58 – 63

Treasury Department,

U. S. COAST AND GEODETIC SURVEY,

O. H. Tittmann, Superintendent.

55825

States: Penn. & Md.

SKETCHBOOK.

No 2

ABSTRACT OF CONTENTS:

Mason & Dixon's Line.
1) Notes and sketches on western part of line. (Vicinity of Youghiogheny River.) (1900) pp. 1–25
2) Topography eastward from M.P. 63 to M.P. 58 (1902) pp. 60–45
pp. 45–60

1900 - 2

CHIEF OF PARTY:

W C Hodgkins

19 Vols.
Vol. 5

84°40'
26.30 } 85#

275
337°34

Treasury Department,

U. S. COAST AND GEODETIC SURVEY,

O. H. Tittmann, Superintendent.

States: Pa. – Md.

SKETCHBOOK.

ABSTRACT OF CONTENTS:

Mason and Dixon Line.

1900–2

CHIEF OF PARTY:

W. C. Hodgkins

Vols. Vol. 5

1900 - Dec. 15th A.M. Fair + cold
Sun bright but atmosphere hazy and very unsteady, even on short sights.

Set up about 10 ft west of worm fence next west of Mud Pike and sighted on rod held at Stake east of road and (near "Michler Stone".)

D = 1° 57'
d 1° 57'

74in Spot	Upper ◇	74in Spot	Upper ◇
19.106	1.797	19.211	1.909
.082	.818	.210	.930
.109	.788	.203	.917
.095	.789	.207	.938
.099	.785	.213	.924
.111	.793	.181	.890
602	570	25	108
19.100	1.795	19.204	1.918
1.795		1.918	
17.305		17.286	

Upper ◇	74in Spot	Upper ◇	74in Spot.
1.889	19.163	1.860	19.175
.861	.160	.911	.189
.832	.129	.888	.231
.830	.128	.858	.230
.850	.126	.875	.212
.839	.130	.876	.204
301	236	468	41
1.850	19.139	1.878	19.207
	1.850		1.878
	17.289		17.3.29
	17.305		17.286
	17.297		17.307
			17.297
			17.302

cos² 1° 57'	9.999 50
log $\frac{13\,560 \times 74}{150}$	3.825 40
colog 17.307	8.761 90
	2.586 80
	− 32
~~386.2~~	2.586 48
385.9	

δ = ~~386.2 + 1.3 = 387.5~~ 385.9 + 1.3 = 387.2

At same station sights on rod at Stake 200^{m} West

D = 0° 22'

Lower	Upper	Lower	Upper
18,601	1.377	18,687	1,448
.613	,351	.643	.406
,612	,355	,678	,409
,608	,369	,671	,407
,614	,349	.661	,419
.621	.378	.660	,401
64	379	400	90
18.611	1.363	18.667	1.415
1.363		1.415	
17.248		17.252	

Upper	Lower	Upper	Lower
1,341	18,609	1,419	18,687
,365	.619	,412	.689
,362	.614	.438	.695
.360	,635	,411	,694
.389	,622	,404	,696
.379	,621	,426	,687
396	120	110	548
1.366	18.620	1.418	18.691
	1.366		1.418
	17.254		17.273
	17.248		17.252
	17.251		17.263
			17.251
			17.257

cos² 0° 22'	9.99998
log 13560	4.13226
colog 17.257	8.76303
785.7	2.89527
	− 32
	2.89495

S = { ~~785.7 + 1.3 787.0~~ 785.1 + 1.3 = 786.4

99.6
83.1
182.7

D = 0° 33'

D = 0°41'
Rod inverted

Middle	Upper	Middle	Lower
12,962	6.040	13.556	6.435
,951	.032	.561	.411
.950	,056	.540	422
.965	,047	,541	421
.957	.046	.541	422
.944	,048.	,530	435
329	269	269	146
12,955	6.045	13,545	6,424
6.045		6.424	
6.910		7.121	

Upper	Middle	Lower	Middle
6,038	12,990	6.454	13,548
,050	,960	.439	.531
,037	,980	.415	,569
,048	971	.423	.561
,045	.966	,430	,551
,055	,975	,429	.550
273	442	190	310
6.046	12.974	6.432	13.552
	6.046		6.432
	6.928		7.120
	6.910		7.121
	6.919		7.121

$\cos^2 0^\circ 33'$	9.99996	$\cos^2 0^\circ 41'$	9.99994
$\log \frac{13560 \times 74}{150}$	3.82540	$\log \frac{13560 \times 76}{150}$	3.83698
colog 6.919	9.15996	colog 7.121	9.14746
966.76	2.98532	964.67	2.98438
	− 32	966.76	32
966.05	2.98500		2.98406
	S =	~~965.7~~	963.96
		~~+ 1.3~~	966.05
		~~967.0~~	

S = 965.0
1.3
966.3

Moved to Stake about 150m West of Ent. Stone & observed on rod at next Stake West (Same sighted from Scrub Settlement Road yesterday)

D = 2° 35'

Lower	Upper	Lower	Upper
15.970	3.916	15.970	3.866
,989	.900	.944	,865
,985	,890	.955	,861
985	,912	,974	,841
990	,891	.955	,825
.976	,890	.952	.831
495	599	350	.289
15.983	3.900	15.958	3.848
3.900		3.848	
12,083		12.110	

Upper	Lower	Upper	Lower
3.899	15.965	3.819	15.920
.897	.959	831	940
,880	,945	825	932
,880	,937	810	928
,877	.951	854	945
.891	.948	829	924
524	305	168	.189
3.887	15.951	3.828	115.931
	3.887		3.828
	12.064		12.103
	12.083		12,110
	12.074		12.106
	12,073		12.074
			12.090
			12.093
			12,092

cos² 2°35'	9.999 12
log 13560	4.132 26
colog 12.090	8.917 57
1119.3	3.048 95
	− 32
1118.5	3.048 63

S = { ~~1119.3 + .3 = 1120.6~~ 1118.5 + 1.3 = 1119.8

From same stake sighted back (east) to rod on ridge 183 ft east of Latitude Stone.

E 2° 25'

Lower	Upper	Lower	Upper
17.026	2.827	17.067	2.871
.002	.830	.065	.870
.014	.816	.075	.859
.002	.845	.067	.840
.009	.819	.066	.848
.003	.840	.050	.864
56	177	390	352
17.009	2.829	17.065	2.859
2.829	2.829	2.859	2.859
14.180		14.206	
14.180		14.206	

Upper	Lower	Upper	Lower
2.839	16.958	2.829	16.956
.815	.965	.843	.931
.825	.960	.845	.935
.813	.960	.839	.918
.822	.960	.820	.911
.820	.948	.818	.900
134	351	194	151
2.822	16.958	2.832	16.925
2.822	2.822	2.832	2.832
	14.136		14.093
	14.180		14.206
	14.158		14.150
	14.158		14.158
			14.154
			14.156
			14.154

cos² 2° 25'	9.99923
log 13560	4.13226
Colog 14.154	8.84912
956.3	2.98061
	− 77 32
955.6	2.98029

S = { ~~956.3 + 1.3 = 957.6~~

= { 955.6 + 1.3

956.9

From same stake measured west to pt abreast of old stone pile much dilapidated. This mound was marked by a stake at center

33.3
10
43.3 fm "A"

D = 1°55'

South of line

Middle	Upper
15.639	2.572
633	.585
628	599
615	581
630	585
622	571
167	493
15.628	2.582
2.582	2.582
13.046	
13.046	

13.04) 13560. (1040
13 04
5200

1040
74
4160
7280
150) 76960 (513
750
196
150
460
450

513
775
1288

66) 1.288 (19.5
66
628
594
340
330

Upper	Middle
2.568	15.609
570	615
571	611
582	603
575	615
556	600
422	53
2.578	15.609
2.570	2.570
	13.039
	13.046
	13.042
	13.042

$\cos^2 1°55'$	9.99951
$\log \frac{13560 \times 74}{150}$	3.82540
colog 13.042	8.88466
512.3	2.70957 32

2.70925

S = ~~512.3 + 1.3 = 513.6~~

5120
+ 1.3
513.3

185

Going East to Thomas Road
line in Bud 4 S. of A line

Set slate at E. side road
and put tack in blaze in S.
side wild cherry east side
road

Put in stakes on ridge
Eastern one 18.5 ft south
of blaze + tack on S.E. side
of old chestnut

Stopped at stake on wooded
ridge next east of gatehouse
and put in a stake 51.0 ft
south, for boundary.

Witnessed by blazes on 3 trees

E. by N.	(S. side of tree)	16.1 ft
W.N.W.	(toward stake)	36.6 "
S.W.	(S. side of tree)	23.15

Set up 6 ft west of fence east of Stake on wooded ridge and sighted back on rod by above Stake (both about 7 ft north of "A" line

$\varepsilon = 3^\circ 8'$		$\varepsilon = 3^\circ 43'$	
Lower	Middle	Middle	Upper
16.187	4.114	14.904	3.190
.201	.129	.902	.181
.209	.129	.913	.172
.220	.121	.927	.175
.205	.124	.908	.174
.192	.122	.890	.175
014	139	44	467
16.202	4.123	14.907	3.178
4.123		3.178	
12.079		11.729	

Middle	Lower	Upper	Middle
4.105	16.202	3.192	14.910
124	211	.197	.920
139	225	.200	922
114	213	.179	933
136	190	.197	916
113	.225	.179	913
131	66	544	114
4.122	16.211	3.191	14.919
	4.122		3.191
	12.089		11.728
	12.079		11.729
	12.084		11.728 +

$\cos^2 3^\circ 08'$	9.99870	$\cos^2 3^\circ 43'$	9.99817
log $\frac{13560 \times 76}{150}$	3.83698	log $\frac{13560 \times 74}{150}$	3.82540
Colog 12.084	8.91779	Colog 11.728+	8.93176
566.85	2.75347	569.28	2.75533
569.28	− 32		− 32
568.07	2.75315	568.87	2.75501
566.43		δ =	568.1 + 1.3 569.4
568.87			
567.65			567.7 + 1.3 569.0

From same point sighted east at rod abreast of stake on east brow of hill no 20' north of A

Reading of direct line $\overset{3}{\underline{3}}9°30'$
Reading of rod, 38°43' } diff = 0° 47'

D = 4°37'
Rod inverted

D = 4°22'

d 4°22'		d 4°37'	
Middle	Upper	Middle	Lower
14.826	4.351	15.107	4.292
830	.310	.080	.307
832	.295	.092	.292
827	.312	.094	.270
798	.330	.097	.288
794	.320	.085	.275
507	118	555	524
14.885	4.320	15.092	4.287
4.320		4.287	
10.565		10.805	

Upper	Middle	Lower	Middle
4.~~300~~ 300	14.796	4.279	15.082
.~~280~~ 280	.803	278	.075
.~~300~~ 300	770	288	.071
.~~282~~ 282	762	288	.062
.260 260	767	292	.086
.255 255	762	285	.081
477	460	510	457
4.280	14.777	4.285	15.076
	4.280		4.285
	10.497		10.791
	10.565		10.805
	10.531		10.798

cos² 4°22'	9.99748	cos² 4°37'	9.99718
log $\frac{13560 \times 74}{150}$	3.82540	log $\frac{13560 \times 76}{150}$	3.83698
colog 10.521	8.97794	colog 10.798	8.96666
632.15	2.80082		2.80082
cos 0°47'	9.99996	631,68	− 32
632.1	2.80078		2.80050
631.63	− 32	S =	{ 632.1
	2.80046		+ 1.3
	631.7		633.4
	1.3		
	633.0		

6

Set up instrument where rod was last held (20 ft north of stake on "A" line) & sighted on a rod held 35 1/3 ft north of stake on "A" line just east of woods next W. of Selbyport Road.

$\angle = 3°48'$

Lower	Upper	Lower	Upper
13.781	6.086	13.552	5.892
759	.079	.556	888
744	089	.545	883
764	069	561	868
744	089	566	871
751	081	548	869
343	493	328	471
13.757	6.082	13.555	5.879
6.082		5.879	
7.675		7.676	

Upper	Lower	Upper	Lower
6.082	13.750	5.876	13.533
080	759	865	547
091	754	872	542
072	762	868	550
085	752	879	535
078	758	872	545
488	335	432	252
6.081	13.756	5.872	13.542
	6.081		5.872
	7.675		7.670
	7.675		7.676
	7.675	7.674	7.673

cos² 3°48'	9.99809
log 13560	4.13226
colog 7.674	9.11498
1759.3	3.24533
colog "	6.75467
log 15.34	1.18583
sin 0°29'58.6"	7.94050
cos "	9.99998
log 1759.3	3.24533
log 1759.2	3.24531
−	32
1757.9	3.24499

S = ~~1759.2 + 1.3 = 1760.5~~

1757.9
+ 1.3
1759.2

Put in stake on line on W side of track and another with guard stakes on top of small bluff about 20 ft from stump and 7.3 ft from chestnut at fence corner up hill and 23.9 from butternut in hollow a little E. of it.
Blaze & tack on latter
Stake W of rail is 14.0 ft W. of B.M. on large rock E. of track marked 1402 in black

Sketch showing relation of stakes at crossing of Youghiogheny River ~~South~~ of Watsondale, Penn.

Angle from "C" to 2 R.R. Line Post

1) Eastern	132° 35' 40"	47° 24' 20"	110.5
2 Western	133 43' 00"	46 17 00	112.2

General direction of track to South~~ward~~
126° 30'   53° 30'

Rect. offset = 107.73 ft
offset down track = 134.0
" thro' W. post = 149.1

At "Track"

Observed on rod at Stake B on the east side of the fence

D = 0° 3'		Rod inverted D = 0° 33'	
Upper	Middle	Lower	Middle
2.489	20.405	0.857	19.251
499	421	.890	.268
491	415	.888	.262
500	427	.857	251
506	429	869	265
503	415	872	254
2988	112	433	351
2.498	20.419	0.872	19.258
	2.498		0.872
	17.921		18.386

Middle	Upper	Middle	Lower
20.302	2.454	19.249	0.869
.319	.431	.258	859
.319	420	259	872
319	431	259	858
320	437	249	874
318	430	259	859
97	203	33 3	391
20.316	2.434	19.255	0.865
2.434		0865	
17.882		18.390	
17.921	17.902	18.386	18.388

log $\frac{13560 \times 74}{150}$	~~4.132 26~~ 3.82540	log $\frac{13560 \times 76}{150}$	~~4.132 26~~ 3.83698
colog 17.902	8.74710	colog 18.386	8.73551
	2.57250 − 32		2.57249 − 32
	2.57218		2.57217

373.4
+1.3
374.7 ✓

Rear offset at B = 108.3

At track.

Observed on rod on stake "C" at foot of hill

E 0° 19'

Upper	Lower	Upper	Lower
4.336	15.049	4.341	15.061
.321	046	.350	059
.328	057	340	075
826	051	344	060
331	046	353	067
329	045	355	068
171	294	283	390
4.329	15.049 4.329 10.720	4.347	15.065 4.347 10.718

Lower	Upper	Lower	Upper
15.049	4.347	15.070	4.363
051	355	.075	382
050	354	.084	376
047	338	077	371
049	344	067	379
054	341	073	388
300	279	446	459
15.050 4.346 10.704 10.720	4.346 10.712	15.074 4.376 10.698 10.718	4.376 10.708 10.712 10.710

Cos° 0° 19'	9.99998
log 13550	4.13194
colog 10.710	8.97021
1265.1	3.10213

$$S = \left\{ \begin{array}{r} 1265.1 \\ +\ 1.3 \\ \hline 1266.4 \end{array} \right.$$

at track

Observed on rod on D on hill side

$\varepsilon = 4° 57'$

Upper	Lower	Upper	Lower
5.589	14.238	5.635	14.279
599	.249	.637	270
591	248	637	277
599	248	643	280
598	238	638	288
592	239	641	281
28	260	231	475
5.595	14.243	5.638	14.279
	5.595		5.638
	8.648		8.641

Lower	Upper	Lower	Upper
14.233	5.625	14.270	5.647
.230	.609	290	.668
250	.610	275	649
251	621	273	647
247	637	283	630
248	630	279	621
259	13 2	470	262
14.243	5.622	14.278	5.644
5.622		5.644	
8.631		8.634	
8.648	8.640	8.641	8.638
			8.640
			8.639

cos 4° 57′	9.99838		
cos² "	9.99676		1556.8
log 13560	4.13226		+ 1.3
colog 8.639	9.06354		1558.1
1558.	3.19256		
	− 32		
1556.8	3.19224		

at "Bluff"
observed on rod at "D"

d 6°53'

Upper	Lower	Upper	Lower
7.088	12.744	7.067	12.747
.076	.743	070	741
061	743	079	745
063	747	079	749
064	746	071	745
060	743	071	744
412	26	17	31
7.069	12.744	7.073	12.745
	7.069		7.073
	5.675		5.672

Lower	Upper	Lower	Upper
12.735	7.072	12.749	7.083
742	.069	.747	092
739	065	.746	096
749	059	744	080
741	064	740	085
745	074	754	087
251	403	40	43
12.742	7.067	12.747	7.087
7.067		7.087	
5.675		5.660	
5.675	5.675	5.672	5.666
			5.675
			5.671

cos 6° 53'	9.99686
cos² "	9.99372
log 13560	4.13226
colog 5.671	9.24634
2357.	3.37232
	32
2355.0	3.37200

S = { 2355.0
+ 1.3
2356.3

At Bluff.

Obs. on rd at Bowser - ~~East~~ West of Road

D = 0° 36'

Upper	Lower	Upper	Lower
7.848	11.475	7.837	11.479
.840	.489	850	.485
840	.475	843	471
839	.484	839	477
837	486	838	478
846	480	843	473
250	489	250	43
7.842	11.481	7.842	11.477
	7.842		7.842
	3.639		3.635

Lower	Upper	Lower	Upper
11.470	7.838	11.474	7.836
.479	.844	475	.838
.476	.849	463	838
474	843	473	830
485	839	484	829
470	841	488	841
34	254	457	212
11.476	7.842	11.476	7.835
7.842		7.835	
3.634		3.641	
3.639	3.636	3.635	3.638
			3.636
			3.637

Cos 0° 36'	9.99998	
Cos² "	9.99996	
log 13550	4.13194	3725.3
colog 3.637	9.43926	+ 1.3
3725.3	3.57116	3726.6

Dec. 19 P.M.

At Station on wooded hill side east of large ravine E of Bowsers road and 50 ft N. of Pipe line gap: sighting on rod held at 2d Station E. of Browser's Road Recording for myself, work necessarily slow.
d 1° 02

d 1° 02'

Upper	Lower	Upper	Lower
6.~~750~~ 715	12 863	6 710	12 872
~~77~~ 719	880	699	859
~~789~~ 716	880	713	876
723	892	716	871
725	902	713	887
727	897	729	877
125	514	80	442
6.721	12886	6.713	12,874
	6,721		6 713
	6.165		6.161

Lower	Upper		
12 918	6.791	12 890	6 779
916	809	882	786
925	810	898	794
932	813	899	796
945	823	904	791
950	838	906	797
180	84	579	543
12,930	6 814	12 896	6.791
6 814		6 791	
6,116		6,105	
6,165		6 161	
6,140		6.133	
		6.140	6.136

cos 1° 02'	9.99993
cos² "	9.99986
log 13550	4.13194
cotan 6.136	9.21211
22075	3.34391

Repeated preceding observation with the aid of a recorder, by which means the pointing could be made more rapidly

d 1° 02′

Upper	Lower	Upper	Lower
6.719	12,838	6.617	12,750
719	.837	.616	750
710	.839	615	759
719	840	619	751
721	852	610	757
718	854	619	758
106	260	36	255
6.7177	12.8433	6.616	12.754
	6.7177		6.616
	6.1256		6.138

Lower	Upper	Lower	Upper
12,842	6.723	12.748	6.628
835	.718	752	.625
852	725	749	.624
848	720	750	626
846	730	752	626
859	721	751	620
282	137	2	29
12.847	6.723.	12.750	6.625
6.723		6.625	
6.124			
6.126	6.125	6.125	
		6.138	6.131
			6.125
			6.128

cos² 1° 02′	9.999 86
log 13550	4.131 94
colog 6.128	9.212 68
2210.4	3.344 48

Giving this mean 3 times the weight of the former

$$\delta = \left\{ \begin{array}{r} 2209.7 \\ + \quad 1.3 \\ \hline 2211.0 \end{array} \right.$$

78
80 85
5

At Point 4.5 ft E. of l. stump + 80.85 ft east of Station N. of Earth mound in fence line about 30 ft E. of fence running S. Sighted west on rod held 50 ft S. of last station; Rod & this station are in "A" line

D 1°47'

d 1°47'

Upper	Lower	Upper	Lower
3.389	16.091	3.323	16.074
.369	.089	320	.055
374	087	318	086
.380	088	313	065
.371	095	322	079
.384	096	325	070
467	6	121	429
3.378	16.091	3.320	16.071
	3.378		3.320
	12.713		12.751

Lower	Upper	Lower	Upper
16.082	3.341	16.063	3.321
090	.349	.069	318
099	349	069	316
095	358	.073	315
081	350	077	315
073	335	075	327
520	282	6	112
16.087	3.347	16.071	3.319
3.347		3.319	
12.740		12.752	
12.713	12.727	12.751	12.751
			12.727
			12.739

cos² 1°47'	9.99958
log 13550	4.13194
colog 12.739	8.89486
	3.02638
1062.6	

S = { 1062.6
+ 1.3
1063.9
− 80.9
983.0

Dist from last station to that abreast of mound

at 193.313 miles (m.p.)

At same station sighted unit on rod held at stake ft west of road leading from Speelman's mill to Peters bridge or Addison.

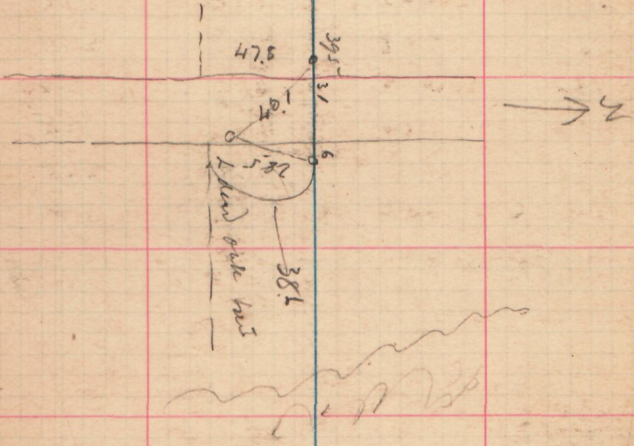
$\mathcal{E} = 0° 22'$

Upper	Lower	Upper	Lower
6.195	13.270	6.176	13.263
191	.280	.174	.260
190	265	.184	252
199	270	.171	255
191	280	171	255
193	280	168	252
19	445	454	337
6.193.	13.274	6.1.76	13.256
	6.193		6.176
	7.081		7.080

Lower	Upper	Lower	Upper
13.283	6.172	13.254	6.172
283	.179	262	181
280	.187	240	187
264	187	263	181
270	184	262	181
279	186	250	187
461	495	35-1	9
13.277	6.183	13.258	6.181
6.183		6.181	
7.094		7.077	
7081	7.0875	7.080	7.0785
			7.0875
			7.083

cos² 0° 22'	9.99998
log 13550	4.13194
colog 7.083	9.14977
1912.9	3.28169

S = { 1912.9 + 1.3 = 1914.2


47.8
39.5
31
40.1
6
5.32
dead stake line
38.6
N

Dec. 20th on R R track

22

Testing rods

Time 10-40 a.m.

D = 0° 5'

Upper	Lower	Upper	Lower
3.086	16.585	3.118	16.705
.079	562	115	699
.059	559	112	705
054	558	129	698
042	551	155	715
030	539	137	719
350	354	161	41
3,058	16 559	3.127	16 707
	3 058		3 127
	13.501		13.580

Lower	Upper	Lower	Upper
16,539	2,951	16,719	3.192
538	920	719	199
531	919	739	201
522	930	729	199
513	919	732	211
519	910	739	209
162	149	177	11
16.527	2,925	16 729	3 202
2925		3 202	
13.602		13 527	27.103
13 501		13 580	27.107
13.552		13.553	54.210
			13.552½

Upper	Lower	Upper	Lower
3.030	16,640	2,958	16.551
031	.647	954	565
038	654	959	568
036	668	980	572
046	668	970	571
050	671	982	580
229	348	403	407
3.038	16 658	2.967	16.568
	3 038		2967
	13,620		13.601

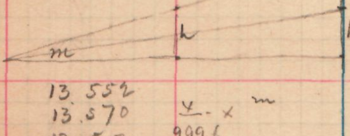
Lower	Upper	Lower	Upper
16.678	3.147	16,587	3.065
682	158	594	.072
691	162	591	070
709	169	603	068
709	168	611	086
708	181	618	087
577	385	04	448
16.696	3,164	16 601	3075
3 164		3 075	
13 532		13 526	13.576
13 620		13 601	13.564
13.576		13 564	13.570

Upper	Lower	Upper	Lower
2,859	16.459	2,862	16.448
.861	458	873	.459
877	464	852	456
862	471	859	461
874	473	870	470
884	473	871	473
411	398	387	367
2.868	16.466	2.864	16.461
	2.868		2.864
	13.598		13.597

Lower	Upper	Lower	Upper
16.479	2,959	16.486	2,958
479	.970	.491	.972
501	959	499	982
489	987	504	981
489	970	515	999
498	986	518	996
535	431	13	488
16.489	2.972	16.502	2.981
2.972		2.981	
13.517		13.521	
13.598		13.597	13.559
	13.557		13.557
			13.558

Upper	Lower	Upper	Lower
2.815	16.371	2.799	16.339
808	.374	792	.339
812	386	789	351
821	390	789	349
823	389	791	349
819	400	799	355
98	510	559	282
2.816	16385	2.793	16.347
	2.816		2.793
	13.569		13.554

Lower	Upper	Lower	Upper
16.408	2.877	16.347	2.811
.415	890	.353	807
.411	897	357	806
.414	890	358	814
.420	902	353	824
.425	897	359	805
93.	553	327	67
16.415	2.892	16.354	2.811
2.892		2.811	
13.523		13.543	
13.569	13.546	13.554	13.548
			13.546
			13.547



13.552
13.570
13.554
13.547
223
13.556

$\frac{4}{999.6} \times$ m

$\tan m = \frac{h}{s}$ ∴

4.13226
1.13213
3.00013

2.99983
1.13213
4.13196
13.55

$s = \frac{h}{\tan m} = \frac{h}{m \tan 1''}$ or $h = s . m . \tan 1''$

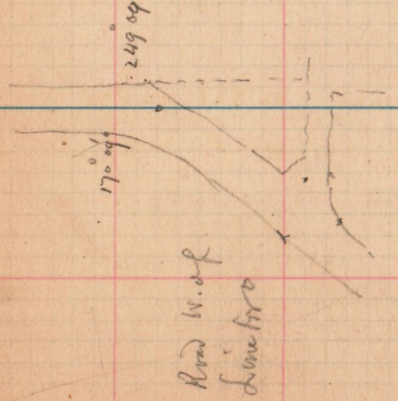
$K = \frac{h}{13556 \tan 1''} = 999.6$

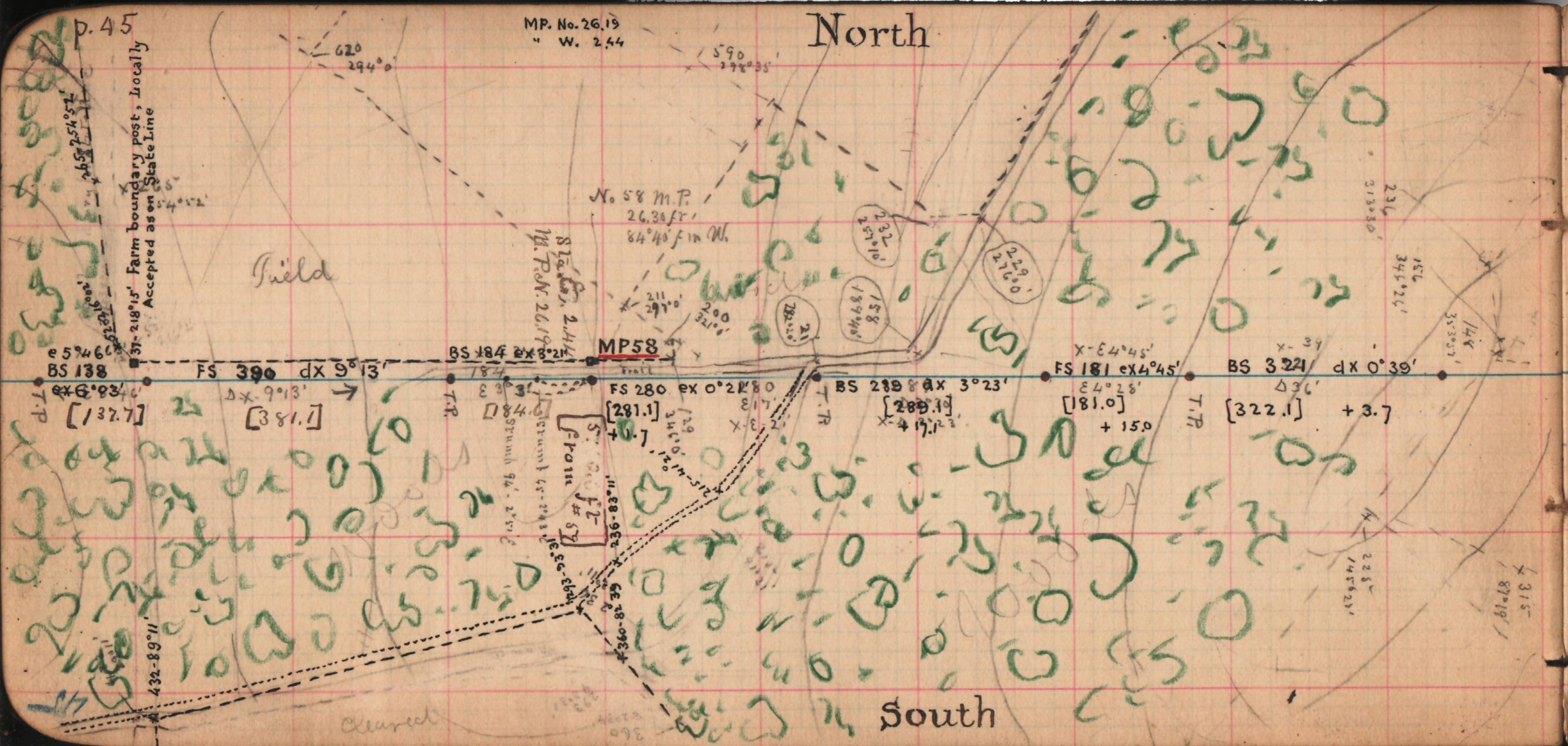
$\frac{S}{K} = \frac{s}{999.6} = \frac{h}{m \tan 1''} = \frac{13556 \tan 1''}{h}$ ∴ $S = \frac{999.6 \times 13.556}{m} = \frac{13550}{m}$

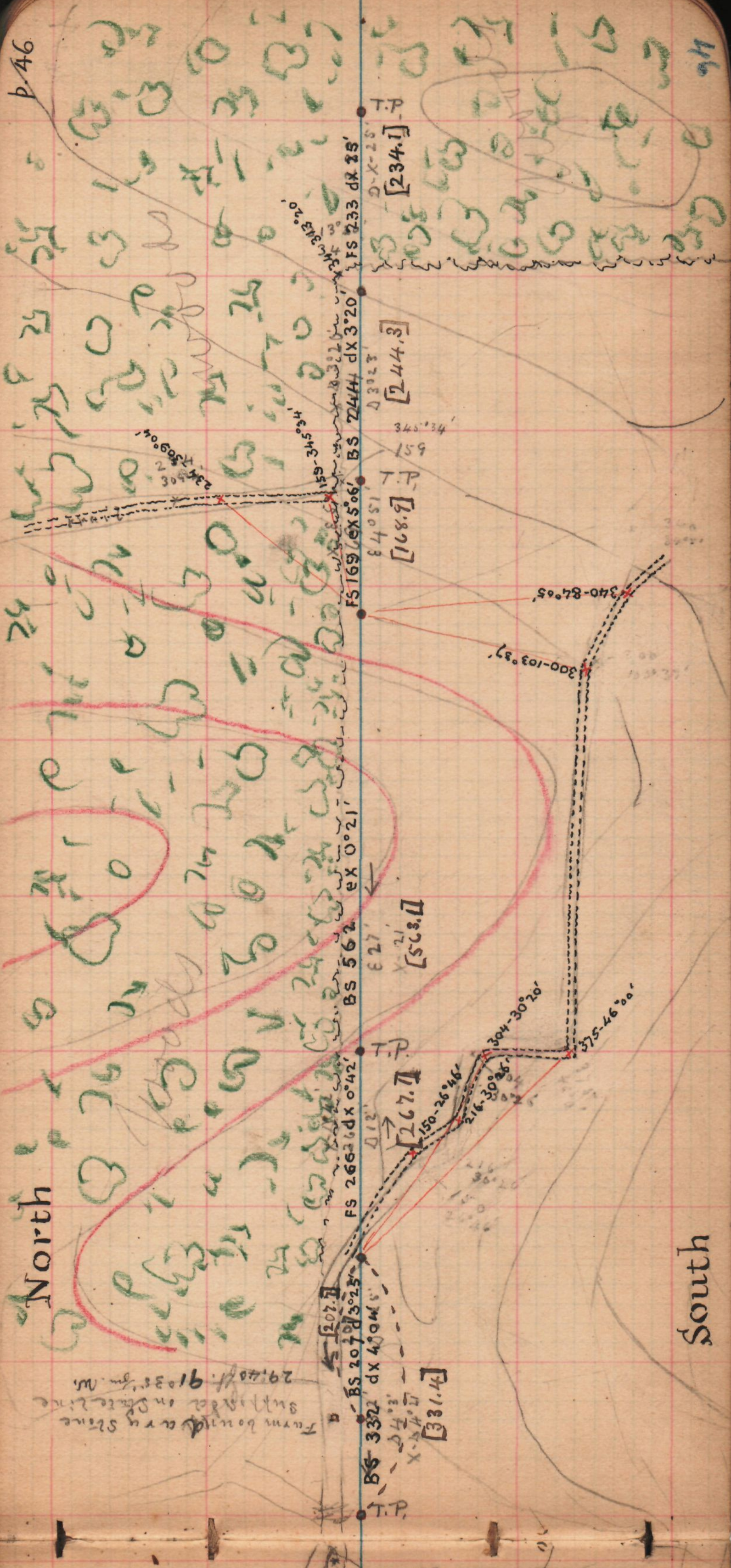
log 13550 = 4.13194

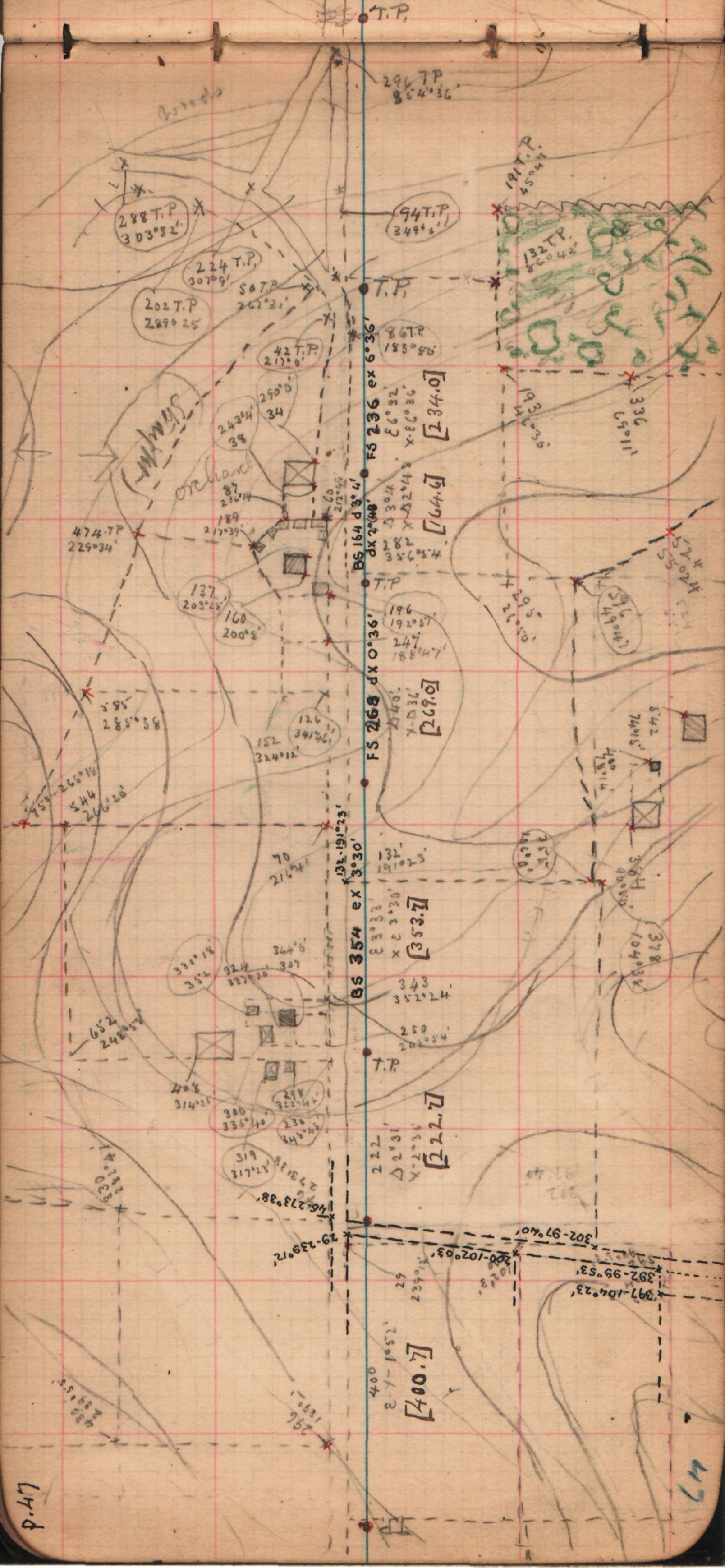
Note:

The azimuths are reckoned from the eastern direction of the transit line. E.= 0°; S.= 90°; W.= 180°; N.= 270°.

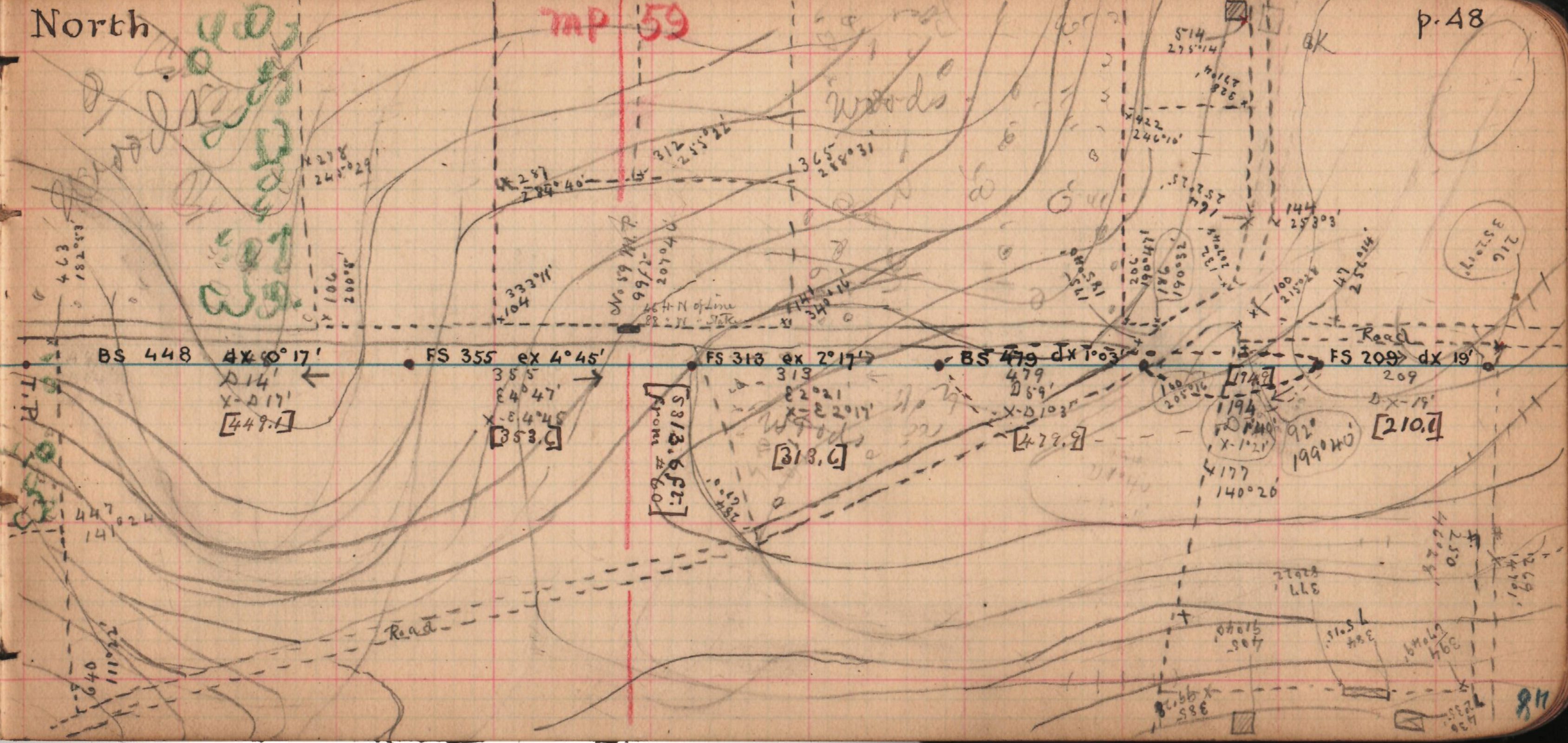



North
MP. No. 26.19
" W. 2.44
620
294°0'
590
298°35'
37-218°15' Farm boundary post, Locally Accepted as on State Line
265-254°52'
265
54°52'
e 5°46'
BS 138
~~ex 6°83'~~ 46'
[137.7]
T.P.
Field
FS 390 dx 9°13'
Δx-9°13'
[381.1]
T.P.
No. 58 M.P.
26.30 ft.
84°40' f m W.
Sta. 2.44
M.P.N. 26.19
BS ~~184~~ ex 3°21'
184
ε 3° 31'
[184.6]
Stump 94' - 2°51'
Stump 45' - 2°43'
from
57
211
297°0'
200
321°0'
MP58
Trail
FS 280 ex 0°21' 80
[281.1]
+1.7
129
346°0'
215-41°21'
ε 1°
x-3°2'
236-83°11'
293-93°31'
360-82 39
432-89°11'
21
282°20'
158
189°40'
232
257°10'
229
276°0'
T.P.
BS 289 8 dx 3°23'
[289.1]
x-4° 17°23'
+17.1
X-E 4°45'
FS 181 ex 4°45'
E 4°28'
[181.0]
+15.0
T.P.
x-39
BS 321 dx 0°39'
Δ36'
[322.1]
+3.7
236
313°30'
156
345°24'
148
353°57'
228
145°21'
315
87°19'
Cleared
South

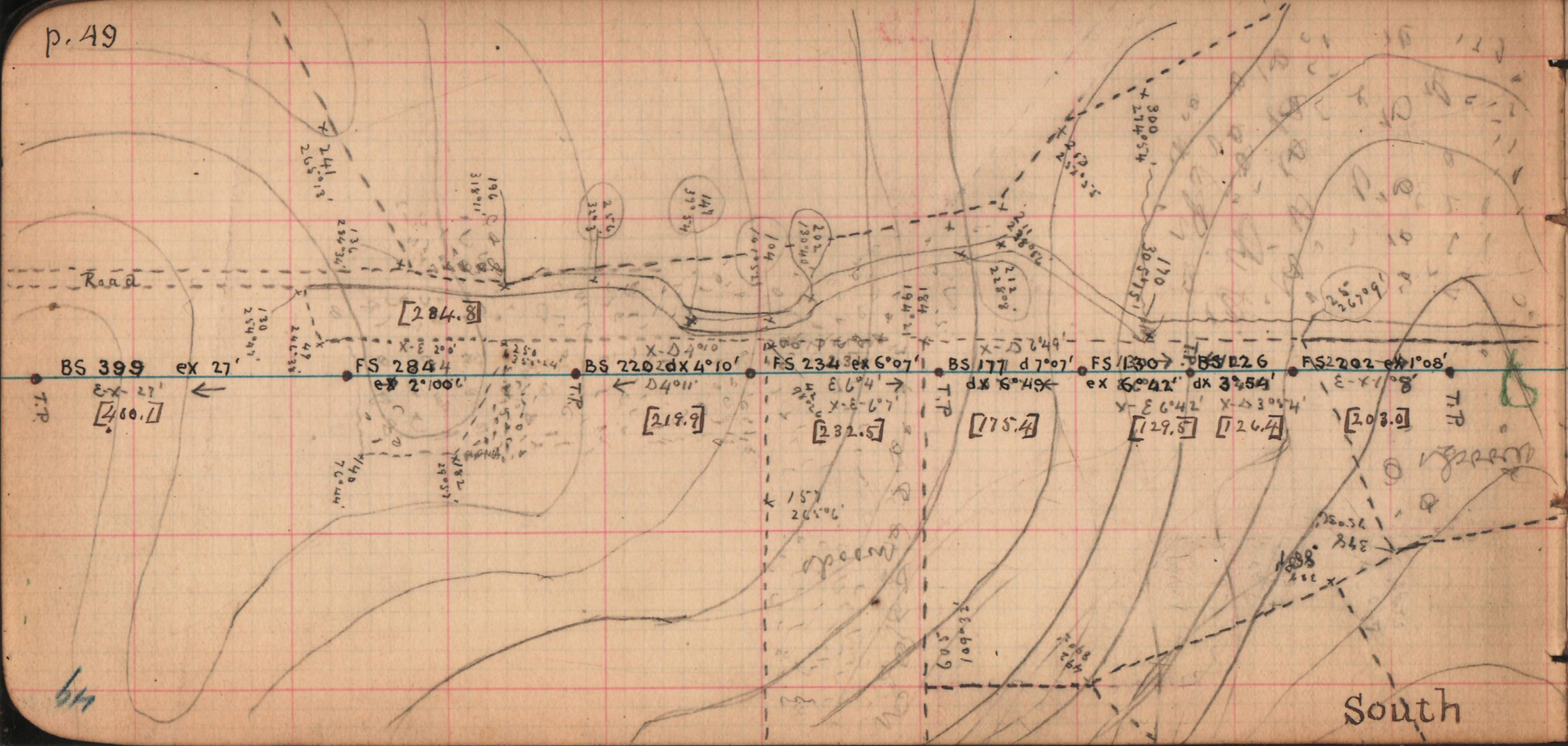
p.46
46
North
South
T.P.
FS 233 dx 3°25'
D-X-25'
[234.1]
34 3°
343°20'
BS 244 dx 3°20'
D3°23'
[244.3]
345°34'
159
234-309°04'
159-345°34'
T.P.
FS 169 dX 5°06'
E4°51'
[168.9]
340-84°05'
300-103°37'
BS 562 eX 0°21'
E27'
X-21'
[563.1]
T.P.
FS 266 dx 0°42'
D12'
[267.1]
150-26°46'
216-30°20'
304-30°20'
375-46°00'
216
30°20
150
26°46
[207.1]
BS 207 d 3°25'
BS 332 dx 4°04'
X-4°04'
[331.4]
T.P.

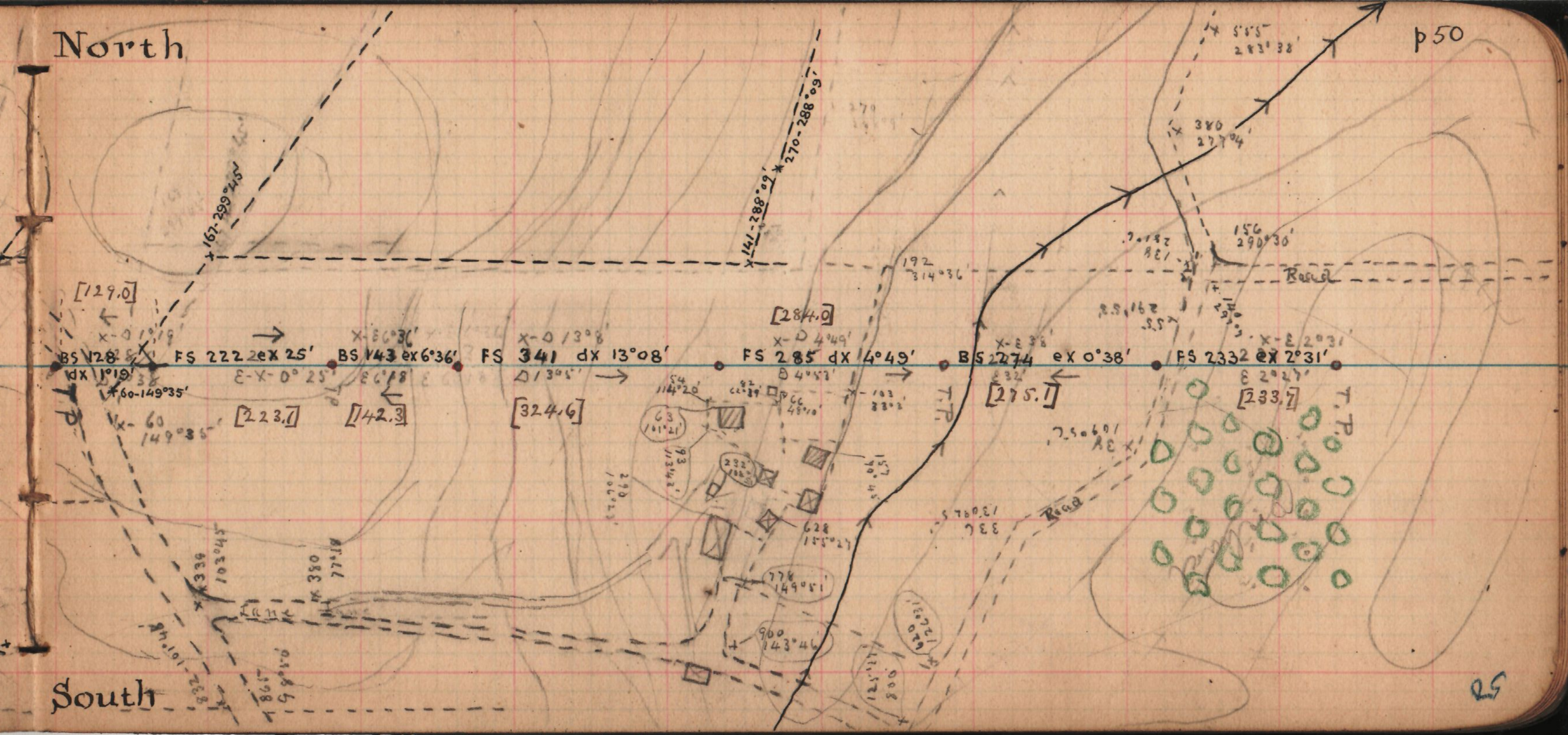

T.P.
woods
296 T.P. 354°36'
288 T.P. 303°32'
94 T.P. 349°6'
224 T.P. 307°9'
202 T.P. 289°25
50 T.P. 267°31'
191 T.P. 45°04'
132 T.P. 86°42'
T.P.
86 T.P. 183°56'
42 T.P. 217°0'
250°0' 34
243°4' 38
FS 236 ex 6°36'
E 6°32
x-E 6°36'
[234.0]
orchard
87 236°14
189 217°39'
60 212°45'
BS 164 d 3°4'
dx 2°48'
Δ 3°4
x-Δ 2°48
[164.6]
282 356°54
474 T.P. 229°34'
193 43°30'
336 11°07'
524 55°24'
137 203°28'
160 200°8'
T.P.
196 192°57'
247 188°47'
295 26°50'
396 144°40'
585 285°38
FS 268 dX 0°36'
Δ 0°40'
X-Δ 0°36'
[269.0]
126 341°46'
152 324°12
453-268°18'
544 266°20'
70 216°4'
132-191°23'
BS 354 eX 3°30'
132 191°23'
E 3°33
x E 3°30'
[353.7]
542 74°15'
400 81°18'
384 40°40'
378 104°3'
331°18' 352
324 337°20'
344°6' 307
343 352°24
652 248°55'
250 245°54'
408 314°25'
T.P.
298 322°46'
300 336°40'
230 348°43
319 317°23'
222
Δ 2°31
X-2°30'
[222.7]
330 282°41'
46-273°38'
29-239°12'
302-97°40'
220-102°03'
392-99°53'
397-104°23'
29 239°12'
400
E-X-1°52'
[400.7]
430 255°5'
296 188°
cm

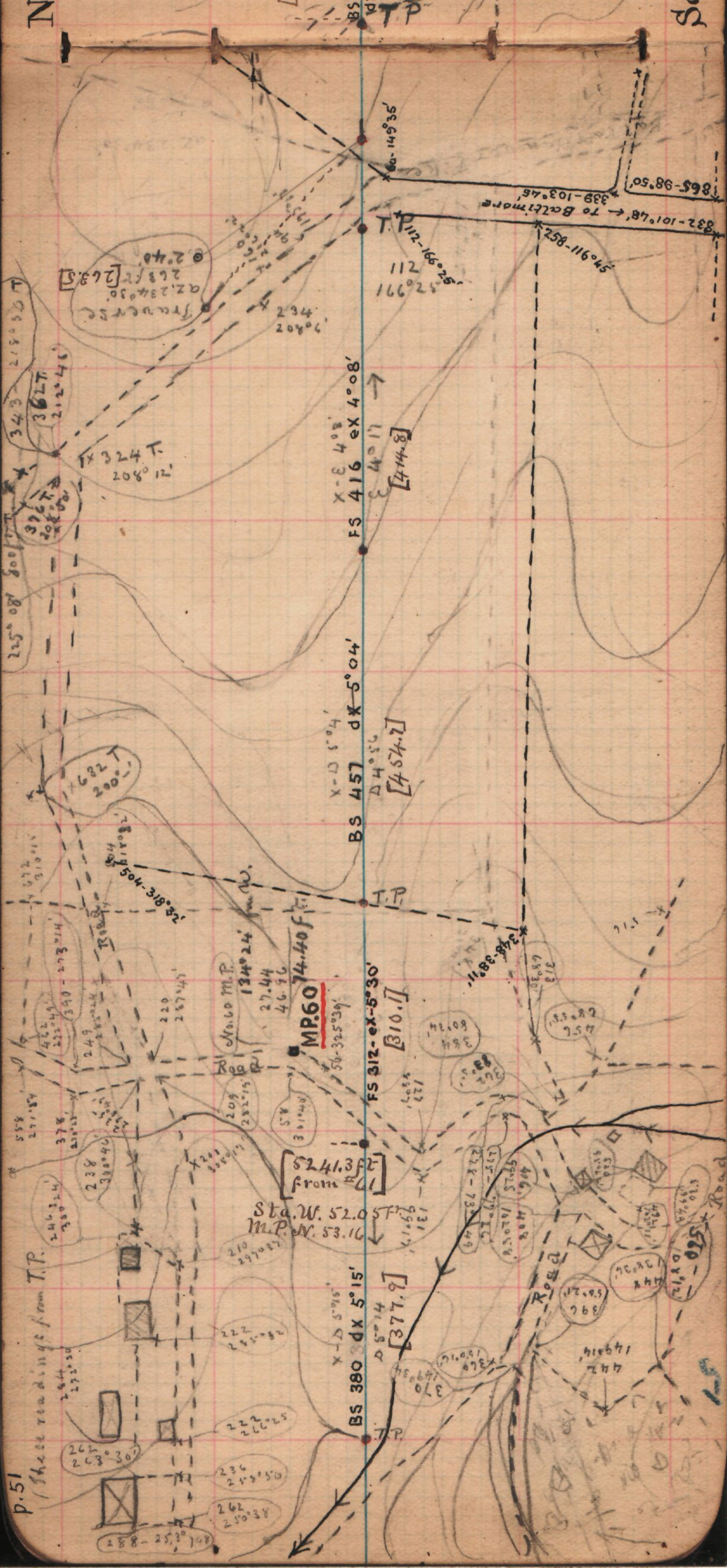
p. 48


North
MP 59
Woods
Woods
Road
Road
T.P.
BS 448 dX 0°17'
D 14'
X-D 17'
[449.1]
FS 355 eX 4°45'
355
E 4°47'
X-E 4°45
[353.6]
FS 313 eX 2°17'
313
E 2°21
X-E 2°17'
[313.6]
[5313.6 ft. from #60]
No 59 M.P.
99/2
207°40
46 ft N of Line
88 : N : Stk
BS 479 dX 1°03'
479
D 5'9'
X-D 1°03'
[479.9]
FS 209 dX 19'
209
D-X-19'
[210.1]
[194.9]
194
D 1°40'
X-1°21'
100
205°16
92°
199°40'
177
140°20
463
182°53
X 278
245°29'
X 106
200°8'
X 287
284°40'
312
255°22
X 104
333°11'
365
288°31
141
340°16
175
185°40
206
190°47
196
190°32
132
207°04
164
252°25
X 422
246°10'
328
271°04
514
275°14'
144
253°03'
100
215°28
47
252°14
216
352°17
447
141°24
640
111°22
377
272°28
405
9°40'
384
5°15'
394
7°44
385
99°28
436
2°35'
250
46°28
269
14°01'

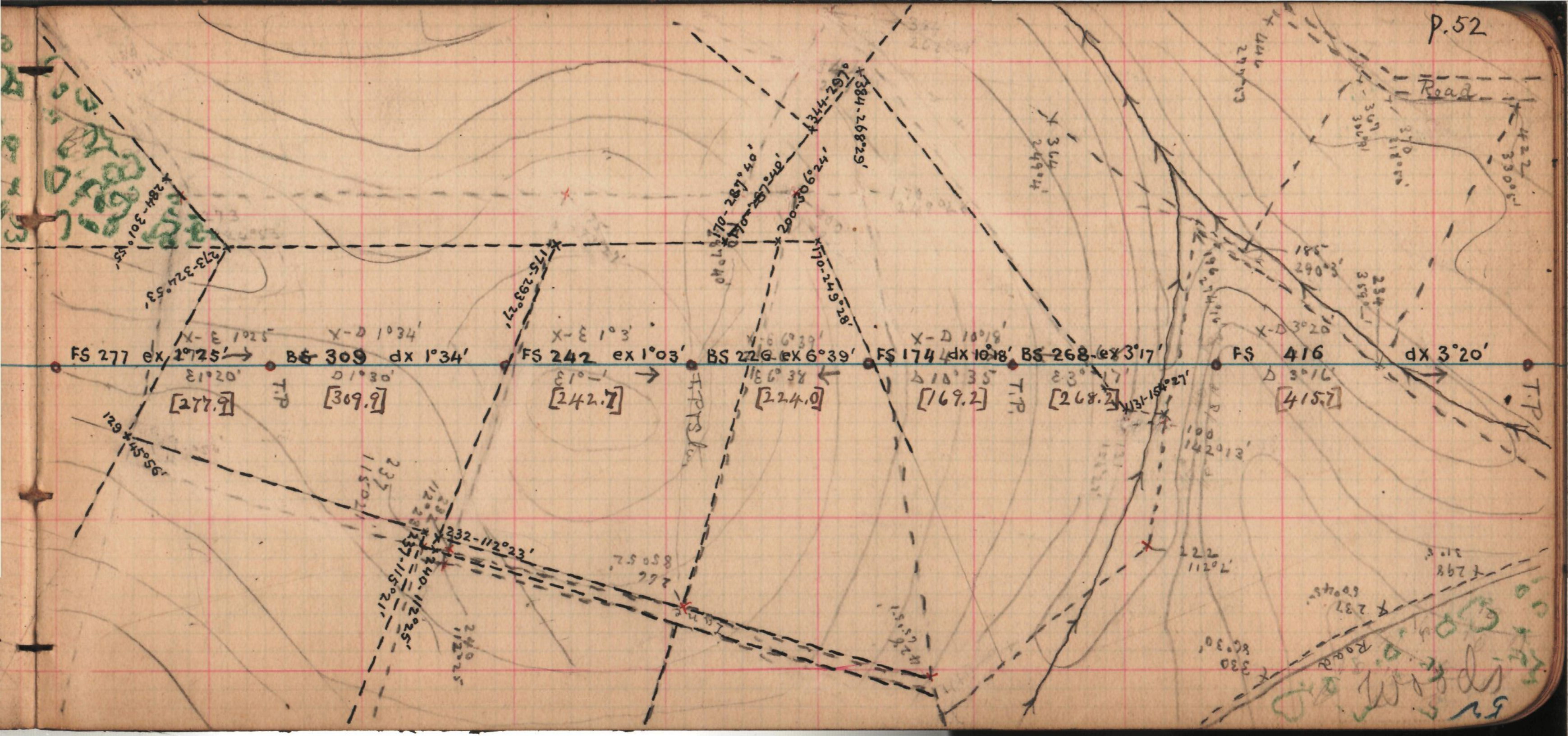
118

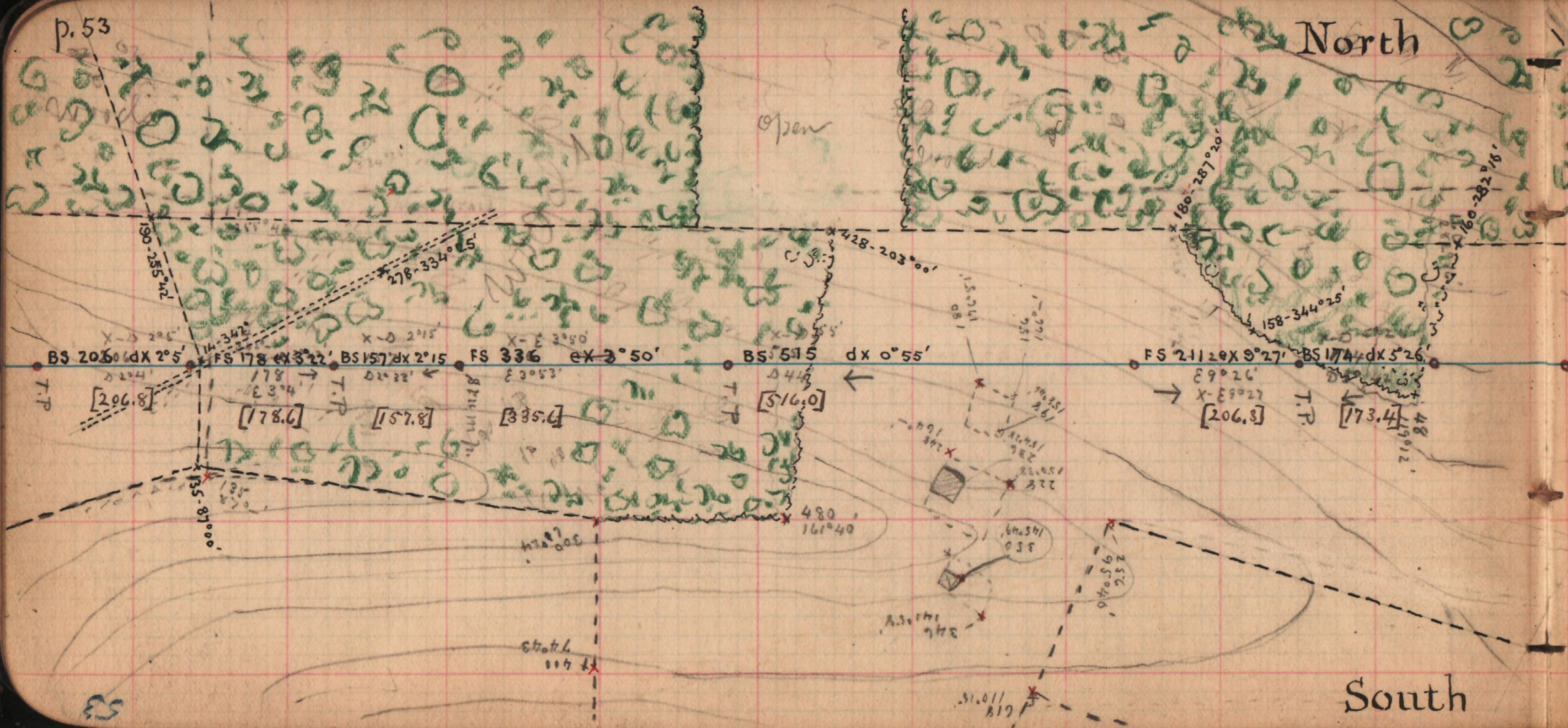

Road
241
268°13'
136
234°34'
196
318°11'
130
254°47'
49
242°38'
256
32°3'
147
39°54'
104
101°52'
202
130°40'
184
194°21'
211
238°56'
212
228°08'
252
252°35'
300
274°54'
170
305°15'
256
267°09'
T.P
BS 399 eX 27'
E-X 27'
[400.1]
FS 2844
eX 2°10'0"
X-E 2°0'
250
35°24'
[284.8]
140
76°44'
182
29°57'
T.P
BS 220 dX 4°10'
D4°11'
X-D 4°10'
[219.9]
FS 234 eX 6°07'
E 6°4'
X-E 6°7'
[232.5]
157
265°06'
Woods
T.P
BS 177 d 7°07'
dX 6°49'
X-D 6°49'
[175.4]
605
109°32'
FS 130 eX 6°42'
X-E 6°42'
[129.5]
BS 126 dX 3°54'
X-D 3°54'
[126.4]
FS 202 eX 1°08'
E-X 1°08'
[203.0]
T.P
343
888
South

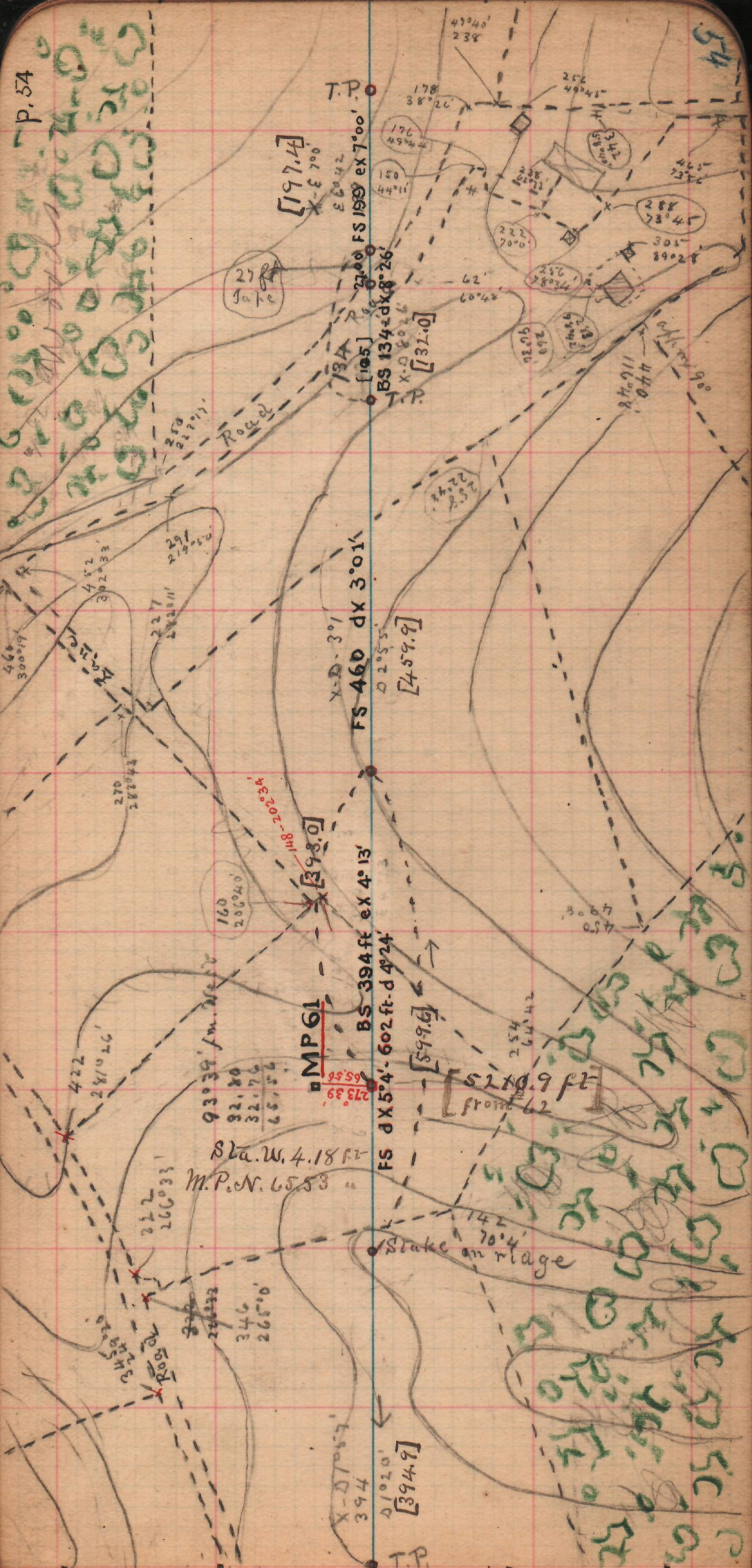

North
South
BS 128 dx 1°19'
x-D 1°19'
[129.0]
T.P.
*60-149°35'
x- 60 149°35'
167-299°45'
FS 222 2eX 25'
E-X-0°25'
[223.1]
BS 143 ex 6°36'
x-E 6°36'
E 6°18
[142.3]
FS 341 dX 13°08'
x-D 13°08'
D 13°05'
[324.6]
FS 285 dX 4°49'
x-D 4°49'
D 4°53'
[284.0]
141-288°09'
*270-288°09'
54 114°20'
63 101°21'
93 113°42'
290 106°23'
82 62°39'
66 48°10'
232
628 155°27'
778 149°51'
900 143°46'
800 125°27'
620 122°37'
192 314°36'
T.P.
BS 2274 eX 0°38'
x-E 38'
E 32'
[275.1]
103 33°2'
FS 2332 eX 2°31'
x-E 2°31'
E 2°27'
[233.7]
T.P.
156 290°30'
Road
Road
380 277°04'
555 283°38'
336 130°45'
330 77°18
338 103°45
Lane
832 101°48'

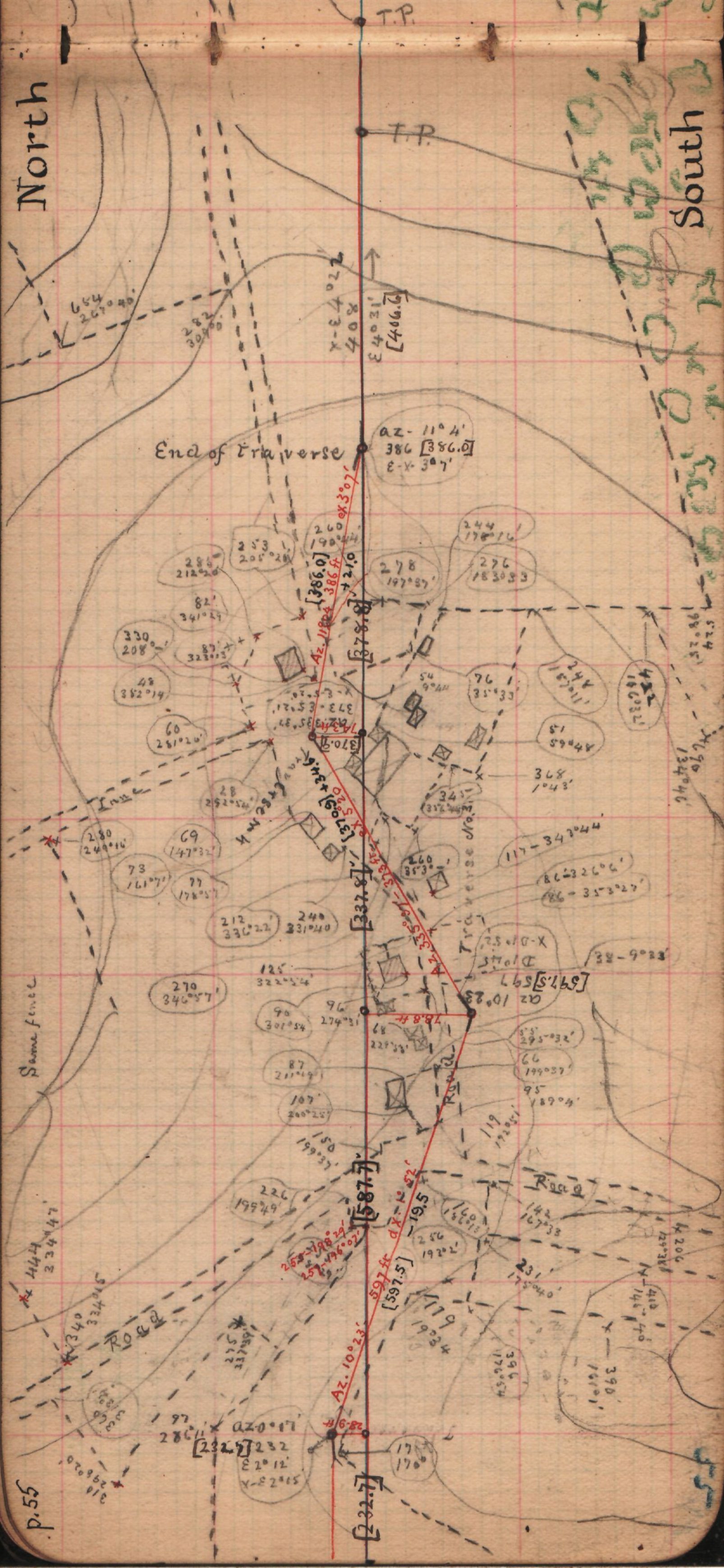

N
S
T.P.
a. 149°35'
T.P.
112-166°26'
112
166°26'
339-103°46'
865-98°50'
832-101°48' ← To Baltimore
258-116°45'
Traverse
az. 234°30'
263 ft [263.5]
2.40
234
208°6'
343
218°38' T
362 T.
212°46'
X 324 T.
208°12'
376 T.
208°50'
225°08'
FS 416 eX 4°08' →
X-E 4°08'
E 4°11'
[414.8]
BS 457 dX 5°04'
X-D 5°04'
D 4°56'
[454.2]
X 682 T
200°
504-318°32'
348-38°11'
T.P.
Road
134°24' fm W.
74.40 ft
No. 60 M.P.
27.44
46.96
MP.60
56-325°39'
FS 312- eX-5°30'
[310.1]
Road
[5241.3 ft from #61]
Sta. W. 52.05 ft
M.P. N. 53.16
BS 380 dX 5°15'
X-D 5°15'
D 5°14
[377.9]
T.P.
370
149°34'
442
149°14'
Road
Road
Three readings from T.P.
p. 51
262
243°30'
262
250°38'
236
258°30'
222
266°25'
222
285°32'
210
297°32'
288-253°48'

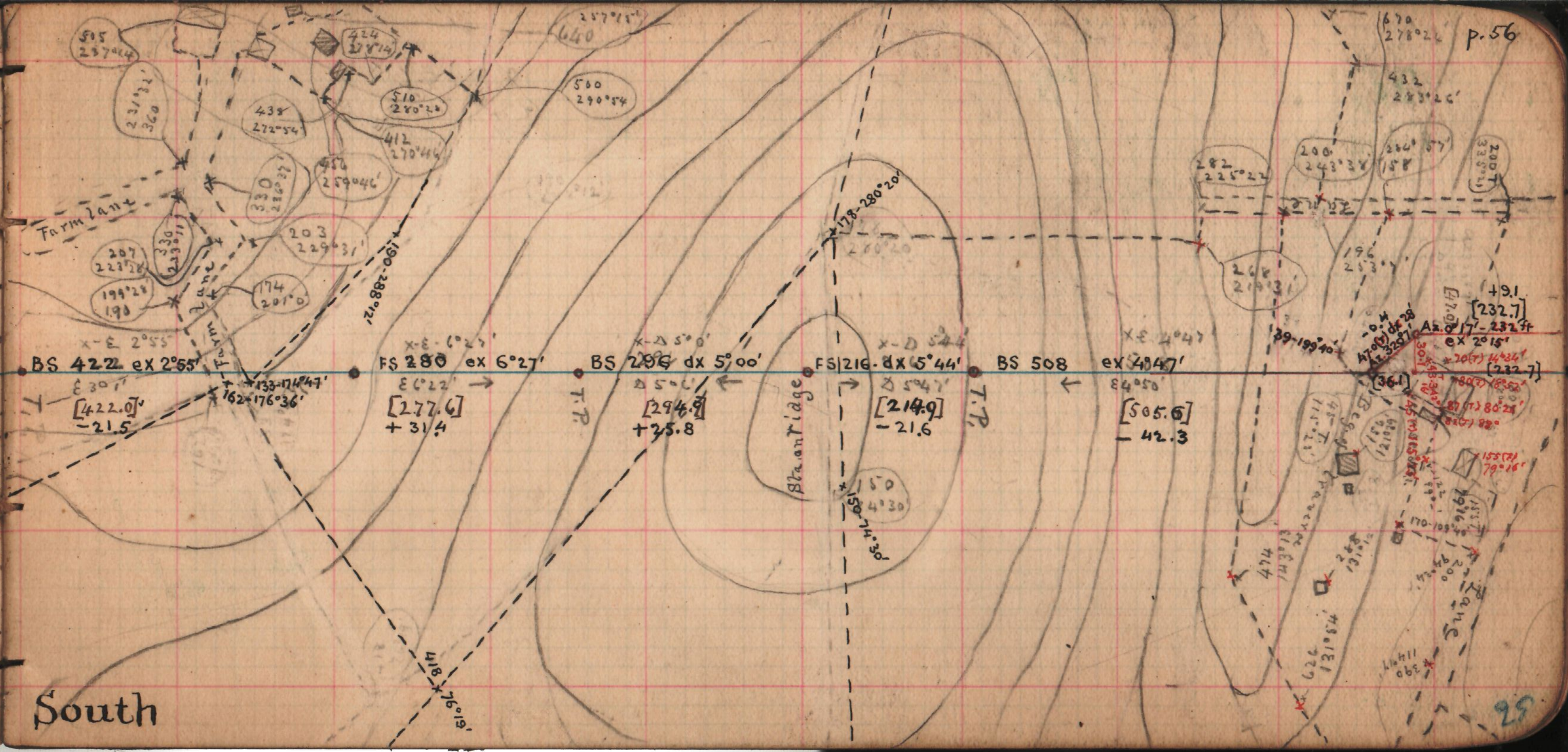
P.52

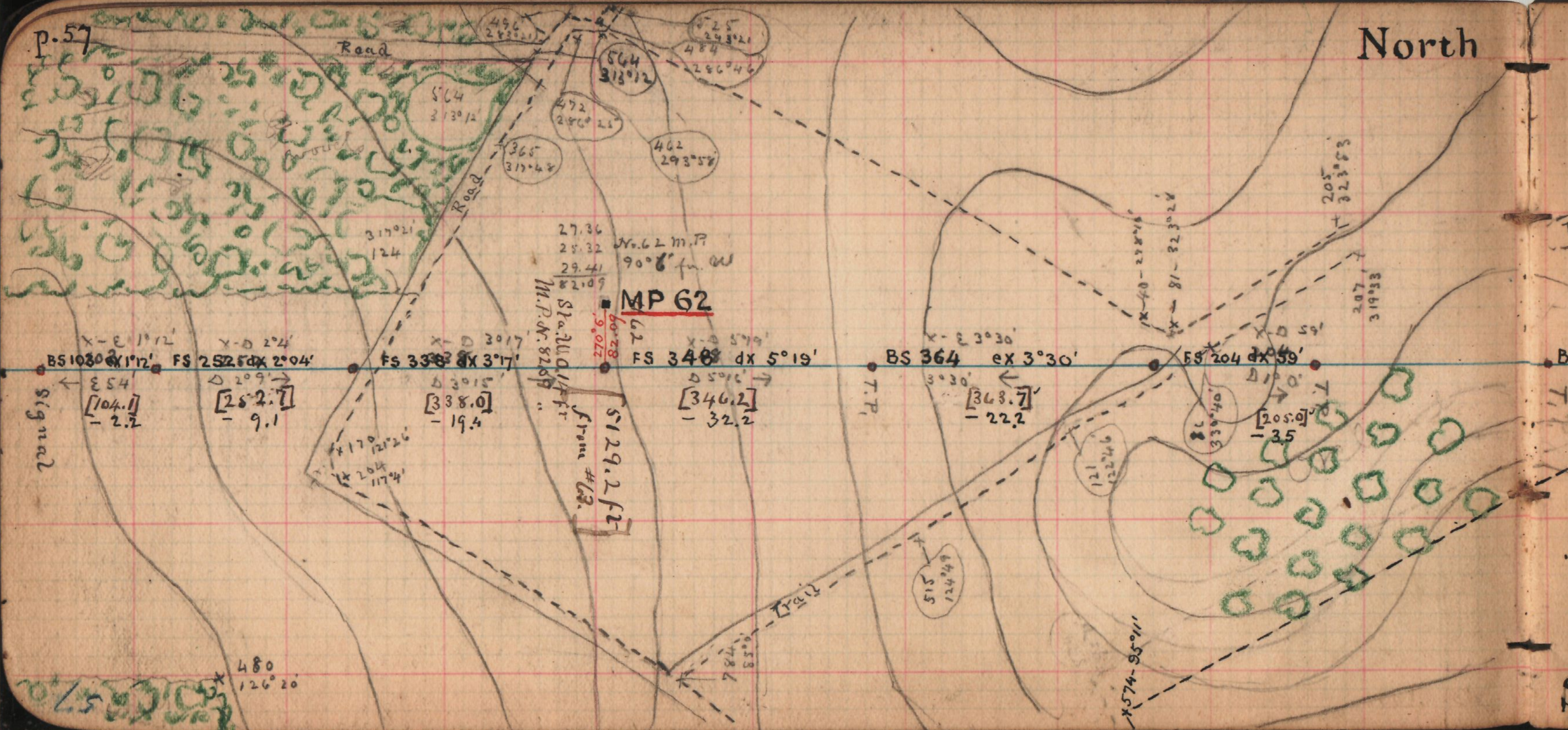

FS 277 ex 2°25'
X-E 1°25'
E 1°20'
[277.9]
T.P
BS 309 dx 1°34'
X-D 1°34'
D 1°30'
[309.9]
FS 242 ex 1°03'
X-E 1°3'
E 1°-'
[242.7]
T.P.T Sta.
BS 226 ex 6°39'
X-E 6°39'
E 6°38'
[224.0]
FS 174 dx 10°18'
X-D 10°18'
D 10°35'
[169.2]
T.P.
BS 268 ex 3°17'
E 3°17'
[268.2]
FS 416
X-D 3°20'
D 3°16'
[415.7]
dX 3°20'
T.P
273-324°53'
284-301°55'
129 45°56'
175-293°27'
170-287°40'
170-287°40'
200-306°24'
344-297°
384-268°29'
170-249°28'
232-112°23'
232 112°23'
237 115°21'
237-115°21'
240-112°25'
240 112°25'
131-154°27'
100 142°13'
222 112°2'
330 86°30'
237 89°45'
364 249°4'
185 290°3'
234 359°-'
196 274°16'
369 306°9'
370 318°58'
422 330°5'
446 277°53'
Road
Road
Woods

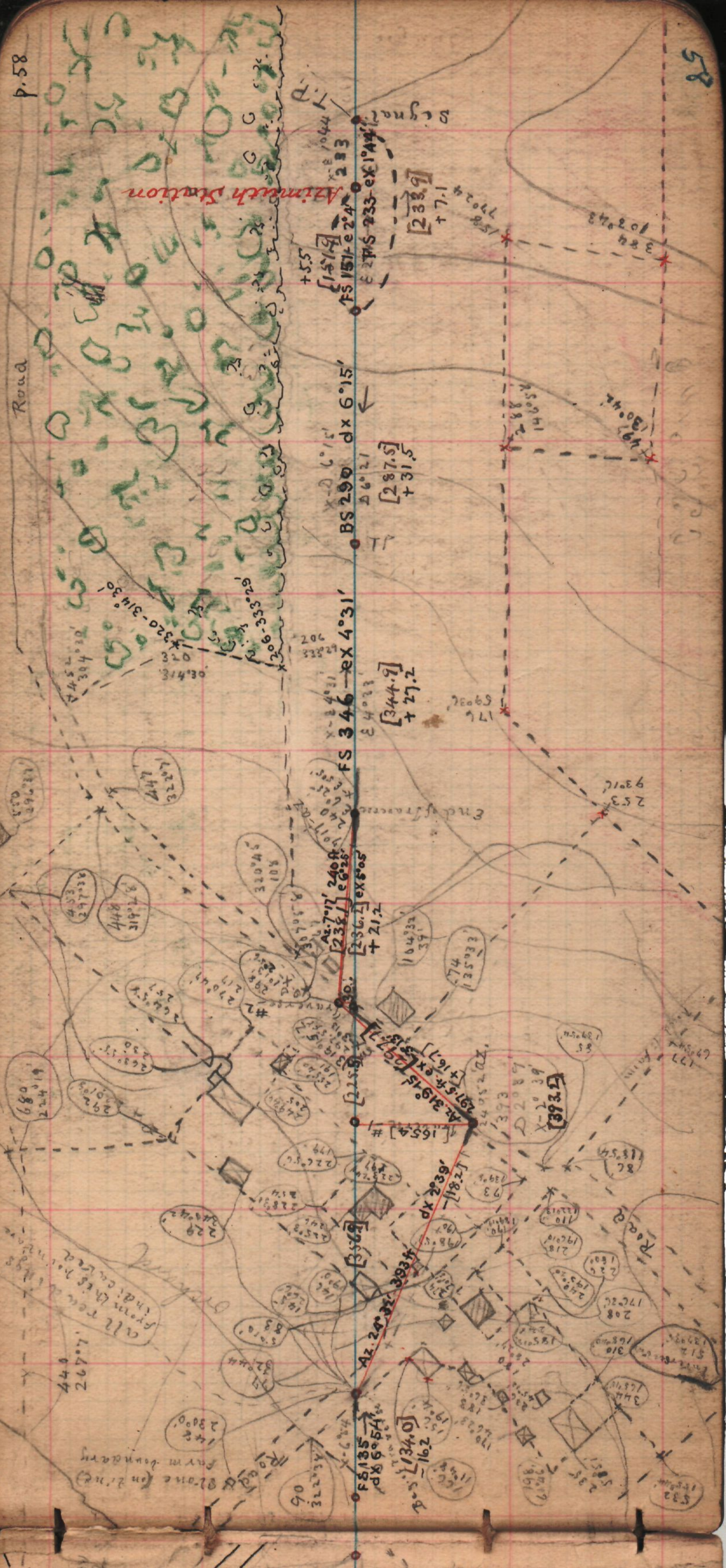

North
South
Open
BS 206 dX 2°5'
X-D 2°5'
D 2°4'
[206.8]
T.P
190-255°42'
14-342°
FS 178 eX 3°22'
178
E 3°4'
[178.6]
278-334°15'
T.P
BS 157 dX 2°15
X-D 2°15
D 2°33'
[157.8]
stump
FS 336 eX 3°50'
X-E 3°50'
E 3°53'
[335.6]
135-87°00'
135
87°
300°47'
74°43
T.P
BS 515 dX 0°55'
X-D 55'
D 44'
[516.0]
428-203°00'
480
161°40
FS 211 eX 9°27'
E 9°26'
X-E 9°27'
[206.3]
T.P.
BS 174 dX 5°26'
[173.4]
48
19°12
158-344°25'
180-287°20'
160-282°15'
256
95°40'

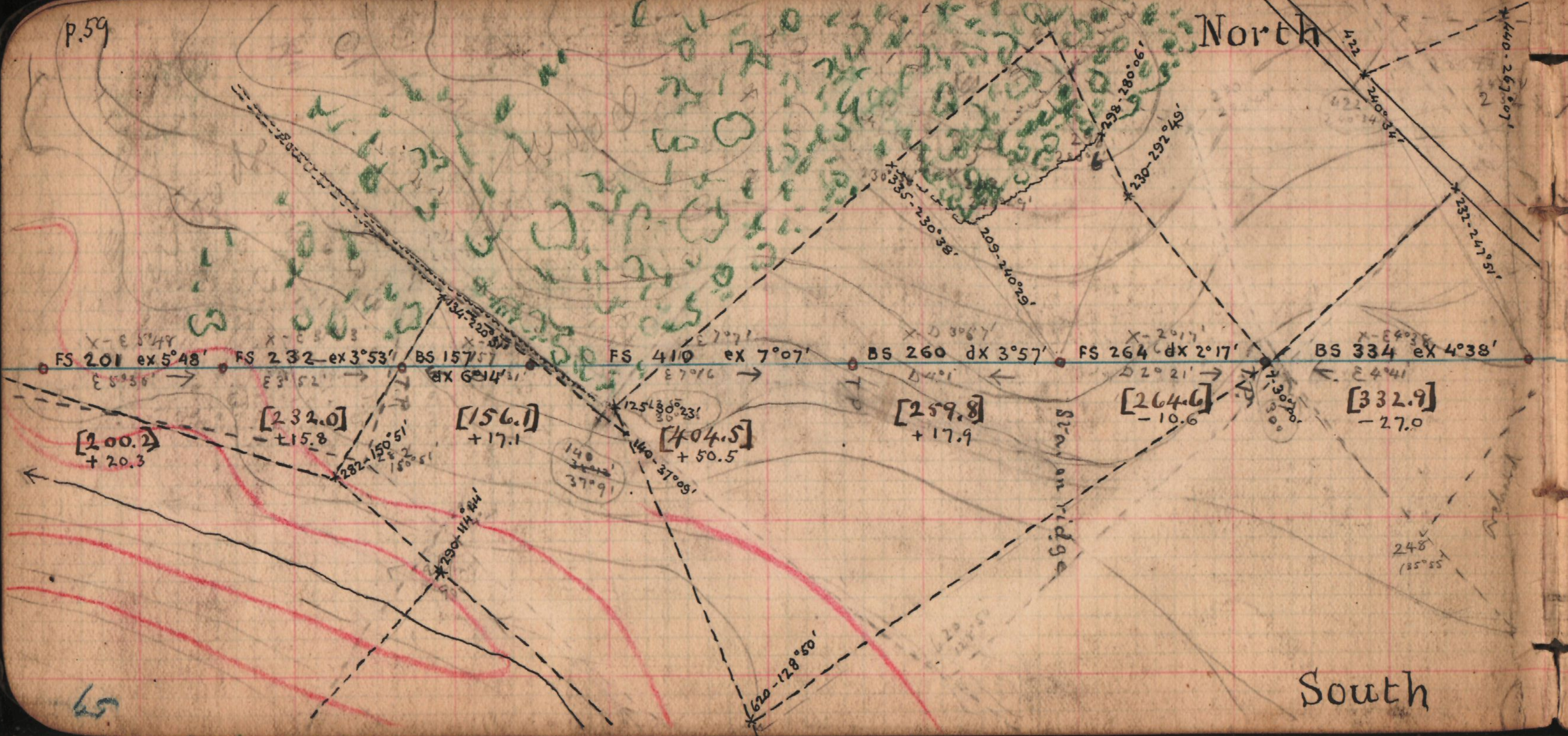

T.P.
[197.4]
FS 199 ex 7°00'
27.00
27 ft Tape
BS 134 dX 8°26'
[105]
[132.0]
134
T.P.
Road
FS 460 dX 3°01'
X-D 3°1
D 2°55'
[459.9]
[393.0]
148 - 202°34'
160 206°40'
BS 394 ft eX 4° 13'
MP 61
273°39'
65.56
FS dX 5°4' 602 ft d 4°24'
[599.6]
[5210.9 ft from 62]
93°39' fm. Weir
32.80
32.76
65.56
Sta. W. 4.18 ft
M.P.N. 65.53 "
142
70°4'
Stake on ridge
254
64°42
422
281°26'
342
266°33'
346
265°0'
Road
X-D 1°03'
394
D 1°02'
[394.9]
T.P.
178
38°26'
176
49°44'
150
44°11'
49°40'
238
256
49°45'
238
62°22'
222
70°0'
256
78°34
288
78°45
305
89°28
342
465
73°46
62'
60°48
440
110°48'
34.22 B.S.
258
227°11'
291
219°50'
452
302°33'
460
300°19'
227
282°11'
270
282°43
450
30°64

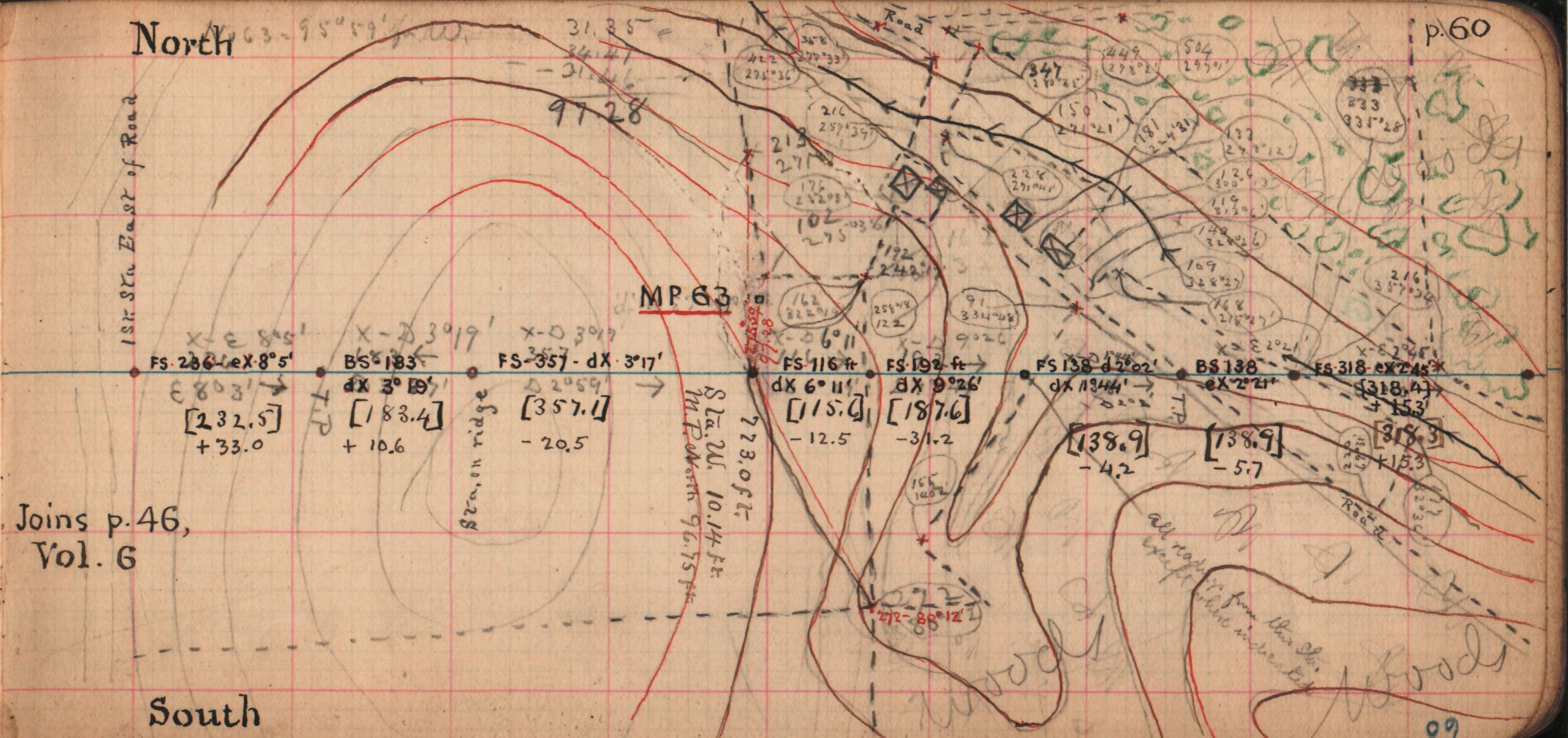

North
South
T.P.
T.P.
654
267°40'
282
309°00'
X-E 4°02
408
E 4°31'
[406.6]
End of Traverse
az - 11° 4'
386 [386.0]
E-X- 3°7'
ex 3°07'
260
190°44'
253
205°20'
286
212°20'
82'
341°29
330
208°
87'
323°03
48
352°14
60
281°20'
244
178°16'
278
197°37'
276
183°33
[386.0]
386 ft
+21.0
Az. 11°04'
[378.8]
X-E-5°20'
373 - 353°21'
az 353°37'
74.3 ft
[370.9]
Az 5°20 ex
[370.9] +346
Lane
28
252°54'
69
147°32'
280
249°16'
73
161°7'
77
178°57'
54
9°44
76
35°33
247
11°37'
432
18°03'
51
59°48
368
1°43'
345
352°44
260
353°
117 - 343°44
86 - 326°6'
86 - 353°27'
Traverse No. 3
[337.8]
Az. 335°07' - 373 ft
212
336°22'
240
331°40
125
322°24'
270
346°57'
X-D 10°52'
D 10°47'
[597.5] 597
az 10°23
38 - 9°33'
96
274°31'
90
301°54
78.8 ft
68
229°33'
55
295°32'
66
199°37'
87
211°49'
95
189°4'
107
200°25'
Road
119
192°51'
150
199°37'
[587.7]
dX 1° 52'
- 19.5
Road
142
167°33
226
195°49'
160
186°13
256
193°2'
253 - 198°29'
257 - 196°02'
597 ft
[597.5]
231
175°40'
179
190°34
444
334°47'
340
334°15
Road
275
337°39'
336
330°
Az. 10°23'
97
286°11
az 0°17'
[232.7] 232
E 2°12'
X-E 2°15
28.9 ft
17
170°
[232.7]
310
296°20'
Same fence
206
390
190°
410


BS 422 ex 2°55'
x-E 2°55'
E 3°1'
[422.0]'
−21.5
FS 280 ex 6°27'
x-E 6°27'
E 6°22'
[277.6]
+31.4
T.P.
BS 296 dx 5°00'
x-D 5°0'
D 5°0'
[294.9]
+25.8
Sta. on ridge
FS 216 dx 5°44'
x-D 5°44'
D 5°47'
[214.9]
−21.6
T.P.
BS 508 ex 4°47'
x-E 4°47'
E 4°50'
[505.6]
−42.3
T.
Farm lane
Lane
Beg. of Traverse
South
133-174°47'
162-176°36'
190-288°12'
178-280°20'
150-74°30'
418-76°19'
39-199°40'
−0.4
47.0(T) dx 28'
Az. 329°7'
Az. 0°17' - 232 ft
ex 2°15'
+9.1
[232.7]
[232.7]
[47.0]
(36.1)
30.1
48.3 (T) 34°16'
45 (T) 315°23'
20 (T) 14°34'
80 (T) 18°52'
87 (T) 80°21'
82 (T) 88°
155 (T) 79°16'
155 T 79°16'
170-109°40'
122 99°
200 94°24'
390 114°11'
626 131°54'
268 131°1'
474 143°13'
156 121°39'
45 T 115°23'
505 237°44'
360 231°32'
438 272°54'
424 278°14'
510 280°28'
412 270°44'
456 259°46'
330 228°37'
203 229°31'
330 223°11'
207 223°28'
198 199°28'
174 201°0
500 290°54'
257°15'
640
670 278°22'
432 243°26'
200 243°38'
264 157 158
200 T 335°21'
282 225°22'
196 253°7'
268 219°31'
150 74°30'


North
Road
Road
564
313°12'
496
282°21'
525
293°21'
484
286°46
564
313°12
472
286°21
365
317°48
462
293°58'
317°21'
124
27.36
25.32
29.41
82.09
No. 62 M.P.
90°6' fm. W
MP 62
62
270°6'
82.09
Sta. W. 0.14 ft
M.P. N. 82.09
5129.2 ft
from #63.
X-E 1°12'
BS 1030 eX 1°12'
E 54
[104.1]
- 2.2
Signal
X-D 2°4'
FS 2525 dX 2°04'
D 2°9'
[252.7]
- 9.1
X-D 3°17'
FS 338 dX 3°17'
D 3°15'
[338.0]
- 19.4
x 170 121°26'
x 204 117°4'
480
126°20'
X-D 5°19'
FS 348 dx 5°19'
D 5°16'
[346.2]
- 32.2
T.P.
X-E 3°30'
BS 364 eX 3°30'
3°30'
[363.7]
- 22.2
x-40-278°18
x-81-323°28
205
323°53
207
319°33
X-D 59'
FS 204 dX 59'
D 1°0'
[205.0]
- 3.5
T.P.
8L
330°40'
121
122°46
515
124°49
Trail
784
85°53
x574-95°11'
B


p. 58
58
Azimuth Station
Signal
T.P.
Road
[233.9]
+ 7.1
[151.9]
+ 5.5
FS 151' e 2°4'
FS 233 eX 1°49'
BS 290 dx 6°15'
[287.5]
+ 31.5
TP
FS 346 eX 4°31'
[344.9]
+ 27.2
End of traverse
Az. 7°17'
[238.1]
e 6°25'
[236.1] ex 5°05'
+ 21.2
Az. 319°15'
297.5 ex
[393.1]
[165.4]
dx 2°39'
-18.2
393.4
Az. 24°31'
[336.9]
FS 135
dX 6°54'
[134.0]
-16.2
Road
Road
Stone (on line farm boundary)
440
267°7'
320
314°30'
206
333°29'


North
South
FS 201 ex 5°48'
E 5°36'
[200.2]
+ 20.3
FS 232 ex 3°53'
E 3°52'
[232.0]
+15.8
BS 157 dx 6°14'
[156.1]
+ 17.1
FS 410 ex 7°07'
E 7°16
[404.5]
+ 50.5
BS 260 dX 3°57'
D 4°1'
[259.8]
+ 17.9
TP
Sta. on ridge
FS 264 dX 2°17'
D 2°21'
[264.6]
- 10.6
BS 334 eX 4°38'
E 4°41'
[332.9]
- 27.0
440-267°07'
422
240°34'
232-247°51'
298-280°06'
230-292°49'
209-240°29'
335-230°38'
134-220°51'
125-30°23'
140-37°09'
140
37°9'
282-150°51'
290-114°44'
620-128°50'
248
135°55'
1-30°0'


North
63 - 95°59' fr W.
1st Sta East of Road
31.35
34.41
- 31.46
97.28
Road
MP 63
FS 236 - eX 8°5'
E 8°03'
[232.5]
+ 33.0
T.P.
BS 183
dX 3° 19'
[183.4]
+ 10.6
X - D 3°19'
Sta. on ridge
X - D 3°17
FS 357 - dX 3°17'
D 2°59'
[357.1]
- 20.5
Sta. W. 10.14 ft.
M.P. North 96.75 ft.
773.0 ft.
97.28
FS 116 ft
dX 6° 11'
[115.6]
- 12.5
FS 192 ft
dX 9°26'
[187.6]
- 31.2
FS 138 d 2°02'
dX 1°44'
[138.9]
- 4.2
BS 138
eX 2°21'
[138.9]
- 5.7
T.P.
FS 318 eX 2°45'
[318.4]
+ 15.3
[318.3]
+ 15.3
272 - 80°12'
Road
all readings from this Sta. except where indicated
Woods
Woods
Joins p. 46,
Vol. 6
South

279°57'

234°30'