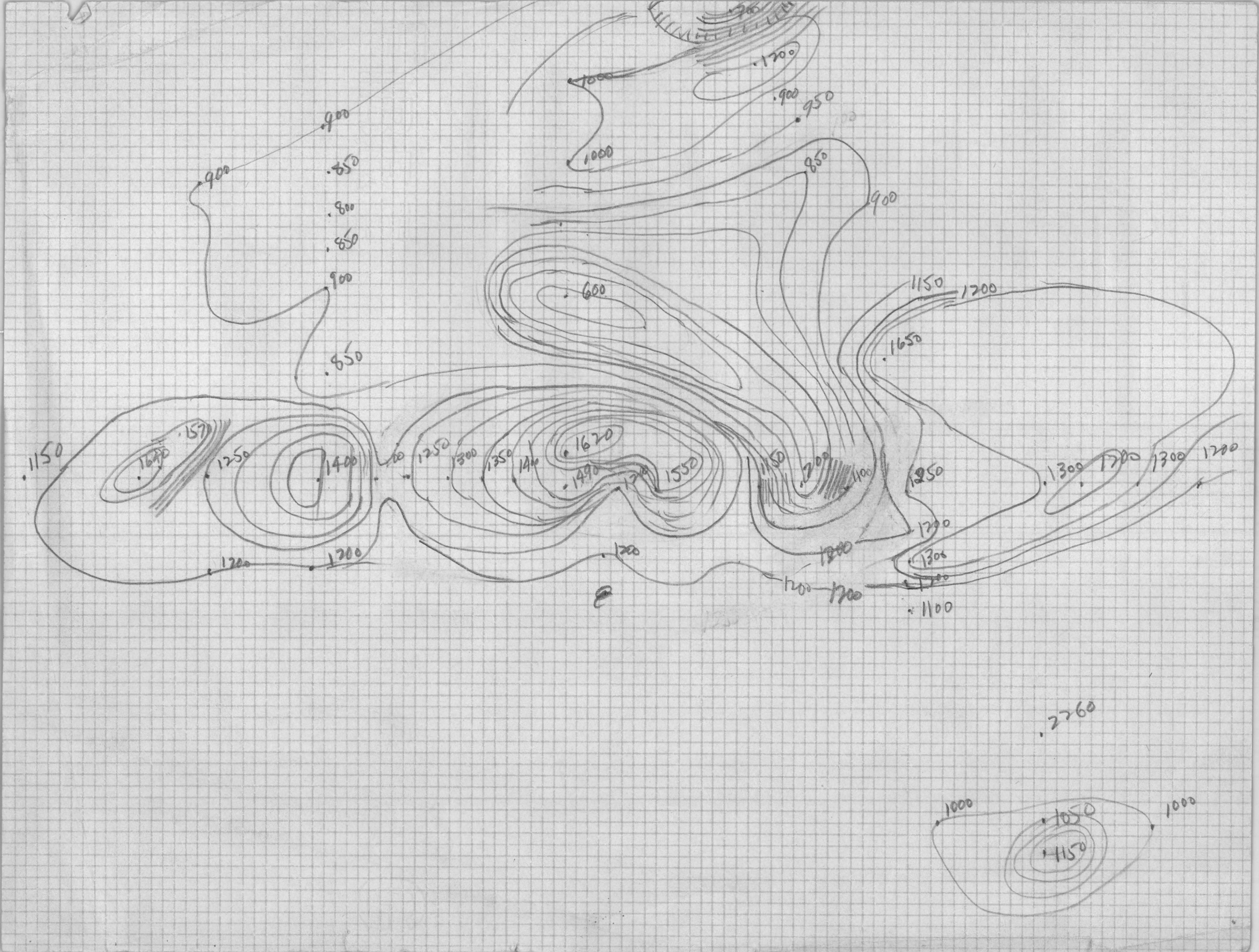
25 August 1959 π McLain
φ {Marlatt
{Ludwig

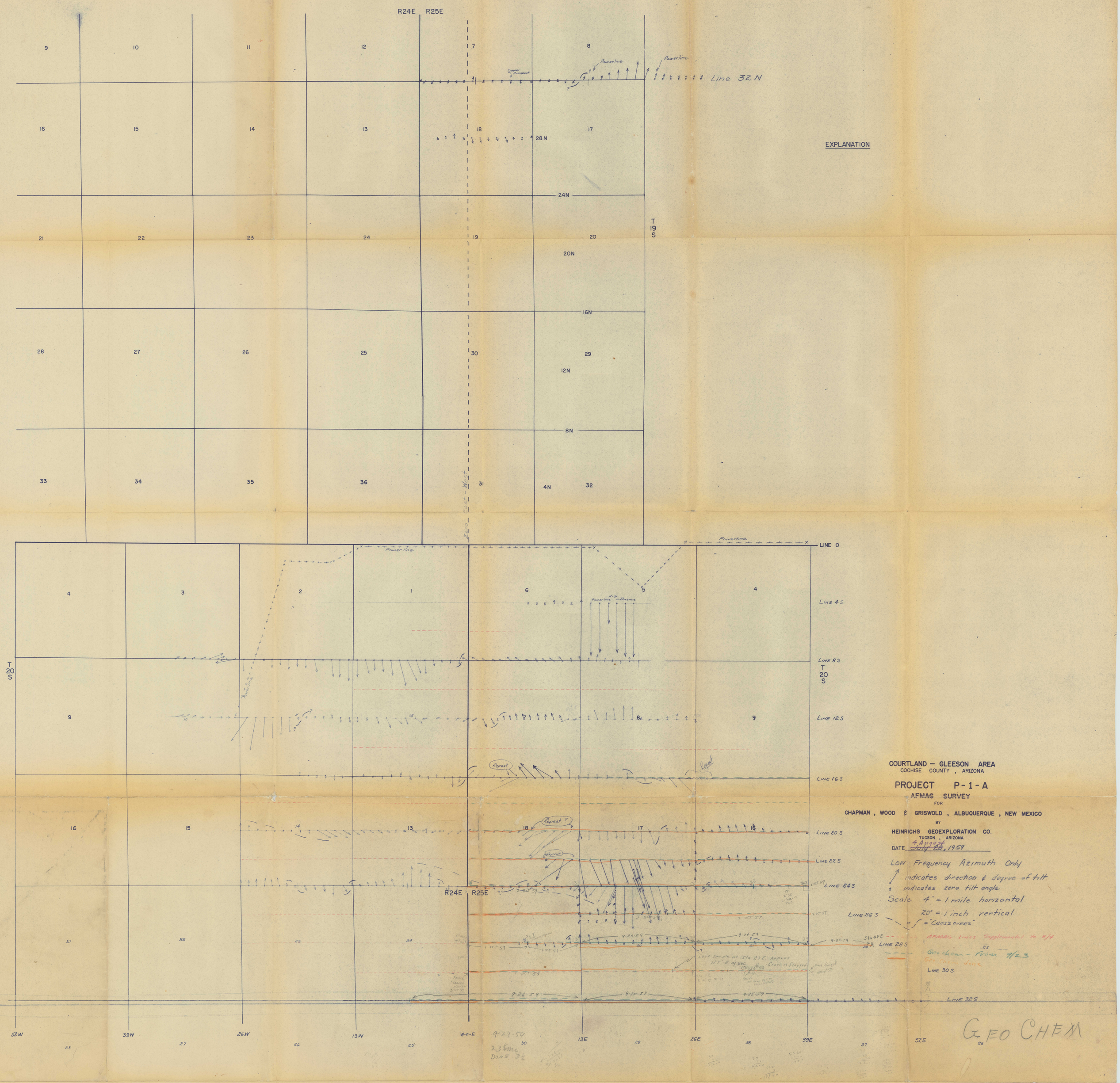
−∡	1∡	Remarks
90°-04	—	all Claim Numbers in "Chaco" group.
90°-04	—	Tp "J" NE Cor Chaco #51
180-00	—	on Sec line 19-20 780' North of corner.
180-00	—	63-64 in Wash. Marker
180-00	—	tree on east side marked on cut limb.
180-00	—	Tp "K" on rise W of Wash

26 August 1959 π McLain
φ {Marlatt
{Ludwig

180-00	—	
180-00	—	
180-00	—	
180-00	—	
180-00	—	Tp L on top of Hill 100' W of 87-88
180-00	—	
180-00	—	
180-00	—	
180-00	—	
180-00	—	



1000
1200
900
950
1000
900
850
900
850
800
850
900
850
600
1150
1200
1650
1150
1640
1570
1250
1400
1250
1300
1350
1400
1620
1490
1550
1150
1200
1100
1250
1300
1200
1300
1200
1200
1200
1200
1200
1200
1200
1300
1100
2260
1000
1050
1000
1150

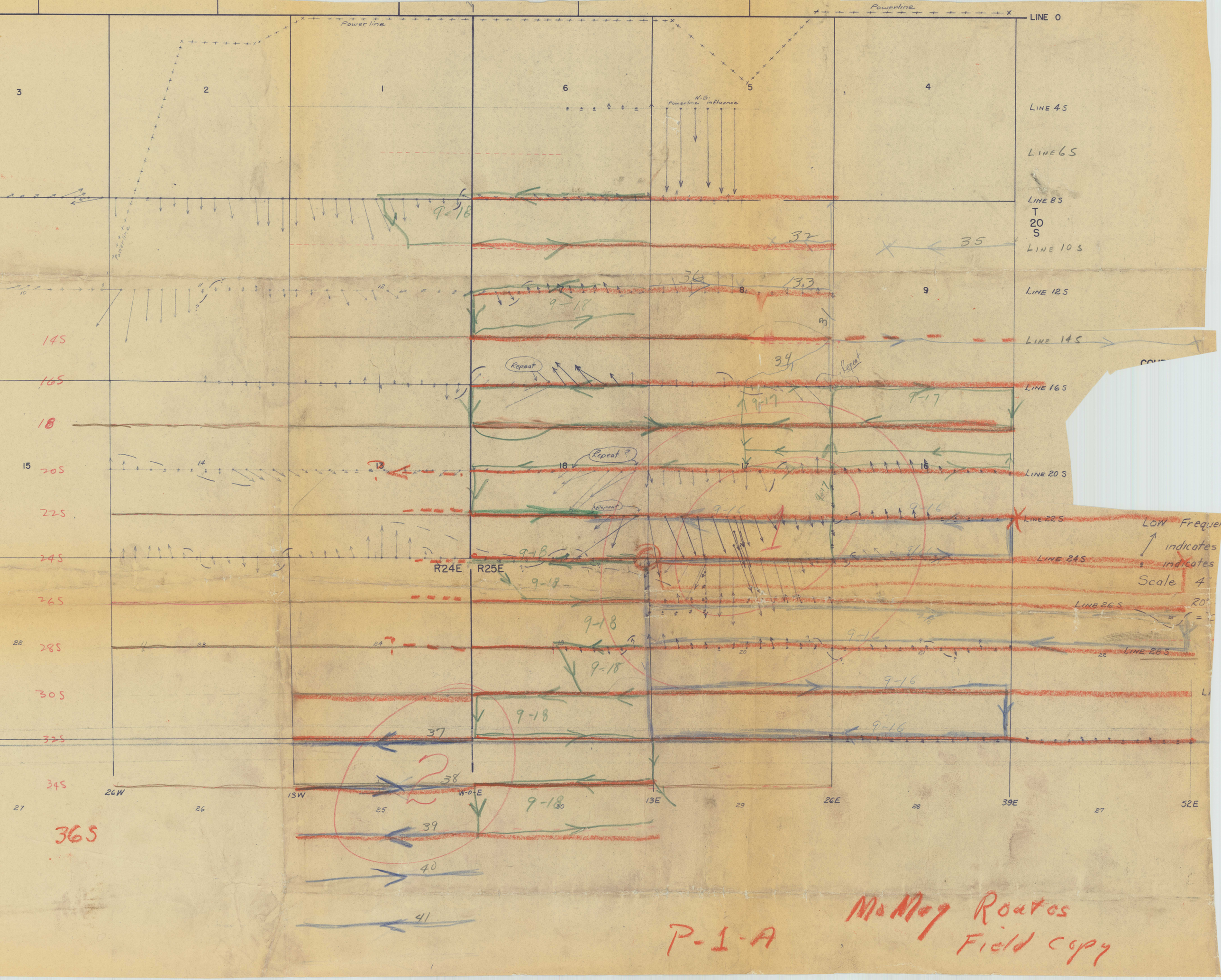


EXPLANATION

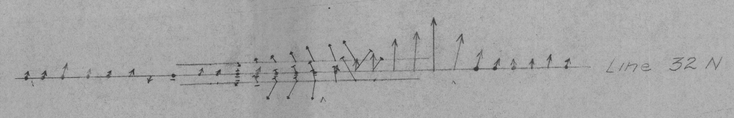
COURTLAND — GLEESON AREA
COCHISE COUNTY, ARIZONA

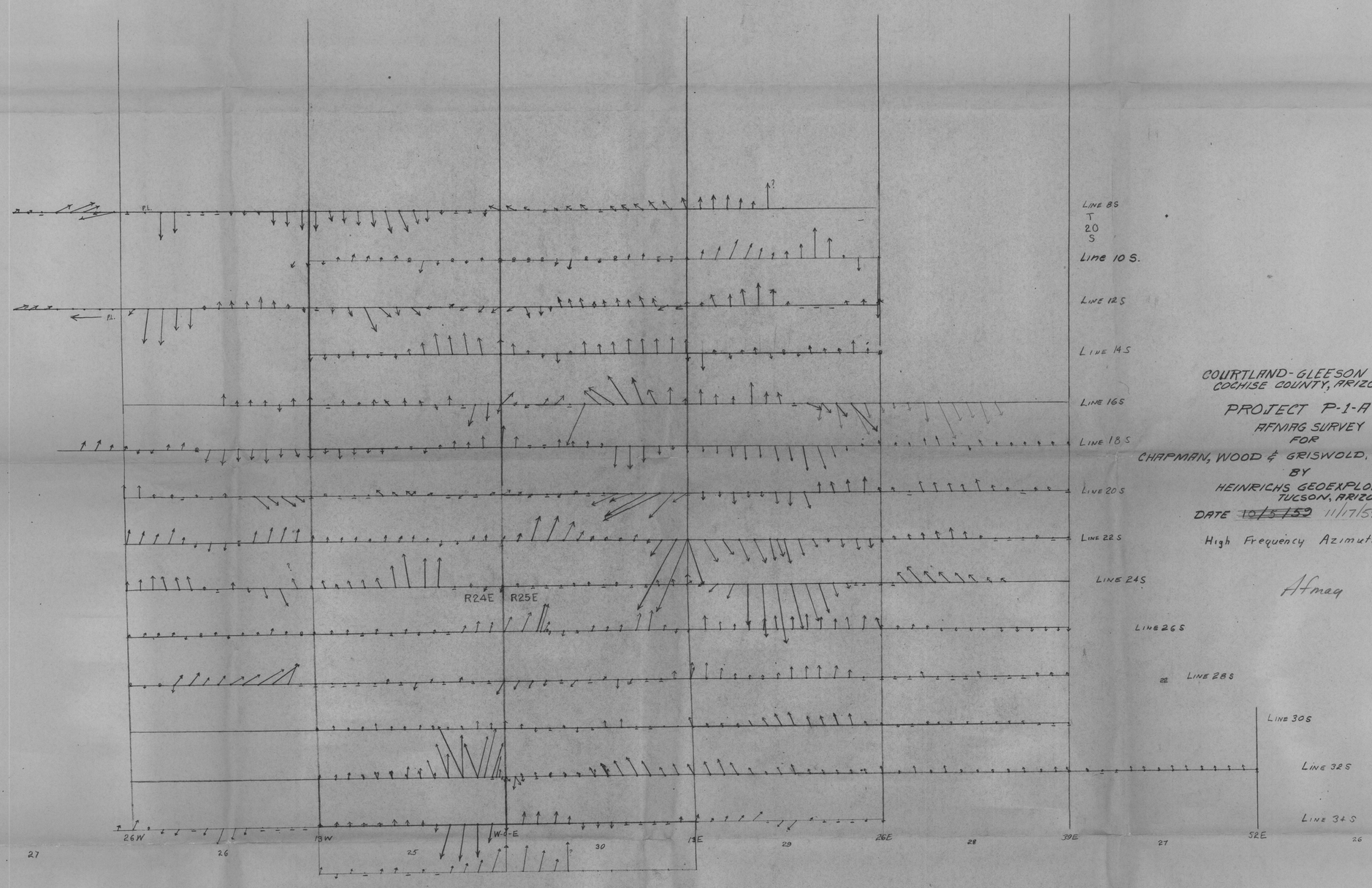
PROJECT P-1-A
AFMAG SURVEY
FOR
CHAPMAN, WOOD & GRISWOLD, ALBUQUERQUE, NEW MEXICO
BY
HEINRICHS GEOEXPLORATION CO.
TUCSON, ARIZONA
DATE ~~July 28~~ 4 August, 1959

Low Frequency Azimuth Only
indicates direction & degree of tilt
indicates zero tilt angle
Scale 4" = 1 mile horizontal
20° = 1 inch vertical
or = "Cross overs"



Powerline
LINE 0
Power line
N.G. Powerline influence
LINE 4S
LINE 6S
LINE 8S
T 20 S
LINE 10S
LINE 12S
LINE 14S
LINE 16S
LINE 20S
LINE 22S
LINE 24S
LINE 26S
LINE 28S
14S
16S
18
20S
22S
24S
26S
28S
30S
32S
34S
36S
R24E
R25E
26W
13W
W-0-E
13E
26E
39E
52E
Repeat
Repeat ?
Low Frequen
indicates
indicates
Scale 4"
20°
P-1-A
McMag Routes
Field Copy





COURTLAND-GLEESON AREA
COCHISE COUNTY, ARIZONA

PROJECT P-1-A

AFMAG SURVEY
FOR
CHAPMAN, WOOD & GRISWOLD, ALBUQUERQUE, NEW MEXICO
BY
HEINRICHS GEOEXPLORATION CO.
TUCSON, ARIZONA

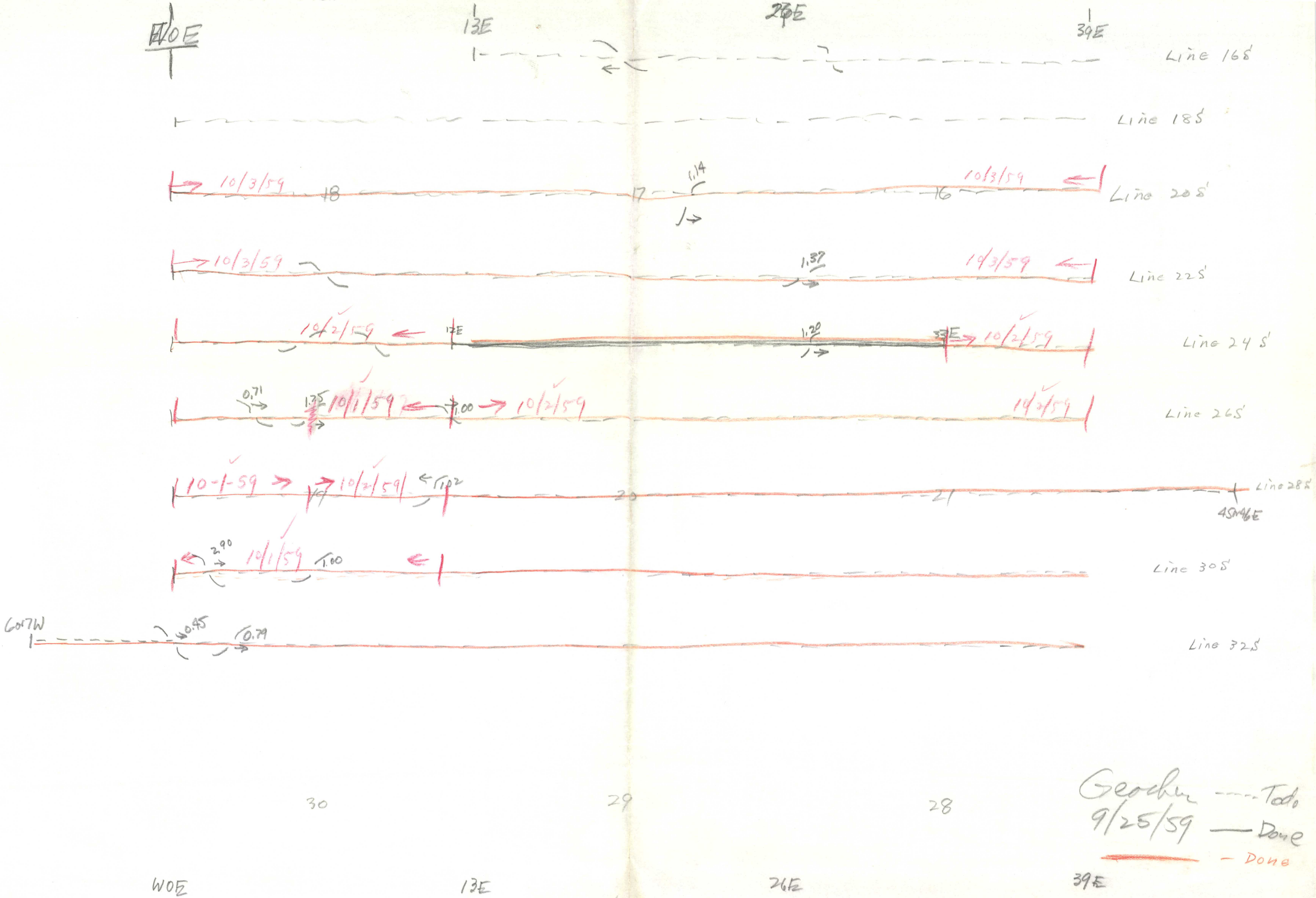
DATE ~~10/5/59~~ 11/17/59

High Frequency Azimuth Only

Afmag 11/17/59

LF

DOC- 1 **PAGE-** 65


W0E
13E
26E
39E
Line 16S
Line 18S
Line 20S
Line 22S
Line 24S
Line 26S
Line 28S
Line 30S
Line 32S
10/3/59
18
17
1.14
16
10/3/59
10/3/59
1.37
10/3/59
10/2/59
17E
1.20
33E
10/2/59
0.71
1.35
10/1/59
1.00
10/2/59
10/2/59
10-1-59
10/2/59
1.02
20
21
45N46E
2.90
10/1/59
1.00
60N7W
0.45
0.79
30
29
28
Geocher ---- Todo
9/25/59 — Done
— Done
W0E
13E
26E
39E

AFMAG CROSSOVERS.

Line 32 S	Sta 0 E/W	Ratio : $\frac{3+20}{4+21} = \frac{23}{25} = 0.92$: good conductivity Dip to west. Shallow depth.
Line 30 S.	Sta 0 E/W	Ratio : $\frac{1+3}{3+8} = \frac{4}{11} = 0.36$: poor conductivity Dip to east. Depth : deep.
Line 30 S	Sta 6 E	Ratio : $\frac{2+3}{2+3} = \frac{5}{5} = 1.0$: Excellent conductivity Dip to west. Moderate depth
Line 28 S	Sta 12 E	Ratio : $\frac{2+7}{3+6} = \frac{9}{9} = 1.0$: Excellent conductivity Dip to west. Moderate depth.
Line 28 S	Sta 14 W	Ratio : $\frac{0+14}{0+15} = \frac{14}{15} = 0.93$: Excellent conductivity Dip to east Shallow depth
Line 26 S	Sta 2 E	Ratio : $\frac{2+12}{3+7} = \frac{14}{10} = 1.4$: Super conductivity Dip to east Shallow depth.
Line 26 S	Sta 13 E	Ratio : $\frac{1+8}{1+9} = \frac{9}{10} = 0.90$: Good conductivity Dip to east. Moderate depth.
Line 24 S	Sta 27 E	Ratio : $\frac{30+6}{22+9} = \frac{36}{31} = 1.16$: Excellent conductivity Dip to east Moderate depth
Line 24 S	Sta 2 W.	Ratio : $\frac{2+14}{5+14} = \frac{16}{19} = 0.84$: Good conductivity Dip to east Moderate depth.

AFMAG CROSSOVERS

Line 24 S — Sta 19 W — Ratio: $\frac{8+6}{7+6} = \frac{14}{13} = 1.07$ = Excellent conductivity

Dip to west

Moderate to deep depth.

Line 22 S — Sta 9 E — Ratio $\frac{4+36}{(-1)+37} = \frac{40}{36} = 1.11$ = Excellent conductivity

Dip to west

shallow depth.

Not done:

8 S at B.L.

12 S at 4 E

16 S at B.L.

20 S at 21 W

20 S at 22 E

P-1-A Sept 1 – Sept. 26, 1959

complete for posts

Surveying 2-Chuza Groups – 1-32 & 33-68
11 Miles traverse

Put in 81 claims posts : 4 new claims established & all state claim posting completed. (Chaco 107-110 ½ mile Traverse.)

Part or all of 6 days. 2 to 6 men
145 hours.

Mo Mag field : 4½ days plus travel to & from Tucson
Approximately 57 miles of traverse.
office : 6 man days on records & maps.

12.7 miles/day = 13
$27.60/profile mile = $27.00

Geochem 2 men ½ day, 1 man 2 days, 4 man days 30 4¼ miles 1.½ 5.75 "
= 1.45 miles/man day

AF MAG

Sept.	1	1 mi.
"	2	1 "
"	3	2.5 "
"	10	3 "
"	16	1 "
"	17	1 "
"	18	2 "
"	22	1¼ "
"	25	1½ "

Line 18

only two used ✓

13 3/4

Sept 29 – 1¼
30 1¼

16¼ miles. 16 3/4 = 16.75 used

29
13
16

= 1.85 miles/day

P-I-A. Sept./59

1.	Ludwig AFMAG 8	McLain AFMAG 8	Clark MoMAG 8	Jones MoMAG 8	(MoMAG didn't work, 4 of AFMAG for drafting)
2.	McLain Ludwig } AFMAG-16				
3.	McLain Ludwig } AFMAG-16				
4.	McLain Ludwig } AFMAG-10 & veh. maint 8				
5.	McLain Ludwig } AFMAG-12, drafting 8				
6.					Sunday Labor day
7.	Ludwig off. 9				
8.	Marlatt 1 hr. off.	Ludwig 2 travel	McLain 2 travel		
9.	Ludwig AFM. 8	McLain AFM. 8			
10.	Ludwig AFM. 8 draft 3	McLain 8 AFM 3 draft			
11.	Ludwig AFM. 6 travel 2	McLain AFM 6 travel 2			
12.			**NADA**		
13.	Sunday				
14.	Greene prep & travel to - 8	Marlatt prep & trav. 8			
15.	Greene AF-3, Sur. 5	Marlatt AFM. 3 Sur. 5			
16.	Valdez, I. MoMAG 8	Greene AFMAG 8	Clark AFMAG 8 MoM. 3	Marlatt MoMAG 8	
17	Valdez I. MoMAG 9	Valdez, T Surv. 8	Zepeda, R. AFMAG 6 Sur. 2	Greene Sur. 10	Clark 2½ mom. AFM 6 Sur. 3	Marlatt MoMAG 10
18.	Valdez. I MoMag 8	Valdez, T Surv. 8	Zepeda R AFMAG 10	Greene Sur. 8	Clark AFM. 10	Marlatt MoMAG 9
19	Valdez I Sur. 8	Valdez T Sur. 8	Zepeda, R AFMAG 4 Sur. 9	Greene Sur. 8	Clark AFM. 4 Sur. 4	Marlatt Sur. 8
20.	Sunday				
21.	Greene office 8 on	mo & AF data	Clark MoMAG off. 8	Marlatt MoMAG off. 10	
22.	Walt 4 G.G. & S.	Valdez I Sur. 8	Valdez T Sur. 8	Zepeda R AFMAG 9	Greene Sur. 8	Clark AFM. 9	Marlatt MoMAG off 9 Travel 2
23.	Walt 16 Lots	Valdez I Sur. 8	Valdez T Sur. 8	Zepeda R Sur. 8	Greene Sur. 8	Clark 1 AFM. 7 MoMAG	Marlatt 1 AFMAG 7 MoMAG
24.	Greene 4 MoMAG 5 gooch.		Clark 4 AFM. 5 Gooch.	Marlatt MoMAG 4 MoMAG off 2	Travel 3 G.ch. 1	
25.	Zepeda R AFMAG 8	Greene 9 G.ch.	Clark AFM 8	Marlatt MoMAG off. 8	
26.	Zepeda R AFMAG 4	Greene 8. G.ch.	Clark 4 AF. 4 Gooch.	Marlatt MoMAG off. 7	
27.	Sunday.				
28.					
29.					
30.					

Surveying Miles

Sec 16 – 2 1/2 "

" 17 – 2 1/2 "

" 18 – 1 "

" 13 – 1/2 "

" 19 – 2 1/2 "

" 24 – 1 "

" 20 – 2 "

" 21 – 1 1/2 "

13.5

P 1 A - AF MAG

8/1/59 - no readings except at base due to poor signal

8/2/59 — Sunday

8/3/59 3 miles - Line 32S STA. 26E-52E
28S STA 26E-39E

8/4/59 3 miles - Line 20S STA 26E-39E
Line 22S STA 19E-39E
(Repeat) Line 24S STA 13E-20E

8/5/59 3½ miles Line 30S STA 13E-39E
Line 32S STA 6E-26E

8/6/59 1 mile Line 32S STA 7E-10W

8/7/59 ?

8/8/59 3¼ miles Line 32S STA 7E-13W

8/9/59 — Sunday Line 30S STA 13W-11E

8/10/59 ?

8/11/59 2¾ miles Line 28S STA 13E-23W

8/12/59 no reading possible - poor signal

8/13/59 2 miles Line 26S STA 13E-13W

8/14/59 1 mile Line 26S STA 26E-39E

8/15/59 ?

8/16/59 — Sunday

8/17/59 1 mile Line 22S STA 13E-0 E/W

8/18/59 no reading possible

8/19/59 ?

8/20/59 2 miles Line 34S STA 13E-13W

8/21/59 → 8/28/59 Surveying

P 1 A - AFMAG

8/28/59 2 miles Line 18 S - STA 13E - 39E

8/29/59 } Weekend off
8/30/59

8/31/59 no reading possible

$\boxed{24\frac{1}{2} \text{ miles } \cancel{\text{total}}}$ AFMAG = 319 Stas±

19 AFMAG WORKING DAYS
= 1.3 Miles/day or about 17 Stations/day.

13.5 miles traverse claim Surveying

5.5 miles Self. pot. traverse 9 days, 414 observations

0.6 Miles/day. = 46 observations/day or stations
(Sabidity repeats)

August

8/
46
9
44

P-1-A Self Potential

8-11-59	Line 24 S	Sta. 53+00 E – 104+00 E	(51 stations)
8-12-59	Line 24 S	53+00 E – 68+00 E	(16 repeats)
8-13-59	Line 24 S	68+00 E – 98+00 E	(30 repeats)
8-14-59	Line 24 S	98+00 E – 158+00 E	(60: 54 new, 6 repeat)
8-17-59	Line 24 S	53+00 E – 38+00 E & back	(30: 15 new, 15 repeat)
8-18-59	Line 24 S	38+00 E – 0 E/W	(38 new)
	Line 32 S	0 E/W – 35+00 E	(36 new)
8-19-59	Line 32 S	0 E/W – 53+00 W	(54 new)
8-31-59	Line 32 S	35+00 E – 82+00 E	(47 new)
9-1-59	Line 24 S	158+40 E – 106+40 E	(52 repeat)

9 days

Line 24 S	: 3 miles	277 stations	(158 + 119 repeats)
Line 32 S	: 2.5 "	137 stations	(new)
Totals	5.5 miles	414	

Line 24 S goes from $\frac{13/18}{24/19}$ east to $\frac{16/15}{21/22}$

Line 32 S goes from $\frac{23/24}{26/25}$ east to approx. $\frac{20}{29}$

8/2/59

Approx: 412 different ~~station~~ positions occupied

involving 594 readings

and 29 1/4 miles of profile

20 ~~[illegible]~~ field readings days

$\frac{29.25}{20} = 1.4625$ Miles/day.

~~[illegible]~~

or approx 1 1/2 miles/day.

average coverage

[illegible]

Grover — 29 1/2 8/2/59

28 1/2

29 1/4 profile Miles

2 1/2 Mi Repeat coverage etc.

Stas. occupied	Line	2	Line
34	28S	20	26E – 6
47	26S	16	
102	24S	63	19E – 4
164	22S	11	
215	20S	54	13E – 4
269	16S	51	17E – 5
274	12S	61	26+400S – 3
287	8S	55	22
350	4S	13	379
376	32N	34	401
397	Hilonsone Base	1	
		379	400

[illegible]

29.25

30
5000
15 0000
1

154,440

227
155

227
75
152

130
75
5

Total Cost July	—	$3196.63
" Miles	—	30.25
" Stations	—	412.
Observations		574
Cost / Sta.	—	$7.76
Cost / Obser.	—	$5.57
Cost / mile	—	$105.67

$30\frac{1}{4}$ Miles = $\frac{160,000 \text{ feet}}{400}$ = 400 stations.

400
400) 160,000

574
412
2162
400
64,800 = 12 42
5280

John Wood call: 7/27/59

Line 24 South

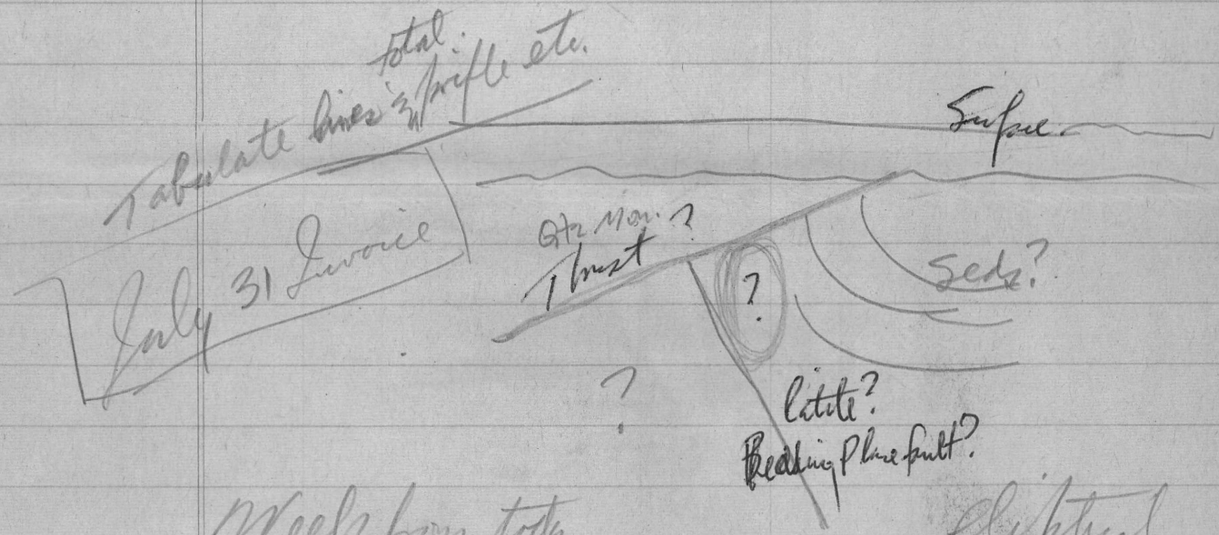
Small 15° on E 7° on W
Cross over @ 14 13 / 23 24 Seems to trend
NW @ is indicated in minor way on line 20 S.
in center of Sec 14

AM - PM diff. storm
" " " power line loads.

Line 32 N
Minor crossover @ Sta. 11-12 E 1300'
East of SW Cor. Sec. 8

Line 26 S - 6° or less dip. 13 E, Very minor ~~small~~ cross over. AM

" 28 S - (7° dip) 13 E - 26 E



Week from today
Tucson Noon Monday
20 S 25 E TWP plat.

Elliptical

Monday week 26-28 extend EW
30 So.

5000 30 / 150,000

900 400 / 160,000

P-1-A Oct Production

Date	Afmag	Geochem
10/1	Clark Valdez 4hrs. 2000'±	Clark Valdez 4hrs. ✓ Fair 8 ~~- 2 miles ±?~~ 2-2½
10/2	" " 7hr. 5600'	1hr. Fair 7½ 2 miles ±? ✓ Malatt 8 - 2 miles
10/3	[illegible]	Fair 6 Malatt 6 - 3 miles Clark 8 - 3 " ±?
	5600 2000 7500 = 1½ miles ±? Afmag. 1 mile new ½ repeat.	12½ miles ±?
10/8		Clark 8hrs. Malatt " } 5 miles
		17½

[illegible]

M E M O

November 4, 1959

To: Mr. John A. Wood

Re: P-1-A - Afway

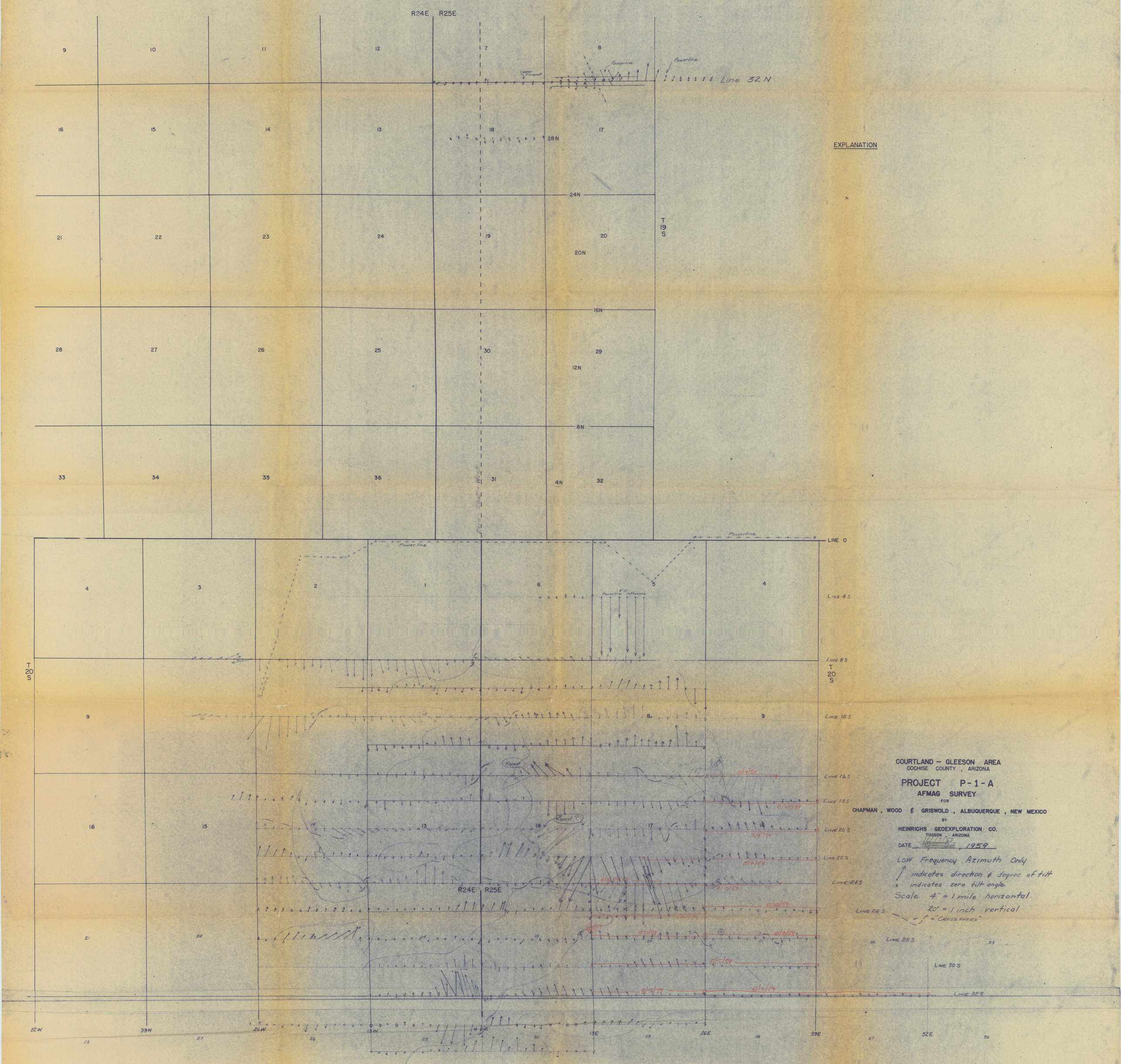
Line 16S, stations 6E to 14E

Original data showed a rapid gradient from 0° tilt ± 4° at station 4E to 20°N tilt at station 6E. Partial repeat data on stations 11E to 7E showed a more reasonable gradual increase in S tilts to a maximum of about 14° then a reversal back toward what appear as normal 0° ± 4° tilts at station 4E. Stations 6E, to 0EW were originally scheduled for repeat, but this work was apparently inadvertently omitted during the ensuing shuffle. I believe it is intirely justified to assume the existence of a smooth tie of S tilts (plotted E on the plans) from Station 7E to 4E on both high and low frequency with no cross over between Stations 6E and 7E as would be inferred from the plan plots. In other words, merely invert and appropriately shorten the arrows for Stations 5E and 6E on the low freq. plan and for Stations 6E on the high freq. plan with NW azimuths in all 3 cases.

W. E. Heinrichs.

P. S.: Enclosed are 3 copies each of up to date self potential data on lines 24S and 32S. Sorry you have been without these all this time and hope you wont mind them arriving folded which was done to expedite mailing out tonight.

Regards,
WEH.



EXPLANATION

COURTLAND — GLEESON AREA
COCHISE COUNTY, ARIZONA

PROJECT P-1-A
AFMAG SURVEY
FOR
CHAPMAN, WOOD & GRISWOLD, ALBUQUERQUE, NEW MEXICO
BY
HEINRICHS GEOEXPLORATION CO.
TUCSON, ARIZONA
DATE 10/17/59, 1959

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indicates direction & degree of tilt
indicates zero tilt angle
Scale 4" = 1 mile horizontal
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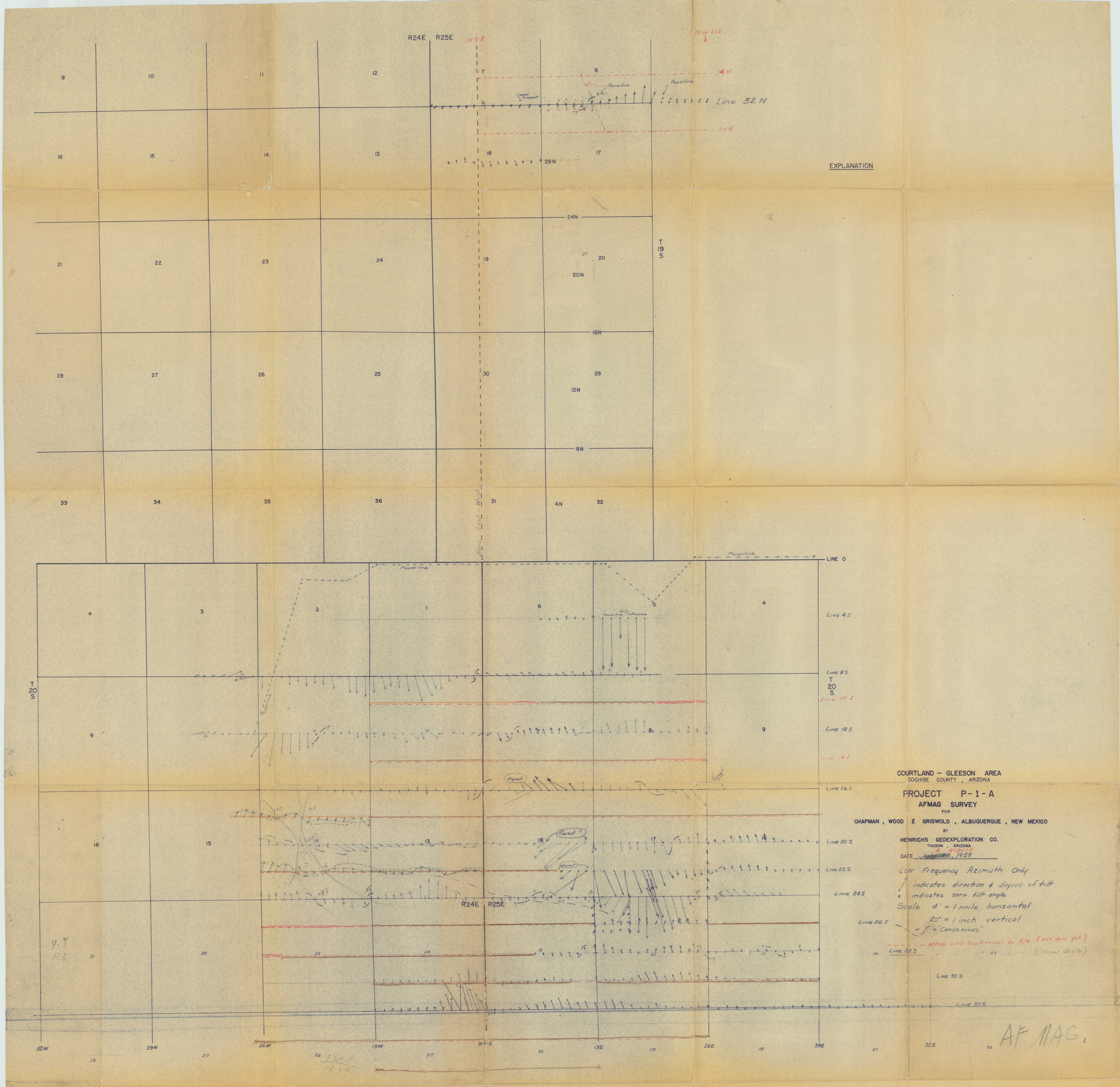
or = "Cross overs"


R24E R25E
W O E
37 or 28E
34N
30N
Line 32 N
Powerline
Copper Prospect
28N
24N
20N
16N
12N
8N
4N
T 19 S
Zero East - West
LINE 0
LINE 4 S
LINE 8 S
T 20 S
Line 10 S
LINE 12 S
Line 14 S
LINE 16 S
LINE 20 S
LINE 22 S
LINE 24 S
LINE 26 S
LINE 28 S
LINE 30 S
LINE 32 S
Repeat
52W
39W
26W
13W
W-O-E
13E
26E
39E
52E
EXPLANATION
COURTLAND — GLEESON AREA
COCHISE COUNTY, ARIZONA
PROJECT P-1-A
AFMAG SURVEY
FOR
CHAPMAN, WOOD & GRISWOLD, ALBUQUERQUE, NEW MEXICO
BY
HEINRICHS GEOEXPLORATION CO.
TUCSON, ARIZONA
DATE ~~July 26~~ 4 August, 1959
Low Frequency Azimuth Only
indicates direction & degree of tilt
indicates zero tilt angle
Scale 4" = 1 mile horizontal
20° = 1 inch vertical
or = "Cross eyes"
AFMAG Lines Supplemental to P/4 (Not done yet)
" " " 23 " " (Now done)
AF MAG.

EXPLANATION

COURTLAND – GLEESON AREA
COCHISE COUNTY, ARIZONA

PROJECT P-1-A
AFMAG SURVEY
FOR
CHAPMAN, WOOD & GRISWOLD, ALBUQUERQUE, NEW MEXICO
BY
HEINRICHS GEOEXPLORATION CO.
TUCSON, ARIZONA

DATE July 28, 1959

Low Frequency Azimuth Only
indicates direction & degree of tilt
indicates zero tilt angle
Scale 4" = 1 mile horizontal
20° = 1 inch vertical
or = "Cross overs"