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Arizona Geological Survey
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Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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August 17, 1962

Letter Report

West Sierrita Project
Inspiration Consolidated Copper Co.
Inspiration, Arizona

Gentlemen,

We think you are entitled to a full explanation of the causes involved in the "manufacture" of the "anomaly" on Line #4, West Sierritas Project.

At that particular time we were experiencing a series of unfortunate equipment malfunctions in each of the four separate principle units which make up the I. P. survey gear. These malfunctions were due in part to recent equipment modification and re-design (which is always involves a necessary shakedown period) plus normal equipment fatigue. These various circumstances probably helped to mask the much more subtle and insidious malfunction which gave rise to the above mentioned anomaly.

Following completion of Line #4 in West Sierritas we ran Line #6 in the Mary group. It was here that we first definitely observed a relation between high pot resistance which when varied, caused variations in the A.C. signal received. Several days of laboratory testing finally traced the source of trouble to the above mentioned transistor circuit. Noted that this malfunction only occurs under unusual field conditions of high and variable pot resistance. It was not possible to determine exactly when the malfunction first occured but it made suspect

certain recently acquired data. The equipment was taken out of service and exhaustive tests were made to determine that all was now functioning exactly as it was designed to do. In addition, field techniques were developed whereby the operator can now detect immediately this malfunction if it should recur.

Following the Christmas (experimental) work it was decided to repeat Line #4 West Sierritas which resulted in effective cancellation or at least a great attenuation of the anomaly. There still remains a localization of values of perhaps twice background in the same area that might conceivably represent submarginal sulfide involvement.

Line #2 was then repeated with the expected results of attenuation or elimination of these anomalies and again the localization of values that may mean questionable sulfides but also could be partly due to the strong resistivity variations.

On the vague possibility that the effective penetration of the 500 ft. dipoles on Line #1 was not sufficient to see possible sulfides associated with or below mag anomaly "A" it was decided to run Line #6 at an electrode spacing of 1,000 ft. centered about 2,000 ft. N ( ) E of anomaly "A". Once again there was no definite indication of sulfide mineralization and the results must be considered to be negative. Accompanying this letter are sectional data sheets showing the new work and a plan map showing the location of Line #6.

It is understandable that some people might lose confidence in technique and equipment and even in the method itself.

We, however, through this unfortunate experience have not only learned to detect the most subtle of possible electronic malfunctions but have gained a much greater confidence in the equipment as well as the method.

Very truly yours.

Heinrichs Geoex

F. A. Seward,
Geophysicist.

SUPPLEMENTAL MAGNETIC COVERAGE

West Sierrita Mountains
Pima County, Arizona

for

INSPIRATION CONSOLIDATED COPPER COMPANY
Inspiration, Arizona

April 1962

by

HEINRICHS GEOEXPLORATION COMPANY
P. O. BOX 5671 TUCSON, ARIZONA

TABLE OF CONTENTS

INTRODUCTION

Subsequent to our report submitted March 20, 1962 on the magnetic reconnaissance of the west side of the Sierrita Mts., Pima County, Arizona some additional coverage was obtained in specific areas. The MoMag was used on March 27 to obtain four more profiles at anomaly "A" to cut it off to the south and additional traverses were run in Sections 26, 35 and 36, T 17 S, R 10 E and Sections 2 and 12, T 18 S, R 10 E. On March 29, 1962 a Jalander hand magnetometer was used to take readings along five profiles in Sections 1 and 12, T 18 S, R 10 E and Section 7, T 18 S, R 11 E.

RESULTS

Records No. 30, 31, 32 and 33 were parallel and 660 ft apart over the southern part of the area containing anomaly "A". The contour map of this anomaly has been revised and is included with this supplement. Effects from the cause of "A" cover a surface area of roughly 2,200 ft. by 1,200 ft. Magnetically it is elongate NW-SE, dips southwest and has a pronounced contact with a large low lying to the east. The cause is a magnetite rich zone lying along a contact, probably fault, of granite to the west or southwest and sediments and/or metamorphics to the east-northeast. Because of its geographic position and magnetic characteristics viewed in the light of known geology and mineral-

ization of the area this anomaly should be given strong attention. If the usual route of acquiring a large amount of land, plus geology, geophysics and drilling cannot be taken at this time, then a block of at least four claims should be located with the center on the high and extending 1,500 feet north, 1,500 ft. south, 600 ft. east and 600 ft. west of the magnetic high. Annual work then can be kept up and the claims held until such time in the future as it may become possible to thoroughly investigate it.

Record No. 34 was an attempt to find an extension on the north side of the hill of anomaly "G". An abrupt rise in level of 200 gammas was found a little east of where expected. As there are steep cliff-forming slopes here we could not drive far but were satisfied that we had crossed a formational contact with enough variance in magnetite or skarn minerals to sharply define the contact. Magnetics would be the best method for mapping this contact if anyone ever presents a geologic reason for its importance.

Record No. 35 was run in the southern part of Section 35 and like Record No. 34 was to look for an extension of the trend of anomalies "E", "F" and "G". An anomaly was found, close to the west face of the hill. Character of the record indicates it is from a near surface cause, probably exposed, and nearly vertical. We are now satisfied that there is a mineralized

contact zone N-S in Sections 26, 35 and 2 along the west face of sedimentary hills. This must be terminated by faulting near the Banner Mine as it was not picked up on Record No. 4 across this section.

Record No. 36 showed anomalism only over the granite and nothing that is considered significant at this time was crossed.

Record No. 37 has a minor high that probably is not too important but might have some minor mineral association.

Jalander Profiles #1 and #2 were run east of the Sunshine Mine to check on a prospect on Iron Mountain. No. 1 shows a small anomaly from two station readings at or near the dump of a small prospect. This could possibly correlate with the minor anomaly on MoMag Record No. 37 at about the same position on the south side of the hill. If so, it means the mineralization here can be traced magnetically, and this is reportedly one of the better mineral showings in the district. The only thing of particular note on profile No. 2 is an anomalous low in the central part of Section 7, apparently associated with a flow and/or fault but with no observed mineralization. Profiles 3, 4 and 5 were in Section 1. Aside from some local anomalism, two features are worthy of mention. On No. 3 is a small contact zone with a narrow sharp anomaly that would appear to be a magnetite body similar to anomaly "D". And at the north end of No. 4--east end of No. 5 is a high zone, not cut off but apparently due to diabase.

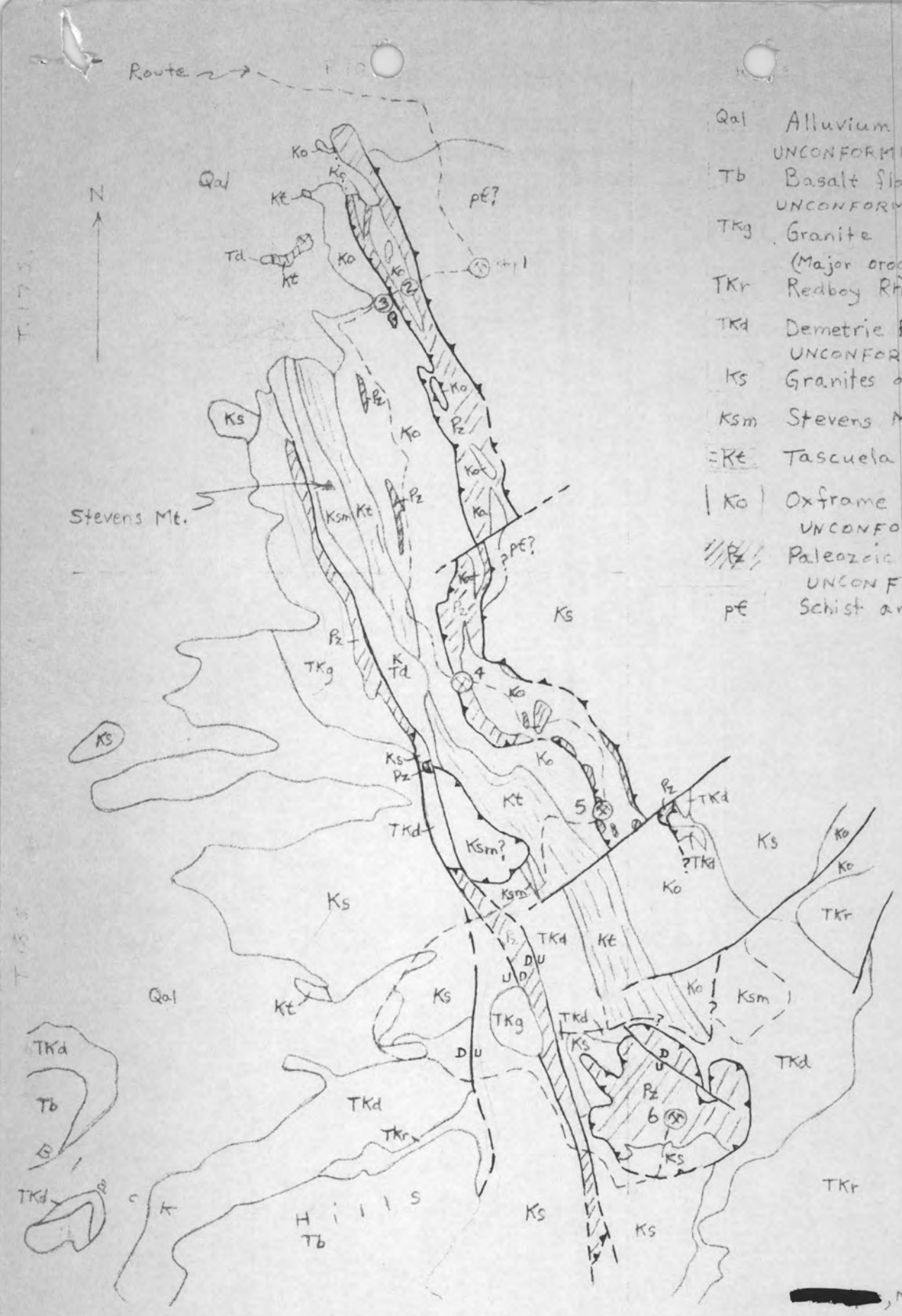
An overlay has been prepared showing the positions of the new coverage. This overlay is for the map furnished with the original report of March 20, 1962. We suggest the two be combined by tracing the data from the overlay onto the original maps.

Respectfully submitted,

HEINRICHS GEOEXPLORATION CO.

J. W. Marlatt
Geologist

April 10, 1962
P. O. Box 5671
Tucson, Arizona

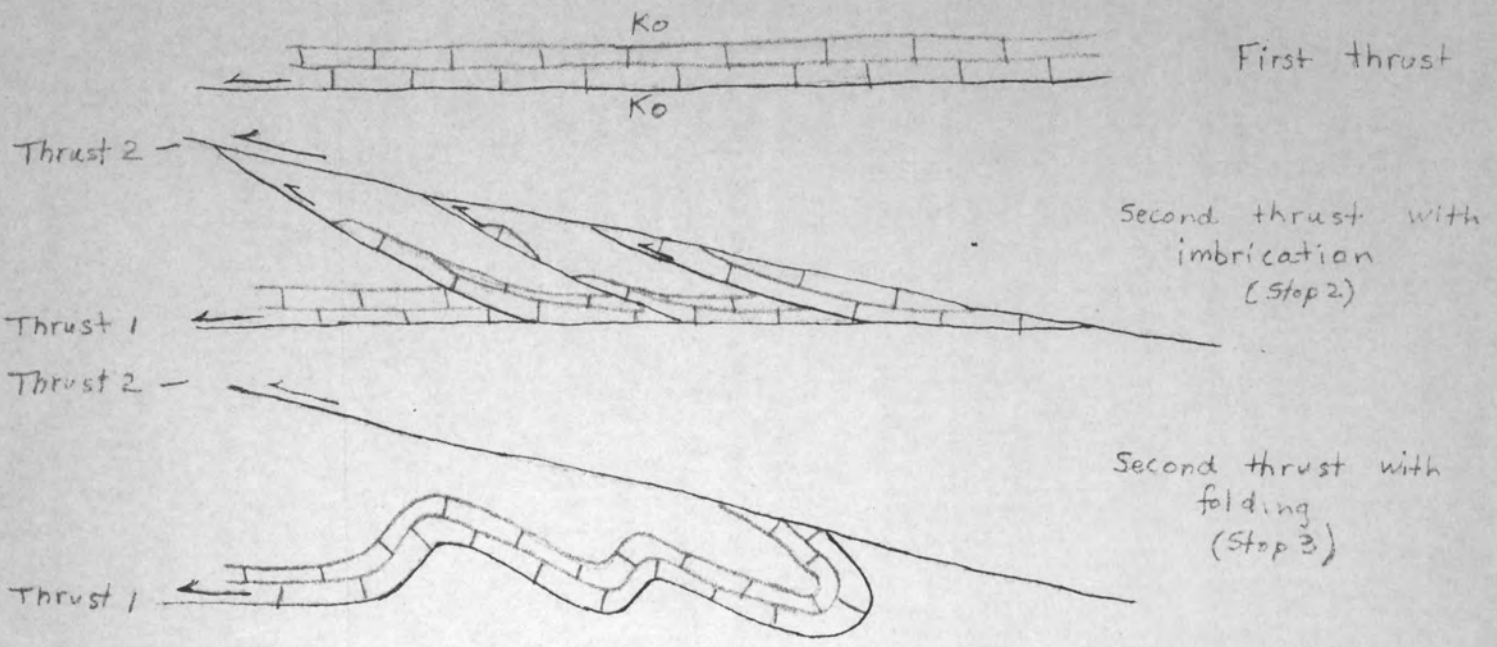


R 6 S
Field Trip
March 25, 1962

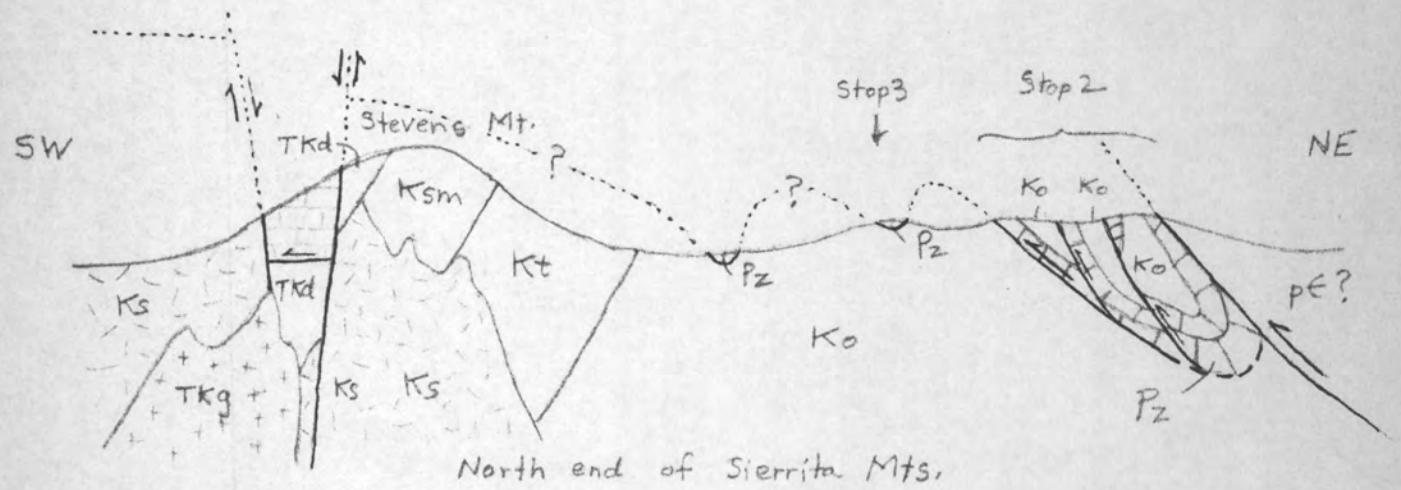
[redacted], March 1962

WEST SIDE OF SIERRITA MOUNTAINS

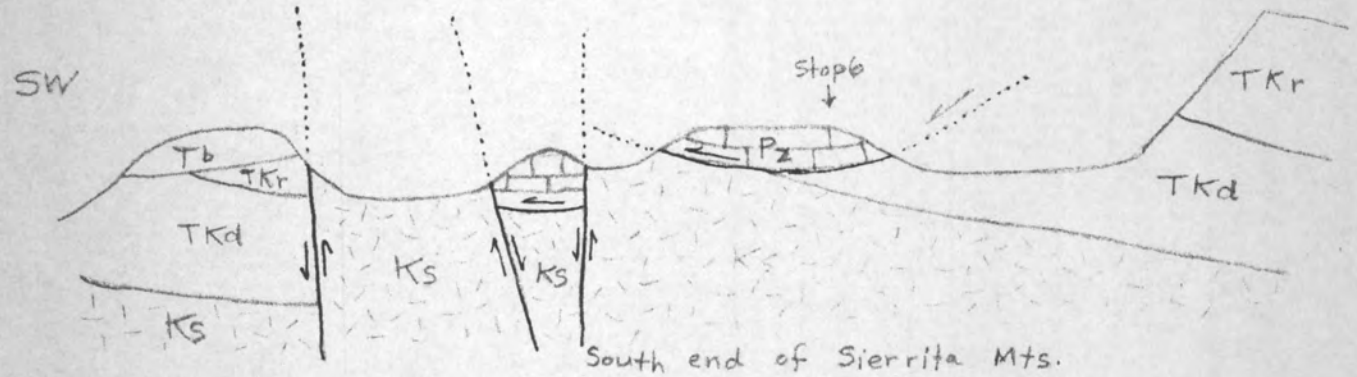
0 1 2 MILES



IDEALIZED SECTIONS SHOWING MULTIPLE THRUSTS



North end of Sierrita Mts.



South end of Sierrita Mts.

SKETCH SECTIONS — NOT TO SCALE

[redacted], March 1962

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WAR DEPARTMENT

ARIZONA
(PIMA COUNTY)
COCORAQUE BUTTE QUADRANGLE
15-MINUTE SERIES

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WAR DEPARTMENT

ARIZONA
(PIMA COUNTY)
SAN XAVIER MISSION QUADRANGLE
15-MINUTE SERIES

Topography by S. C. Kain,
Chester Lloyd, and J. W. Clark
Surveyed in 1940

Scale 62500

Contour interval 25 feet
Datum is mean sea level

PALO ALTO RANCH, ARIZ.
Edition of 1943
N3145—W11115/15

Topography by J. L. Lewis, F. H. Purdy,
J. J. Hayes, S. M. Borrell, K. A. Bunker,
P. J. Frampton, and G. B. Woolley
Surveyed in 1938–1939

SCALE 1:62500

Contour interval 50 feet
Datum is mean sea level

TWIN BUTTES, ARIZ.
Edition of 1948
N3145—W11100/15

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

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Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys and the resulting maps have for many years been of three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile) or $\frac{1}{21,120}$ (1 inch = 2,000 feet), with a contour interval of 1 to 100 feet, according to the relief of the particular area mapped.

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The aerial camera is now being used in mapping. From the information recorded on the photographs, planimetric maps, which show only drainage and culture, have been made for some areas in the United States. By the use of stereoscopic plotting apparatus, aerial photographs are utilized also in the making of the regular topographic maps, which show relief as well as drainage and culture.

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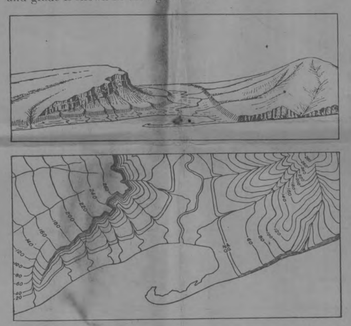

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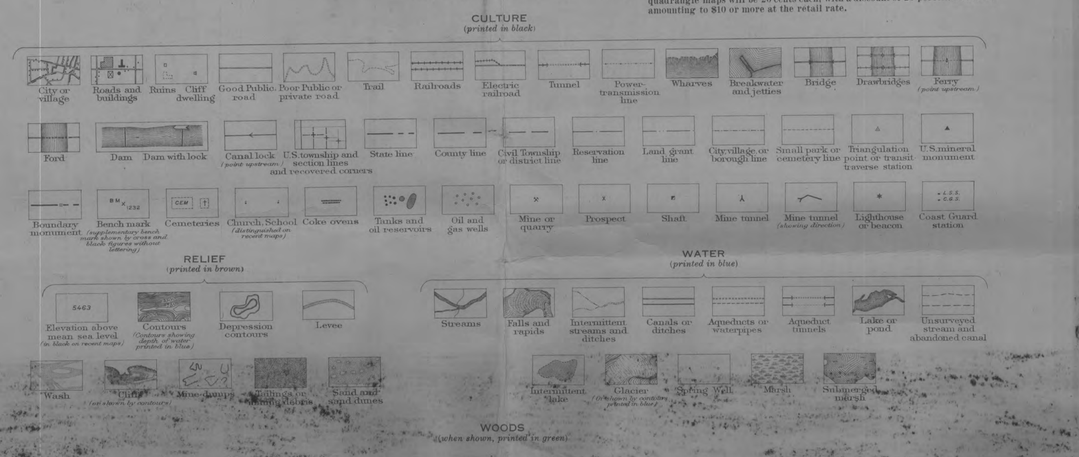

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

ARIZONA
(PIMA COUNTY)

PALO ALTO RANCH QUADRANGLE
15-MINUTE SERIES

(San Vicente) (San Xavier Mission) (Twin Buttes) (Tucson) (Presumido Peak) (Arivaca)

TUCSON 30 MI.
ROBLES JUNCTION 6 MI.

SASABE 18.5 MI.
ARIVACA 19 MI.

Topography by S. C. Kain,
Chester Lloyd, and J. W. Clark
Surveyed in 1940

Scale 1/62500

1 0 1 2 3 4 Miles
1000 500 0 1000 2000 3000 4000 5000 6000 7000 Yards
1000 0 3000 6000 9000 12000 15000 18000 Feet
1 5 0 1 2 3 4 5 Kilometers

TRUE NORTH
14°
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1940

Contour interval 25 feet
Datum is mean sea level

ROUTES USUALLY TRAVELED
HARD IMPERVIOUS SURFACES
OTHER SURFACE IMPROVEMENTS
U. S. ROUTE 1943
STATE ROUTE

Polyconic projection. 1927 North American datum
5000 yard grid based on U. S. zone system, F
10000 foot grid based on Arizona (Central)
rectangular coordinate system

PALO ALTO RANCH, ARIZ.
Edition of 1943
N3145—W11115/15

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a series of standard topographic maps to cover the United States. This work has been in progress since 1882, and the published maps cover more than 47 percent of the country, exclusive of outlying possessions.

The maps are published on sheets that measure about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, the areas that they represent are of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, miles, and kilometers. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 of the same units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys and the resulting maps have for many years been of three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile) or $\frac{1}{24,000}$ (1 inch = 2,000 feet), with a contour interval of 1 to 100 feet, according to the relief of the particular area mapped.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 100 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, and the high mountain area of the northwest, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles) or $\frac{1}{250,000}$ (1 inch = nearly 4 miles), with a contour interval of 20 to 250 feet.

The aerial camera is now being used in mapping. From the information recorded on the photographs, planimetric maps, which show only drainage and culture, have been made for some areas in the United States. By the use of stereoscopic plotting apparatus, aerial photographs are utilized also in the making of the regular topographic maps, which show relief as well as drainage and culture.

A topographic survey of Alaska has been in progress since 1898, and nearly 44 percent of its area has now been mapped. About 15 percent of the Territory has been covered by maps on a scale of $\frac{1}{500,000}$ (1 inch = nearly 8 miles). For most of the remainder of the area surveyed the maps published are on a scale of $\frac{1}{250,000}$ (1 inch = nearly 4 miles). For some areas of particular economic importance, covering about 4,300 square miles, the maps published are on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile) or larger. In addition to the area covered by topographic maps, about 11,300 square miles of southeastern Alaska has been covered by planimetric maps on scales of $\frac{1}{125,000}$ and $\frac{1}{250,000}$.

The Hawaiian Islands have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

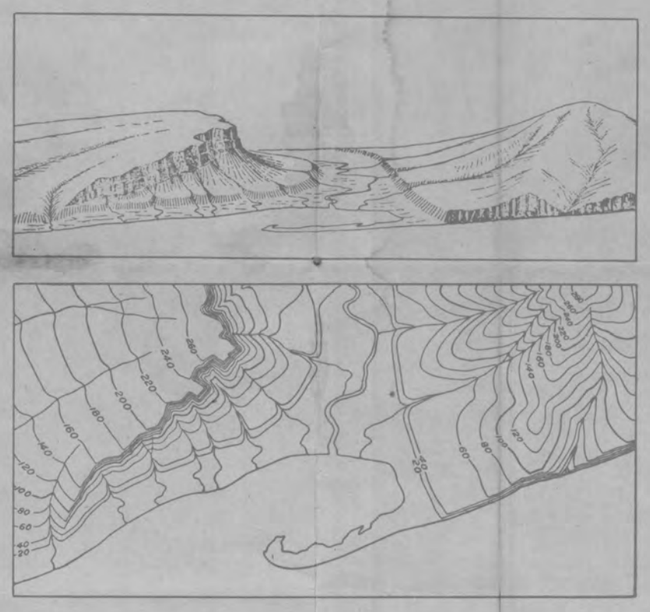
A survey of Puerto Rico is now in progress. The scale of the published maps is $\frac{1}{30,000}$.

The features shown on topographic maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams by double lines. The larger streams, lakes, and the sea are accentuated by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on a few maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The datum or zero of altitude of the Geological Survey maps is mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet above mean sea level. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope, and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. In order that the contours may be read more easily certain contour lines, every fourth or fifth, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road intersections, summits, surfaces of lakes, and benchmarks—are also given on the map in figures, which show altitudes to the nearest foot only. More precise figures for the altitudes of benchmarks are given in the Geological Survey's bulletins on spirit leveling. The geodetic coordinates of triangulation and transit-traverse stations are also published in bulletins.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public roads suitable for motor travel the greater part of the year are shown by solid double lines; poor public roads and private roads by dashed double lines; trails by dashed single lines. Additional public road classification if available is shown by red overprint.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. More than 4,100 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

Geologic maps of some of the areas shown on the topographic maps have been published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped, and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. Two hundred twenty-five folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 percent is allowed on an order amounting to $5 or more at the retail price. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November 1937.

STANDARD SYMBOLS

CULTURE
(printed in black)

City or village; Roads and buildings; Ruins; Cliff dwelling; Good Public road; Poor Public or private road; Trail; Railroads; Electric railroad; Tunnel; Power-transmission line; Wharves; Breakwater and jetties; Bridge; Drawbridges; Ferry *(point upstream)*

Ford; Dam; Dam with lock; Canal lock *(point upstream)*; U.S. township and section lines and recovered corners; State line; County line; Civil Township or district line; Reservation line; Land grant line; City, village, or borough line; Small park or cemetery line; Triangulation point or transit-traverse station; U.S. mineral monument

Boundary monument; Bench mark *(supplementary bench mark shown by cross and black figures without lettering)*; Cemeteries; Church, School *(distinguished on recent maps)*; Coke ovens; Tanks and oil reservoirs; Oil and gas wells; Mine or quarry; Prospect; Shaft; Mine tunnel; Mine tunnel *(showing direction)*; Lighthouse or beacon; Coast Guard station

RELIEF
(printed in brown)

Elevation above mean sea level *(in black on recent maps)*; Contours *(Contours showing depth of water printed in blue)*; Depression contours; Levee

Wash; Cliffs *(or shown by contours)*; Mine dumps; Tailings or mining debris; Sand and sand dunes

WATER
(printed in blue)

Streams; Falls and rapids; Intermittent streams and ditches; Canals or ditches; Aqueducts or waterpipes; Aqueduct tunnels; Lake or pond; Unsurveyed stream and abandoned canal

Intermittent lake; Glacier *(Or shown by contours printed in blue)*; Spring; Well; Marsh; Submerged marsh

WOODS
(when shown, printed in green)

ORIGINAL MOMAG RECORDS
WEST SIERRITA MTNS. PROJECT

for

INSPIRATION CON. COP. CO.

MARCH, 1962

RECORDS Nº 1 thru Nº 37 INCLUSIVE

Jalander Magnetometer Profiles 1 thru 5 incl.

Jalander

Records

West

Sierritas

Inspiration
Project

March 1962

1 Date - 7/29/62

Weld Sierrita Mtns

STA.	TIME	RANGE	READ	X	Corr. X
Base	8:18	+1	105	1082	
3 pts.	8:18	+1	105	"	
"	8:19	+1	105	"	
"	8:21	+2	29	896	
"	8:22	+2	30	927	
"	8:22	+2	30	927	
		LINE 1			
0+00E	9:56	+1	64	659	659
"	9:57	+1	64	659	
1+00E	9:59	+1	65	670	
2+00E	10:01	+1	66	680	
3+00E	10:03	+1	68	700	
4+00E	10:04	+1	66	680	
5+00E	10:07	+1	66	680	
6+00E	10:08	+1	90	927	
7+00E	10:11	+1	63	649	
6+50E	10:13	+1	75	773	
8+00E	10:20	+1	70	721	
9+00E	10:23	+1	72	742	
10+00E	10:25	+1	75	773	
11+00E	10:27	+1	75	773	
11+60E	10:28	+1	75	773	
12+00E	10:29	+1	72	742	
13+00E	10:30	+1	76	783	
14+00E	10:31	+1	68	700	

Remarks

Q ~1000 N of Sunshine Mine
Loose on road
sandy shale? meta grit
" "
dark fine grained?
sandy shale? meta grit
yellow clay " " " "
meta lime? Quartz of N pit
at pit - Cu Oxide - vein?
N 10° W 65° W - 5' wide
gossan - Cu stain - pyrite stringers
- lime - shale contact?
N-S fine - granite?
" 100' S of saddle
clay
"
"
N-S 3' lamp like
granite
"
"

STA	TIME	RANGE	READ	γ	CAL γ
15+00E	10:33	+1	75	773	
16+00E	10:36	+1	81	834	
17+00E	10:37	+1	74	762	
18+00E	10:38	+1	75	773	
19+00E	10:39	+1	73	752	
20+00E	10:43	+1	70	721	
21+00	10:45	+1	70	721	LINE 2E
22+00	10:46	+1	72	742	
23+00	10:50	+1	65	670	
24+00	10:51	+1	62	639	
25+00	10:52	+1	63	649	
26+00	10:55	+1	70	721	
27+00	10:55	+1	49	505	
28+00	10:56	+1	58	597	
29+00	10:57	+1	35	361	
30+00	11:00	+1	69	711	
31+00	11:02	+1	61	628	
32+00	11:04	+1	62	639	
33+00	11:05	+1	67	690	
34+00	11:05	+1	67	690	
35+00	11:06	+1	65	670	
36+00	11:07	+1	65	670	
37+00	11:08	+1	57	587	
38+00	11:09	+1	62	639	
39+00	11:10	+1	59	607	
40+00	11:11	+1	59	607	
40+40	11:12	+1	65	670	
41+00	11:12	+1	58	597	

Remarks
granite – ? thin rhyolite dike & #150 E
flag "
" & diabase ? or metadiabase
"
"
flag " & granite contact-weathered
granite following weathered
weathered glassy granite – rhyolite ? contact
granite N) – rhyolite S &
granite
" – flag
granite & altered granite ?
Andesite – dark fine grained
"
dike about north end " E-W fault-granite?
granite – flag
"
"
"
"
" flag
"
"
"
"
" flag
" & fine grained dark dike
"

STA	TIME	RANGE	READ	K	COMM
42+00	11:14	+1	55	567	
43+00	11:15	+1	60	618	
44+00	11:16	+1	63	649	
45+00	11:17	+1	71	731	
46+00	11:19	+1	59	607	
47+00	11:20	+1	55	567	
48+00	11:21	+1	60	618	
48+50	11:24	+1	55	567	
49+00	11:25	+1	55	567	
50+00	11:26	+1	62	639	
51+00	11:27	+1	58	597	
					Line 2 cont'd
20+00E	11:51	+1	75	772	
REPEAT					
1+00	11:52	+1	67	690	
2+00	11:54	+1	66	680	
3+00	11:54	+1	65	670	
4+00	11:55	+1	59	607	
5+00	11:56	+1	63	649	
6+00	11:56	+1	61	628	
7+00	11:57	+1	63	649	
8+00	11:58	+1	58	597	
9+00	11:59	+1	69	711	
10+00	12:00	+1	73	752	
11+00	12:01	+1	68	700	
12+00	12:02	+1	66	680	
13+00	12:03	+1	65	670	
14+00	12:04	+1	60	618	

Remarks

granite
" "
" "
flag " 30' N of Green cross
" & rhyolite
" "
" "
" " & 1/4 mi E of dam in stream
" "
" at road fork
" flag

following road west from 20'00 E rhyo
ads
granite
"
"
"
"
"
lamp dikes
flag granite
"
"
" & dark dike
"

STA	TIME	RATE	READ	δ	Corr δ
15+00	12:05	+1	64	659	
16+00	12:06	+1	60	618	
17+00	12:07	+1	49	505	
18+00	12:08	+1	73	752	
19+00	12:09	+1	65	670	
OFFSET					
REPEAT	12:11	+1	59	607	
	LINE 3				
0+00E	13:18	+1	58	597	
1+00E	13:17	+1	55	567	
2+00E	13:16	+1	60	618	
3+00E	13:19	+1	60	618	
4+00E	13:20	+1	60	618	
4+55E	13:21	+1	60	618	
5+00E	13:26	+1	54	556	
6+00E	13:27	+1	54	556	
7+00E	13:28	+1	44	453	
8+00E	13:29	+1	88	906	
9+00E	13:31	+1	69	711	
10+00E	13:32	+1	66	680	
11+00E	13:33	+1	70	721	
12+00	13:34	+1	53	546	
13+00	13:35	+1	53	546	
14+00	13:36	+1	64	659	
15+00	13:37	+1	65	670	
16+00	13:37	+1	54	556	

Remarks

fill

woodside - shale

at fence - shale - moving fill

" "

@ 7+11/12 going N 53° E grey shale

fence more sandy " "

" " " "

" " " "

Top of hill N 75° E " "

flag " " "

Limestone - shaley

granite

" "

flag " many flint

granite

" "

" "

300' " " Parkside Manor

flag " "

STA	TIME	RANGE	READ	K	Cor K
17+00E	13:39	+1	59	607	
18+00E	13:40	+1	64	659	
19+00E	13:42	+1	58	597	
20+00E	13:43	+1	56	577	
20+[illegible]E	13:44	+1	45	464	
21+00	13:51	+1	50	515	
22+00	13:52	+1	54	556	
23+00	13:54	+1	50	515	
24+00	13:55	+1	49	505	
25+00	13:56	+1	49	505	
26+00	13:57	+1	49	505	
27+00	13:58	+1	55	567	
28+00	13:58	+1	53	[illegible]	
29+00	13:59	+1	49	505	
30+00	13:60	+1	57	587	
31+00	14:01	+1	54	556	
32+00	14:02	+1	52	536	
33+00	14:03	+1	58	597	
34+00	14:04	+1	56	577	
35+00	14:05	+1	59	607	
36+00	14:06	+1	64	659	
37+00	14:07	+1	63	649	
38+00	14:08	+1	61	628	
39+00	14:09	+1	60	618	
40+00	14:09	+1	60	618	
TURN NORTH			40+00 = 0+00 N		
1+00N	14:13	+1	62	639	
2+00N	14:14	+1	65	670	

Remarks -

granite
" barker bored
" " "
flag " "
fence cannot suggest color like Cindi
[illegible] granite - fault gone ?
next granite red
" "
" "
flag " "
" "
" "
" "
flag " "
" "
" "
" "
fresher "
"
"
"
"
"
"
"
"

STA	TIME	RANGE	READ	%	Corr %
3+00N	14:16	+1	65	670	
4+00N	14:17	+1	65	670	
5+00N	14:18	+1	68	700	
6+00N	14:19	+1	73	752	
7+00N	14:20	+1	78	803	
8+00N	14:21	+1	81	834	
9+00N	14:23	+1	86	886	
10+00N	14:24	+1	79	814	
11+00N	14:25	+1	80	824	
12+00N	14:26	+1	89	917	
13+00N	14:27	+1	99	1020	
14+00N	14:28	+1	104	1071	
15+00N	14:30	+1	82	845	
16+00N	14:32	+1	70	721	
17+00N	14:33	-1	105	1082	
16+50N	14:40	-1	90	927	
17+50N	14:41	-1	125	1288	
18+00N	14:42	+1	80	824	
18+50N	14:42	+1	79	814	
19+00N	14:43	+1	88	906	
20+00N	14:44	+1	94	968	
	TURN	5	25 W	0+00W = 20+00N	
1+00W	14:53	+1	93	958	
2+00W	14:54	+1	78	803	
3+00W	14:55	+1	78	803	
4+00W	14:56	+1	75	773	
5+00W	14:57	+1	74	762	
6+00W	14:58	+1	74	762	

Remarks

granite
"
" flag
"
" rubble
" "
" "
" "
flag

grey granite
major fault gouge - N N 45° E
last N of fault
diabase dike
road @ 14+50 N - contact flag
granite
granite tabs
" "
" "
" "
" "
" "
" "
150 S & E - N Ridge flag
granite
"
"
" & dirt
flag "
"

7

STA	TIME	PAGE READ			Corr Y
7+00W	15:59	+1	70	721	
8+00W	15:00	+1	61	628	
9+00W	15:00	+1	72	741	
10+00W	15:01	+1	72	762	
11+00W	15:02	+1	74	762	
12+00W	15:02	+1	65	676	
13+00W	15:03	+1	61	628	
14+00W	15:04	+1	68	700	
15+00W	15:05	+1	60	618	
16+00W	15:06	+1	70	721	
11	15:27	+1	66	680	
17+00W	15:28	+1	70	721	
18+00W	15:29	+1	50	515	
19+00W	15:30	+1	63	649	
20+00W	15:30	+1	54	556	
21+00W	15:31	+1	65	670	
22+00W	15:32	+1	65	670	
23+00W	15:32	+1	55	567	
24+00W	15:33	+1	35	361	
29+50W	15:33	+1	57	587	
25+00W	15:34	+1	53	546	
26+00W	15:35	+1	50	515	
27+00W	15:36	+1	51	525	
28+00W	15:37	+1	50	515	
29+00W	15:38	+1	50	515	
30+00W	15:39	+1	64	659	
31+00W	15:39	+1	59	607	
32+00W	15:40	+1	73	752	

Remarks

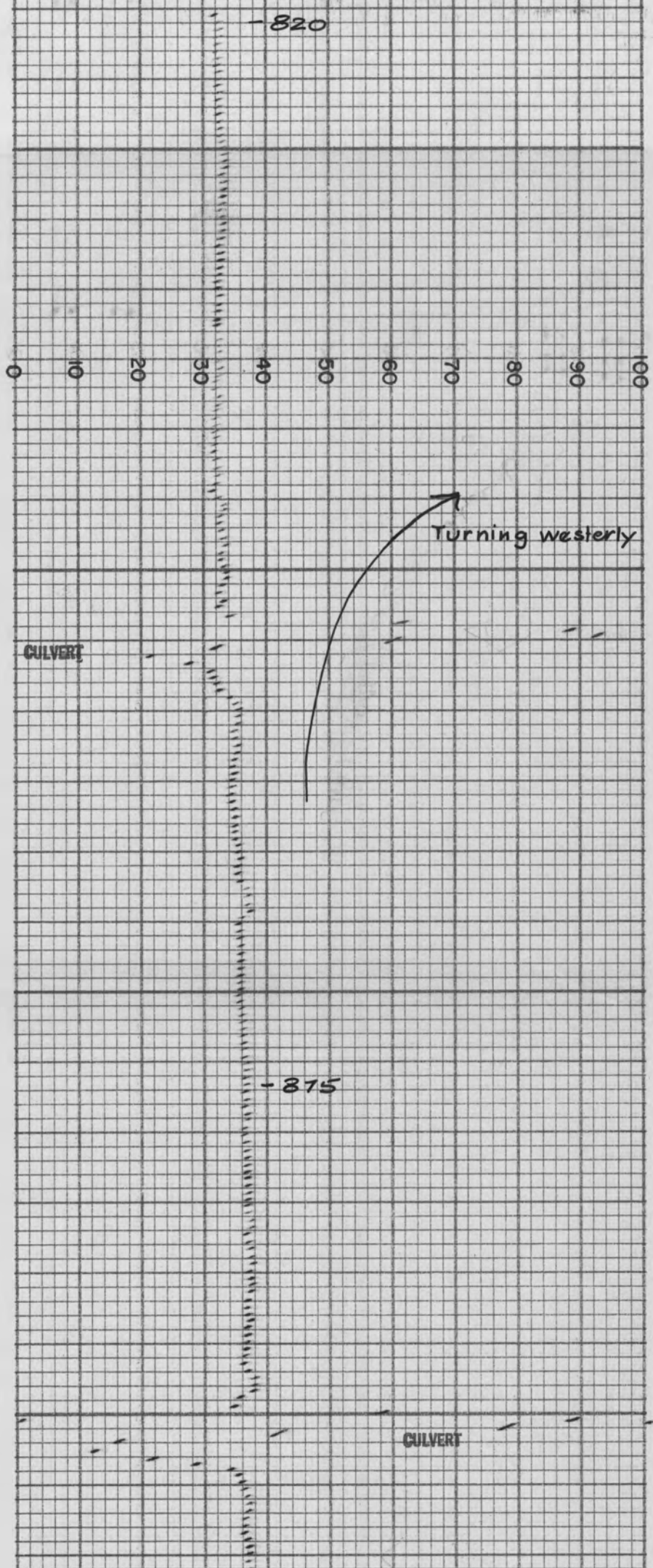
granite
" " & fence @ 7+60 W
" "
" " & flag
"
" fault zone ?
" "
" "
" " flag
"
"
"
"
" flag
"
"
"
"
"
"
"
" "
" " flag
"
"
"
" "
" " flag
"
"

STA	TIME	RANGE	READ	%	Corr %
33+00	15:41	+1	69	711	
34+00	15:42	+1	48	494	
35+00	15:43	+1	65	670	
36+00	15:43	+1	68	700	
37+00	15:44	+1	71	731	
38+00	15:44	+1	67	690	
39+00	15:45	+1	67	690	
40+00	15:46	+1	51	525	
0+00E	16:07	+1	61	628	
@ 2/11/12					
BASE	16:40	+1	45	464	
Inte			52	535	

Remarks
granite
"
"
"
"
"
N - S
"
Fence
flag
flag

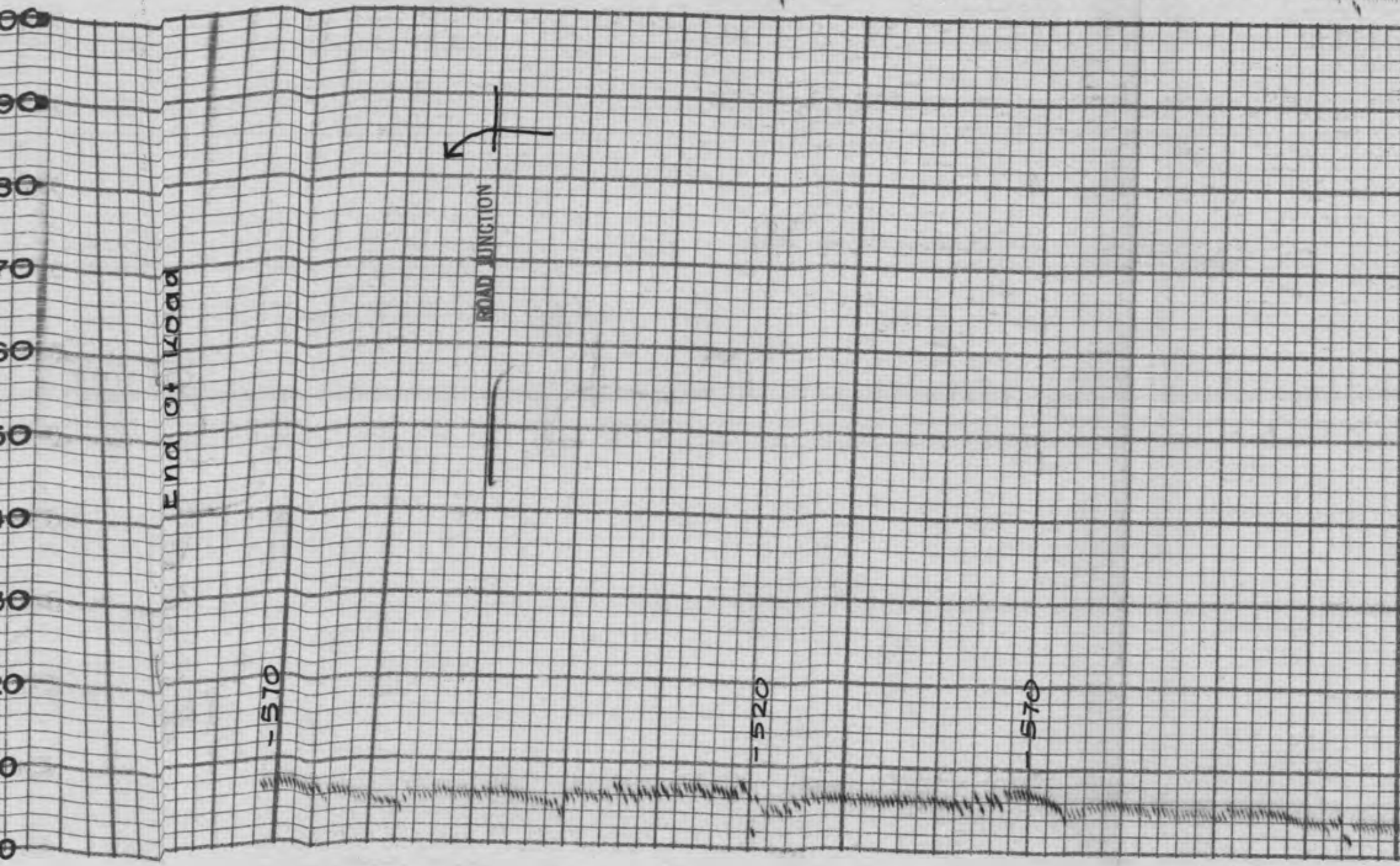

Entrance to Anvil Ranch
ROAD JUNCTION
CULVERT
DIP
Missile Site
MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 1748IX

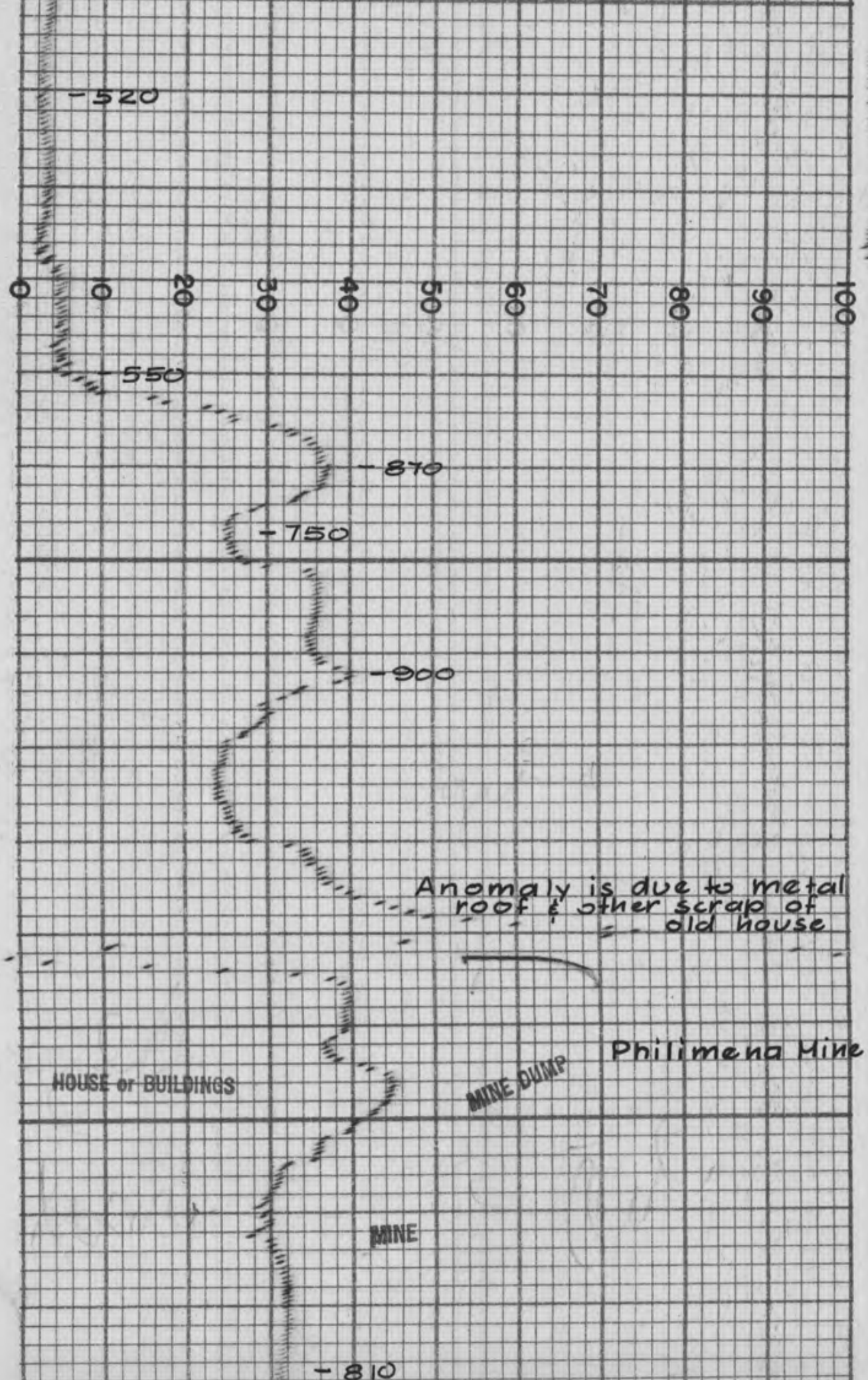
600'-700' ± E. of Bridge at Altar Wash
Sec 26



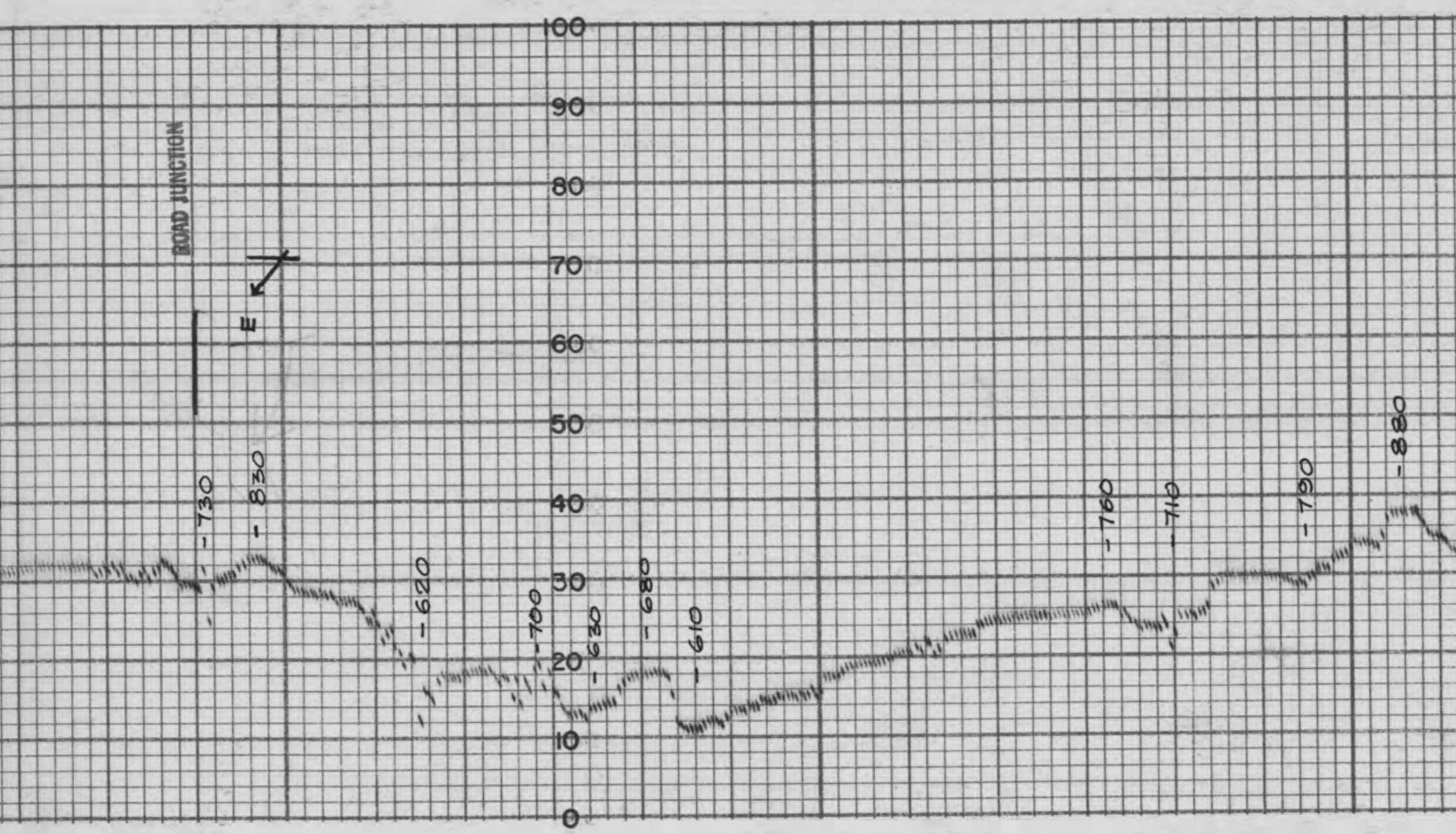

CATTLE GUARD
Where Britten Ranch Rd. starts from Sasabe Hwy
Fence cor.
Gate
ROAD JUNCTION
ANOMALOUS AREA "B"
THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U.S.A.
CHART NO. 1749X
MADE IN U.S.A.

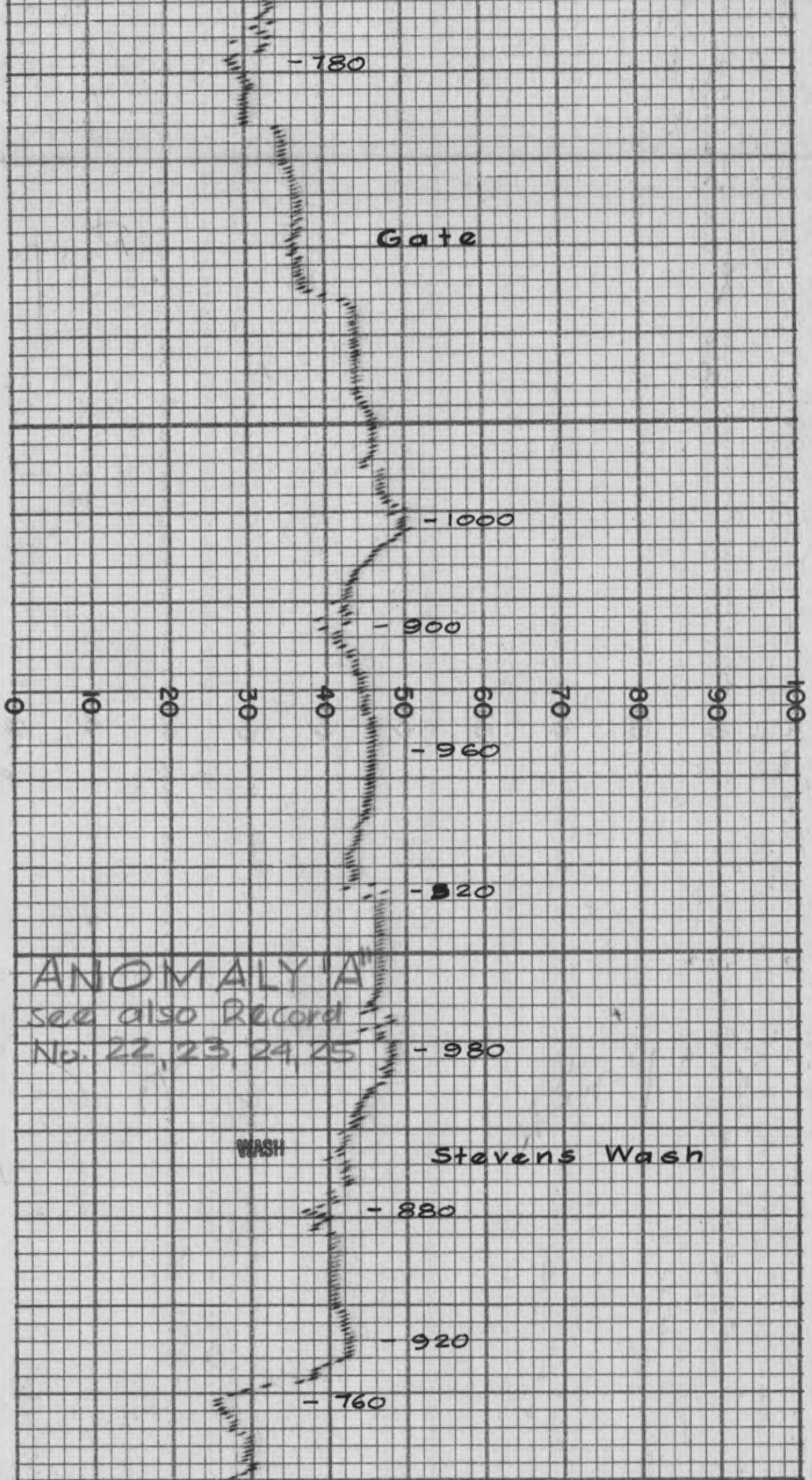
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X



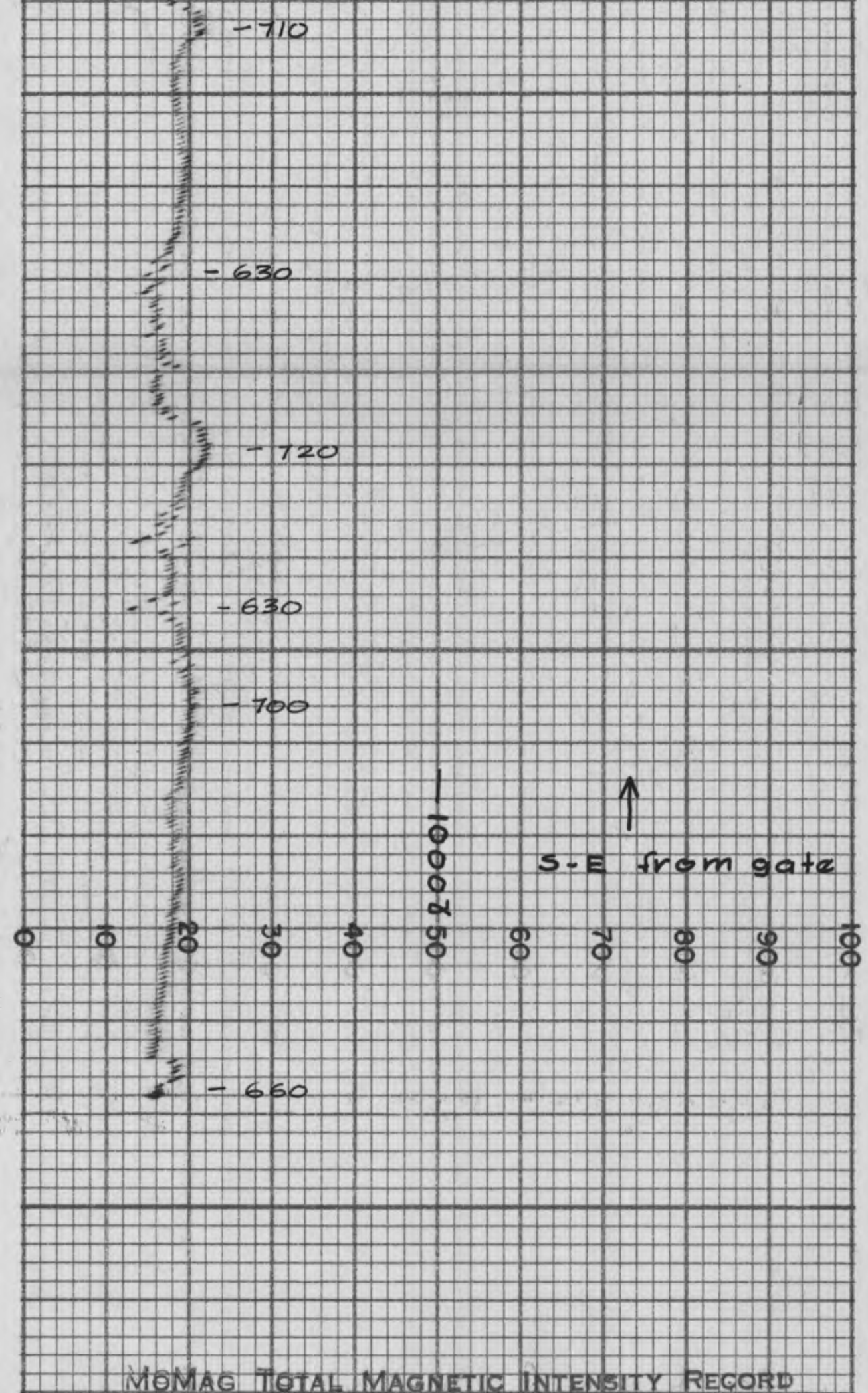

-520
0
10
20
30
40
50
60
70
80
90
100
-550
-870
-750
-900
Anomaly is due to metal roof & other scrap of old house
Philimena Mine
HOUSE or BUILDINGS
MINE DUMP
MINE
-810

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




INDIANAPOLIS, IND., U. S. A.
E.S.
-780
Gate
-1000
-900
0
10
20
30
40
50
60
70
80
90
100
-960
-920
ANOMALY "A"
see also Record
No. 22, 23, 24, 25
-980
WASH
Stevens Wash
-880
-920
-760


100
90
80
70
60
50
40
30
20
10
0
-730
-760
-720
-660
-700
-680
-720
-670
-730
-650



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

MoMag TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 6 DATE March, 1962

SENSITIVITY 100 GAMMAS /½ In S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

South & South East from gate in section line fence, Section 21 | 22 T17S - R10E to a dead end SE of the Philimena Mine in Sec. 27 T17S - R10E.

Fence across the road

-780

-740

0 10 20 30 40 50 60 70 80 90 100

W

-970

-960

-1000

ROAD JUNCTION

-930

-960

-860

-940

-840

-940

-800

1000 ft

S-W
from N. of Philimena Mine

0 10 20 30 40 50 60 70 80 90 100

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

MoMag Total Magnetic Intensity Record

FOR: INSPIRATION CON. COPPER CO.

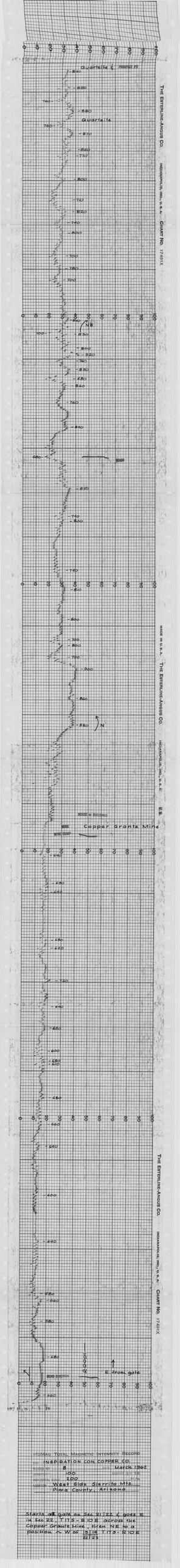
RECORD NO. 7 DATE March 1962

SENSITIVITY 100 GAMMAS/+ In. S.D.

HORIZONTAL SCALE 200 Ft./In.

LOCATION West side Sierrita Mts.
Pima County, Arizona

From Road Junction N of Philimena Mine in Sec. 27 T17S - R10E to where Road is blocked by a fence on section Line 33/34 in NW cor. of Sec. 34 T17S - R10E.



MOMAG TOTAL MAGNETIC INTENSITY RECORD

INSPIRATION CON COPPER CO.

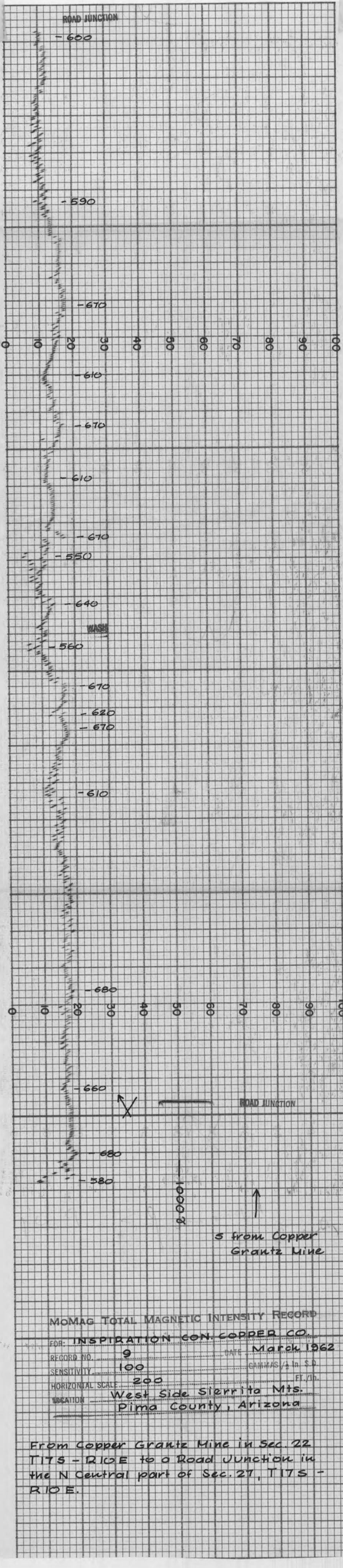
RECORD NO. 8 DATE March 1962

INSTRUMENT NO. 100

OPERATOR'S NAME 100

LOCATION West side Sierrita Mts.
Pima County, Arizona

Starts at gate on Sec 21 | 22 & goes E in Sec 22, T 17 S - R 10 E across the Copper Granite Mine, then NE to a pasture in W ½ of Sec 13 T 17 S - R 10 E 22/23



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

E.S.

MoMag TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 9 DATE March 1962

SENSITIVITY 100 GAMMAS/½ In. S.D.

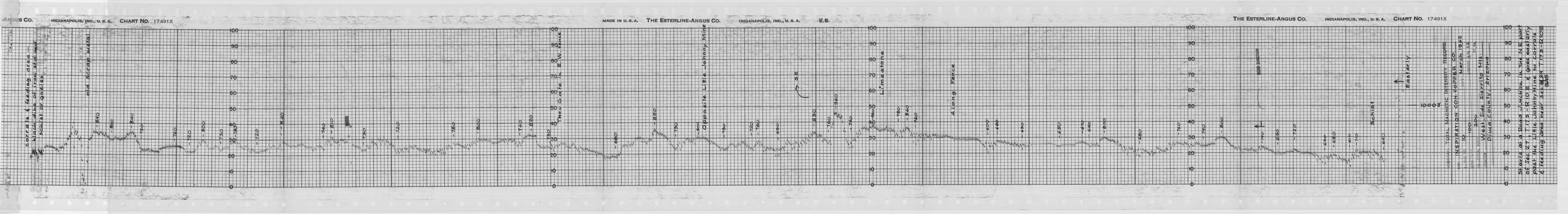
HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

From Copper Grantz Mine in Sec. 22 T17S - R10E to a Road Junction in the N Central part of Sec. 27, T17S - R10E.

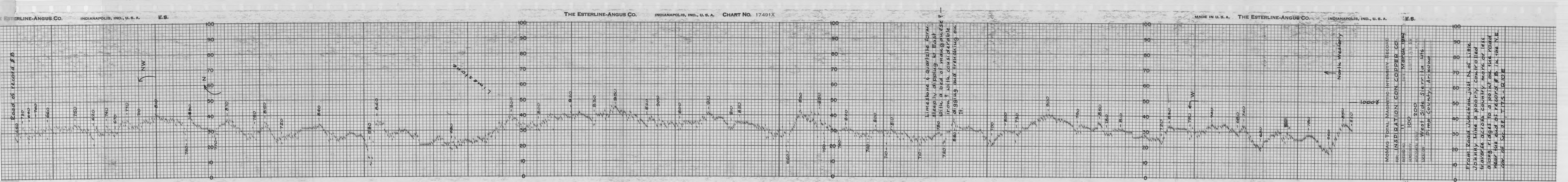
MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. E.S.

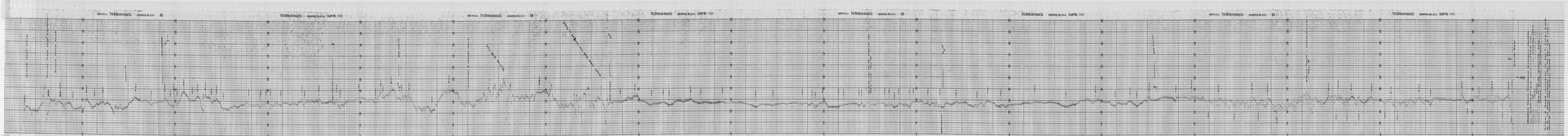
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X



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

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



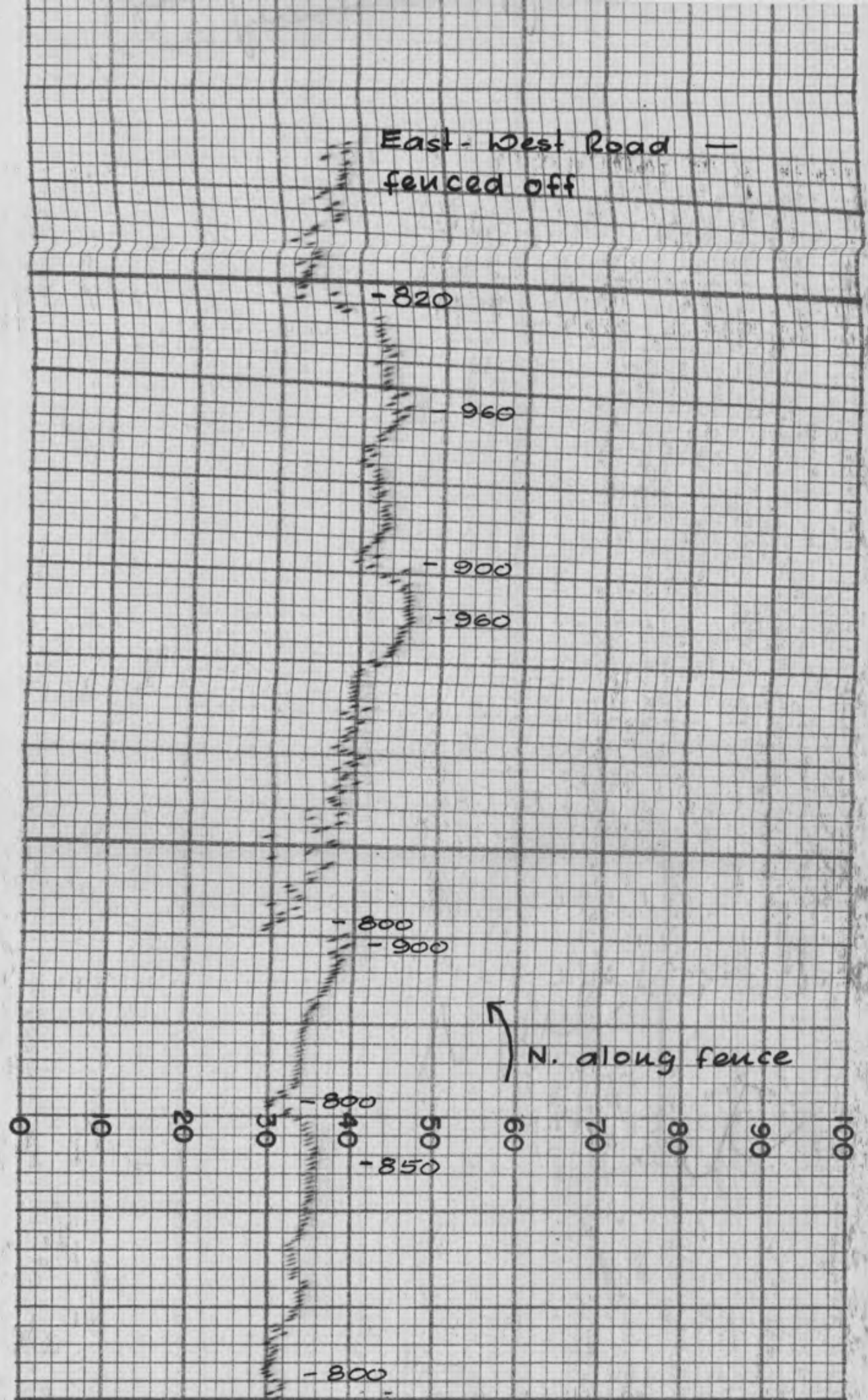


ADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.

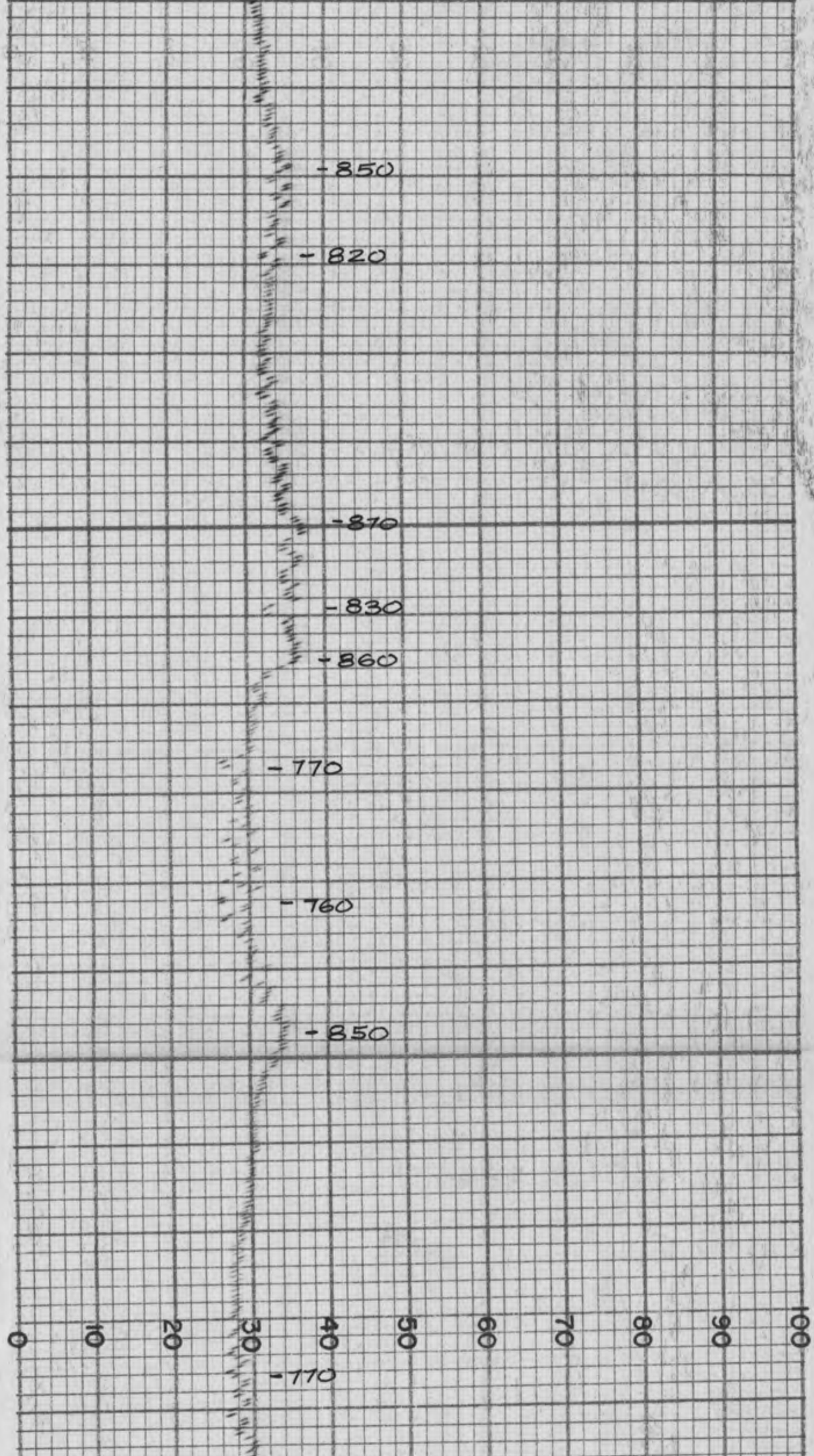
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

MOMAG TOTAL MAGNETIC INTENSITY RECORD
FOR: INSPIRATION CON. COPPER CO.
RECORD NO. 15 DATE March 1962
SENSITIVITY 100 GAMMAS/In. M.D. FT./In.
HORIZONTAL SCALE 200
LOCATION West Side Sierrita Hts.
Pima County, Arizona

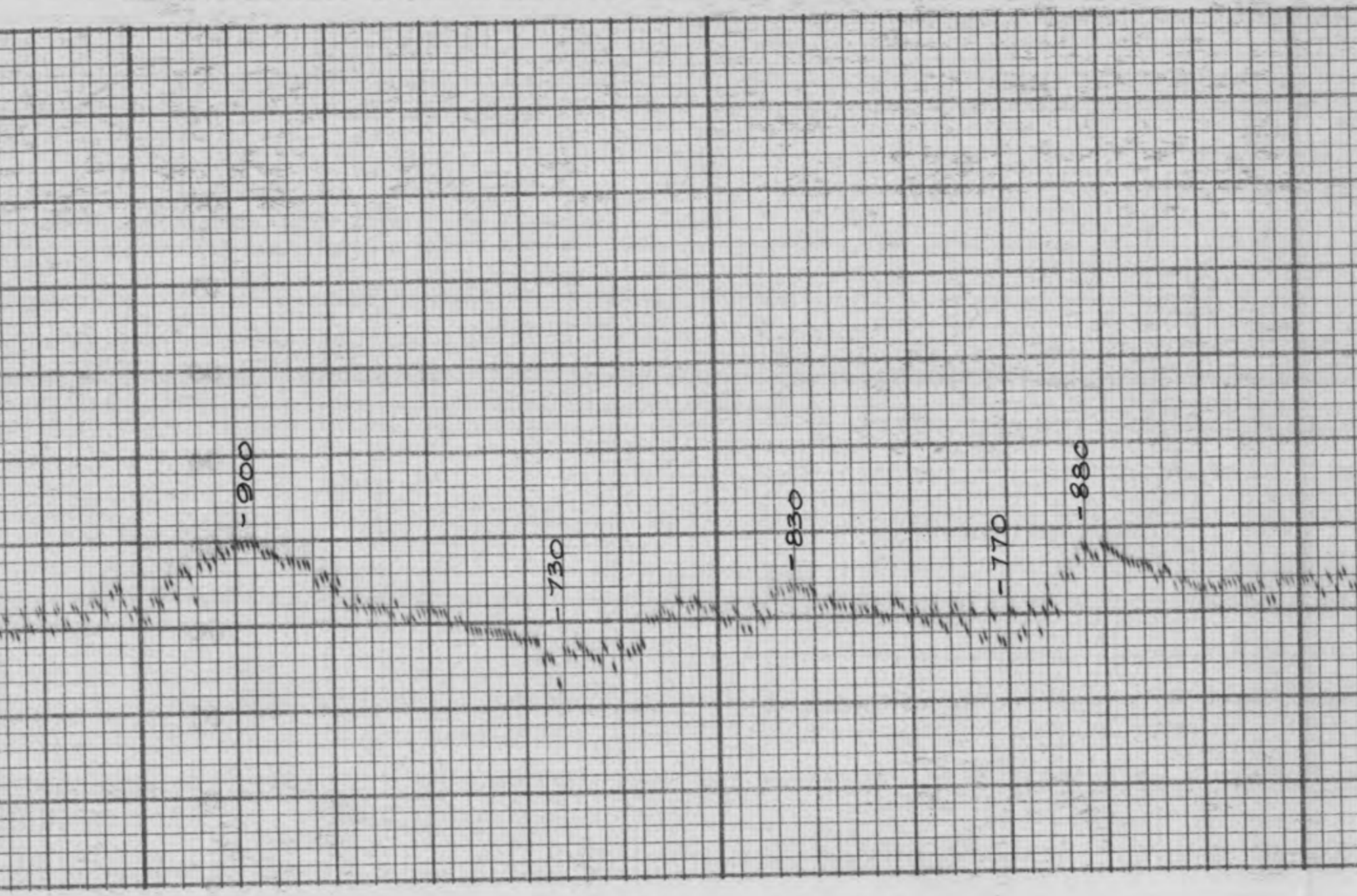
East Base Road Junction center Sec. 15
T17S., R10E. to a Road intersection in the
N.W. part Sec. 23, T17S., R10E.



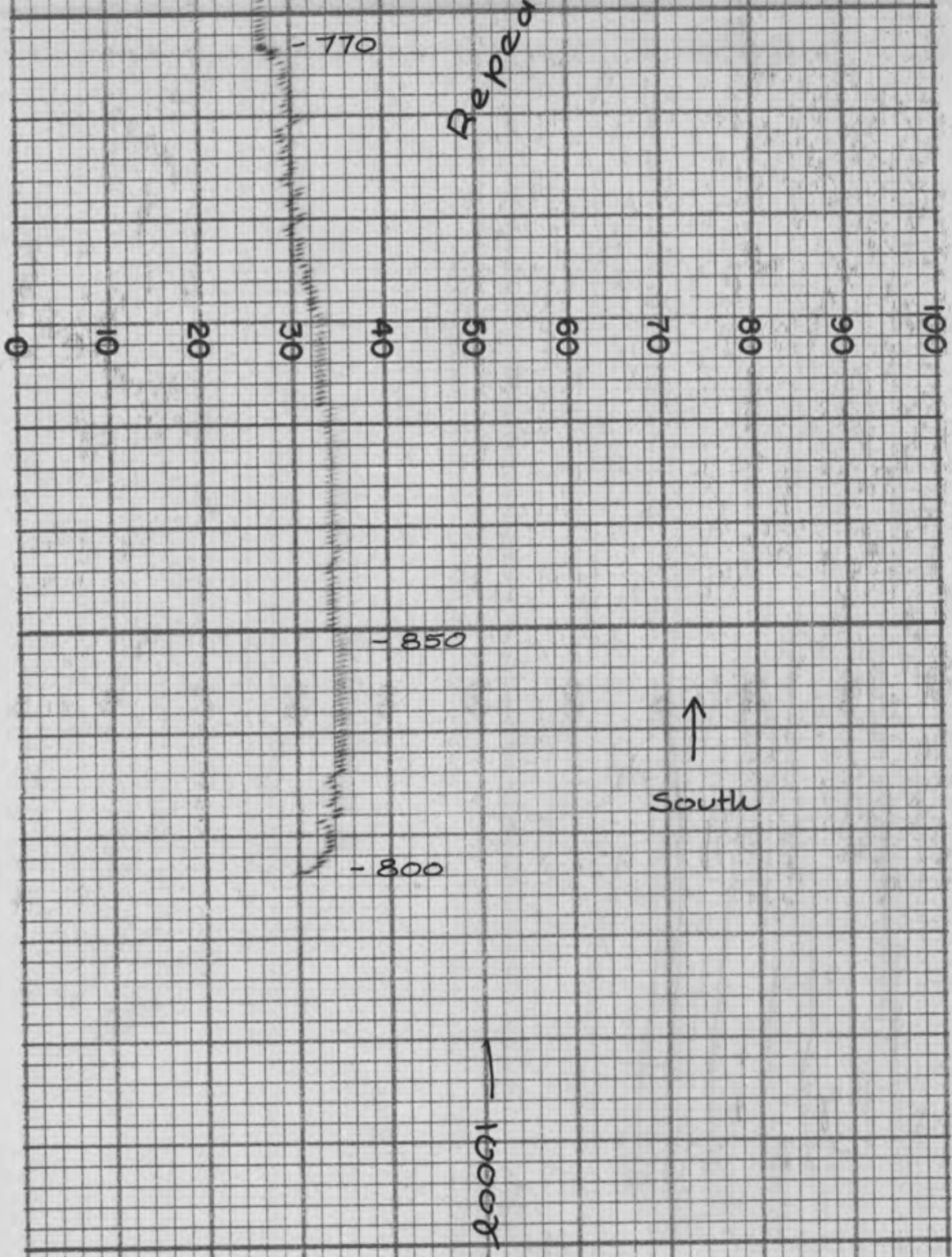
S CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X


-850
-820
-870
-830
-860
-770
-760
-850
0
10
20
30
40
50
60
70
80
90
100
-770

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



-810
-770
-790
-840
0
10
20
30
40
50
60
70
80
90
100
E. up Wash
ts part of Rec. 13



MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 14 DATE March 1962

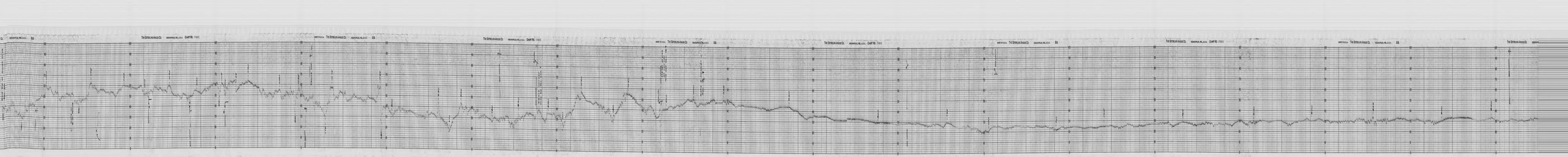
SENSITIVITY 100 GAMMAS /½ In. S.D.

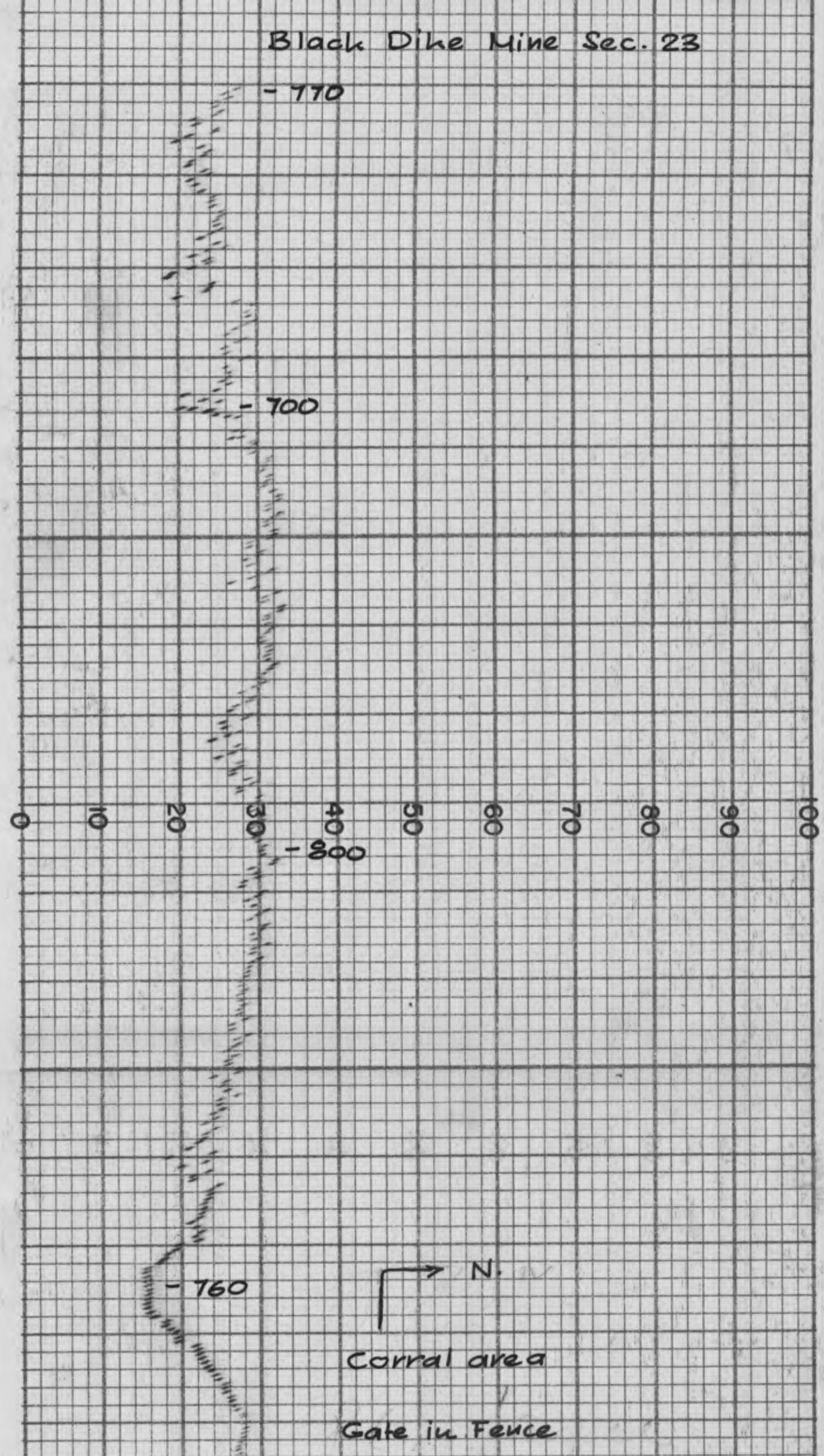
HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

Repeats part of Rec. 13 then goes east up wash in sec. 14, to a fence at E. Sec. line Sec. 14, T 17S, R 10 E.

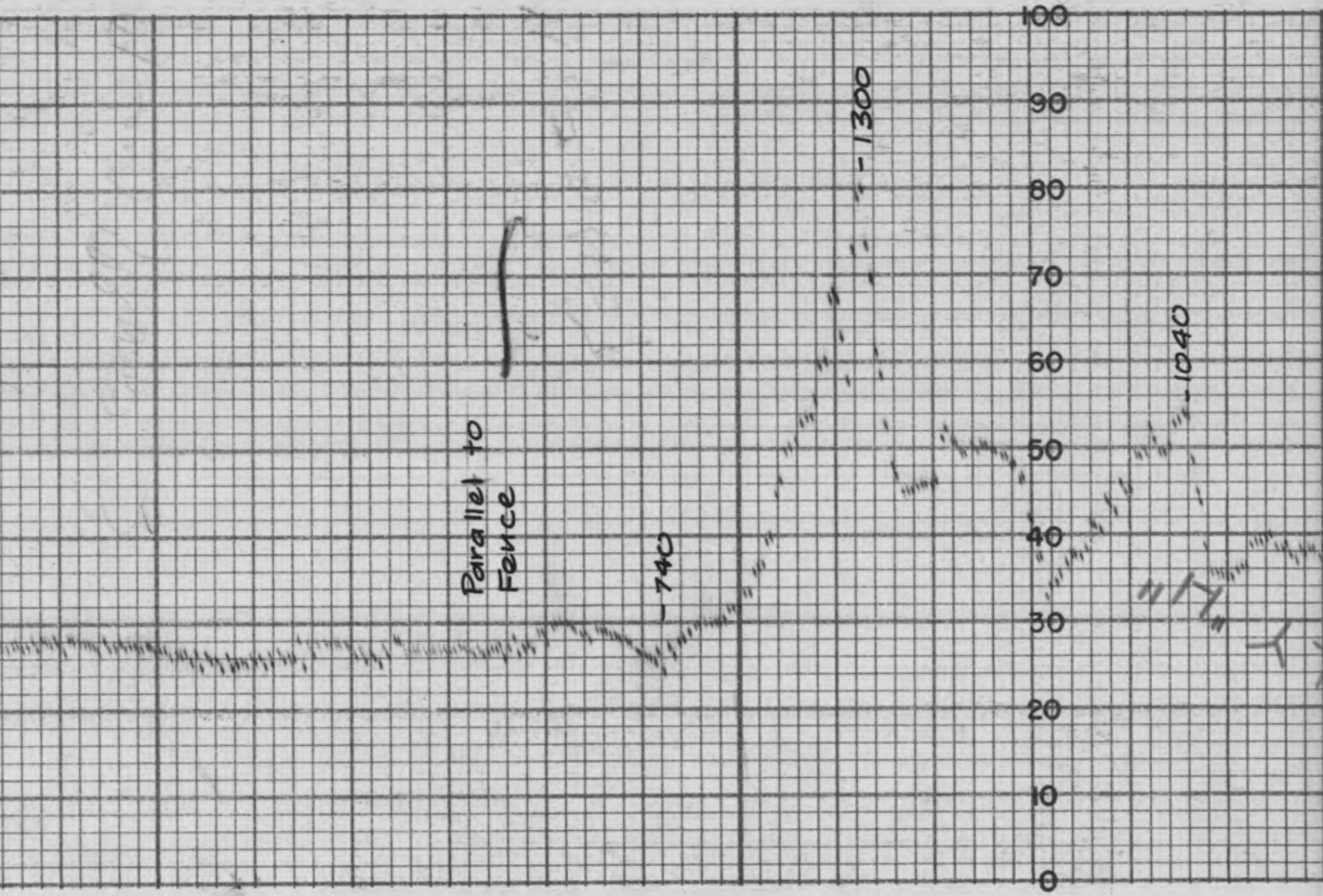
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

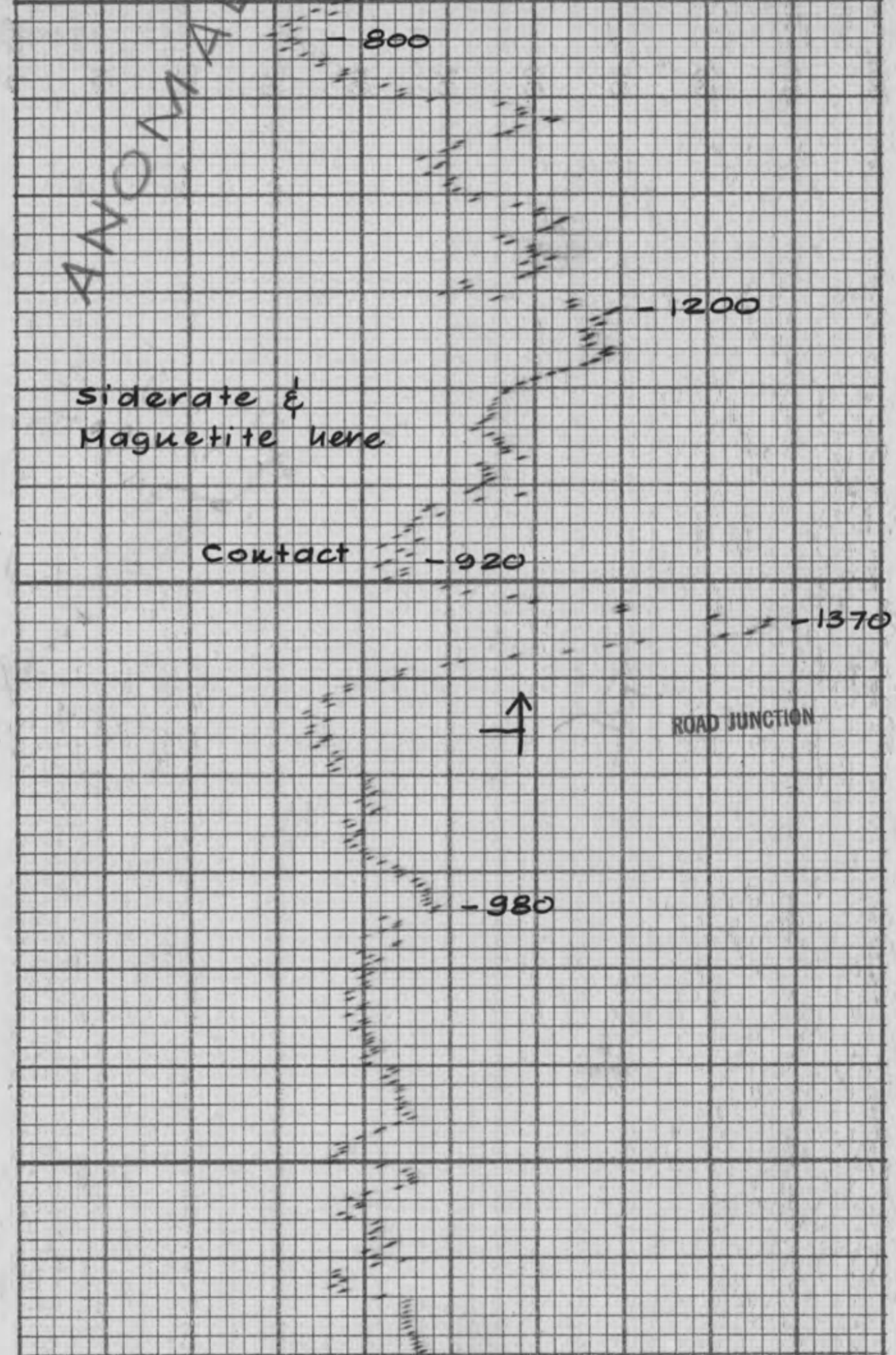




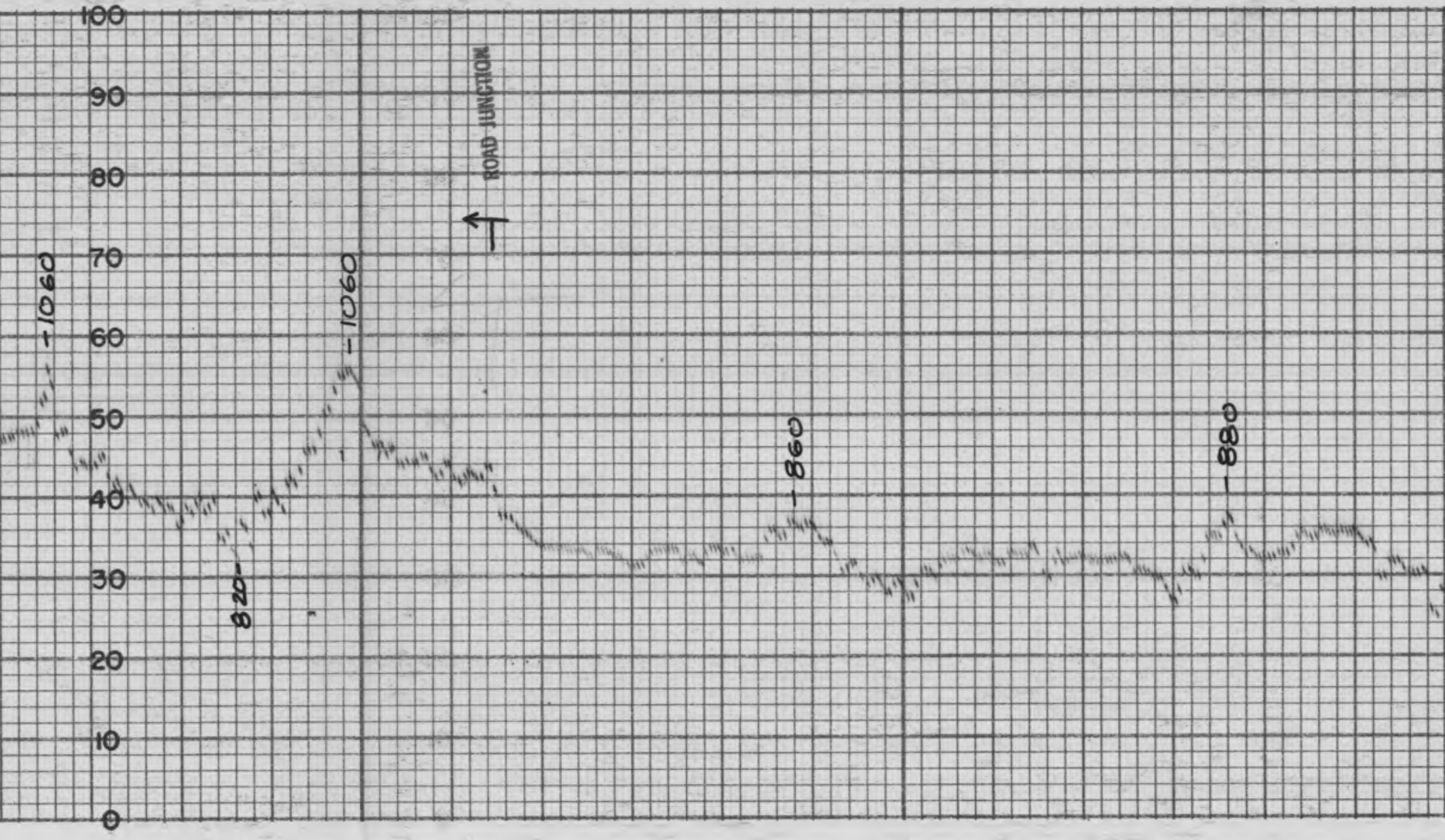
MADE IN U.S.A. THE ESTERLI

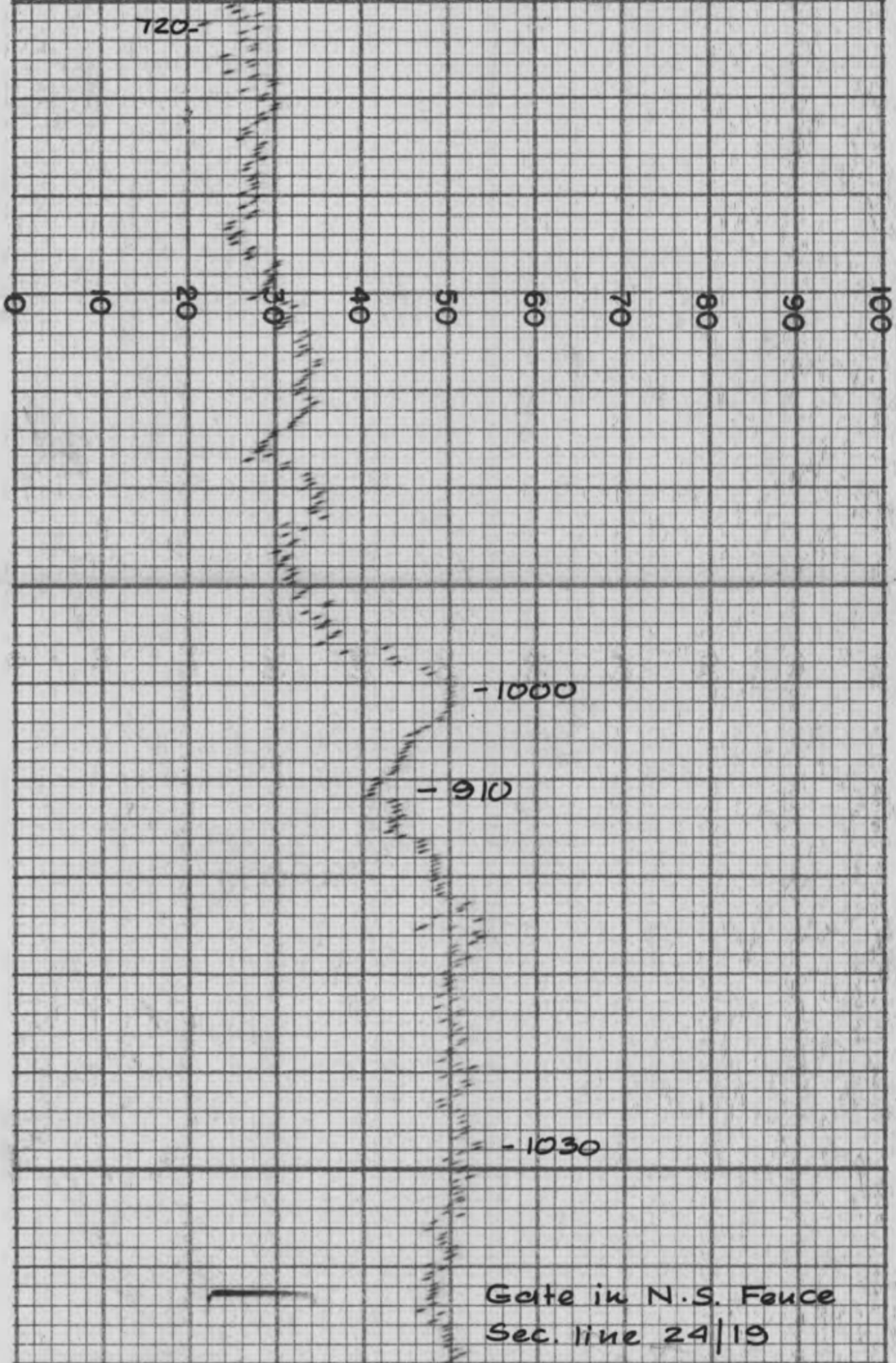
NE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. E.S.

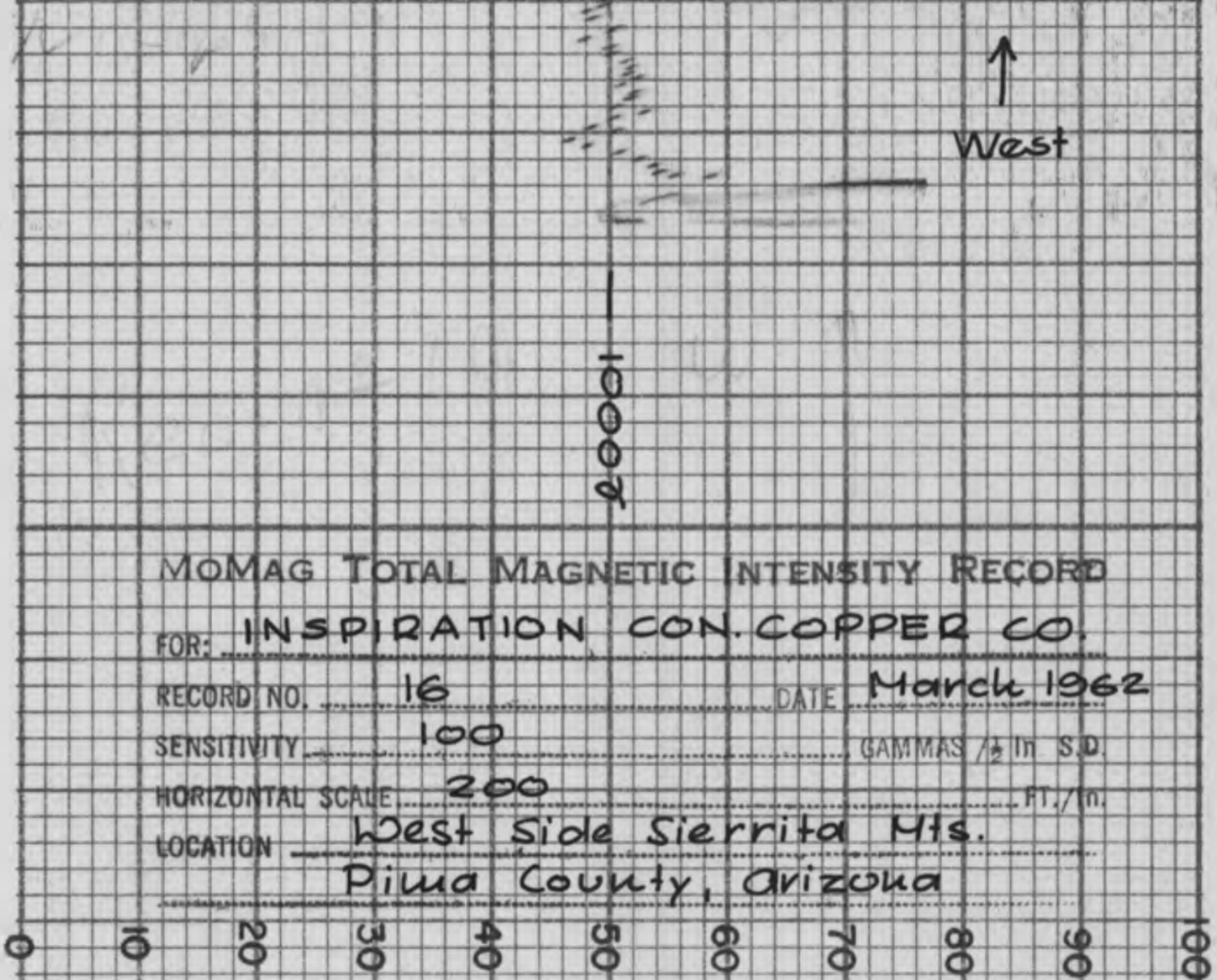



ANOMALY
800
1200
siderate &
Magnetite here
Contact
920
1370
ROAD JUNCTION
980

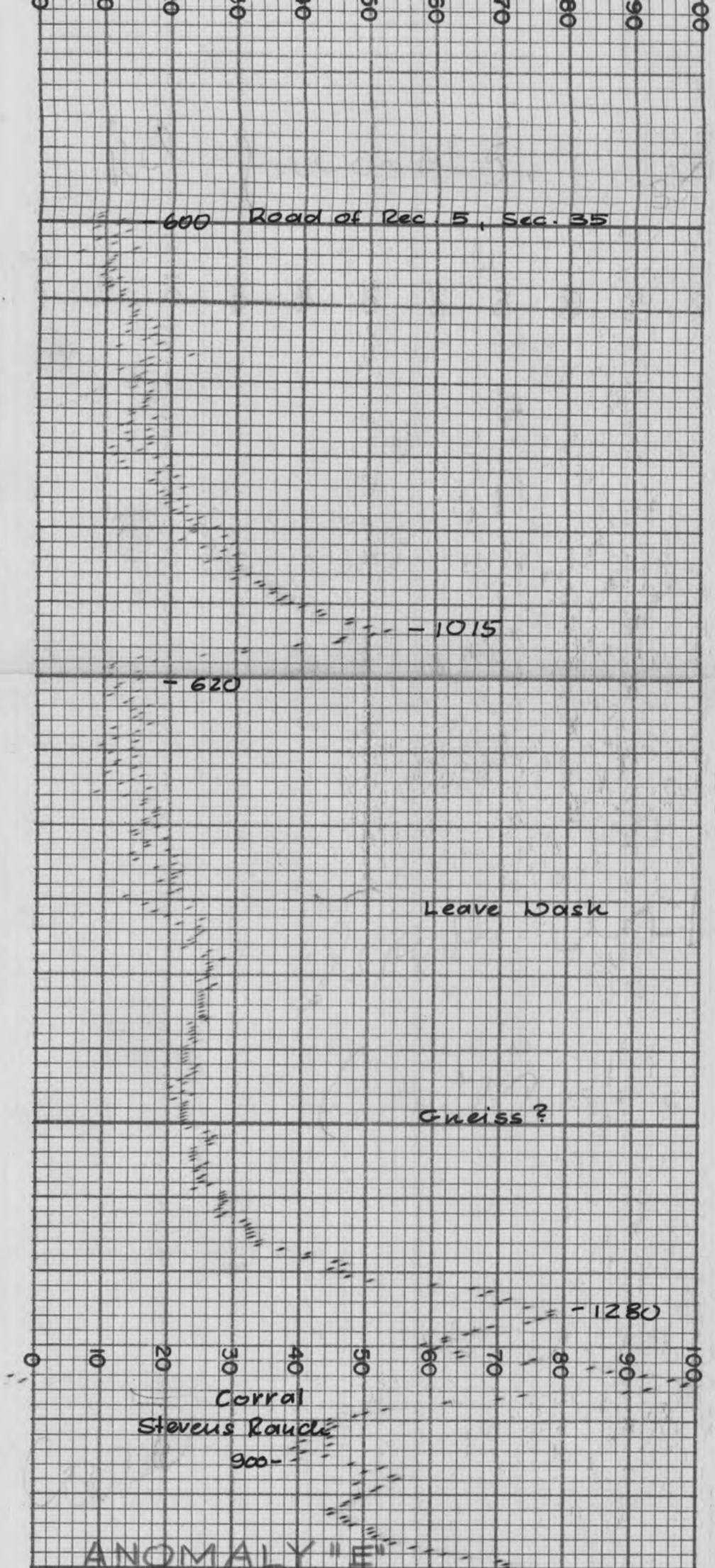
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X



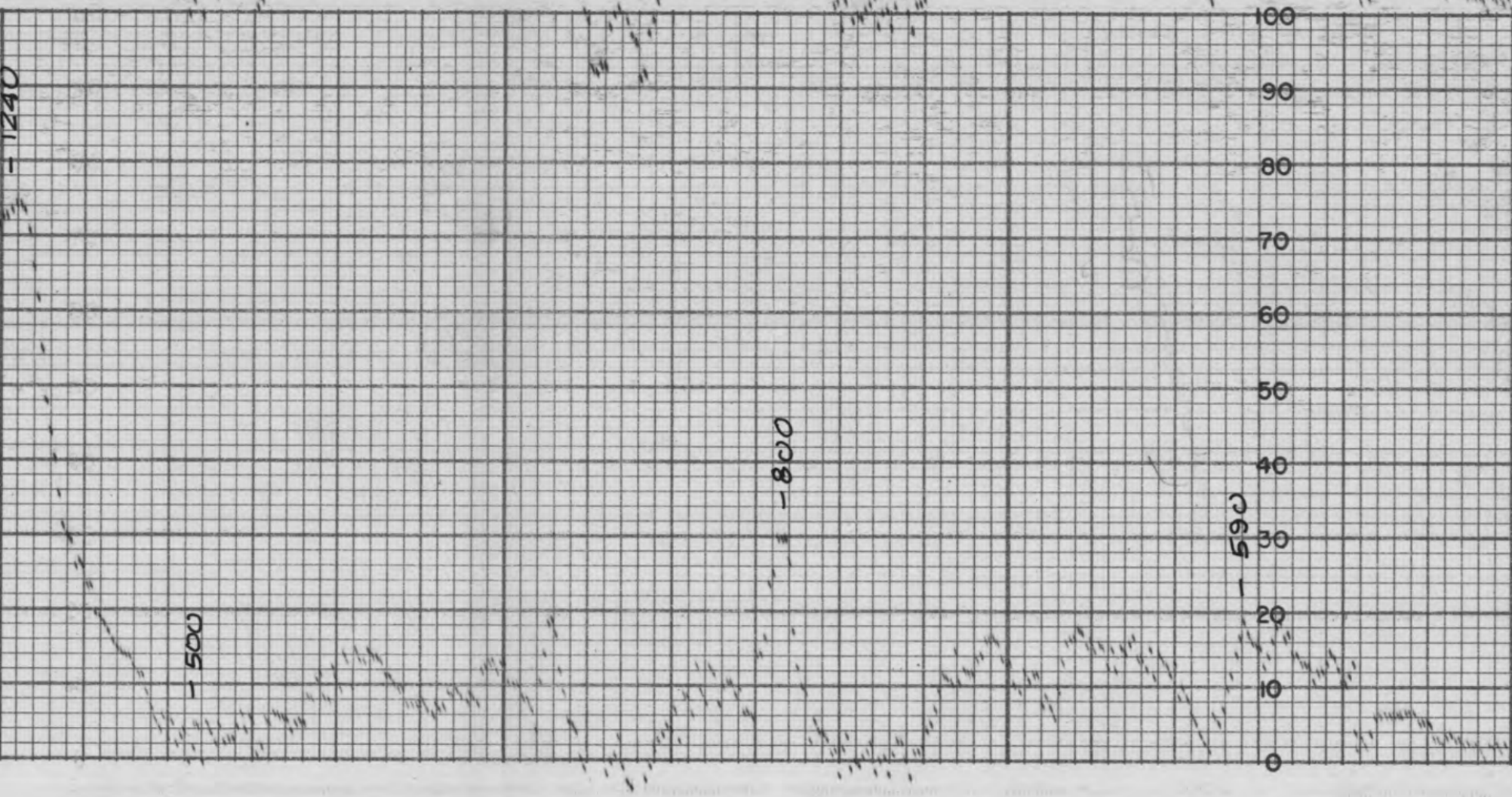

720
0
10
20
30
40
50
60
70
80
90
100
-1000
-910
-1030
Gate in N.S. Fauce
Sec. line 24|19

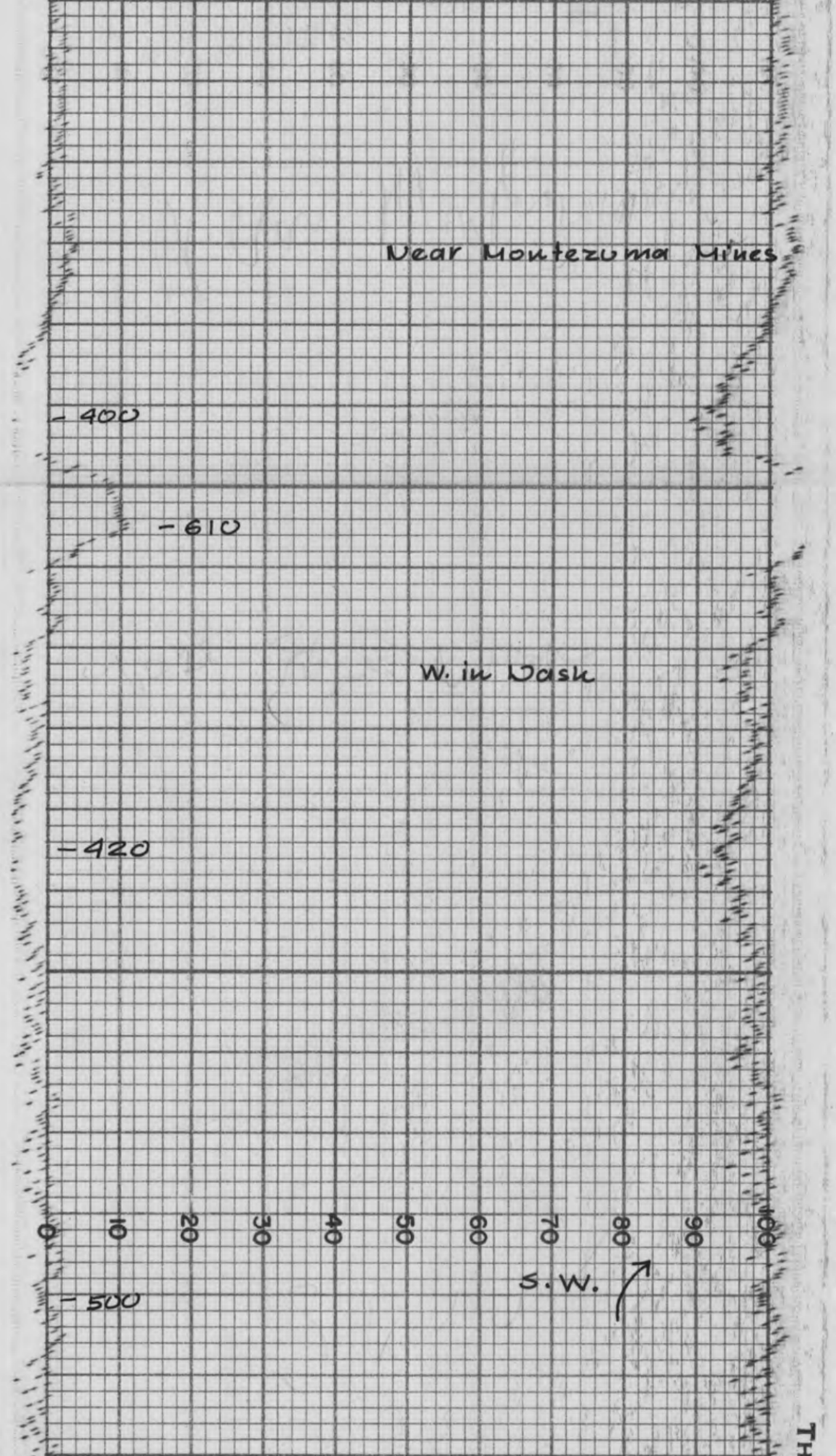


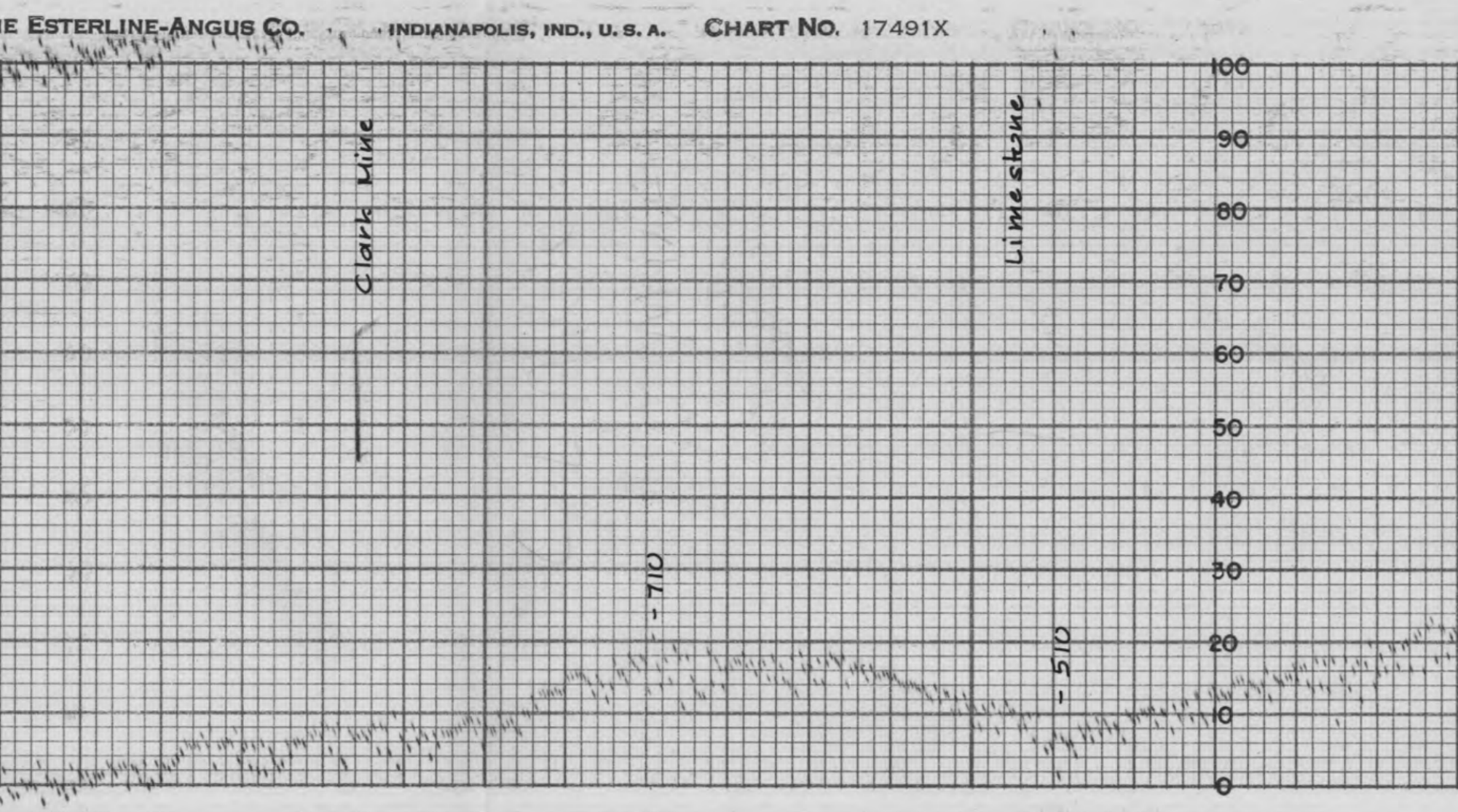
West from Sec. 19 T17S., R11E. to corrals at approx. Sec. cor. 23|24 / 26|25 T17S., R10E.

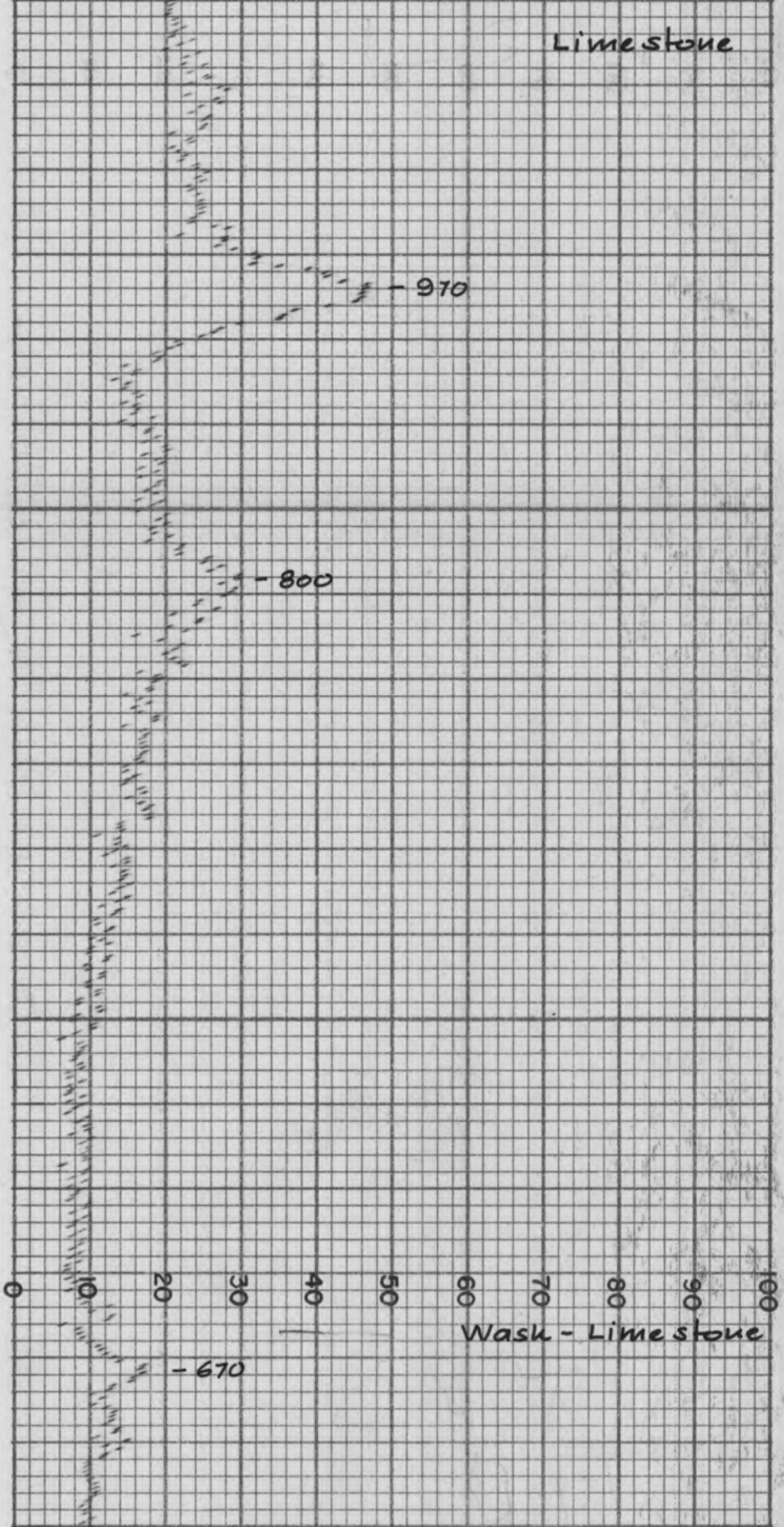

600 Road of Rec. 5, Sec. 35
-1015
-620
Leave Dash
Gneiss?
-1280
0
10
20
30
40
50
60
70
80
90
100
Corral
Stevens Ranch
900-
ANOMALY "E"

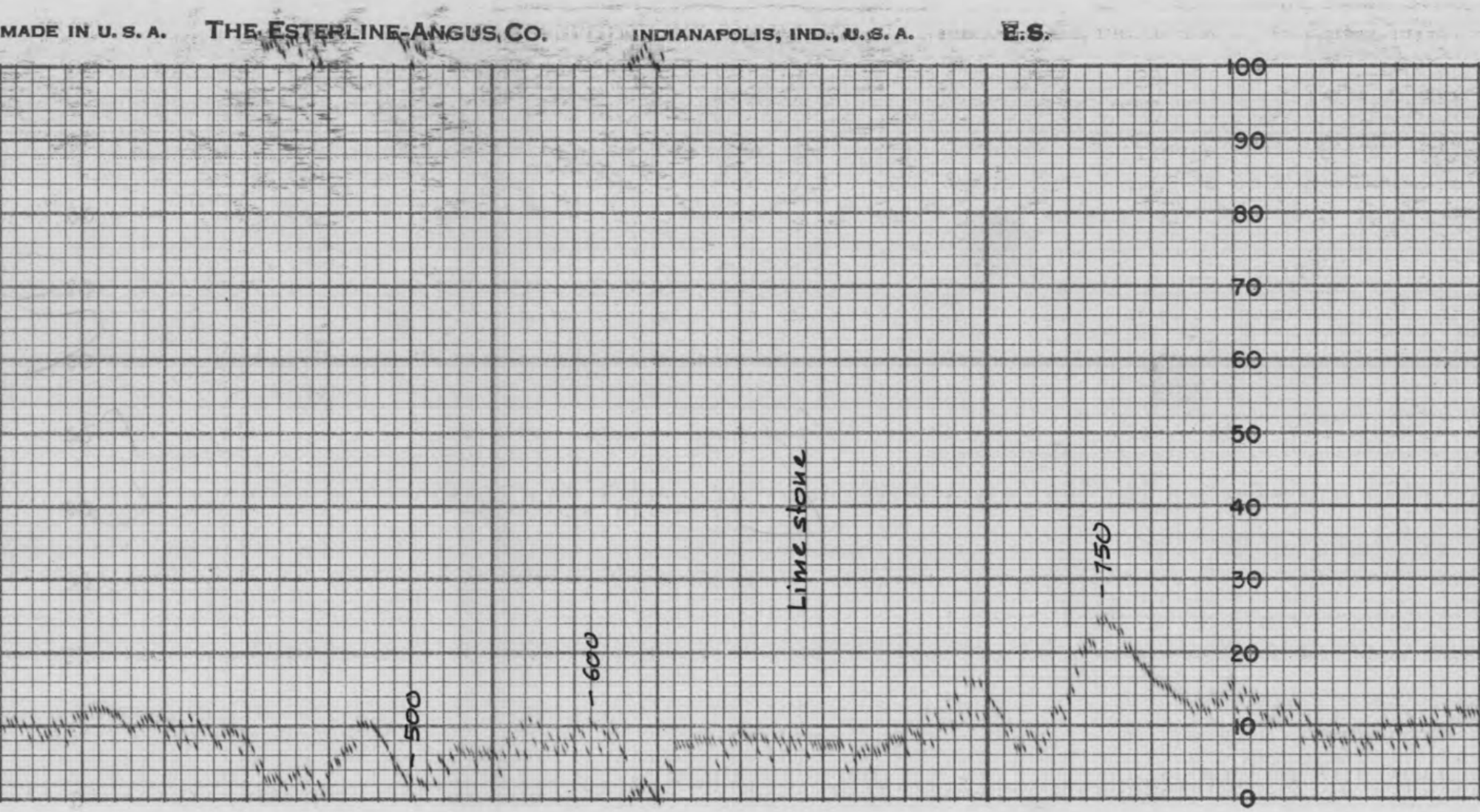
MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. E.S.

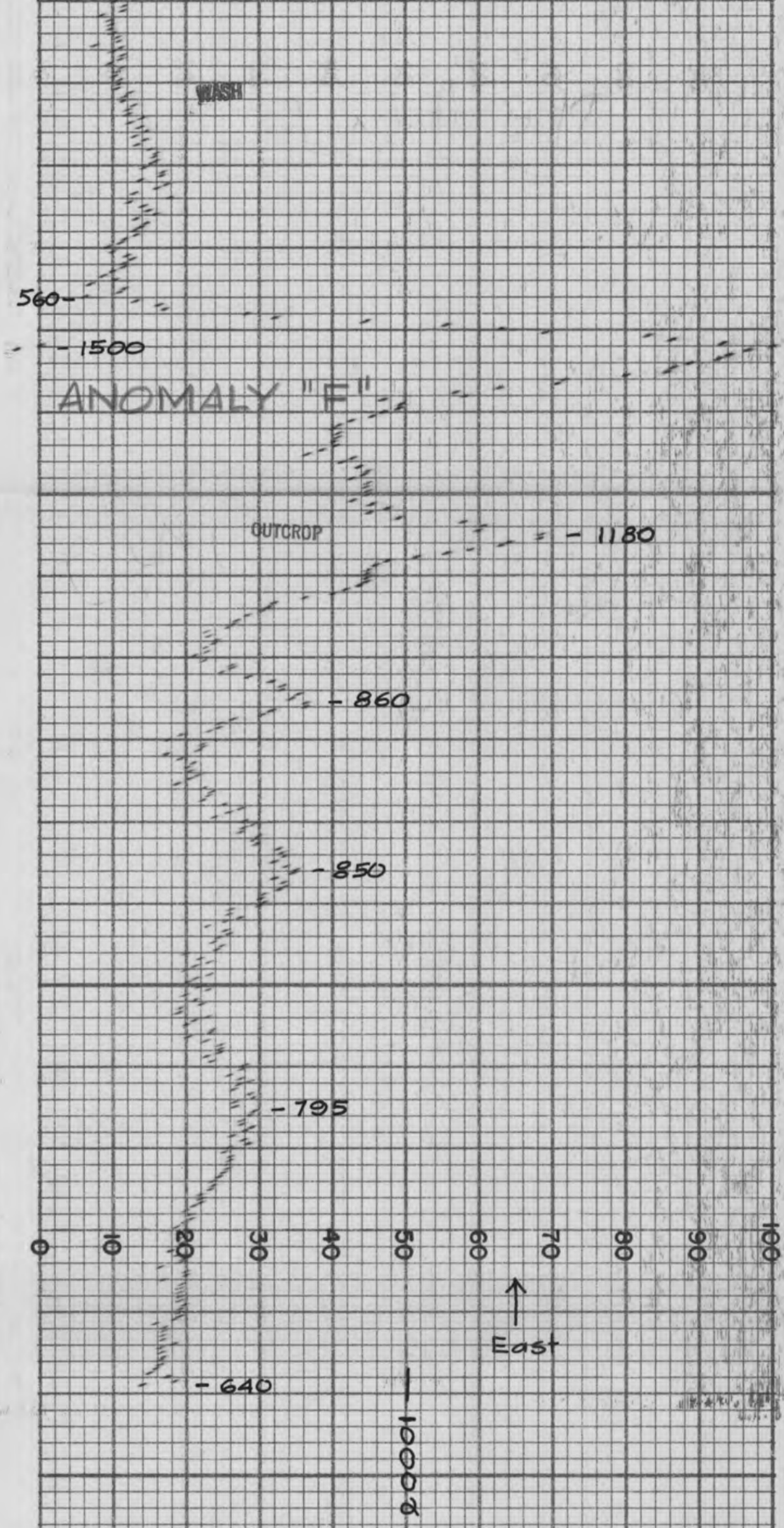



Near Montezuma Mines
-400
-610
W. in Dask
-420
-500
0
10
20
30
40
50
60
70
80
90
100
S.W.


E ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X
Clark Mine
Limestone
-710
-510
100
90
80
70
60
50
40
30
20
10
0


Limestone
- 970
- 800
- 670
0
10
20
30
40
50
60
70
80
90
100
Wash - Limestone


MADE IN U. S. A.
THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U. S. A.
E.S.
100
90
80
70
60
50
40
30
20
10
0
500
600
Lime stone
750



MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 17 DATE March 1962

SENSITIVITY 100 GAMMAS /½ In S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts
Pima County, Arizona

A loop E. S. & W. past the Clark and Montezuma Mines — mainly in Sec. 35 T17S., R10E.

THE ESTERLINE-ANGUS CO. INDIANAP

-780

-880

-1300

-1320

-700

0 10 20 30 40 50 60 70 80 90 100

Repeat anomaly below but going west and with recorder on fast time

In pass west of Aguinaldo Mine

-600

-660

Limestone

0 10 20 30 40 50 60 70 80 90 100

-800

-700

ANOMALY "G"

-1370

-910

ADIT

-800

0 10 20 30 40 50 60 70 80 90 100

-620

East in Sec. 26

1000'

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 18 DATE March 1962

SENSITIVITY 100 GAMMAS /½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts. Pima County, Arizona

East in Sec. 26 T17S. R10E. on the Rd. to the Aguinaldo Mine.

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 19 DATE March 1962

SENSITIVITY 100 GAMMAS / ½ In. S.D.

HORIZONTAL SCALE 200 Ft./In.

LOCATION West Side Sierrita Mts. Pima County, Arizona

West - South & East starting in Sec. 3 from a Rd. Junction on Rec. 4 and ending in Sec. 11 at an old shack near a Rd. Junction in Sec. 11. T18S. - R10E.

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 20 DATE March 1962

SENSITIVITY 100 GAMMAS /½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

West, North & East starting at a junction of the Road and Ash Wash Sec. 10 and ending at a Rd. Junction in Sec. 3 T18S. R10E. also passing thru Sec. 9 & 4

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 21 DATE March 1962

SENSITIVITY 100 GAMMAS /½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

North from Sec. 3 T18S. R10E. across Sec. 34 to Philimena Mine in Sec 27 T17S. R10E.

Fence across wash

-600

-580

-620

-640

-540

Vertical dip — Schist

Schist

Rhyolite?

-500

ANOMALY "A"

-1080

see also Records

No. 6, 23, 24, 25

East up
Stevens Wash

-940

2000'

AEROMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 22 DATE March 1962

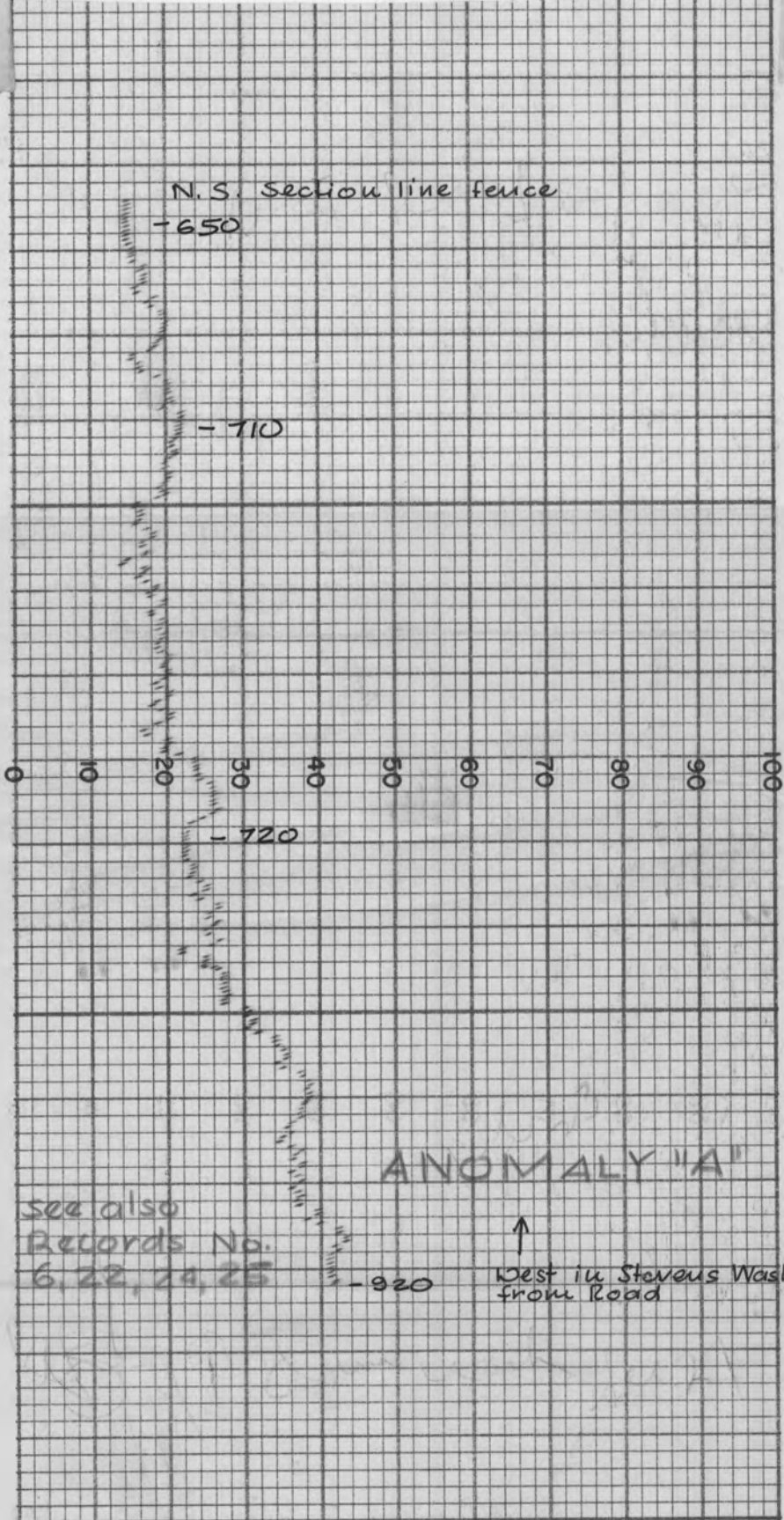
SENSITIVITY 100 GAMMAS / ½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

East in Sec 27 up Stevens Wash from Rd in W. part of Section to fence in east part of Sec. 27 T 17S. R 10 E.

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



MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 23 DATE March 1962

SENSITIVITY 100 GAMMAS /½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

Extension westerly of Rec. 22. Ends at N.S. fence at Sec. line 28|27
Sec 27, T17S. R10E.

660' South where Rec. 25 starts

- 540

- 620

S. at 3500' East

0 10 20 30 40 50 60 70 80 90 100

- 620

ROAD JUNCTION

- 540

ROAD JUNCTION

- 500

600'

0 10 20 30 40 50 60 70 80 90 100

- 730

ANOMALY "A"

See also Record No 6, 22, 23, 25

- 680

ROAD JUNCTION

- 820

East from cor. 21/28 22/27

1000'

0 10 20 30 40 50 60 70 80 90 100

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 24 DATE March 1962

SENSITIVITY 100 GAMMAS / ½ In. S.D.

HORIZONTAL SCALE 200 Ft./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

East from Sec. corner 21/28 22/27 along Sec. line 22/27 for 3500' T17S., R10E.

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

N.S. Fence at Sec. line

-600

0 10 20 30 40 50 60 70 80 90 100

ROAD JUNCTION

-840

ANOMALY "A"

see also Records No. 6, 22, 23, 24

-760

-420

0 10 20 30 40 50 60 70 80 90 100

-500

Small Hill
Rhyolite?

ROAD JUNCTION

-550

West in Sec. 27

-620

-540

1000'

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

IOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 25 DATE March 1962

0 10 20 30 40 50 60 70 80 90 100

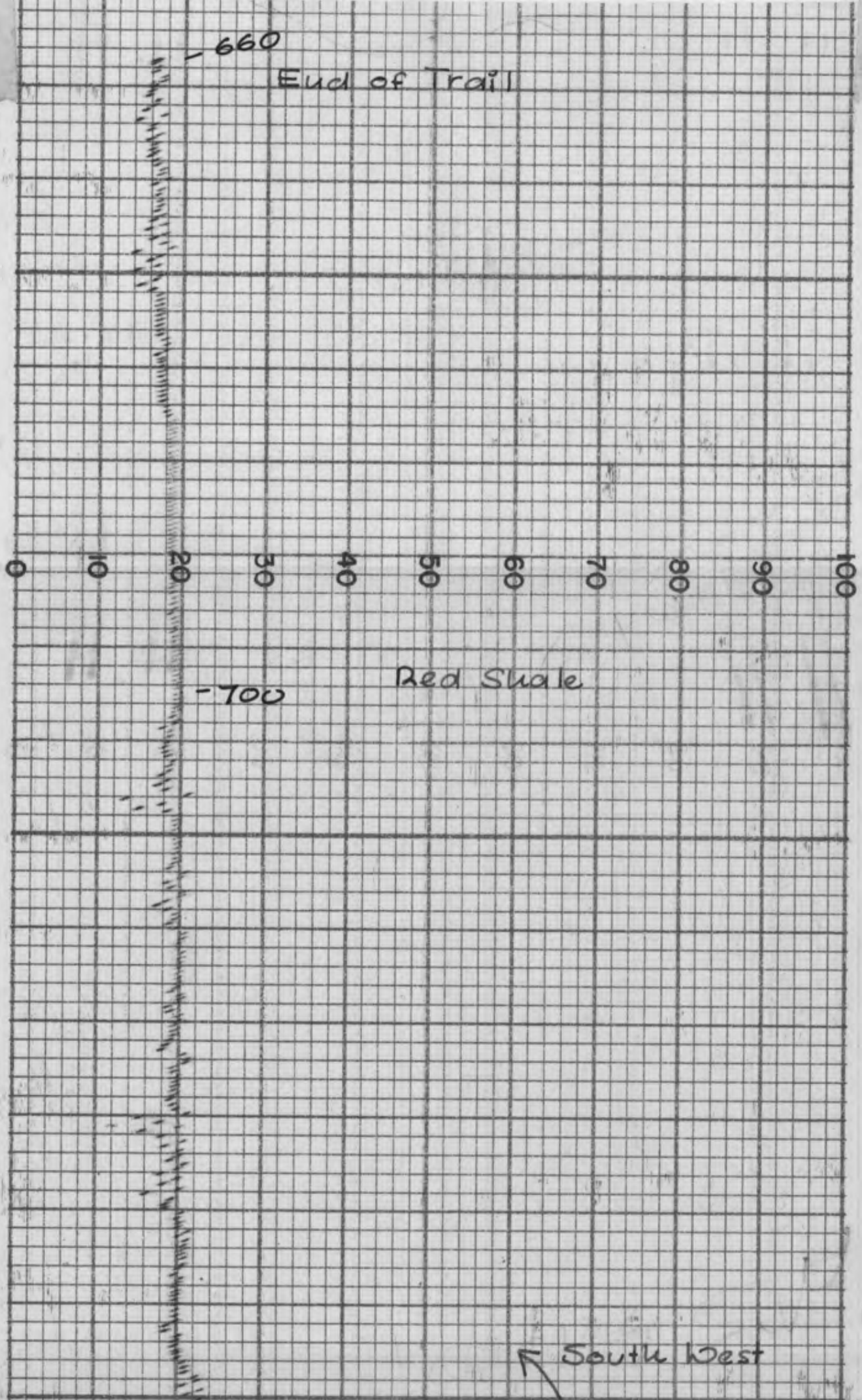
SENSITIVITY 30 100 40 50 60 GAMMAS 8 In. S.S.

HORIZONTAL SCALE 200 FT./In.

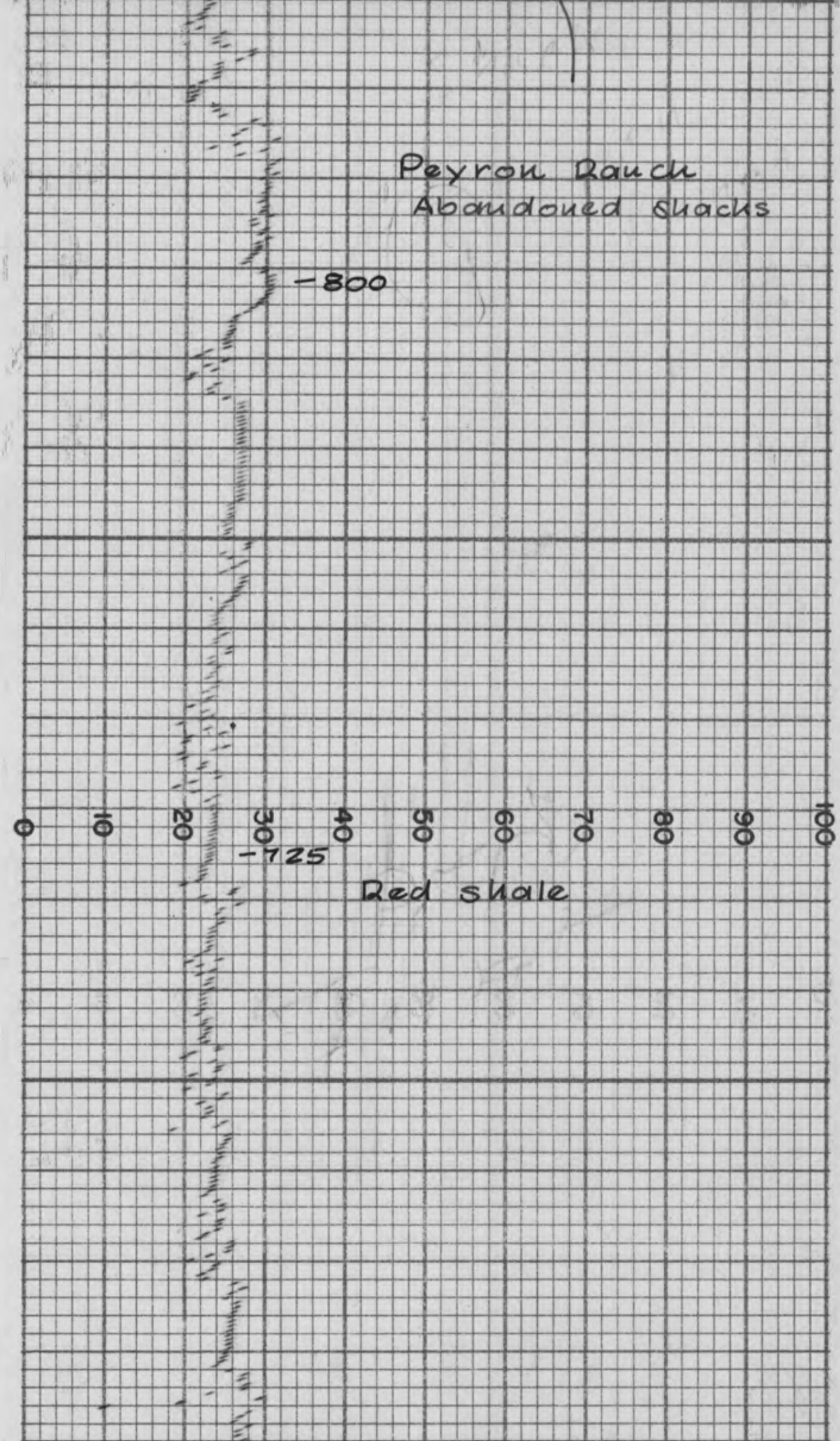
LOCATION West Side Sierrita Mts.
Pima County, Arizona

West in Sec. 27, T17S. R10E. on a line 660' south of the north Sec. line. The line is 3500' long ending at west Sec. line.


Swan Top
Tin Shack
N.
ROAD JUNCTION
Fence parallel on right
ROAD JUNCTION
ROAD JUNCTION
Swan Marble Quarry on left
Effects from Fence
ROAD JUNCTION
ROAD JUNCTION
ROAD JUNCTION
Metal - artificial anomaly
Stock Tank
WASH
ROAD JUNCTION
Stock Tank
ROAD JUNCTION
ROAD JUNCTION
ROAD JUNCTION
ROAD JUNCTION
ROAD JUNCTION
ROAD JUNCTION
WASH
S.E. from Rd. in Sec. 17
McMAG TOTAL MAGNETIC INTENSITY RECORD
FOR: INSPIRATION CON. COPPER CO.
RECORD NO. 26 DATE March 1962
SENSITIVITY 100 GAMMAS/in. S.D.
HORIZONTAL SCALE 200 FT./in.
LOCATION West Side Sierrita Mts. Pima County, Arizona
S.E. from Rd. Junction Sec. 17, T16S. R10E. to abandoned shack at Swan Top Marble Quarry in Sec. 24 T16S. R10E.

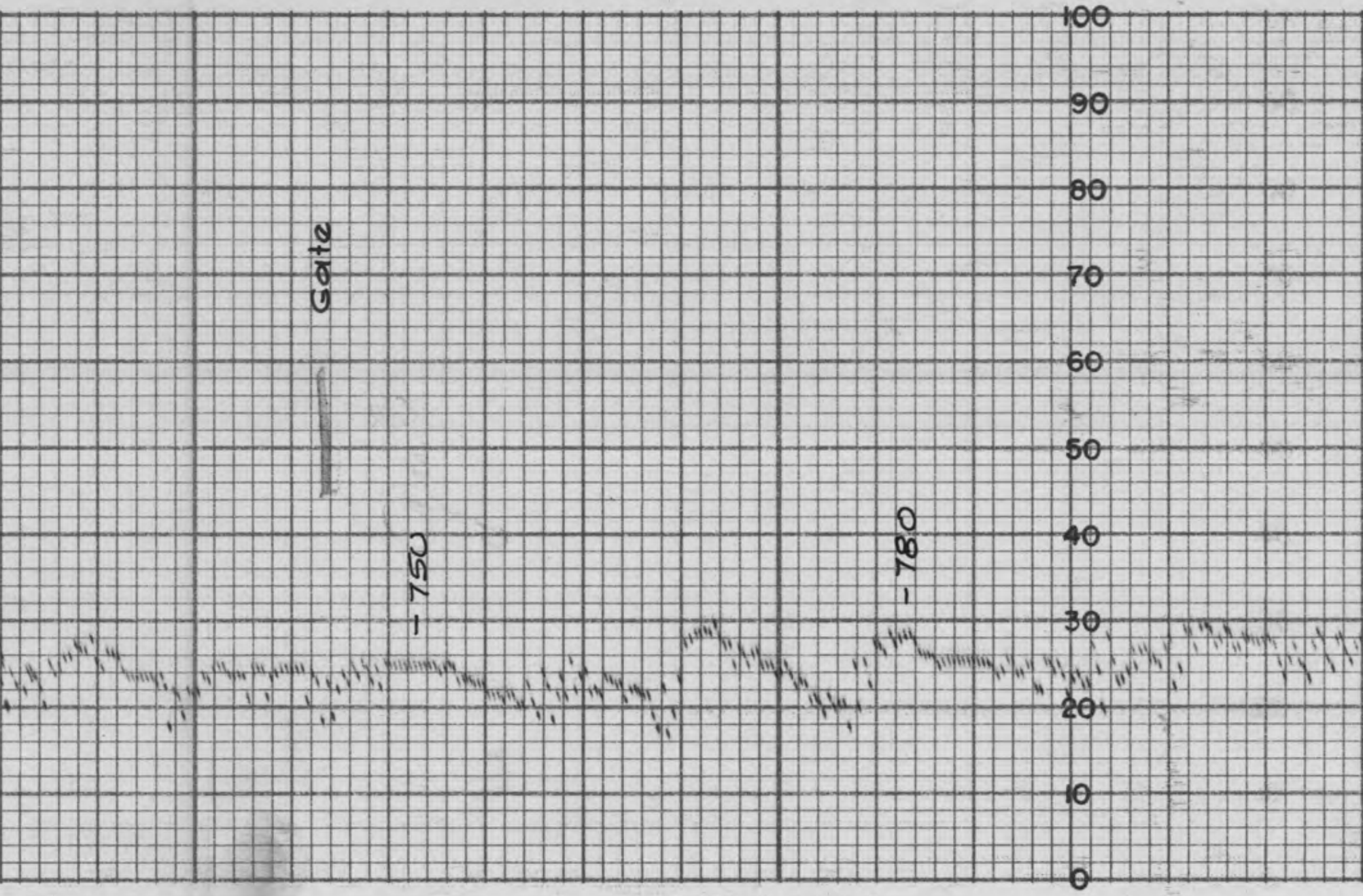


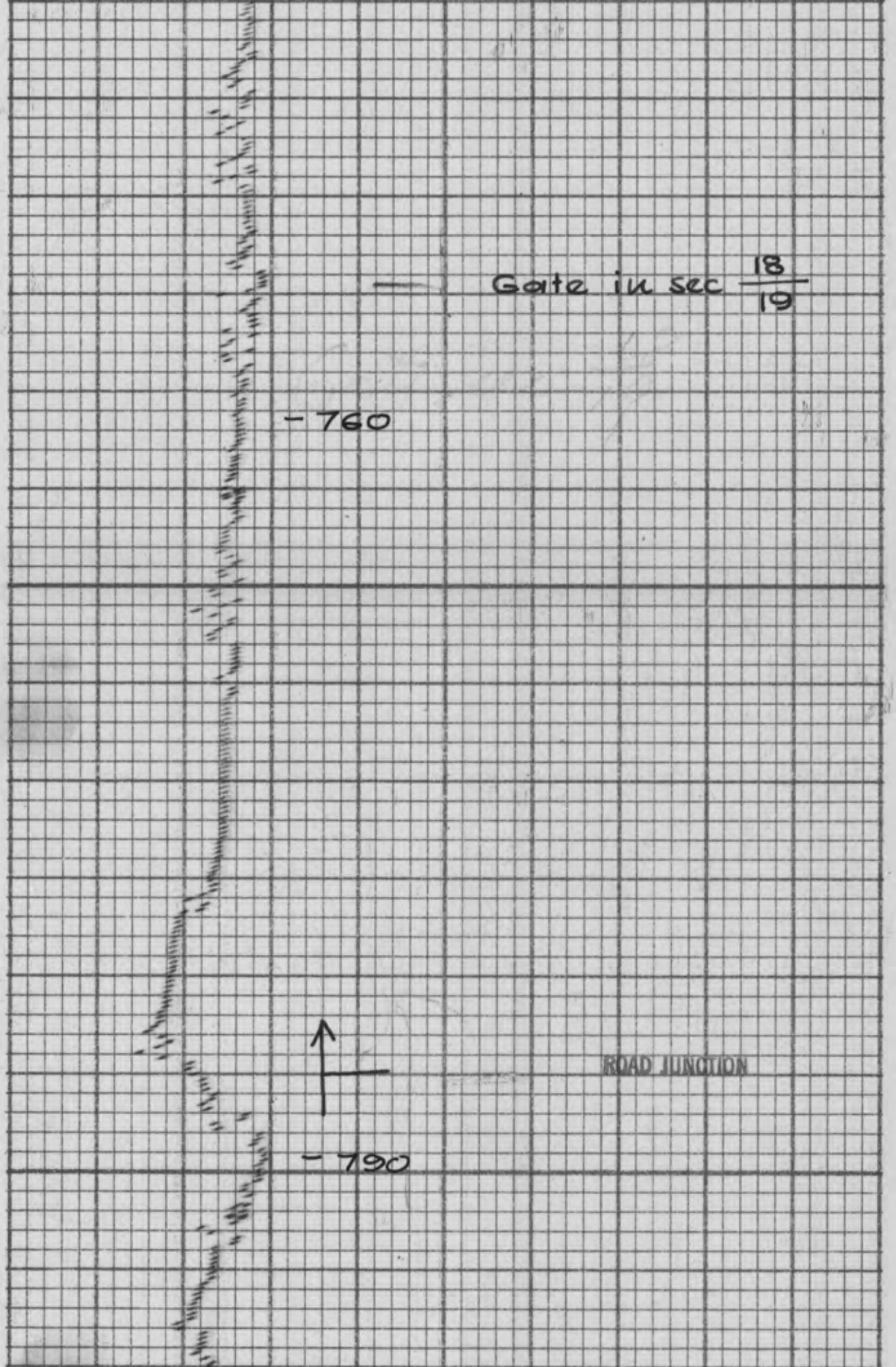
E.S.
LTD., INC., U.S.A.



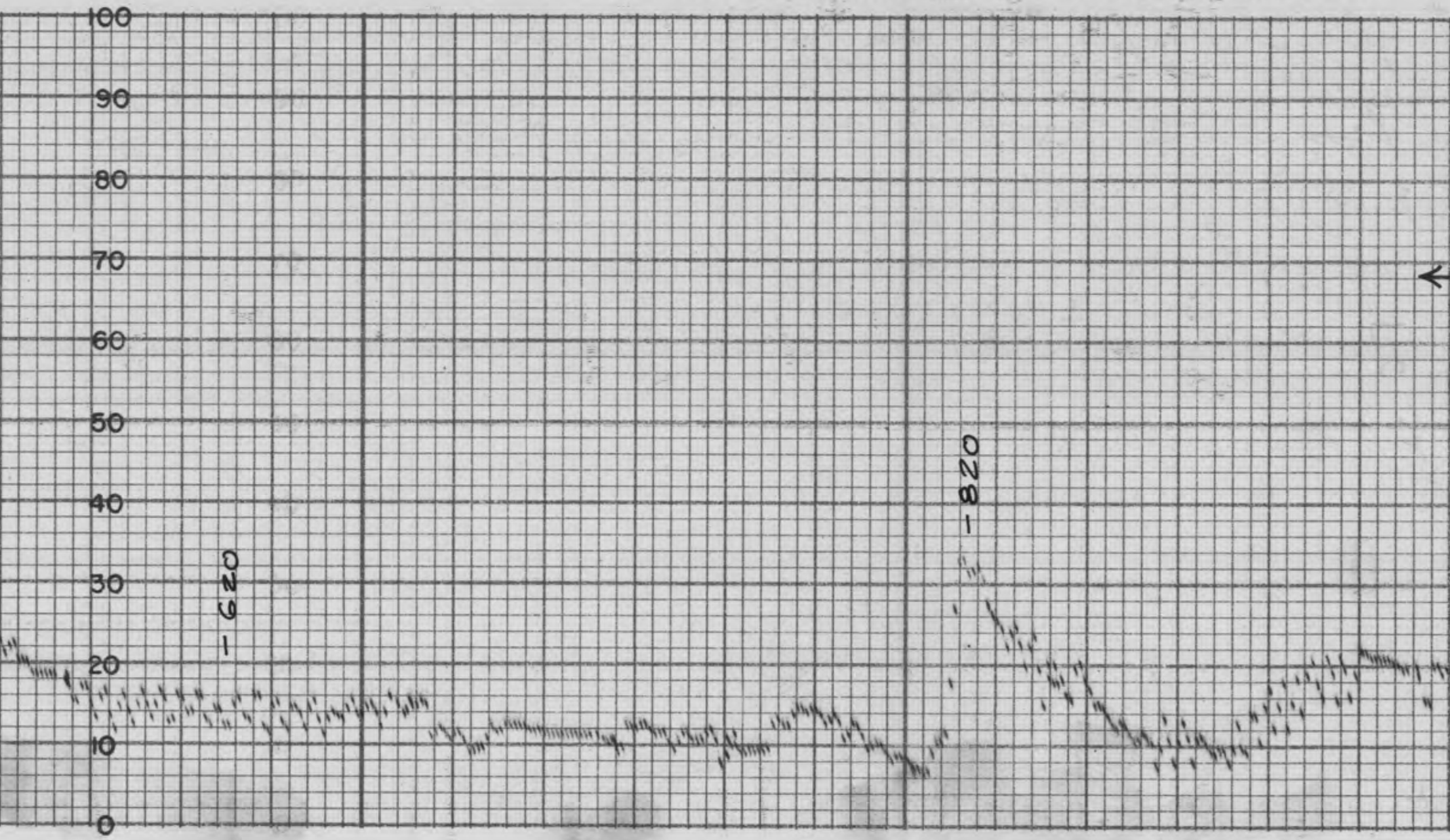
THE ESTERLINE-ANGUS CO.

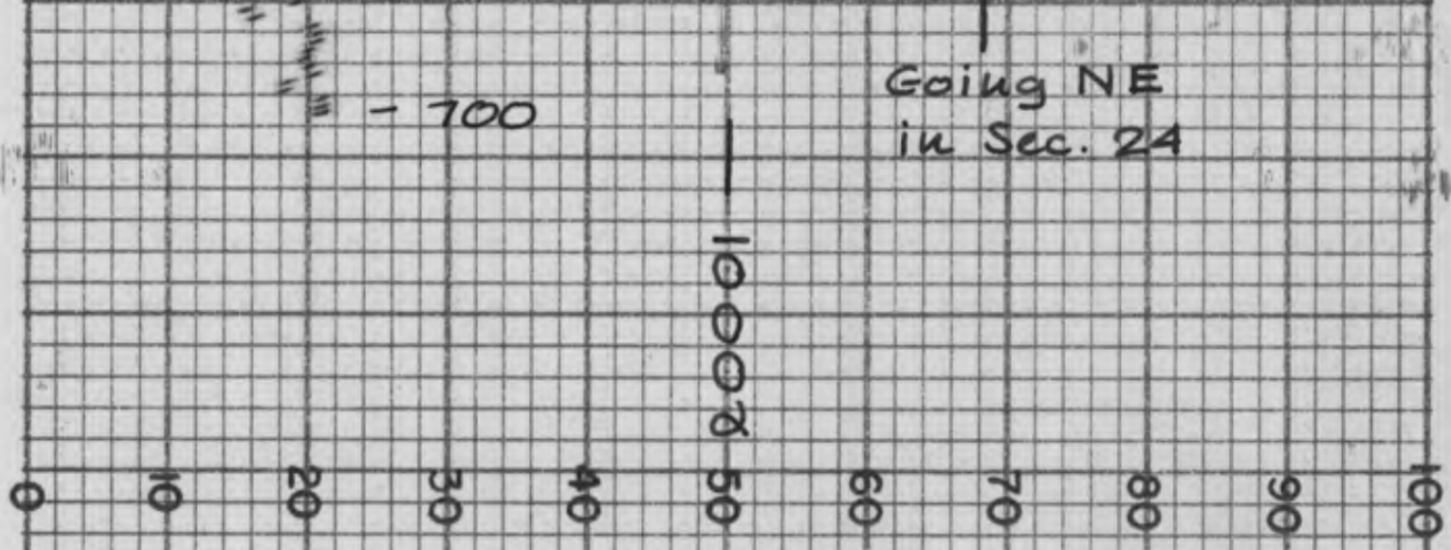
INDIANAPOLIS, IND., U. S. A. **CHART NO.** 17491X




Gate in sec 18/19
- 760
ROAD JUNCTION
- 790

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





MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 27 DATE March 1962

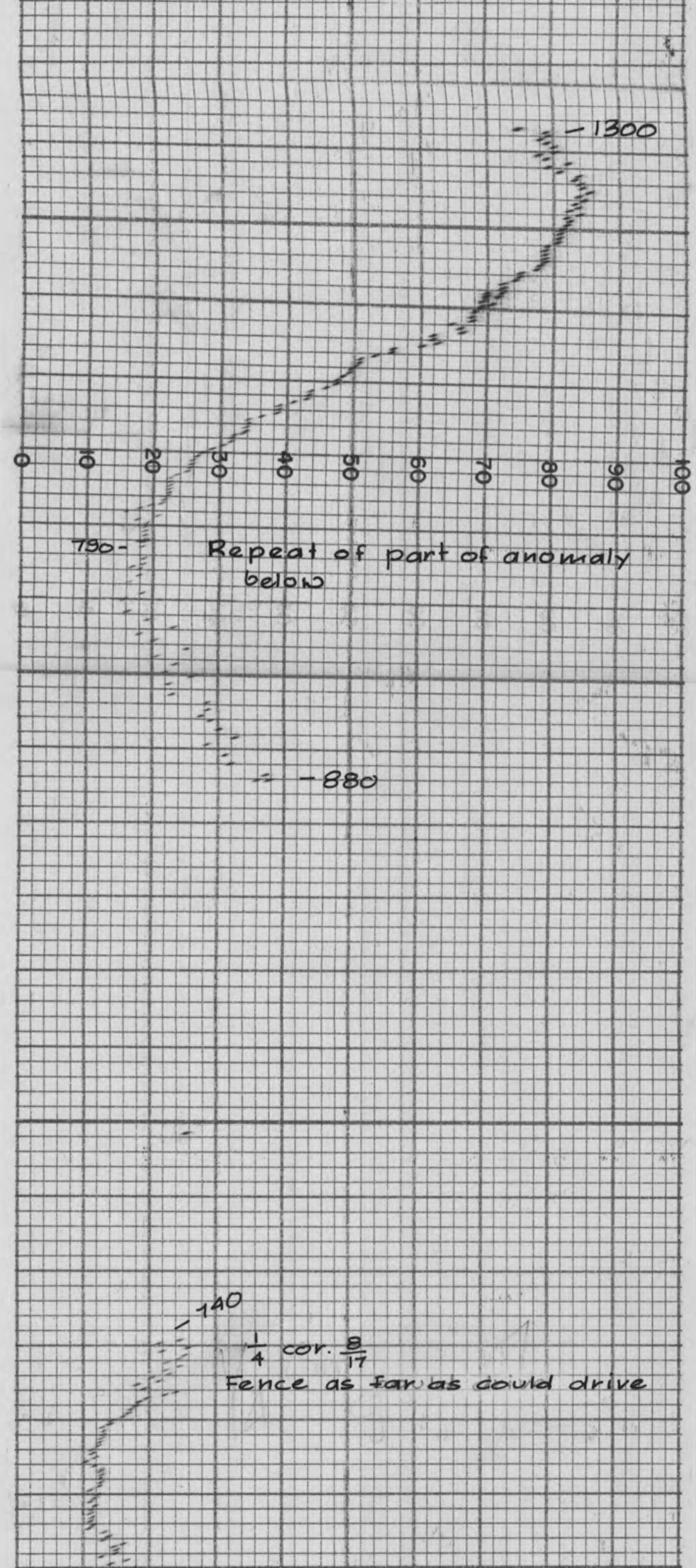
SENSITIVITY 100 GAMMAS ½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION West Side Sierrita Mts.
Pima County, Arizona

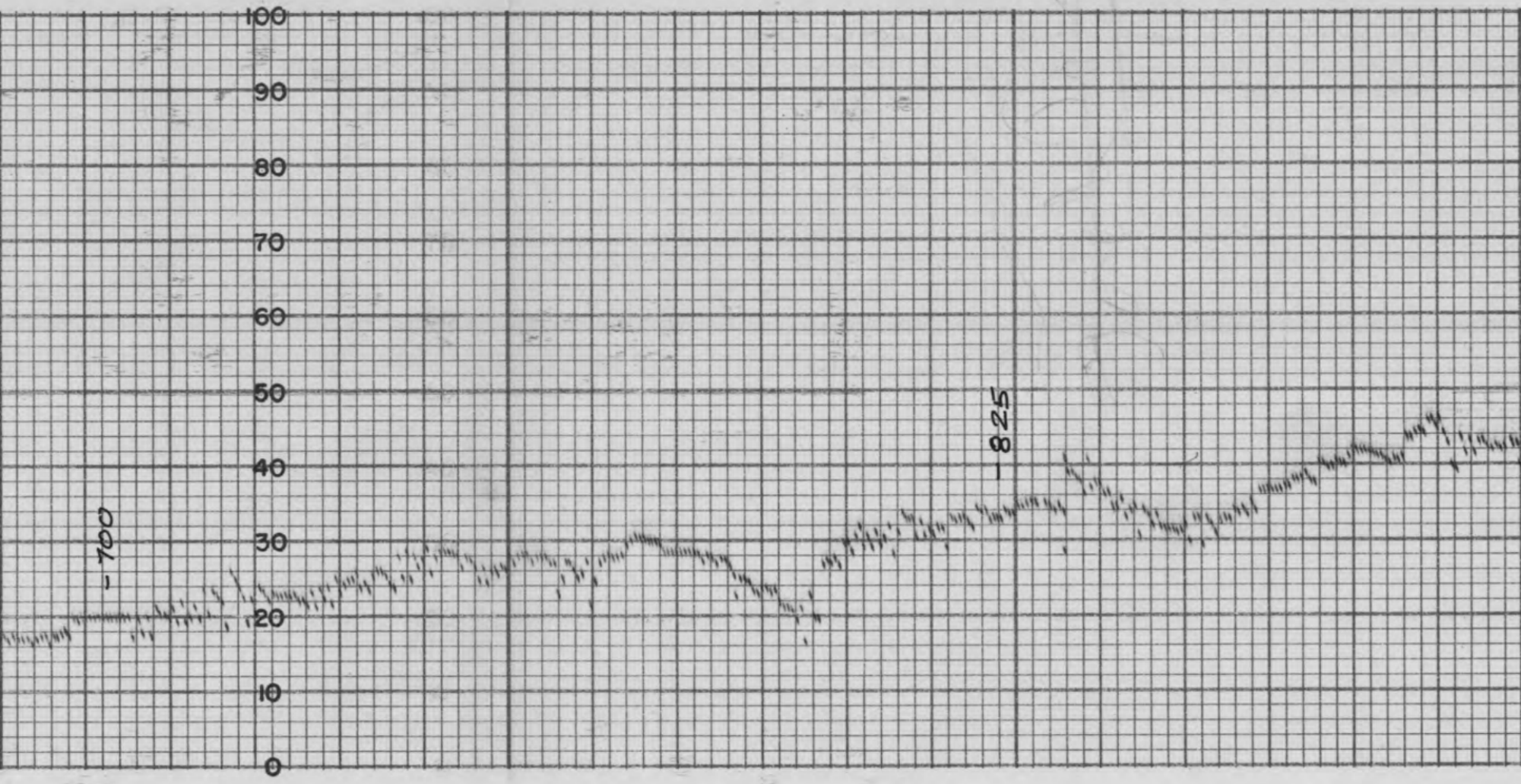
Starts at a Rd. Junction near the Marble Quarry in Sec. 29 T18S. R10E. and ends near Peyron Ranch Sec 13. T18S. R10E.

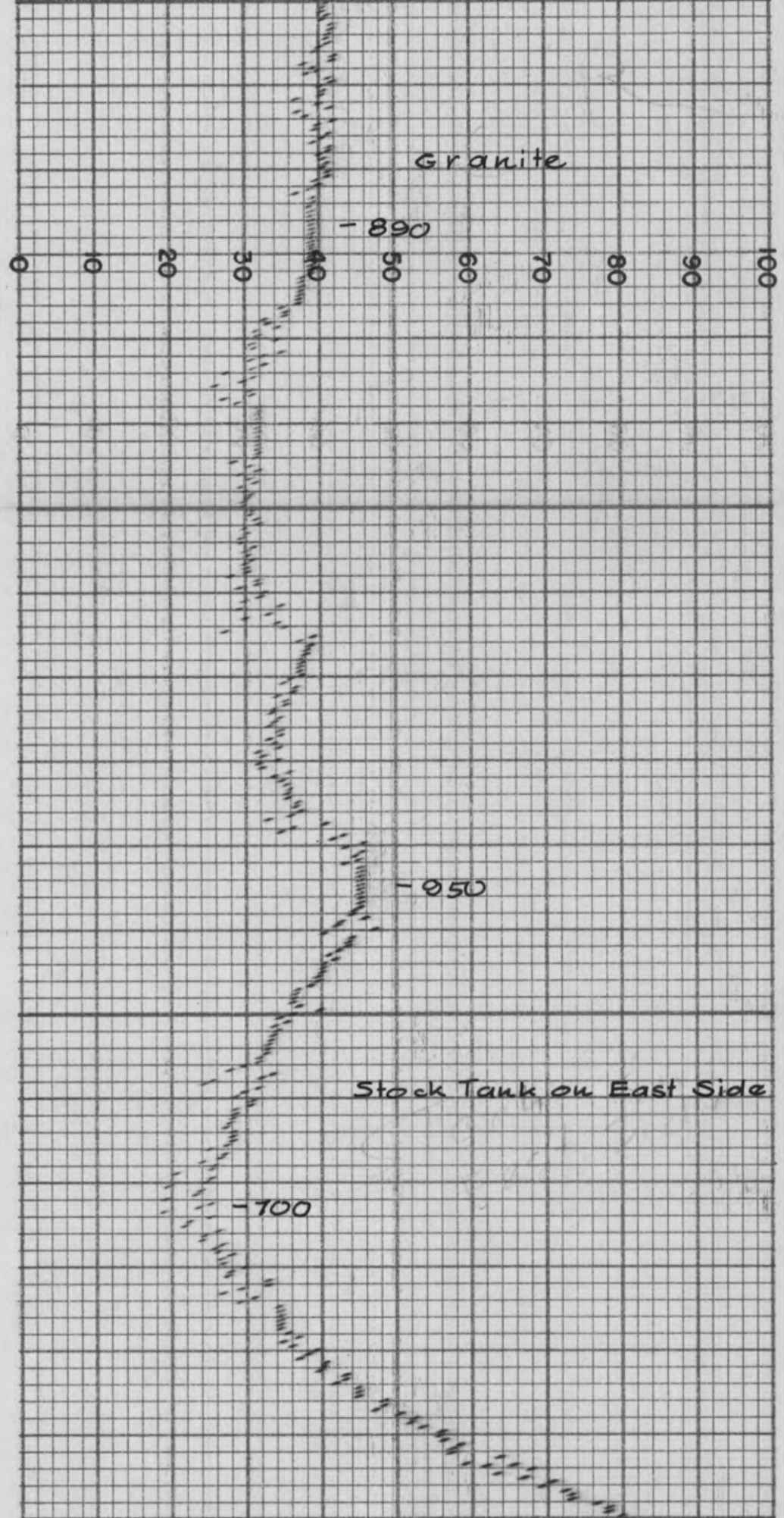
E.S.


-1300
0
10
20
30
40
50
60
70
80
90
100
790-
Repeat of part of anomaly below
-880
140
1/4 cor. 8/17
Fence as far as could drive

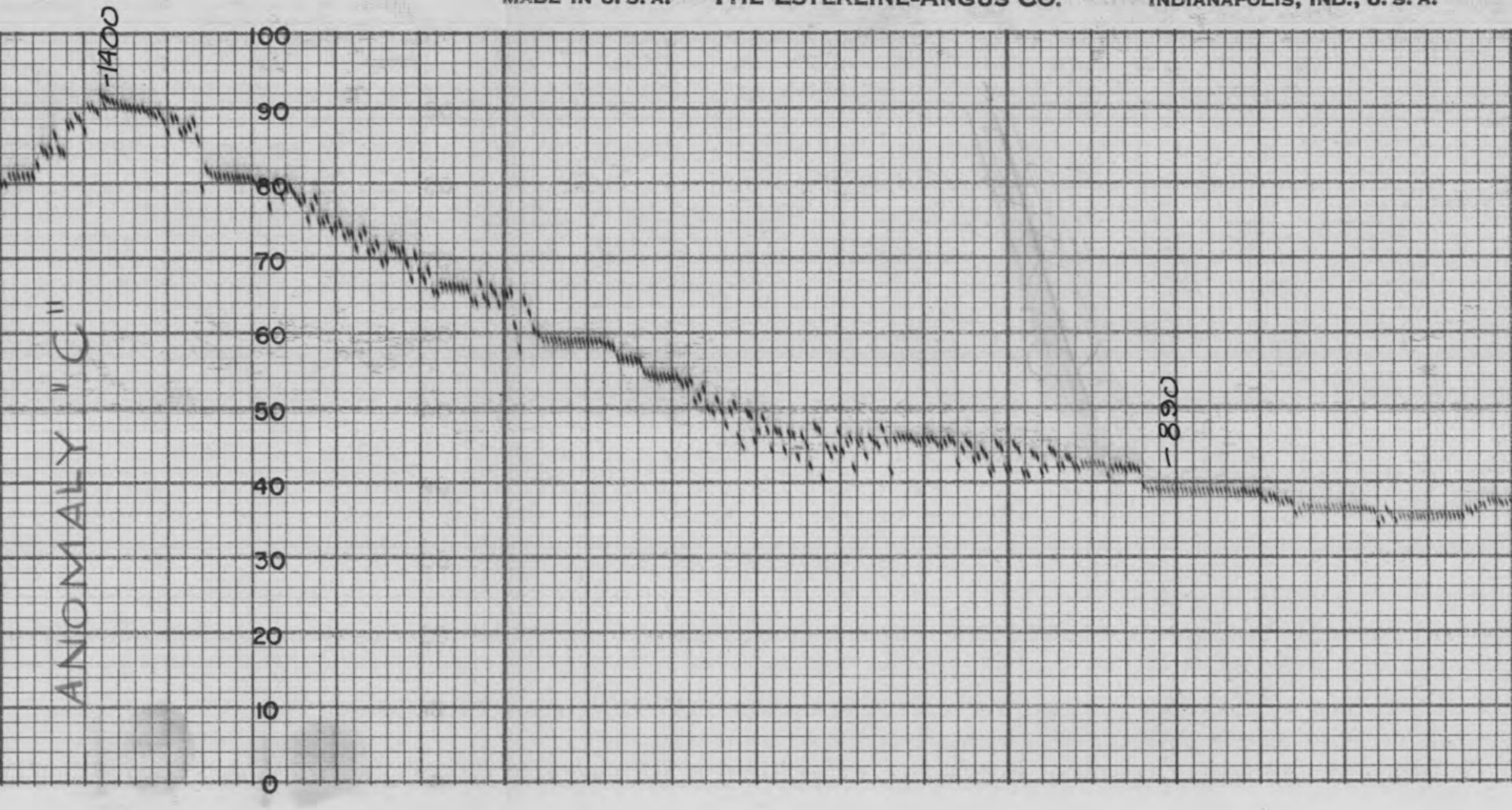
IS, IND. U. S. A. E.S.

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

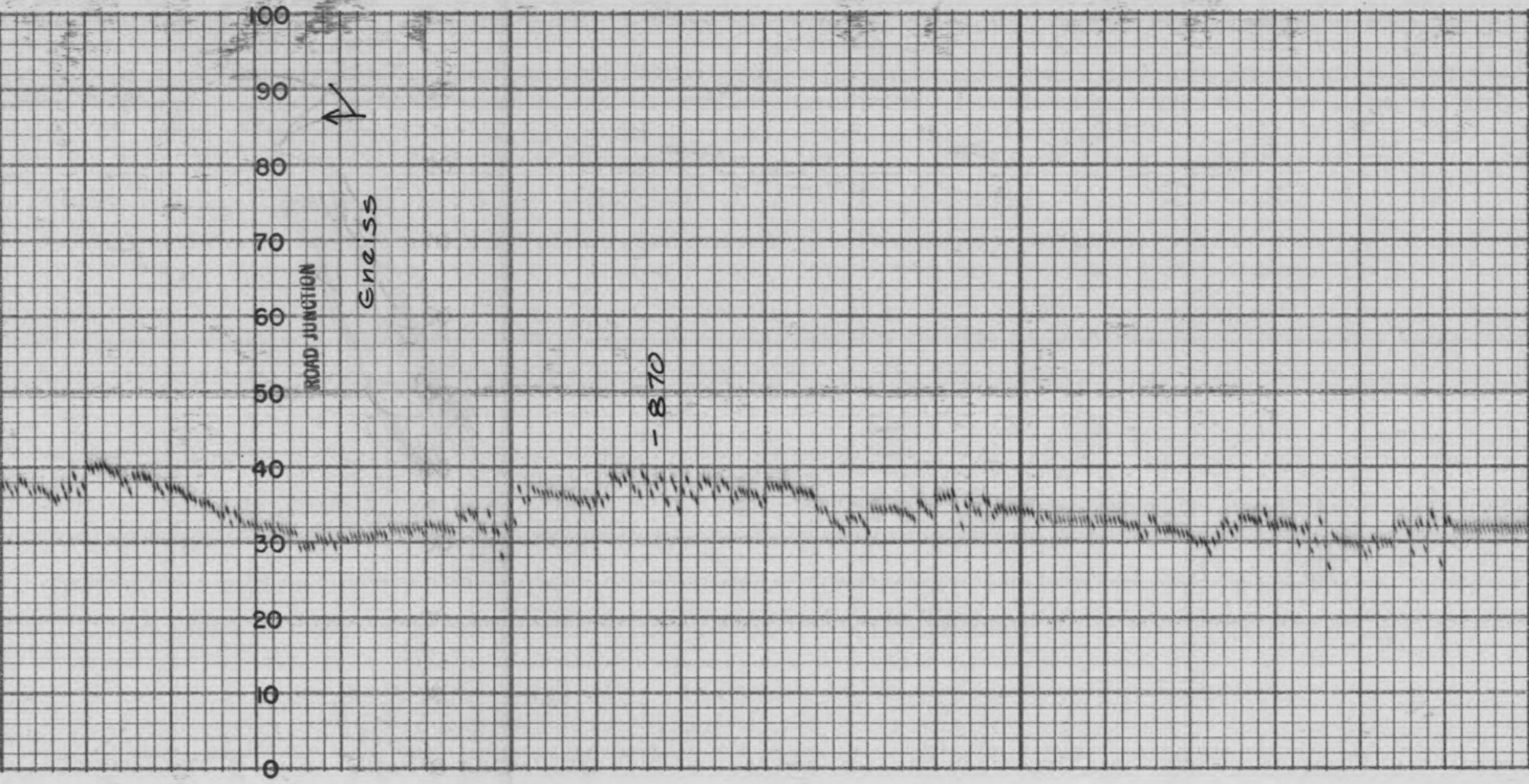



Granite
-890
-950
Stock Tank on East Side
-700
0
10
20
30
40
50
60
70
80
90
100

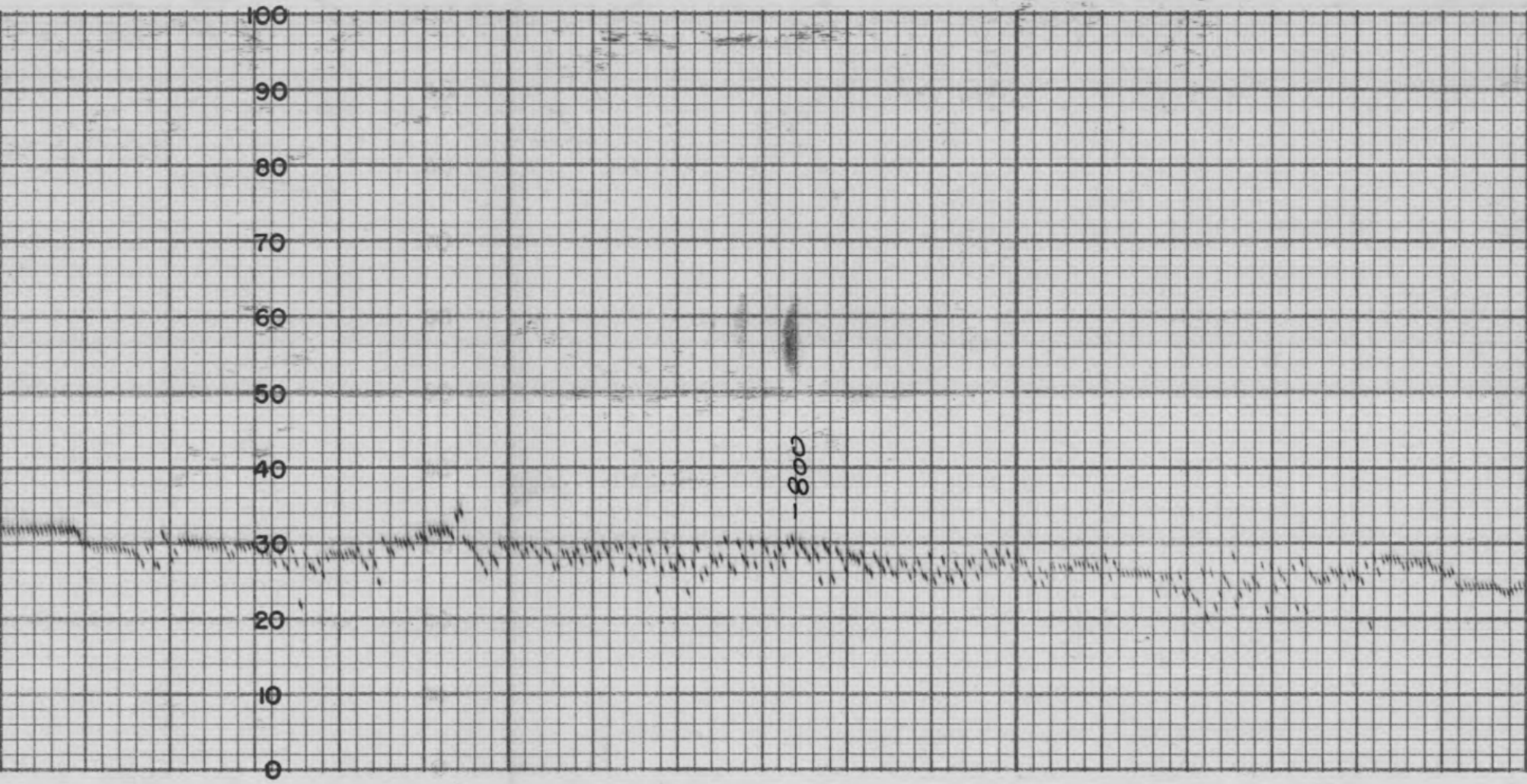
MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A.

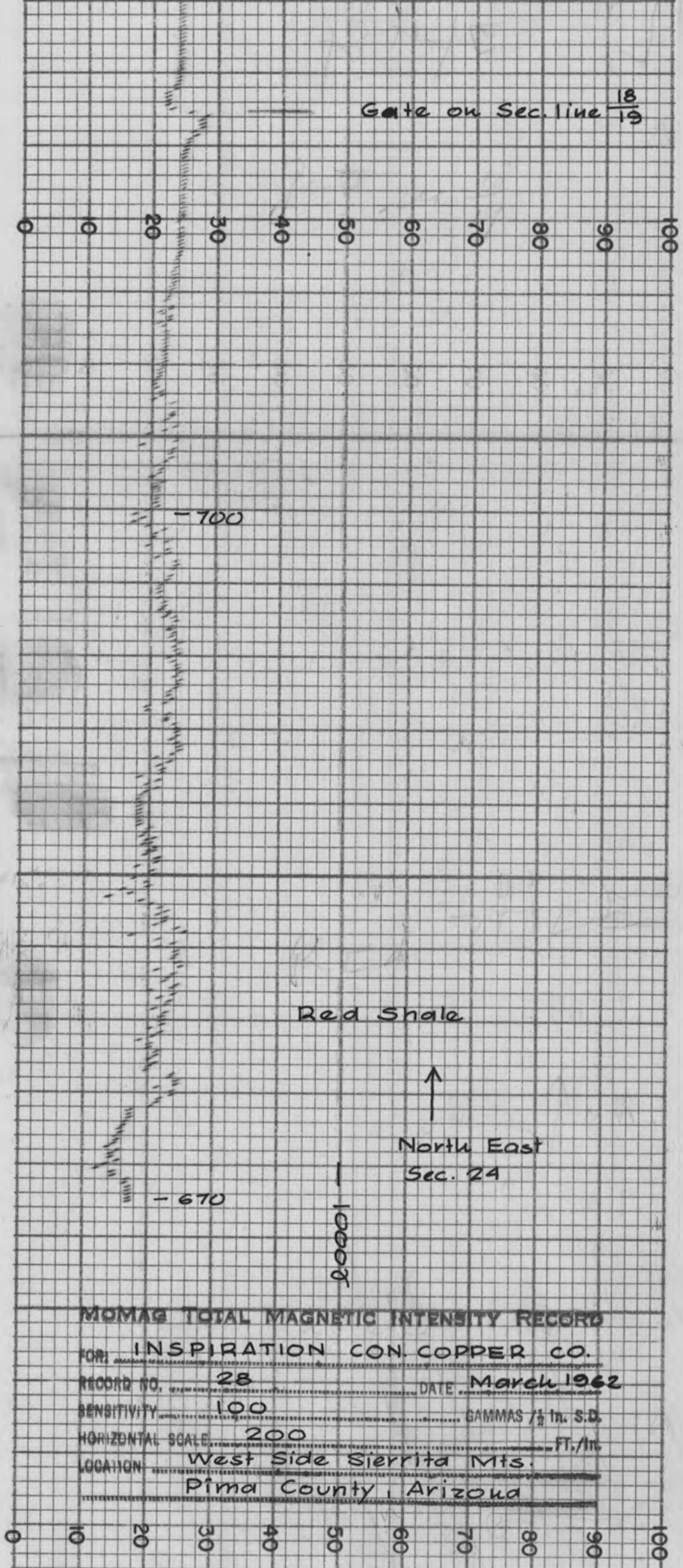


E.S.

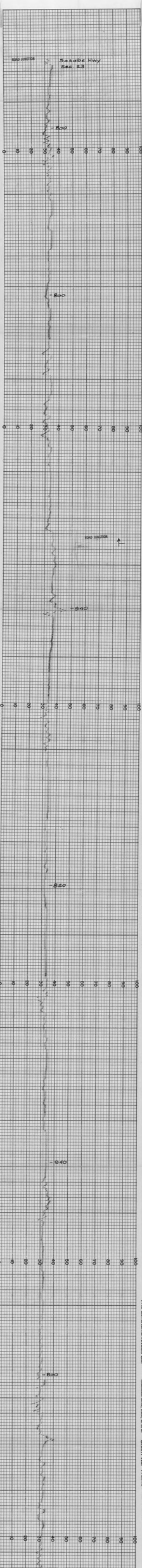


THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X





From Road Junction in Sec. 24 T18S, R10E.
North East to the 1/4 cor. 8/17 T18S, R11E.


Sassafras Hwy
Sec. 23
-800
-900
-940
-850
-940
-800
THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U. S. A.
CHART NO. 17481X
MADE IN U. S. A.

Fence - East-westerly

-500

Turn South

schist outcrop

-500

-600

-900

-1100

-1090

-1020

-900

ROAD JUNCTION

-940

-800

out of wash

-765

WASH

-725

-810

-740

-720

-700

East

1000'

0 10 20 30 40 50 60 70 80 90 100

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

MoMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 30 DATE MARCH, 1962

SENSITIVITY 100 GAMMAS / ½ In S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION WEST SIERRITA Mts. PIMA COUNTY, ARIZONA

East in section 27, T17S R10E at 1320 feet south of the north section line.

-680 N.-S. fence

0 10 20 30 40 50 60 70 80 90 100

-630

-770

-860

ROAD JUNCTION

-660

0 10 20 30 40 50 60 70 80 90 100

CLAIM POST

-500

1000'

West

-520

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 31 DATE MARCH, 1962

SENSITIVITY 100 GAMMAS / 1/2 in. S.D.

HORIZONTAL SCALE 200 FT./in.

LOCATION WEST SIERRITA MTS.
PIMA COUNTY, ARIZONA

West from where Rec. No 30 ended at fence to west section line of Sec. 27 T17S R10E on 1980 feet South of the north section line.

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

Too rough to drive farther east
Unmarked stone monument

-520

-580

-795

ROAD JUNCTION

-750

-700

-600

Dark - porphyry?

OUTCROP

GRANITE

-640

East

1000γ

0 10 20 30 40 50 60 70 80 90 100

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO.: 32 DATE: MARCH, 1962

SENSITIVITY: 100 GAMMAS @ In. S.D.

HORIZONTAL SCALE: 200 FT./In.

LOCATION: WEST SIERRITA Mts
PIMA COUNTY, ARIZONA

East, into Sec. 27, T17S, R10E from fence on west section line and on a line 2640' South of the north section line.

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

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

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

-560

Too rough to go on.

apparent contact Schist ↑ / granite ↓

ROAD JUNCTION

-610

-775

-700

-880

-700

opposite discovery Pit & post -50' + to south, but no paper.

0 10 20 30 40 50 60 70 80 90 100

CLAIM POST

WASH

GRANITE

-930

-800

East

2000

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

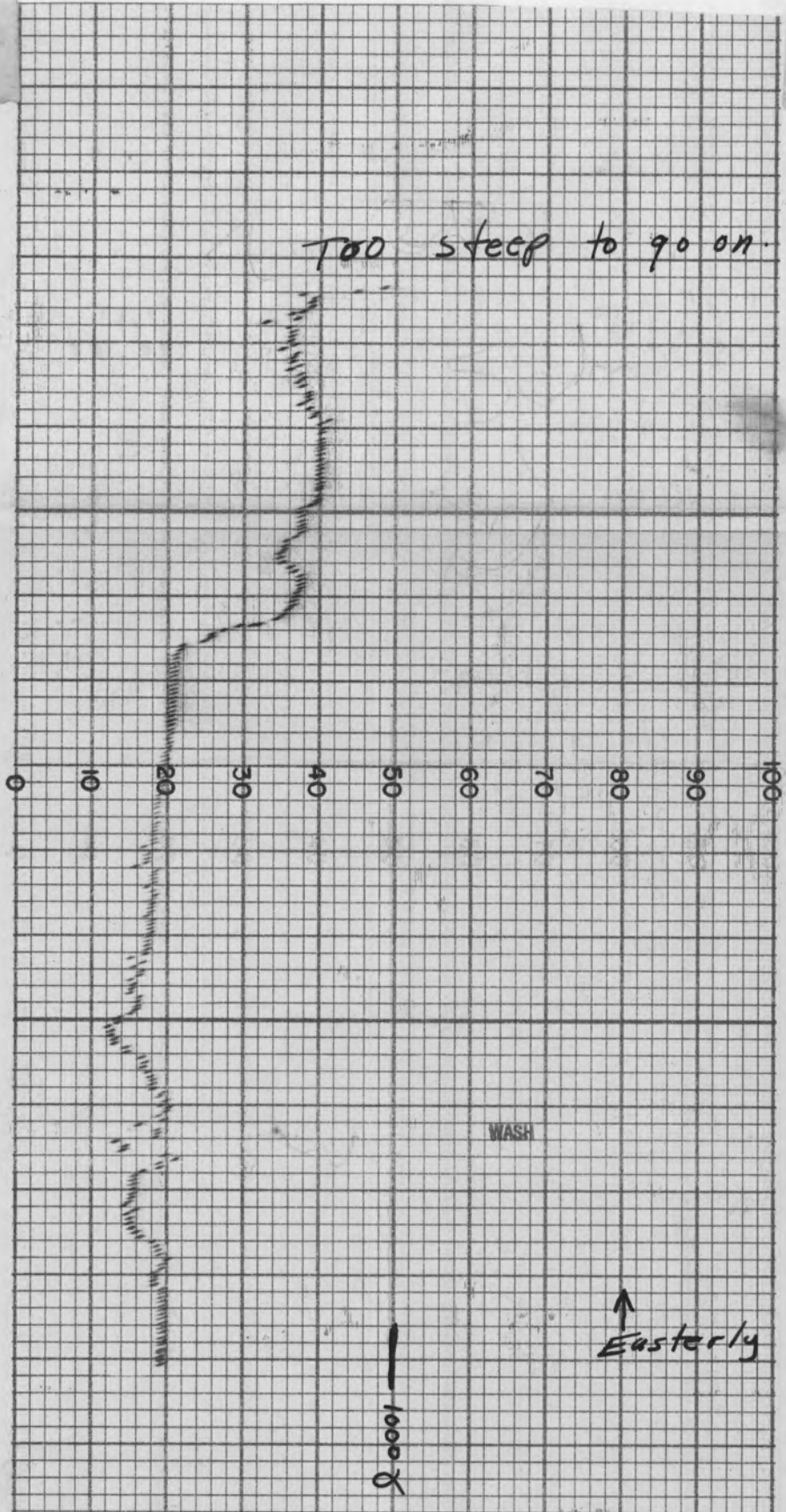
RECORD NO. 33 DATE MARCH, 1962

SENSITIVITY 100 GAMMAS /½ in. S.D.

HORIZONTAL SCALE 200 FT./in.

LOCATION WEST SIERRITA MTS.
PIMA CO. ARIZONA

East into Sec. 27, T17S, R10E from the west section line on a line 3300 feet south of the north section line.



MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 34 DATE MARCH, 1962

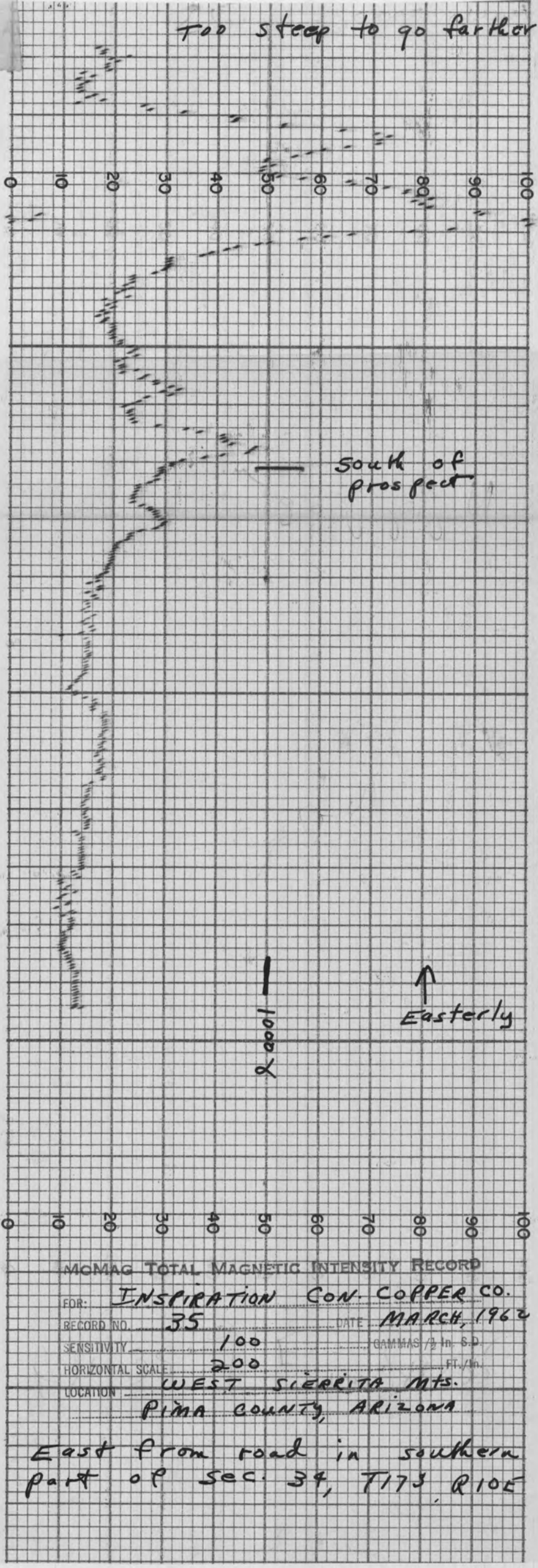
SENSITIVITY 100 GAMMAS / 1 in. S.D.

HORIZONTAL SCALE 200 Ft./In.

LOCATION WEST SIERRITA Mts.
PIMA COUNTY, ARIZONA

East in sec. 26 from road and north of the small hill.

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.

McMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

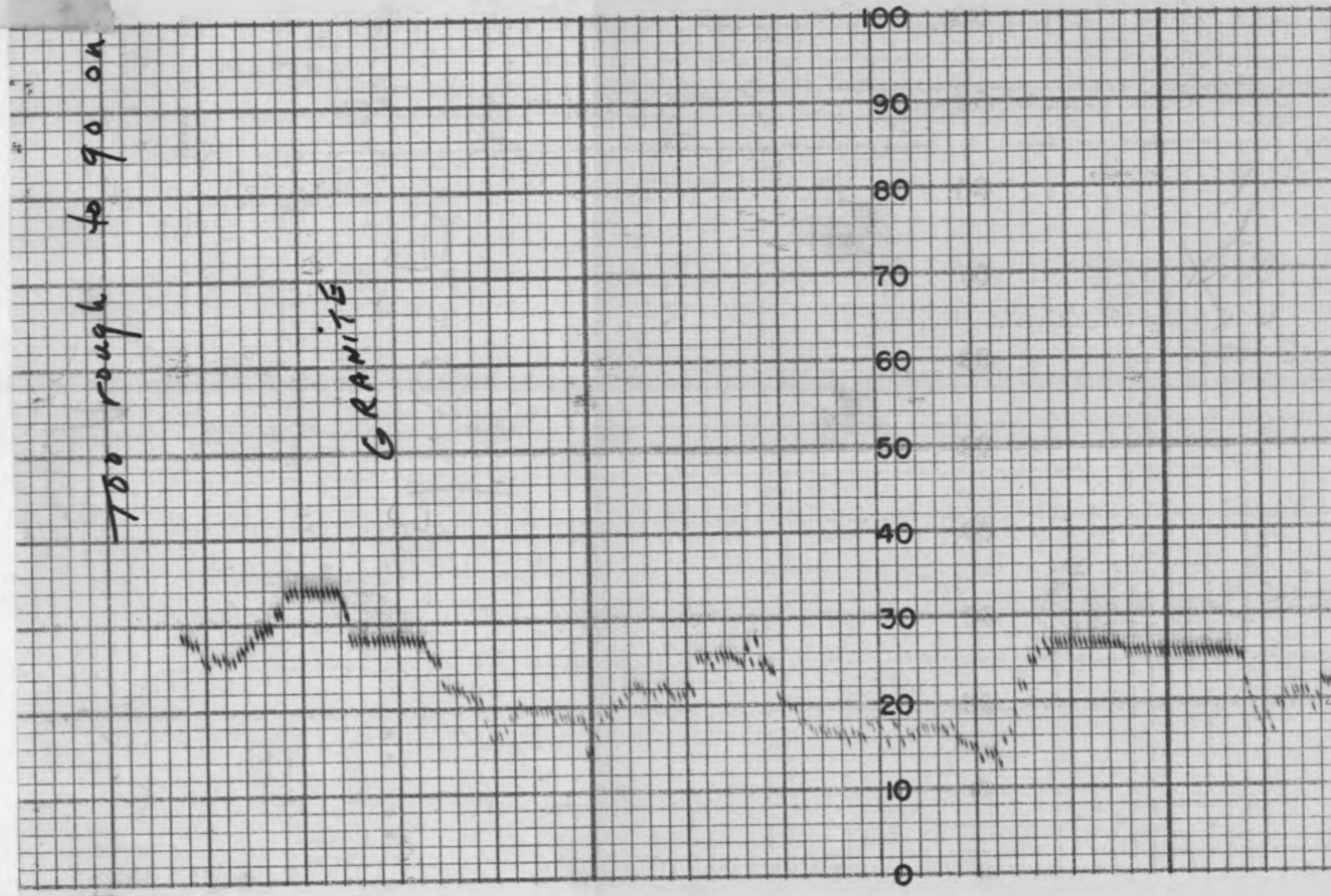
RECORD NO. 35 DATE MARCH, 1962

SENSITIVITY 100 GAMMAS/½ In. S.D.

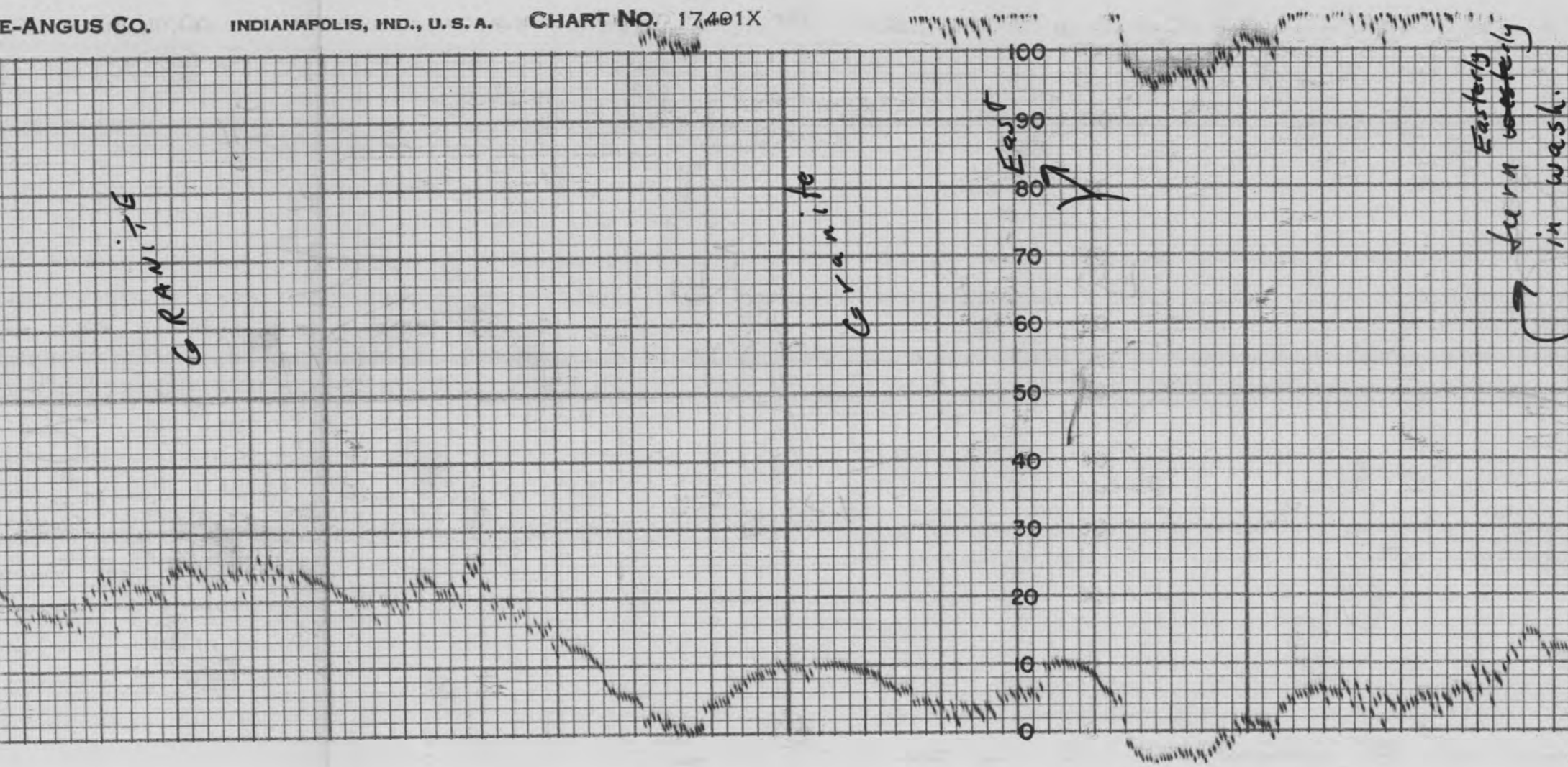
HORIZONTAL SCALE 200 FT./In.

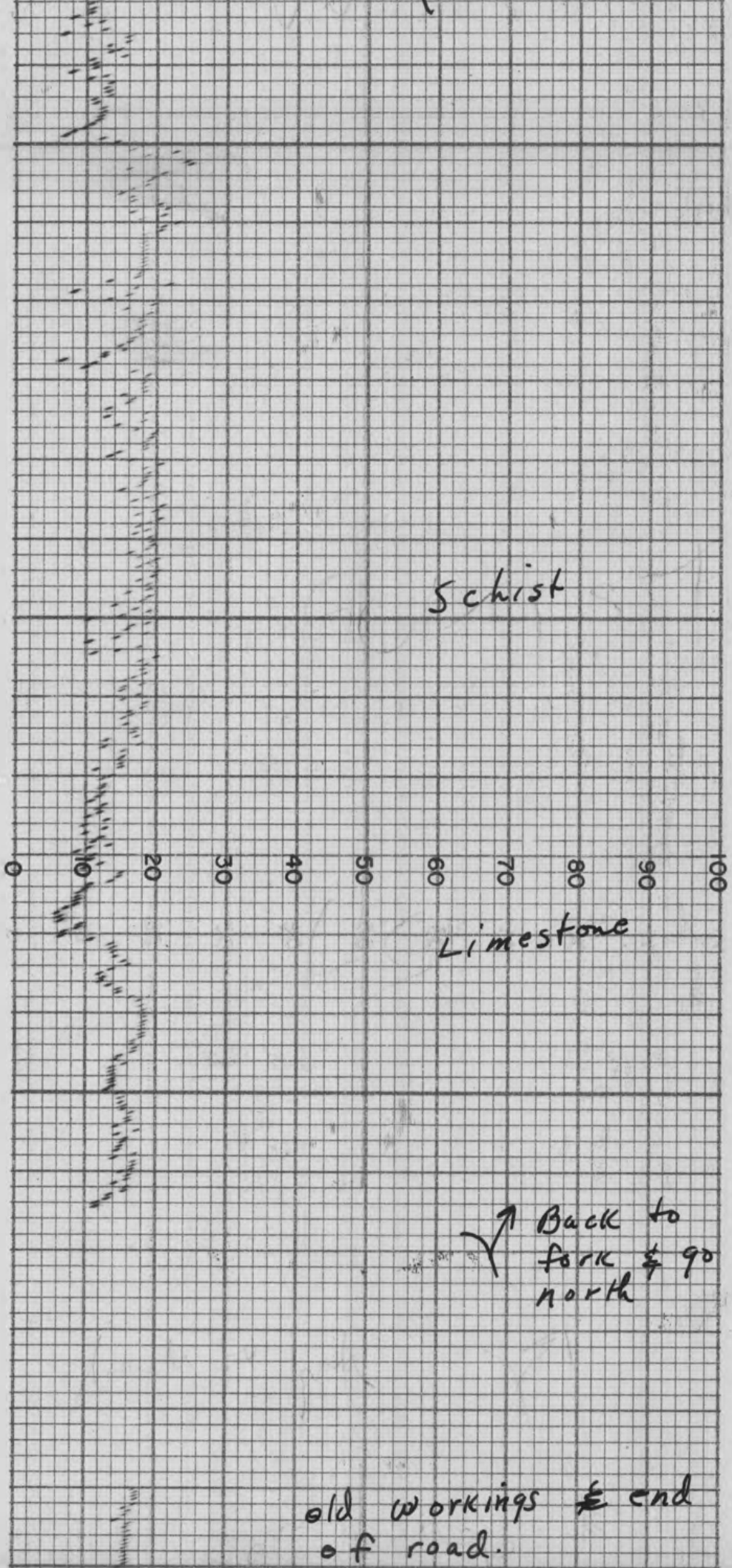
LOCATION WEST SIERRITA Mts.
PIMA COUNTY, ARIZONA

East from road in southern part of Sec. 34, T17S R10E


Too rough to go on
GRANITE
100
90
80
70
60
50
40
30
20
10
0

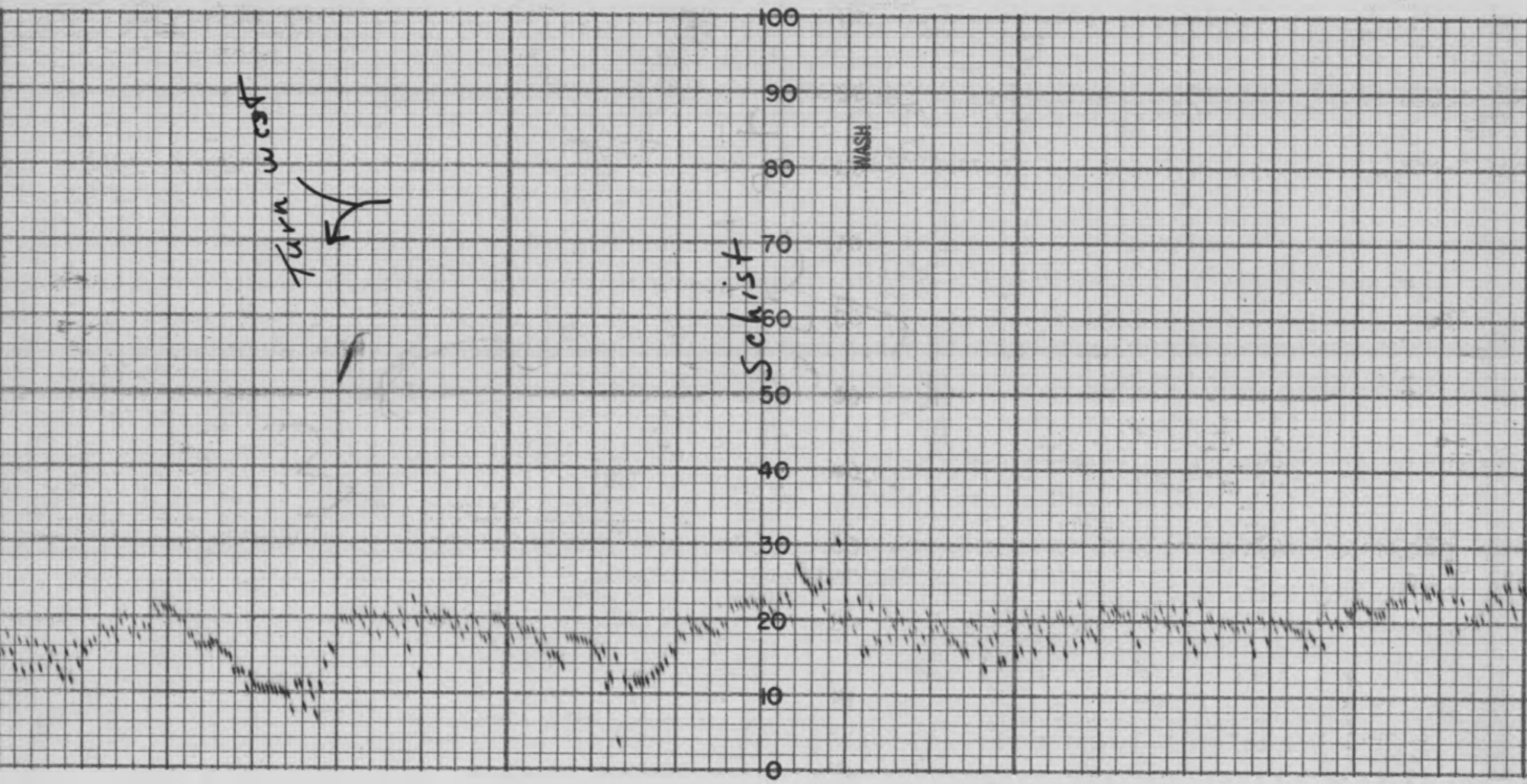
E-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17,401X

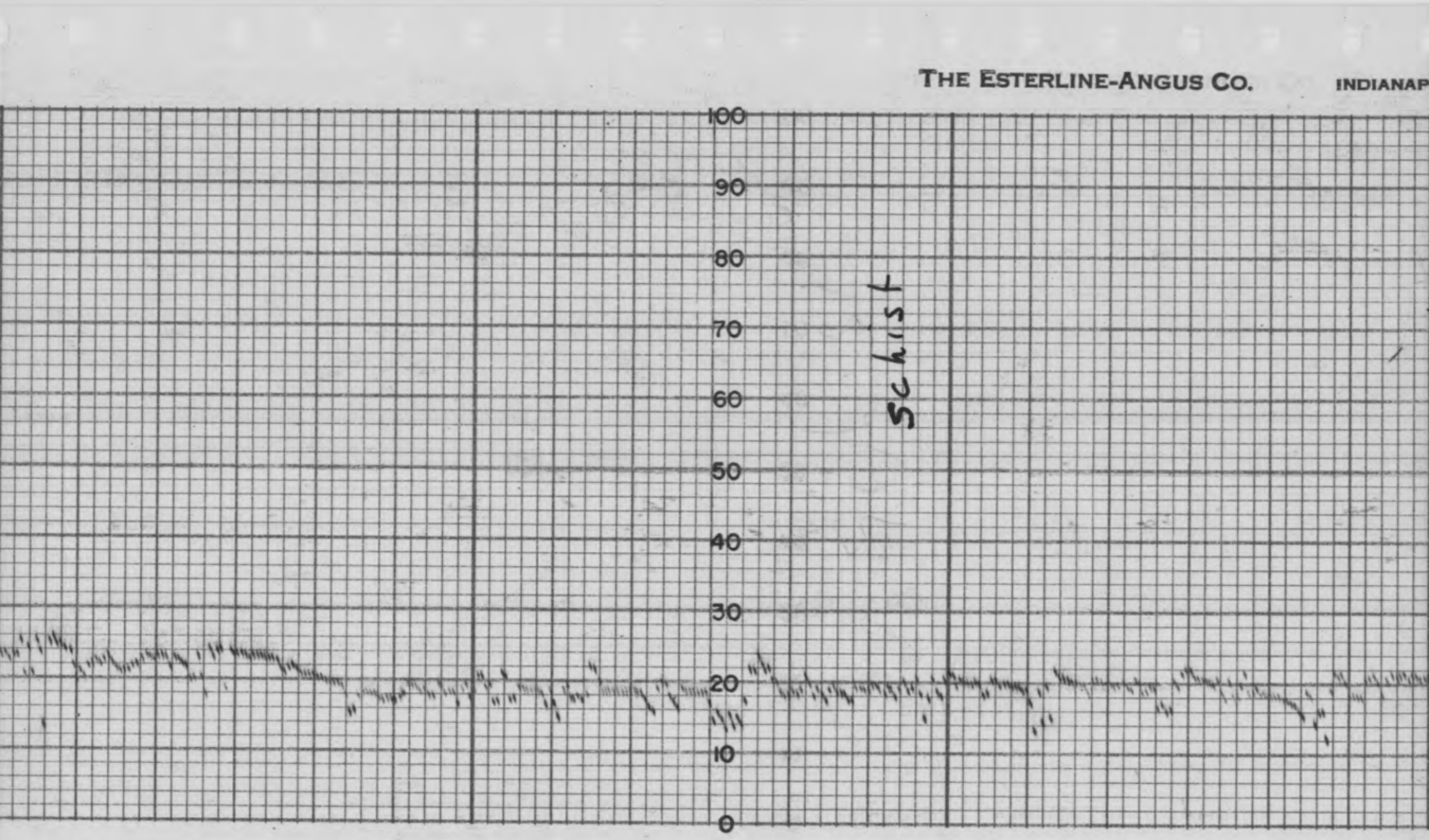


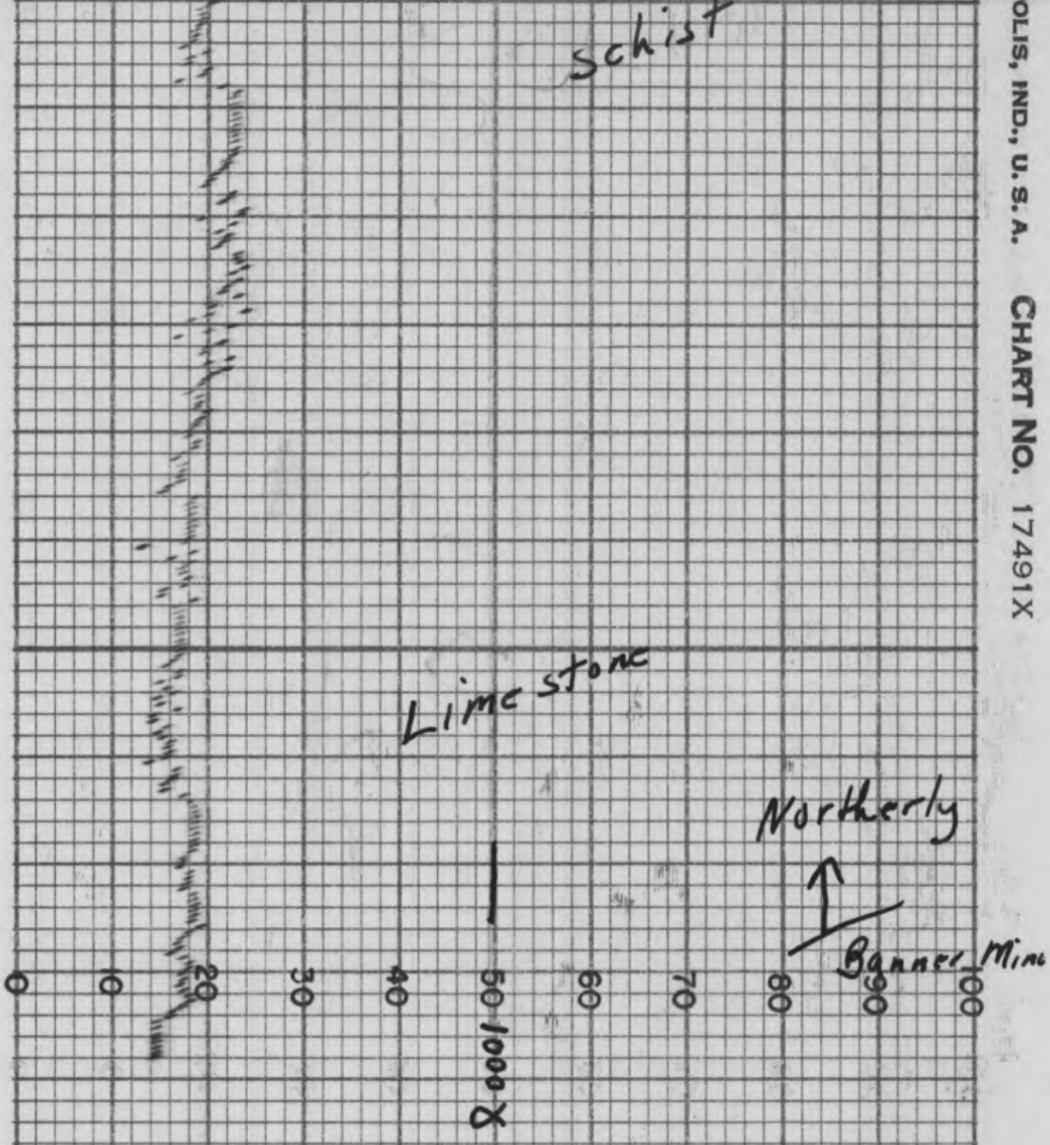


MADE IN U.S.A. THE ESTERLINE-ANGUS

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




THE ESTERLINE-ANGUS CO.
INDIANAP
100
90
80
70
60
50
40
30
20
10
0
Schist



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

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

RECORD NO. 36 DATE MARCH 1962

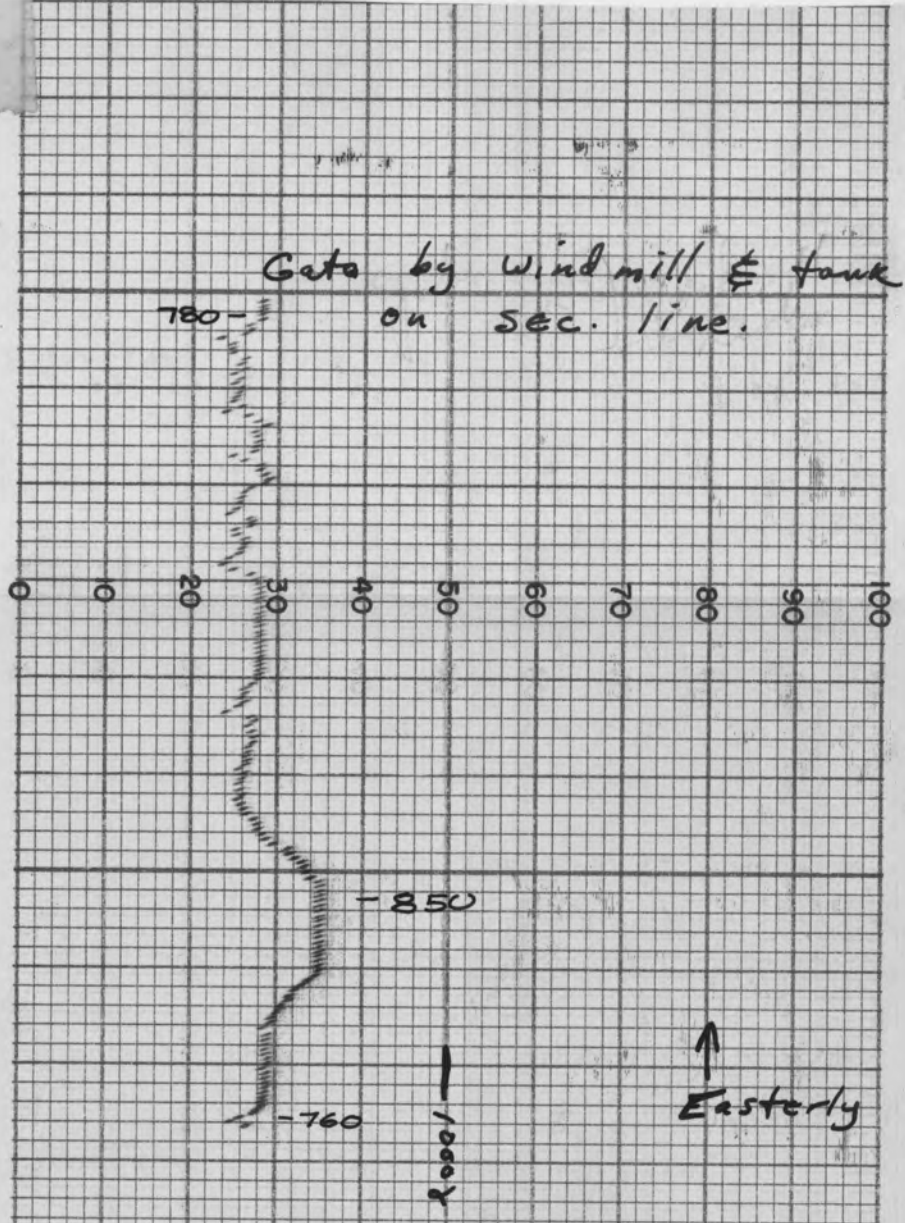
SENSITIVITY 100 GAMMAS / ½ In. S.D.

HORIZONTAL SCALE 200 FT./In.

LOCATION WEST SIERRITA Mts.
PIMA COUNTY, ARIZONA

North in section 2 from near Banner Mine, T18S, R10E to near MONTEZUMA Mine in Sec. 35 then easterly into Sec. 36, T17S, R10E

CHART NO. 17491X



MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: INSPIRATION CON. COPPER CO.

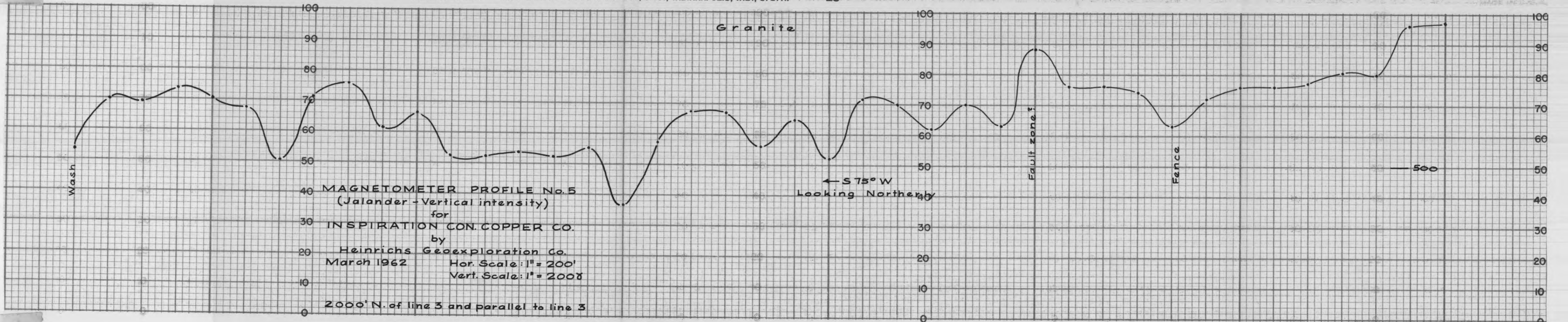
RECORD NO. 37 DATE MARCH, 1962

SENSITIVITY 100 GAMMAS / 4 in. S.D.

HORIZONTAL SCALE 200 FT./in.

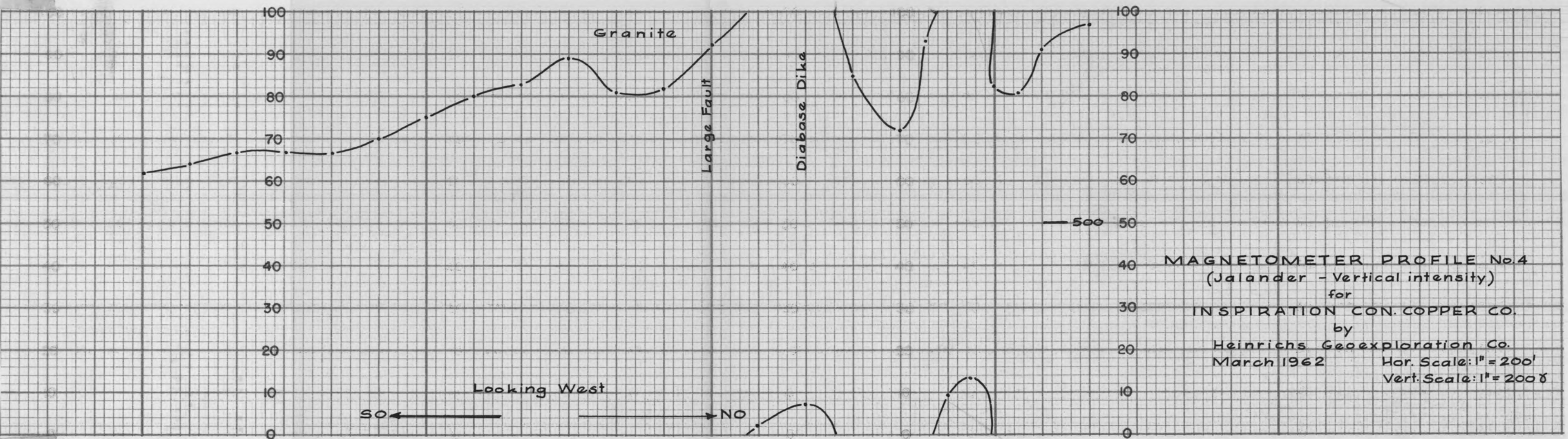
LOCATION WEST SIERRITA MTS.
PIMA COUNTY, ARIZONA

Easterly up ASH WASH from Sunshine Mine to sec. line 12/7 Sec. 12, T18S R10E

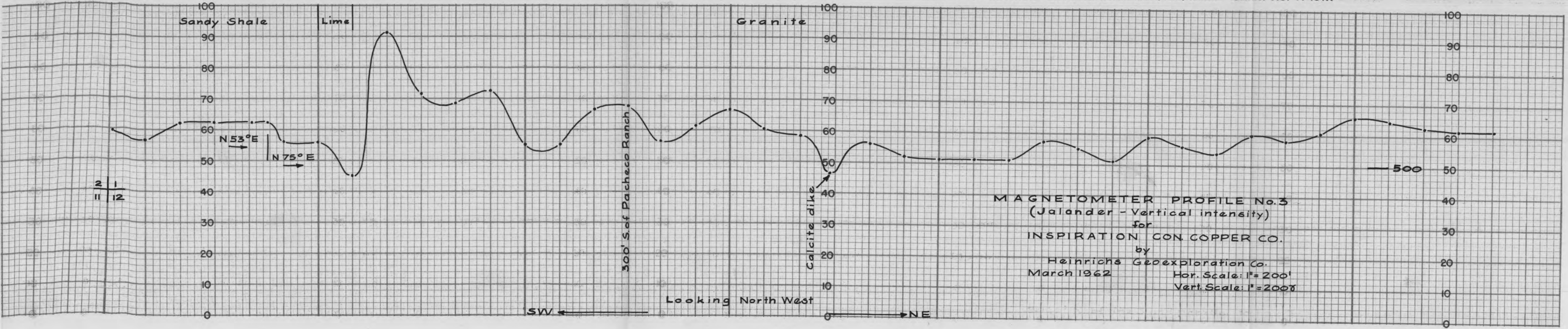


MAGNETOMETER PROFILE No. 5
(Jalander - Vertical intensity)
for
INSPIRATION CON. COPPER CO.
by
Heinrichs Geoexploration Co.
March 1962
Hor. Scale: 1" = 200'
Vert. Scale: 1" = 200γ

2000' N. of line 3 and parallel to line 3



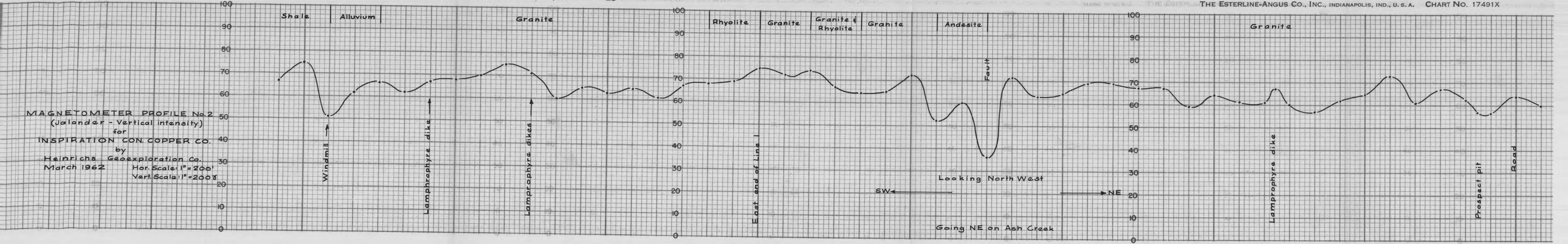
MAGNETOMETER PROFILE No. 4
(Jalander - Vertical intensity)
for
INSPIRATION CON. COPPER CO.
by
Heinrichs Geoexploration Co.
March 1962
Hor. Scale: 1" = 200'
Vert. Scale: 1" = 200 δ



MAGNETOMETER PROFILE No. 3
(Jalander - Vertical intensity)
for
INSPIRATION CON. COPPER CO.
by
Heinrichs Geoexploration Co.
March 1962
Hor. Scale: 1" = 200'
Vert. Scale: 1" = 200γ

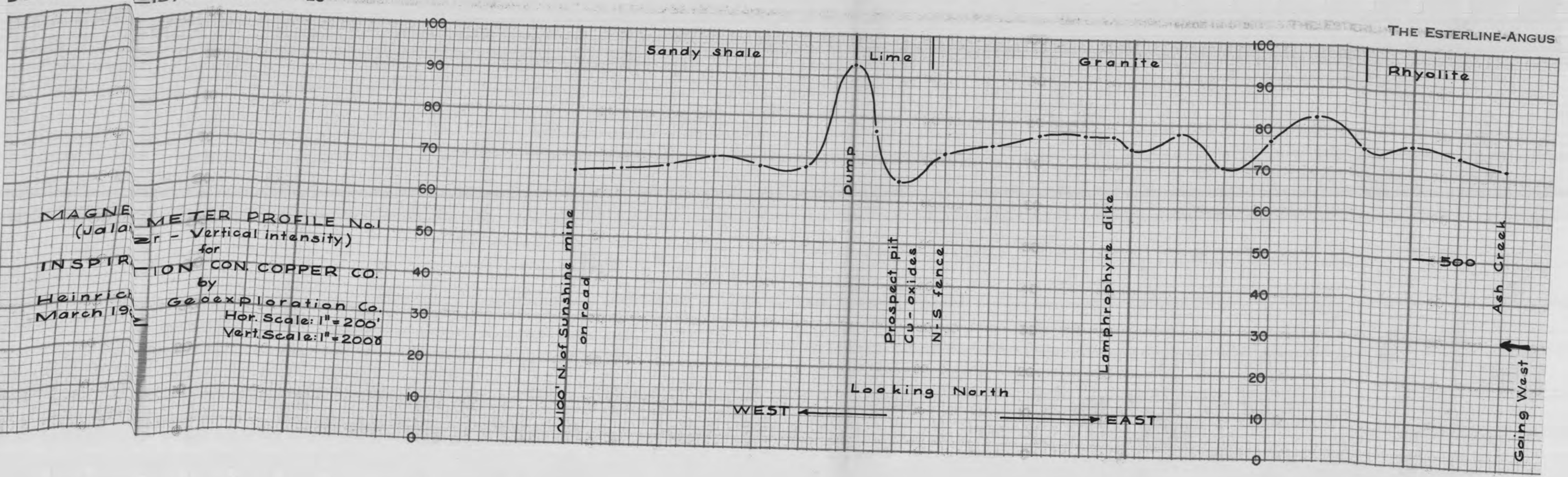
THE ESTERLINE-ANGUS CO., INC., INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X

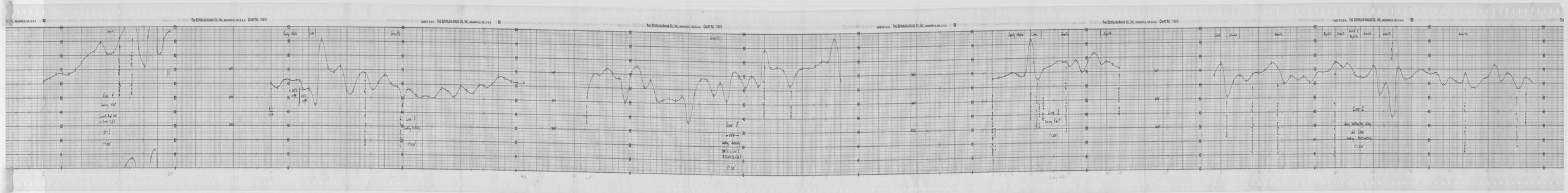
MAGNETOMETER PROFILE No. 2
(Jalander - Vertical intensity)
for
INSPIRATION CON. COPPER CO.
by
Heinrichs Geoexploration Co.
March 1962 Hor. Scale: 1" = 200'
Vert. Scale: 1" = 200γ



CO., INC., IN IS, IND., U. S. A. ES

THE ESTERLINE-ANGUS





PRELIMINARY MAGNETIC RECONNAISSANCE

West Side of Sierrita Mountains
Pima County, Arizona

for

INSPIRATION CONSOLIDATED COPPER COMPANY
Inspiration, Arizona

March 1962

by

HEINRICHS GEOEXPLORATION COMPANY
P. O. Box 5671 Tucson, Arizona

TABLE OF CONTENTS

MAPS

INTRODUCTION

Heinrichs Geoexploration Company used its mobile magnetometer to obtain magnetic profiles on some of the roads and trails on the west side of the Sierrita Mountains, Pima County, Arizona for Inspiration Consolidated Copper Co. This mineralized area is known as the Papago or Sierrita Mining District. The reconnaissance magnetic coverage obtained was essentially in Townships 16, 17 & 18 South, Ranges 9 & 10 East.

The work was authorized in a telephone call from Mr. Hugh Olmstead on March 10, 1962 and the field data was obtained on March 12, 13 and 15, 1962.

Purpose and Scope

Just over the mountains to the east the Pima and Twin Buttes Mining Districts are known to have, in places, magnetite associated with ore. It was thought worthy of determining if the mineralized ground on the west side of the mountains likewise had magnetic associations. Consequently the MoMag was used to search for magnetic clues to possible structural and/or lithologic variations, as well as isolated anomalies, while Mr. Olmstead examined the surface geology in areas both of known mineralization and where anomalous magnetic features were disclosed.

CONCLUSIONS AND RECOMMENDATIONS

Several zones of anomalism with sufficient extent, character and variation of magnetic susceptibility to be of potential interest were crossed. These can be separated into categories of varying importance according to surface indications, known mineralization, favorable or unfavorable land status picture, etc.

Each of the anomalous zones shown on our coverage map should be examined carefully on the ground. This has been done, or is being done, to some extent by Mr. Olmstead. Besides the usual geologic features looked for and noted, observation should be made for:

1. Magnetite, or mafic mineral content of rocks that could possibly give rise to a magnetic anomaly.
2. All clues to any type mineralization.
3. Samples of mineral bearing and country rock for susceptibility testing.

Complete land status studies should be initiated so that if and when it is decided to move into the district it can be done rapidly if necessary.

In making the final decisions, weighing the following factors as a unit is suggested:

(a) Magnetics by Geoex.

(b) Geology by Inspiration.

(c) Geology from John Cooper's field trip to the area on March 25, 1962 by the Arizona Geologic Society.

(d) Land availability.

(e) All the above for this area versus all the above for another area (or areas).

If, it is then deemed advisable to undertake an exploratory program in this district, the selected anomaly (or anomalies) should be magnetically detailed by closer spaced lines to close off the anomalism in all directions and to exactly locate highs and lows. This should be followed by some induced polarization lines to determine if there are sulfides present, unless there has been proven an association of magnetite with ore type minerals in the immediate area where the anomaly is located. The latter is usually the only valid example of when it might be recommended to drill a magnetic anomaly without confirmatory anomalism in the same area using a different method.

INTERPRETATION

As always, the magnetic results may be separated into relative scales of interest along such lines as:

(a) Alluvial covered areas where bedrock is very deep and magnetic changes are broad and smooth because of great depth.

(b) Anomalistic character--rapid, short amplitude variations on the record, indicative of erratic concentrations of

magnetic or mafic minerals either in natural magmatic segregations or due to later chemical or mechanical weathering concentration processes.

(c) Alluvial covered areas where bedrock is shallow, or exposed occasionally, and no known economic-type mineralization has been found within the immediate or nearby vicinity. This causes even otherwise likely appearing anomalies to be much less interesting.

(d) Individual anomalies, either highs, lows, flats, constant slopes, or slope-intercepts that stand out as being significant, for any of several reasons.

Proper evaluation of the data calls for temporarily ignoring at least the first two above. If exploration intensity increases, then attention should be re-directed to the profiles and all possible information wrung out of them by studying them in detail.

For the present, ten anomalous areas, identified as "A" through "J" have been selected as representing the most obvious features for first consideration and evaluation. They are lettered in possibly decreasing importance.

"A", in Sec. 27, T 17 S, R 10 E is found on Records #6, #22, #23, #24 and #25. A special map of the area with somewhat interpretive contouring is included in the map pocket. From present coverage, the maximum deviation appears to be on the order of 700 gammas and closure is possibly about 400-500 gammas. Prelim-

inary estimates to depth of cause show an order of magnitude of 500 feet. There is a dip component--it appears to be southwest and moderately steep. This anomaly has been selected as the most promising of any found on this reconnaissance because of its inherent magnetic characteristics as well as its proximity to the better shows of mineral in the district--Copper Grantz Mine to the north, Yellow Bird Mine to the southeast, Philimena Mine to the south.

"B", in Sec. 3, T 18 S, R 10 E, is a general area of anomalies, apparently related but which have not been sufficiently detailed to be able to say much about them. Records #4, #19 and #20 are the profiles crossing this zone. #19 has an obvious major fault, and all show a pattern of a rock type and environment that apparently was not crossed elsewhere in the district. However, no mineralization was noted on the surface here.

"C" was found on Record #28 and is in Sec. ~~17~~ 18, T 18 S, R 11 E, in a valley. The anomaly has a deviation of 700 gammas, and a southerly dip and marked similarity to "A". It is interpreted to be a dipping contact with high magnetite content, buried a few hundred feet. Considerably more work is needed to further evaluate this, but first either interesting mineral or geology must be found on the surface or reasonable inference for proper subsurface conditions must be deduced.

"D" in Sec. 12, T 18 S, R 10 E was crossed by only Record #4. This is in the vicinity of the Gold Hill Mine and appears

to be a contact metamorphic zone. The effects are seen on the record for a distance of over 2,000 ft. Assuming the probability that the road was not entirely normal to the strike of the cause and not running along it either, the zone must be at least 1,000 ft. wide. Two veins or beds of magnetite outcrop here and other little beds or lens are also reflected magnetically. Careful surface checking should be done here because of widespread mineral shows and prospect pits in this vicinity. Chances are good here for finding magnetite-mineralization association which would warrant detailed coverage of the area.

"E", "F" and "G" line up along the local strike and are assumed to be separate crossings at three points along a bed or fault. The magnetite rich fault zone interpretation is preferred, and it is steep to nearly vertical. The profiles crossing these zones are Record #17 & #18 and the locations are in Sections 26 and 35, T 17 S, R 10 E. This is somewhat the heart of the known mineralization and a relative importance is attached to this magnetic zone. However, any potential ore here is likely to be the vein-fault type, high grade, underground situation.

"H" is located in Sec. 24, T 17 S, R 10 E and was crossed by Record #16. It is a contact zone, somewhat similar to "D" but considerably less intense. Some siderite and magnetite was noted in crossing here. In itself this anomaly is given little importance, but, it may be possible to trace the zone southerly

to and beyond "D". If this could be done then a tremendously large and important contact zone will have been delineated on or along which there somewhere might be major economic mineralization.

"I" and "J" are considerably south of the district, in Sec. 34 & 35, T 18 S, R 10 E and are on Record #29. The Black Hills, north of this profile are the cause of a broad magnetic high on the record for nearly two miles but there are two anomalies imposed on this. They could represent faults, or flows, or merely extensions of the hills southerly at these points. Their over all character looks somewhat promising, but due to their ground location and probable geologic environment they should be given less consideration than any of the zones previously discussed.

Respectfully submitted,

HEINRICHS GEOEXPLORATION COMPANY

J. W. Marlatt
Geologist

March 20, 1962
P. O. Box 5671
Tucson, Arizona

SUPPLEMENTAL MAGNETIC COVERAGE

West Sierrita Mountains
Pima County, Arizona

for

INSPIRATION CONSOLIDATED COPPER COMPANY
Inspiration, Arizona

April 1962

by

HEINRICHS GEOEXPLORATION COMPANY
P. O. BOX 5671 TUCSON, ARIZONA

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INTRODUCTION

Subsequent to our report submitted March 20, 1962 on the magnetic reconnaissance of the west side of the Sierrita Mts., Pima County, Arizona some additional coverage was obtained in specific areas. The MoMag was used on March 27 to obtain four more profiles at anomaly "A" to cut it off to the south and additional traverses were run in Sections 26, 35 and 36, T 17 S, R 10 E and Sections 2 and 12, T 18 S, R 10 E. On March 29, 1962 a Jalander hand magnetometer was used to take readings along five profiles in Sections 1 and 12, T 18 S, R 10 E and Section 7, T 18 S, R 11 E.

RESULTS

Records No. 30, 31, 32 and 33 were parallel and 660 ft apart over the southern part of the area containing anomaly "A". The contour map of this anomaly has been revised and is included with this supplement. Effects from the cause of "A" cover a surface area of roughly 2,200 ft. by 1,200 ft. Magnetically it is elongate NW-SE, dips southwest and has a pronounced contact with a large low lying to the east. The cause is a magnetite rich zone lying along a contact, probably fault, of granite to the west or southwest and sediments and/or metamorphics to the east-northeast. Because of its geographic position and magnetic characteristics viewed in the light of known geology and mineral-

ization of the area this anomaly should be given strong attention. If the usual route of acquiring a large amount of land, plus geology, geophysics and drilling cannot be taken at this time, then a block of at least four claims should be located with the center on the high and extending 1,500 feet north, 1,500 ft. south, 600 ft. east and 600 ft. west of the magnetic high. Annual work then can be kept up and the claims held until such time in the future as it may become possible to thoroughly investigate it.

Record No. 34 was an attempt to find an extension on the north side of the hill of anomaly "G". An abrupt rise in level of 200 gammas was found a little east of where expected. As there are steep cliff-forming slopes here we could not drive far but were satisfied that we had crossed a formational contact with enough variance in magnetite or skarn minerals to sharply define the contact. Magnetics would be the best method for mapping this contact if anyone ever presents a geologic reason for its importance.

Record No. 35 was run in the southern part of Section 35 and like Record No. 34 was to look for an extension of the trend of anomalies "E", "F" and "G". An anomaly was found, close to the west face of the hill. Character of the record indicates it is from a near surface cause, probably exposed, and nearly vertical. We are now satisfied that there is a mineralized

contact zone N-S in Sections 26, 35 and 2 along the west face of sedimentary hills. This must be terminated by faulting near the Banner Mine as it was not picked up on Record No. 4 across this section.

Record No. 36 showed anomalism only over the granite and nothing that is considered significant at this time was crossed.

Record No. 37 has a minor high that probably is not too important but might have some minor mineral association.

Jalander Profiles #1 and #2 were run east of the Sunshine Mine to check on a prospect on Iron Mountain. No. 1 shows a small anomaly from two station readings at or near the dump of a small prospect. This could possibly correlate with the minor anomaly on MoMag Record No. 37 at about the same position on the south side of the hill. If so, it means the mineralization here can be traced magnetically, and this is reportedly one of the better mineral showings in the district. The only thing of particular note on profile No. 2 is an anomalous low in the central part of Section 7, apparently associated with a flow and/or fault but with no observed mineralization. Profiles 3, 4 and 5 were in Section 1. Aside from some local anomalism, two features are worthy of mention. On No. 3 is a small contact zone with a narrow sharp anomaly that would appear to be a magnetite body similar to anomaly "D". And at the north end of No. 4--east end of No. 5 is a high zone, not cut off but apparently due to diabase.

An overlay has been prepared showing the positions of the new coverage. This overlay is for the map furnished with the original report of March 20, 1962. We suggest the two be combined by tracing the data from the overlay onto the original maps.

Respectfully submitted,

HEINRICHS GEOEXPLORATION CO.

J. W. Marlatt
Geologist

April 10, 1962
P. O. Box 5671
Tucson, Arizona

R 10 E

T 17 S

21 22 28 27

Sec. cor. marker is a scribed rock

COPPER GRANTZ MINE

Momag Rec. 5

Momag Rec. No. 5

Rec. No. 24

Rec. No. 25

Rec. No. 23

Rec. No. 22

Rec. No. 8

Rec. No. 9

Rec. No. 5

Stevens Wash

ANOMALY "A"

To Phillimena Mine

LEGEND

- x—x—x—x Fence
- Rec. No. 8 ·····>····· Momag Traverses
- = = = = = = Roads

N

HEINRICHS GEOEXPLORATION COMPANY		
P.O. Box 5671 Tucson, Arizona		
MAGNETIC CONTOUR MAP ANOMALY "A" AREA FOR INSPIRATION CON. COPPER CO.		
West Sierrita Mountain Project Pima County, Arizona		
SCALE: 1" = 200'	CONTOUR INTERVAL: 50γ	REVISIONS
	DATA BY: J. W. M.	
DATE: March 1962	SHEET OF	
DRAWN BY: I. B.	DRAWING NO.:	FILE: