

854

S x

1901

H x

Treasury Department,

U. S. COAST AND GEODETIC SURVEY,

O. H. Tittmann, Superintendent.

55825

States: Pa. - Md.

SKETCHBOOK.

ABSTRACT OF CONTENTS:

- Mason and Dixon Line.
 1) Micrometric distance measures.
 Topographic sketches, etc., on
 certain part of Mason & Dixon
 Line, Cecil Co. Md., Chester and
 Lancaster Counties, Pa.
 2) Observations for Azimuth at Algonk
 farm near Md. R. 9 pp. 45-50

1901

CHIEF OF PARTY:

W. C. Hodges

19 Vols.

Vol. 1

10	S	3.64
11	N	3.0-
12	N	5.95-

H. L. Woodrow Carowage

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

States: *Pa. — Md.*

SKETCHBOOK.

ABSTRACT OF CONTENTS:

Mason and Dixon Line,

1) *Sketches and distance measures*
east of the Susquehanna River.

2) *Observations for Azimuth*
(Solar) at Algard's farm, near
Mile Post No 9. pp. 45-50

1901

CHIEF OF PARTY:

W. C. Hodgkins

Vols.

Vol. 1

Scale adapted for field sketches
25 ft to the small squares (blue)
or 200 ft to the large squares (red lines)

April 17th 1901

At Alford Sta.

Sylmar 10. 279
281
295
289
270
298

Rocky Pt 10 230
215
195
207
246
230

Ploughed field 10 230
260
263
271
251
220

Sylmar to Crown Church 0 00 00 13
72 37 20
6 75 42 30 30
6 59 20 20
72° 37' 08"

Mount Rocky to Church 0 00 00 10
72 37 20
75 43 30 32
59 30 40
72° 37' 17"

Four mile stone 88.18 ft from stake
South of it

At stake about 100 m W, on rd

Line East reads 255 34 10

4 m. S. (approx) 234 03 20

21 30 50

At stake S. of 4 m. P.

West Line 0 00 00

4 m. P. (approx) 93 23 00

$$p = \frac{87.62 \text{ ft}}{88.03} \quad b(\text{west}) = \frac{3.76 \text{ ft}}{5.2}$$

April 23rd pm.

63

Measured Base line on R.R.
below town.

Laid off 1000 ft to Northward
and on return measure over run
0.018 ft i.e. original space is
999.982 on 2nd measure

1000
999.991 mean

Put in stakes abreast of ter-
minal points, making a cor-
rection of 0.009 at N.E. end
to complete the 1000 foot base

Also put in an intermediate
stake abreast of 500 ft mark.

All of these stakes are 8.5 ft
from the centre line of the rail
(N.E. rail of main track) on
which the measurement was
made.

April 25th - Am.

Tried Transit No 145 on
R.R. base line to get space
subtended by distance wires,
Constant to be added to
all measures = 1.20 ft

Space subtended by outer wires
at 500 ft or by centre + one
outer at 1000 ft = 5.28 ft

Offset to North (east
of 15 mile post) { ^{ft} 1.997
in 0.609

1.995
.608

Made new mark at ^{ft} 2.000

April 30th 1901

4

Distance to Milestone No 8 = 46.25^{fr}

Angle from Stone to East Line 92° 47' 40"

East 0.02 S. of line.

May 1st 1901

After resetting stone 46.30

∠ from W. line to stone 86° 50'

$p = 46.23$ $b(\text{east}) = 2.56$

Stone ahead to M. St. No 7 58.75

W. Line to mile stone No 7 89° 23' 20"

$p = 58.75$ $b(\text{east}) = 0.63$

May 2 1901
South of No 6 (Louisa Miller farm)

Stone to East line

$92^{\circ} 50' 20''$

Distance

64.20

$p = 64.12$

$b(\text{east}) = 3.18$

South of No 5 (Maple Grove farm)

W. line to Stone

$105^{\circ} 56' 20''$

Distance

77.3

$p = 74.33$

$b(\text{west}) = 21.23$

S.W. of No 3 - Mile Stone

Line west (Lewisville)

$0^{\circ} 00' 00''$

Post No 3

$125^{\circ} 32' 40''$

$p = 101.7$

Dist bet Station

70.5

South of No 3

W. Line (Lewisville)

$0^{\circ} 00' 00''$

Post No 3

$91^{\circ} 11' 05''$

Dist

101.8

$p = 101.7$

$b(\text{west}) = 2.18$

May 3rd 1901
At Station S.W. of No 2 well post
from W. Line (Lewisville)

to Stone No 2 $\angle 136^{\circ} 11' 30''$
Distance from Station near road S.W.
of No 2 to Station S. of same

48.35
71.68
120.03

Measured distance from
Station South to Stone No 2

50.02
34.43
30.33
114.78

Angle from W. Line (Lewisville)
to Stone No 2

89 46 00

$p = 114.74$ $b(\text{east}) = 0.47$ p

At Station S. of No 1 Stone

Angle from No 1 Stone
to East Line

91° 21' 20"

Distance

49.93
50.1
35.05
135.08

$p = 135.04$ $b(\text{east}) = 3.2$ p.

May 6th 1901

P.M.

Fair warm, N. E. wind.

On R.R. base line (1000 ft) near
Rising Sun Mtd. $d = 0^{\circ} 15'$

Observations for micrometer value
from South end of base, instrument
being at up 1.41 feet S. of terminus,
this being constant correction c , additive
vertical base = 12.492 feet

Upper T.	Lower T.	Upper	Lower
3.307	16.956	3.776	17.364
303	940	771	369
303	952	779	351
315	953	766	355
329	949	772	358
337	959	772	368
<u>3.316</u>	<u>16.952</u>	<u>3.773</u>	<u>17.360</u>
	3.316		3.773
	13.636		13.587

Lower	Upper	Lower	Upper
17.185	3.631	17.351	3.771
171	625		772
186	619	345	765
191	618	345	759
200	620	350	772
200	623	358	759
<u>17.189</u>	<u>3.623</u>	<u>17.350</u>	<u>3.766</u>
3.623		3.766	
13.566		13.584	
13.636		13.587	
13.601		13.585	
		13.601	
		13.593	

h

Upper	Lower	Upper	Lower
3.850	17.458	3.208	16.809
.850	.461	.204	.791
.840	.470	.209	.801
.851	.480	.215	.799
.852	.488	.220	.802
.859	.481	.222	.800

3.850 [✓]	17.473 [✓]	3.213 [✓]	16.800 [✓]
	3.850 [✓]		3.218 [✓]
	13.623 [✓]		13.587 [✓]

Lower	Upper	Lower	Upper
17.482	3.923	16.810	3.251
.500	.908	.820	.251
.498	.912	.815	.257
.491	.931	.811	.249
.484	.925	.821	.247
.489	.931	.821	.248
17.491 [✓]	3.922 [✓]	16.816 [✓]	3.251 [✓]
3.922		3.251	
13.569 [✓]		13.565 [✓]	
13.623 [✓]	13.596 [✓]	13.587	13.576
			13.596 [✓]
			13.586

4.10 p.m.

Upper	Lower	Upper	Lower
4.350	17.982	4.269	17.834
.355	.970	.269	.837
.351	.981	.263	.831
.351	.991	.249	.838
.370	.997	.263	.840
.369	.999	.258	.835
4.358 [✓]	17.987 [✓]	4.262 [✓]	17.836 [✓]
	4.358		4.262
	13.629 [✓]		13.574 [✓]
	13.629 [✓]		

Lower	upper	Lower	upper
18.006	4.431	17.826	4.229
.004	.434	.831	.217
.005	.436	.839	.225
.015	.432	.833	.211
.000	.437	.831	.221
.006	.435	.819	.219

18.006 [✓]	4.434 [✓]	17.830 [✓]	4.220 [✓]
4.434		4.220	
13.572 [✓]		13.610 [✓]	
13.629	13.600 [✓]	13.574	13.592 [✓]
			13.600 [✓]
			13.596 [✓]

upper	Lower	upper	Lower
2.205	15.782	2.270	15.841
.201	.782	.270	.835
.205	.775	.264	.850
.200	.779	.265	.840
.208	.779	.263	.844
.204	.774	.269	.849
2.204 [✓]	15.778 [✓]	2.267 [✓]	15.843 [✓]
	2.204		2.267
	13.574 [✓]		13.576 [✓]

Lower	upper	Lower	upper
15.788	2.213	15.834	2.309
.779	.218	.847	.308
.785	.202	.858	.308
.784	.201	.852	.311
.789	.199	.851	.310
.781	.204	.853	.316
15.784 [✓]	2.206 [✓]	15.852 [✓]	2.310 [✓]
2.206		2.310	
13.578 [✓]		13.542 [✓]	
13.574	13.576 [✓]	13.576	13.559 [✓]
			13.576
			13.568 [✓]

(3000)

Upper	Lower	Upper	Lower
3.520	17.045	3.473	17.026
.513	.057	.461	.032
.504	.045	.465	.032
.483	.060	.461	.031
.489	.054	.461	.020
.477	.054	.468	.030
3.498	17.052	3.465	17.029
	<u>3.498</u>		<u>3.465</u>
	13.554		13.564

Lower	Upper	Lower	Upper
17.065	3.469	17.030	3.481
.054	.468	.029	.484
.051	.454	.030	.487
.043	.453	.034	.488
.045	.466	.030	.477
.049	.456	.035	.475
17.051	3.461	17.031	3.482
<u>3.461</u>		<u>3.482</u>	
13.590	13.572	13.549	13.556
13.554		13.564	<u>13.572</u>
			13.564

Upper	Lower	Upper	Lower
3.200	16.736	3.188	16.745
.191	.739	.193	.752
.199	.749	.189	.749
.201	.742	.189	.749
.191	.741	.199	.754
.182	.738	.181	.757
3.194	16.741	3.190	16.751
	<u>3.194</u>		<u>3.190</u>
	13.547		13.561

Lower	Upper	Lower	Upper
16.739	3.188	16.751	3.203
.741	.180	.756	.197
.746	.183	.753	.198
.745	.178	.754	.197
.746	.172	.760	.190
.745	.182	.757	.209

16.744	3.181	16.755	3.199
3.181		3.199	
13.563		13.556	13.559
13.547	13.555	13.561	13.555
			13.557

Upper	Lower	Upper	Lower
3.098	16.661	3.110	16.661
.102	.667	.118	.669
.101	.658	.103	.680
.102	.655	.111	.675
.100	.653	.120	.674
.093	.652	.106	.672
3.099	16.658	3.111	16.672
	3.099		3.111
	13.559		13.561

Lower	Upper	Lower	Upper
16.651	3.108	16.665	3.129
.651	.091	.665	.128
.661	.098	.675	.122
.650	.100	.671	.125
.653	.098	.678	.133
.654	.098	.673	.121
16.653	3.098	16.671	3.126
3.098		3.126	
13.555		13.545	13.553
13.559	13.557	13.561	13.557
			13.555

General Mean = 13.574

5.30 pm

At Station South of milepost
No 17

Angle from No 17 to	83 17
East line (40 ft South of 1 st)	96° 43'
Distance	18.03 ft

on line west of No 17 found
that line would strike trees and
church further west

Therefore set off 15.0 feet to S. & E.
on line at angles to L
East line to offset station

56 17 55-

Angle from E line to
reverse line of offset

56 08 00 +
00 3

Memorandum with reference to trial lines east of Auguehanna River.

Line A

- 1) The eastern section of about 9 miles was laid off from the hill at Lewisville so as to pass between the buildings at that place and to clear woods both east and west as well as possible. This line lies wholly in Maryland and nearly the whole extent of it can be seen from the hill at Lewisville, nearly midway.

Line B

- 2) The next section of about 14 miles from the 9 mile post to the Auguehanna River (or to the 23rd mile post) was laid out so as to pass between the R.R. Station at Sylmar and a warehouse a little east (and north of the line) to range along the line road east of Sylmar and to pass south of the barn of John J. Algard and north of the fodder shed just south. This line was extended to the westward through the wood and past the 14th mile post. Between the 14th & 15th it was necessary to make an offset of 2 feet to the north to pass through the window in shed attached to a small house. This line (2 ft north of B) was extended to No 16 and a little beyond. Here an offset of 1 foot was made to the southward and this line (1 foot North of B) was extended

(Line B continued)

15
nearly to 17, when the house of
Mr Reynolds was found to be
on line. Although it was found
that the line could be carried thro'
the windows of the house the
woods were so thick here and
that an offset of 21 feet was
made to the south and this
line (40 feet south of B) was
extended to westward past
No 17 until it was found to
strike the southern point of Oc-
tanso 22.5 Church.

A rectangular offset being in-
convenient a diagonal offset
of 48.173 feet at an angle of $56^{\circ} 08'$
with the line was made to
the north the rectangular distance
being equal to 40 feet.

This brought us back to Line B
and this was run west past
the Church and into the woods.
On account of striking heavy
timber a rectangular offset
of 1 foot was made to south
and this line (1 foot S. of B)
was carried through thick woods
to top of bluff of the Octanso
valley and across to No 18.
2 additional points were located
in bushes west of No 18.

May 14th Am
at State North of No 18

East line $0^{\circ} 00' 00''$
Stone No 18 $91\ 30\ 10$
Distance $11.34\ ft$
 $b = 11.34\ b = 0.30$ (Stone W. of stake)

Took two photos of No 18
also one of bend of Octararo
N.E. of No 18.

Ran in stakes east of bend of
Octararo.

After lunch ran line to westward
to last crossing of Octararo thro'
thick woods

Read distances from instrument 200 with
thead. fixed wires.

From 2^d stake in woods back to
starting point east of woods

$433.7 + 1.4 = 435.1$ $378\ ft$ $359^{\circ} 20'$ (elevation)

from same station to 1st stake in woods

$[246.8]$ $214\ ft$ $358^{\circ} 26'$ (elevation)

from same station to stake west

$1549 + 1.4 = 1550.8$ $135\ ft$ $0^{\circ} 07'$ (depression)

from last stake to stump on brow of hill

$139.8 + 1.4 = 141.2$ $122\ ft$ $358^{\circ} 05'$ (depression)

from stump to stake near creek bank

$[164.4]$ $152\ ft$ $14^{\circ} 49'$ (depression)

from stump to stake on N. bank of creek

$[296.1]$ 263 $8^{\circ} 50'$ (depression)

from stump to stake near west edge of

grass land below wooded hill side W.

$497.1 + 1.4 = 498.5$ $433\ ft$ $5^{\circ} 18'$ (depression)
 $[494.0]$

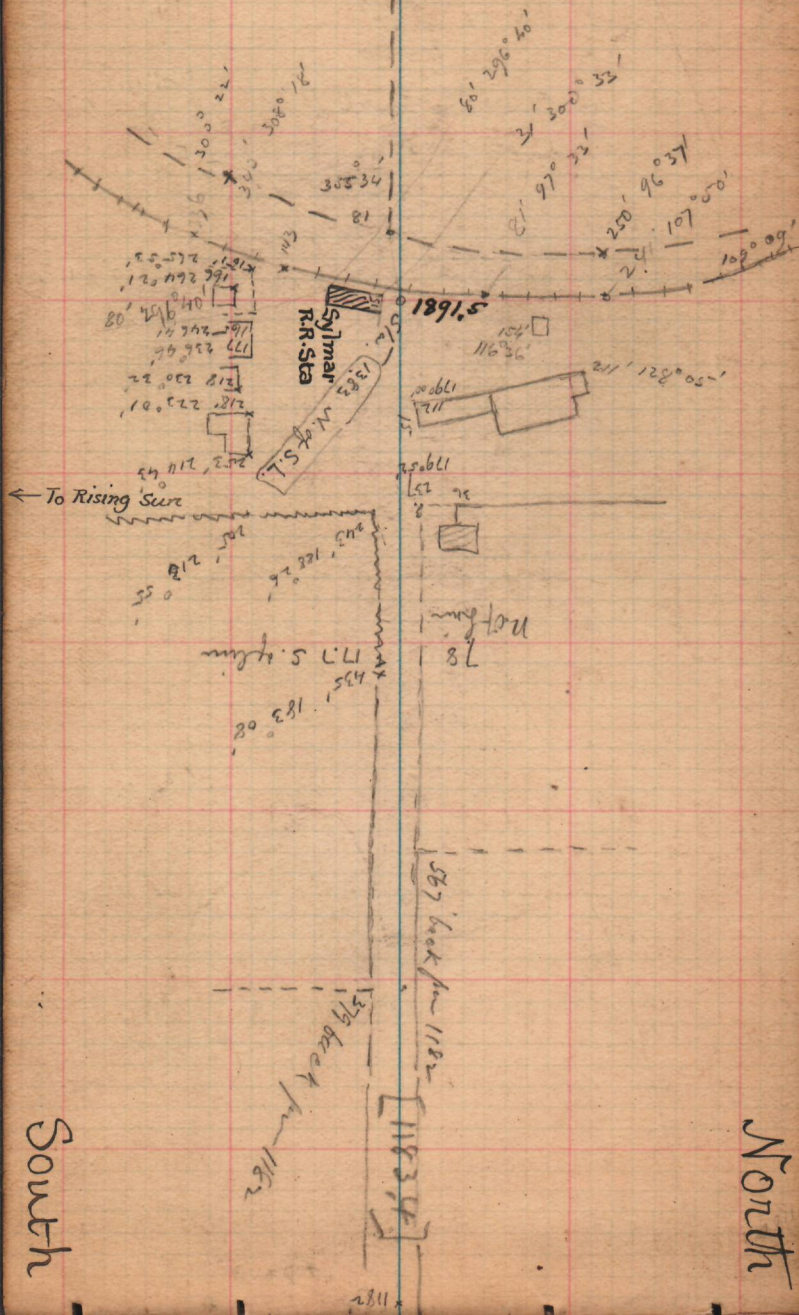
or 4218.7 from Ferguson's house

851.4 " next to stake W. in woods

(Joins p. 28)

* 585 To small stake
d° 0° 11'

[586.4]



18

(Joins p. 19)

[3003.5]

1005'
d 1028'

1182
1005
2187
813
3000

753.1
178° 03'

[2750.8]

[2382.8]

[1005.7]

385' 181° 21'

133° 03'
3.4

813 + 1182 = 1995
Sta 119.4 280° 00' 1997.8

234.4
300.2
29.7

[414.4]

234'
183° 05'

12mm

140'
140° 02'

88' 157° 04'
116° 02'

135' 13'
54'
117° 23'

64'
163° 22'

3074.9

116° 05'
116° 05'

1182
Sta 116.5 5 of line

[1183.4]

1200

May 10 (Cont)

(Joins p. 18)

19

2000

4875.0

1183.4
 814.4
 1005.7
 378.3
 0.2

3382.0

in Lylinar

to M.P. 12

0°00'

* TP

[378.3]

M.P. 12

Sta.

377

355° 53' (elev)

5273.5 from No 13

Mile Stone No 12

268° 05' b = + 0.2

b = 5.95

5308.3 from No 11

712.281, 121

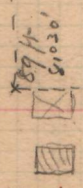
[351.3]

35° 16' 00"

350' m M.P. 358° 52' (elev)

[418.3]

179° 30' 1200 ft from Sta.



Sta.

417' from Sta. TP d 0° 46'

[221.9]

754' 201° 12'

710 ft 1594.1' 1409.1'

416 ft 92° 43'

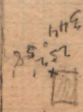
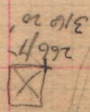
412 ft 88° 40'

Sta. 220.5 ft from Post Sta. 359° 27'

414 ft 21° 20'

701 ft 26° 29'

Note - This Station is 5.6 ft north of State Line by computation.



North

Sta
290 ft
from sta. on slope
d 6° 38'

[287.5]

Sta
337 ft
from sta. on summit W
1013'

[338.2]

Mount Rocky

Sta.
4.7 ft. N. of SL

580 ft from last Sta.
Sight east e 357° 07'
fence 14.7 S. of Sta.

388 ft
180° 57'

[579.9]

Sta.

435 ft from last TP (800)
e 358° 44'

[436.2]

3540/10'
2752

TP

800 ft from Sta. near X rd
0° 49'

[801.2]

632
0° 18'

520'
356° 55'

South

face about 10' S.
of offset 4165 M.
512 290

Local Offset - 40 ft N. of B. in clear branches of tree

Branch of N.E. Cr.

← 552 ft 313 ft 552 ft

233 ft 10° 13'

192 ft 644'

face about 10' S.
of offset 4165 M.
512 290
938 ft 10° 37'

150 161
151

[570.4]

face about 185

512 569 ft (938)
20032

150 161
529

Branch of N.E. Cr.

512 569 ft (938)
20032

22

North

52904 N. of Mex
363 ft 11 m. S. Mex
2580 m (82)
for site 10. of Cretac
5308.3 from m.f. 12

220 1/2

A hand-drawn map on a grid background showing a creek and a road intersection. The creek flows from the top right towards the bottom left. A road, labeled 'road' with an arrow, crosses the creek. Survey points are marked with dots and labeled with coordinates in brackets and elevations. A blue line runs vertically through the center. An arrow points left from the top left.

Survey data points (from top to bottom):

- $680^{\text{m}} \pm 0^{\circ} 30'$ [681.0]
- $576^{\text{m}} \pm 2^{\circ} 54'$ [575.7]
- 470.0 [470.0]
- $106^{\text{m}} \pm 6^{\circ} 01'$ [106.0]
- $632^{\text{m}} \pm 4^{\circ} 02'$ [630.0]
- $150^{\text{m}} \pm 2^{\circ} 56'$ [150.8]
- $266^{\text{m}} \pm 1^{\circ} 06'$ [267.1]

Other labels include 'Creek', 'road', and 'Summit'.

$$\begin{array}{r} 681.0 \\ 630.0 \\ 267.1 \\ \hline 1578.1 \end{array}$$

457
746
5211
-561
02322
-1222

(See p. 22)

5290.4 m. of X

5308.3 E. of M

← To Sylmar

M.P. No. 11
3.6 ft S. of stake

[4.854]

3.4 ft N. of stake

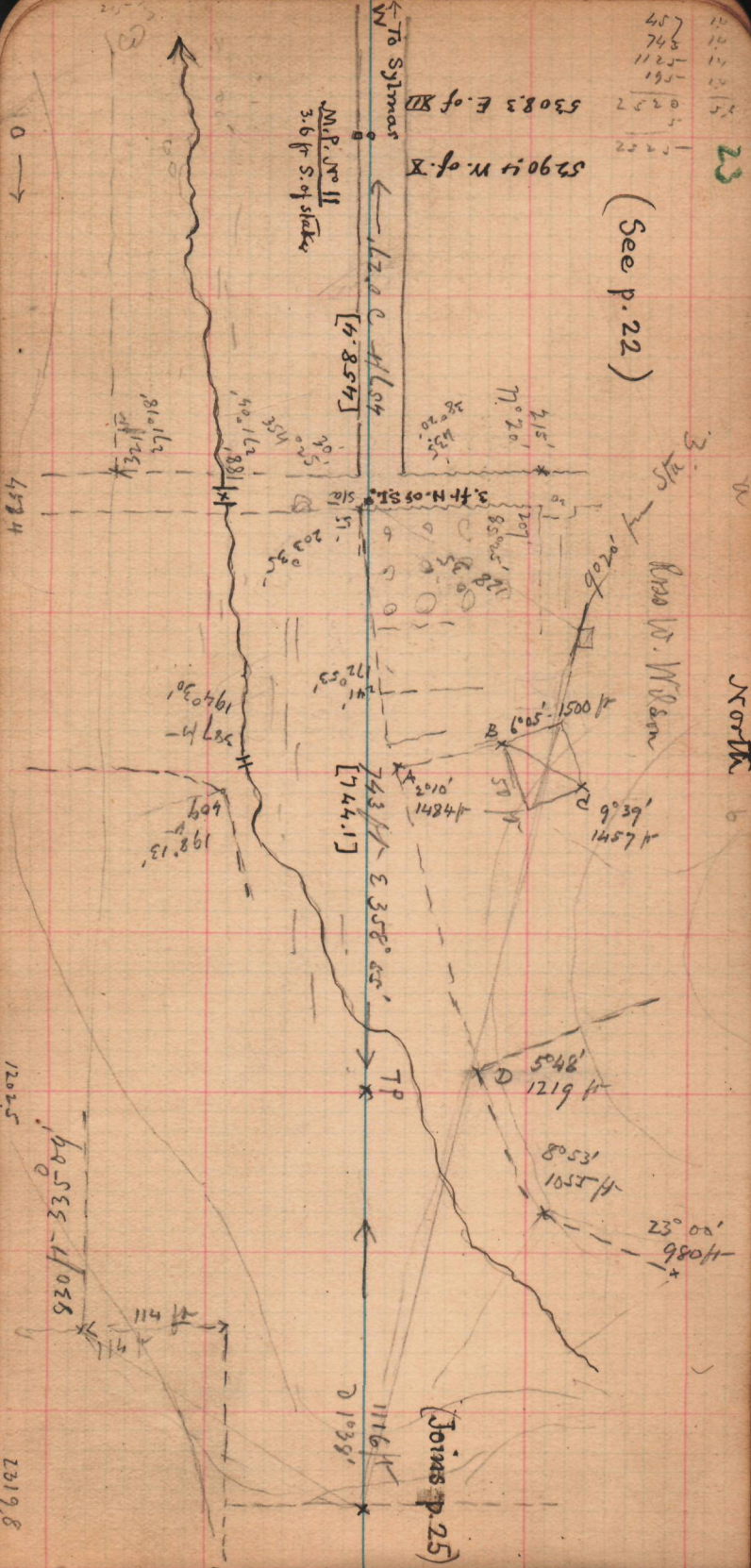
Area W. Wilson

North

[744.1]

TP

(Joins p. 25)



0 →

4584

1202.5

2019.8

at Stake in ploughed hill east of Ross Wilson
 Observed on road at stake W. run brook
 D. 10° 57'

Upper Target	Lower T	Upper	Lower
4.721	15.411	4.775	15.429
713	408		
720	426	775	420
750	400	781	438
727	418	762	416
742	15.407	771	419
733	4.7219	761	440
4.729	10.678	4.771	15.436
			4.771
			10.655

Lower	Upper	Lower	Upper
15.386	4.771	15.418	4.791
874			
411	761	411	790
430			
431	753	410	780
421			
	770	413	755
15.409	774	417	750
4.764			
10.645	755	411	750
10.678	4.764	15.413	4.769
10.662		4.769	
		10.644	
		10.655	
		10.650	
		10.662	10.656

1312.3
 1.4
 1313.7

at Stake by hedge west of last station read to
 detail points near Wilson's farm with middle
 fixed win in lower target and movable in
 upper do

A. 0.535	az. 2° 10'	B. 0.658	az. 6° 5'
529	1482.6	635	1498.5
543	1484.0	625	1.4
0.536		0.639	1500.3

C. 0.380	az. 9° 39'	Middle win
358	1455.9	10.000
350	1.4	9.985
0.363	1457.3	9.980
		9.972
		9.960
		9.977
		9.979
8.483	az. 5° 48'	
8.481	1217.7	
8.486	1.4	
8.483	1219.1	

25

563 p
15° 23'

Sta 1126 E of TP.
D 00 30'

1249 11830

State 5434
from State on 5/10/00

note Stake near foot
stack is approx. 2×11.75 ft.
d. 0.03
23.50
in. Stake on summit of
ridge S.E. of Rock Island

State near house
to above 2 x 600 ft
1296

Upper		Lower		Upper		Lower
-------	--	-------	--	-------	--	-------

4.940	15.029	5.036	15.110
912	050	035	100
938	050	050	101
958	055	038	097
941	050	049	095
940	068	054	096
<u>4.938</u>	<u>15.050</u>	<u>5.044</u>	<u>15.100</u>
	4.932		5.044
	10.112		10.056

Lower	Upper		
15.086	5.039	15.095	5.045
088	038	103	054
086	030	104	040
079	031	112	042
073	023	102	065
080	035	098	044
<u>15.082</u>	<u>5.033</u>	<u>15.102</u>	<u>5.048</u>
5.033		5.048	
<u>10.049</u>	10.080	10.054	
10.112		10.056	10.055

$$\begin{array}{r} 1390.2 \\ + 1.4 \\ \hline 1391.6 \end{array}$$

10.055 - 10.067

543 from State on Summit W.

Joinas p. 25)

139
fence about 6.5 ft
N. of station

North

(Joins P. 27)

26

24.30' / 23.00' / 452

69.022
220.67
510.15
X

17928
450

20.081, 1097

535

$$\begin{array}{r} 820 \times \\ 20502 \\ \hline 206028 \end{array}$$

702 H-179 37

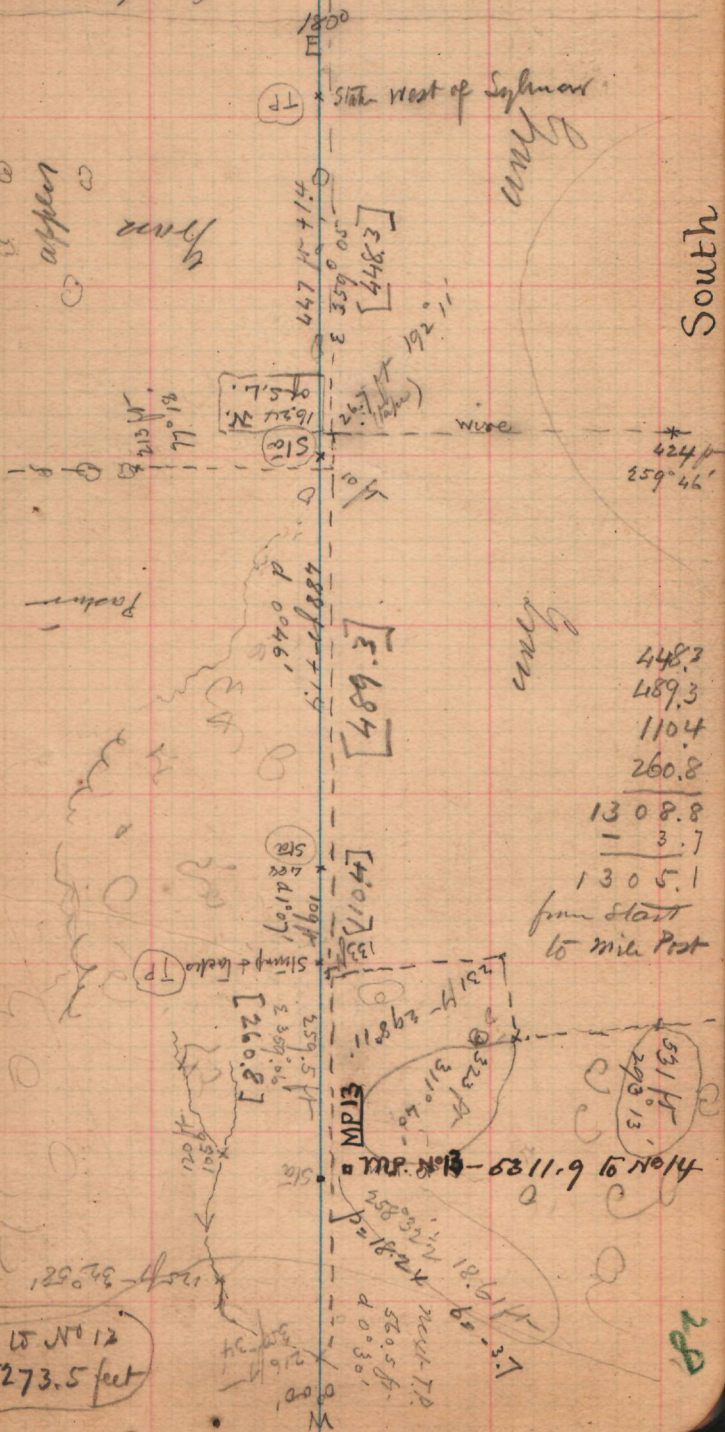
20.291

May 23^d 1901 -

Began work at small stake in field west of Sylmar P.R. Station (set May 15th) and worked westward.

(Joins p. 17)

North



be

South

North

P.29
3.7
561.9
544.4
446.4
981.1
557.8
506.9
3602.2
m.p. 13
to station 2.
of road.

"B" Line

MP13

mill post No 13

(13)

[5619]

500.0
5029

TP

[5444]

Back sight 543 ft
500.0
5018

0

2

0

0

0

0

0

0

0

0

0

0

0

[446.4]

445 ft
446.4
446.4

446.4

446.4

446.4

446.4

446.4

STC

STC

STC

388 ft
500.0
5018

388 ft

388 ft

388 ft

388 ft

388 ft

388 ft

388 ft

388 ft

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388 ft

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388 ft

388 ft

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624 ft
298° 24'

[981.17]

Foreogin 980 ft

211° 00'

Wine
+ 26.5
+ 25.5
+ 24.5

50 ft
45 ft
55 ft

300 ft
335 ft
92° 46'

311 ft
88 ft

758 ft
0° 15'

254 ft
2° 44'

100 ft
100 ft
100 ft

223 ft
248 ft
230 ft

240 ft
290°

421 ft
209° 54'

367 ft
219° 17'

[557.8]

Foreogin 55 ft

235° 10'

550 ft
48° 25'

710 ft
110°

512 ft
206°

505 ft
206°

320 ft
212° 12'

274 ft
206° 51'

[506.9]

Foreogin 505 ft

20° 15'

10 Side End of mt

Scalting woods

524 ft
323° 05' Heart of cliff

477 ft
150° 51'

P.30

Joins P.31

30

Joins p. 30

P. 31

North

South

Round

[597.0]

Straw 5965-4-

357463

١١

Back-Sight

380.5 H

359. 411' 2

[381.9]

(Sia)

1868 ft - 276° 07' to bed
top of L. rock in foreground
east of Seneca other

dis 304 ✓
d0057 ✓

[305; 3]

300

B. 5. 330.5

355 38

1900 26 1844 +

260 ft
216° 18'

L. Walmsley

325/4
39.10'

[Handwritten notes:]

933780

High winds

12
Gornburg

2678
78°

631 ✓ 3205

477
2051

1709, 7

No 13 to No 14

long 5311.9
 colong 60
 long 3.65
 long 1709.7
 0.82
 + 1569

3.72521
 6.27476
 0.40654
 3.23292
 9.91421

Cap 16,52 = 1.21827

$\sin 23^\circ 35' = -9.602$ j-colām

21.32 1.61612 3784 1.57798
17097
1747.5

from station E,
of E. road to
station north of
mile post - 14

m.p. 14 to 15.69 S. of Stk
0.60 W. - - -

$$\begin{array}{r} 6.27475 \\ 0.40654 \\ 2.24242 \\ \hline 9.92371 \end{array} \quad \begin{array}{r} .84 \\ 15.66 \\ \hline 16.52 \end{array}$$

May 24th 1901

At state north of Ferguson's house
observing on theometer in woods west
of last crossing of Octant Creek.
d 0' 14" 10 am. overcast

Upper	Lower	Upper	Lower
8.577	11.346	8.577	11.328
.562	.337	.578	.322
.551	.340	.552	.325
.578	.333	.570	.318
.584	.331	.560	.321
.562	.329	.569	.327
8.567	11.336	8.568	11.324
	8.567		8.568
	2.769		2.756
Lower	Upper	Lower	Upper
11.328	8.583	11.336	8.564
.330	.558	.337	.556
.329	.581	.333	.569
.335	.572	.352	.578
.331	.577	.321	.560
.330	.579	.320	.579
11.331	8.575	11.333	8.568
8.575		8.568	
2.756		2.765	
2.769	2.763	2.756	2.760 2.761
			2.763

Upper	Lower	Upper	Lower
8.578	11.319	8.555	11.298
.568	.332	.551	.320
.561	.320	.560	.318
.562	.315	.553	.308
.553	.341	.555	.319
.555	.325	.561	.325
8.563	11.325	8.556	11.315
	8.563		8.556
	2.762		2.759

Lower	Upper	Lower	Upper
11.319	8.554	11.321	8.531
313	565	319	549
309	561	331	541
304	550	322	557
331	552	332	558
322	569	329	550
11.316	8.559	11.326	8.548
8.559		8.548	
2.757		2.778	
2.762	2.760	2.759	2.768
			2.760 2.764

Upper	Lower	Upper	Lower
8.549	11.291	8.545	11.311
549	308	541	304
539	299	552	311
546	293	552	330
564	303	550	320
541	321	548	320
8.548	11.302	8.548	11.316
	8.548		8.548
	2.754		2.768

Lower	Upper	Lower	Upper
11.313	8.562	11.310	8.545
314	549	324	560
313	576	312	556
305	544	329	556
325	541	341	559
310	555	305	550
11.314	8.555	11.320	8.554
8.555		8.554	
2.759		2.766	
2.754	2.757	2.768	2.764
			2.757 2.761
2.761			
2.764			
2.761			
	2.762		

5070.1
2220.6
2849.5 from M.P. 18

cos 00 14'
cos 2
wp 14 000
colap 2.762
9.999996
9.999992
2.146128
9.558776
3.704896
D = 5068.7
+ 14
= 5070.1

May 24th p.m. 12.15
 Fog breaking away Sun bright atm. br
 mod. S. wind

Observed on road at station in
 Required bush lot, just east
 of woods and fence.

d 2° 40'

Upper	Lower	Upper	Lower
7.731	12.353	7.701	12.351
.702	.362	.675	.377
.703	.356	.698	.378
.706	.369	.691	.359
.681	.360	.691	.369
.669	.355	.672	.359
7.699	12.359	7.688	12.366
	7.699		7.688
	4.660		4.678

Lower	Upper	Lower	Upper
12.345	7.676	12.351	7.701
.352	.687	.345	.670
.348	.665	.365	.679
.340	.667	.368	.676
.359	.671	.354	.680
.357	.697	.350	.700
12.350	7.677	12.356	7.684
7.677		7.684	
4.673		4.672	
4.660	4.667	4.678	4.675
			4.667
			4.671

wa 2° 40' 9.999 529
 wa 2° " 9.999 058
 wp 14 000 4.146 128
 wlap 4.671 9.330 590
 3.475 776

D = 2990.7
 + 1.4
 = 2992.1

or 771.5 from M.P. No 18

At same place observed
upon rod at intermediate state
in Reynolds' brook pasture

d 3° 20'

12.50 pm

Upper	Lower	Upper	Lower
7.161	12.592	7.159	12.572
.165	.595	.145	.548
.157	.587	.159	.576
.142	.591	.153	.577
.144	.569	.150	.575
.148	.582	.145	.575
7.153	12.586	7.152	12.569
	7.153		7.152
	5.433		5.417

Lower	upper	Lower	upper
12.600	7.154	12.605	7.142
.583	.159	.580	.120
.569	.155	.581	.153
.570	.150	.593	.150
.572	.130	.576	.138
.576	.136	.592	.150
12.578	7.147	12.586	7.142
7.147		7.142	
5.431		5.444	
5.433	5.432	5.417	5.430
			5.432
			5.431

cos 3° 20' 9.999265

cos² " 9.998530

log 14000 4.146128

cos log 5.431 9.265120

2569.1

+ 1.4

3.409778

D = 2570.5

or 349.9 from M.P. No 18

May 24 pm.

At same place observed upon road at
 Lake north of Mile Post No 18 in "Horse shoe" ✓

d 5° 08'

1:15 pm.

Upper	Lower	Upper	Lower
-------	-------	-------	-------

6.679	12.916	6.681	12.938
-------	--------	-------	--------

.681	.891	.659	.930
------	------	------	------

.699	.925	.651	.905
------	------	------	------

.678	.912	.677	.950
------	------	------	------

.670	.932	.653	.941
------	------	------	------

.670	.886	.669	.938
------	------	------	------

6.679	12.910	6.665	12.934
-------	--------	-------	--------

6.679

6.231

6.665

6.269

Lower	Upper	Lower	Upper.
-------	-------	-------	--------

12.941	6.652	12.929	6.678
--------	-------	--------	-------

.895	.660	.922	.671
------	------	------	------

.908	.629	.902	.652
------	------	------	------

.910	.625	.940	.640
------	------	------	------

.909	.649	.919	.650
------	------	------	------

.890	.670	.948	.661
------	------	------	------

12.909	6.647	12.930	6.659
--------	-------	--------	-------

6.647

6.262

6.231

6.247

6.659

6.271

6.269

6.270

6.247

6.259

Upper	Lower	Upper	Lower
-------	-------	-------	-------

6.590	12.830	6.581	12.858
-------	--------	-------	--------

.587	.824	.579	.820
------	------	------	------

.560	.845	.560	.840
------	------	------	------

.581	.859	.548	.834
------	------	------	------

.571	.825	.541	.835
------	------	------	------

.571	.839	.580	.810
------	------	------	------

6.577	12.837	6.565	12.833
-------	--------	-------	--------

6.577

6.260

6.565

6.268

Lower	Upper	Lower	Upper
12. 832	6. 561	12. 839	6. 568
. 830	. 590	. 852	. 570
. 815	. 568	. 810	. 564
. 810	. 570	. 830	. 573
. 830	. 561	. 815	. 549
. 815	. 551	. 789	. 520
12. 822	6. 567	12. 823	6. 557
6. 567		6. 557	
6. 255		6. 266	
6. 260	6. 238	6. 268	6. 267
			6. 258 = 6. 262

Upper	Lower	Upper	Lower
6. 558	12. 804	6. 518	12. 780
. 539	. 811	. 530	. 795
. 552	. 813	. 527	. 770
. 539	. 811	. 532	. 789
. 551	. 818	. 529	. 788
. 552	. 817	. 526	. 789
6. 552	12. 812	6. 527	12. 785
	6. 552		6. 527
	6. 260		6. 258

Lower	Upper	Lower	Upper
12. 829	6. 525	12. 789	6. 530
. 801	. 528	. 778	. 518
. 809	. 567	. 768	. 541
. 800	. 529	. 795	. 540
. 789	. 540	. 794	. 539
. 775	. 531	. 760	. 538
12. 801	6. 537	12. 781	6. 539
6. 537		6. 539	
6. 264		6. 242	
6. 260	6. 262	2. 258	6. 250

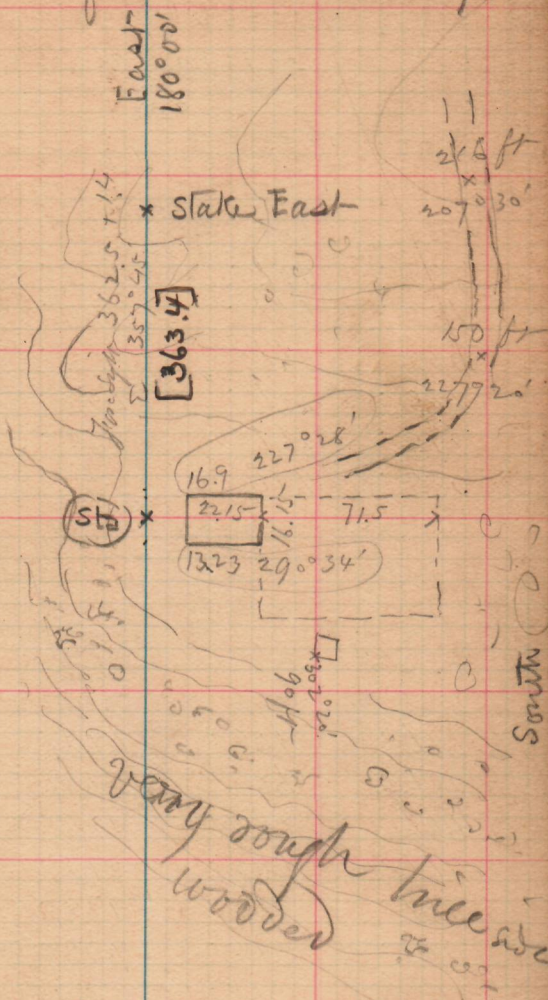
6. 259		6. 256	
6. 262			
6. 256			
6. 259			
	coa 50 08'	9. 998255	2218.9
	coa 2 do	9. 996510	+ 1.4
	long 14 000	4. 146128	2220.3
	culog 6. 259	9. 203495	+ .3
		3. 346133	2220.6

to Skrim
22

Vicinity of Ferguson's house
just east of Octaroon Valley.

North

West
0000'



(Joins P. 19, Vol. 2)

Transit Line is
2 ft. N. of "B" Line.

North

40

At stake just west of small flag
on highway W. of mile stone No 15

N
0° 00'

1130.5 W. of M.P. 15

TP
Stake on brow of hill

[218.4]
01.00

218.4

Sta

-4' 12"

[259.9]
120° 193° 23'

163° 193° 47'

101° 581' 185° 10'

[41.0]
140° 140°

478.3

Sta

619.3

[510.8]
510° 135°

715'

131° 088°
263° 139°

1130.5

MP 15

Sta

1130.1

b = 22.82
b = 37

Joins P. 41

At stake on P. 19 is 0.37 ft. East
of stake on P. 19

South

North

(Joins p. 40)

Sta

M.P. 15

15 m.p.

[1049.3]

1048 ft

[331.3]

85 330 ft

1380.2 E. of m.p. #15

Sta

Joins p. 44

Transit Line is 7
2 ft N. of "B" Line

South

1049.3
331.3
1380.6

→ To Rong Son

Joins p.32

H.

27 49 10

in R. 15.69 ft. s.
0.60 ft. m.
of state
Plan f. 297° 10' 26 ft. x

State 919 m. of Sta.

Large road

South

North

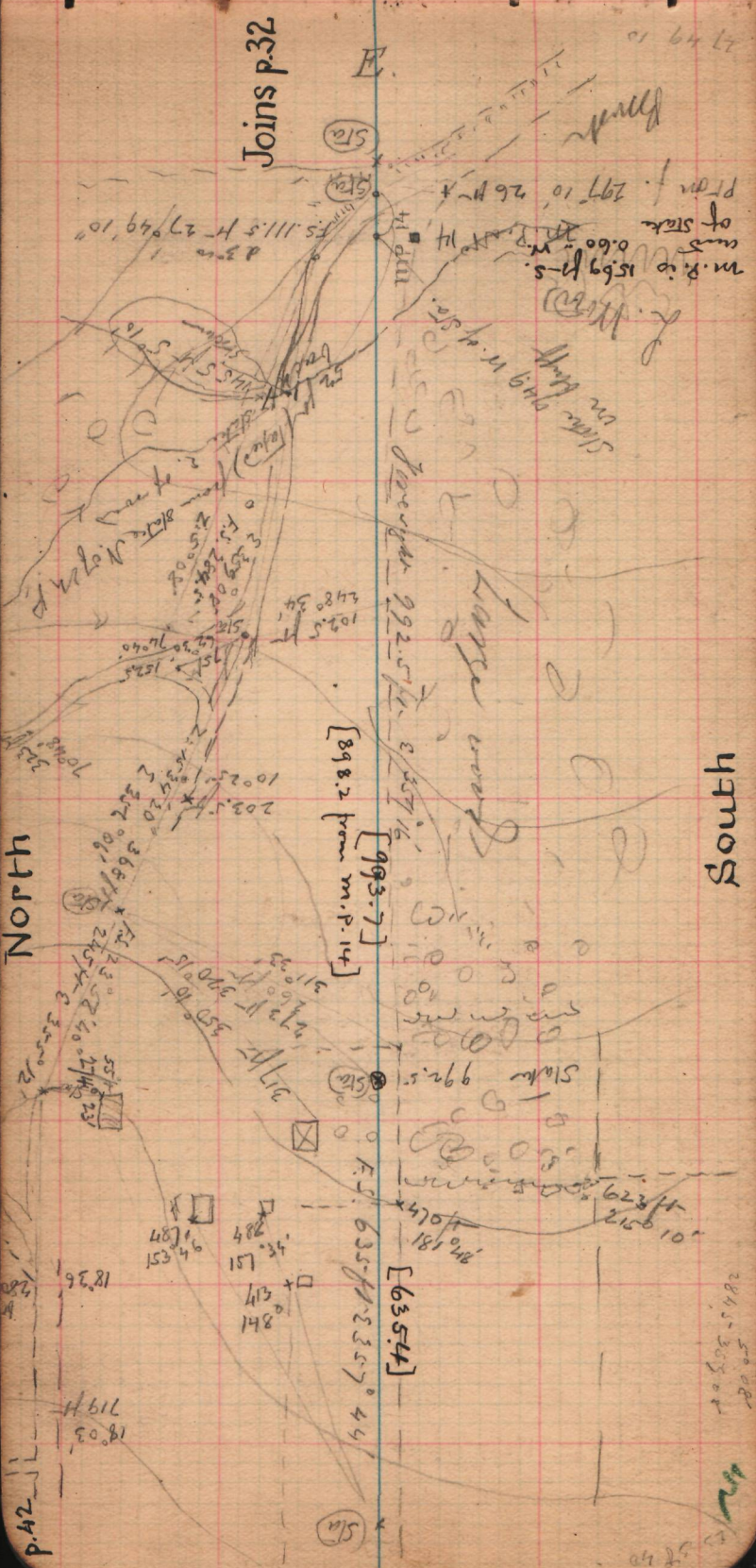
[898.2 from m.p. 14]

[993.7]

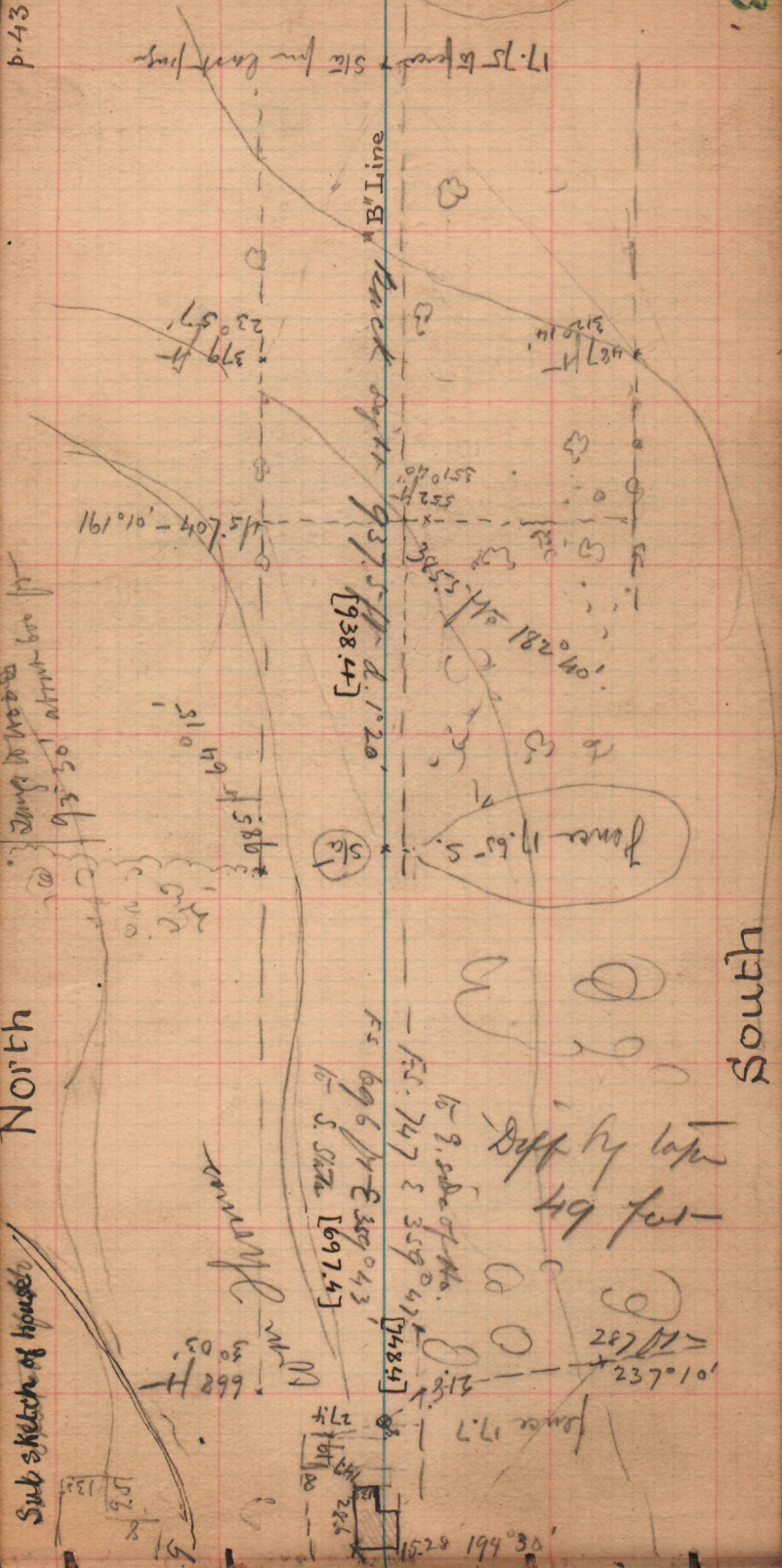
[6354]

Sta

Sta



Sub sketch of house



June 5th 1901 P.M.

Obsns on Sun for time + Azimuth

1) at Algarro farm

at N. stake on Sylvan line
Mark - Chrome Church Capola

Tel	Object	Time	Hor. Cir.	Vert. Cir.
D	Mark		0° 00' 00"	
	X	h m s	B	B"
		5 39 50	302° 23' 46" - 38"	341° 49' - 49"
		41 52	302° 41' 15" - 16"	342° 11' - 10.5"
		43 25	302° 54' 35" - 25"	342° 29' - 28"
				342° 09'.4
R	X	46 55	122° 48' 26" - 15"	196° 56' - 54.5"
		49 02	123° 06' 45" - 40"	196° 33' - 32"
		50 33	123° 20' 06" - 50"	196° 16' - 14.8"
	mean	5 45 16	302 52 22.8	196 34.4
	Mark		180° 00' 00" - 00"	17° 12'.5
		h m s	180° 00' 00" - 00"	
R	X	5 55 11	124° 06' 05" - 00"	195° 25' - 24"
		56 40	124° 13' 15" - 10"	195° 09' - 08"
		57 57	124° 24' 20" - 20"	194° 53' 54"
		169 48		195° 09'.2
		5 56 36		
D	X	6 00 54	305° 25' 35" - 35"	345° 41.5' - 41.5"
		02 33	305° 39' 45" - 40"	346° 06' - 00"
		04 04.5	305° 53' 15" - 10"	346° 16' - 16"
		7 31.5		345° 59'.2
	mean	6 02 30.5	304° 56' 00.8"	14° 35.0
	Mark	5 59 33.3	0° 00' 00" - 00"	

2) At South State on
Lewisville Line

Horizontal Angle between

			A	B	Mean
Chrom Ch	2nd D		0 00 00	00	00
Lewisville		1	107° 16' 10"		
fly pole	ARR	6	283° 36' 12"	08"	10'

RS 6 0° 00' 05" - 07" 06'

Arc passed	Angle
643° 36' 10"	107 16 01.7
23 56	252 43 59.3

01.0

Resulting Angle =	107 16 01.2
Explement	252 43 58.8

180 00 00

107 16 01

72 43 59

June 25, 1901 p.m.

37

Obsns for Time & Azimuth near
Milestone No 9, farm of J. J. Algood
at South State - Lewisville Tenn

Tel	Object	Time	Vert Circle			Hor. Circle			
			0	A	B	0	A	B	"
D	Mark					0	00	00	10
		2 51 15	309	21	20	276	17	40	30
P ₁	X	54 40	309	59	58	276	58	20	10
		57 50	310	35	34	277	36	20	10
		2 54 35	309	57.8					
		3 02 50	228	34	33	97	41	45	55
Feb	X	06 55	227	47	45.6	98	29	30	40
		09 15	227	20	18.8	98	56	35	41
R		3 06 20	227	53.1		277	40	01	
	Mark	3 00 28	48° 57.7			179	59	35	41
		2 nd Set				359	59	51	
R	Mark					180	00	00	04
		3 19 40	225	22	20.4	100	53	02	04
	X	22 15	224	51.5	49.9	101	21	35	39
		25 00	224	20	18.8	101	50	55	55
			224	50.4					
		29 25	316	36.5	35.5	283	25	35	31
		32 10	317	08.5	07.7	283	54	40	36
		34 45	317	38	37	284	20	42	34
D		3 27 12.5	317	97.2		282	37	44	
	Mark	3 rd Set	43	51.6		360	00	45	39
	Mark					0	00	00	00
		3 45 50	319	45.5	44.9	286	10	00	52
	X	48 25	320	16.0	15.0	286	35	55	45
		50 45	320	41	40.2	286	57	15	05
			320	13.77					
		54 40	218	37.8	36.6	106	50	15	19
R	X	57 10	218	09.6	08.4	107	14	10	10
		59 20	217	44.2	43.0	107	35	05	05
	Mark	3 52 41.7	218	09.93		286	53	45	
			38° 58.68			179	59	22	12
						359	59	38.5	

At North Stake near Road

Tel	Object	Time	Vert. Circle		Hor. Circle	
			A	B	A	B
R	Mark				0° 00' 00"	00
	X	4 24 10	212	58.5 57.5	111	35 05 05
		26 35	212	31 30	111	56 55 57
		29 35	212	08 07	112	14 40 40
			212	32.0		
		33 35	328	56 55	293	40 35 35
		35 40	329	19 18	293	58 35 35
	X	37 40	329	42 41.6	294	16 12 14
D	Mark	4 31 12.5	329	18.6	292	57 01.2
			31° 36.7"		0 00 30 28	
					0 00 14.5	
	Mark				0 00 08 00	
D		4 45 15	331	08.6 08.0	295	22 25 25
	X	47 35	331	35.4 34.2	295	42 45 45
		49 57	332	03.0 02.0	296	03 35 35
			331	35.37		
R		53 40	207	20.8 19.8	115	55 40 40
		56 12	206	52 51	116	17 50 50
		58 15	206	28.8 27.8	116	35 10 10
		4 51 49	206	53.37	295	59 34.2
	Mark		27° 39' 0"		179	59 19 25
					359	59 43
	Mark				180° 00' 00" 00"	
R		5 12 03	203	52 51	118	35 38 34
	X	14 24	203	26.2 24.8	118	55 40 40
		16 35	203	01.8 00.6	119	14 34 30
			203	26.07		
		5 20 08	337	44.0 43.6	300	22 50 44
	X	22 43	338	13.2 12.8	300	45 00 00
		24 55	338	37.6 37.0	301	03 30 30
D	Mark	5 18 27.5	338	11.37	299	49 30.8
			22° 37' 35"		0 00 40 38	
					0 00 19.5	

Ann

Tel	Object	Time h m s	Vert. Circle 0 A B			Hor. Circle 0 A B		
D	Mark					0	00	00 04
	X	8 16 49	319	40	40	109	25'	50" 46
		18 28	319	22.6	22.4	109	41'	35" 39
		20 10	319	02.4	02.	109	59'	24" 24
			319	21.57				
R	X	8 23 00	221	35.8	34.8	289	40'	55" 49
		24 45	221	56	55	289	58'	32" 30
		26 15	222	14	13	290	13'	45" 41
	$\delta = 23^{\circ} 20' 58''$	8 21 33.7	221	54.77		109	49'	59.3
		5 30	41^{\circ} 16' 36"					
	Mark	8 27 = 1.45 km. J.				179^{\circ}	59'	42" 40
			mean			359	59'	51.5
	Mark					180	00	00 00
	X	8 34 07	223^{\circ}	43.5	42.7	291	34'	15" 09
		35 47	224^{\circ}	02.8	02	291	51'	38" 36
		37 01	224^{\circ}	17	16	292	04'	32" 30
			224^{\circ} 00.7					
	X	8 39 21	315	21.3	20.9	113	18'	55" 63
		41 01	315	02	02	113	37'	00" 08
		42 38.5	314	43.5	43.1	113	54'	48" 50
	$\delta = 23^{\circ} 20' 57''$	8 38 19.3	315	02.13		112	43'	32"
		5 30	44^{\circ} 29' 17"					
	Mark	8 44 = 1.73 km. J.				0^{\circ}	01'	00" 52
			mean			0^{\circ}	00'	28"

Mark

0 00 00 00

D
exp
R

8	59	00	311	359	351	117	50	51	01
9	01	10	311	118	110	117	25	00	00
3	05		310	50	492	117	48	15	15
			311	12.17					

5	55		229	47.0	462	297	27	40	44
8	05		230	118	110	297	53	42	40
9	55		230	325	319	298	16	10	04
9	04	31.7	230	10.57		117	38	27.7	
			49° 28' 57"						

$\delta = 23^{\circ} 26' 54''$

Mark

9	10		179	59	30	30			
			359	59	45				

2.17 2m.7.

- 2.17 2.11.7.

July 6th PM Conowingo Crossing
 10 Sta. N. of Chrom. Pile to H near Pike
 6° 28'

n	L
8.805	10.716
790	702
790	698
798	715
805	701
810	708
<u>500</u>	<u>40</u>
8.800	10.707
	8.800
	1.907

n	L
8.802	10.711
790	730
799	730
804	715
796	713
801	719

L	n
10.711	8.798
719	809
718	806
722	804
709	793
712	797
<u>10.716</u>	<u>8.801</u>
8.801	
1.915	
1.907	1.911

L	n
722	
728	
732	

July 9th. am. 8.30
 Sun shining. Atmos. somewhat tremulous
 Targets hard to point on.

do 27'

u	L	u	L
9.105	11.015	9.131	11.044
.092	.011	.131	.047
.098	.015	.138	.057
.084	.017	.133	.050
.093	.040	.145	.039
.096	.032	.139	.062
9.095	11.022	9.136	11.050
	9.095		9.136
	1.927		1.914
L	u	L	u
11.039	9.146	11.060	9.150
.032	.119	.048	.151
.037	.131	.053	.152
.016	.139	.063	.148
.037	.140	.059	.161
.042	.128	.049	.144
11.034	9.134	11.055	9.151
9.134		9.151	
1.900		1.904	
1.927	1.913	1.914	1.909
			1.911
u	L	u	L
8.935	10.885	8.970	10.877
.950	.868	.949	.858
.944	.881	.961	.875
.960	.875	.952	.870
.951	.893	.950	.881
.960	.865	.940	.850
8.950	10.878	8.954	10.869
	8.950		8.954
	1.928		1.915
L	u	L	u
10.899	8.959	10.859	8.951
.888	.960	.883	.957
.881	.940	.879	.963
.890	.941	.861	.977
.882	.941	.869	.973
.888	.959	.856	.964
10.888	8.950	10.868	8.964
8.950		8.964	
1.938	1.933	1.904	1.909
		1.915	1.927

1.933 1.933

12.888
51.552

16.771

July 11th Am

at Same pt. observing on Horiz Base of 10.75 ft. former stake + $\frac{51.56}{.33}$
51.89

S
6 .205
 .209
 .195
 .208
 .205
 .201
6.204

N
13 .962
 .958
 .969
 .960
 .959
 .955
13.960
6.204
7.756

S
6 .209
 .200
 .200
 .210
 .214
 .207
6.207

N
13 .957
 .953
 .956
 .946
 .955
 .950
13.953
6.207
7.746
7.751
S

N
13 .959
 .959
 .951
 .955
 .960
 .959
13.957
6.211
7.746
7.752

S
6 .207
 .212
 .210
 .213
 .210
 .214
6.211
7.751

N
13 .951
 .950
 .952
 .955
 .958
 .961
13.955
6.207
7.748
7.746

S
6 .208
 .211
 .202
 .200
 .210
 .209
6.207
7.747
7.751
7.749

S
6 .186
 .172
 .170
 .171
 .170
 .179
6.174

N
13 .928
 .928
 .929
 .923
 .918
 .921
13.924
6.174
7.750

S
6 .160
 .168
 .170
 .166
 .162
 .171
6.166

N
13 .902
 .904
 .905
 .911
 .919
 .915
13.909
6.166
7.743

N
13 .911
 .922
 .915
 .921
 .929
 .922
13.920
6.171
7.749
7.750

S
6 .170
 .169
 .171
 .172
 .165
 .181
6.171
7.749

N
13 .908
 .909
 .911
 .914
 .905
 .910
13.910
6.163
7.747
7.743

S
6 .161
 .162
 .168
 .169
 .160
 .161
6.163
7.745
7.749
7.747
7.749
7.748

7275.1
+ 1.4
7276.5
10.8

7287.3 for to stake

7295.4 Wtd mean

15

July 11th noon
 At Amb Corner observing meridian at
 edge of woods west of Rye field

d 10 18'

n	L	n	L
7.136	13.072	7.160	13.050
141	081	.153	.065
138	060	.152	.050
150	078	.150	.066
146	068	.150	.051
141	058	.145	.060
7.142	13.069	7.152	13.057
	7.142		7.152
	5.927		5.905
L	n	L	n
13.085	7.151	13.058	7.139
073	.142	.058	.138
065	.153	.072	.148
062	.160	.075	.139
061	.144	.050	.141
050	.145	.065	.140
13.066	7.149	13.063	7.141
7.149		7.141	
5.917		5.922	
5.927	5.922	5.905	

5.914 5.918
 5.922

n	L	n	L
7.141	13.050	7.145	13.068
.141	.050	.150	.069
.130	.056	.149	.045
.156	.064	.146	.040
.141	.060	.138	.052
.139	.046	.135	.048
7.141	13.054	7.144	13.054
	7.141		7.144
	5.913		5.910

L	n	L	n
13.050	7.135	13.060	7.120
.060	.141	.070	.131
.049	.130	.050	.121
.061	.131	.051	.130
.062	.129	.049	.128
.053	.131	.068	.136
13.056	7.133	13.058	7.128
7.133		7.128	
5.923		5.930	
5.913	5.918	5.910	

5.920 5.919
 5.918

002-10 18' 4.999888
 002 do 4.999776
 W 14000 4.146128
 using 5.918 4.227825
 3.373729

2364.4
 + 1.4
 2365.8

23.64.4
 184) 820 (4
 368
 452

July 12 pm.

at point 17.2 ft east of N° 24 and about
3 ft south of line observed on pole 8.11 p
m. of N° 23

d 0° 08'

u
8.469
470
469
480
458
462
8.468

I
10.898
887
875
891
880
885
10.886
8.468
2.418

u
8.468
450
470
472
475
471
8.468

I
10.888
869
891
870
870
875
10.876
8.468
2.408

I
10.892
890
891
874
901
875
10.887
8.467
2.420
2.418

u
8.475
479
450
471
474
451
8.467

2.419

10.897
904
900
880
870
880
10.885
8.475
2.410
2.408

8.486
465
469
470
477
480
8.475
2.409

by 14000 = 4.146128

Calog 2.419 = 9.616364
3.762492

5787

2.409

5812
1207
25

4.146128

9.618163

3.764291

2.414

25

2.15 mm.

Same sta (setting slightly changed)

d 0° 07'

5

u	L
8.829	11.234
828	229
825	230
824	239
834	244
822	239
8.827	11.236
	8.827
	2.409

u	L
8.814	11.199
811	203
812	216
805	208
796	211
799	229
8.806	11.211
	8.806
	2.405

L	u
11.240	8.831
243	842
247	822
247	825
242	822
248	820
11.244	8.827
8.827	
2.417	
2.409	2.413

L	u
11.223	8.815
211	822
214	809
210	810
220	791
225	810
11.217	8.810
8.810	
2.407	
2.405	2.406
	2.413
	2.410