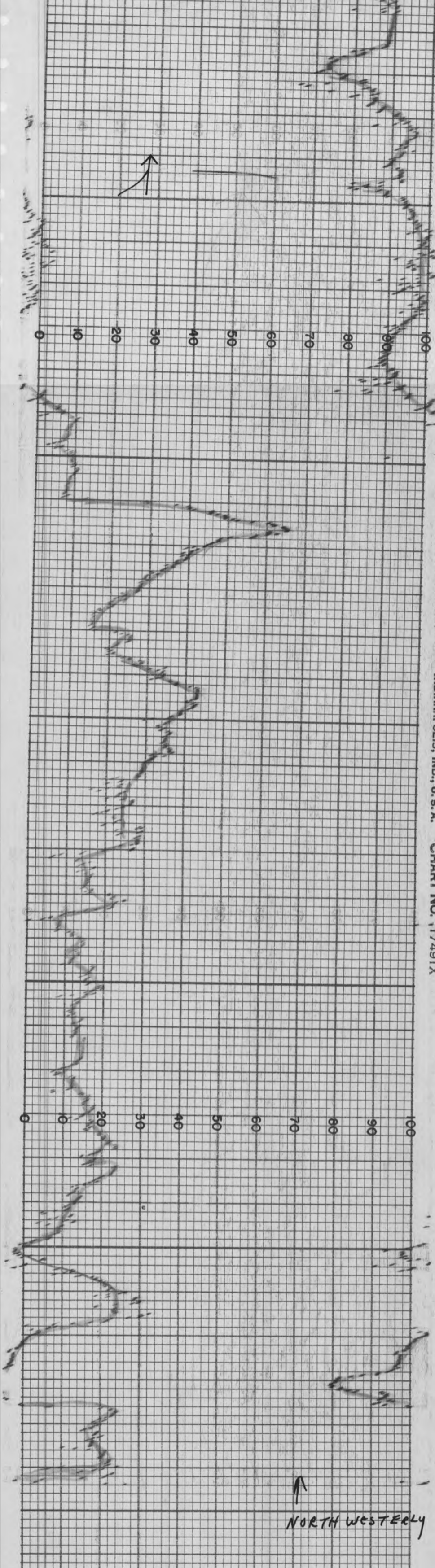
LOCATION SACATON MTS.
PINAL CO., ARIZONA

East across sections 21 & 22 T5S, R5E one quarter mile south of the north section lines and continuing about 2/3 mile into section 23 but bearing a little south of east.

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X
 MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.

Reservation boundary - fence
gate and 1/4 cor - 50.10

THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

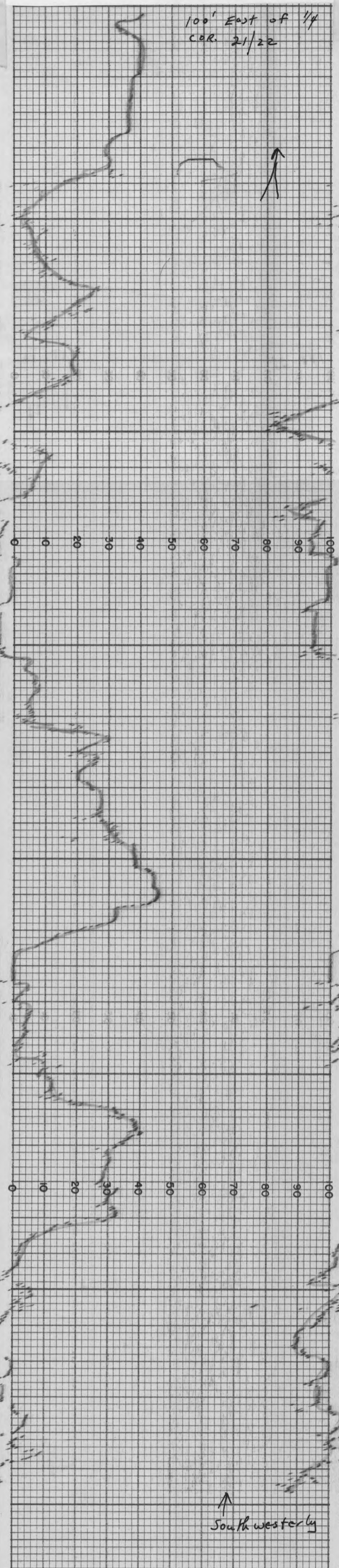


MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: MINERALS EXPLORATION CO.
 RECORD NO: 8 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS / IN. S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SACATON MTS.
PINAL CO. ARIZONA

From the section line road a little north of 1/4 sec. cor. 22/23 north westerly on an old trail to the south 1/4 of sec. 10 T5S R5E

100' East of 1/4
COR. 21/22



Southwesterly

MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION Co.
 RECORD NO. 9 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS / 1/2 in S.B.
 HORIZONTAL SCALE 400 FT / in
 LOCATION SAGATON MTS.
PIÑAL CO., ARIZONA

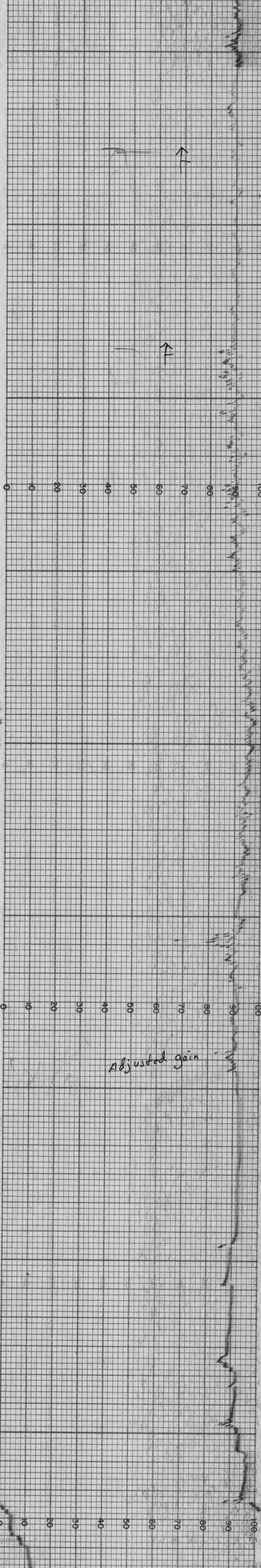
Southwest from a trail junction
in the north center to sec. 15
to 100' East of 1/4 cor. 21/22
T5S, R5E

Highway & Railroad

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

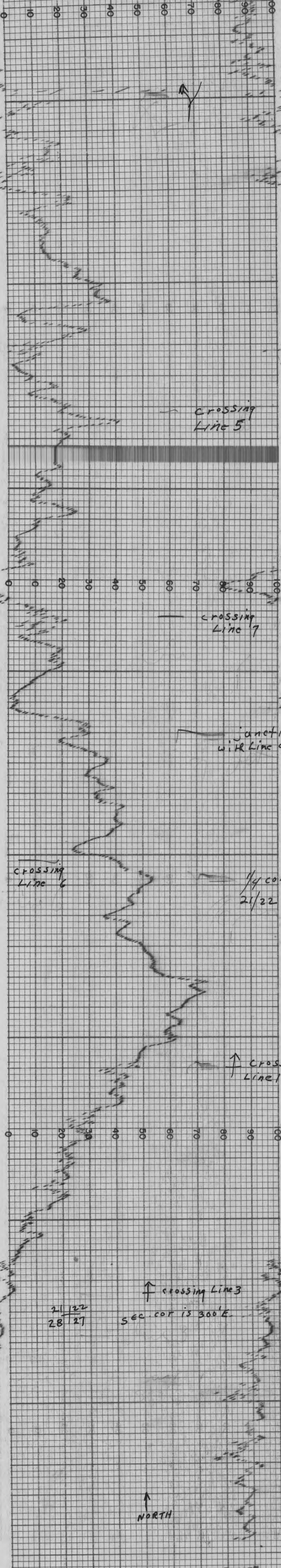
MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A.

E.S.



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 10 DATE AUG, 1963
 SENSITIVITY 50 GAMMAS 1/2 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SACATON MTS.
 PINAL CO. ARIZONA

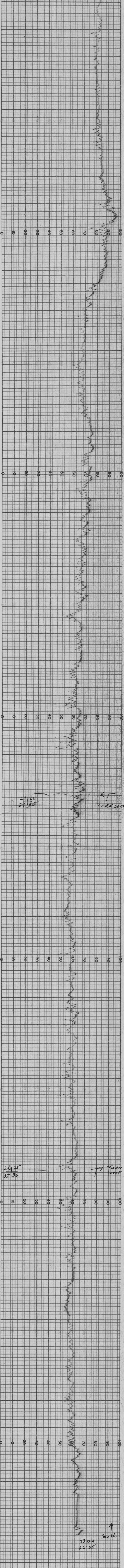
south from 1/4 cor. 21/22 T55
 R5E To highway-section 5/4
 T6S R5E.



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 11 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS 1/2 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SACATON MTS.
 PINAL CO., ARIZONA

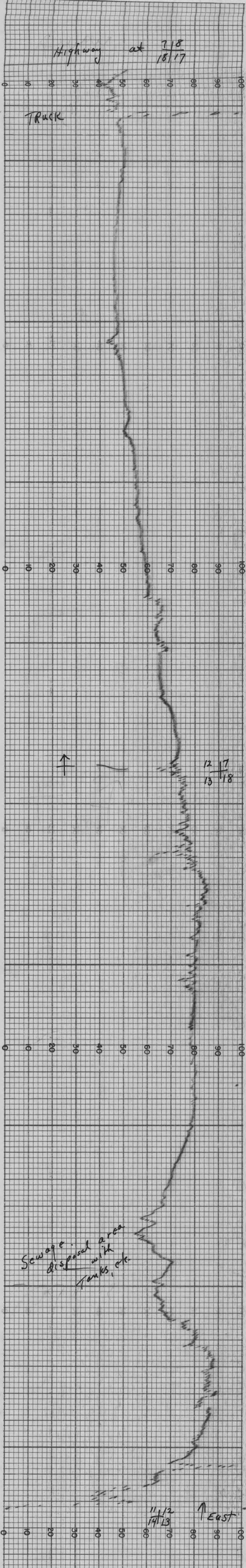
NORTH along sec. line 28/27 to repeat a portion of Rec. No. 70 then continues on the road northeasterly along flank of hills in sec. 15, T5S, R5E.

Highway & Railroad
Sec. 10



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION Co.
 RECORD NO. 13 DATE Aug. 1963
 SENSITIVITY 50 GAMMAS 1/3 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SACATON MTS.
 PINAL Co., ARIZONA

South from 23/24 26/25 T6S, R5E
 to 26/25 35/36 then west to 27/26
 then south to highway in sec. 10,
 T6S, R5E.

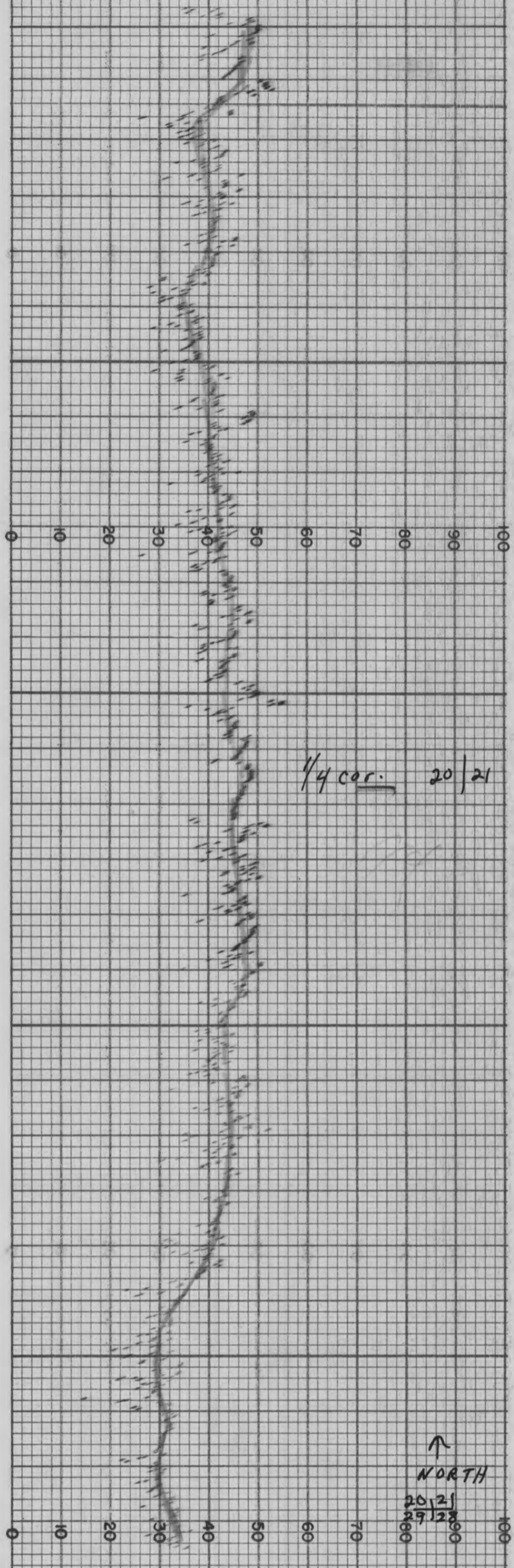


MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 14 DATE Aug. 1963
 SENSITIVITY 50 GAMMAS / 1/8 in S.D.
 HORIZONTAL SCALE 400 FT./in.
 LOCATION Sacaton MS
 PINAL CO., ARIZONA

East from section cor. 11/12 14/13
 T6S, R5E to 7/8 18/17 T6S, R6E

Sec. cor.

17/16
20/21



1/4 cor. 20/21

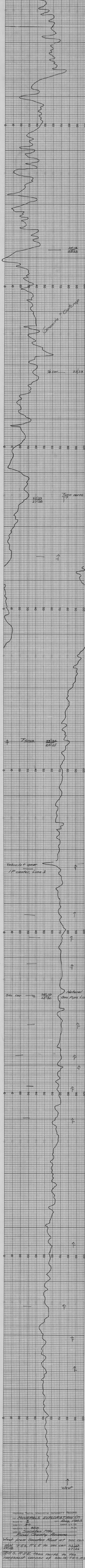
↑
NORTH

20/21
29/28

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: MINERALS EXPLORATION CO.
 RECORD NO. 4 DATE AUG. 1963
 SENSITIVITY 50 GAMMAS / 2 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION SAGATON Mts.
PINAL CO., ARIZONA

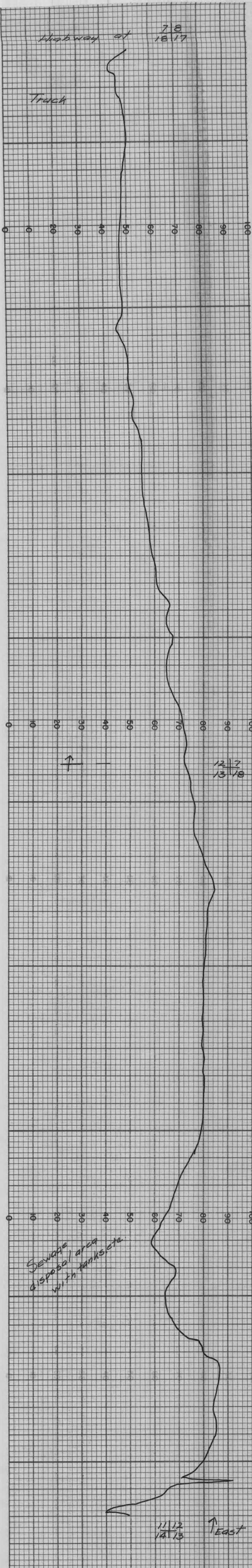
NORTH from Sec. cor. 20/21 to 17/16
29/28 20/21
 T55, R5E



MINOMAGS TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO
 RECORD NO. 2 DATE: Aug. 1963
 SENSITIVITY 50 GAMMAS 1/3 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sacaton Mts
 Pinal County, Arizona

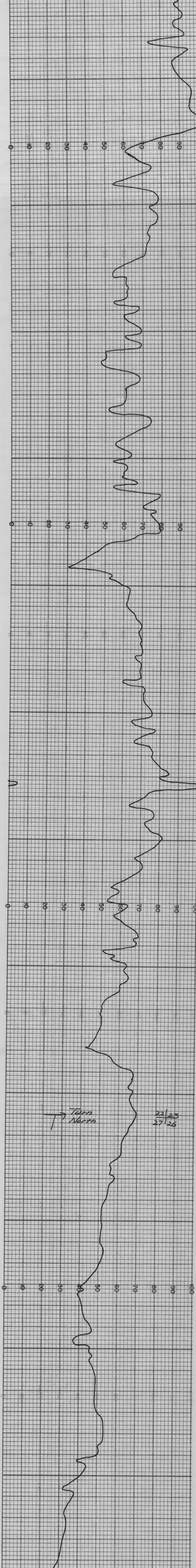
West from Sacaton Road at sec cor
 2021 T55, R6 E to sec cor 22/23
 29/28

T55, R5E, then north to the
 northeast corner of sec 15, T55, R5E



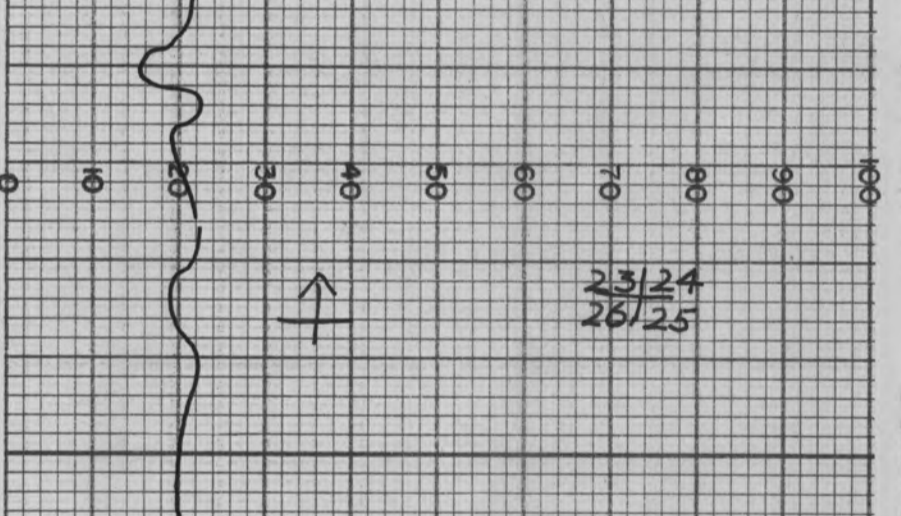
MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO
 RECORD NO. 14 DATE Aug 1963
 SENSITIVITY 50 G.M. 1/2 IN S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sacaton Mts
Pinal County, Arizona
 East from sec. cor 11 12 14 13 T65, R5E
78 18 17 T65, R6E

Fence 10
15/14

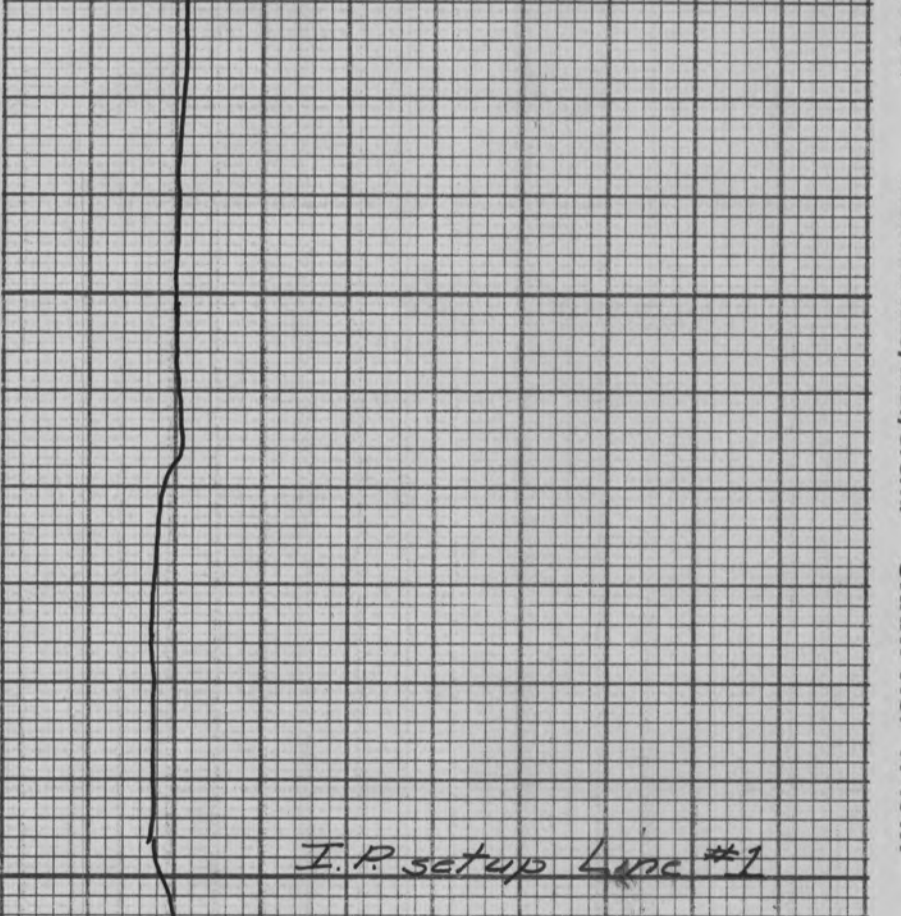


Turn North

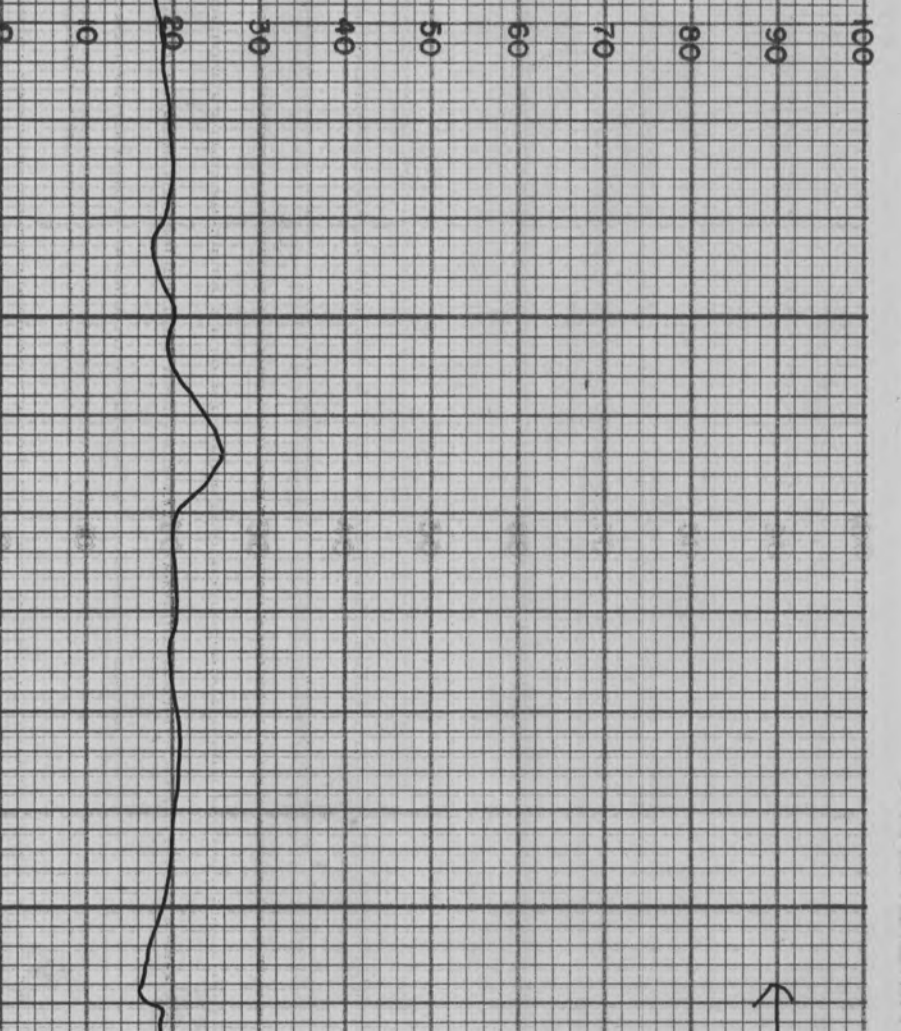
22/23
27/26



23/24
26/25



I.P. setup Line #1



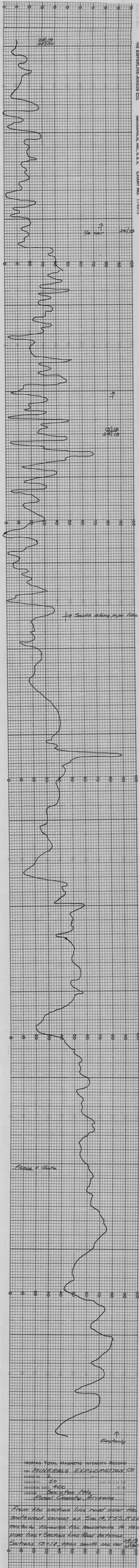
24/19
25/30

West

MEMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. Perrin Part Rec 2 DATE Aug 1963
 SENSITIVITY 50 GAMMAS / 2 in. S.D.
 HORIZONTAL SCALE 400 FT./in.
 LOCATION Sacaton Mts
Final County Arizona

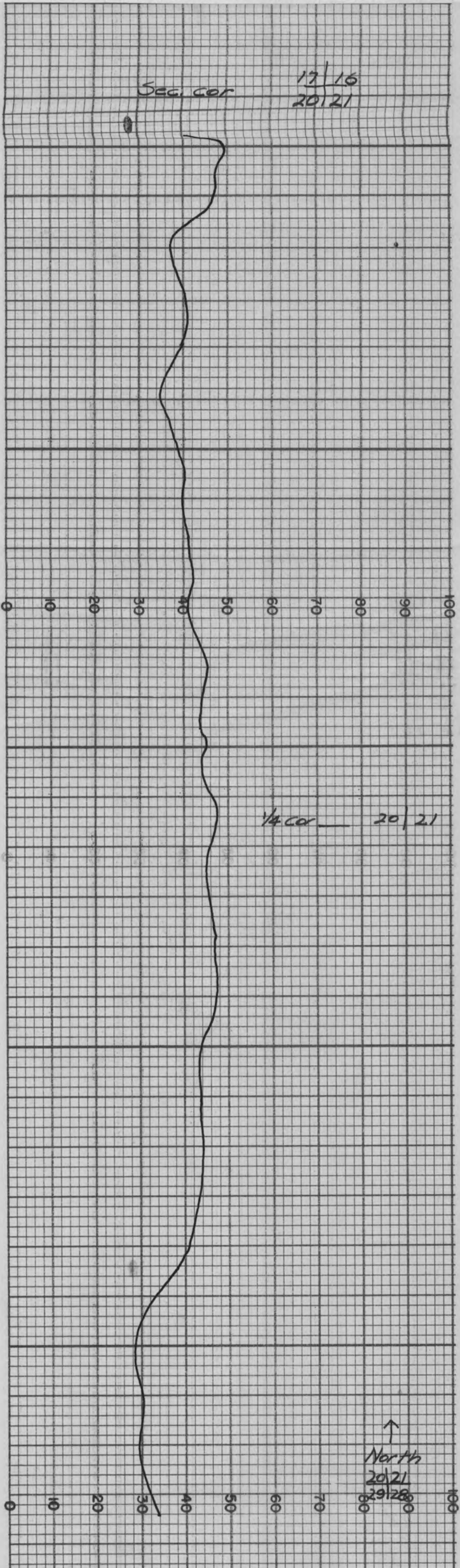
Perrin of Rec No 1, except for first portion of Rec 1

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X
 MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.



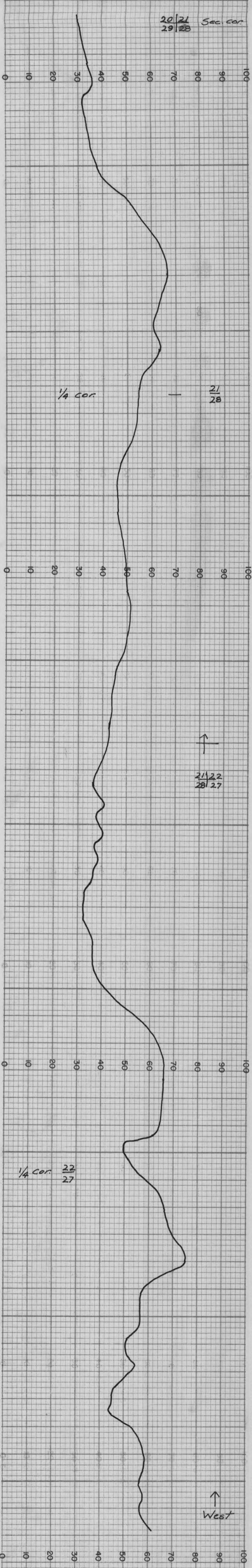
MOMAG TOTAL MAGNETIC INTENSITY RECORD
FOR: MINERALS EXPLORATION CO
RECORD NO. 2
SENSITIVITY 50 (Gauss/cm S.D.)
HORIZONTAL SCALE 400 (ft./in.)
LOCATION Socaton Mts
Pinal County, Arizona

From the section line road near the southwest corner of Sec 14, T55, R5E easterly through the mountains to the pipe line + Section Line Road between Sections 13 + 18, then south sec cor 24/19 25/50



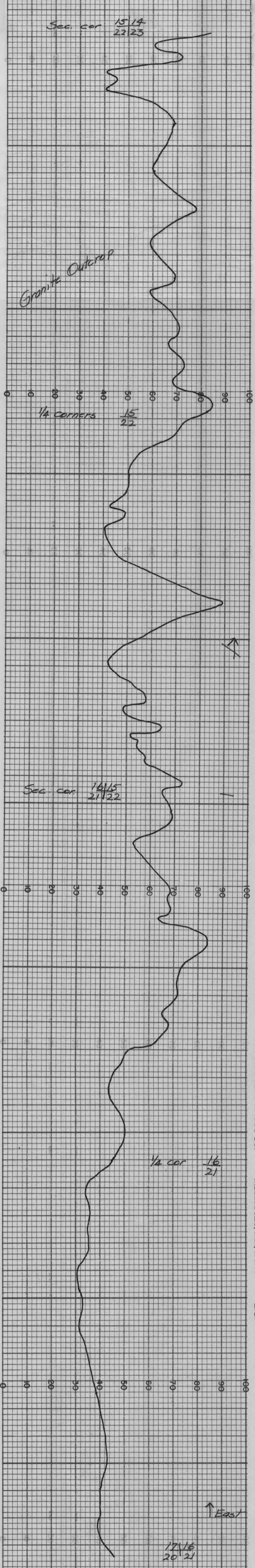
MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 4 DATE Aug 1963
 SENSITIVITY 50 GAMMAS / 1/2 in. S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sacaton Mts
Pinal County, Arizona

North from Sec cor ^{20/21} to ^{17/16}
_{29/28} _{20/21}
 T55, R5E

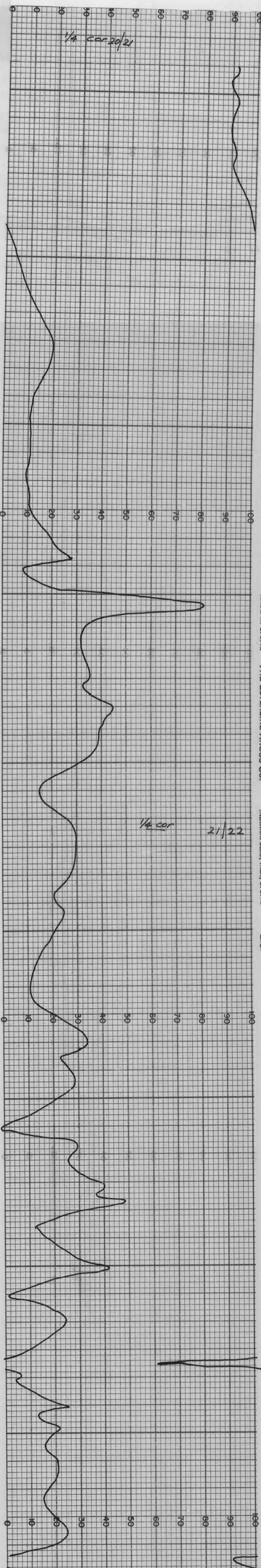


MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION Co
 RECORD NO. 3 DATE Aug. 1963
 SENSITIVITY 50 GAMMAS $\frac{1}{3}$ in. S.D.
 HORIZONTAL SCALE 400 FT./in.
 LOCATION Sacaton Mts
Pinal County, Arizona

West from 22/23 to 20/21 T55, R5E
27/26 29/28



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 5 DATE Aug, 1963
 SENSITIVITY 50 GAMMAS 1/3 IN 5.0
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sacaton Mts
Pinal County, Arizona
 East from Sec. cor 20/21 to 22/23
 T55, R5E

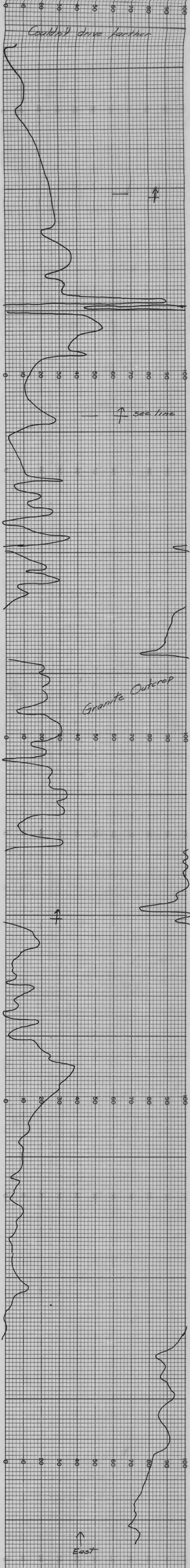


THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. MADE IN U.S.A.

↑
 WEST

1/4 cor 22/23

MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERAL EXPLORATION Co.
 RECORD NO. 6 DATE Aug, 1963
 SENSITIVITY 50 GAMMAS / 1/2 IN. S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Socaton Mts
Pinal County, Arizona
 West from 1/4 cor. 22/23 to 1/4 cor 20/21 T5S, R5E

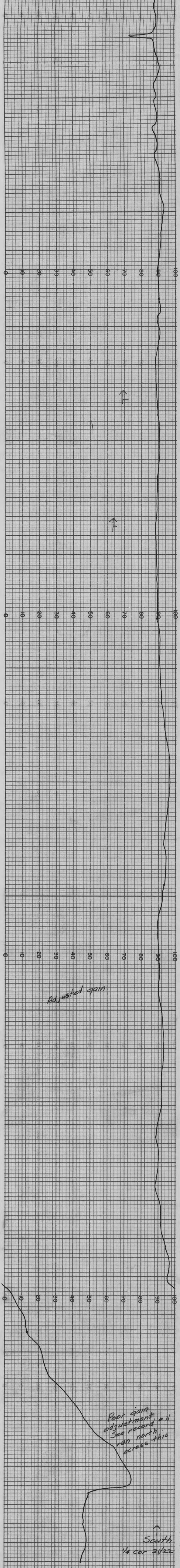


MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO
 RECORD NO. 7 DATE Aug. 1963
 SENSITIVITY 50 GAMMAS 1/3 in. S.S.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sasaton Mts.
Pinal County, Arizona
East across sections 21+22
T5S, R5E one quarter mile south
of the north section lines and
continuing about 1/4 mile into
Section 23, but bearing a little
south of east.

MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X
 THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X

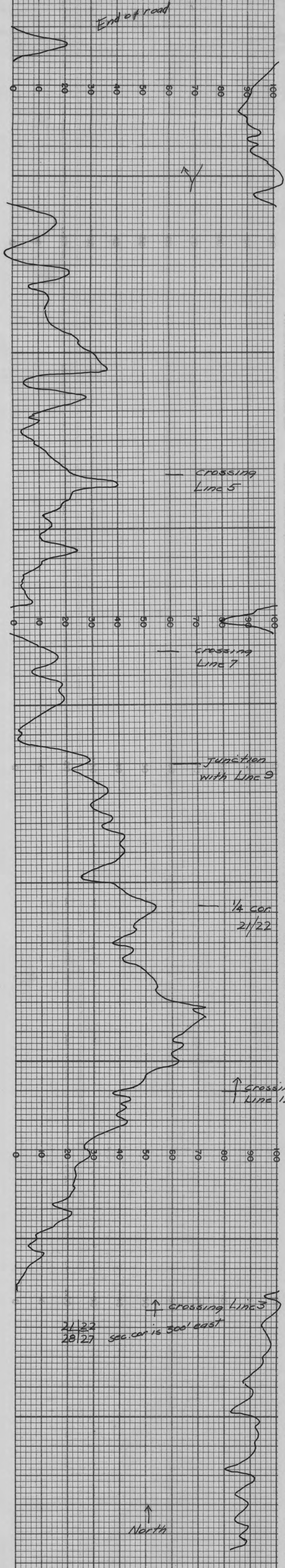
Highway + Railroad

MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. E. S. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. E. S.



MOMAS TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 10 DATE Aug, 1963
 SENSITIVITY 50 GAMMAS 1/2 IN. S.E.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sagaton Mts.
Final County, Arizona

South from 1/4 cor 21/22 T55
 R.5E to highway-section 5/4
 T65, R5E



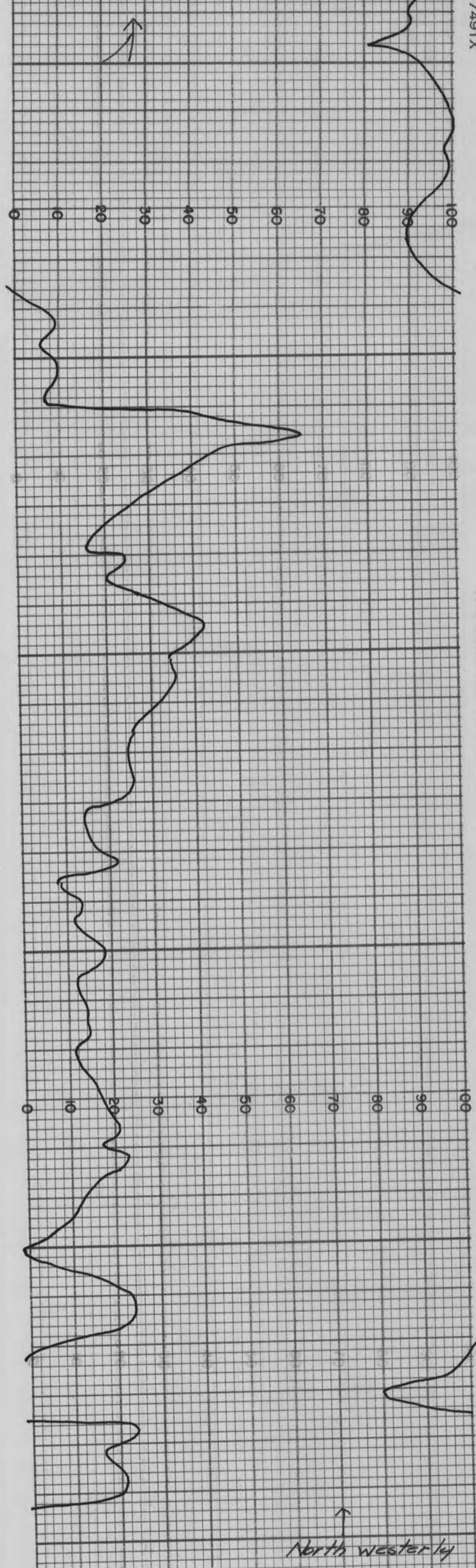
MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: MINERALS EXPLORATION CO.
 RECORD NO. 11 DATE Aug 1963
 SENSITIVITY 50 GAMMAS 1/3 In S.D.
 HORIZONTAL SCALE 400 FT./in.
 LOCATION Sagaton Mts
Pinel County, Arizona

North along sec. line 28/27 to repeat
 a portion of Rec. No 10, then continues
 on the road northeasterly along
 flank of hills in Sec. 15, T55, R5E

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. MADE IN U.S.A.

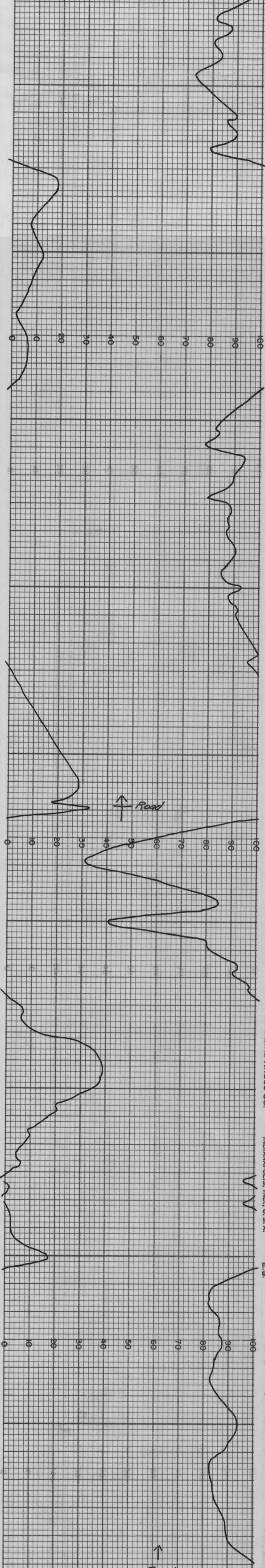
Reservation boundary fence
gate and 1/4 cor - S. 10



MOMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 8 DATE Aug 1963
 SENSITIVITY 50 GAMMAS 1/2 in S.D.
 HORIZONTAL SCALE 400 FT./in.
 LOCATION Sacaton Mts
Pinal County, Arizona

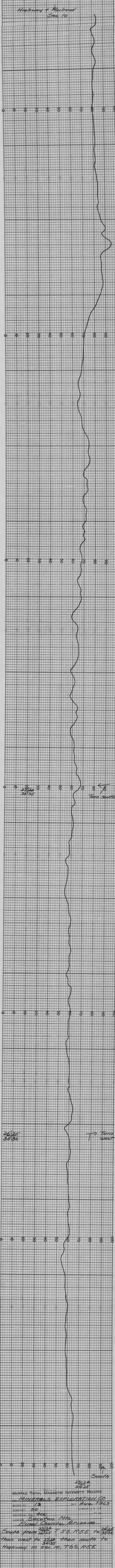
From the section line road a little
 north of 1/4 corner - 22-23 north
 westerly on an old trail to the
 south 1/4 of Section 10, T55, R6E

East Section Line
Sec. 22



10MAG TOTAL MAGNETIC INTENSITY RECORD
 FOR: MINERALS EXPLORATION CO.
 RECORD NO. 12 DATE Aug 1963
 SENSITIVITY 50 GAMMAS / % IN. S.D.
 HORIZONTAL SCALE 400 FT./IN.
 LOCATION Sacaton Mts.
Pinal County, Arizona

East across Sections 21+22, T5S,
 R5E at one quarter mile north of
 the south section Line.



McMAG TOTAL MAGNETIC INTENSITY RECORD
 FOR MINERALS EXPLORATION CO
 RECORD NO. 13 DATE Aug. 1963
 SENSITIVITY 50 GAIN AS 73 IN 5-0 FT./M.
 HORIZONTAL SCALE 400
 LOCATION Sacaton Mts
Pinal County, Arizona
South from 2625 T 5S, R5E to 2625
then west to 2625 then south to 3536
Highway in sec. 10, T6S, R5E

MEXCO - Sacaton

S.P. Survey
LINE 1

center at aquies 3-4

Base pts at 0 = 1.006M

TR. MK. REG. U.S. PAT. OFF.

<u>Sta.</u>	<u>Read.</u>
1E	+16
2E	+11
3E	+11
4E	+10
5E	+11
6E	+7
7E	+18
8E	+12

1W	+4
2W	+7
3W	+4
4W	+12
5W	+8
6W	+2
7W	+12
8W	+4

Beady Eye No 27 by
 Bruno Volozga, Delilah
 Volozga, Herb Sherman,
 Harley B. Kelley, Moya
 Kelley, Cross Ek,
 Clarence Ek, and
 Eric Ek

12 July 61

160 acres from $\frac{1}{4}$ on
 15/16 TSS RSE
 East 2640, S 2640,
 W 2640, N 2640

also 26 & 27
 but part is 200' N
 100' E of cor. (located)

at 74 cor is
post for NE cor
Hench 9 - S. E.
Cor. Hench 10

300' N is a similar post
red top, in post, notes
gone, no identification

300' W of 74 cor are
3 posts - loc Hench
9 & 10 E end out
code - Jones & Wright

26 Aug 1963

Another red top post
300' W. But clavis
seen N+S

no locations Aug.
 on to west, less
 than 600' on 3 points
 - locations Hunt 7 & 8
 7 to S, 8 to N.

c/c for 78910 on in

another shot 600
 west, same. 3 points
 Hunt 5 + 6. No c/c.

Assumed 1, 2, 3, 4
 on to west

fracture outcrop - red
 some diorite like +
 float / diff exp.

gray det granite
exposed near 1/4 cor
Survey 1958

BLM US Calochet
Survey

From 1/4 cor - 600' E
± 125' S is a pit
recent work, gray

granite minor sand
mineral, No. 1000

Jay's Copper King,

8 June 1962 by
Richard Andrade &

Morris Flay - 750'
NE & 750' SW.

Jay's
west side line
Santa Rosa

1150' E of $\frac{1}{4}$ is
 been with country,
 about 30' S. is one
 monument. Santa
 Rosa #2. 9 Jan 62

Fred Andrade &
 Woodling M. Hansen
 1450' north & 50'
 south

Line is N36' E
 dips 75° to E
 is a shear about 3
 feet wide. Some
 green calc. penetration
 into E on hanging
 wall.

1600' E) It is a
wooden type post-
red top & thin foil,
like an end cut on
c/c. No ident.

9/3/63

TR. MK. REG. U.S. PAT. OFF.

Jalandar Survey
SacatonStart at $\frac{116}{127}$

E 90 West

LINE 1

Sta Scale Road con.

TR. MK. REG. U.S. PAT. OFF.

sc. con. #1	192
2+00w	195
4+00w	195
6 w	194
8 w	196
10w	194
12w	195
14w	194
16w	193
18w	194
20w	195
22w	197
24w	198
26w	198
28w	199
30w	199
32w	195
34w	196
36 -	200
38	203
40w	201
42w	198
44w	196
46w	193
48w	195
50w	194
52w	188

→ D. D. H. ^{*}(2) 1/4 copys.
gate n-r.

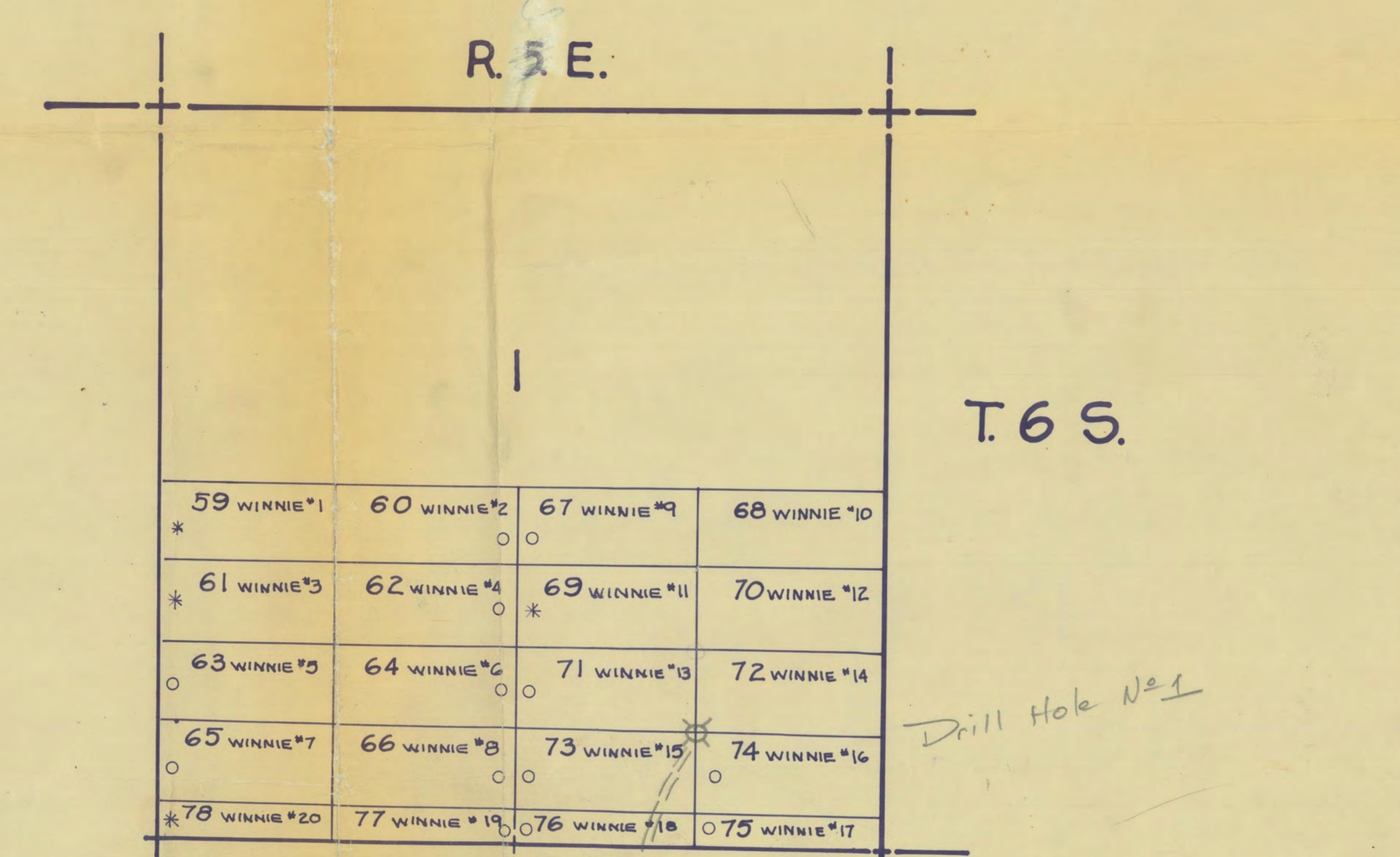
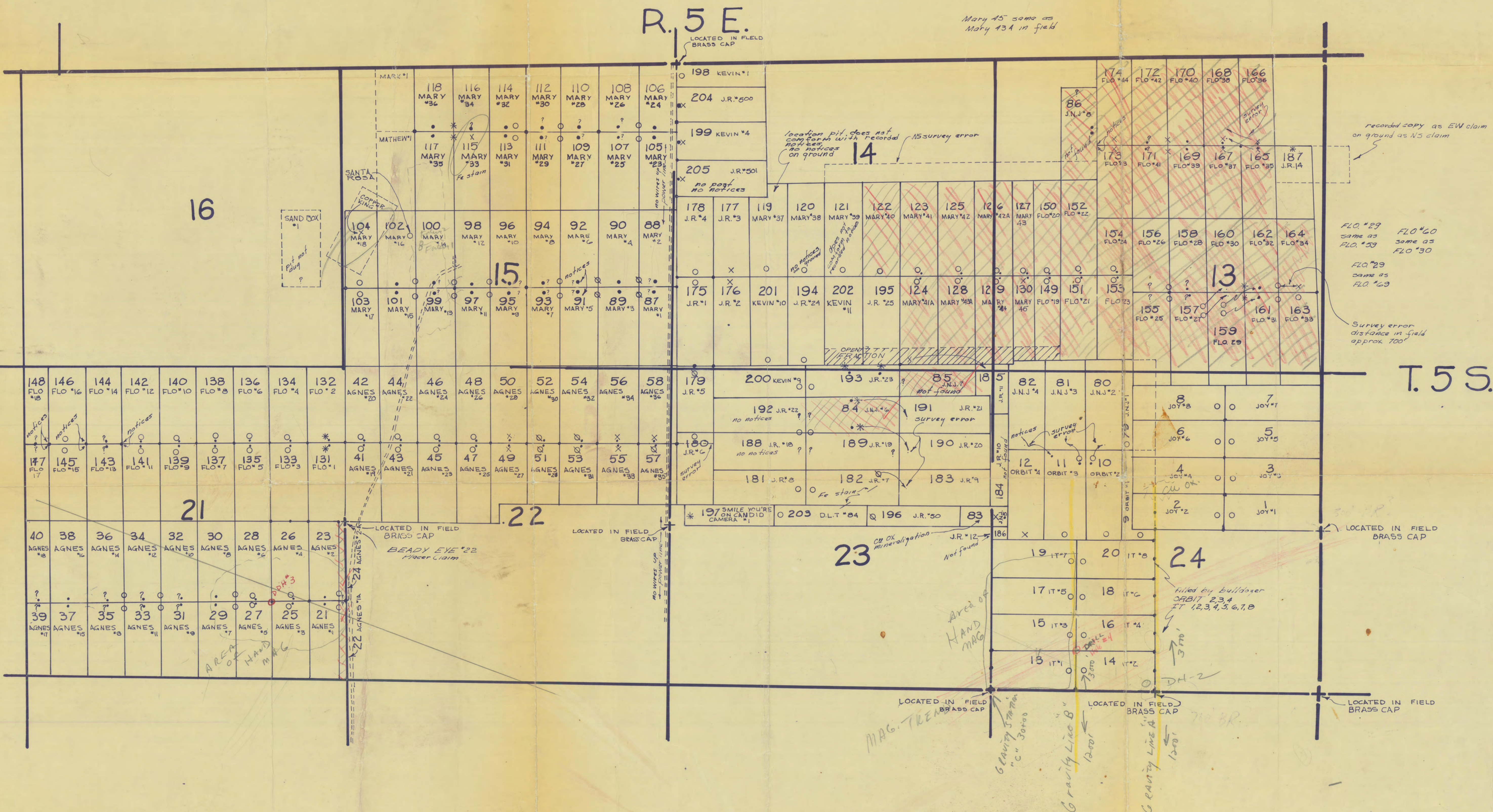
WASH

See cat. Fence
and gas
pipe - 1/2" -
& storage pipe

LINE 2
Parallel to Line 1
1200' NORTH

TR. MK. REG. U.S. PAT. OFF.

52W	+1	210	Between fence & P. @ 100'
50W		192	LOC. WINNIE 5
48W		195	
46W		197	
44W		196	
42W		200	
40W		196	
38W		195	So. edge hill
36W		194	Sch. Jr.
34W		184	
32W		179	
30W		185	- LAST
28W		188	
26W		190	100'S - 2 disc
24W		190	
22W		195	
20W		190	
18W		189	
16W		184	
14W		189	- 200' N D.P.
12W		188	
10W		188	
8W		189	
6W		189	
4W		191	
2W		190	
0		189	



- EXPLANATION**
- — PIT LOCATED LEGAL DIMENSION
 - ⊙ — PIT LOCATED IN BEDROCK LEGAL DIMENSION
 - * — PIT LOCATED IN ALLUVIUM INSUFFICIENT DEPTH
 - X — PIT LOCATED IN BEDROCK INSUFFICIENT DEPTH
 - BOUNDARY APPROXIMATE
 - — POST RECOVERED IN FIELD

HEINRICHS GEOEXPLORATION COMPANY P.O. Box 5671 Tucson, Arizona		
CLAIM VALIDITY FOR MINERALS EXPLORATION COMPANY		
SACATON PROJECT PINAL COUNTY, ARIZONA		
SCALE: 1" = 780	CONTOUR INTERVAL:	REVISIONS
DATE: JULY 1963	DATA BY: E.G.H.	
DRAWN BY: G.D.P.	SHEET OF	FILE:
DRAWING NO.:		

Claims located after Sept 1, 1962
Total ~~39~~ 40 claims

Field MAP

LINE 5

1350

LINE 7

1350

LINE 6

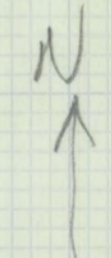
1350

LINE 12

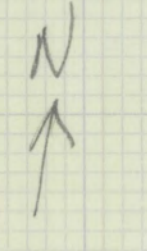
1350

LINE 3

1350



Not stacked to scale
Sacaton Project
Momaq Records
H. Scale 1" = 400'
V. " 1" = 50'



Stacked to scale
 Sacaton Project
 Monog. Records
 H. Scale 1" = 400'
 V. " 1" = 50'
 8/63

Rec'd 8/23/63
Field File

23 August, 1963

Heinrichs Geoeexploration Co.
P.O. Box 5671
Tucson, Arizona

Attn: Mr. E. Grover Heinrichs

Dear Sirs:

In compliance with your request, we are forwarding the following proposal for drilling on the claims located in Section 24, Township 5 South, Range 5 East and in Section 1, Township 6 South, Range 5 East near Casa Grande, Arizona. We understand that 3 (1,000 foot) holes are to be drilled in this area.

We will move a truck mounted drill to the property and do the drilling required on the basis of \$80.00 per 8 hour shift plus the following;

1. -\$1.50 per foot for rock bit drilling.
2. -\$3.50 " " " core drilling.
3. -\$1.25 " " " reaming.
4. -Casing left in a hole by request or lost due to ground conditions will be billed at cost.
5. -Water Haul: Metler Brothers Drilling Co. will furnish a truck and a tank and haul water for drilling. If water can be obtained within a three mile haul of the drilling operations, there will be no charge for this service. Should the haul exceed 3 miles, the charge will be \$10.00 per 8 hour shift plus \$0.10 per mile.

Access roads and drill sites are to be prepared by your company in advance.

Core boxes are to be furnished by your company, however, we will furnish them at cost if requested to do so.

The rig we will use on the job if we are chosen, will be a Longyear 44 Diesel powered, truck mounted drill complete with a 4½ X 6 Gardner Mud Pump and a mast accepting 30 ft. rods behind the quill. The Longyear 44 drill is rated at 2,400 feet of NX wireline.

page 2.

Thank you for giving us the opportunity to quote prices
on this drilling.

Very truly yours,

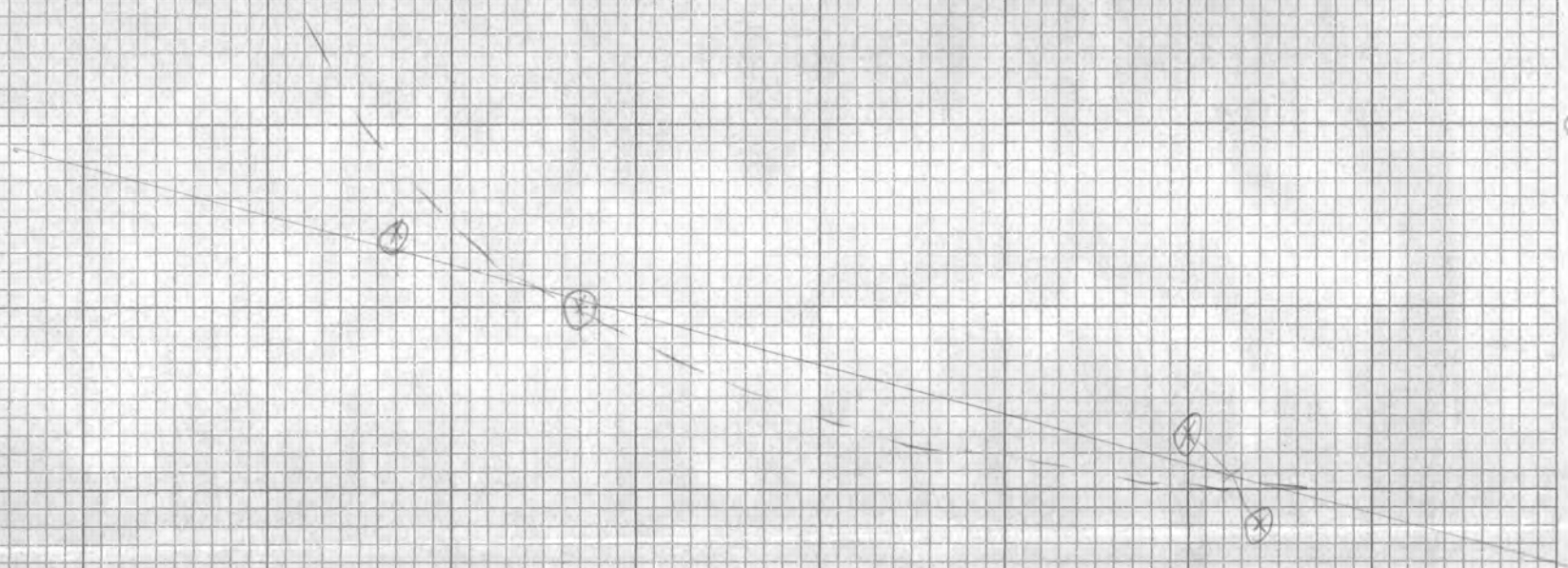
METLER BROS. DRILLING CO.

Frank C. Metler

Frank C. Metler

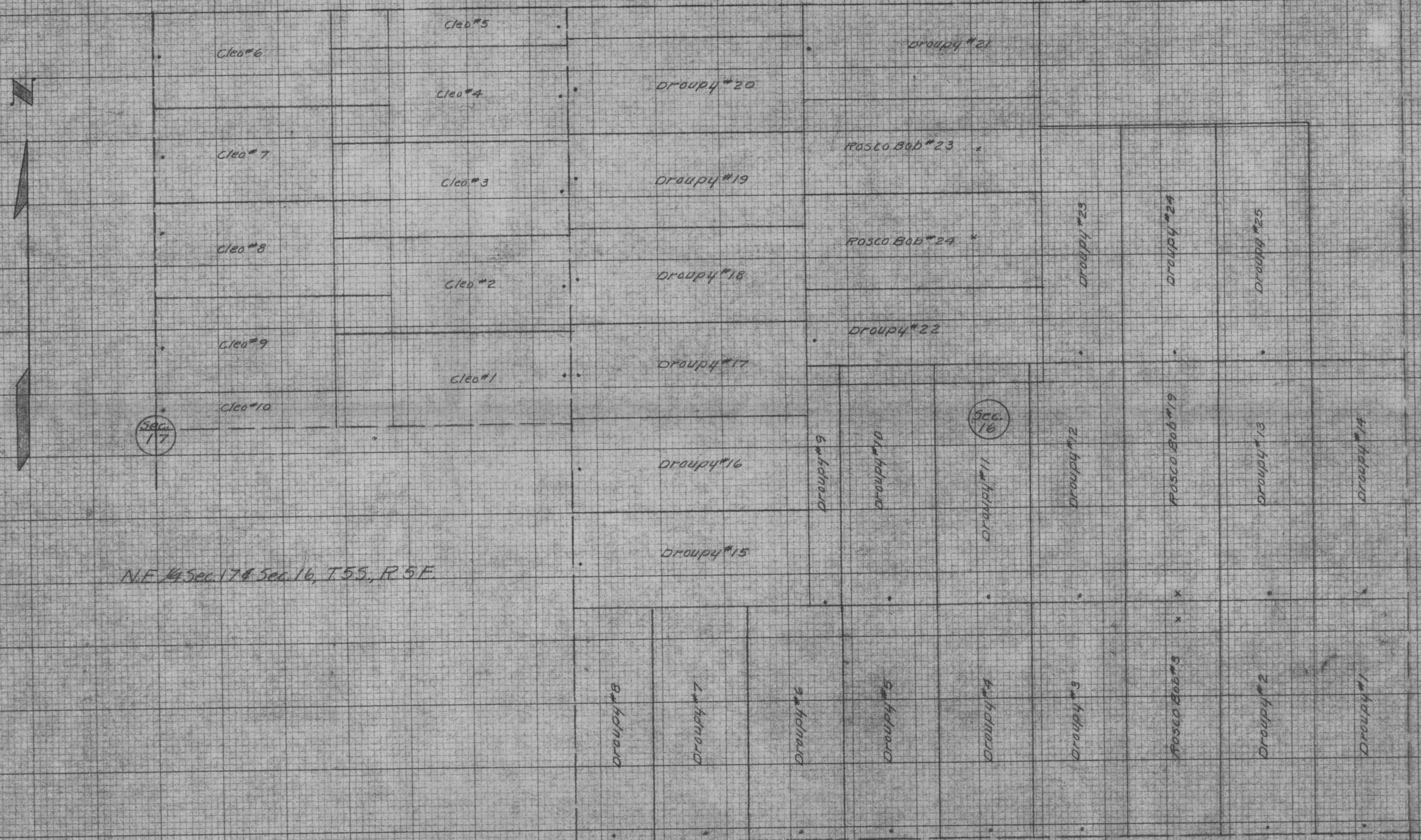
FCM/dr

1000
90
80
70
60
50
40
30
20
10
0



1000
900
800
700
600
500
400
300
200
100
0

GILA RIVER INDIAN RESERVATION BOUNDARY



NE 1/4 Sec. 17 & Sec. 16, T.5S, R.5E

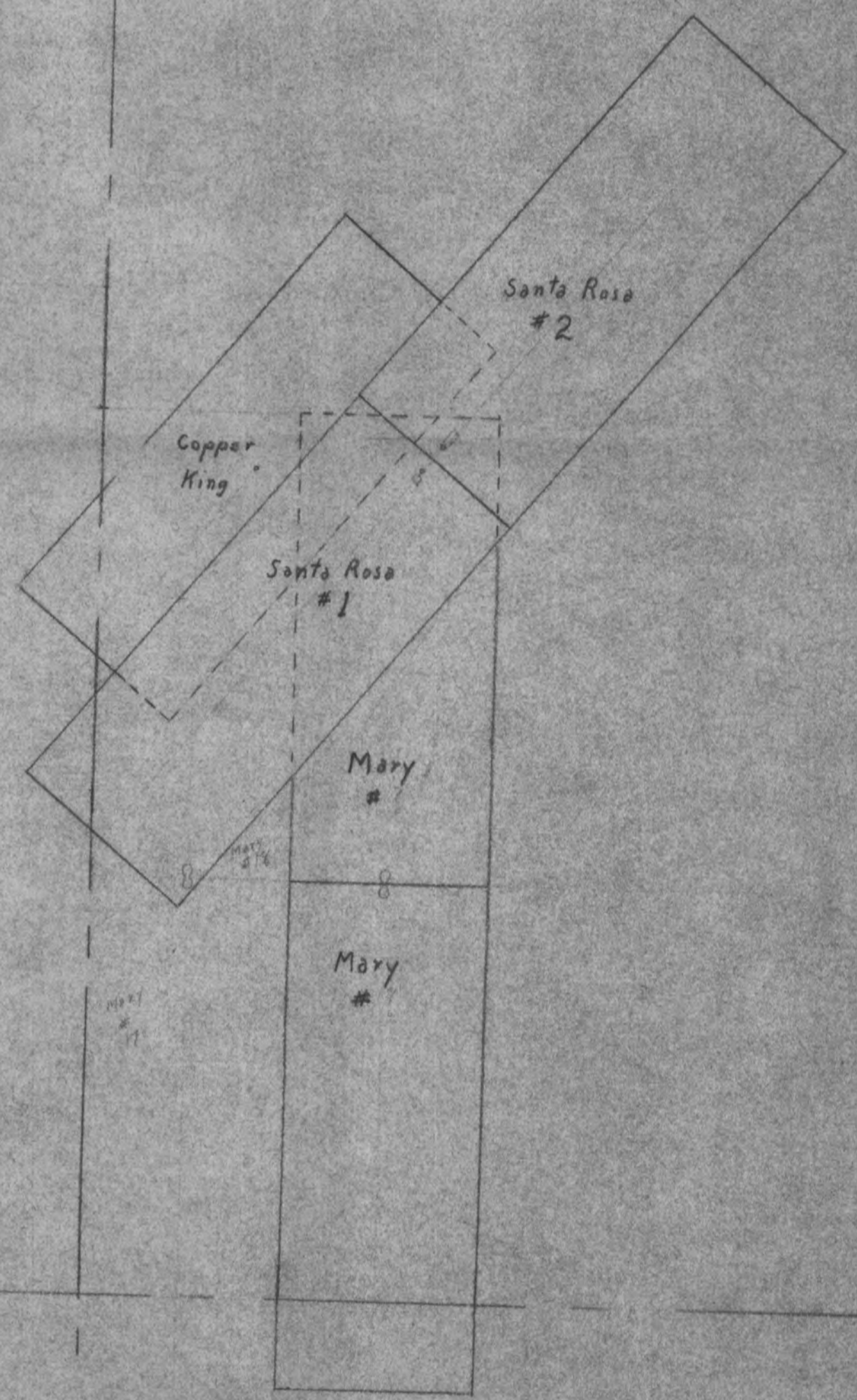
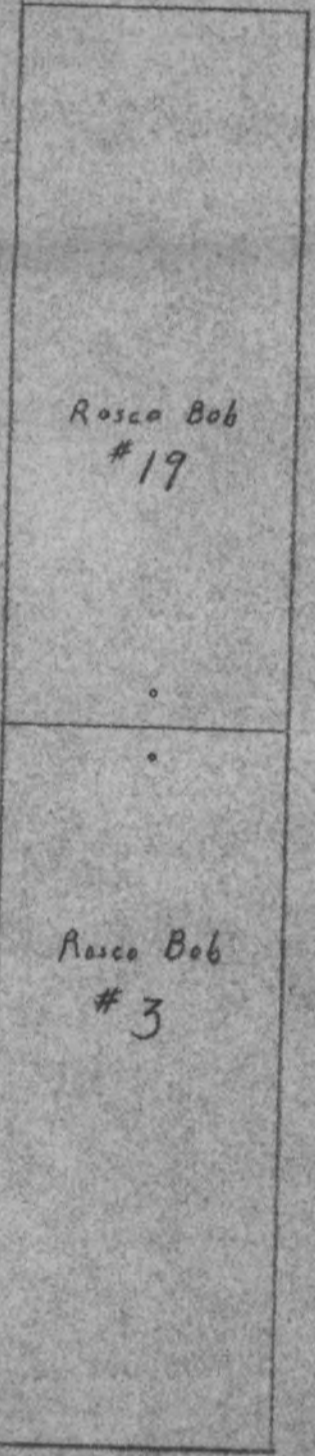
Sec. 17

Sec. 16

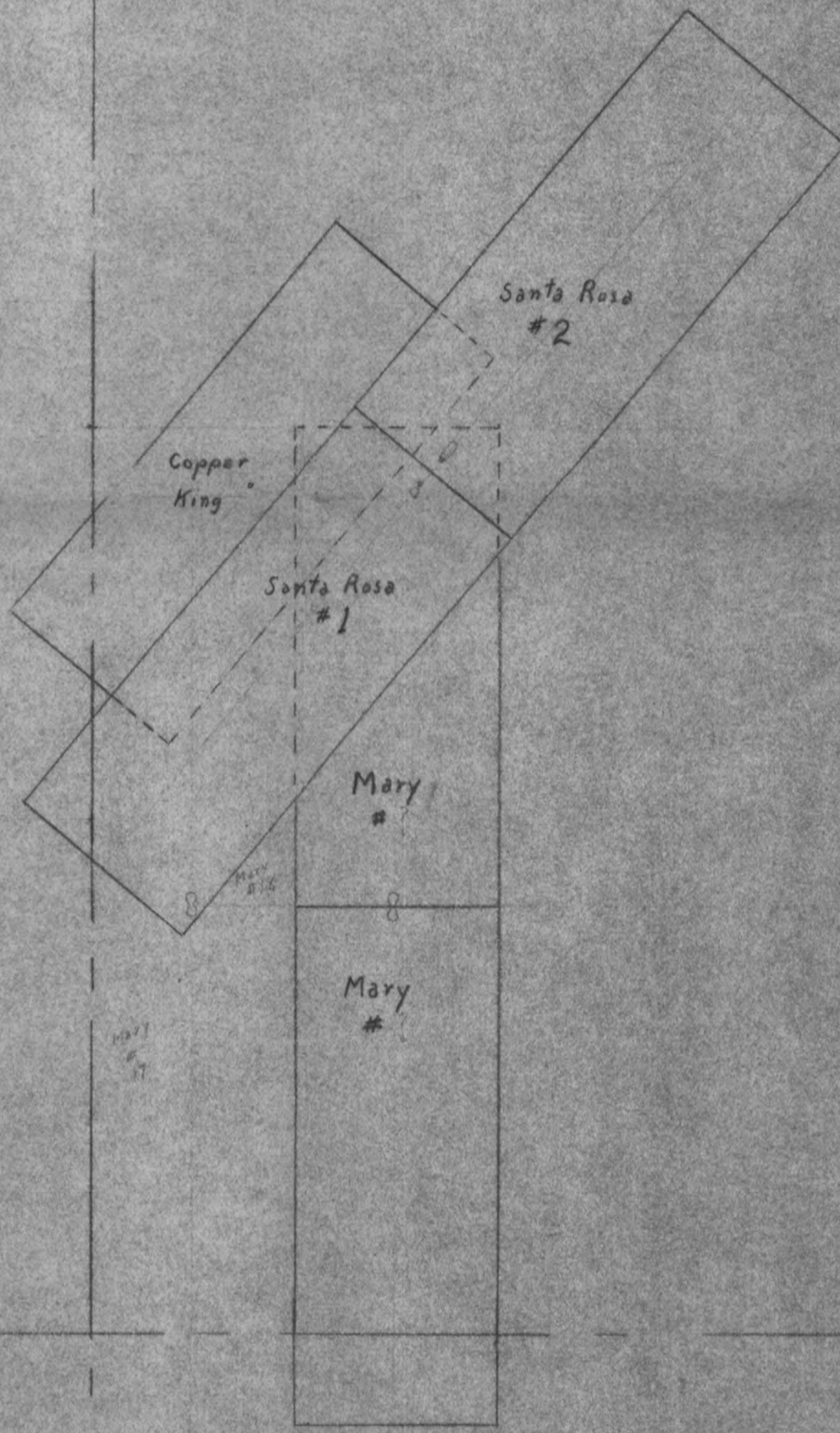
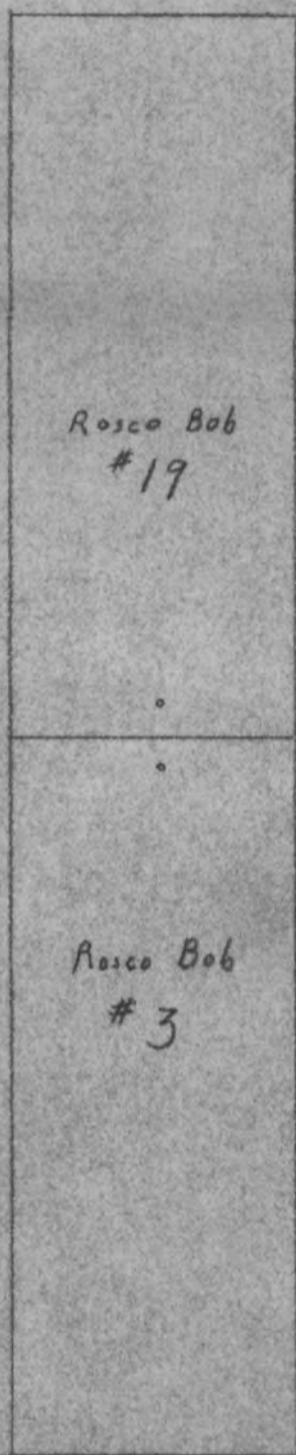
Sept 15, 1963 HAW

Sec. 16
Sacaton
Mexico

16



Sec. 16
Mexico
Sacaton



Sec. 16
Sacaton
Mexico

GILA RIVER INDIAN RESERVATION BOUNDARY

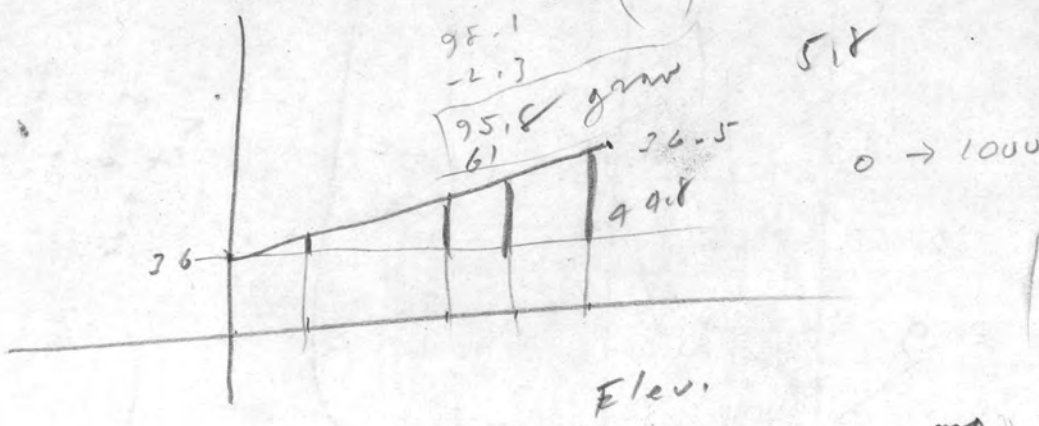
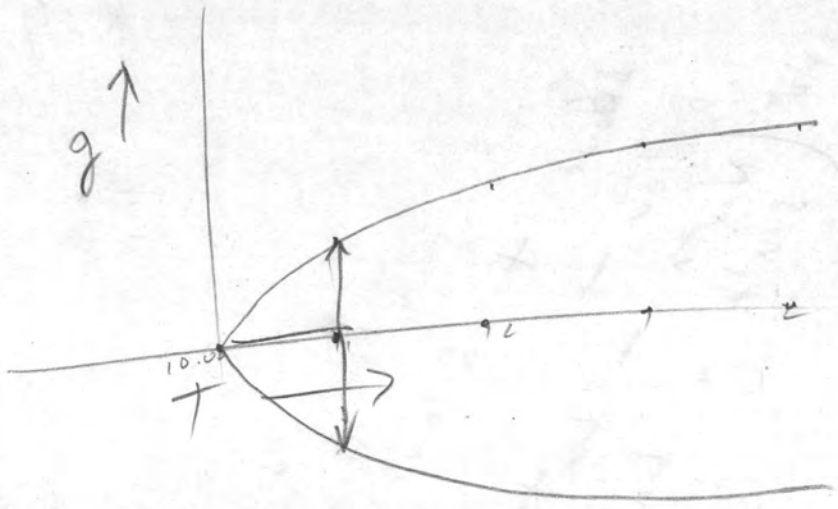


Sept. 15, 1963 H.B.W.

Sec. 16
Tacator
Mexico

$0.110704 \frac{\text{mg}}{\text{ft}} \times \text{S.D.} = \text{mg} = +46.1 \text{ mg}$
 Elev $\rightarrow +12.0$
 Lat $\rightarrow -2.3$

g ↑



+ Free air corr. $0.09 \frac{\text{mg}}{\text{ft}}$
 - Bouguer corr. $0.03 \frac{\text{mg}}{\text{ft}}$
 $0.06 \frac{\text{mg}}{\text{ft}}$
 .07

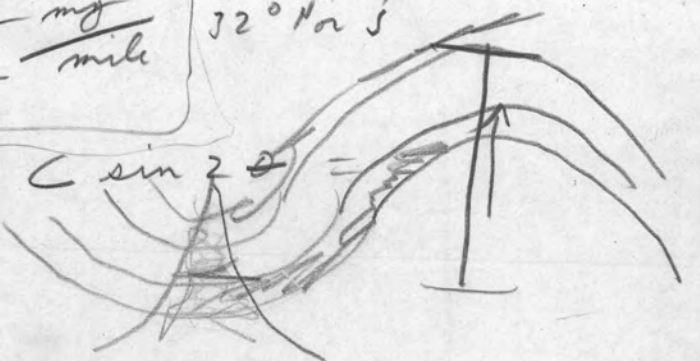
3200'

Datum 2000'

$2.67 \frac{\text{mg}}{\text{mi}^2}$
 $0.06025 \frac{\text{mg}}{\text{ft}}$

$1.174 \frac{\text{mg}}{\text{mile}}$

32° 14' 3"



2585

$$\begin{array}{r} 162 \\ 76 \\ \hline 126 \end{array}$$

1.174 $\frac{m}{mil}$

ACE

(NX2)X10 \Rightarrow ACE corr

.0 x 0

.10704

Above + Elev
 Below - Lat
 N Hemi (North - Lat
 South + Lat

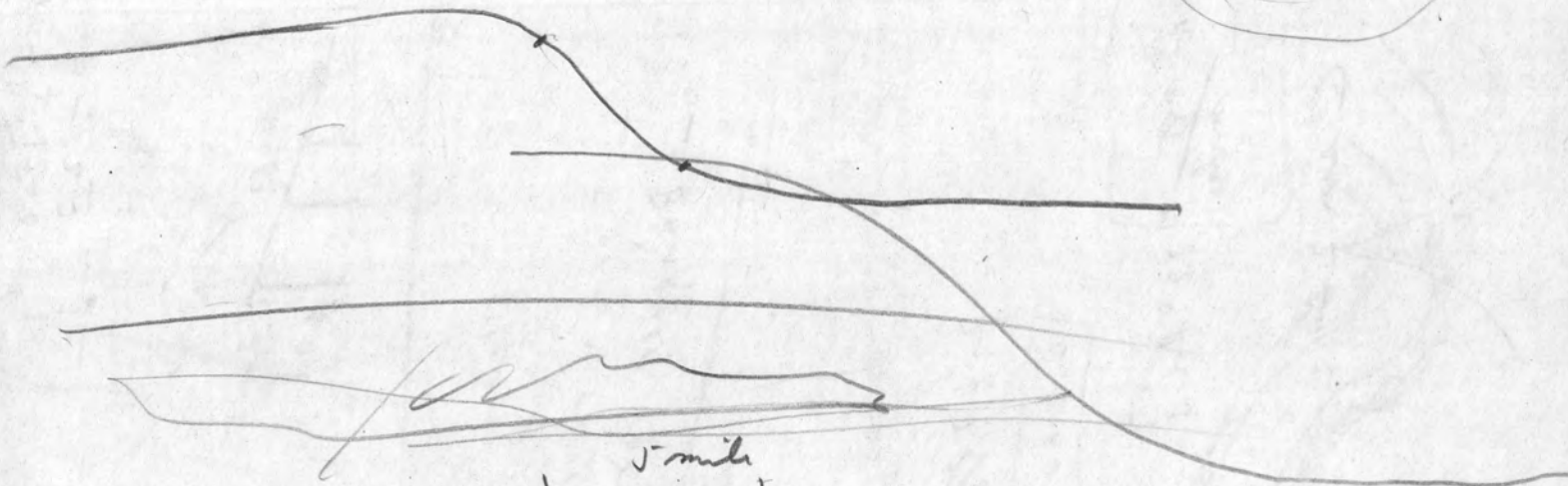
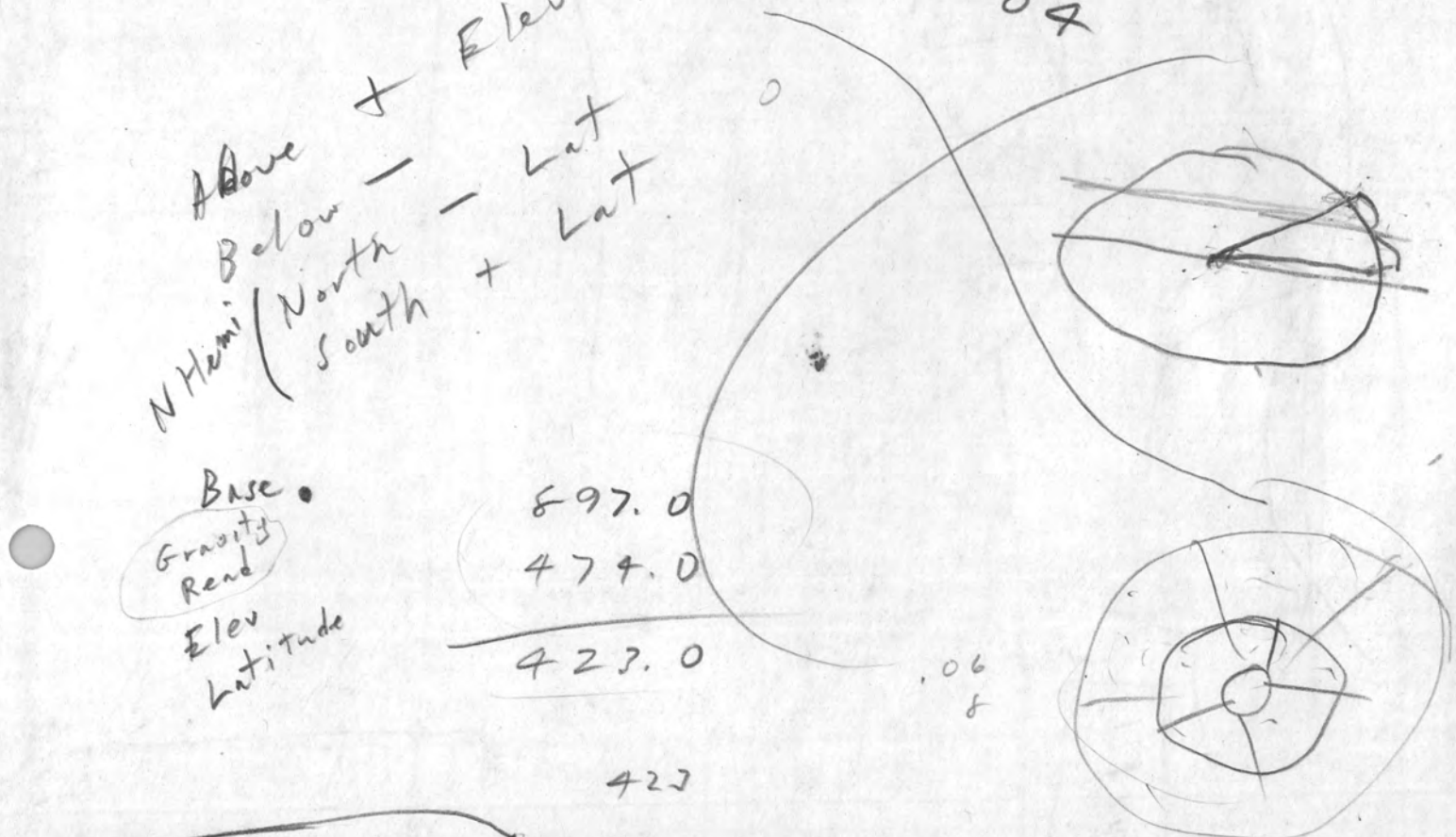
Base •
 Gravity
 Read
 Elev
 Latitude

897.0
 474.0

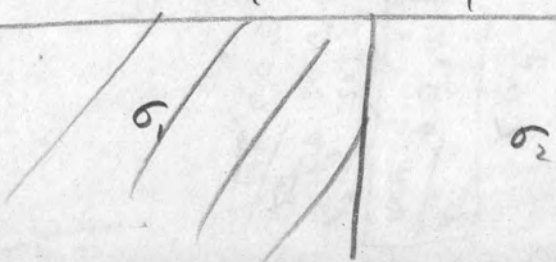
 423.0

.06
8

423



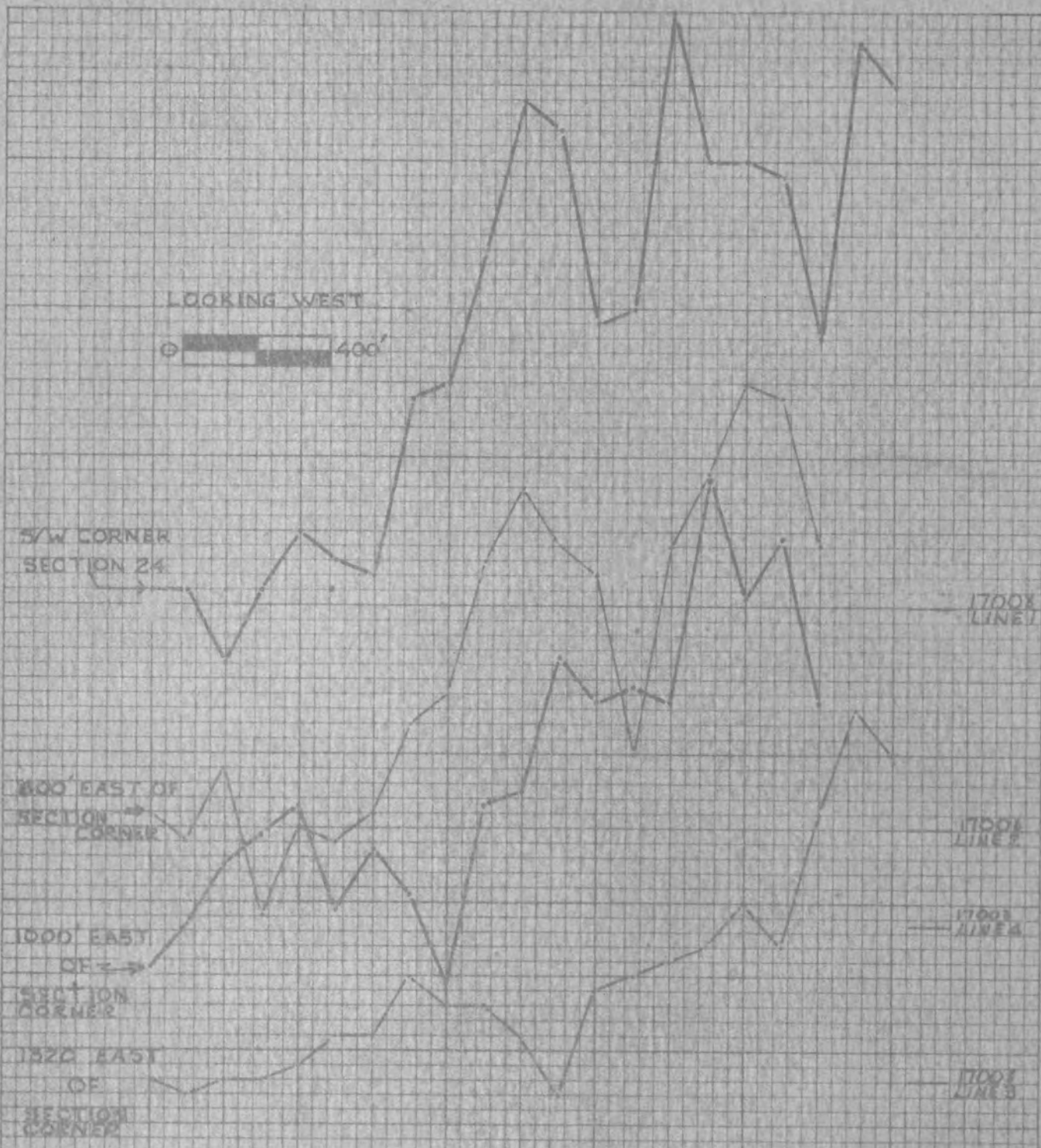
5 miles



5,252

EUGENE DIETZEN CO.
MADE IN U. S. A.

NO. 3408-10 DIETZEN GRAPH PAPER
10 X 10 PER INCH



Vertical Scale = 1" = 100 gammas

MAGNETIC PROFILES

II Claim Group

Sec. 24, T 5 S, R 5 E, Pinal County, Arizona

SAGATON PROJECT

for

MINERALS EXPLORATION COMPANY

by

HEINRICHS GEOEXPLORATION COMPANY

September 1963

MEK CD
SACATON

Jalandar May
Sept. 10, 1963

S. E. part. Sec. 21

LINE 1
East from Agnes 7 1/2 8

Sta Scale Read Con

TR. MK. REG. U.S. PAT. OFF.

0	+1	212	10:38
1E		214	
2E		219	
3E		220	C.C.
4E		218	
5E		221	
6E		232	Agnes 5 1/2 6
7E		239	
8E		200	
9E		186	C.C.
10E		184	10:45
11E		175	
12E		170	Agnes 3 1/4
13E		144	
14E		170	
15E		175	C.C.
16E		173	
17E		175	
18E		176	Agnes 1 1/2
19E		176	
20E		170	10:52
21E		210	
22E		218	
23E		216	Agnes 1 A 2 A east edge R

Line 20ⁿ North of
20E Line 1

STA	Scale	Reach.	Con
20E ON	1+	170	
1N		169	
2N		146	
3N		171	
4N		190	
5N		215	
6N		221	
7N		225	
8N		223	

TR. MK. REG. U.S. PAT. OFF.

Remarks
10:58

Line 2B

8S		198	
7S		200	
6S		206	
5S		210	
4S		195	
3S		197	
2S		189	
1S		176	
20E OS		165	

11:16

Line 3 South From
8N - crossing line 1
AT 17 E

TR. MK. REG. U.S. PAT. OFF.

STA	Scale	Read.	Con.	Remarks
8N	1+	203		11:07
7N		212		
6N		201		
5N		190		
4N		178		
3N		147		
2N		164		
1N		162		
ON		173		
17E		200		11:12
15		204		
25		201		
35		181		
45		170		
55		189		
65		204		
75		200		
85				

Line 4A From 12E

TR. MK. REG. U.S. PAT. OFF.

Sta	Scale	Read.	Con	Remarks
0				
12E	1+	164		11:37
1N		170		
2N		175		
3N		184		
4N		210		
5N		210		
6N		223		
7N		240		
8N		238		
9N		237		
10N		230		11:43
11N		225		
12N		218		50' S of Post

Line 4B

105		189		12:01
95		198		
85		199		
75		204		
65		213		
55		208		
45		206		
35		209		
25		174		
15		153		
12E 05		165		12:07

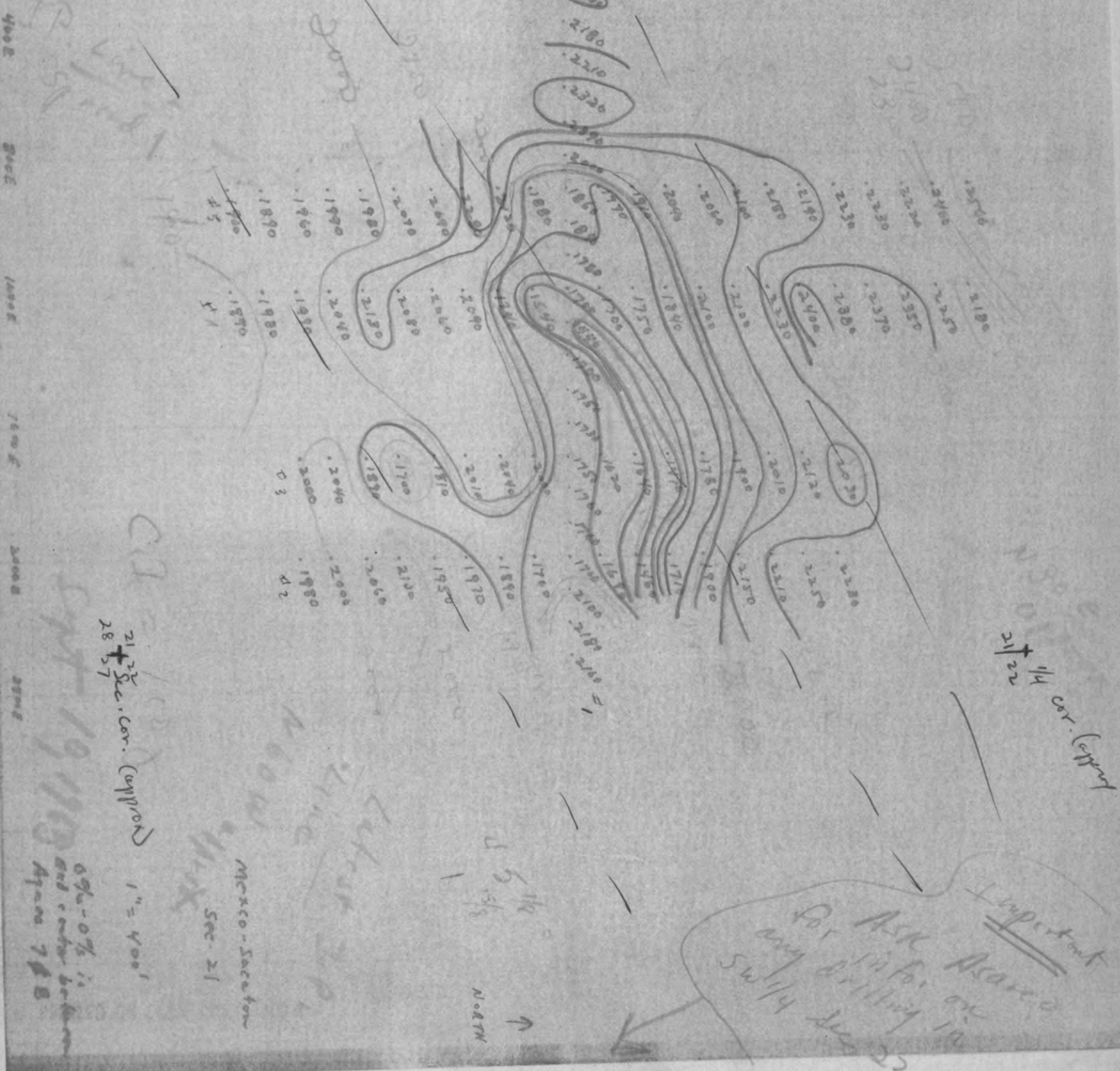
LINE 5 - 12N
crossing 9E

TR. MK. REG. U.S. PAT. OFF.

Sta	Scale	Read	Con	Remarks
12N	+1	256		11:48
	+2	87		
11N	+1	240		
	+2	80		
10N	+1	222		
9N		223		
8N		223		
7N		219		
6N		218		
5N		210		
4N		206		
3N		204		
2N		191		11:54
1N		177		
9E		180		
0		188		
1S		188		
2S		212		
3S		228		
4S		269		
5S		267		
6S		198		
7S		199		
8S		196		
9S		189		
10S		190		

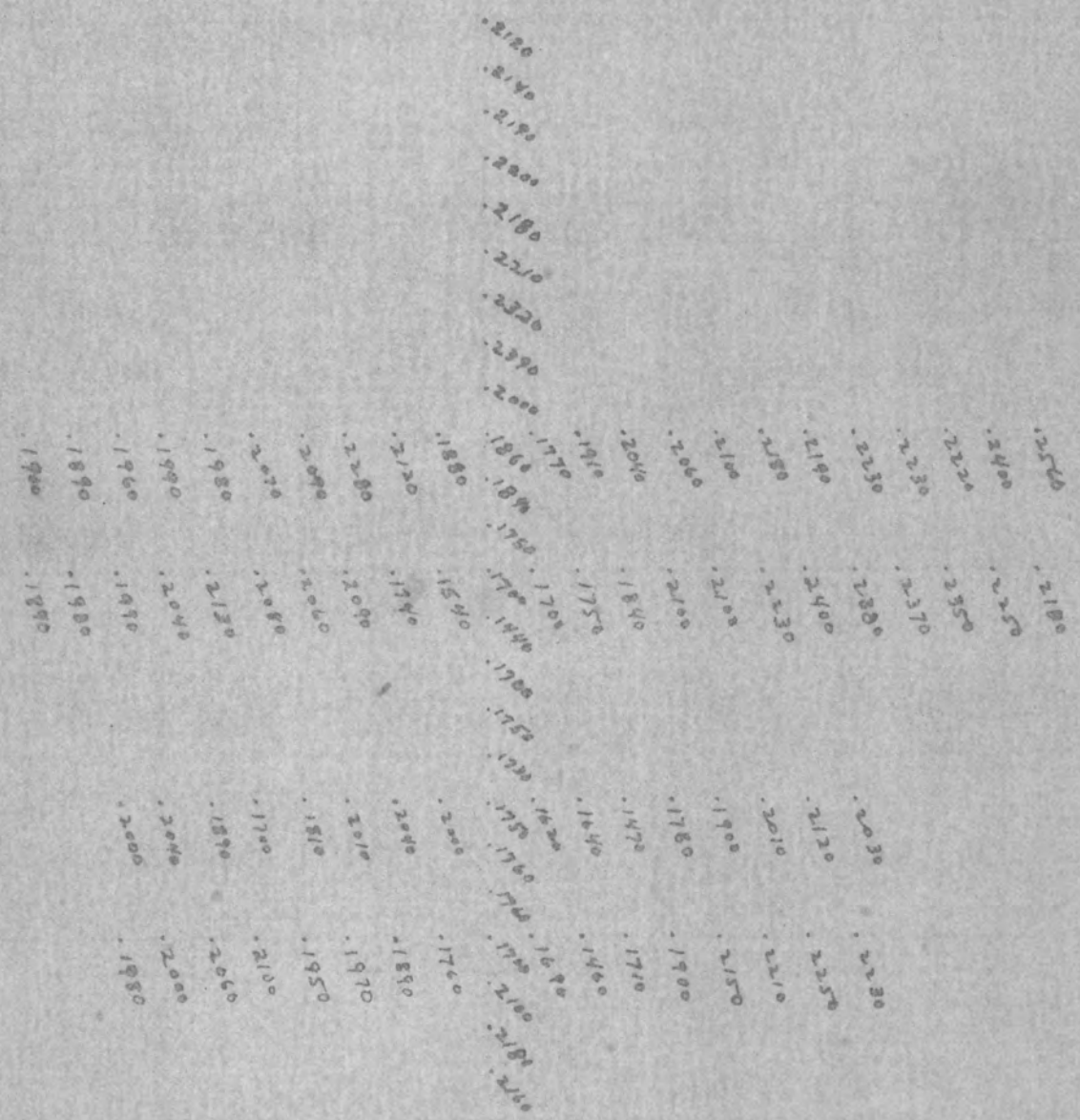
Probably a
 cloud land of 500 ft
 about 1200 ft 500-600 N-S

Strike ??
 Strike ??
 Strike ??



400 E
 200 E
 100 E
 100 W
 200 W
 300 W

0 4000 8000 12000 16000 20000 24000



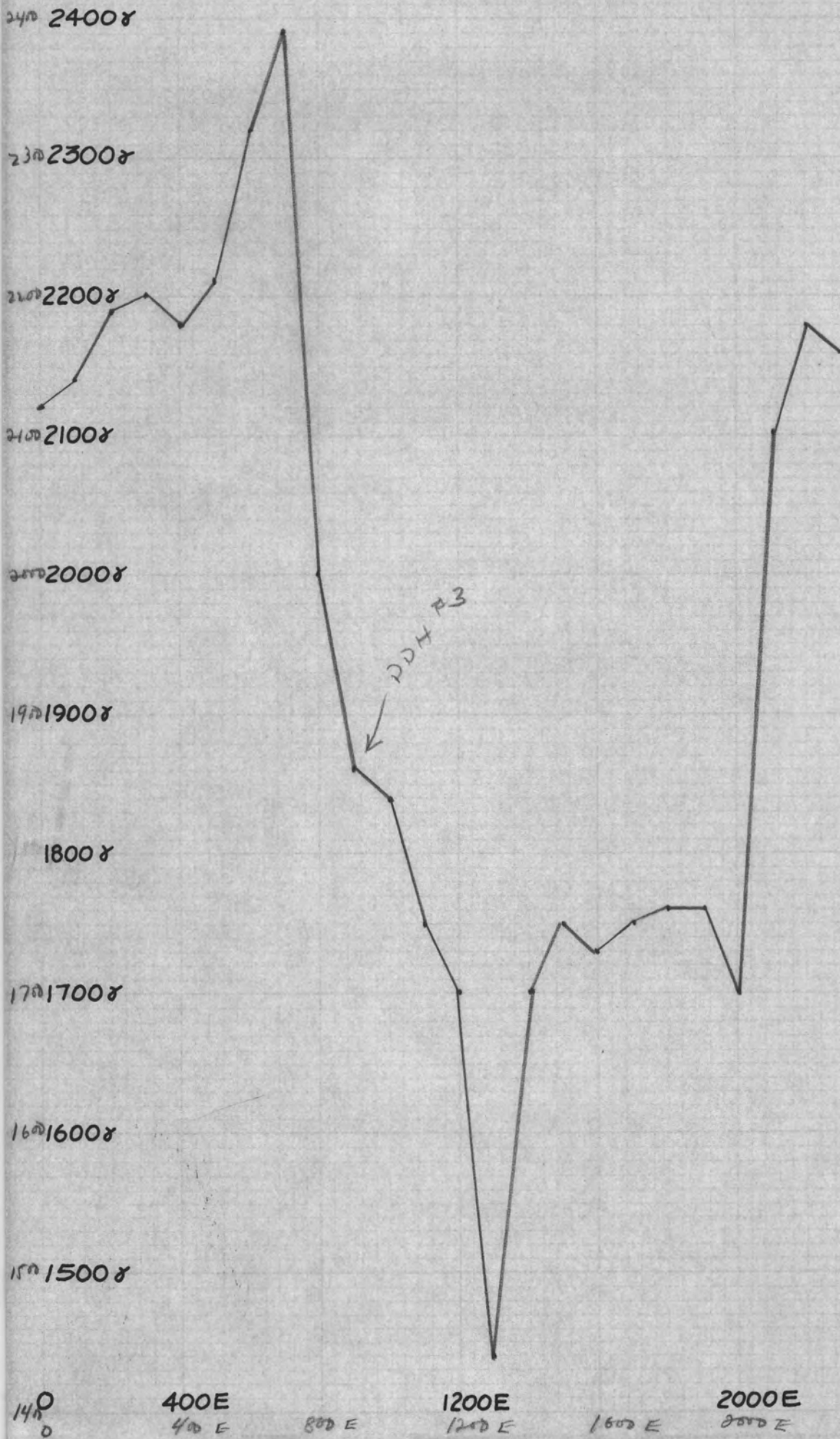
↑
NORTH

Metric-Inches

Sec. 21

1" = 400'

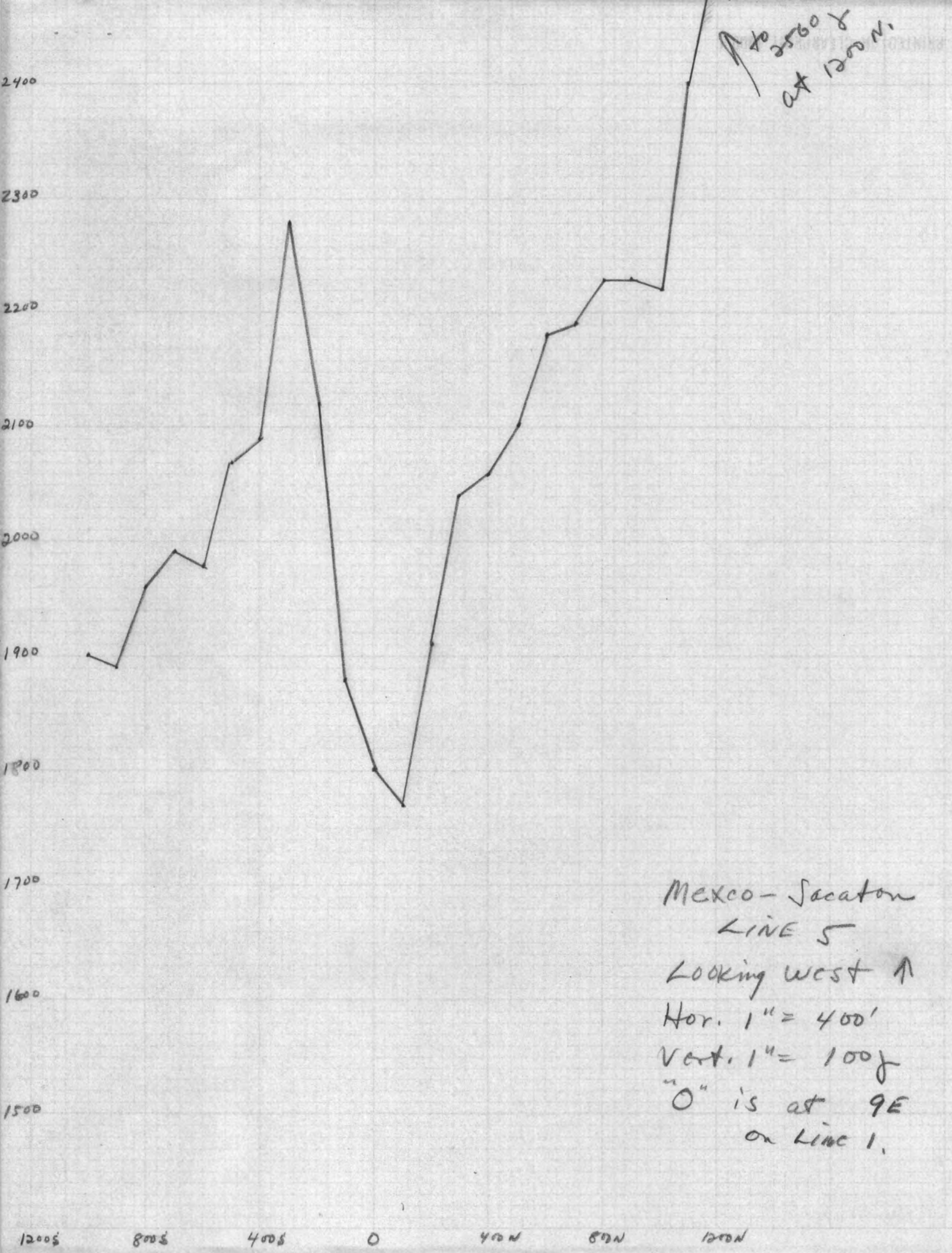
0% - 0% is
cut into bottom
Area 7 of 8



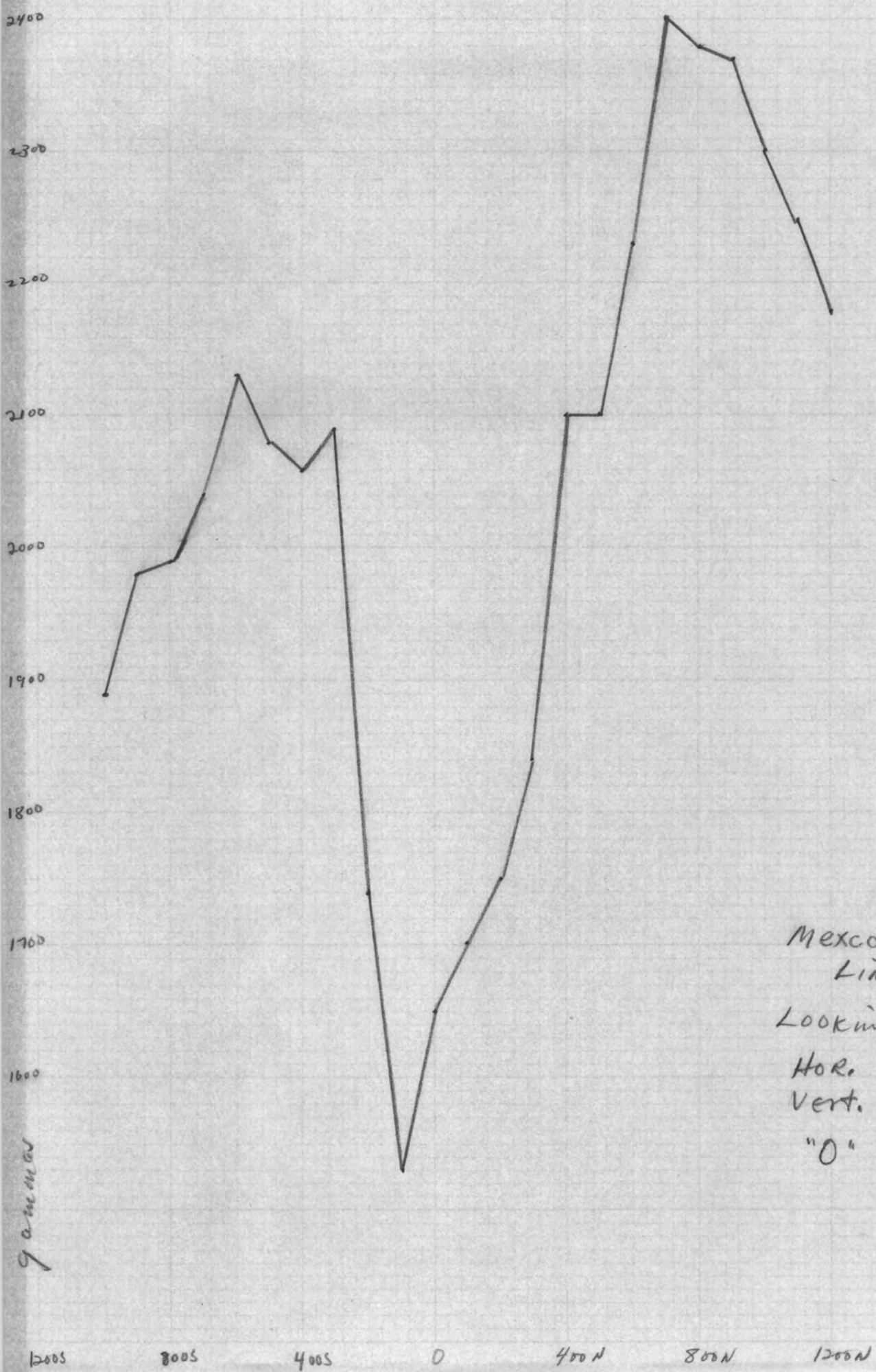
Mexico - Sacaton
 Line 1
 Looking north ↑

Hor. 1" = 400'
 Vert. 1" = 100'
 "0" is end center
 between Agnes 7 & 8.

1400 0
 400E 400 E 800 E 1200E 1200 E 1600 E 2000E 2000 E 2400 E



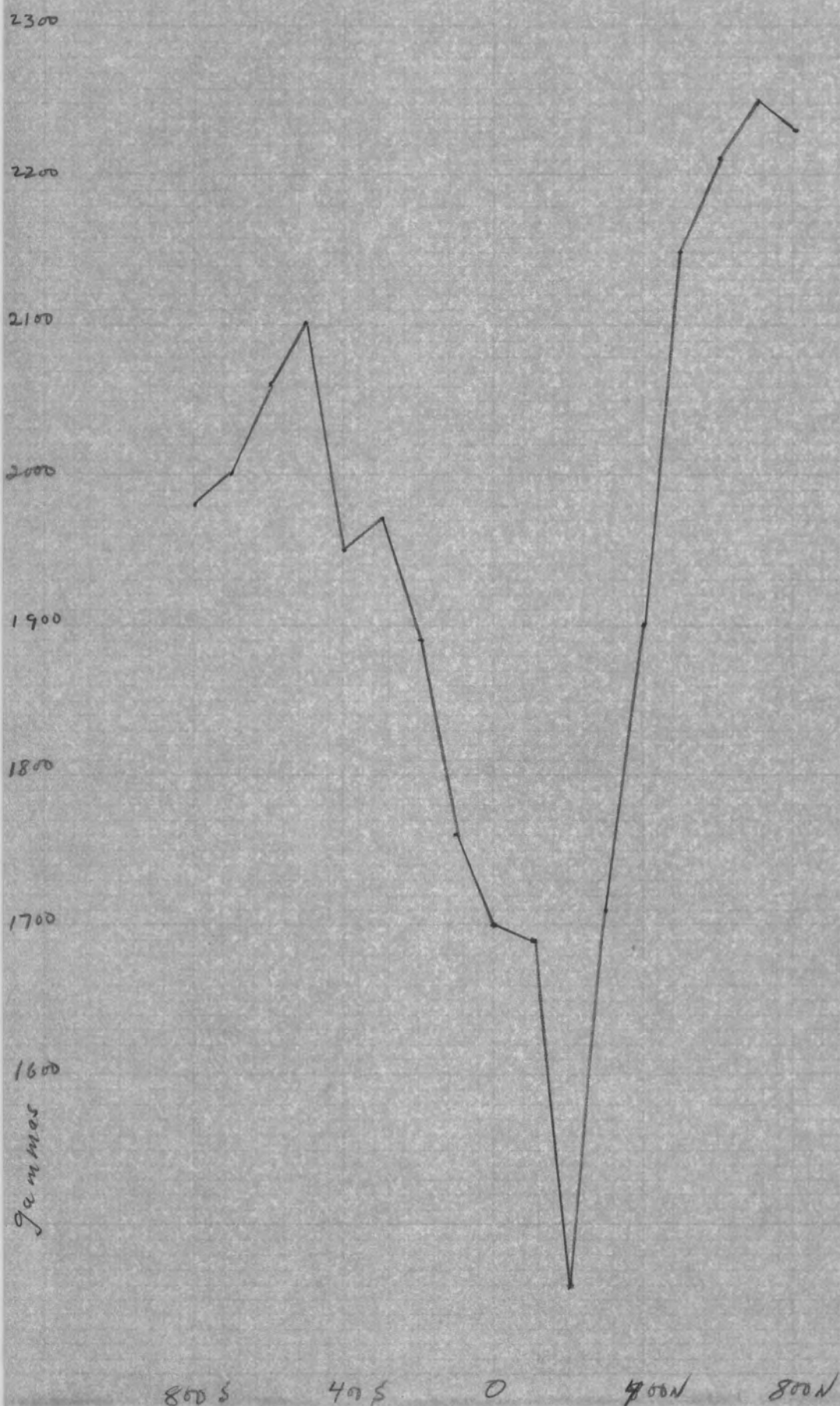
Mexco-Sacaton
 LINE 5
 Looking west ↑
 Hor. 1" = 400'
 Vert. 1" = 100'
 "0" is at 9E
 on Line 1.



Mexco - Sacaton
 LINE 4
 Looking West ↑
 Hor. 1" = 400'
 Vert. 1" = 100'
 "0" is at 12E
 ON LINE 1

elevation

200S 300S 400S 0 400N 800N 1200N



Mexico - Sacaton
 LINE 2
 Looking west
 Hor. 1" = 400'
 Vert. 1" = 200'
 "0" is at 20E
 on Line 1.

EUGENE DIETZGEN CO.
MADE IN U. S. A.

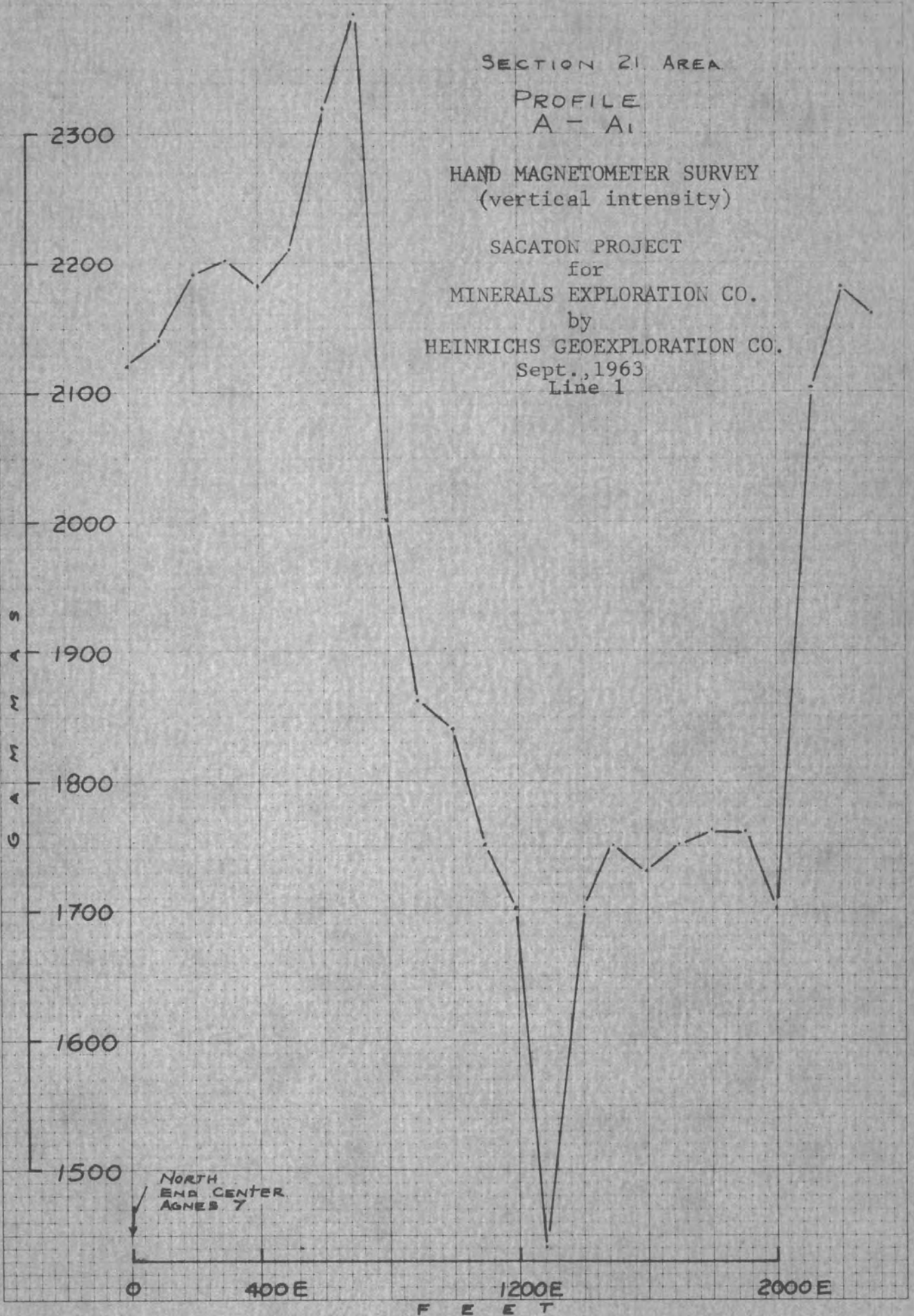
NO. 340R-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

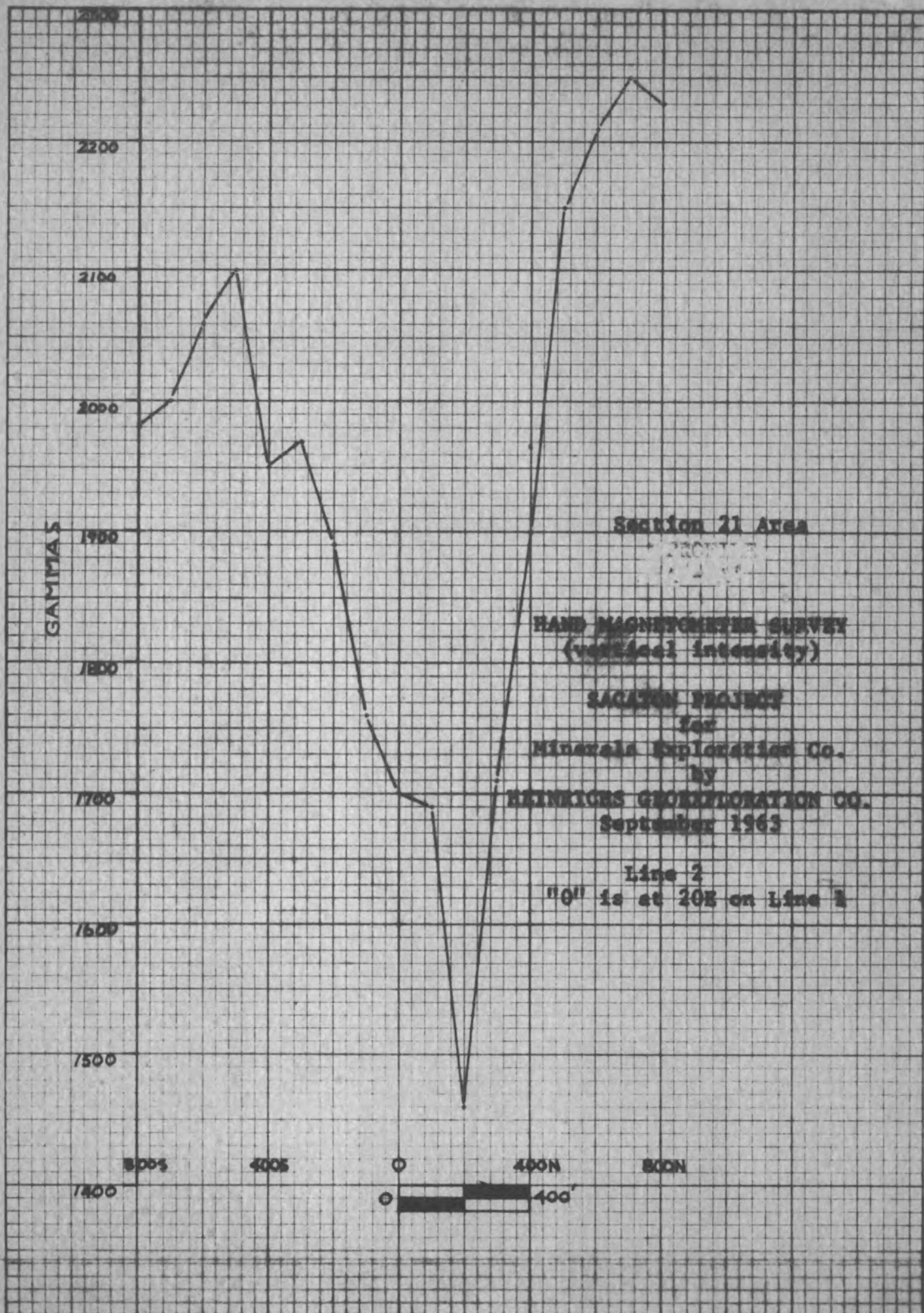
SECTION 21 AREA

PROFILE
A - A₁

HAND MAGNETOMETER SURVEY
(vertical intensity)

SACATON PROJECT
for
MINERALS EXPLORATION CO.
by
HEINRICHS GEOEXPLORATION CO.
Sept., 1963
Line 1





GAMMAS

Section 21 Area

HAND MAGNETOMETER SURVEY
(vertical intensity)

SACATEM PROJECT
for
Minerals Exploration Co.

by
HEINRICHS GEOEXPLORATION CO.
September 1963

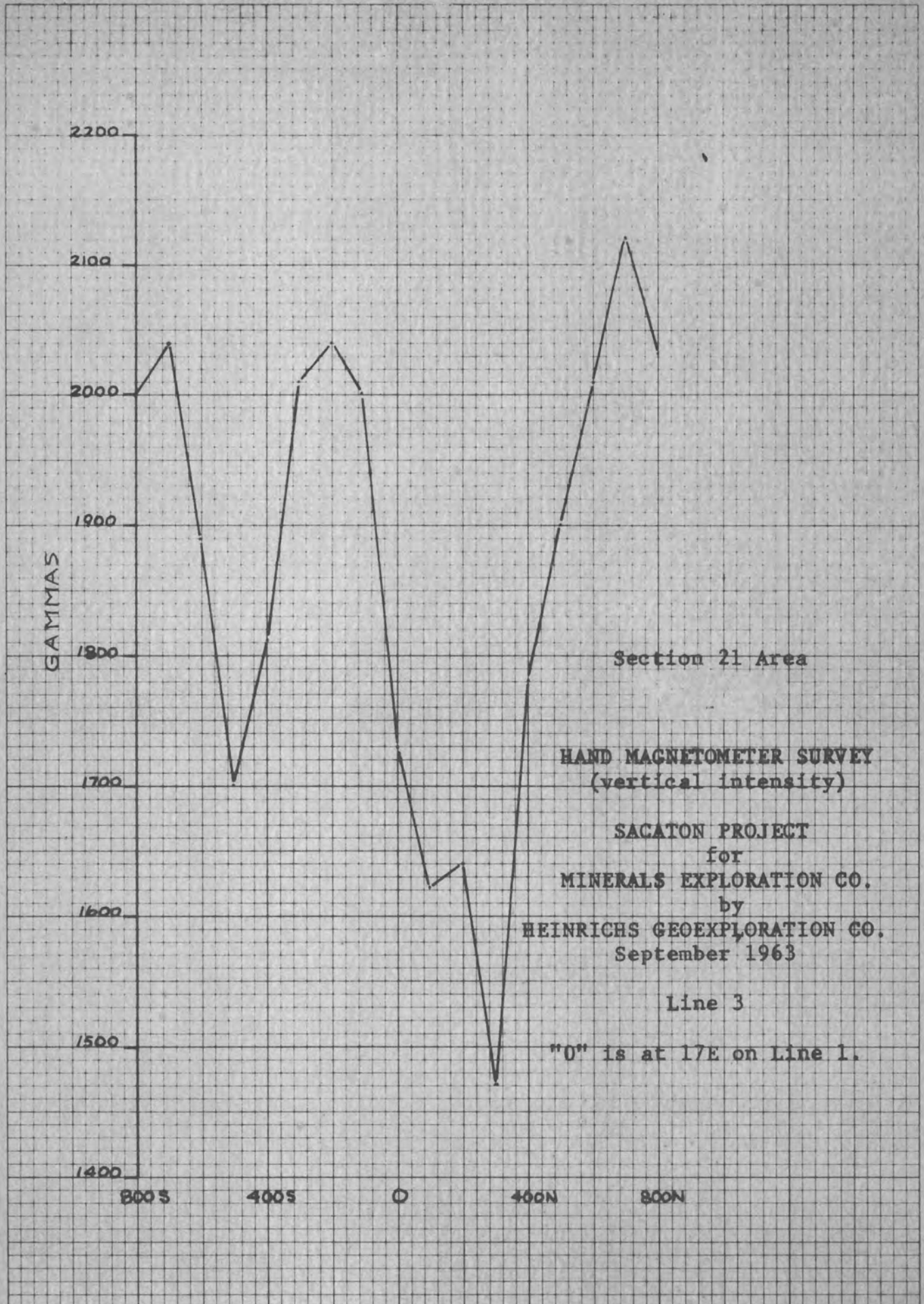
Line 2
"0" is at 20E on Line 1

K-E 10 X 10 TO THE INCH 350-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340R-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH



Section 21 Area

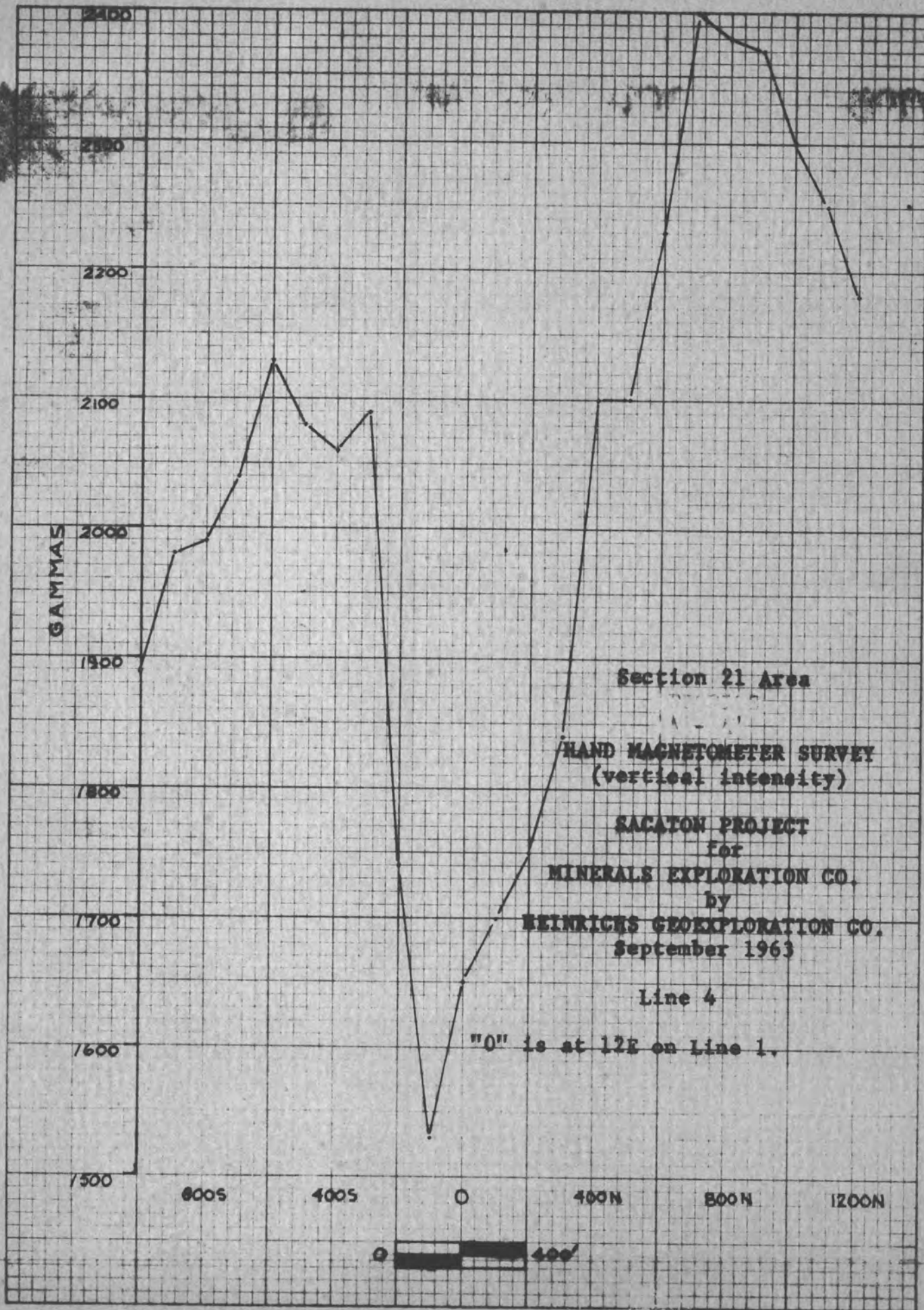
HAND MAGNETOMETER SURVEY
(vertical intensity)

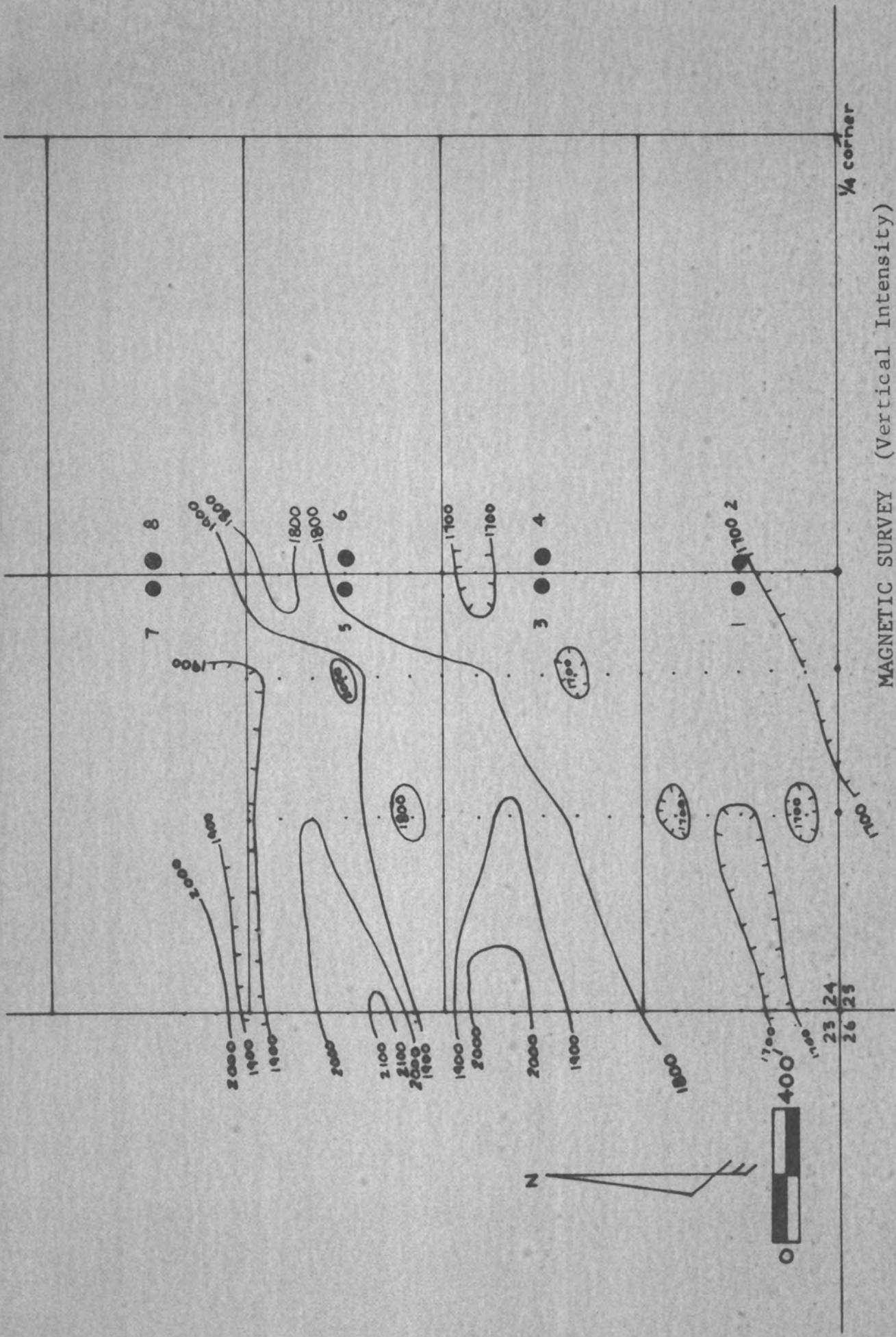
SACATON PROJECT
for
MINERALS EXPLORATION CO.
by
HEINRICHS GEOEXPLORATION CO.
September 1963

Line 3

"0" is at 17E on Line 1.

K&E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U. S. A.





MAGNETIC SURVEY (Vertical Intensity)
 IT Claim Group
 Sec. 24, T 5 S, R 5 E, Pinal County, Arizona
 SACATON PROJECT

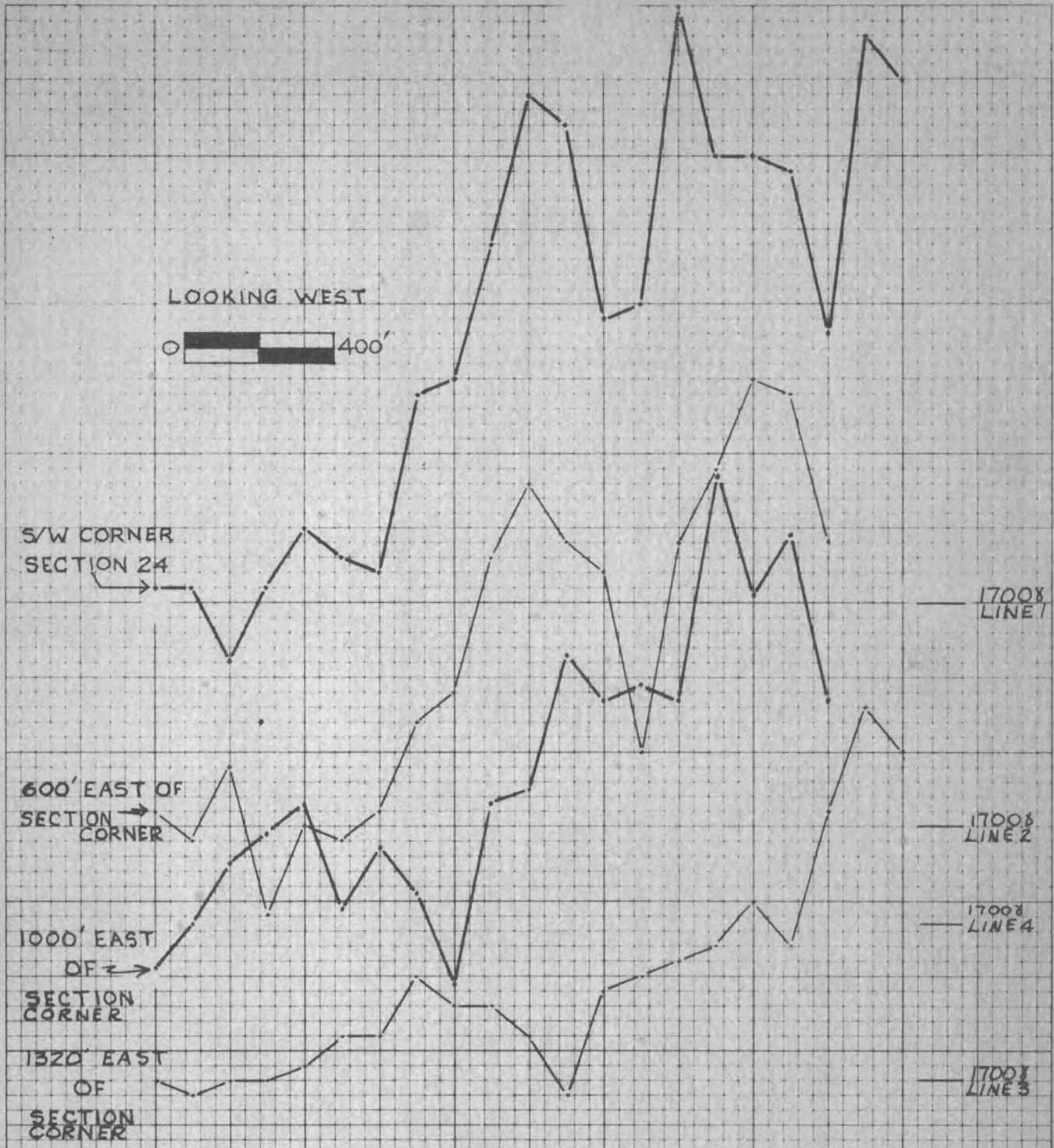
for
 MINERALS EXPLORATION COMPANY
 by
 HEINRICHS GEOEXPLORATION COMPANY

Contour Interval = 100 γ

SEPTEMBER 1963

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340R-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH



Vertical Scale = 1" = 100 gammas

MAGNETIC PROFILES

IT Claim Group

Sec. 24, T 5 S, R 5 E, Pinal County, Arizona

SAGATON PROJECT

for

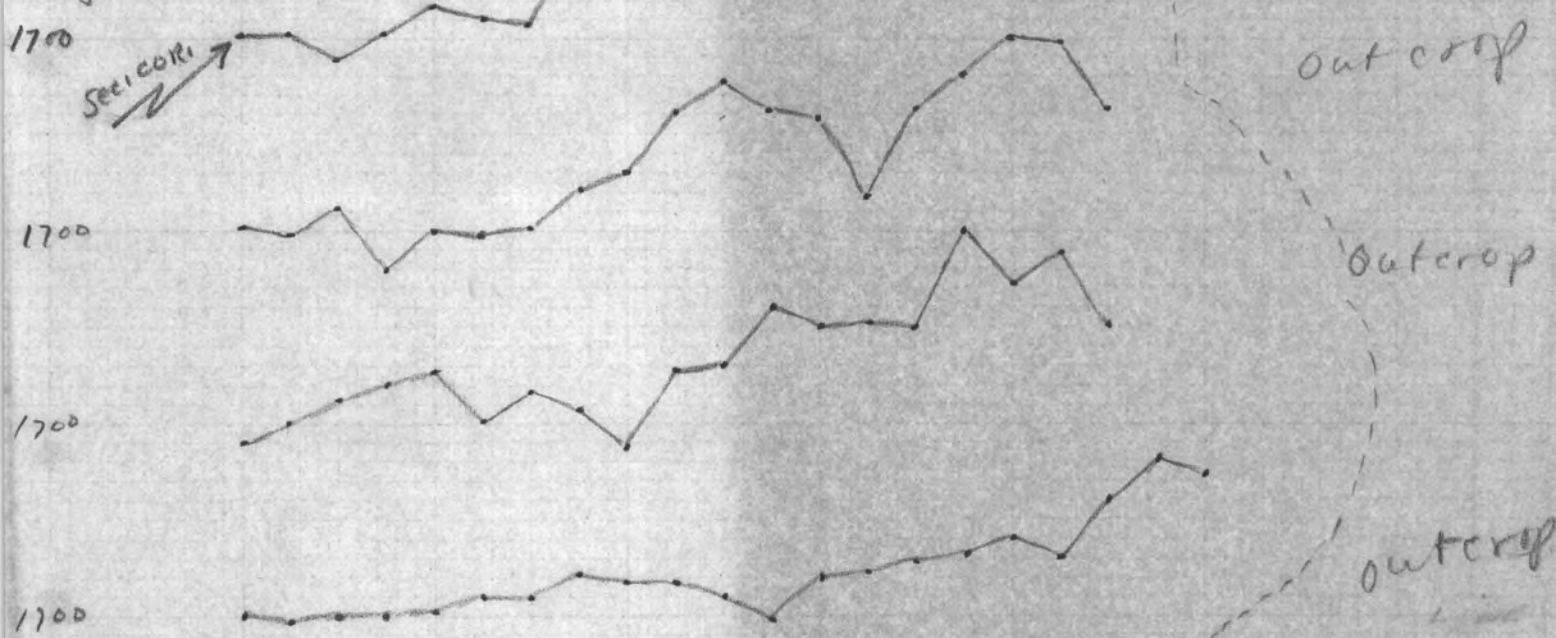
MINERALS EXPLORATION COMPANY

by

HEINRICHS GEOEXPLORATION COMPANY

September 1963

2000
300 gamma rays
per inch
See core



one night
change to 1000 gamma/in

Looking west

S ←

→ N

vert. 1" = 300 γ
Hor. 1" = 400'

Mexico - Sacaton
Salander Mag profiles
I 4" claims
Sec. 24
Sept. 17, 1963

MEXCO-Sacaton

TR. MK. REG. U.S. PAT. OFF.

Salanda Survey

Sept. 17, 1963

Sec. 24, T5S, R5E

"IT" Claim Group.

North. from S.W. cor.,
Sec. 24Sta. Scale Read.

<u>Sta.</u>	<u>Scale</u>	<u>Read.</u>
0 ^{N/S}	+1	171
1N		171
2N		166
3N		171
4N		175
5N		173
6N		172
7N		184
8N		185
9N		194
10N		204
11N		202
12N		189
13N		190
14N		210
15N		200
16N		200
17N		199
18N		188
19N		208
20N		205

TR. MK. REG. U.S. PAT. OFF.

S.W.C. IT #1

W.E.C. IT #1

W.E.C. IT #1E3

W.E.C. IT #3

W.E.C. IT #3E5

W.E.C. IT #5

outcrop
of S.E.7

Granite

"

No. Mineral
Biotite granite
or monzonite

South - 1800' N
 & 600' E } Sec. 24
 Sec. 24

TR. MK. REG. U.S. PAT. OFF.

Sta.	Scale	Read
18N	71	189
17N		199
16N		200
15N		194
14N		189
13N		175
12N		187
11N		189
10N		193
9N		188
8N		179
7N		177
6N		171
5N		169
4N		170
3N		164
2N		174
1N		169
0%		171

Base
 Sec 24 171

100' from out
 100'

North from S. sec. line
 1200' E. of S.W. Sec. cor.
 line 24

⑤

TR. MK. REG. U.S. PAT. OFF.

<u>Sta.</u>	<u>Scale</u>	<u>Read</u>
0 N	+1	170
1 N		169
2 N		170
3 N		170
4 N		171
5 N		173
6 N		173
7 N		177
8 N		175
9 N		175
10 N		173
11 N		169
12 N		176
13 N		177
14 N		178
15 N		179
16 N		182
17 N		179
18 N		188
19 N		195
20 N		192

outer rop

South - 1200' E }
 W. Sec. line Sec 2 y

TR. MK. REG. U.S. PAT. OFF.

<u>Sta</u>	<u>Scale</u>	<u>Read</u>	
18N	+1	185	outcrop 300 feet north
17N		196	
16N		192	
15N		200	
14N		185	
13N		186	12575 - claim return see below
12N		185	
11N		188	
10N		179	
9N		178	
8N		166	
7N		172	
6N		175	
5N		171	
4N		178	
3N		174	
2N		174	
1N		170	
0		167	

Base
 o/live 2 171

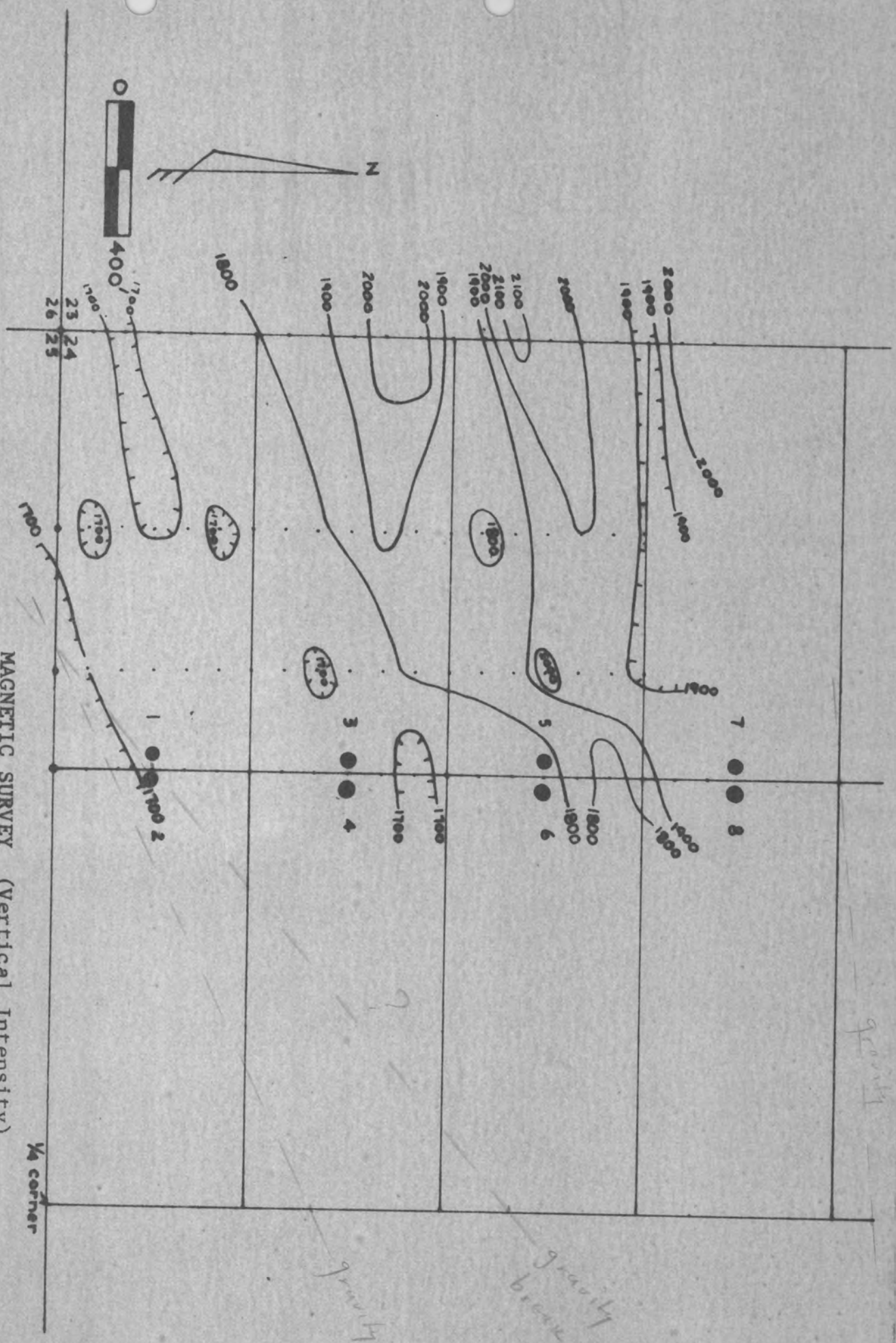
Desert Gen. #2
 by Jack O. WATTER & Richard
 D. WALKER NOV. 20 1957
 1320X660 - Lda E/W 660
 M/S 330

Contour Interval = 100 f

MINERALS EXPLORATION COMPANY
by
HEINRICHS GEOEXPLORATION COMPANY

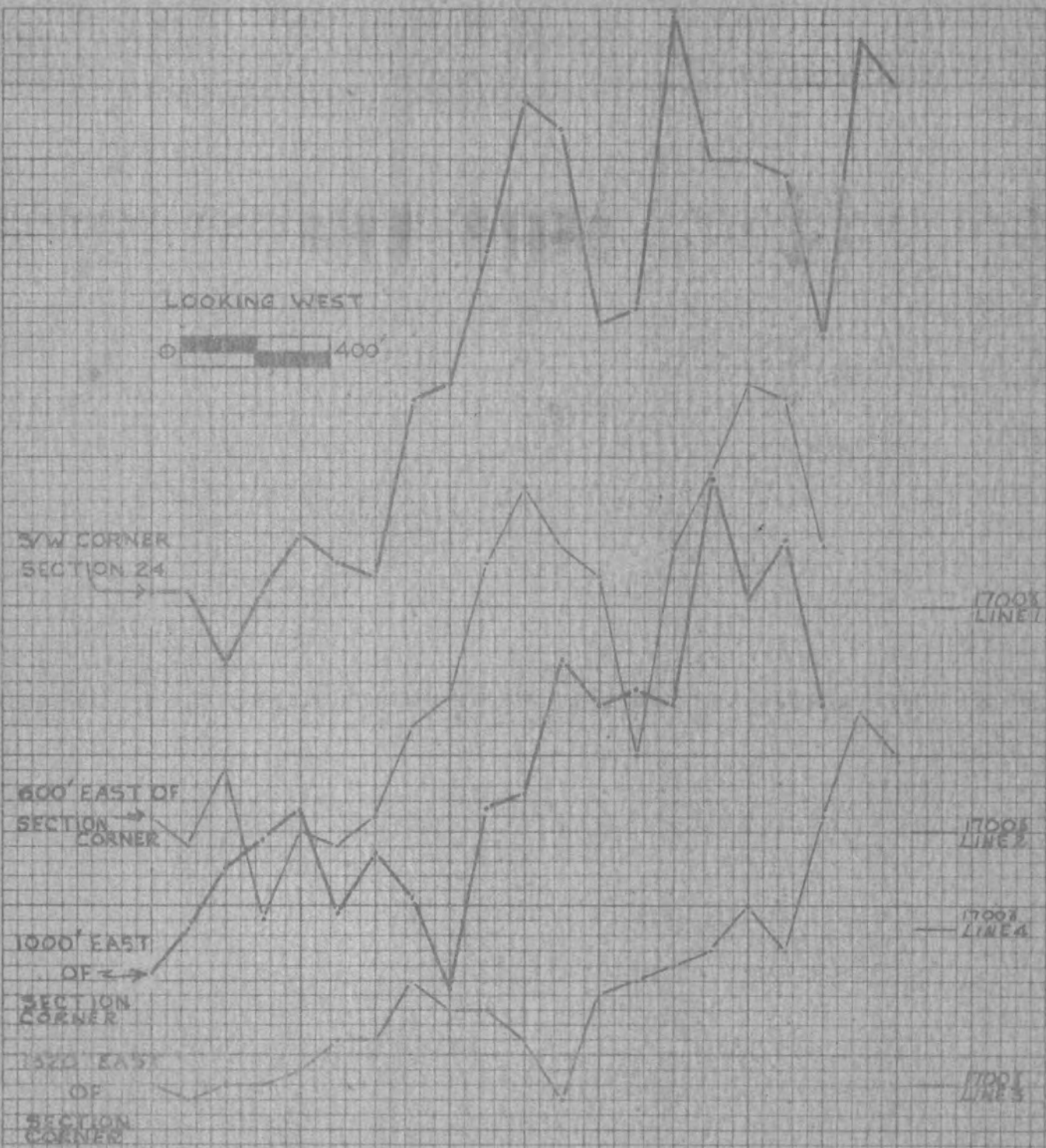
SEPTEMBER 1963

MAGNETIC SURVEY (Vertical Intensity)
IT Claim Group
Sec. 24, T 5 S, R 5 E, Pinal County, Arizona
for
SACATON PROJECT



EUGENE DERTZEN CO.
MADE IN U. S. A.

MD-2408 10 DERTZEN GRAPH PAPER
10 X 10 PER INCH



Vertical Scale = 1" = 100 gamma

MAGNETIC PROFILES
IT Claim Group

Sec. 24, T 5 S, R 5 E, Pinal County, Arizona

SAGATON PROJECT

for

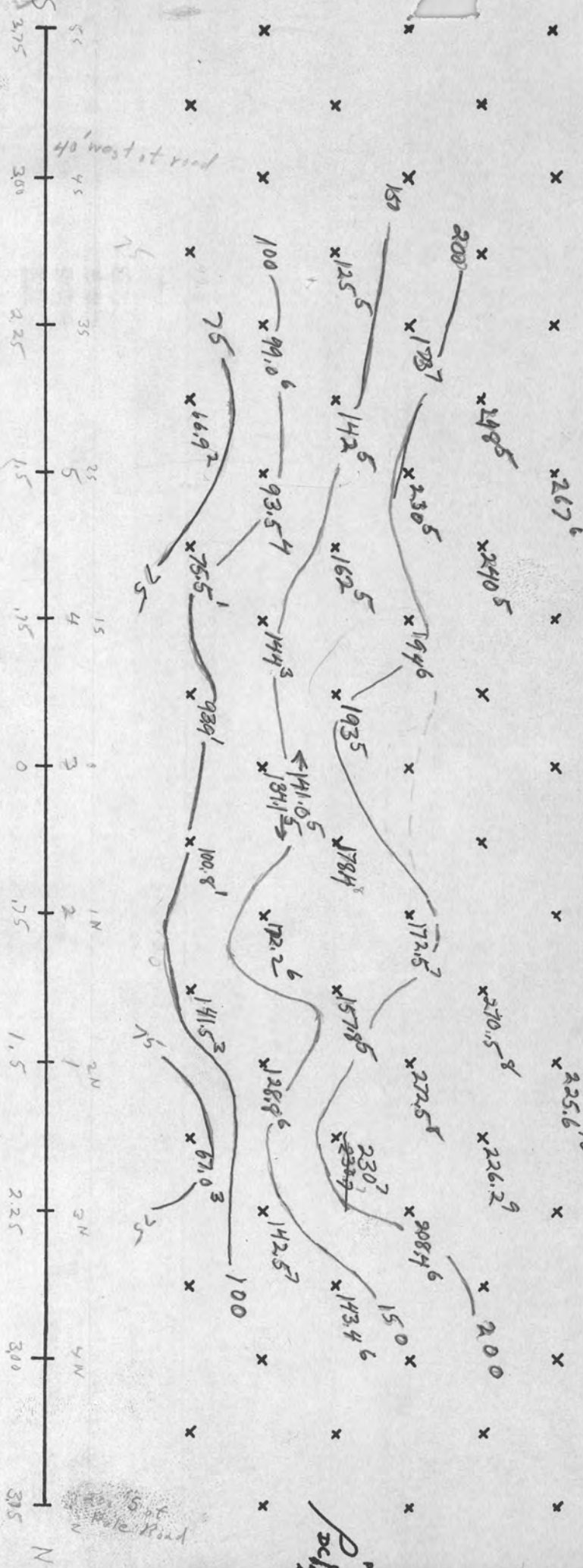
MINERALS EXPLORATION COMPANY

by

HEINRICHS GEOEXPLORATION COMPANY

September 1963

INDUCED POLARIZATION WORK SHEET



Area Section Line #3 SP 1

Scale 1" = 750'

Date 8-7-63

MCF

PRE
Dec 1963

Repeat.

Project Socaton Line # 2 Snd 2 5/2 Field date 4/15/63 Data page 3 Comp. date 4/15/63 Comp by PBS

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 154 Comp by PBS

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send					
(B) Receive	75-1.5 ³	2-3	1-2	2-3	3-4
(C) n separation		15-23.5 ³	2.25-3.0 ³	2-3	3-4
(D) I		1	1	2	3
(E) Vdc (avg)		1400	18.82	12.38	19.8
(F) Dccal		78.1	9.44	83.5	9.32
(G) Kn x 10 ⁻³		9.25	9	22.5	9
(H) $\rho_{dc} = \frac{E_{XF} \times G \times 10^3}{D}$	76	82	147	162	110
(I) Vac Σ					
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.					
(M) $\rho_{dc} / \rho_{ac} = \frac{E_{Xl}}{K}$					
(N) PFE = (M-1) (102)	7	4	4	6	3
(O) MGF = (M-1) (105) / H	90	46	29	37	26
		19	12	40	40
		44	44	27	32
		22	22	17	22
		16	16	36	16
		50	40	5	40
		48	36	4	36
		29	30	4	29
		37	37	4	37
		31	31	4	31
		35	35	4	35

* 7 run of 22/Aug - Madden Gear
* 4 run of 30/Aug/63 - Craft Gear
used

Project: Sectone Line: 2 5 # 5 1/2 Int. Cal 54 Date: 8-29-61

Send	34	45	2-3	3-9	4-8	1-2	2-3	3-4	4-8	1-2	2-3	3-9
Rec.	125	→	2-35	→	→	→	→	→	→	→	→	→
Time	100	30	100	30	30	110	30	10	10	30	70	10
DC-1	27.8 26.2	12.5 14.0	40.0 39.3	9.3 9.6	6.4 7.5	42.2 41.0	9.1 10.7	475 470	42.2 43.0	12.0 9.6	4.40 4.40	30.2 264
DC-2	27.9 26.1	12.5 14.0	40.0 39.3	9.3 9.6	6.7 7.4	42.2 41.0	10.7 9.3	476 469	42.0 43.4	11.7 9.6	4.60 4.58	260 305
Σ	54.0 54.1	26.5 26.5	79.3 79.3	19.1 19.2	13.9 14.1	85.2 83.2	19.8 20.0	944 945	85.4 85.8	21.6 21.5	9.0 9.18	566 565
DC-3	28.0 26.1	12.7 13.8	37.6 39.8	9.7 9.8	7.4 6.9	40.7 42.4	10.8 9.2	473 474	40.4 44.0	12.0 9.8	4.64 4.46	2.82 2.97
Dc-4	27.9 26.1	12.5 13.9	39.7 39.8	9.9 9.5	7.4 6.7	42.5 40.8	10.7 9.2	464 474	41.0 40.3	7.5 12.0	44.7 45.5	288 291
Σ	54.1 54.0	26.8 26.4	79.4 79.5	19.2 19.4	14.1 14.1	83.1 83.1	20.7 19.9	944 945	86.4 85.3	21.5 21.5	9.10 9.02	574 573
DC-AV	54.0	26.5	79.4	19.4 ⁸⁹	14.1	83.2	19.9	944	85.2	21.5	9.08	572
AC-1	26.0	12.3	38.2	8.8	6.6	40.1	9.3	440	36.5	10.1	4.21	2.64
AC-2	26.0	12.2	38.1	8.8	6.6	40.0	9.3	338	36.0	10.0	4.27	2.64
Σ	52.0	24.5	76.3	17.6	13.2	80.1	18.6	779	67.5	20.1	8.54	5.28
S. P.	+2.5	→	-19.2	→	→	+1.44	→	8.78	→	-12.3	→	→
AC-N	.01	→	.65	→	→	0.5	→	→	→	→	→	→

(A) Send	3.4	45	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
(B) Receive	12.5		2-35			3-45						
(C) n separation % Scale												
(D) I	1400											
(E) Vdc (avg)	59.0	26.5	79.4	19.9	14.1	83.2	19.5	24.4	81.5	21.5	90.8	5.72
(F) DCCal	944											
(G) Kn x 10 ⁻³	2.25	9	2.25	9	2.25	2.25	9	2.25	9	9	2.25	45
(H) Pdc=ExFxGx10 ³ /D	82.0	162.2	120.4	154.1	224.0	126.2	122.1	183.2	258.0	130.8	137.7	173.2
(I) Vac	52.6	24.5	76.3	17.6	13.2	80.1	18.6	7.08	6.75	20.1	8.54	5.28
(J) AC noise x 2	1.010 ²	0.055						8.14	7.15			
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.				1.051								
(M) Pdc/Pac=ExI/K	1.038	1.060	1.014	1.165	1.052	1.020	1.049	1.051	1.197	1.049	1.042	1.060
(N) PFE=(M-1)(10 ²)	4	6	1	105	5	2	5	195	298	5	4	6
(O) MGF=(M-1)(10 ⁵)/H	464	32.0	1.7	87594	21.7	15.9	400	134.0	930	324	30.5	346

Project <u>Cbove</u>	Line	Field date	Data page	Comp. date	Comp by
(A) Send	45	12	23	34	45
(B) Receive	5-65				
(C) n separation					
(D) I					
(E) Vdc (avg)	5.75	8.61	4.21	3.45	3.44
(F) DCCal					
(G) Kn x 10 ⁻³	78.75	22.5	45	78.75	126
(H) Pdc=ExFxGx10 ³ /D	305.5	130.7	142.2	183.2	292.2
(I) Vac	5.14	7.98	4.35	3.20	3.24
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.					
(M) Pdc/Pac=ExI/K	1.098	1.058	1.052	1.057	1.042
(N) PFE=(M-1)(10 ²)	16	6	5	6	4
(O) MGF=(M-1)(10 ⁵)/H	32.1	406	329	31.1	14.4

Used 980
 (see graph p 115)

(A)	Send			3-9	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
(B)	Receive			2-3N			3-4N								4-5N		
(C)	n separation			1400													
(D)	I																
(E)	Vdc (avg)			73.7	29.9	15.55	48.1	14.95	8.53	5.32	18.35	8.27	5.26				
(F)	Dccal			850			946	850			946	880					
(G)	Kn x 10 ⁻³			2.25	9	22.5	2.25	9	22.5	45	9	22.5	45				
(H)	$\rho_{dc} = \frac{E_x F_x G_x}{10^3 D}$			81.0	131	1210	56.8	65.0	93.4	117	86.7	91.0	115				
(I)	Vac Σ			20.8	27.6	14.95	46.9	14.0	7.96	5.00	17.80	7.70	4.86				
(J)	AC noise x 2																
(K)	Vac (corr) = $\sqrt{I^2 - J^2}$																
(L)	AC-DC cal.																
(M)	$\rho_{dc} / \rho_{ac} = \frac{E_x I}{K}$			1.021	1.081	1.020	1.085	1.047	1.049	1.042	1.040	1.052	1.062				
(N)	PFE = (M-1) / (102)			2	6	2	1	5	5	4	4	5	6				
(O)	MCF = (M-1) / (105) / H			28.5	46.5	11.7	8.9	71	53	36	46	57	45				

(A)	Send	1-2	4-5	3-4	2-3	1-2											
(B)	Receive		5-1N														
(C)	n separation																
(D)	I																
(E)	Vdc (avg)	3.78	20.3	10.20	6.82	4.90											
(F)	Dccal		946	850													
(G)	Kn x 10 ⁻³	28.75	22.5	45	78.25	126											
(H)	$\rho_{dc} = \frac{E_x F_x G_x}{10^3 D}$	145	241	222	262	302											
(I)	Vac Σ	3.52	18.50	7.41	6.28	4.44											
(J)	AC noise x 2																
(K)	Vac (corr) = $\sqrt{I^2 - J^2}$																
(L)	AC-DC cal.																
(M)	$\rho_{dc} / \rho_{ac} = \frac{E_x I}{K}$	1.052	1.052	1.062	1.063	1.082											
(N)	PFE = (M-1) / (102)	5	5	6	6	9											
(O)	MCF = (M-1) / (105) / H	36	23	24	24	27											

Note AC-DC cal
 ,980 ton all script 4-5 send.
 Note DC cal
 ,946 goid for sending 4-5
 use ,880 for all others

Project: SectorLine: 252 N 1/2

Int. Cal

Date: 8-9-63

Send			34	2-3	12	45	3-4	23	1-2	45	39	25
Rec.			2.3N	→	→	3-4N	→	→	→	40N	→	→
Time			100	30	30	100	30	70	10	30	10	10
DC-1			37.8 32.0	15.0	7.7 7.8	24.1 24.0	7.9 7.1	4.38 4.17	2.502 2.545	9.3 7.0	4.64 4.18	2.440 2.84
DC-2			36.6 37.0	14.9	7.6 8.0	24.2 24.1	7.7 7.0	4.22 4.24	2.46 2.50	9.1 9.2	4.55 3.65	2.400 2.54
Σ			73.8 73.6	29.9	15.5 15.6	48.1 48.3	15.0 14.9	8.56 8.56	5.27 5.26	19.3 19.3	8.78 8.70	5.24 5.24
DC-3			36.6 37.0	15.0	8.1 7.4	24.0 24.0	8.1 6.8	4.40 4.10	2.68 2.68	7.2 9.2	4.65 3.66	2.400 2.57
Dc-4			36.0 37.7	14.7	8.3 7.3	24.0 23.5	7.3 7.1	4.66 4.44	2.77 2.50	7.2 9.2	3.72 4.57	2.36 2.92
Σ			73.6 73.7	29.9	15.5 15.6	48.0 47.9	14.9 15.0	8.56 8.50	5.36 5.28	18.4 18.4	8.31 8.20	5.27 5.28
DC-AV			73.7	29.9	15.55	48.1	14.95	8.53	5.32	18.35	8.27	5.26
AC-1			35.9	13.8	7.45	23.5	7.0	3.98	2.50	9.65	3.85	2.43
AC-2			35.9	13.8	7.50	23.4	7.0	3.78	2.50	9.65	3.85	2.43
Σ			70.8	27.6	14.95	46.9	14.0	7.96	5.00	17.30	7.70	4.86
S. P.			+2.7			-15.7				-7.7		
AC-N			7.1	→	→	7.1	→	→	→	→	7.1	→

INDUCED POLARIZATION

SENDER NOTES

Project: SACATONLine: 3 SKDate: 8/29



Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Receive												
Time												
Range												
Current	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Send	4-5	1-2	2-3	3-4	4-5		2-3					
Receive							Cal					
Time												
Range												
Current	1400	1400	1400	1400	1400		1000	1200				

INDUCED POLARIZATION

SENDER NOTES

Project: SACATON

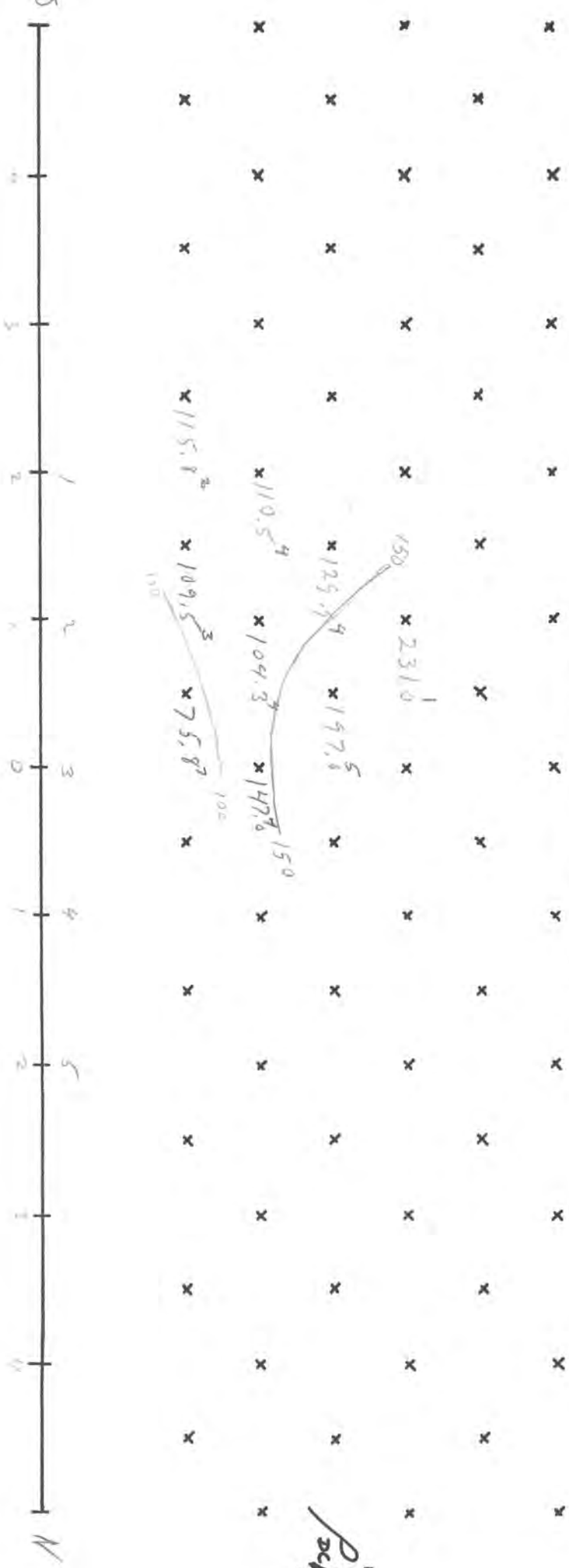
Line: 2Date: 9/3

Send	2-3	1-2	3-4	2-3	1-2	4-5	2-4	2-3	1-2	4-5	3-4	2-3
Receive												
Time	8/29/63		9/3/63									
Range												
Current	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Send	1-2	4-5	3-4	2-3	1-2		4-5					
Receive							CA/		2-3, 7			
Time									1-3, 2-3, 3-4, 4-5, 2-4			
Range									1400	1200		
Current	1400	1400	1400	1400	1400		1000	1200				

Project: Sagatay Line: 2 Spacel#2 Int. Cal 53.8 Date: 9/22/63

Send	34	45	2-3	34	45	12	23	34	45	12	23	34
Rec.	122	→	2-35	→	→	3-45	→	→	→	4-85	→	→
Time	30	38	100	30	38	100	30	11	11			
DC-1	24.2 26.4	12.0 12.0	36.2 36.0	8.0 9.2	6.0 7.1	36.4 40.0	8.40 9.40	4.22 4.30	3.64 4.00			
DC-2	26.2 24.3	12.2 11.4	36.6 36.3	9.3 7.9	7.1 5.9	40.0 36.4	8.40 9.40	4.14 4.14	4.14 3.48			
Σ	50.6 50.6	24.0 24.0	72.2 72.3	17.2 17.2	13.1 13.0	76.4 76.4	18.20 18.2	8.52 8.52	7.64 7.62			
DC-3	26.3 24.3	12.0 12.0	36.0 36.3	7.9 7.4	5.9 7.0	36.4 40.0	9.6 8.7	3.80 4.70	3.82 2.82			
Dc-4	26.2 26.2	12.3 11.8	36.4 35.9	7.8 5.6	7.0 5.8	39.6 38.8	9.4 8.6	3.70 4.70	3.78 2.84			
Σ	10.2 50.8	94.8 94.8	32.3 32.3	17.2 17.3	12.9 13.0	76.4 76.4	18.2 18.2	8.52 4.0	7.64 7.62			
DC-AV	50.5	29.2	72.3	17.2	13.0	76.4	18.2	8.51	7.63			
AC-1	23.5	11.7	35.2	8.3	6.1	37.0	8.80	4.12	3.81			
AC-2	24.0	11.6	35.5	8.3	6.3	37.8	8.86	4.10	X2			
Σ	47.5	23.3	70.7	16.6	12.4	74.8	17.6	8.22	7.60			
S. P.	2.4	→	118.2	→	→							
AC-N	140	25	16	2	2	2	2	2				

INDUCED POLARIZATION WORK SHEET



PFE
Pachm

MCF

Mexico, Zacatecas - (SL - KH etc.)
 Area _____ Scale 1" = 150'
 Date 8/23/03

HEINRICH'S GEOEXPLORATION COMPANY
 INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Sacaton Line 2 Served Field date 8-22-63 Data page 1 Comp. date 8-22-63

(A) Send	2.3	1-2	34	2.3	1-2	4.5	3.4	2.3	1-2	4.5	3.4	2.3
(B) Receive	1-2.5	→	2.35	→	3.45	→	4.5	→	3.45	→	4.55	→
(C) n separation	40	308	35	41	52	42	29	22	259	36	42	43
(D) I	1660	→	→	→	→	1000	1600	→	1200	1000	1600	→
(E) Vdc (avg)	24.55	7.22	20.4	8.72	3.53	8.61	5.61	440	151	2.08	250	261
(F) Dccal	940	→	→	→	→	→	→	→	→	→	→	→
(G) Kn x 10 ⁻³	2.25	9	2.25	9	2.25	2.25	9	22.5	45	9	2.25	45
(H) $\rho_{dc} = \frac{ExFxGx10^3}{D}$	3.24	38.1	27.0	46.0	46.7	18.2	29.6	58.2	52.9	17.6	33.1	69.0
(I) Vac Σ	24.0	2.00	19.80	8.24	3.42	4.36	5.50	440	160	2.10	246	2.56
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	984	987	987	983	977	983	991	996	999	986	983	982
(M) $\rho_{dc} / \rho_{ac} = \frac{ExL}{K}$	1.505	1015	1.618	1040	1.005	1012	1011	1008	1020	1.192	1.112	1.132
(N) PFE = (M-1) (10 ²)	1	?	2	4	1	1	1	1	2	15	18	13
(O) MCF = (M-1) (10 ⁵) / H	154	394	666	85.2	10.7	66.0	37.2	18.5	37.8	920.	560.	193.

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	1-2	45	34	2.3	1-2
(B) Receive	→	565	→	→	→
(C) n separation	16	18	28	36	14
(D) I	1200	1000	1600	1600	1200
(E) Vdc (avg)	1.97	1.10	1.80	2.10	1.89
(F) Dccal					
(G) Kn x 10 ⁻³	28.75	22.5	45	74.75	126
(H) $\rho_{dc} = \frac{ExFxGx10^3}{D}$	59.9	23.2	47.6	97.2	87.7
(I) Vac Σ	94	110	1.64	2.14	.84
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.	995	957	991	986	1000
(M) $\rho_{dc} / \rho_{ac} = \frac{ExL}{K}$	1.032	1168	1084	1012	1.058
(N) PFE = (M-1) (10 ²)	3	16	9	1	5
(O) MCF = (M-1) (10 ⁵) / H	53.6	723	180.	12.4	66.2

HEINRICHS GEOEXPLORATION COMPANY
 INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Sacchar Line 35 1/16 Field date 8-6-63 Data page 142 Comp. date 8-6-63 Comp by KH

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
(B) Receive	1-2N		2-3N			3-4N					4-5N	
(C) n separation	91.5 cal											
(D) I	1800											
(E) Vdc (avg)	96.7	30.2	12.74	38.8	16.1	64.3	29.0	14.2	7.16	32.1	20.7	12.24
(F) DCcal	054.888											
(G) Kn x 10 ⁻³	2.25	5	2.25	5	2.25	2.25	5	2.25	4.5	5	5	2.25
(H) Pdc=ExFxGx10 ³ /D	100.8	134.1	141.5	178.2	178.4	670	128.8	157.8	172.5	142.5	230.0	272.5
(I) Vac	89.1	28.6	12.5	36.3	14.8	58.3	27.1	13.4	7.20	29.7	18.2	11.26
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	990											
(M) Pdc/Pac=ExI/K	1.005	1.045	1.028	1.058	1.078	1.026	1.060	1.050	1.068	1.071	1.067	1.080
(N) PFE=(M-1)/(10 ²)	1	5	3	6	8	3	6	5	7	7	7	8
(O) MCF=(M-1)/(10 ⁵)/H	4.5	34	24	34	43	31	47	32	48	50	25	21

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	4-5	1-2	2-3	3-4	4-5
(B) Receive		5-6N			
(C) n separation					
(D) I	1800				
(E) Vdc (avg)	6.96	12.5	7.39	5.82	3.62
(F) DCcal					
(G) Kn x 10 ⁻³	78.75	22.5	45	78.5	126
(H) Pdc=ExFxGx10 ³ /D	276.5	143.4	208.4	226.2	225.6
(I) Vac	6.42	12.0	8.80	5.35	3.28
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.					
(M) Pdc/Pac=ExI/K	1.043	1.063	1.057	1.078	1.103
(N) PFE=(M-1)/(10 ²)	4	6	6	9	10
(O) MCF=(M-1)/(10 ⁵)/H	31	44	27	34	46

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
(B) Receive	75-1.50		152.205			1225	3105			3015	3255	
(C) n separation												
(D) I	1800											
(E) Vdc (avg)	86.0	32.1	69.2	33.0	17.55	61.3	21.4	14.86	8.90	23.7	13.0	10.07
(F) Dccal	873											
(G) Kn x 10 ⁻³	2.25	5	2.25	9	2.25	2.25	9	2.25	4.5	7	2.25	4.5
(H) $\rho_{dc} = \text{ExFxGx}10^3/D$	93.9	241.0	75.5	144.0	193.0	66.9	93.5	162.0	194.0	99.0	142.0	229.6
(I) Vac Σ	82.6	23.7	66.0	31.0	16.22	58.0	11.8	13.70	8.15	20.4	11.55	7.12
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) $\rho_{dc}/\rho_{ac} = \text{ExL/K}$	1.007	1.045	1.012	1.030	1.045	1.022	1.043	1.043	1.056	1.056	1.051	1.052
(N) PFE=(M-1)(10 ²)	1	5	1	3	5	2	4	5	6	6	5	5
(O) MCF=(M-1)(10 ⁵)/H	7.5	32	16	21	23	33	46	30	29	57	36	23

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	12	75	39	28	12
(B) Receive		75	405		
(C) n separation					
(D) I					
(E) Vdc (avg)	630	1190	278	647	490
(F) Dccal					
(G) Kn x 10 ⁻³	28.75	22.5	45	28.75	126
(H) $\rho_{dc} = \text{ExFxGx}10^3/D$	240	1245	172.8	244	268.5
(I) Vac Σ	5.20	16.54	7.25	5.88	4.01
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.	967				
(M) $\rho_{dc}/\rho_{ac} = \text{ExL/K}$	1.050	1.050	1.066	1.049	1.063
(N) PFE=(M-1)(10 ²)	5	5	7	5	6
(O) MCF=(M-1)(10 ⁵)/H	21	40	34	20	22

Project: ScoutonLine: 351/N^{1/2}Int. Cal 53.2Date: 9-6-62

Send	2-3 Cal				3-4	4-5	2-8	3-4	4-5	1-2	2-3	3-4
Rec.	1000	1000	1200	1200	1-2N	→	2-3N	→	→	3-4N		
Time	100	300	150	300	100	30	100	30	30	100	30	30
DC-1	57.5	56.0	69.2	67.5	47.0 43.9	14.6 15.8	62.1 65.3	19.2 19.7	7.8 8.3	28.2 32.1	14.2 14.7	7.0 7.1
DC-2	57.4	55.5	69.4	67.5	44.2 41.3	14.3 16.3	65.4 61.7	19.0 19.7	7.7 8.3	28.2 32.3	14.3 14.7	7.0 7.2
Σ	114.9	111.5	138.6	135.6	90.9 90.5	30.4 30.6	127.4 127.3	38.9 38.3	16.1 16.8	60.3 60.5	28.9 29.0	14.1 14.2
DC-3					46.5 44.1	16.4 13.6	65.4 62.0	19.5 19.4	7.6 8.4	28.0 32.2	14.3 14.6	6.8 7.5
Dc-4					44.0 46.8	16.8 13.0	65.7 62.8	19.1 19.7	7.9 8.2	28.2 28.0	14.3 14.7	6.8 7.9
Σ					90.6 90.8	30.6 29.8	127.4 127.3	38.9 38.8	16.0 16.1	60.2 60.2	28.9 29.0	14.2 14.2
DC-AV					90.7	30.2	127.4	38.8	16.1	60.3	29.0	14.2
AC-1	56.9	53.8	68.6	65.0	44.7	14.3	61.2	18.1	7.4	29.2	13.5	6.7
AC-2	56.8	53.6	68.4	65.0	44.4	14.3	61.3	18.2	7.4	29.1	13.6	6.7
Σ	113.7	107.4	137.0	130.0	89.1	28.6	122.5	36.3	14.8	58.3	27.1	13.4
S. P.	-10.3				-10.3		-14.0				-7.9	
AC-N					.1				7.1			

$$\begin{array}{r} 2.02 \\ 1.72 \\ \hline 3.74 \end{array}$$

2.02
 ← 3.74

6.7
 3.4

3.2
 2.2

2.5
 6.7
 4.7
 4.68

$$\begin{array}{r} 4.72 \\ 4.2 \\ \hline 4.68 \end{array}$$

$$\begin{array}{r} 4.80 \\ 4.5 \\ \hline 4.76 \end{array}$$

$$\begin{array}{r} 4.76 \\ 4.4 \\ \hline 4.60 \end{array}$$
 4.80
 4.80
 4.76

4.5
 3.75
 4.16
 3.50

$$\begin{array}{r} 4.22 \\ 7.72 \\ \hline 3.94 \end{array}$$

$$\begin{array}{r} 3.72 \\ 3.72 \\ \hline 3.74 \end{array}$$
 3.74

Project: Section Line: 351/W² Int. Cal 53.8 Date: 9-6-63

Send	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Rec.	7-SW	5-CN											
Time	16	30	30	10	16	30	10	10					
DC-1	2.82 3.84	11.69 14.7	9.6	6.23 6.06	3.55 3.45	6.5 6.3	4.72 4.63	2.90 3.12	1.78 1.90				
DC-2	3.86 3.89	17.0 15.0	9.5 11.1	5.83 6.44	3.67 3.23	6.4 6.6	4.78 4.58	3.03 2.78	2.06 1.54				
Σ	7.68 7.70	31.9 32.0	20.8 20.6	12.29 12.27	8.00 6.90	12.9 13.0	9.32 9.36	6.92 5.81	3.84 3.80				
DC-3	3.72 4.07	18.8 15.0	9.3 11.4	6.12 6.12	3.20 3.85	6.4 6.5	4.86 4.60	2.99 2.92	14.6 1.97				
Dc-4	3.79 4.12	17.1 14.7	9.2 11.4	6.14 6.22	3.10 3.88	6.4 6.6	4.79 4.66	3.06 2.68	1.57 2.14				
Σ	7.58 7.88	31.8 32.5	20.7 20.6	12.24 12.30	6.03 6.90	12.8 13.0	9.46 9.44	5.84 5.74	3.43 3.68				
DC-AV	7.76	32.1	20.7	12.28	6.96	12.9	9.35	5.82	3.62				
AC-1	3.60	14.9	9.6	5.63	3.21	6.0	4.40	2.68	1.63				
AC-2	3.60	14.4	9.6	5.63	3.21	6.0	4.40	2.67	1.65				
Σ	7.20	29.7	19.2	11.26	6.42	12.0	4.80	5.35	3.28				
S. P.		+11.3					-7.2						
AC-N	<.1	3			<.1				<.1				

Project: SarcotayLine: 3 S/I / 5 1/2Int. Cal 53.9 Date: 8-5-63

Send	45				→ 2.3	1.2	34	2.3	1.2	45	34	23
Rec.	cal				→ .75 ←	1.55	1.5 ←		→ 2.25	2.25		
Time	100	100	300	350	160	30	100	30	10	100	30	10
DC-1	59.0	69.7	56.0	67.0	43.4 42.6	16.0 16.0	37.9 31.0	16.0 17.1	8.7 8.92	21.0 30.5	10.6 10.7	7.5 7.45
DC-2	59.0	69.6	56.0	67.5	43.1 42.4	16.1 16.0	37.9 31.5	15.8 17.1	8.5 9.15	30.5 30.5	10.9 10.6	7.45 7.2
Σ	18.0	139.3	112.0	139.5	86.0 85.9	32.0 32.1	68.9 67.4	33.1 33.9	17.52 17.60	61.5 61.0	21.3 21.4	14.55 14.85
DC-3	(1000)	(1200)	(100)	1200	43.4 42.6	16.2 15.9						7.65 7.25
Dc-4					43.2 42.7	16.0 16.2			8.3 7.2			7.65 7.15
Σ					86.0 85.9	32.1 32.2			17.5			14.7 14.8
DC-AV							69.2	33.0	17.55	61.3	21.4	14.86
AC-1	57.2	67.8	53.5	65.0	41.4	14.8	33.0	15.5	8.1	29.0	9.9	6.85
AC-2	57.5	67.9	53.5	64.7	41.2	14.9	33.0	15.5	8.12	29.0	9.9	6.85
Σ	114.7	135.7	107.0	129.7	82.6	29.7	66.0	31.0	16.22	58.0	19.8	13.70
S. P.					-5.0		→ 23.7			→ 4.4		
AC-N	clcd 7.1mv									.10		

Project: SackettLine: 35I/5¹/₂Int. Cal 53.9 Date: 9-5-63

Send	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
Rec.	3.0	3.0 →	.75									
Time	10	30	10	10	10	10	10	10	3			
DC-1	5.10 3.80	9.5 13.2	7.3 5.7	4.95 5.15	3.42 2.90	5.9 5.5	4.40 8.58	3.95 2.57	2.22 2.14			
DC-2	5.15 3.75	11.1 11.6	7.4 5.6	7.80 5.25	3.55 2.65	5.95 5.45	4.92 3.55	3.90 2.52	2.24 2.16			
Σ	8.90 8.90	22.7 22.7	13.0 13.0	10.10 10.10	6.32 6.32	11.40 11.40	7.97 7.97	6.52 6.42	4.40 4.40			
DC-3					2.44 3.90			3.95 2.50	2.17			
Dc-4					3.78 2.50			3.95 2.60				
Σ					6.31 6.31			6.45 6.55				
DC-AV	8.50	22.7	13.0	10.04	6.30	11.40	7.98	6.49	4.40			
AC-1	4.87	10.4	5.97	4.55	2.90	5.25	3.62	2.99	2.00			
AC-2	4.08	10.4	5.98	4.57	2.90	5.25	3.63	2.99	2.01			
Σ	8.15	20.4	11.95	9.12	5.80	10.50	7.25	5.98	4.01			
S. P.	→	-34.0				→	-16.5					
AC-N	.10 →	.10 -			.05	.3?						

INDUCED POLARIZATION

SENDER NOTES

Project: SPECATION Line: 445 Date: 9/6

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	2-4	4-5	1-2	2-3	3-4
Receive												
Time												
Range												
Current	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Send	4-5	1-2	2-3	3-4	4-5		2-3					
Receive							ca/					
Time				1800								
Range		1800										
Current	1800		1800		1800		1000	1200				

INDUCED POLARIZATION

SENDER NOTES

Project: SACHTONLine: 4 5Date: 7/5

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
Receive	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Time	6:38	6:45	7:00	7:10	7:13	7:28	7:33	7:45	8:01	8:29	8:34	8:39
Range	750	750	1500	1500	1500	2250	2250	2250	2250	3000	3000	3000
Current	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Send	1-2	4-5	3-4	2-3	1-2		4-5			10-9	9-8	8-7
Receive	4-5	1-2	2-3	3-4	4-5		CA/			7-8	8-9	9-10
Time	8:57	9:21	9:30	9:35	9:50		6:15	6:25		8:12	8:16	8:20
Range	3000	3750	3750	3750	3750		1500	1500		4500	4500	4500
Current	1800	1800	1800	1800	1800		1000	1200		3600	900	900

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	3.4	4-5	2-3	3-4	4-5
(B) Receive	12W	4-5	2-3W	3-4W	2-3
(C) n separation	54%	93%	24%	17%	27%
(D) I	11.27	2.77	14.8	3.49	1.48
(E) Vdc (avg)	1800				
(F) Dccal	Used 992				
(G) Kn x 10 ⁻³	3	12	3	12	24
(H) $P_{dc} = \frac{E \times F \times G \times 10^3}{D}$	1872	18.3	2445	23.1	24.45
(I) Vac	10.88	2.74	14.6	3.46	1.62
(J) AC noise x 2		1.00		1.00	
(K) Vac(corr) = $\sqrt{I^2 - J^2}$		2.54		12.5	
(L) AC-DC cal.	973	582	995	1000	973
(M) $P_{dc} = \frac{E \times I}{K}$	1.007	1.072	1.008	1.005	1.091
(N) PFE = (M-1) / (102)	1	7.9	1	9.2	1
(O) MCF = (M-1) / (105) / H	3.7	394.7	33	39.	369.7
Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	4-5	1-2	2-3	3-4	4-5
(B) Receive		5-6W	5-6%		
(C) n separation					
(D) I	1800				
(E) Vdc (avg)	162	2.79	1.50	1.55	1.64
(F) Dccal	992				
(G) Kn x 10 ⁻³	105	30	60	105	168
(H) $P_{dc} = \frac{E \times F \times G \times 10^3}{D}$	36.4	46.1	49.6	53.0	59.2
(I) Vac			1.50		
(J) AC noise x 2			1.00		
(K) Vac (corr) = $\sqrt{I^2 - J^2}$			1.12		
(L) AC-DC cal.			1.17		
(M) $P_{dc} = \frac{E \times I}{K}$			1.310		
(N) PFE = (M-1) / (102)			3.17		
(O) MCF = (M-1) / (105) / H			633.7		

958 / 130
7.7

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Socofon Line #1 South-E Field date 2/1/83 Data page 3 Comp. date 2-13 Page 13
 Comp. by

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
(B) Receive	1-2E	4-5E	2-3E	4-5E	3-4E	2-3E	1-2E	4-5E	3-4E	2-3E	1-2E	4-5E	3-4E	2-3E	1-2E	4-5E
(C) n separation	49%	45%	38%	45%	39%	41%	37%	44%	38%	42%	36%	43%	37%	40%	35%	41%
(D) I	150	180	200	190	210	170	220	160	230	150	240	140	250	130	260	120
(E) Vdc (avg)	18.25	2.77	2.92	2.68	1.16	2.03	2.24	1.09	1.54	2.37	1.35	1.13	2.50	1.35	1.13	2.79
(F) Dccal	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992
(G) Kn x 10 ⁻³	3	12	3	12	31	3	12	31	60	12	31	60	12	31	60	10
(H) $\rho_{dc} = \frac{ExFxGx10^3}{D}$	17.0	14.3	12.3	17.7	19.2	12.1	14.9	18.1	17.9	15.0	23.4	27.4	15.0	23.4	27.4	15.0
(I) Vac Σ	980	272	259	217	14	6.78	14	6.78	14	6.78	14	6.78	14	6.78	14	6.78
(J) AC noise x 2		100		14		14		14		14		14		14		14
(K) Vac (corr) = $\sqrt{I^2 - J^2}$		253		2.72		2.72		2.72		2.72		2.72		2.72		2.72
(L) AC-DC cal.	977	990	1585	988	988	988	988	988	988	988	988	988	988	988	988	988
(M) $\rho_{dc} / \rho_{ac} = \frac{ExL}{K}$	1.020	1.073	1.015	1.052	1.052	1.024	1.024	1.024	1.024	1.024	1.024	1.024	1.024	1.024	1.024	1.024
(N) PFE = (M-1) / (102)	2	7.2	2	8.2	2	2	2	2	2	2	2	2	2	2	2	2
(O) MCF = (M-1) / (105) / H	117	395	146	463		198										

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	1-2	4-5	3-4	2-3	1-2
(B) Receive	5-6E				
(C) n separation	48%				
(D) I	180				
(E) Vdc (avg)	1.52	1.03	.73	.55	.53
(F) Dccal					
(G) Kn x 10 ⁻³	105	30	8.0	105	168
(H) $\rho_{dc} = \frac{ExFxGx10^3}{D}$	36.1	17.1	24.2	31.4	45.0
(I) Vac Σ					
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.					
(M) $\rho_{dc} / \rho_{ac} = \frac{ExL}{K}$					
(N) PFE = (M-1) / (102)					
(O) MCF = (M-1) / (105) / H					

Project: SacatonLine: 1-Spr. 1 - W₂

Int. Cal

Date: 6/19/62

Send	7-4	2-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Rec.	1-2W	→	2-3W	→	→	7-9W	→	→	→	4-5W	→	→
Time	10	3	10	10	3	30	10	3	3	10	3	3
DC-1	5.78 5.46	1.45 1.49	2.2 2.0	1.82 1.72	.93 .93	11.0	2.40 2.20	1.08 1.1	.67 .67	2.75 2.40	1.16 1.16	.62 .62
DC-2	5.43 5.65	1.20 1.31	2.6 2.8	1.66 1.81	.57 .55	11.1	2.60 2.20	1.03 1.03	.98 .52	2.20 2.10	.87 .87	.57 .57
Σ	11.21 11.21	2.75 2.75	4.8 4.8	3.48 3.48	1.5 1.5	22.1	5.00 5.00	2.11 2.11	1.15 1.15	4.95 4.95	1.99 1.99	1.19 1.19
DC-3	5.35 5.48	1.55 1.72	2.0 2.0	1.85 1.44	1.07 1.5	11.0	2.38 1.08	1.66 1.08	.66 .67	2.17 1.81	1.07 .98	.62 .62
Dc-4	5.95 5.88	1.28 1.27	2.8 6.8	1.57 2.10	.41 .45	11.1	2.62 1.03	1.93 1.03	1.48 .26	1.02 2.26	.94 1.02	.57 .62
Σ	11.20 11.28	2.78 2.78	4.8 4.8	3.48 3.48	1.5 1.5	22.1	5.00 5.00	2.11 2.11	1.15 1.15	4.95 4.95	1.99 1.99	1.19 1.19
DC-AV	11.27	2.77	4.8	3.49	1.48	22.1	5.00	2.12	1.14	4.55	1.99	1.19
AC-1	5.44	1.37	2.2	1.73	0.81	10.8	2.43	1.09		2.23		
AC-2	5.44	1.77	2.2	1.73	.81	10.8	2.45	1.09		2.22		
Σ	10.88	2.74	4.46	3.46	1.62	21.6	4.88	2.18		4.45		
S. P.	3.0	→	+22			-21.6	→	→	→	29.2	→	→
AC-N	0.30	→	0.30	→	→	0.50	→	→	→	0.60	→	→
I.C.	3.77	→					→	→	→		→	→

49

71

67
67
67

59

131
141
143
151

151

69

140	141	142
140	141	142
140	141	142
140	141	142

INDUCED POLARIZATION

SENDER NOTES

project: _____ Line: 1 113 Date: _____

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Receive												
Time												
Range												
Current	1400	1800	1500	1800	1800	1800	1800	1800	1800 ¹⁵	1810	1800	1800 ¹⁵
Send	4-5	1-2	2-3	3-4	4-5							
Receive												
Time												
Range												
Current	1800 ¹⁵	1200	1200	115	1800 ¹⁵							

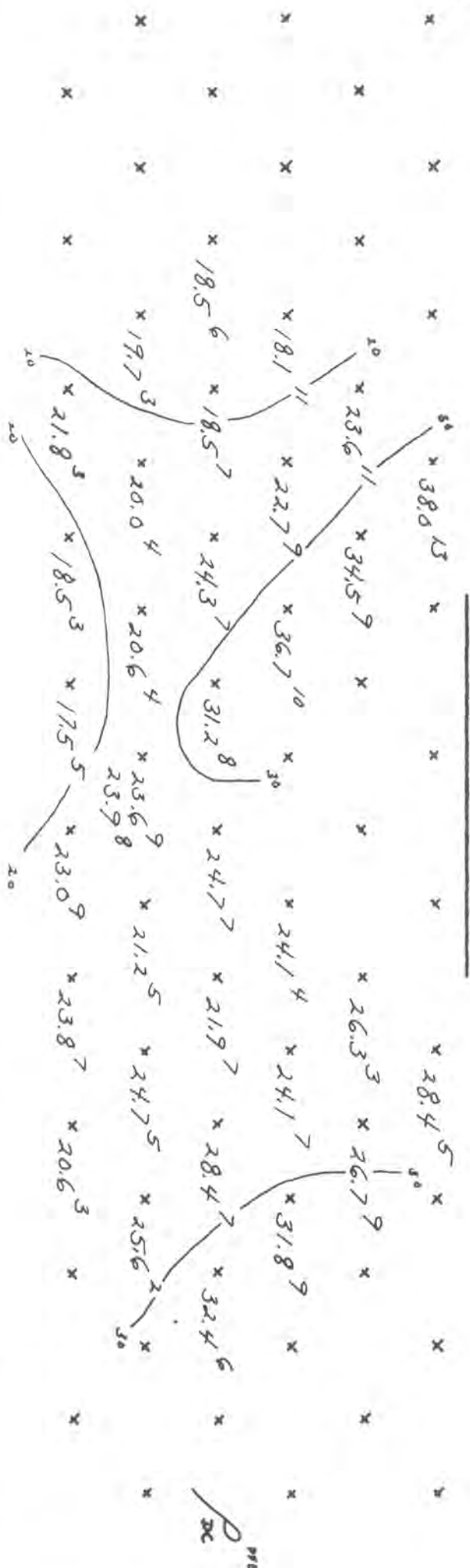
INDUCED POLARIZATION

SENDER NOTES

 project: SUBSTON Line: 1 54 Date: 2/1/66

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
Receive												
Time												
Range												
Current	1800	1800	1800	1800	1800	1500	1800	15	15	1800	15	15
Send	1-2	4-5	3-4	2-3	1-2							
Receive												
Time												
Range												
Current	15 1800	15 1800	15 1800	15 1800	15 1800							

INDUCED POLARIZATION WORK SHEET



North

South

Area Casa Grande (AS & R #1)

Scale 1' = 1000'

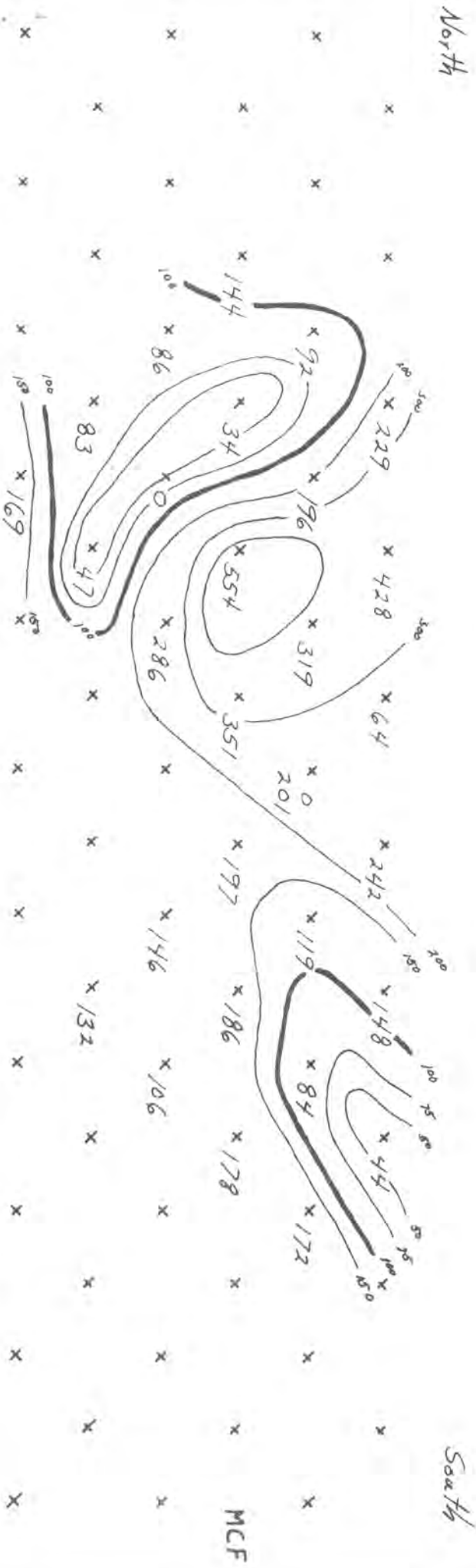
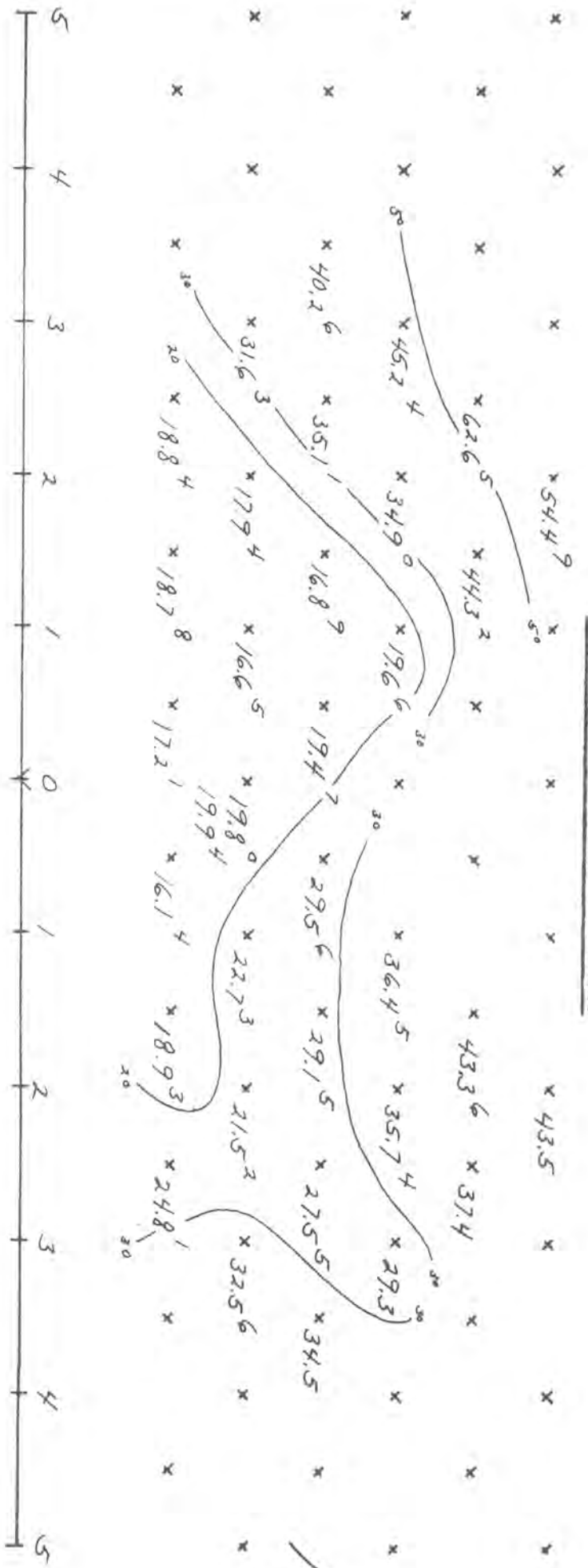
Date October 9, 1963

HRE

MCF

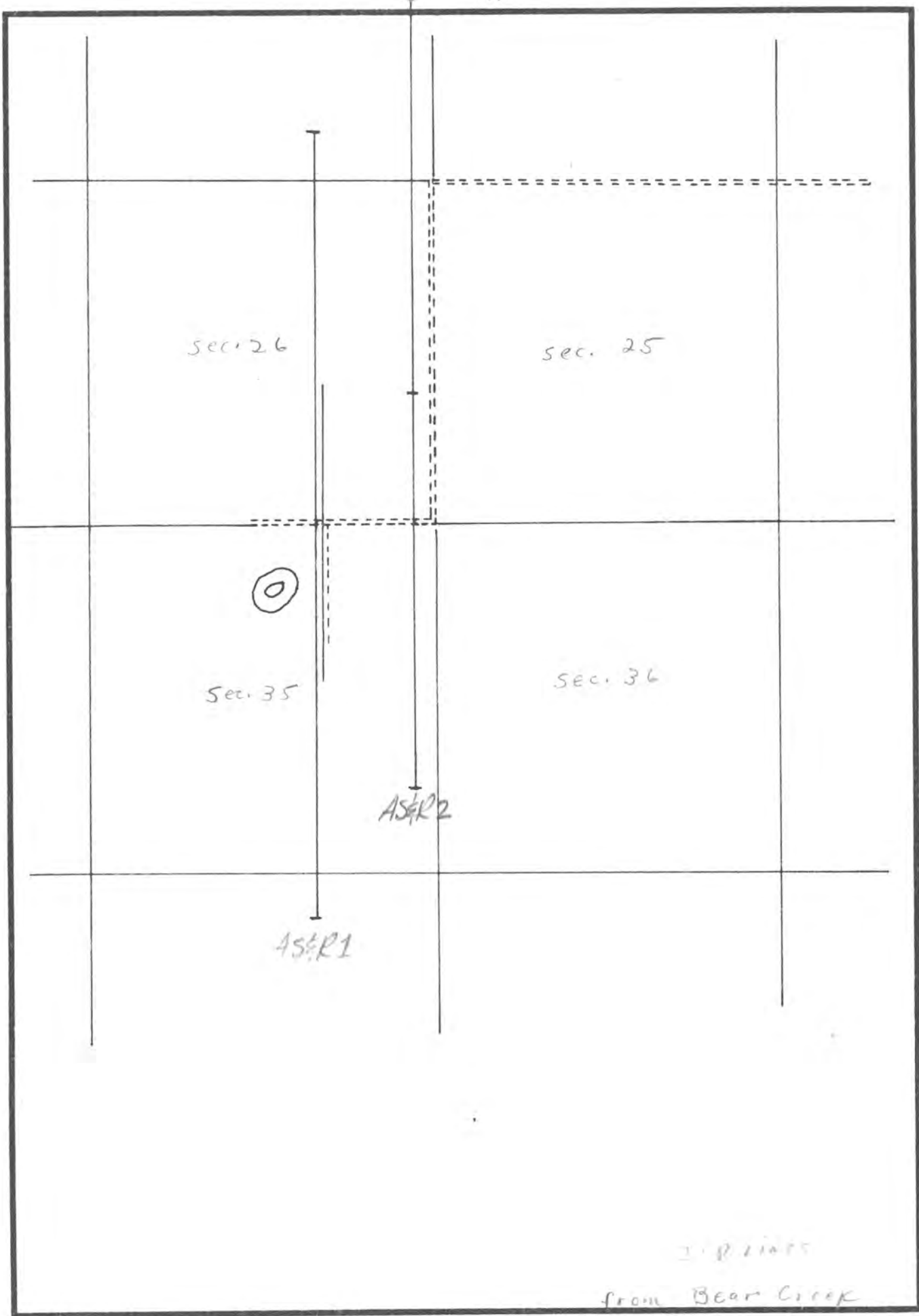
PPE

INDUCED POLARIZATION WORK SHEET



Area Sacaton (Casa Grande) ASAR # 2 Scale 1" = 1000' Date Oct 11, 1963

HRE



sec. 26

sec. 25

sec. 35

sec. 36

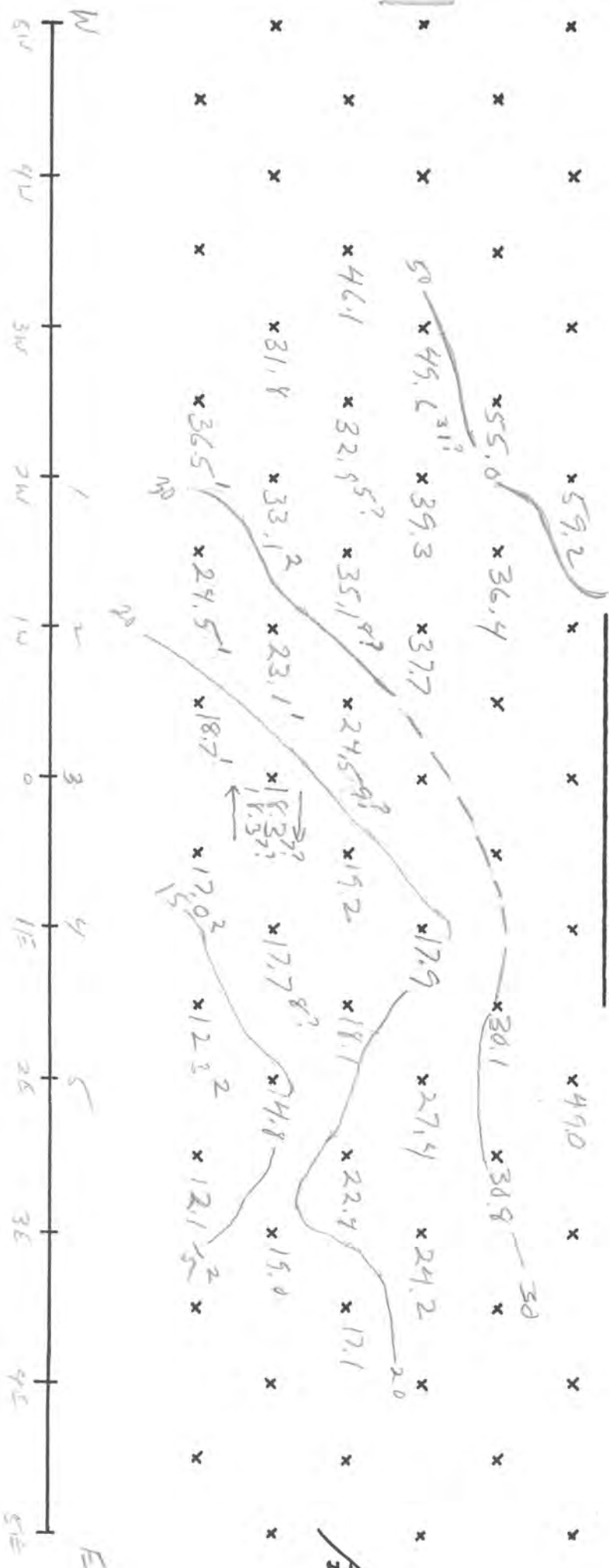


ASR2

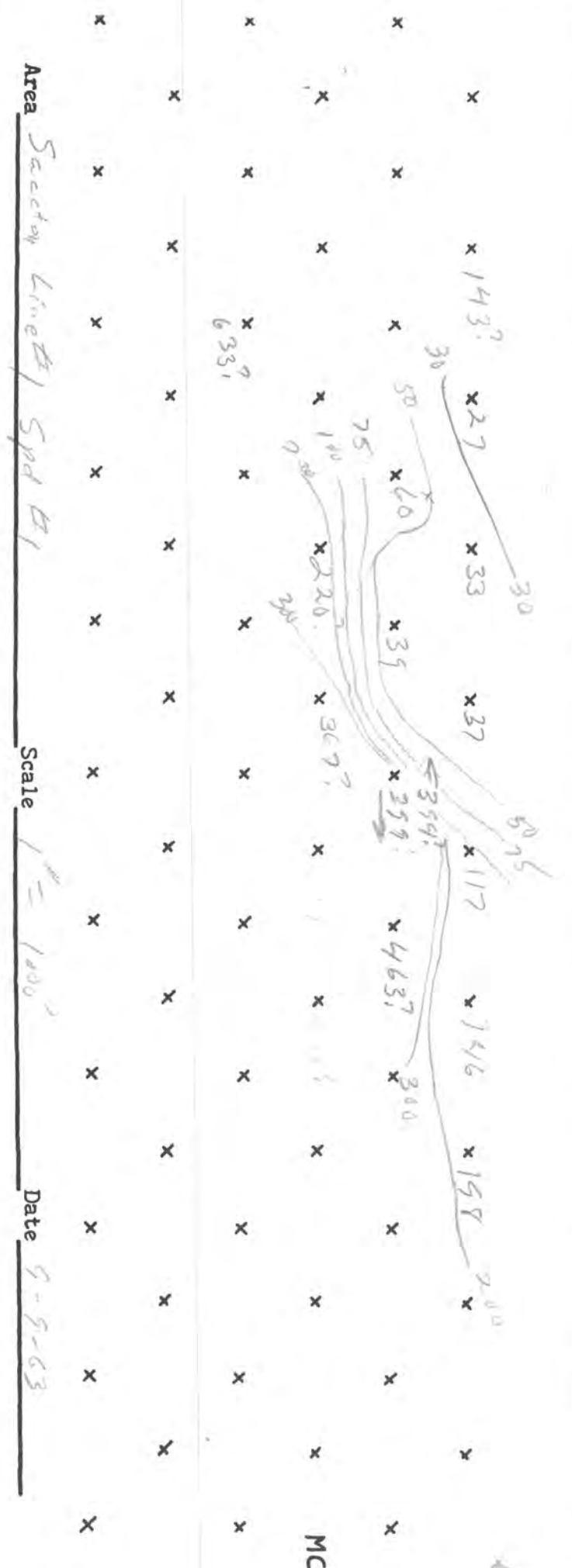
ASR1

2.8 miles
from Bear Creek

INDUCED POLARIZATION WORK SHEET



Red
MPE
2/11



MCF

Area Section Line 1 Spd B1 Scale 1" = 1000' Date 9-9-63

Madden

HEINRICH'S GEOEXPLORATION COMPANY
 INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 2
 Comp. by 1914

(A) Send	2-8	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
(B) Receive	1.75-1.50		2-35									
(C) n separation	20 Sec											
(D) I	1600	1200	1600	1600	1200	1200	1600	1600	1200	1200	1600	1600
(E) Vdc (avg)	18.0	5.51	21.0	5.23	2.26	10.7	5.74	2.47	1.60	2.67	2.51	1.36
(F) DCCal	Used .994											
(G) Kn x 10 ⁻³	2.25	4	2.25	9	2.25	2.25	9	2.25	4.5	5	2.25	4.5
(H) $\rho_{dc} = ExFxGx10^3/D$	24.9	39.0	27.9	27.8	48.8	18.7	3.22	3.28	56.6	18.5	33.3	36.1
(I) Vac Σ	17.5	5.33	20.3	5.06	2.62	10.4	5.56	2.40	1.57	2.62	2.45	1.26
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.005											
(M) $\rho_{dc}/\rho_{ac} = ExI/K$	1.035	1.046	1.040	1.040	1.057	1.034	1.038	1.036	1.022	1.023	1.030	1.084
(N) PFE=(M-1)/(102)	4	4	4	4	6	3	4	4	2	2	3	5
(O) MCF=(M-1)/(105)/H	141	103	143	144	117	180	114	110	39	115	90	233

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	1-2	9.5	39	2-3	1-2
(B) Receive					
(C) n separation					
(D) I	1200	1200	1600	1200	
(E) Vdc (avg)	1.63	1.33	1.78	1.12	1.96
(F) DCCal					
(G) Kn x 10 ⁻³	78.25	22.5	45	78.75	126
(H) $\rho_{dc} = ExFxGx10^3/D$	63.9	23.8	47.2	52.1	89.2
(I) Vac Σ	4.9	1.34	1.80	1.18	1.91
(J) AC noise x 2	2	.4	4	.4	.4
(K) Vac (corr) = $\sqrt{I^2 - J^2}$		1.33	1.73	1.16	1.92
(L) AC-DC cal.					
(M) $\rho_{dc}/\rho_{ac} = ExI/K$	1.045	1.005	1.034	1.068	1.017
(N) PFE=(M-1)/(102)	5	1	3		
(O) MCF=(M-1)/(105)/H	70	217	727		

Project Sacaton Line 2 N/E

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 1
Field date 8-22-63 Data page 1 Comp. date 8-22-63 Comp by HL

(A) Send	3-4	45	2-3	34	45	12	2-3	34	4-5	1-2	2-3	3-4
(B) Receive	12.50	27%	32%	30%	28%	30%	27%	43%	18%	45%	24%	61%
(C) n separation % Scale	34%	27%	32%	30%	28%	30%	27%	43%	18%	45%	24%	61%
(D) I	1600	1200	1600	1600	1200	1200	1600	1600	1200	1200	1600	1600
(E) Vdc (avg)	68.1	5.38	69.0	22.0	2.53	59.9	17.2	4.58	1.14	14.1	6.12	3.63
(F) Dccal												
(G) Kn x 10 ⁻³	2.25	9	2.25	9	2.25	2.25	9	2.25	4.5	9	2.25	4.5
(H) $\rho_{dc} = \frac{E \times F \times G \times 10^3}{D}$	90.4	38.1	85.0	117.0	44.8	106	91.5	114.0	40.4	100.0	8.11	96.4
(I) Vac Σ	66.4	5.23	60.4	21.2	2.49	54.0	16.6	4.05	1.27	13.7	5.86	3.98
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1005	1.33%	1066	1642	1021	1020	1090	1671	1524'	1033	1059	1649
(M) $\rho_{dc} / \rho_{ac} = \frac{E \times I}{K}$	1.031	3	7	4	2	2	4	7	2	3	5	5
(N) PFE = (M-1) (102)												
(O) MCF = (M-1) (105) / H	34	89	78	34	47	19	44	62	59	33	66	51

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	4-5	12	2-3	34	45
(B) Receive	5-6	40%	59%	41%	8.8%
(C) n separation % Scale	10%	40%	59%	41%	8.8%
(D) I	1200	1200	1600	1600	1200
(E) Vdc (avg)	157	8.03	3.52	2.51	1.54
(F) Dccal					
(G) Kn x 10 ⁻³	74.75	22.5	45	2975	126
(H) $\rho_{dc} = \frac{E \times F \times G \times 10^3}{D}$	35.3	1445	104.1	1164	536
(I) Vac Σ	75	1.73	3.74	2.43	1.63
(J) AC noise x 2	16			6	
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	46			2.35	
(L) AC-DC cal.	1005				
(M) $\rho_{dc} / \rho_{ac} = \frac{E \times I}{K}$	1.240	1.043	1.052	1.039	
(N) PFE = (M-1) (102)	24'	4	5	4	
(O) MCF = (M-1) (105) / H	6807	30	50	33	

1.073?

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Section Line 4 spd 1 EL Field date 9-12-68 Data pages 95+6 Comp. date 5-12-83 Comp by 144

Page 2

(A) Send	2-03	1-2	3-4	23	12	45	34	23	12	45	34	23	12	45	34	2-3	
(B) Receive	1-21E	→	2-3E	→	3-4E	→	3-6	→	3-7	→	4-8	→	2-7	→	4-5E	→	2-3
(C) n separation	25	21	41	39	67	33	37	48	27	61	44	28	78	→	→	→	
(D) I	1600																
(E) Vdc (avg)	62.7	15.9	80.4	8.68	41/6	22.8	8.25	3.40	2.00	4.14	3.22	1.60	→	→	→	→	
(F) DCcal	1873																
(G) Kn x 10 ⁻³	1.5	6	1.5	6	15	1.5	6	15	30	6	15	30	15	30	15	30	
(H) $R_{dc} = \frac{ExFxGx10^3}{D}$	51.4	52.2	24.9	28.6	34.1	14.7	65.0	27.8	32.8	35.0	26.4	26.2	→	→	→	→	
(I) Vac S	58.1	14.4	27.7	7.83	3.70	2.10	7.48	3.04	1.76	3.31	3.00	1.52	→	→	→	→	
(J) AC noise x 2				28.2			22.0			13.7							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$																	
(L) AC-DC cal.	980	947	952	952	962	951	952	955	949	960	955	966	→	→	→	→	
(M) $R_{dc}/R_{ac} = \frac{ExL}{K}$	1.027	1.047	1.046	1.047	1.082	1.032	1.051	1.064	1.078	1.044	1.040	1.024	→	→	→	→	
(N) PFE=(M-1)/(10 ²)	3	5	5	5	8	3	5	7	4	4	4	2	→	→	→	→	
(O) MCF=(M-1)/(10 ⁵)/H	53	90	161	65.2	240	171	74.2	245	238	324	153	92	→	→	→	→	

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	1-2	45	34	23	12
(B) Receive	→	5-6E	→	→	→
(C) n separation	58	12	71	34	24
(D) I					
(E) Vdc (avg)	61.0	1.25	1.97	1.83	16.2
(F) DCcal					
(G) Kn x 10 ⁻³	52.5	15	30	52.5	54
(H) $R_{dc} = \frac{ExFxGx10^3}{D}$	31.5	10.6	24.1	23.7	34.5
(I) Vac S	1.06	1.24	1.39	1.76	1.56
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.	956	960	964	952	949
(M) $R_{dc}/R_{ac} = \frac{ExL}{K}$	1.052	944	1.020	1.040	1.051
(N) PFE=(M-1)/(10 ²)	5	0	2	4	5
(O) MCF=(M-1)/(10 ⁵)/H	162	-194	83	168	133

200

273

116220W Electrolite 3 Local @ Loc. F10.4?

Project: _____ Line: _____ Int. Cal 54.1 Date: _____

Send	1-2	2-3	3-4	4-5		Cal				
Rec.	536	→				1080	1080	1208	1200	
Time	00					158	318	180	308	
DC-1						58.0	50.0	69.9	68.0	
DC-2						58.0	50.0	69.8	68.0	
Σ						116.0	112.0	139.7	136.0	
DC-3						58.0	57.0	69.9	68.0	
Dc-4						58.0	57.0	69.9	68.0	
Σ						116.0	114.0	139.8	136.0	
DC-AV						116.0	113.0	139.8	136.0	
AC-1	362					56.0	53.5	67	64.8	
AC-2						59.9	53.5	67.1	64.9	
Σ						115.9	107.0	134.1	129.7	
S. P.										
AC-N										

all #2
afternoon

Project: Sacaton Line: 4 spd 1E/2 Int. Cal _____ Date: _____

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
Rec.	1-2E	→	2-3	→	→	3-4E	→	→	→	4-5E	→	→
Time	167	30	30	10	3	30	10	3	3	3	3	1
DC-1	30.5 21.8	8.9 5.3	15.2 15.2	4.45 4.22	1.96 2.26	10.7 12.1	4.90 3.35	1.67 1.73	1.57 1.03	2.15 2.11	1.36 1.90	1.50 1.50
DC-2	35.6 32.1	8.5 5.4	15.2 15.2	4.47 4.20	1.80 2.30	10.7 12.1	4.92 3.32	1.93 1.72	1.57 1.05	2.11 2.10	1.90 1.31	1.50 1.50
Σ	62.4 62.6	15.1 15.9	30.4 30.4	8.67 8.67	4.22 4.10	22.4 22.9	8.25 8.24	3.40 2.45	2.00 1.02	4.16 4.21	3.26 3.28	1.61 1.61
DC-3	32.0 31.0	8.4 7.4		4.47 4.21	1.87 2.32	10.7 12.1	3.39 4.96	1.72 1.62	1.55 1.03	2.10 2.08	1.34 1.91	1.52 1.78
Dc-4	31.9 30.7	8.4 7.6		4.45 4.23	1.80 2.33	10.8 12.1	3.30 4.96	1.62 1.80	1.55 1.05	2.15 2.00	1.91 1.36	1.78 1.52
Σ	63.6 62.6	16.8 16.0	30.4	8.89 8.89	4.19 4.19	22.9 22.7	8.29 8.26	3.34 2.42	1.97 2.09	4.18 4.15	3.29 3.27	1.60 1.60
DC-AV	62.7	16.9	30.4	8.68	4.16	22.8	8.25	3.46	2.00	4.18	3.27	1.60
AC-1	29.0	7.2	13.9	3.95	1.85	10.5	3.75	1.52	.88	1.91	1.50	.76
AC-2	27.0	7.2	13.8	3.94	1.85	10.5	3.73	1.42	.88	1.90	1.51	.76
Σ	58.0	14.4	27.7	7.89	3.70	21.0	7.48	3.04	1.76	3.81	3.00	1.52
S. P.	7.8	→	14.6	→	→	48.9				16.0		
AC-N	7.1	→	1.62	→	→	.03				1.02		

(A) Send	34	45	2-3	34	45	1-2	2-3	2-4	45	12	23	3-4
(B) Receive	1-2W	→ 24	2-3W	42	39	3-4W	28	62	54	→ 91	36	28
(C) n separation	44	24	34	42	39	40	28	62	54	91	36	28
(D) I	1801									1600		
(E) Vdc (avg)	95.2	18.0	70.9	31.0	8.68	85.2	20.2	13.6	4.00	18.1	80.1	1.28
(F) Dccal	864											
(G) Kn x 10 ⁻³	1.5	6	1.5	6	15	1.5	6	15	30	6	15	30
(H) $P_{dc} = \frac{E_{Fx} G_x}{10^3} / D$	68.6	51.8	51.0	89.9	62.5	61.4	59.5	96.0	64.8	58.6	14.9	102.8
(I) Vac Σ	88.4	16.2	66.8	28.1	7.88	80.1	18.2	12.4	3.56	16.36	7.24	5.68
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	960	959	956	959	958	959	955	968	964	973	957	955
(M) $P_{dc} = \frac{E_{Fx} G_x}{10^3} / K$	1.634	1.061	1.019	1.058	1.055	1.019	1.051	1.060	1.084	1.074	1.060	1.057
(N) PFE=(M-1)/(102)	3	6	1	6	6	2	5	6	8	8	6	6
(O) MCF=(M-1)/(105)/H	49.6	118	27	65	88	19	85	61	131	133	93	56

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	45	1-2	2-3	3-4	45
(B) Receive	→ 31	5-CV	59	51	39
(C) n separation	31	36	59	51	39
(D) I					
(E) Vdc (avg)	2.28	7.86	4.39	3.81	1.45
(F) Dccal					
(G) Kn x 10 ⁻³	52.5	15	80	52.5	84
(H) $P_{dc} = \frac{E_{Fx} G_x}{10^3} / D$	61.8	63.7	71.1	108.0	65.7
(I) Vac Σ	204	7.19	2.96	3.36	1.28
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.	950	957	915	942	958
(M) $P_{dc} = \frac{E_{Fx} G_x}{10^3} / K$	1.068	1.048	1.070	1.092	1.087
(N) PFE=(M-1)/(102)	7	5	7	9	9
(O) MCF=(M-1)/(105)/H	124	75	98	85	133

864

10/10/63

1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 10

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

1
2
3
4
5
6
7
8
9
10

1.00
1.33
1.87
1.36

1.32
1.54

1.45
1.86

AC 1828
14

Project: Sector Line: 4 Spd / 1/2 Int. Cal _____ Date: 9-11-58

Send Rec.	4-5	1-2	2-3	3-4	4-5	1-2	2-3					
Time	3	10	3	3	1							
DC-1	1.12 .90	3.60 4.22	1.95 2.45	1.78 2.03	1.66 .75							
DC-2	1.13 1.06	3.72 4.14	1.93 2.52	1.75 1.98	1.62 .78							19 31
Σ	2.02 2.19	7.92 7.40	4.46 4.35	3.81 3.83	1.41 1.46							34 28
DC-3	1.24 1.03	3.90 4.14	2.05 2.26	1.74 1.96	1.58 .81							
Dc-4	1.32 1.02	3.80 4.61	2.65 2.48	1.76 2.62	1.48 1.90							
Σ	2.31 2.29	7.94 7.69	4.31 4.50	3.80 2.74	1.49 1.49							
DC-AV	2.22	7.86	4.39	3.81	1.45							
AC-1	1.02	3.59	1.98	1.64	.64							
AC-2	1.02	3.68	1.98	1.64	.64							
Σ	2.04	7.19	3.96	3.36	1.28							
S. P.	\rightarrow											
AC-N	7.1	7.1			2.28							

HEINRICHS GEOEXPLORATION COMPANY
 INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Section Line 45 pl 1 Field date _____ Data page _____ Comp. date _____ Page _____
 . Comp by _____

(A) Send																				
(B) Receive																				
(C) n separation	56	17	64	22																
(D) I																				
(E) Vdc (avg)	114.2	112.0	138.7	136.0																
(F) DCcal																				
(G) Kn x 10 ⁻³																				
(H) $V_{dc} = \frac{E \times F \times G \times 10^3}{D}$																				
(I) Vac Σ	112.0	107.0	135.6	130.0																
(J) AC noise x 2																				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$																				
(L) AC-DC cal.	980	955	979	955																
(M) $V_{dc} / V_{ac} = Exl / K$																				
(N) PFE = (M-1) (10 ²)																				
(O) MCF = (M-1) (10 ⁵) / H																				

Project	Line	Field date	Data page	Comp. date	Comp by
(A) Send	209		100	120	
(B) Receive					
(C) n separation	95	13.5	56	17	64
(D) I					
(E) Vdc (avg)	92.5	90.3	116.4	113.0	140.0
(F) DCcal					
(G) Kn x 10 ⁻³					
(H) $V_{dc} = \frac{E \times F \times G \times 10^3}{D}$					
(I) Vac Σ	99.6	85.0	112.6	108.0	136.9
(J) AC noise x 2					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$					
(L) AC-DC cal.	965	953	970	955	977
(M) $V_{dc} / V_{ac} = Exl / K$					
(N) PFE = (M-1) (10 ²)					
(O) MCF = (M-1) (10 ⁵) / H					

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project See eddy Line 4 Spd 1 Field date 9-12-68 Data page _____ Comp. date _____

(A) Send	3-01	459	12	23	34	45				
(B) Receive	12		4-5							
(C) n separation	42	28	42	36	27	32				
(D) I	190		110							
(E) Vdc (avg)	95.5	178.8	18.10	7.85	6.33	2.24				
(F) DCcal			973							
(G) Kn x 10 ⁻³			6	15	30	52.5				
(H) $\rho_{dc} = ExFxGx10^3/D$			59.3	64.5	103.7	612				
(I) Vac Σ	836	161.1	16.40	7.24	571	2.08				
(J) AC noise x 2										
(K) Vac (corr) = $\sqrt{I^2 - J^2}$										
(L) AC-DC cal.	967	558	780	764	959	962				
(M) $\rho_{dc}/\rho_{ac} = ExI/K$	1/106	1060	1.082	1.050	1.082	1.082				
(N) PFE=(M-1)/(102)			8	5	6	6				
(O) MCF=(M-1)/(105)/H			138	58	60	101				

Robert

(A) Send										
(B) Receive										
(C) n separation										
(D) I										
(E) Vdc (avg)										
(F) DCcal										
(G) Kn x 10 ⁻³										
(H) $\rho_{dc} = ExFxGx10^3/D$										
(I) Vac Σ										
(J) AC noise x 2										
(K) Vac (corr) = $\sqrt{I^2 - J^2}$										
(L) AC-DC cal.										
(M) $\rho_{dc}/\rho_{ac} = ExI/K$										
(N) PFE=(M-1)/(102)										
(O) MCF=(M-1)/(105)/H										

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

$\theta = 150$ magel, AC-DC ad

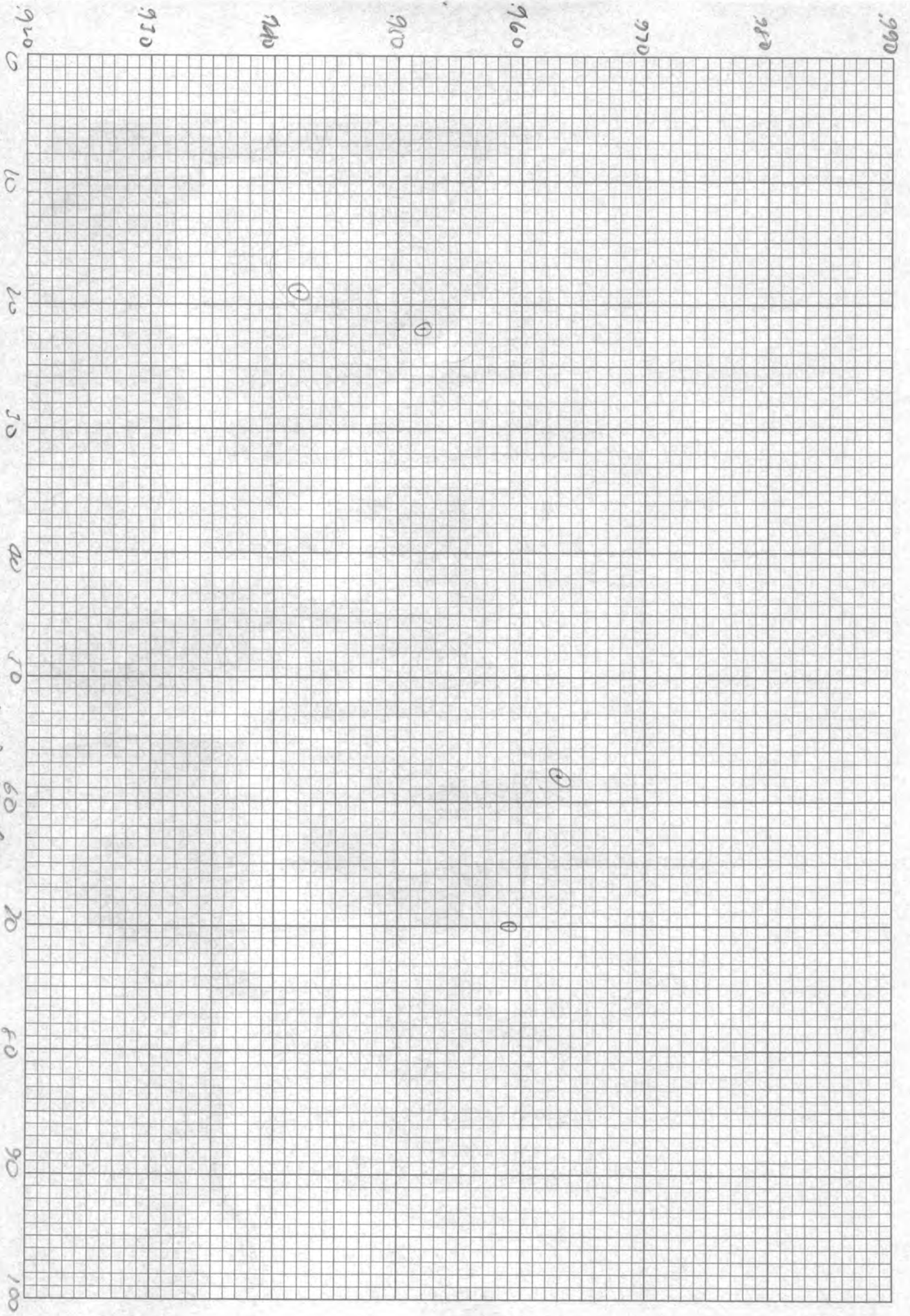
$\theta = 30$ magel AC-DC ad

0 300

1.009

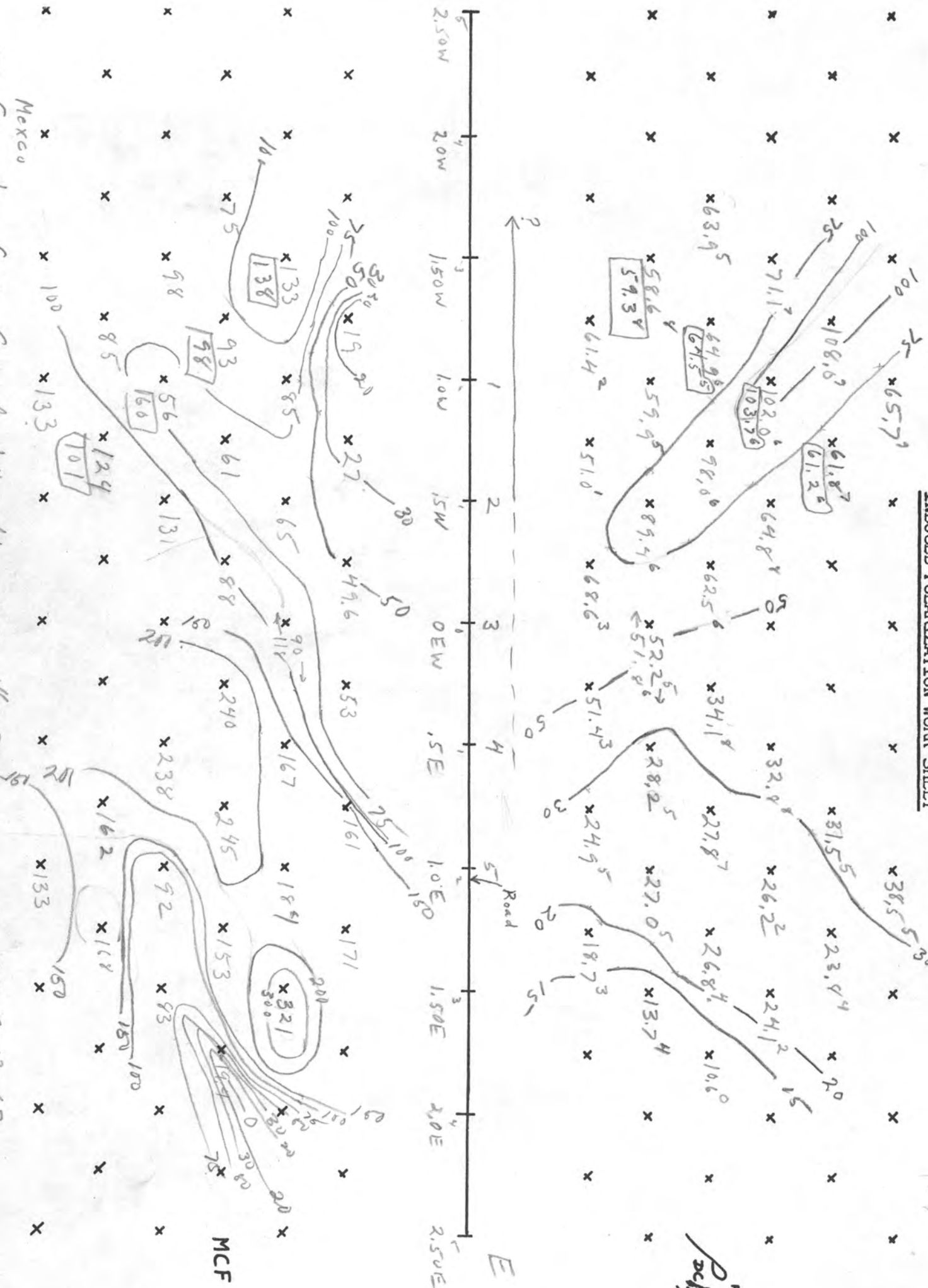
(1)





9. Scale Reflection

INDUCED POLARIZATION WORK SHEET



Area Section Case Grande L4 Spdl

Scale

1" = 500'

Date 9-12-63

MCF

PRE
Pcl

10
49/100

INDUCED POLARIZATION

SENDER NOTES

Project: SASATON Line: 2 Date: 8/23

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Receive												
Time												
Range												
Current	1600	1200	1600	1600	1200	1200	1600	1600	1200	1200	1600	1600
Send	4-5	1-2	2-3	3-4	4-5		2-3					
Receive							Gal					
Time												
Range												
Current	1200	1200	1600	1600	1200		1000	1200				

INDUCED POLARIZATION

SENDER NOTES

Project: SACATONLine: 2Date: 8/23

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	4-3	2-5
Receive												
Time												
Range												
Current	1600	1200	1600	1600	1200	1200	1600	1600	1200	1200	1600	1600
Send	1-2	4-5	3-4	2-3	1-2							
Receive												
Time												
Range												
Current	200	1200	1600	1600	1200							

INDUCED POLARIZATION - RECEIVER NOTES

PAGE

Project: SACR 102

Line: 2 SPR 2 5 1/2

Int. Cal

Date: 8

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-7
Rec.	→	→	→	→	→	→	→	→	→	→	→	→
Time	30	10	30	10	3	30	10	3	3	3	3	3
DC-1	9.2 3.9	2.90 2.60	10.4 10.6	3.02 2.22	1.26 1.50	5.0 5.7	2.32 3.40	1.10 1.16	1.90 1.90	1.30 1.36	1.22 1.70	1.90 1.58
DC-2	9.0 9.1	1.65 2.95	10.7 10.3	2.23 2.00	1.52 1.24	5.8 4.9	3.42 2.30	1.37 1.11	.70 1.90	1.38 1.28	1.38 1.14	1.62 1.74
Σ	18.0 18.1	5.50 5.50	21.0 21.0	5.24 3.33	2.76 2.74	10.7 10.7	5.76 5.72	2.47 2.42	1.60 1.60	2.66 2.66	2.52 2.52	1.36 1.36
DC-3	9.1 9.8	2.95 2.56	10.7 10.3	3.01 2.21	1.29 1.52	5.0 5.7	2.32 2.41	1.33 1.14	1.90 1.68	1.28 1.42	1.17 1.73	1.74 1.61
Dc-4	9.3 9.0	2.61 2.80	10.9 10.1	3.61 2.21	1.50 1.22	5.8 4.9	2.30 3.42	1.15 1.31	.70 1.90	1.40 1.26	1.32 1.19	1.60 1.70
Σ	18.0 18.0	5.51 5.52	21.0 21.0	5.22 3.51	2.76 2.72	10.7 10.7	5.74 5.73	2.47 2.42	1.60 1.60	2.70 2.66	2.50 2.50	1.35 1.36
DC-AV	18.0	5.51	21.0	5.23	2.76	10.7	5.74	2.47	1.60	2.67	2.51	1.36
AC-1	8.8	2.63	10.3	2.57	1.32	5.2	2.9	1.20	1.78	1.34	1.24	.61
AC-2	8.7	2.70	10.0	2.54	1.30	5.2	2.76	1.20	.79	1.28	1.21	.65
Σ	17.5	5.33	20.3	5.06	2.62	10.4	5.56	2.40	1.57	2.62	2.45	1.26
S. P.	4	→	13.6	→	→	1.87	→	→	→	9.4	→	→
AC-N	.46	→	.4	→	→	←	←	1.5	→	.2	←	←

2-7

1000-300-^{AC}53.0
DC 52.5
52.5

100 DC 54.0
54.1

AC 54.0

1200-700-63.0

~~1000~~ 63.7

100 DC 64.0
64.0

300 AC 63.5
63.5

INDUCED POLARIZATION

SENDER NOTES

project: SASATOV Line: 2 Date: 8/22

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
Receive												
Time						246	5439					
Range												
Current	1600	1600	1600	1600	1600	1000	1600	1600	1200	1000	1600	1800
Send	1-2	4-5	3-4	2-3	1-2		4-5					
Receive							Cal					
Time												
Range												
Current	1200	1000	1600	1600	1200		1000	1200				

Project: Sacaton Line: #2 Spread / 5 Int. Cal 53 Date: 8-22-67

Send	2-3	1-7	3-4	2-3	1-2	4-5	3-9	2-3	1-2	4-5	3-4	2-3
Rec.	1-2 S	→	2-3 S	→	→	3-4 S	→	→	→	4-5 S	→	→
Time	30	10	30	10	3	10	10	10	3	3	3	3
DC-1	12.6 12.2	3.42 3.72	10.5 7.85	4.0 4.0	1.71 1.85	4.18 4.58	2.75 2.99	2.34 2.10	1.76 1.75	1.14 1.96	1.36 1.14	1.40 1.22
DC-2	12.1 12.3	3.50 3.30	10.0 9.9	4.9 4.8	1.82 1.45	4.44 4.02	2.90 2.60	2.10 2.24	1.76 1.74	1.94 1.15	1.16 1.34	1.24 1.37
Σ	24.7 24.5	7.24 7.02	20.5 20.4	8.7 8.8	3.53 3.30	8.62 8.60	5.65 5.98	4.44 4.34	1.51 1.51	2.08 2.09	2.50 2.50	2.62 2.61
DC-3	12.4 12.3	3.41 3.90	10.0 10.6	4.8 4.0	1.70 1.80	4.10 4.88	2.73 2.99	2.30 2.35	1.73 1.76	1.13 1.94	1.42 1.09	1.42 1.26
Dc-4	12.2 12.3	3.83 3.30	10.4 9.9	3.8 4.7	1.84 1.63	4.44 4.44	2.90 2.20	2.10 2.05	.83 1.69	.92 1.14	1.10 1.00	1.40 4.18
Σ	24.6 24.5	7.23 7.20	20.4 20.04	8.7 8.7	3.54 3.43	8.60 8.60	5.73 5.78	4.40 4.39	1.52 1.52	2.07 2.06	2.50 2.50	2.62 2.62
DC-AV	24.55	7.22	20.4	8.72	3.53	8.61	5.61	4.40	1.51	2.04	2.50	2.61
AC-1	12.0	3.50	9.90	4.12	1.69	4.20	2.90	2.20	.80	1.05?	1.25?	1.34?
AC-2	12.0	3.50	9.98	4.12	1.71	4.18	2.75	2.20	.80	1.09?	1.23?	1.29?
Σ												
S. P.	-2.6	-1.7	-2.2	→	→	-3.9	→	→	→	-1.09	→	→
AC-N	.35	.35	.20	→	→	.30	→	→	→	.60	→	→
								1	2	3		

INDUCED POLARIZATION - RECEIVER NOTES

PAGE

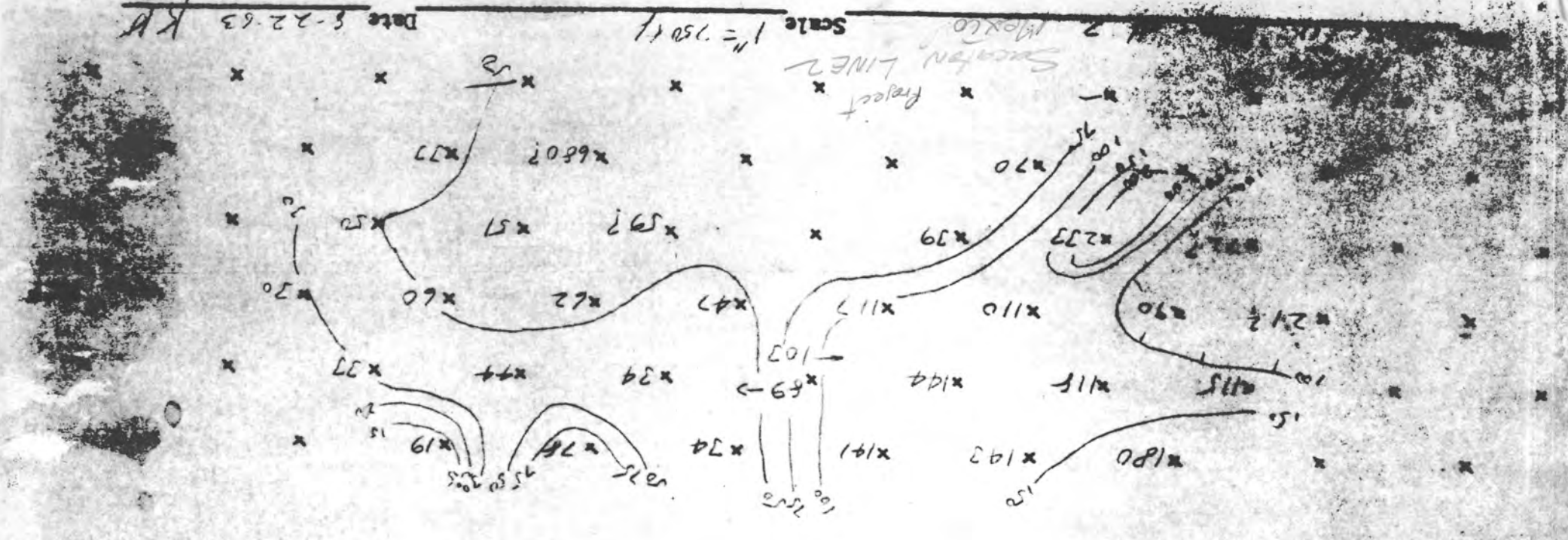
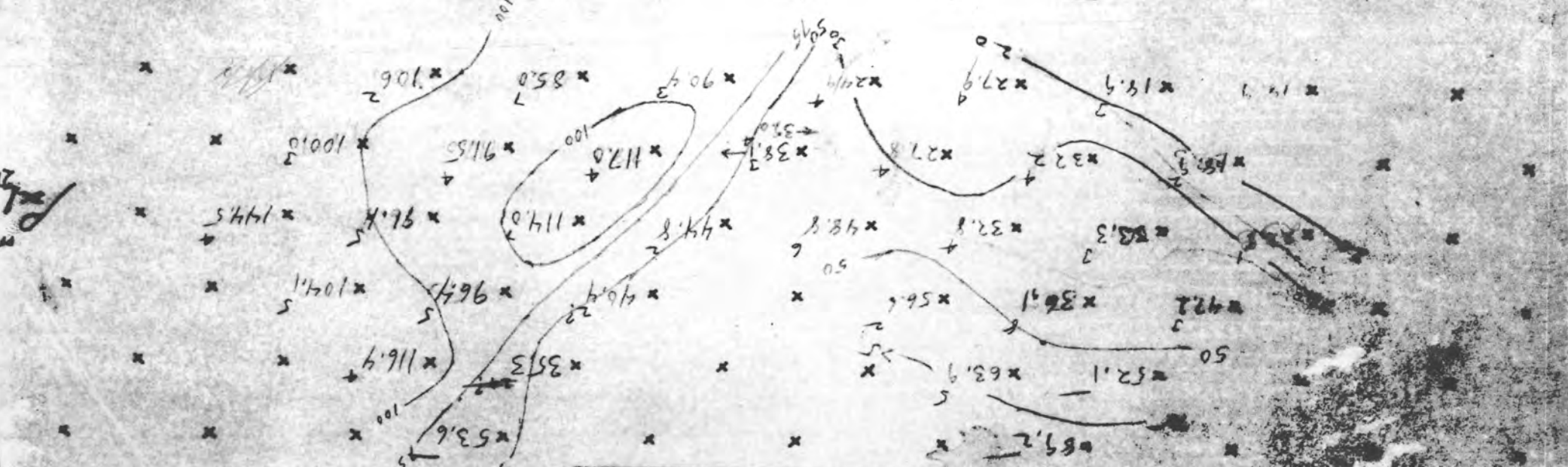
Project: SACATONLine: 2 spv 1 5 1/2

Int. Cal

Date: _____

Send	1-2	4-5	3-4	2-3	1-2			2-3		
Rec.	5-6 →				→					
Time	3	3	3	3	3		1000	300	1200	300
DC-1	1.53 .43	1.50 .60	1.96 .44	1.10 1.05	1.56 1.34			53.5 53.5		63.0 63.0
DC-2	1.54 .45	1.62 1.47	1.99 1.91	1.07 1.06	1.54 1.36		100	54.0 54.0		63.7 62.3
Σ	.96 .99	1.10 1.09	1.90 1.80	2.15 2.13	1.90 1.90					
DC-3	.50 .46	.51 .60	.94 1.85	1.22 1.97	1.30 1.57					
Dc-4	1.50 .48	1.52 .49	1.02 .77	1.20 1.94	1.56 1.31					
Σ	.96 .98	1.01 1.09	1.79 1.77	2.10 2.04	1.87 1.87					
DC-AV	.97	1.10	1.80	2.10	1.89					
AC-1	.50? ¹⁰⁰	.55?	.89?	1.07?	.43?		200	53.0	700	63.0
AC-2	.47? ¹⁰⁰	.57?	.87?	1.07?	.42?		100	52.5	100	62.7
Σ										
S. P.	+2.5	-1.9								
AC-N	→	.3			→					
	4			5						

INDUCED POLARIZATION WORK SHEET



Scale 1" = 150 ft
Project
Suction Line 2
Mexico

Date 5-22-63
R.A.

MESA 32 MI.
17 MI. TO ARIZ. 87

FLORENCE 26 MI.
6 MI. TO ARIZ. 87

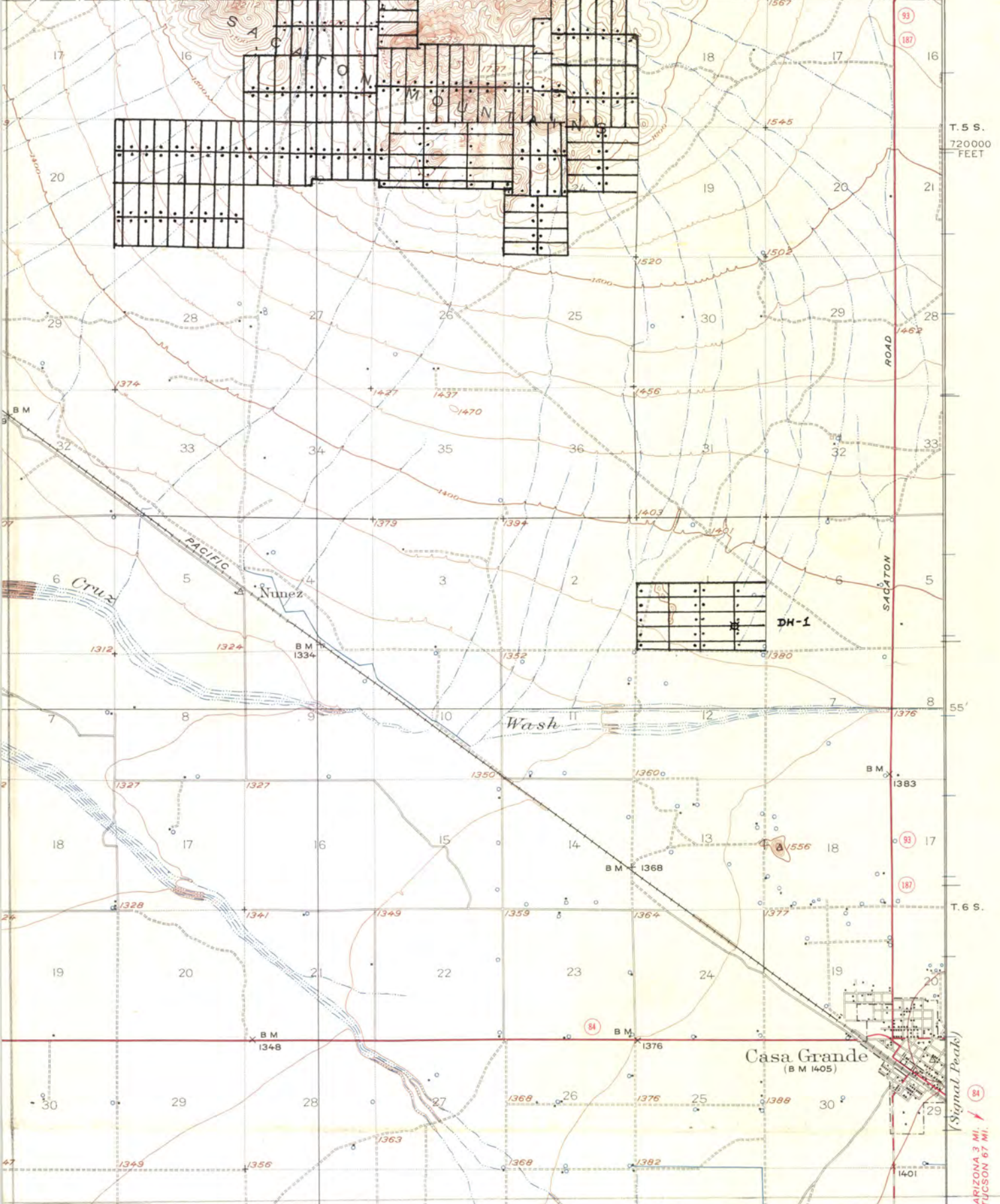
ARIZONA
(PINAL COUNTY)

CASA GRANDE QUADRANGLE

(Sacaton)

Butte) R.5 E. 50' 540000 FEET R.6 E. 11'45" 33'00"

GILA RIVER INDIAN RESERVATION



T.5 S.
720000 FEET

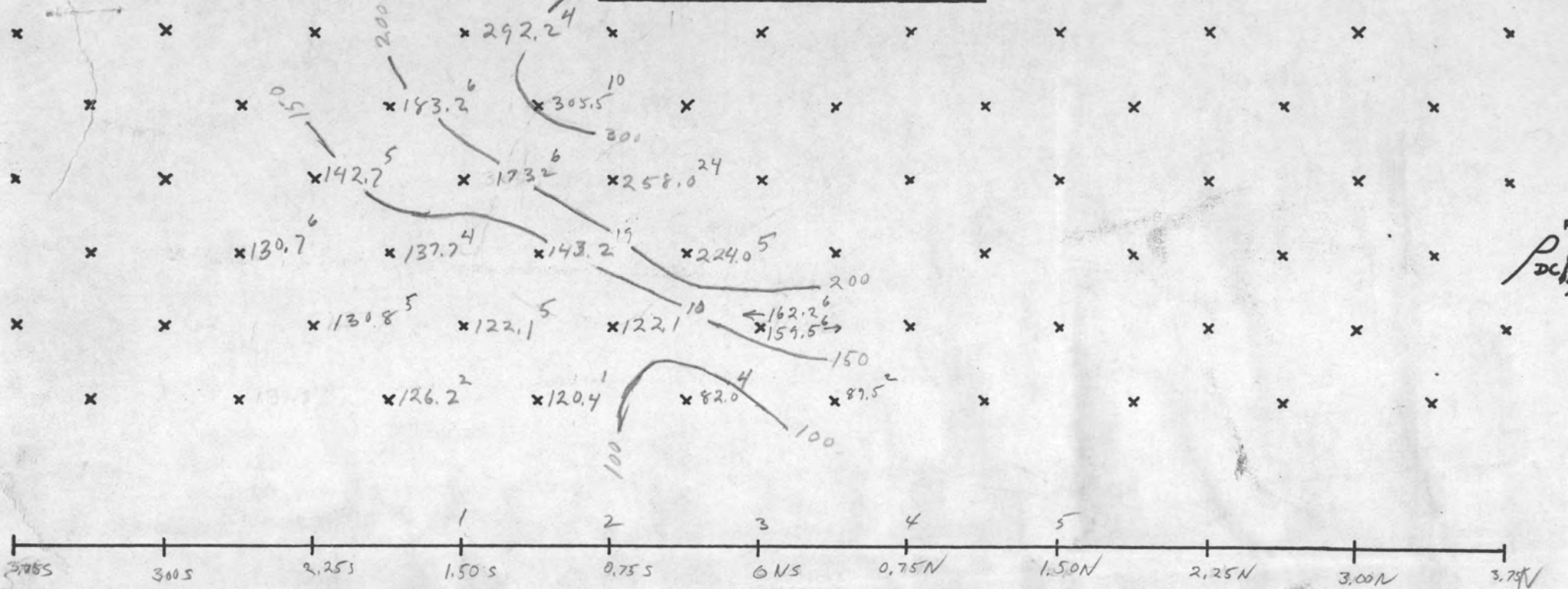
T.6 S.

Casa Grande
(B M 1405)

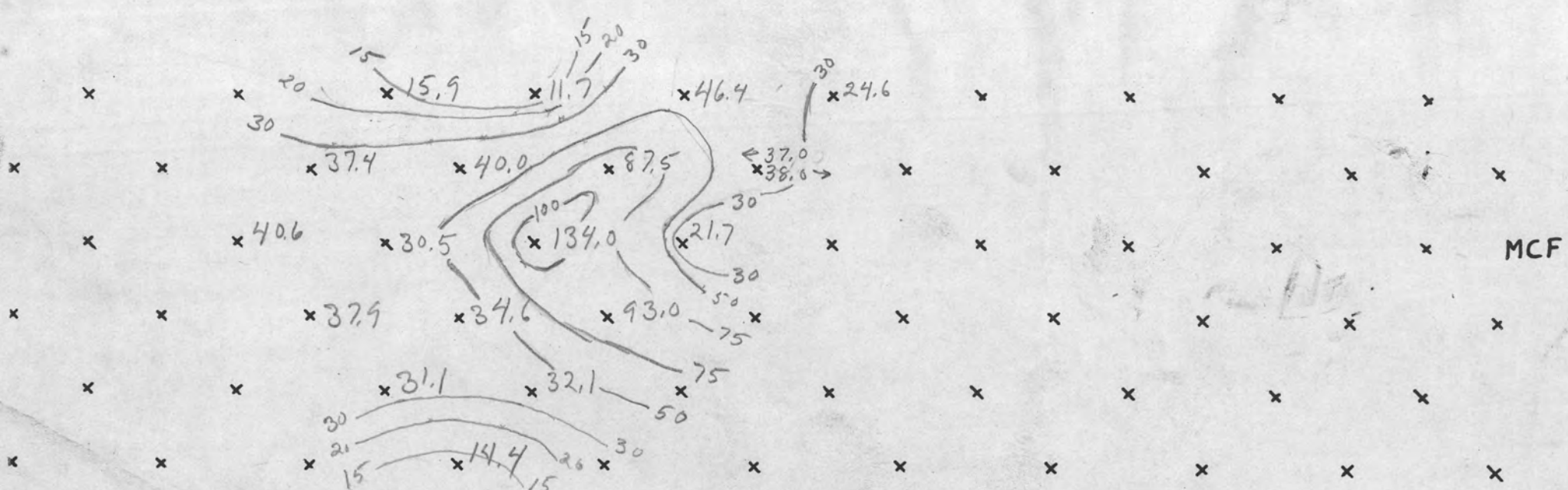
(Signal Peak)
ARIZONA 3 MI.
TUCSON 67 MI.

Looking N.W.

INDUCED POLARIZATION WORK SHEET



PFE
PDCI
211



MCF

MESA 32 MI 17 MI TO ARIZ 87 FLORENCE 26 MI 8 MI TO ARIZ 87

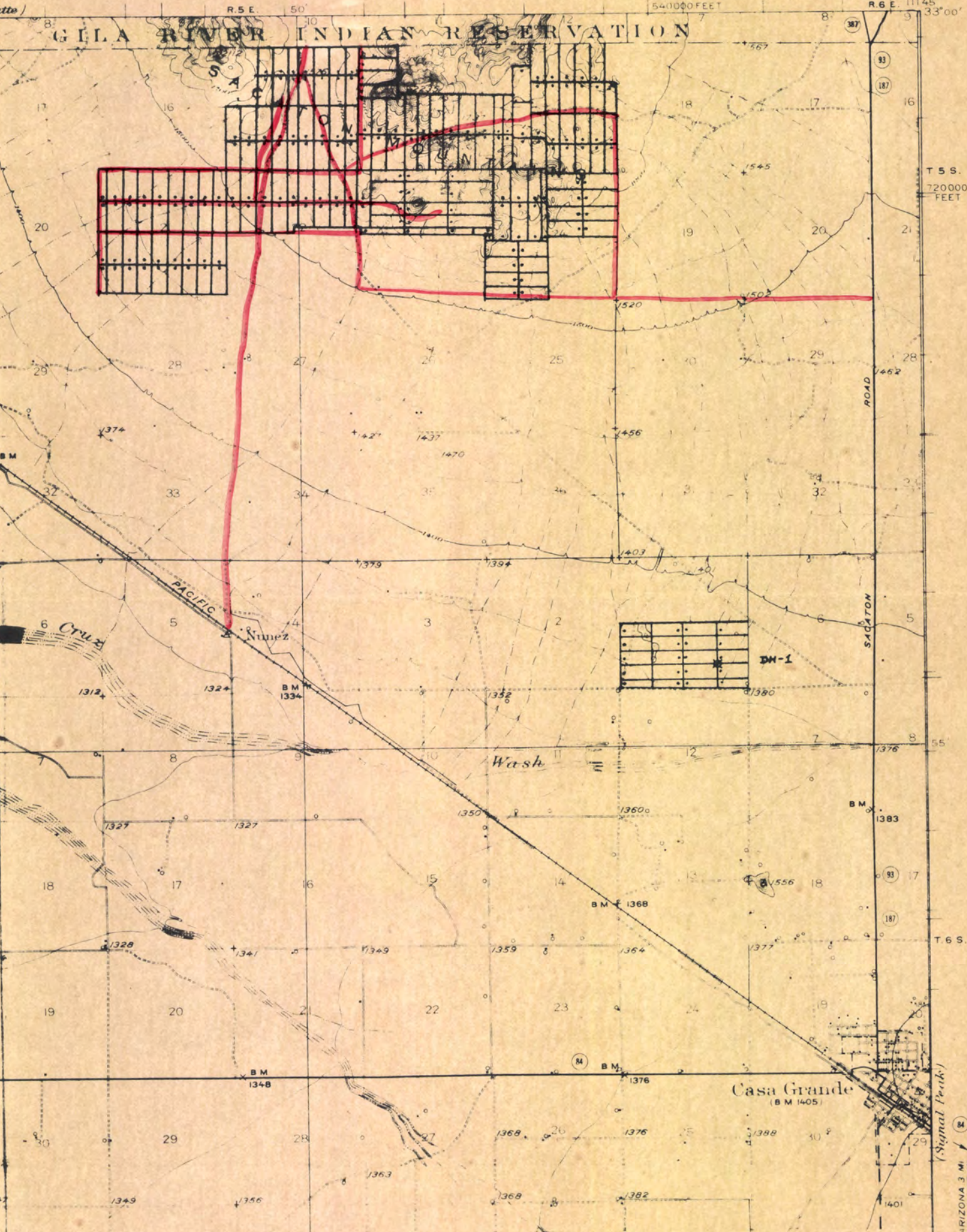
ARIZONA
YUMA COUNTY

CASA GRANDE QUADRANGLE

54,000 FEET

R. 6 E. 111⁴⁵ 33⁰⁰

GILA RIVER INDIAN RESERVATION



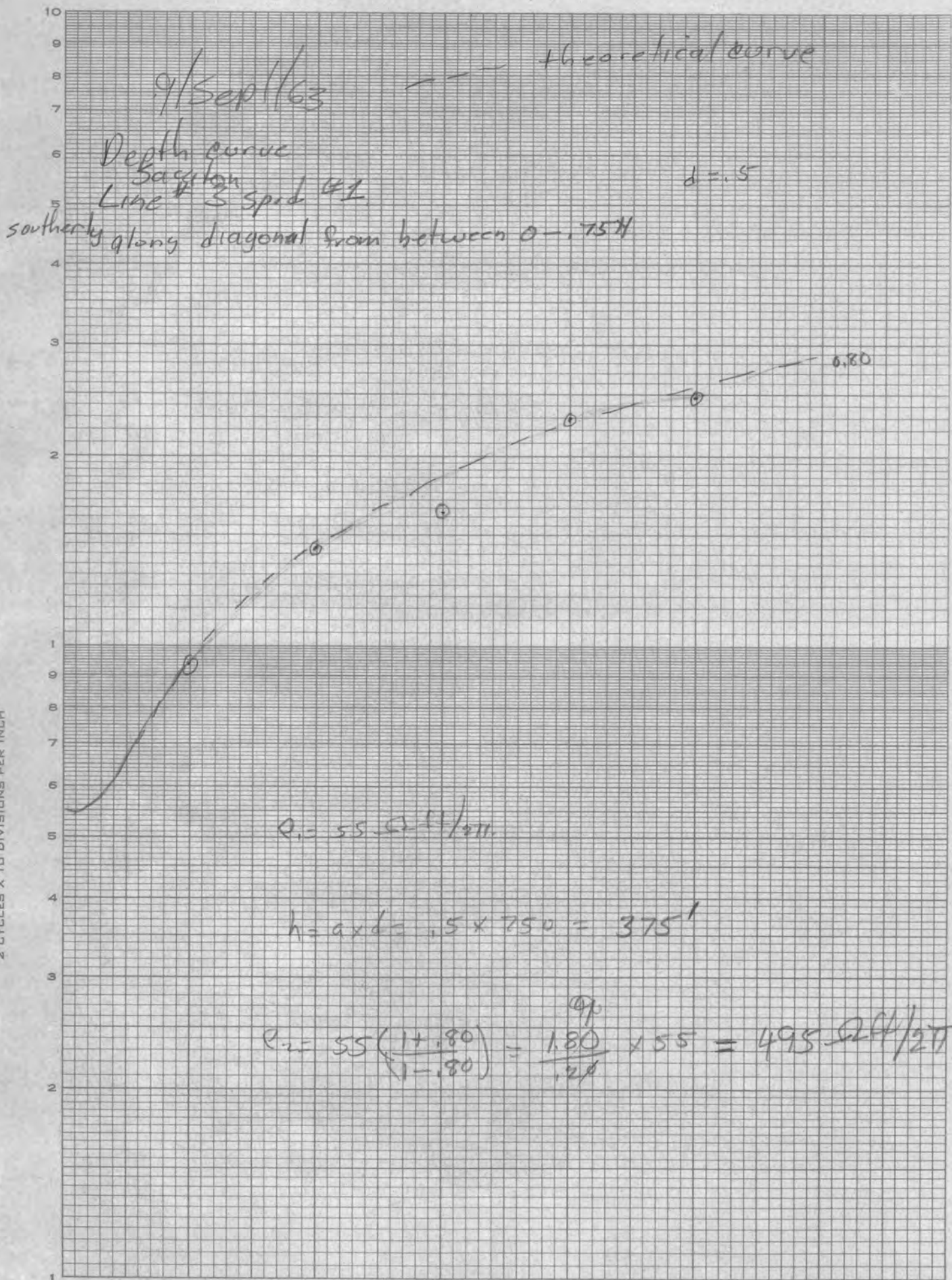
T 5 S.
720000
FEET

ROAD
SACATON

DM-1

Casa Grande
(B.M. 1405)

(Signal Peak)
ARIZONA 3 MI
YUCSON 67 MI



9/Sept/63

theoretical curve

Depth curve

Sagittan

Line # 3 sprd #1

d = .5

southerly along diagonal from between 0-.75H

$$Q_1 = 55 \cdot Q_2H/2H.$$

$$h = a \times d = .5 \times 750 = 375'$$

$$Q_2 = 55 \left(\frac{1 + .80}{1 - .80} \right) = \frac{1.80}{.20} \times 55 = 495 \cdot Q_2H/2H.$$

	V_{AC1}	V_{AC2}	Range	V_{DC}	A.C. noise	S.P.
$n = 100$ /	108.5	108.5	300	109 109 109 109	.08	+12.0
200 2						
400 3						
600 4						
\times 1000 5						
1500 6						
2000 7						
2500 8						
3000 9						

✓