

Treasury Department,
U. S. COAST AND GEODETIC SURVEY,
O. H. Tittmann , Superintendent.

States: *Pa. - Md.*

SKETCHBOOK.

ABSTRACT OF CONTENTS:

- Mason and Dixon Line.*
- 1) Location of boundary at certain points east of Susquehanna R., pp. 1-12
 - 2) Topy W'd from M.P. 84 to a point bet. 87 and 88 (See Vol. 6 for W'd exten.) pp. 13-29.
 - 3) Microm. distance measures from Top of Warrior Ridge to Martin's M., pp. 60-52

1901

CHIEF OF PARTY:

W. C. Hodgkins

Vols.

Vol. 8

289

33

1200

1522

3046

45
65
110

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Treasury Department,
U. S. COAST AND GEODETIC SURVEY,

O. H. Tittmann, Superintendent.

States: *Pa. - Md.*

SKETCHBOOK.

ABSTRACT OF CONTENTS:

Mason & Dixon's Line

1) Location of boundary at
certain points on Cecil Co. line. pp. 1-12

2) Topography westward
from M.P. 84 to about mid-
way between 87 + 88. pp. 13-29

(See vol. 6 for continuation westward)
(Blue Ridge)

3) micr. measures, Warrior Ridge to Martin's Mt. pp. 60-52

1901

CHIEF OF PARTY:

W. C. Hodgkins

Vols.

Vol. 8

Granite Post

5.49 Long

.99 square on top x 1.5 length of dressed part

1.11 x 1.29 on bottom

4.49 from South Slab

W. Slab use east side of back

8 " " west side of back

2

N

Road east of
Gravel Corner.

Top of No. 22

10.56

96°11'

10935
feet
offset

Stake on Line
across Conowingo

S

19.10' at 10° from rectangular offset
Stake on Helio line in
field 619.2' west of Cross
Roads, rect. offset = 19.11

Stake on
boundary.

43.60

Cross Roads north of
Rock Springs.

N

1854.5
feet
offset

Stake on Helio line

Stake on boundary.

18.11'

25'
Back in Small Oak

S

E

Lowland
Cross Roads

Stone (base 4610)
72.78 ft; 47°32' from I

Small House

Stone Farm boundary monument
60 ft. 30°30' from I = 1.58 ft. north of
State Line

Survey Line

1124.6 ft.
from No. 8

1212.9 ft.
from No. 8

489 ft
Rect. offset

Comp. fence
* 1/4 T

Road crossing west of No. 7.

Stake 165 ft
east of fence
59.43 ft.
59°43' from I

Stake 12 ft. west of
fence
78.81 ft.
38°11' from I

Division fence on
Boundary

Survey Line

4622.2 ft
from No. 8

Rect. offset
57.25 ft

2903

N

x 38.51 x

78.62 ft.
30.25' from T

68.46 ft.
22.27' from T

Stake 843 ft. from Tack

1.41 ft.

Stake in Walnut

Stake to fence 2.2 ft.

15.55 ft.

1.55 ft. = Stake 4450.0 ft. from No. 7. m. j.

Stake 11.40 ft. from Tack

Back in Locust

Stake to fence = 6.14 ft.

Division fence

Division fence

N

Burvyg

Line

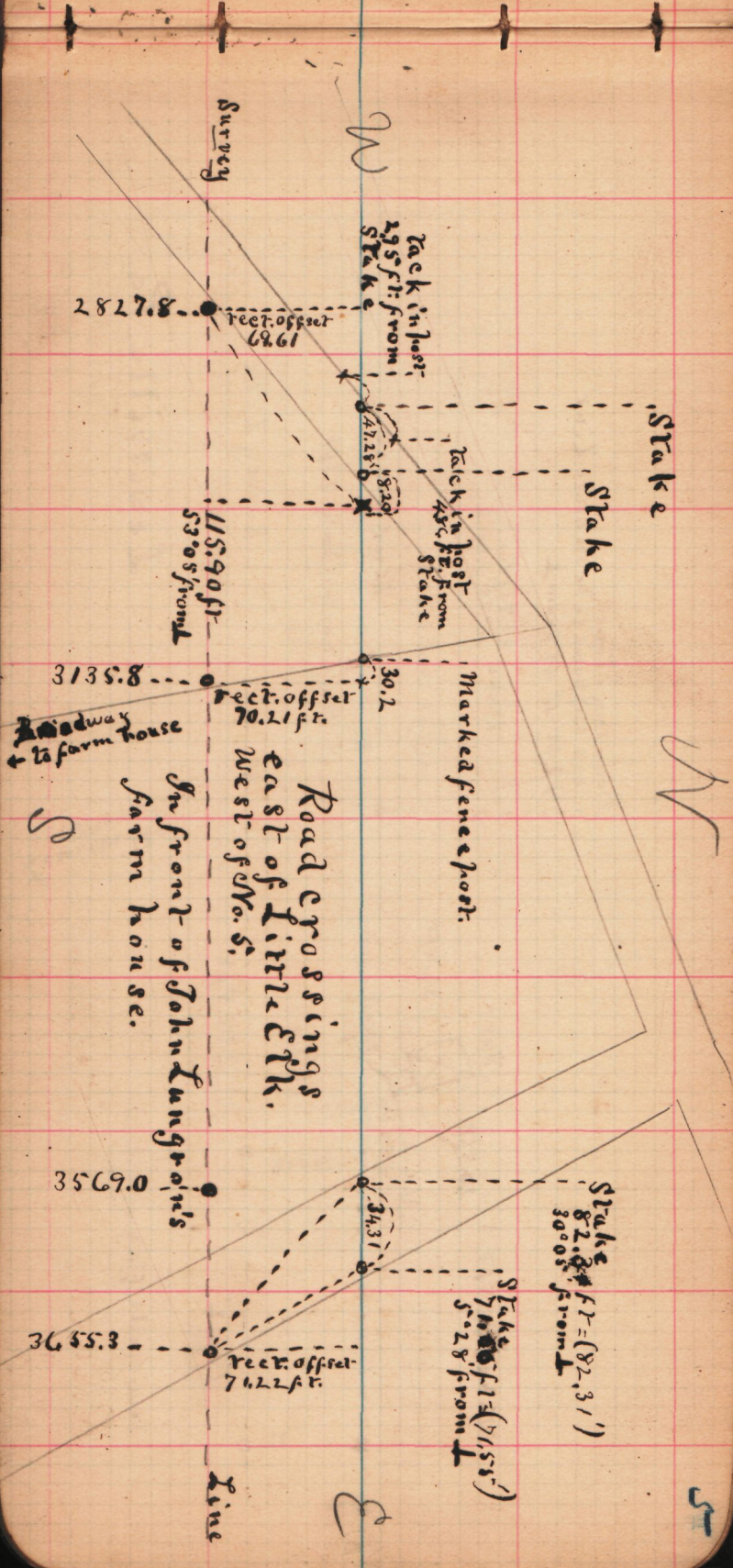
Road crossing west of No. 6.

No 6 m. p.

1.55 ft. = Stake 4450.0 ft. from No. 7. m. j.

Stake under apple tree by fence

5037.6 ft. from No. 7



Survey

N

2827.8

rect. offset
62.61

Tack in post
295 ft. from
Stake

Stake

Stake

115.90 ft
53°05' from

Tack in post
430 ft. from
Stake

3135.8

rect. offset
70.21 ft.

30.2

Marked fence post.

Highway
to farm house

Road crossings
east of Little Elk.
West of No. 51.

In front of John Lungre's
farm house.

N

3569.0

34.31

Stake
82.31 ft = (82.31')
30°05' from L

Stake
71.58 ft = (71.58')
5°28' from L

3655.3

rect. offset
74.22 ft.

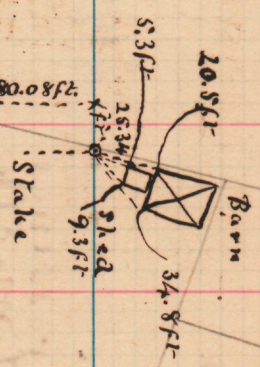
Line

E

51

W

Stake 79.65 ft
 186.2'
 Lewisville Flag



235.5 ft

Lewisville Street

Boundary Stone
 was supposed to be on slate line
 92 ft - 47' from 1

Stake 83.91 ft
 16.05' from 1

80.63 ft rect. offset

fence north of Wdg. 7.3 ft
 Line fence

Survey Line

Lewisville, Pa.

E

N

Road Crossing
West of Big Elk

rect. offset 97.54 ft

Stake on boundary
98.57 ft
102 ft from L

Conf. fence 21.7 ft

hackin hickory
1802 ft.

hackin beech
217 ft.

Survey line

To Ferguson's
House

S

Elbow Lane

Road Crossing
West of No. 2, M.P.

Line fence

Survey line

hackin Chestnut stump
on line

415 ft.

414 ft.

102.90 ft.

rect. offset
114.4 ft.

line fence
2.7 ft. south
of boundary.

hackin post
81 ft.

rect. offset
135.7 ft.
m. No. 2, M.P.

119.2 ft.

m.p. No. 2.

N

7

W

N

E

Survey Line

Stake on boundary

Kemblesville Road

1330.5 ft
fm. No. 2

rect. offset
119.93 ft.

24.70 ft

126.91 ft

19' 06" from T

1431.0 ft
fm. No. 2

Stake on boundary

Stake on boundary

rack in fence
165 ft. from stake

117.34 ft.

fence post on boundary

"Elbow Lane"

Cross Roads
West of No. 2 m.p.

1119.7 ft.

Roadway to farm house

2450.2'
fm. No. 2

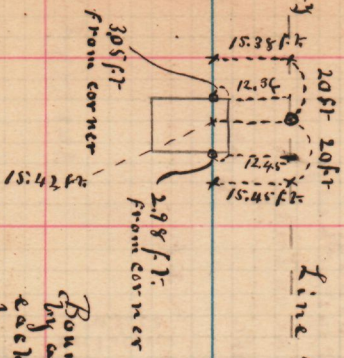
124.41 ft.
rect. off-set.

10

30430 ft
from No. 17 m. p.

Survey

Line 1/4th South of B.



Ferguson's House
east of Octavaro Creek

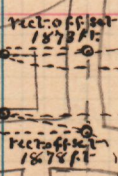
Boundary marked
by a row of tacks on
each side of the
house

Road to
Horseshoe
Farm

Boundary marked
by a row of tacks on
each side of the
church

5.18 ft. from
south-west corner.

4.15 ft. from
north-east corner.



1237.4 ft
from No. 21 m. p.

Mark 18.77 ft
at 315 from T

Mark 18.81 ft
at 300 from T

1208.5 ft
from off 21 m. p.

Survey Line
1/4th South of B.

At Octavaro
M.E. Church



N

Reynold's House

rect. offset 22.78 ft. Tack on window

36.6 ft

Stake 482.94 ft West of No 16.

rect. offset 22.77 ft

20 ft

Line fence 5 ft South.

W

Road 13 ft wide

Road Crossing at Reynolds House east of No 17 m. p.

Stone-Base of No 17

Survey Line 1 ft North of B.

N

Stake 376.2 ft from No 15

Tack in line 15.34 ft from stake

rect. offset 21.97 ft

48.30 ft

Tack in line 6.71 ft from stake

Stake on boundary 27.56 ft 37° 04' from L

Stake on boundary

Tack in post 70.5 ft from stake

Tack in post 49.5 ft from stake

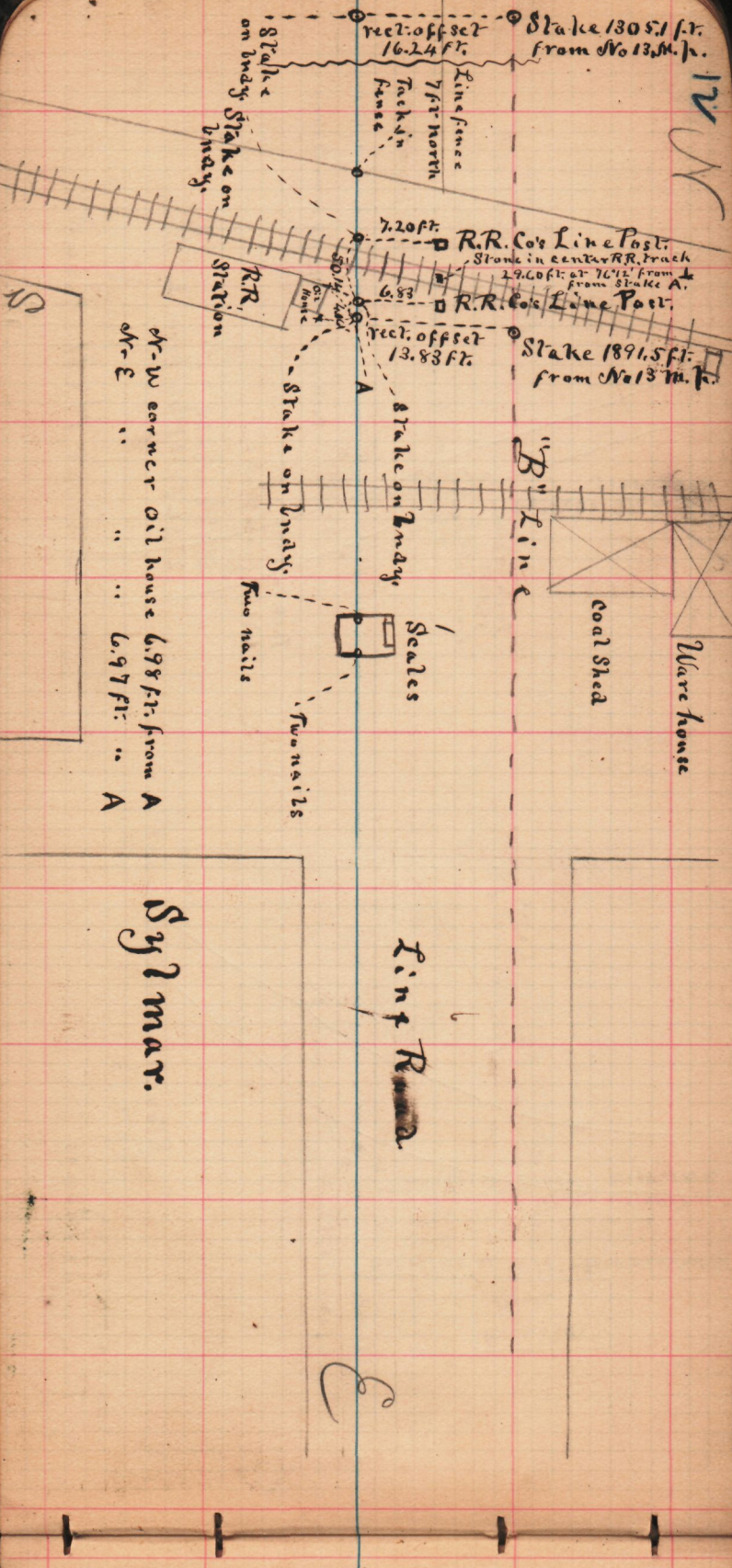
Helio Line 2 ft North of B.

Gar Hill Road.

S

E

12 W



Dr-W earner Oil house 6.98 ft. from A
 Dr-E 6.97 ft. from A

Sylvan

E

Nov. 6 1901

St. No 84

Back line (East) 0 00 00

Mont No 84 82 22 00

Top of Stone at L of S = $8^{\circ}52'$

Distance on slope 47.27 ft

measured from top of monument
to axis of instrument

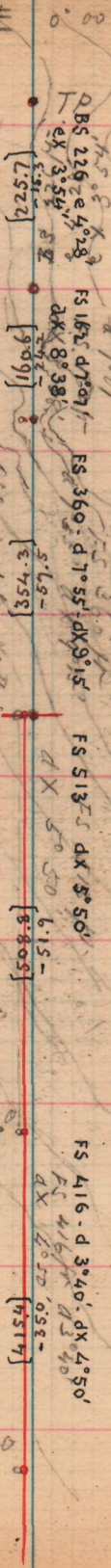
158 ft @ $12^{\circ}28'$

d X $13^{\circ}33'$

No 80 is 1.9 ft south of line

North

South



BS 226 - e 4° 28'
 dx 3° 54' 1/2
 [7.522]

FS 162 - d 7° 09'
 dx 8° 38'
 [9.091]

FS 360 - d 7° 55' - dx 9° 15'
 [3.453]

Rect. Offset 1 ft North

FS 513 - dx 5° 50'
 dx 50 50
 [8.805]

FS 416 - d 3° 40' - dx 4° 50'
 dx 40 50 0.93 -
 [7.517]

Large rocky point

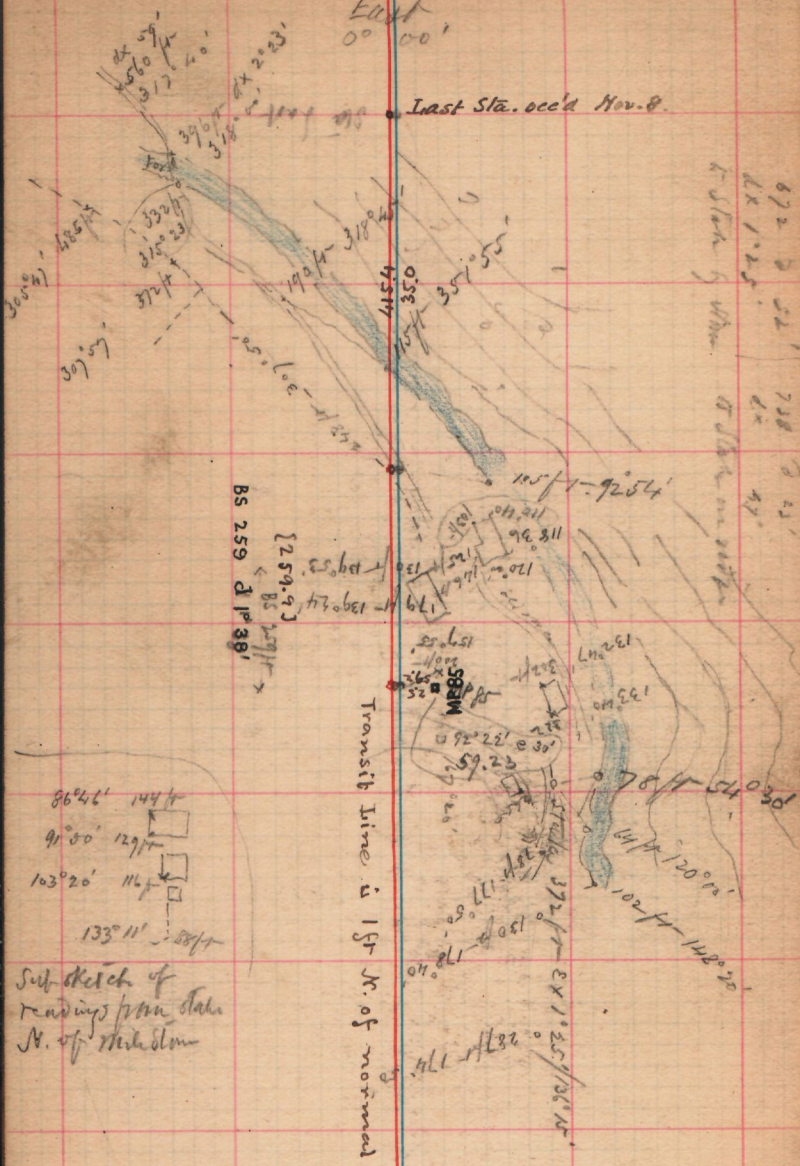
appear 1/2 way
 before large one

2nd L. 1/2

Nov. 13th 1954 A.M.

East
00° 00'

Tran. Sta. occ'd Nov. 8.



Sub sketch of readings from stake N. of milestone

Tran. line is 1st N. of nominal



Offset 2 ft. to North

Transit Line is 3 ft North of Normal

BS 229, dia 2° 0'

dx 16° 30'

dx 88° 48'

BS 84, dia 2° 50'

FS 238, ex 3° 2'

[514.5]

[214.5]

[84.9]

[238.3]

168 + 310

320 + 75° 20'

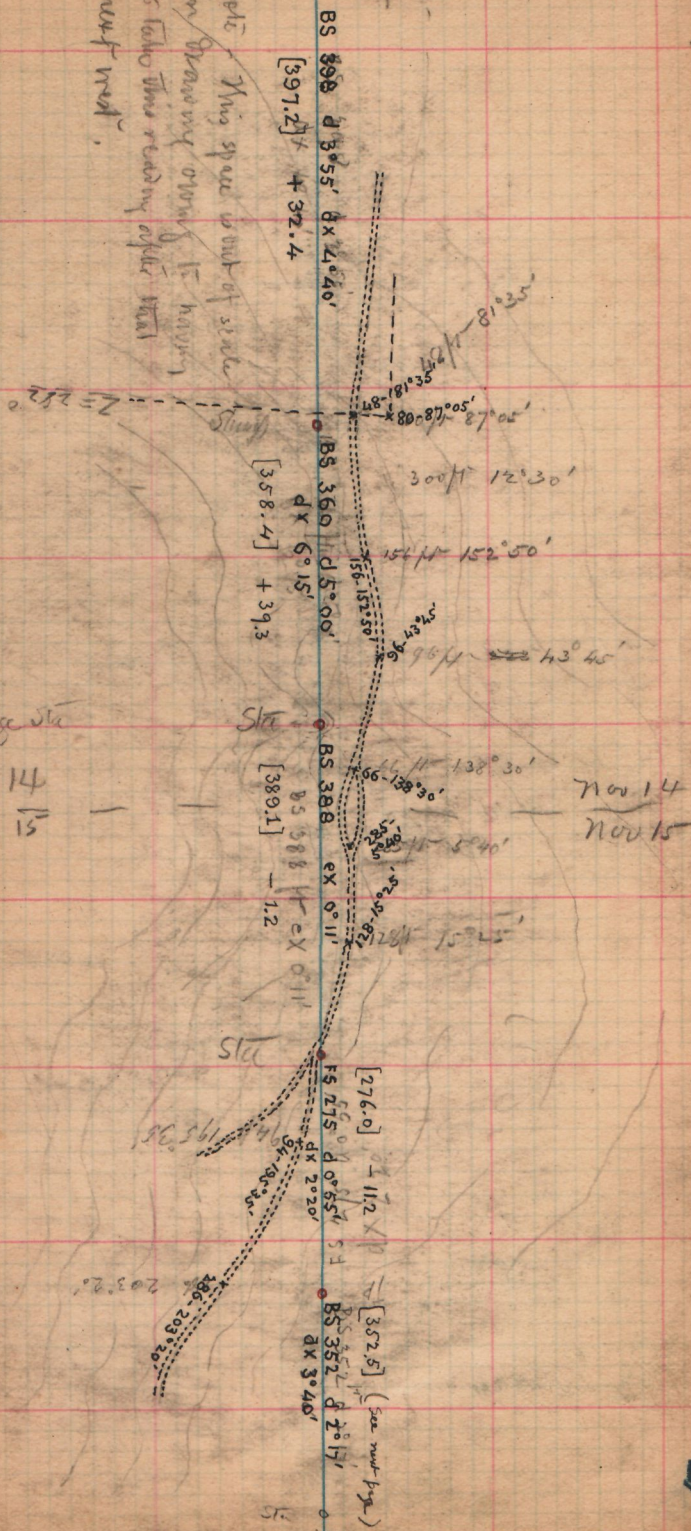
150 + 8° 40'

x 633 + 118° 40'

795 + 104° 20'

109 ft 140° 20'

Note This space out of scale on drawing owing to having to take time reading optic level staff



Nov 14
Nov 15

East 0° 00'

326° - 310'

[352.5]
BS 332.2 - d 217' - dx 3° 40'
magnetic N.S. 84° 15' E.
Mag. S. 84° 15' E.

Large rock 182 ft E. of Sta.

+ 22.6

290° 40' 20"
200-290° 40'

ROCKS

[479.8]
BS 483.1 - d 5° 25' - dx 6° 22.5'

+ 53.5

218-215° 40'
dx 13° 05' [208]
CX 13° 01'

330° 00'

280'

M.P. No 86
79 ft 24° 00'
94° 54'

98 PM

Depth 81.64 ft
slope 7° 36'
∴ p = 80.63 ft
b = + 6.91 ft

[225.7]
BS 229 - d 8° 00'

dx 30° 20' 11"
dx 10° 00'

[249.4]
BS 1257 - d 10° 37'

dx 12° 38'
dx 12° 38'

[263.0]
BS 2169 - d 6° 20'

dx 11° 15'

BS 1114
Level

dx 2° 55'

146 ft 180'

North

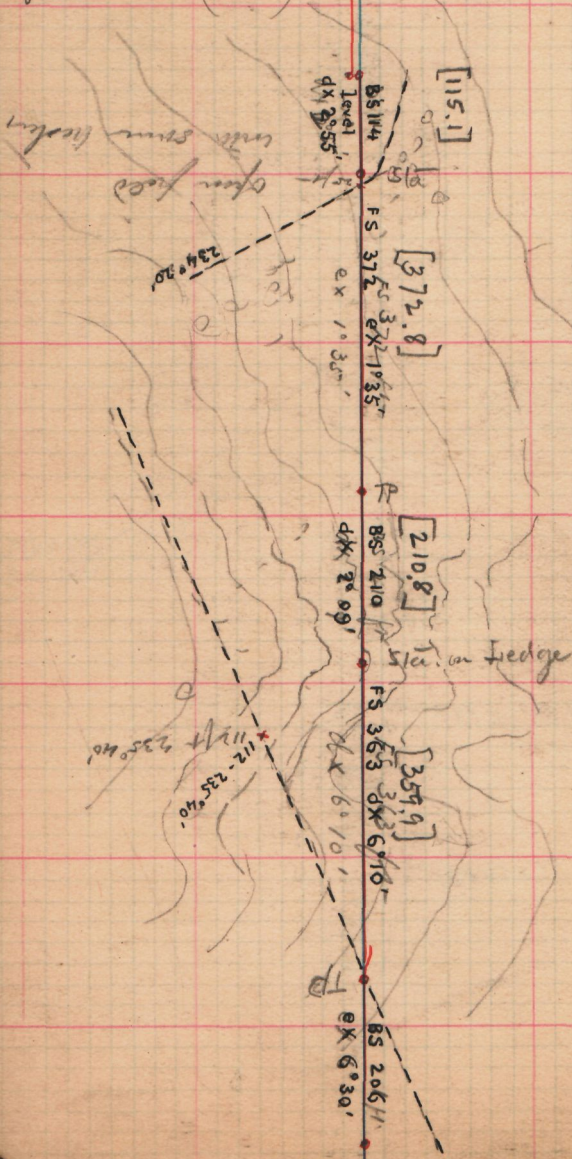
South

Nov. 18 P.M.

Began at station in open field on mountain top, having first set up signals E. of Gettysburg road and on wooded ridge between 84 & 85

To get in line with these had to move to South 2.5 ft of which one foot was known (as an offset previously) therefore the other 1.5 ft must be error of running.

Magnetic course (true) South $84^{\circ}35'$ East



BS 3045 ft ex 5°55' e 6°00' - 2 - 359°46'

3045 ft ex 5°55' this sight is from stake in next field W. of ploughed land.

[234.9]

BS 234 ft

dx 1°32'

Station on sloping ledge

[226.3]

FS 226 dx 3°20'

dx 3°20'

[227.7]

FS 227

SIX on West ledge



Point on ledge
227 ft dx 1°52'
Az. 183°06'

Prn ledge
227 ft 183°06'
dx 1°52'

[3013.8]

BS 3045 ft ex 5°55' from stake west of ploughed land
to point on ledge. Az. = 359°46'

Rough wooded mountain

MP 87
0° 00'

p=5386
b=-6.0

MP 87

2 83° 29' p=5386
b=-6.0
54.39 slope d 4° 52'

FS 210.5 d 4° 00'

dx 56.32' H
d 4° 00'

[210.6]

750 ft 317°

BS 568 ft. ex 7° 00'

BS 568 ft ex 7° 00'

[560.7]

Sta. (see opp. page)

750 ft 317°

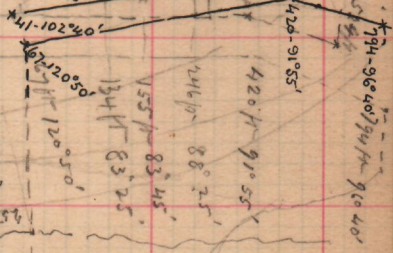
113-59.2 H 59°

134-83.25°

246-88.25°

426-91° 55'

794-96.40/794 H 91° 40'



FS 924 ex 2° 00'

FS 924 H
ex 2° 00'

[924.0]

dx 50.00' H
160.30'

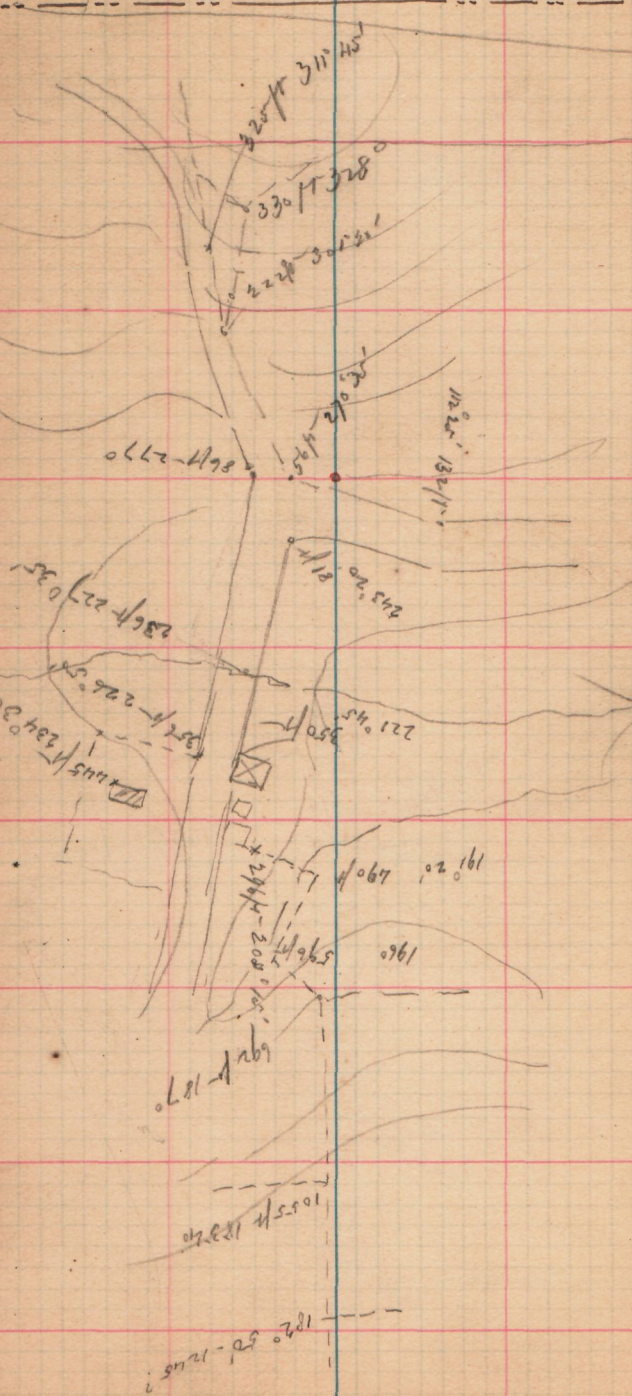
172° 55'

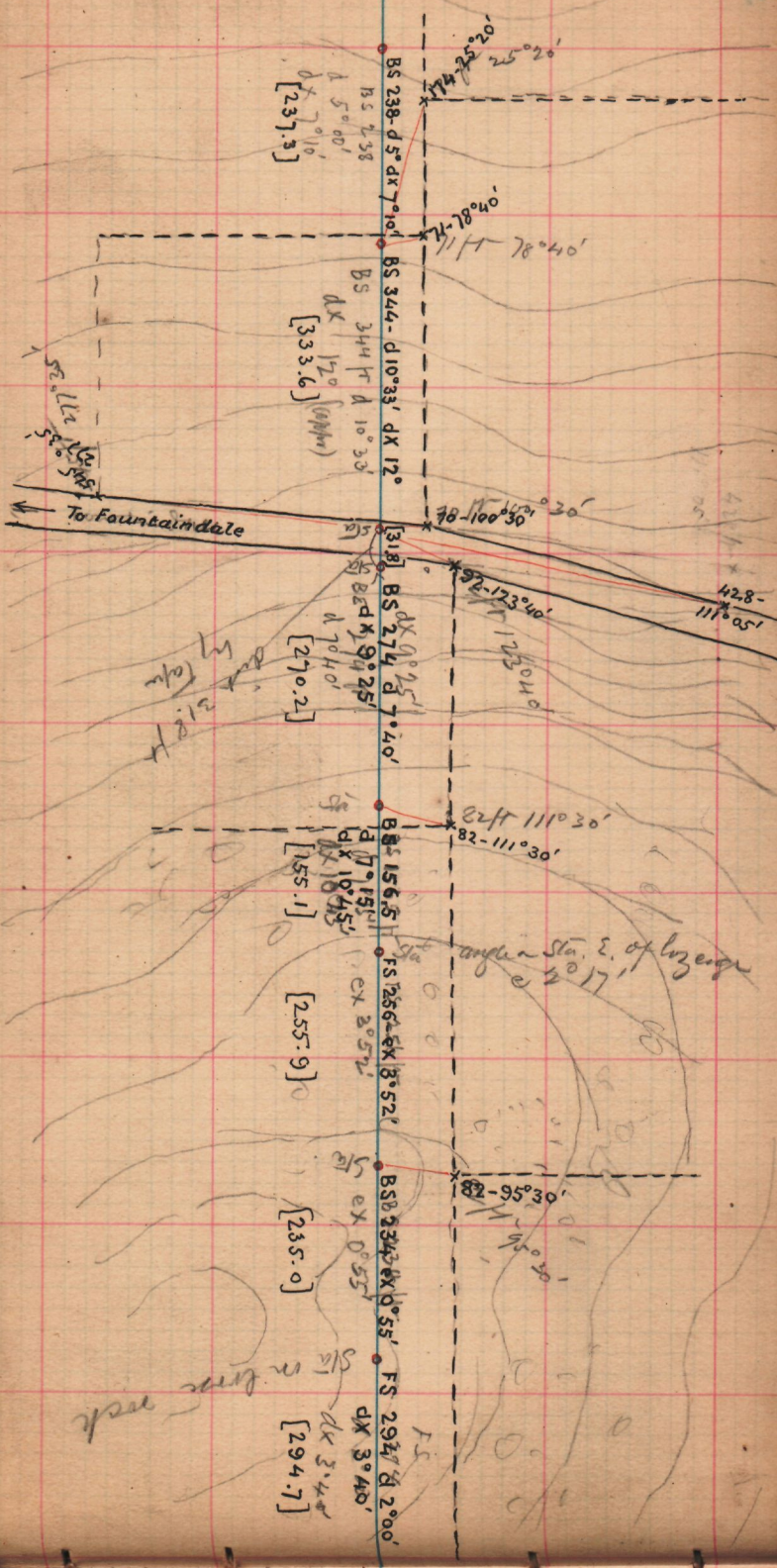
590'

Sub sketch of forks of road N.W. of m.P. 87

Sta in bluffs face

Sub sketch of road NW





Tree 3 marks

FS 319 DX 7°40'
[314.4]

00'

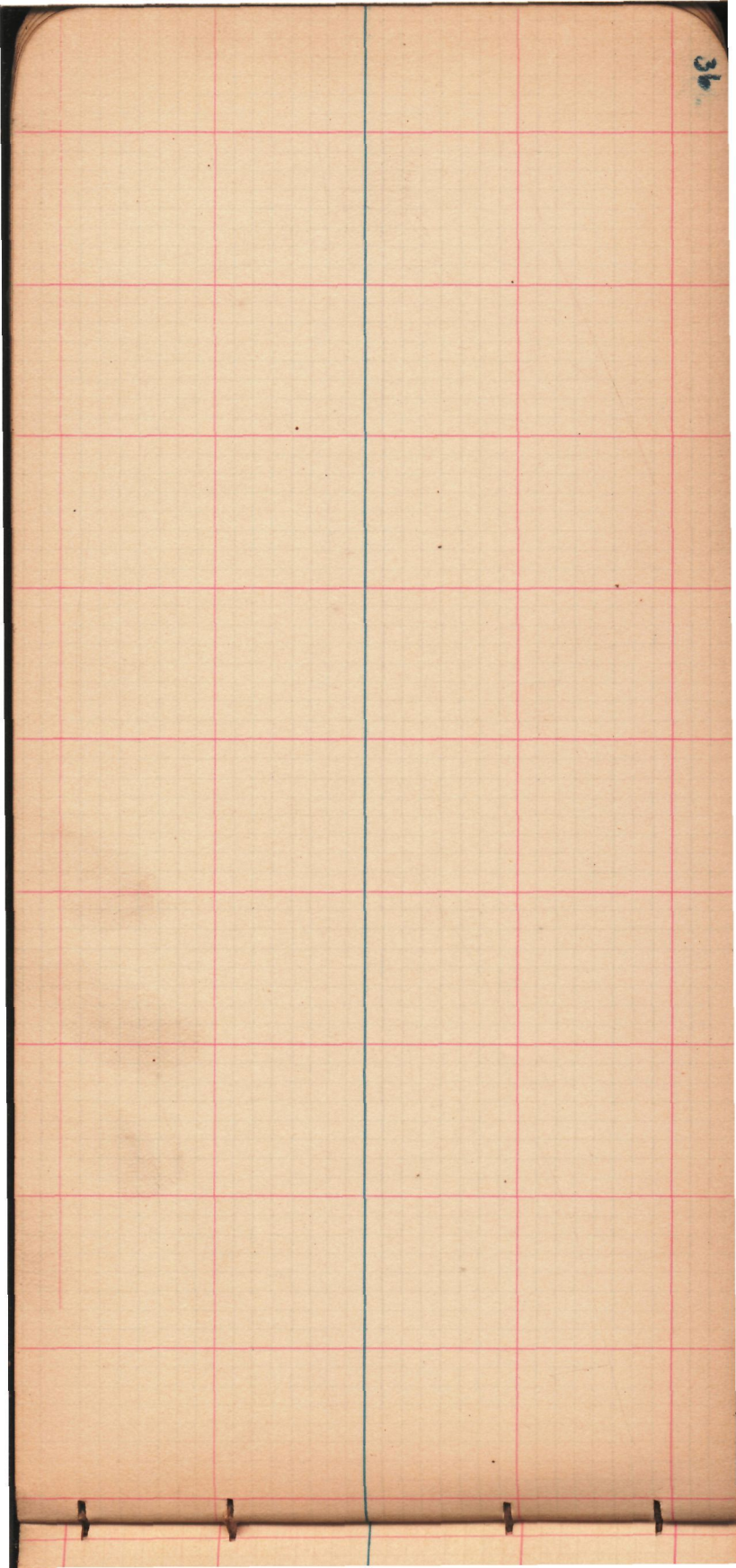
FS 319 DX 7°40'

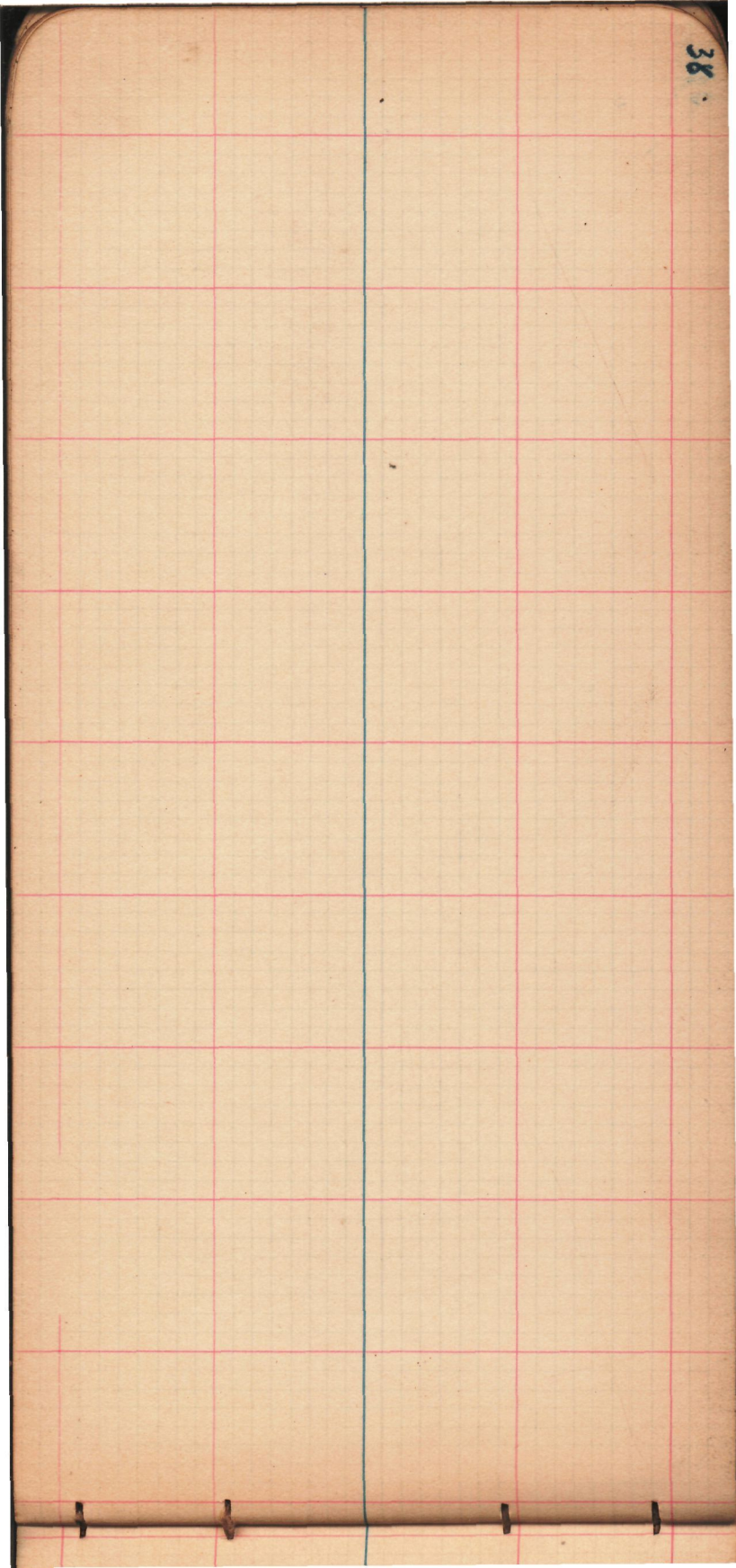
Tree 3 marks

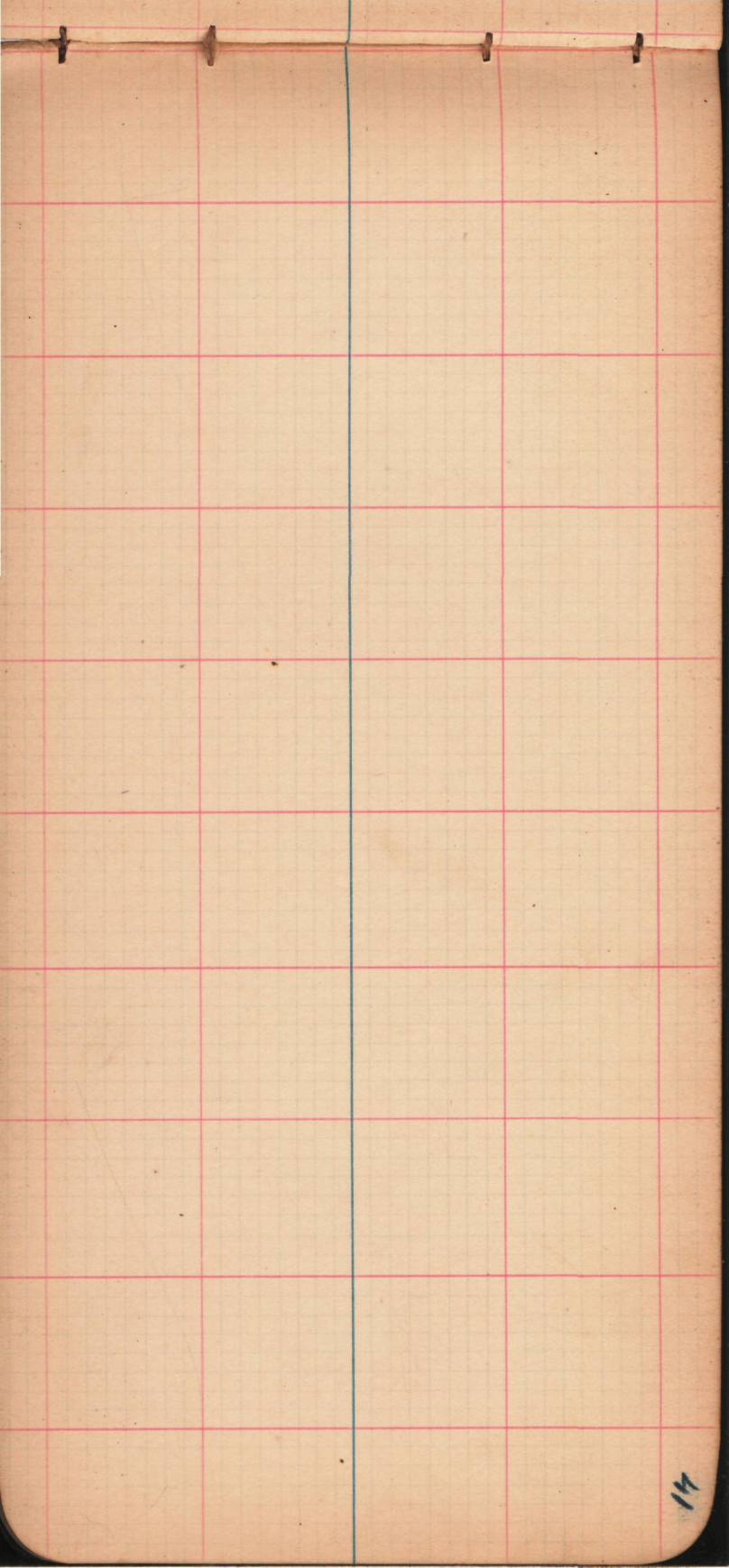
126.129° 139°

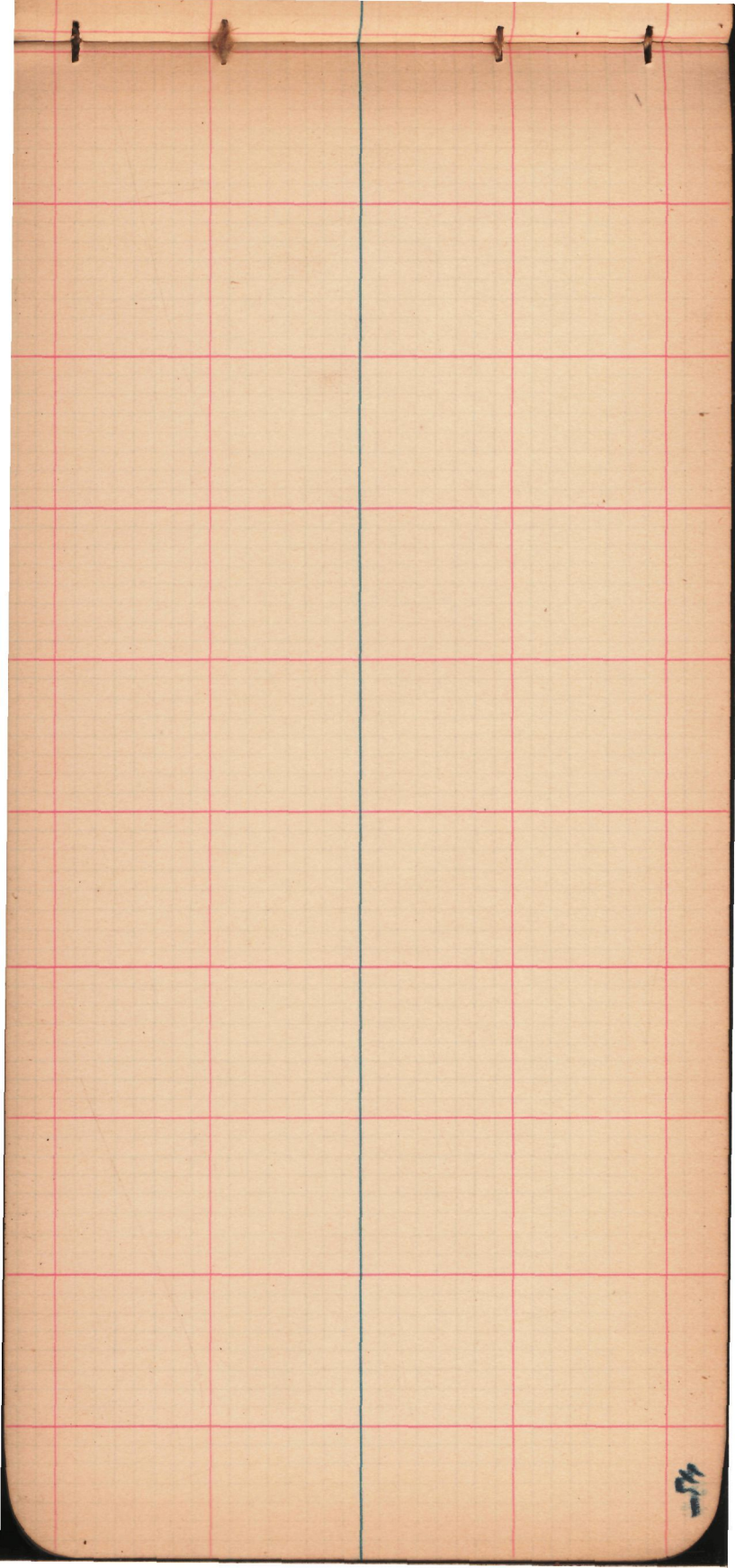
30

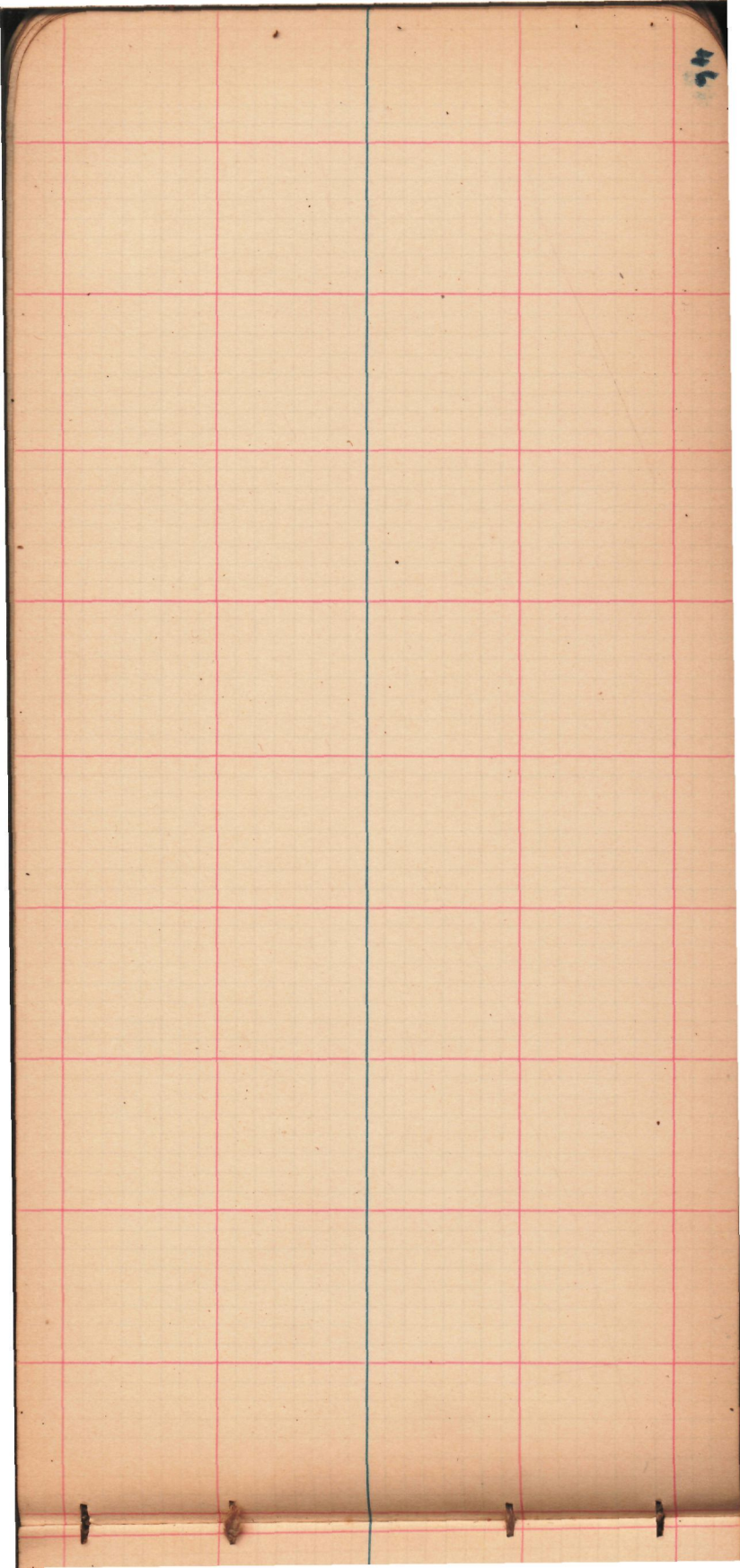
32

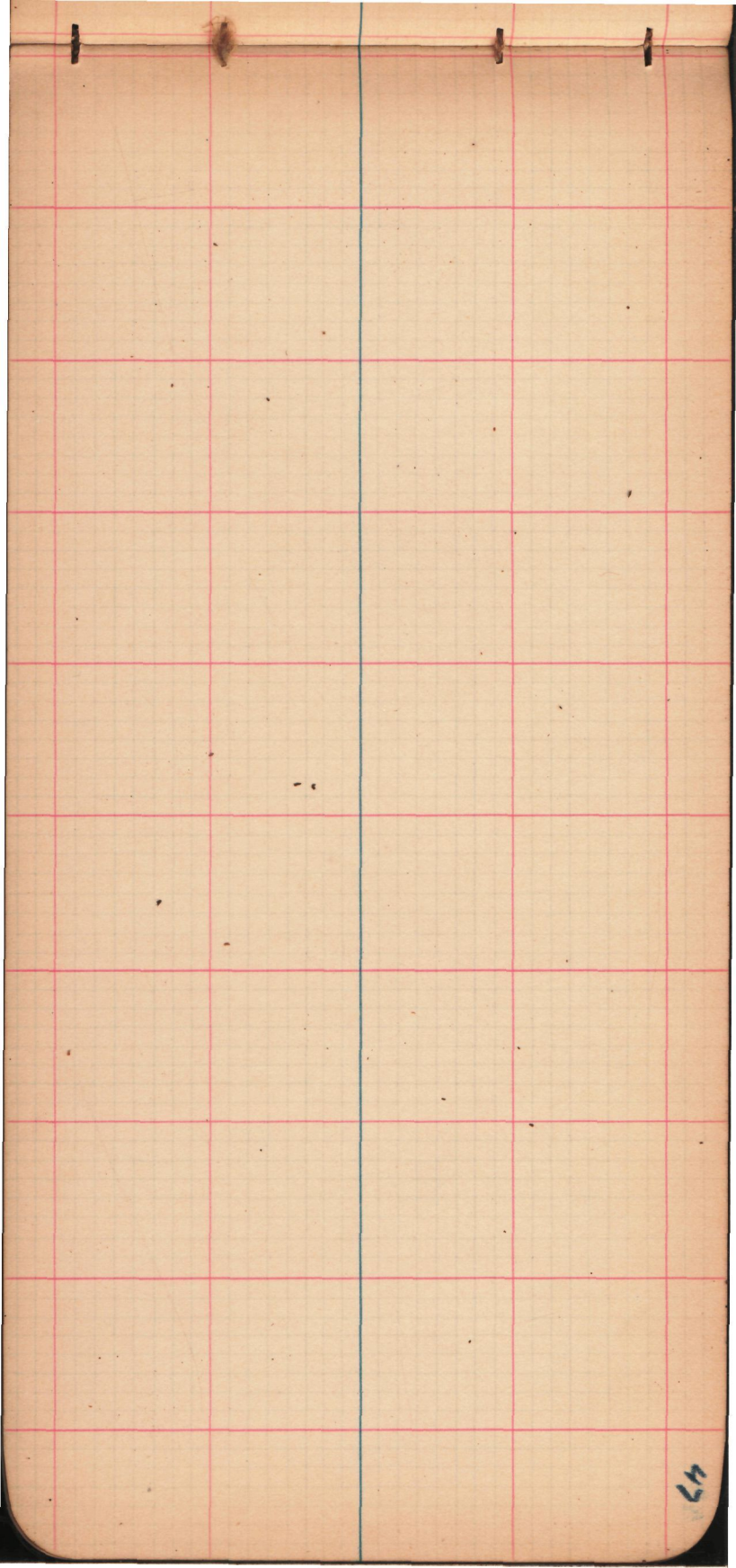


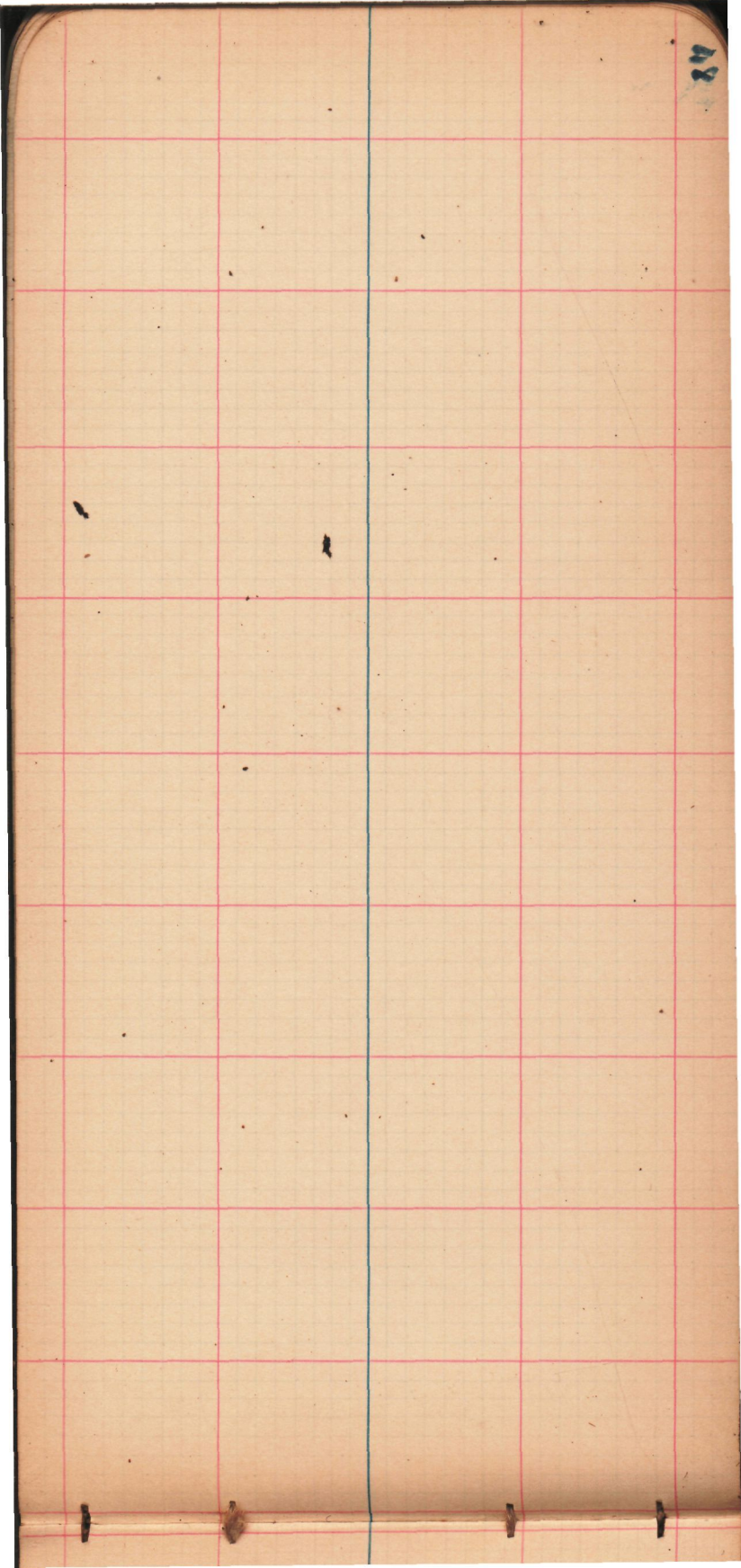


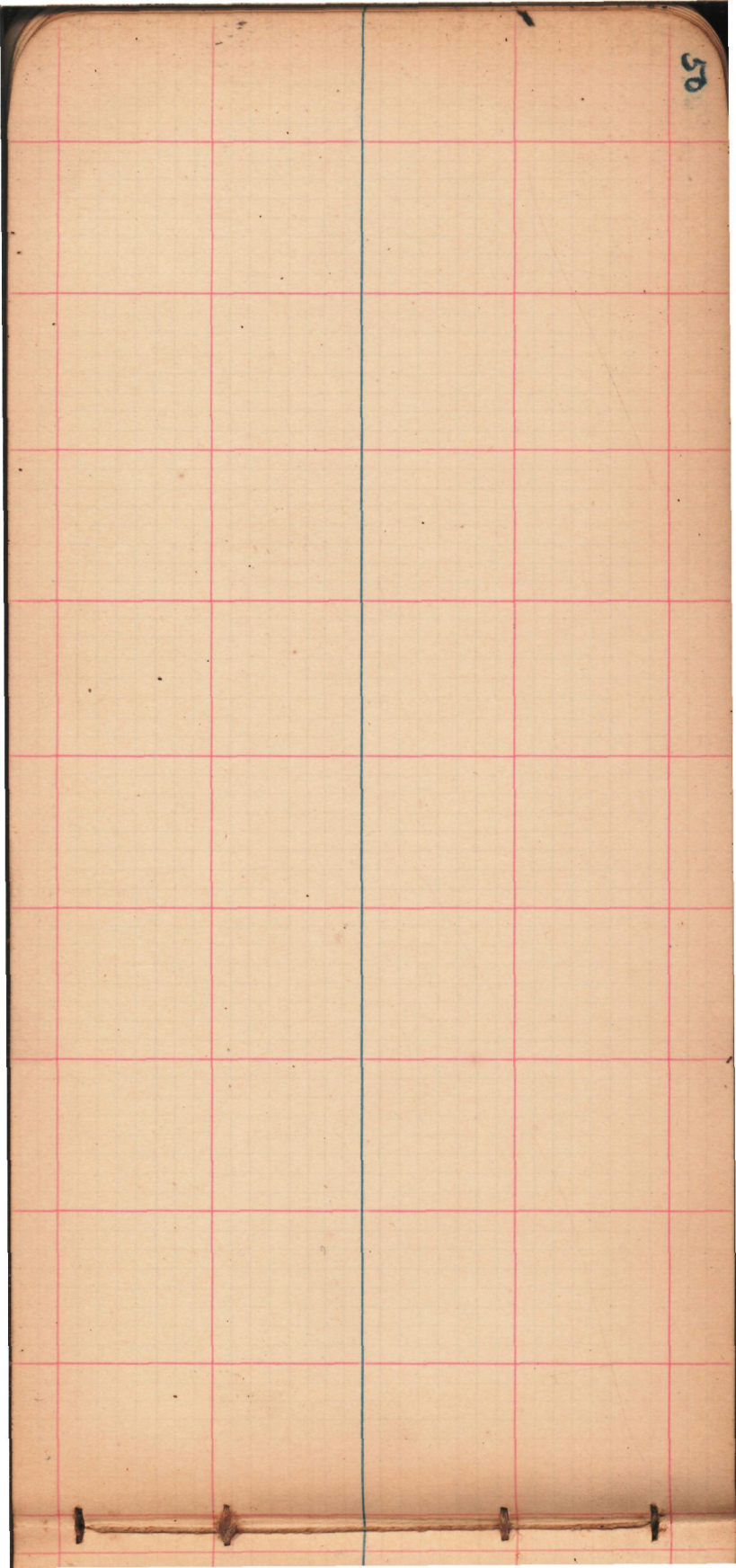


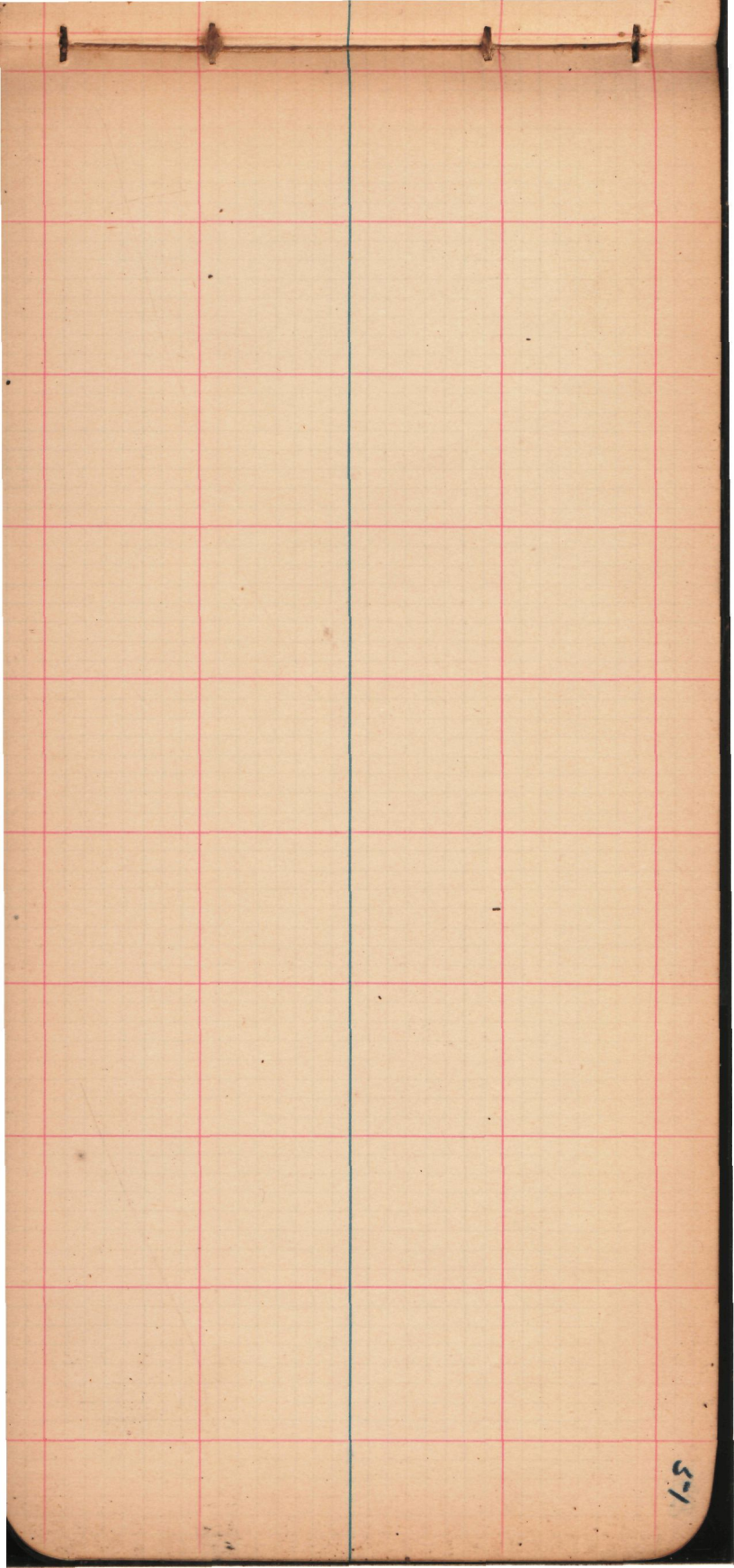












1192.6 ft.
offset 92 links at 90° to S. and put up
sighting pole

The above distance of 9192.6 ft
is from the transit stake on
Zucary Mt. to lozenges on Martin's

The monument on Zucary is
2.5 ft west of stake and this
must be deducted.

The lozenges are 40.9 ft east of the
monument and this must be
added

$$\begin{array}{r} 9192.6 \\ - 2.5 \\ \hline 9190.1 \end{array}$$

$$\begin{array}{r} 9190.1 \\ + 40.9 \\ \hline 9231.0 \end{array}$$

Oct 8 1902 am.

At Inasly mt. Transit station, nearly north of monument observed on hor. base at Martins mt

e 4° 31'

S. Target	N. Target	S. Target	N. Target
2. 175	17. 781	2. 213	17. 785
181	770	208	799
170	770	200	795
181	794	208	787
175	769	212	796
184	780	202	789
<u>2. 1777</u>	<u>17. 7773</u>	<u>2. 2072</u>	<u>17. 7918</u>
	2. 1777		2. 2072
	15. 5996		15. 5846

S. Target	N. Target	S. Target	N. Target
2. 190	17. 784	2. 220	17. 790
189	785	232	799
200	781	210	801
205	772	218	794
196	768	219	788
194	770	226	809
<u>2. 1957</u>	<u>17. 7767</u>	<u>2. 2208</u>	<u>17. 799</u>
	2. 1957		2. 2208
	15. 5810	15. 5846	15. 5782
	15. 5996	15. 5782	
	15. 5903	15. 5814	

S. Target	N. Target	S. Target	N. Target
2. 206	17. 805	2. 185	17. 793
214	801	200	780
215	801	202	809
205	801	201	798
209	789	194	812
200	802	200	810
<u>2. 2082</u>	<u>17. 7998</u>	<u>2. 197</u>	<u>17. 8003</u>
	15. 5916		15. 6033

S. Target	N. Target	S. Target	N. Target
2. 186	17. 794	2. 208	17. 802
197	787	200	800
200	794	200	799
195	780	201	795
199	786	199	794
197	785	195	794
<u>2. 1957</u>	<u>17. 7877</u>	<u>2. 2005</u>	<u>17. 7973</u>
	2. 1957		2. 2005
	15. 5920		15. 5968
	15. 5916		15. 6033
	15. 5918		15. 600

15. 5903
 15. 5918
 15. 5911

919.12 ft
 + 1.4 ft
 9192.6 ft

15. 5814
 15. 6000
 15. 5907
 15. 5911
 15. 5909

Sols Mt Oct 7 pm

Plans on horizontal base of 128.66 ft in mountain mt.

d 2° 06'

N. Target	S. Target	N.	S.
3. 630	16. 200	3. 753	16. 289
647	180	755	290
642	193	755	301
655	200	757	298
649	190	749	293
642	212	751	281
<u>3. 645</u>	<u>16. 196</u>		
	3 545		
	<u>12. 551</u>		

N. Target	S. Target	N.	S.
3. 726	16. 220	3. 759	16. 303
719	222	760	301
731	239	762	297
720	232	773	299
731	235	761	301
728	241	766	301

4. 244	16. 800	4. 240	16. 800
248	802	249	801
253	805	245	805
254	809	244	805
245	800	247	809
242	804	245	802

4. 247	16. 805	4. 255	16. 804
249	810	248	801
245	800	255	809
246	804	256	810
248	802	256	805
243	800	258	800

6

At Warner Ridge

From station on transit line
monument in stone mound

bearing s. of east $78^{\circ} 35'$

dist. on slope of $d 21^{\circ} 00' = 68.46$ ft

or direct dist. on horizontal $= 63.91$ "

Rect. offset to S'd $= 62.65$ "

Dist. to S'd of Sta. $= 12.65$ "

Note for Evitts Mountain

	Appx. dist mi.	offset for 1" ft
Hazen ridge	0.9	1.35 ft
Turn of road	1.9	2.85
Pine ridge	2.16	3.24
Centenary ridge	2.55	3.83
Valley ridge	3.65	5.33
Mills mountain	4.60	6.90

At Evitts Mountain

From Sta. on W. side of ridge the
monument bears $119^{\circ} 57' 15''$
dist. 160.35 ft

\therefore the monument is 138.93 ft South
and 80.06 " west of station

At Warriner Ridge
Oct 3 pm

Read distance to stake on 1st ridge E. of
Chanceyville road and a little W. of logzue
about 2600 feet
D 6' 08"

u	L	u	L
7. 455	12. 789	7. 389	12. 732
446	792	395	731
446	795	396	724
439	788	396	728
442	793	390	722
452	797	387	729
<u>7. 4467</u>	<u>12. 7923</u>	<u>7. 3922</u>	<u>12. 7272</u>
	7. 4467		7. 3922
	5. 3456		5. 3355

u	L	u	L
7. 423	12. 790	7. 381	12. 722
422	789	379	723
430	789	381	721
421	790	383	722
422	798	378	729
432	796	381	725
<u>7. 425</u>	<u>12. 792</u>	<u>7. 3805</u>	<u>12. 7237</u>
5. 3456	7. 425	5. 3355	7. 3805
5. 3670	5. 367	5. 3432	5. 3432
5. 3563	5. 3478	5. 3393	

u	L	u	L
7. 525	12. 866	7. 535	12. 879
529	869	530	869
525	862	529	875
530	860	525	870
522	865	529	876
521	867	545	878
<u>7. 5253</u>	<u>12. 8648</u>	<u>7. 5322</u>	<u>12. 8745</u>
	7. 5253		7. 5322
	5. 3395		5. 3423

u	L	u	L
7. 526	12. 865	7. 537	12. 876
535	862	528	874
522	859	533	875
531	864	539	875
535	865	532	870
535	869	522	873
<u>7. 5307</u>	<u>12. 8640</u>	<u>7. 5318</u>	<u>12. 8738</u>
5. 3395	7. 5307	5. 3423	7. 5318
5. 3253	5. 3333	5. 3420	5. 3420
5. 3364	5. 3393	5. 3421	

2500.1 + 41.5 = 2541.5

St. Martin's Mountain
Oct 3 1888

From W. Stake measured S at 90°

83.11
45.55
128.66

This is 1030 (log 1.01281) times the
usual vertical base of 12.492 ft

The old stake is east of this one

40.75 ft

Put up two lozenges 40.5 ft east of station on
line at right angles to main transit line,
the northern one being in that line and the
southern 128.66 ft south of same

slowed theodolite to stake in pipe line gap 100 ft east
of main station or 59.5 ft east of lozenges and
read distance to rod held near next monument east
about 2800 ft 28.64 ft west of transit stake
d 11° 45'

Upper Angle	Lower Angle	U.	L
7.480	12.471	7.489	12.501
492	471	519	509
491	470	518	503
487	473	524	501
490	471	519	509
485	467	515	513
<u>7.4875</u>	<u>12.4705</u>	<u>7.514</u>	<u>12.506</u>
U	L	U	L
	7.4875		7.514
	4.9830		4.9912

7.471	12.461	7.502	12.508
472	471	512	522
489	469	500	516
485	471	508	514
488	485	500	519
488	489	518	518
<u>7.4822</u>	<u>12.4743</u>	<u>7.5067</u>	<u>12.5162</u>
	7.4822		7.5067
	4.9921		5.0095
	4.9830		4.9920

2686.9
+ 1.4
+ 100.4
2788.7

4.9876

4.9876
5.0008
4.9942

5.0008

Mount to rod station

At station in old field east of Tussey Mt.
 sighted back to pt on summit of Dry Ridge.
 e 1°05'

U.	L.	U.	L.
7644	11786	7706	11845
656	779	7701	849
658	791	710	842
660	781	709	847
655	789	714	844
654	791	714	849
<u>7.6545</u>	<u>11.7862</u>	<u>7.709</u>	<u>11.846</u>
	<u>7.6545</u>		<u>7.709</u>
	<u>4.1317</u>		<u>4.137</u>
U.	L.	U.	L.
7685	11794	7734	11850
679	791	792	859
690	802	744	849
694	798	740	851
694	799	742	852
694	800	736	851
<u>7.6907</u>	<u>11.7972</u>	<u>7.738</u>	<u>11.852</u>
	<u>7.6907</u>		<u>7.738</u>
	<u>4.1065</u>		<u>4.114</u>
	<u>4.1317</u>		<u>4.137</u>
	<u>6.1191</u>		<u>4.1255</u>
3394.9 ft		mean	
+ 1.4		4.1223	
<u>3396.3</u>			

From a point N. of Tussey Mt monument
 angle to monument from S. line = 83.02'
 or 2.92 ft E + 23.86 ft S. dist = 24.04 ft
 road distance back to stake last occupied
 thus:

reduced dist: 791.2	distance = 806.5 ft
+ 1.4	slope = d 7°55'
<u>792.6</u>	
- 2.9	
<u>789.7</u>	

From stake in main transect line this
 stake bears
 or 4.76 ft W. + 71.67 ft S. dist = 71.83 ft
 and the monument bears
 93° 48'
 71.83 ft
 91° 30'
 Dist. (on slope of d 0°20') = 95.65 ft
 or 2.58 ft W. + 95.62 ft S.

194
 05
 02
 83

P.M.

5 Blain's stake on Middle Ridge —
 looking west at rd 4.35 ft E. of Blain's stake
 + considering S. of same (on lower ridge
 between middle & Dry Ridges
 d 10° 16'

U.	L	U	L
6 672	13.102	6673	13.121
669	100	669	.126
669	110	690	.122
670	104	682	.120
666	101	680	.100
667	104	691	100
<u>6.6688</u>	<u>13.1035</u>	<u>6.6808</u>	<u>13.1148</u>
	6.6688		6.6808
	6.4347		6.4340

2174.4
 + 44.4
 2178.8

U	L	U	L
6 658	13.085	6.662	13.106
670	88	669	.079
658	114	667	.081
692	087	661	.085
689	102	682	.173
681	113	685	196
<u>6.6747</u>	<u>13.0982</u>	<u>6.671</u>	<u>13.1367</u>
	6.6747		6.671
	6.4235		6.4657
			6.4340
			6.4498

2173.0 ft
 + 4.4 ft
 2177.4 ft

On Dry Ridge set up at pt about 33 ft S. of
 Blain's stake and read distance back to point S. of
 his stake on last ridge just read to
 rd. dist 919.6
 + 1.4
 921.0
 Distance read = 920.5 ft
 Slope = d 10° 44'

From the same station looking N. to a pt on the
 summit of Dry Ridge, read as follows
 rd. dist. 3768
 + 1.4
 378.2
 Distance = 378 ft
 Slope = e 3° 14'

Obs from stake in field W. of Warrior Ridge
 near Geo Roland's Ho on road in middle ridge
 held 67.3 ft east of stake cut by Mr. Plateau
 e 4° 53'

U.	L.		
5.521	14.269	5.509	14.285
509	270	505	280
529	283	522	290
532	286	503	291
521	279	520	278
523	282	500	279
<u>5.5175</u>	<u>14.2782</u>	<u>5.510</u>	<u>14.284</u>
	5.5175		5.510
	<u>8.761</u>		<u>8.774</u>

U.	L.		
5.539	14.289	5.502	14.285
530	288	518	290
518	293	528	290
511	288	529	280
527	289	525	295
513	287	522	295
<u>5.523</u>	<u>14.289</u>	<u>5.521</u>	<u>14.289</u>
4-	5.523		5.521
1585.3	8.766		8.768
+ 1.4	8.761		8.774
<u>1586.7</u>	8.7635		8.771
+ 67.3			8.763
<u>1654.0</u>			<u>8.767</u>

Warrior Ridge Sta. ^{mean}

looking W. to last station
 L. N. 4° 40'

U.	L.	U.	L.
7.966	12.224	8.183	12.489
960	230	189	487
950	256	190	502
956	248	207	510
959	221	188	497
961	240	196	512
<u>7.9587</u>	<u>12.2365</u>	<u>8.1913</u>	<u>12.4995</u>
	7.9587		8.1913
	<u>4.2778</u>		<u>4.3082</u>

U.	L.	U.	L.
7.956	12.239	8.217	12.520
942	245	187	519
935	220	200	495
931	219	199	499
923	229	201	505
920	213	210	501
<u>7.9348</u>	<u>12.2275</u>	<u>8.2023</u>	<u>12.5065</u>
	7.9348		8.2023
	<u>4.2927</u>		<u>4.3042</u>
	4.2778		4.3082
	<u>4.2852</u>		<u>4.3062</u>

3237.6 ft
 + 1.4
 3239.0

mean
 4.2957

vert. base = 12.492

c = 1.41

cos slope _____
x 2

cos 2 ..

log 14000 4.146128
v/v

colog. Evms

1 turn of screw = 3' 09.82