3

City Park

Survey.

TRANSIT.

2

F.B. 623

623

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

Minutes.	Lks.	Minutes.	Lks.	Minutes.	Lks.
1	2⅓	21	49	41	95⅔
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100⅓
4	9⅓	24	56	44	102⅔
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107⅓
7	16⅓	27	63	47	109⅔
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114⅓
10	23⅓	30	70	50	116⅔
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121⅓
13	30⅓	33	77	53	123⅔
14	32⅔	34	79⅓	54	126
15	35	35	81⅔	55	128⅓
16	37⅓	36	84	56	130⅓
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135⅓
19	44⅓	39	91	59	137⅔
20	46⅔	40	93⅓	60	140

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Table for Running on Slopes.

In the following table the first column shows the angle, the second, the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle.	Cor. in links	Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.
°		°		°		°	
4	0·24	11	1·88	18	5·14	25	10·54
5	0 38	12	2·24	19	5·76	26	11·26
6	0·55	13	2·63	20	6·42	27	12·24
7	0·76	14	3·06	21	7·11	28	13·37
8	0·98	15	3·53	22	7·85	29	14 34
9	1·24	16	4·02	23	8·64	30	15·47
10	1·55	17	4·56	24	9·47	35	22·07

Swit.

Line K being the perimeter of the City Park.

Re-run Dec. 5th & 6th 87

Sta		Angle	Direction	Course	Lat	Dep
17						
16		Tan 892				
15						
14						
13	+08	00° 15'	R	N90.00E	—	E 892
12						
11						
10						
9						
8						
7						
6						
5		Tan 1058.3				
4						
3						
2	+49?	00° 15'	L	N89.45E	3.024609 7.639816 0.664425 4.618 N	3.024609 9.999996 3.024605 1058.3 E
1						
0						
						E249.7
5						

Δ = 13+08.4 old Sta.

Δ = 2+50 old Sta.

Starting from S.E. Cor. S.L. 1123 & turning 90° R from a sight on N.E. Corner of same S.L. & calling it E.

					Lat	Dep	
8							
7							
6							
5		Tan 2042.1					
4							
3							
2							= 31+99 old Sta.
1							
30							
9							
8							
7							
6	+06.4	1° 53'	R	S89.59 E		E2042.1	△ = 26+06.7 old Sta.
5							
4		406.4					
3							
2		1° 52'	L	N88.08 E	2.608954 8.572867 1.121821	2.608954 9.999769 2.608723	△ = 22 old Sta.
1					13.24 N	4062 E	
20							
19							
18							

					Lat	Dep	
9							
8							
7							
6	+15						△ = 56+20 old Sta:
5							
4							
3	+15.2	1° 11'	R	S89.5 9E		E 2280.	△ = 53+20 old Sta:
2							
1							
50							
9		666.7					
8							
7					2.823930	2.823930	
6	+48.5	1° 11'	L	N 88.50E	8.308794	9.999910	△ = 46+51.5 old Sta.
					1.132724	2.823840	
5					1357 N	666.6 E	
4							
3							
2							
1							
40	+73						△ = 40+75 old Sta.
39							

Sta.				Lat	Dep		
80				2.821251	2.821251		
+90.4	85°.56'	R	S 0. 07 W	9.999999 2.821250	7.308824 0.130075	N.E. Cor. Park	△ = 79 + 96 old sta.
9				662.6	1.349		
8				S	W		
7	395.2						
6				2596817 8.863014	2596817 9.998641		
+95.2	4°.10'	R	S 85-49 E	1.459831	2.595658		△ = 76 old sta.
5				288.3	394.1		
4				S	E		
3							
2							
1							
70							
9							
8							
7							
6							
5							
4	Tan 2280						
3							
2							
1							
60							

					Lat	Dep		
1								
100								
9								
8								
7								
6	+92.4							△ = 97 old Sta.
5								
4								
3	+08.6							△ 93+04 ! old Sta.
2								
1								
90								
9								
8								
7					3.595121	3.595121		
6	+58	0°.06'	R	S 00.13 W	9.999997	7.577668		△ = 86+59.2 old Sta.
5					3.595118	1.172789		
4					3936.6	14.89		
3					S	W		
2		662.6						
81								

	Int.	Def
2 +62		
1		
120		
19		
18		
17		
16		
15		
14		
13		
12		
11 +90		
110		
9 +26		
8		
7		
6 +26.'		
5		
4		
3		
102		

Team 3986.6

△ = 124+72.7 old Sta

△ = 112 old Sta.

△ = ?109+35.4 old Sta (110)

△ = 106+35.' old Sta.

					Lat	Dep	
3							
2							
1							
140		Jan 1395.					
9							
8							
7							
6							
5							
4							
3	+87.7	2°03'	L	S 00.36W	3.144574 / 9.999976 / 3.144550	3.144574 / 8.820021 / 1.164595	Δ = 136+00.8 obs sta.
2					1395. S	14.61 W	
1							
130							
9							
8		798.1					
7							
6							
5	+89.6	2°26'	R	S 2.39W	2.902057 / 9.999535 / 2.901592	2.902057 / 8.664988 / 1.567025	Δ = 128 obs sta.
4					797.2 S	36.90 W	
123							

42 + 11
213 + 38
1 + 27

					Lat.	Dep.		
4								
3								
2								
1								
16a								
9	+89.7	85°42'	R	N89.47W	3.816009 / 7.577668	3.816009 / 9.999997	S.E. Cor. Park.	△ = 160+08 old sta.
8					1.393677	3.816006		
7					2476	6546.5		
6					N	W		
5								
4								
3								
2		1107						
1								
150								
9								
8	+82.7	3°55'	R	S4.31W	3.044148 / 9.998649	3.044148 / 8.896246		△ = 149 old sta.
7					3.042797	1.940394		
6					1103.6	87.18		
5					S	W		
144								

				Lat	Dep	
5						
4	+77.6					
3						
2						
1	+77.9					
180						
9						
8						
7						
6						
5						
4	+78.4					
3						
2						
1						
170						
9						
8						
7	+29.7					
6						
165						

△ = 186 old sta.

△ = 183 old sta.

△ = 176 old sta.

△ = 168+50 old sta.

190+20.8
189+65.
1+24.2

207+00
205+74
1+26

Lat Dep

6
5 +74.8
4
3
2
1
200
9
8
7
6
5
4
3
2
1
190 +65.8
9
8
7
186

Tangent 65+46.5

△ = 207 old Sta:

△ = 190+92 old Sta:

					Lat.	Dep
7						
6						
5						
4	+36.2	90°.01'	R	NO. 14E	3.120574 9.999996 3.120570	3.120574 7.609853 0.730427
3					1320.	5.386
2 ✓					N	E
1	+22.6					
220	+23.1					
19						
18						
17						
16						
15						
14						
13	+72					
12						
11						
210						
9						
8						
207						

212+11 / 1+27 / 213+83

213+39 / 1+28 / 212+10

213-5 / 213+23 / 1+28

△ = 225+64.3

△ = 221+50 old Sta.

△ = 215 old Sta.

				Lat	Dep	
8						
7						
6	Tan 1265.7					
5						
4						
3						
2						
1						
240						
9						
8				3.102331	3.102331	
	+56.2	90°.01'	L	N89.47W 7.577668	9.999997	
7				0.679999	3.102328	
6				4.786 N	1265.7 W	
5						
4						
3						
2						
1						
230						
9	Tan 1320					
228						

△ -238+84.3 old Sta

				Lat	Dep
9					
8					
7					
6					
5					
4					
3					
2					
1					
260					
9					
8					
7					
6					
5					
4					
3					
2					
1				3.816519	3.816519
250+21.9	89° 26'	R	No. 21W	9.999912	7.785943
				3.816511	1.602462
249				6554.1 N	40.04 W

△ = 251+50 old Sta.

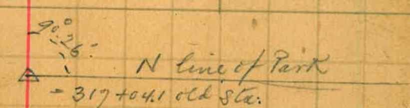
				Lat.	Dep.
290					
9					
8					
7					
6					
5					
4					
3					
2					
1					
280					
9					
8					
7					
6					
5					
4					
3					
2					
1					
270					

Tan 65°54'.2

				Lat	Dep		
11							
310							
9							
8							
7							
6							
5							
4							
3							
2							
1							
300							
9							
8							
7							
6							
5							
4							
3							
2							
291							

				Lat	Dep
16					
15 +76!	90° 26'	R	S89.55E		
14					
13					
12					

Tot. N	Tot. S	Tot E	Tot W
7935.05	7923.83	7994.38	7977.12
23.83		77.12	
11.22		17.26	
		13.	
		4.26	

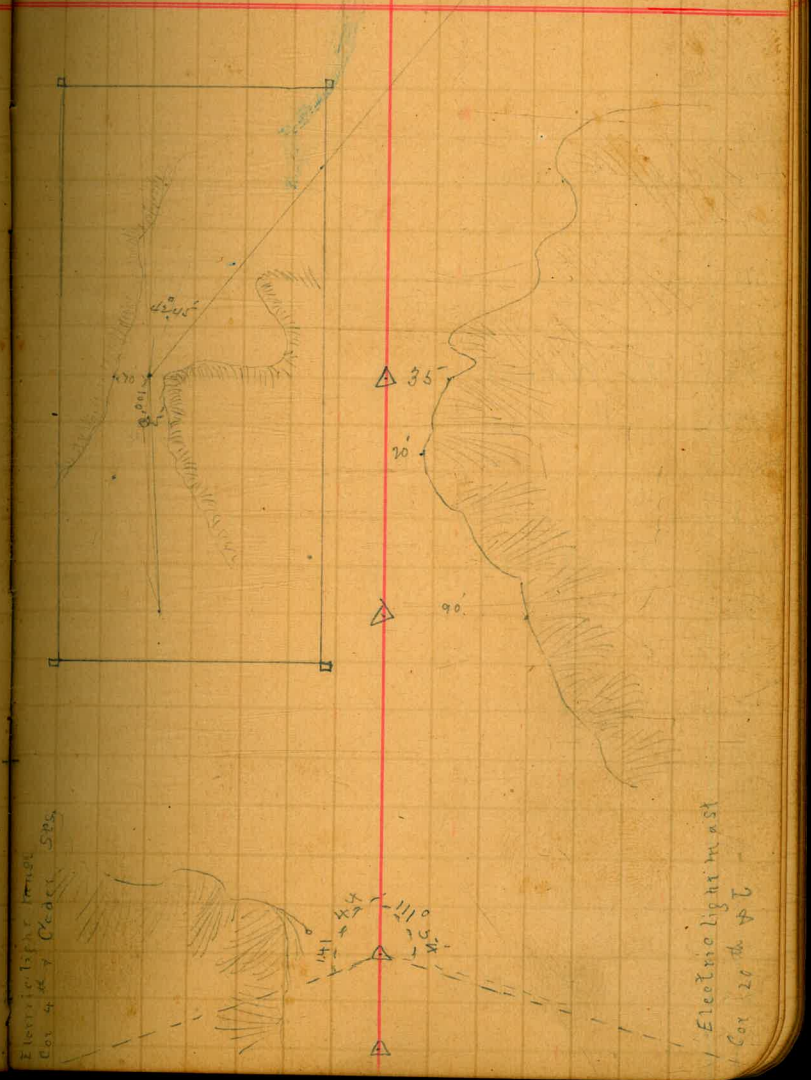


(Note. Westing of 13 ft. on closing by measurement.)

B Line being a meander line fro a Boulevard thro Park.

16
15
14
13
12
11
10
9 — 43° 24' Right
8
7
6 — 26° 26' Left
5
4
3
2
+81.6 — 30° 00' Right
1
0

34		
33		
32		
31		
30		
29		
1+80	42° 45'	Right
28		
27		
26		
25		
24	2° 50'	Left
23		
22		
21		
20		
19		
18		
17+50	33.5'	Left
17		
16+70		



53
52
+50 21° 36' Right
51
50
49
48 23° 00' Left
47
46
45
44 52° 44' Left
43
42
41
40
39
38
37
36
+32
35

72 9° 44' Left

71

70

69

68

67

66

65

64

63 + 22° 45' Right

62

61

+30 + 18° 45' Right

60

59

58

57 26° 20' Left

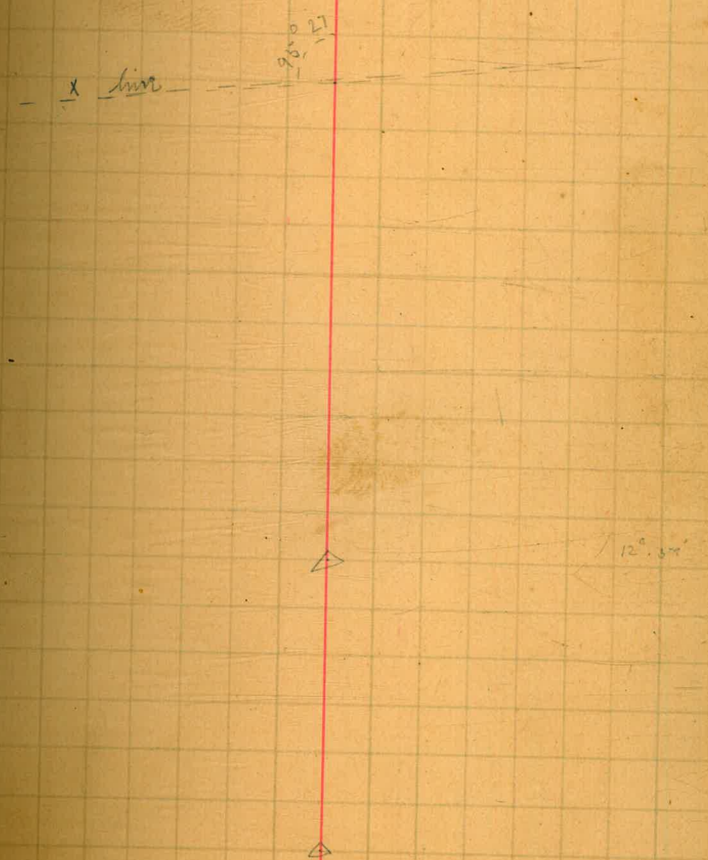
+42.1

56

55

54 15° 00 Left

Station						
91+54.6						
91						
90						
89						
88						
87						
86						
85						
84						
83						
82+08	13° 06' Right					
81						
80						
79						
78						
77						
76	1° 40' Left					
75						
74						
73						



B line location for
Boulevard through park

Sta	Def	Read	Tan			
				Dec 3 & 4 1888		
10+00.6	5° 03' 30"	21° 43'				
9+50	5° 00	16° 39' 30"				
9 1	5° 00	11° 39' 30"				
8+50	5° 00'	6° 39' 30"				
8	1° 39' 30"	1° 39' 30"				
7+83.4	△ B.C.	20° Curve	Right			
7	[illegible]		[illegible]	Tangent Right		
+64.9	△	13° 13'	E C			
6+32.76	3° 13'	10° 00				
+82.72	5° 00	5° 00				
+32.76	5° 00	B.C. 20° Curve Left	Tan = 67.24			
5						
4						
3						
2						
+81.6		30° 00	Right			
1						
0						
0						

E.C.

~~E.C.~~

P.I. = old Sta 9 "B" line

T 114.1 Length 217.2

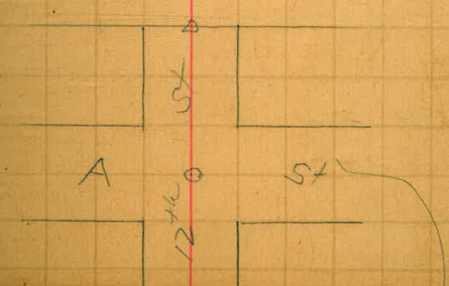
B.C. 20° Curve Right

Int ∠ = 26° 26' P.I. [illegible] line

P.I. = Sta 6. on old "B" line

length 132.17

Int angle 26° 26' P.I. set



"B" line Dec 4 08

Location of Boulevard Thro' City park

Sta	Defl	Ver	Tan	
11				
12				
13				
14				
15				
+82.04 △				
16	1°54'	1°54'		B.C 10° Left. PI set Tan = 174.46
+50	2°30'	4°24'		total angle 33°52'
17	2°30'	6°54'		length 338.66'
+50	2°30'	9°24'		
18	2°30	11°54'		
+50	2°30	14°24'		
19+00.2 △	2°32	16°56'	33°52'	E.C.
20				
21				
22				
23				
+76 △	2°50' Left			
24				
25				
26				

52.5
80
136.5

"B" Line

Park Boulevard

Sta	Def	Ver	
27			
+43.9 △			
28	5°37'	5°37'	
+50	5°00	10°37'	
29	5°00	15°37'	
+57.6 △	5°45	21°22'	42°44
30			
31			
32			
33			
34			
35	Intersect VI Line Orphan's		home tract
36			
37			
38			
39			
40			
+79.7			

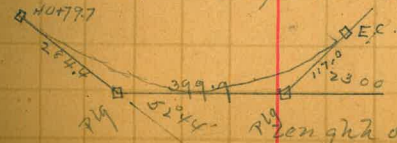
B.C. 20° Right

Int ∠ = 42°45'

Tan = 112.1 Length 213.7

E.C.

B.C. 10° Curve left I = 75°44' Tan = 445.5



Length of curve 757.3

"B" line

Park Boulevard

Sta	Def	Ver	Tan	
40+79.7 △	0	0	0	B.C.
41	1°1′	1°01′		
+50	2°30′	3°31′		
42	2°30°	6°01′		
+50	2°30	8°31		
43	2°30	11°01		
+50	2°30′	13°31′		
44	"	16°01′		
+50 △	"	18°31′	37°02′	
45 △	"	39°32		
+50	"	42°02		
46	"	44°32		
+50	"	47°02		
47	"	49°32		
+00	"	52°02′		
48	"	54°32		
+37 △	1°51	56°23′	75°44	E.C.
49+00.9 △	0	0	0	B.C 8° Curve Right I = 26°36′
+50	1°58	1°58		T 169.3 Length of Curve 3325
50	2°00	3°58		
+50	2°00	5°58		

Park Boulevard "B" line

Sta	Def	Ver	Tan			
51	2°00	7°58				
+50	2°00	9°58				
52	2°00	11°58				
+33.4△	1°20	13°18'	26°36			
+38.6△	0	0	0	Branch line		
+88.6	2°30'	2°30				
53+38.6	2°30'	5°00'				
+88.6△	2°30'	7°30°	15°			
54+45.7△	0	0	0	[illegible]		
55	2°10'	2°10				
+50	2°00	4°10				
+54	North Line of Orphans Home tract					
56	2°00	6°10'				
+50	2°00	8°10				
57	2°00	10°10				
+50	2°00	12°10				
+74.9△	1°00	13°10	26°20'			
58+19.1△	0	0	0			
+50	1°14	1°14				
59	2°	3°14				
+50	2°	5°14				

E.C.

B.C. 10° Curve Left I = 15°

T = 75.4 Length = 150'

E.C.

B.C. 8° Curve Left Total ∠ 26°20'

T 167.55 Length 329.2

E.C.

B.C. 8° Curve Right Total Angle 18°45'

T = 118.25 Length 234.4

Park Boulevard "B" Line

Sta	Def	Ver	Tan				Remarks
60	2°	7°14					
+53.5 △	2° 8½	9°22½	18°45'			EC	
+61.2 △	0	0	0			BC	8° R. Total ∠ 22°45' Tan 144.1 Length 284.4'
61	1°33	1°33					
+50	2°	3°33					
62	2°	5°33					
+50	2°	7°33					
63	2°	9°33					
+45.6 △	1°49½	11°22½	22°45				
64							
65							
66							
67							
68							
+58.1 △	0	0	0			B.C.	2° Left Tan 243.9 Total ∠ 9°44 Length 486.7
69	0° 25'	0°25'					
70	1°	1°25'					
71	1°	2°25'					
72	1°	3°25					
73	1° 30'	4°25					
+44.8 △	27	4°52	9°44			E.C.	S End of wall [illegible]

Park Boulevard B'line

Sta	Def	Ver	Tan		
74					
75					
+00.9 △	1°40'	Left			
76					
77					
+82.5 △	0	0	0	B.C.	2°R. Tan=326.4 Total ∠ 13°00' Length 650'
78	0°10½	0°10½			
79	1°	1°10½			
80	1°	2°10½			
81	1°	3°10½			
82	1°	4°10½			
83	1°	5°10½			
84	1°	6°10½			
+32.5 △	0°19½	6°30'	13°00'	E.C.	
85					
86					
87					
88					
89					

Park Boulevard "B" line

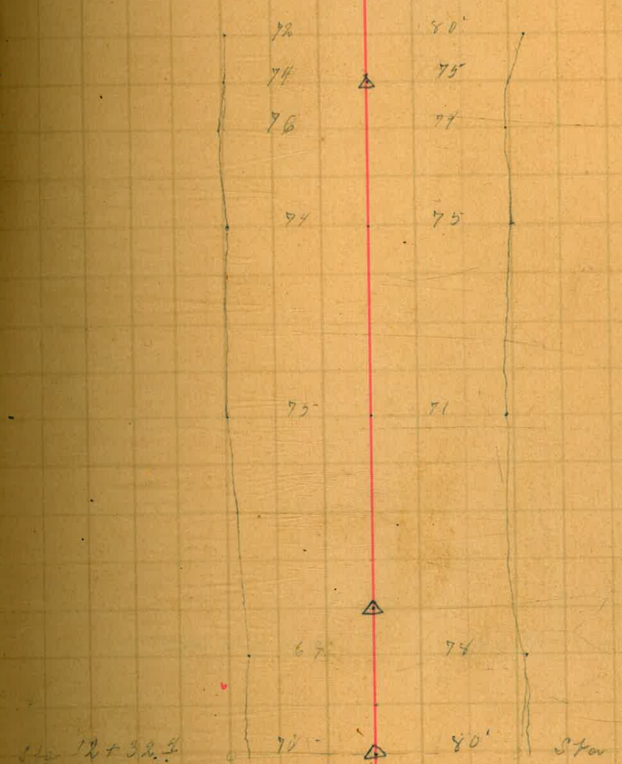
Sta

90
+53.8 znt. x 2nd line sta 36 seepage

Park Boulevard Traverse

Sta	Def	Index	Tan	M.C.		
9						
△ +50	4° 23'	Left.		N5° 30'W		
8						
7						
6						
△ +45.7	2° 16'	17° 04'	34° 8' (N1° 07'W) E.C.			
5	2° 30	14° 48'	Total ∠ 34° 08'			
+50	2° 30	12° 18'	Tangents 175.9			
4	2° 30	9° 48'	Length of Curve 341.3			
+50	2° 30	7° 18'				
3	2° 30	4° 48'				
+50	2° 30'	2° 18'				
△ +04.½	2° 18'				B.C. 10° L	
2						
1						
△ 0 △				N33° 01'E		

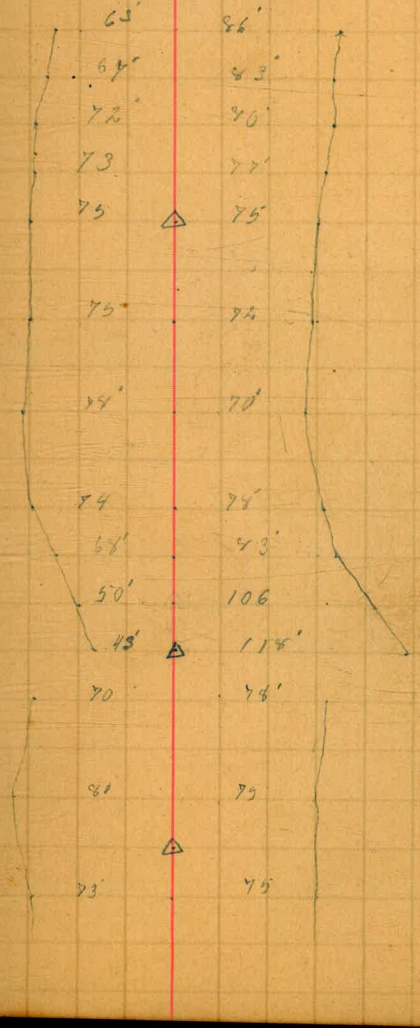
C line



Jan 16 1882

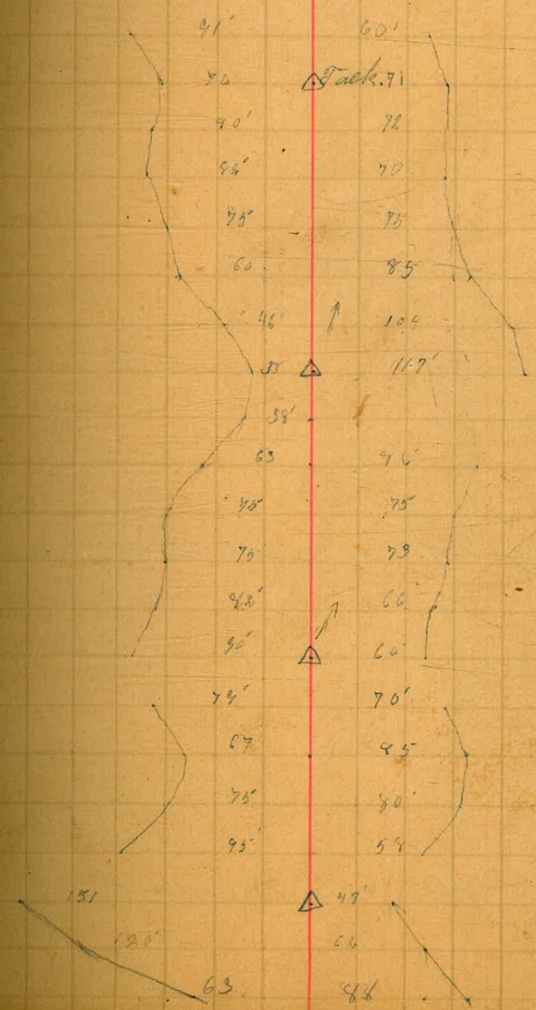
Park Boulevard Traverse — Line 6 Line

Sta				M.C.	Course
28					
27					
26					
25					
24					
23					
22					
21					
20					
19					
18					
17					
16					
+73.6	48°	15'	Right		N 41° 44' E N 56° 14' E
15					
14					
13					
12					
11					
10					



Park Boulevard Traverse Line

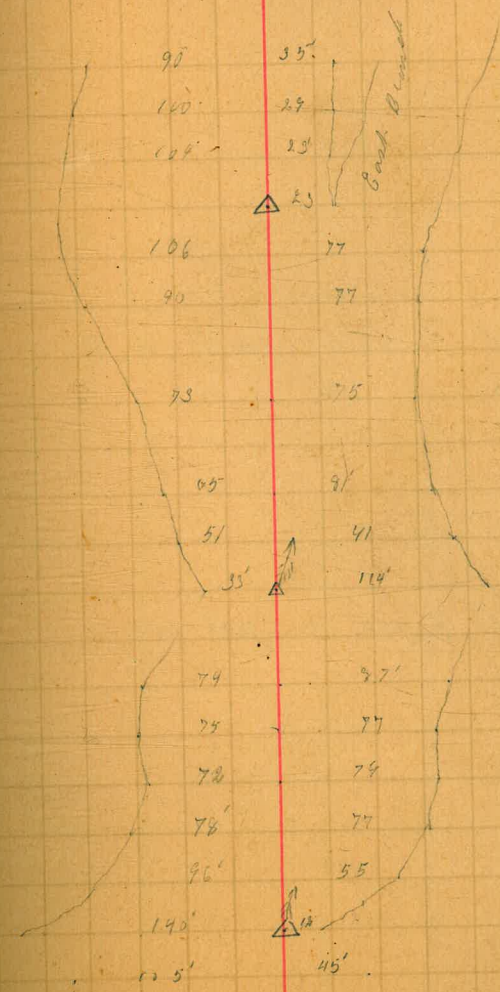
Sta				M.C.	Course
46					
45					
44					
43					
42					
41					
40					
+19.4	33° 56	Right.		N3° 04 W	N10° 26E
39					
38					
37					
36					
35					
+64.2	23° 30'	Left.		N37° W	N23° 30' W
34					
33					
32					
31					
+31	56° 14'	Left.		N13° 30' W.	N
30					
29					



Park Boulevard Traverse

Sta.				B.C.	True Course
64					
63					
62					
+55	12°	30'	Left.	N23°13'W	N11°47'W
61					
60					
59					
58					
57					
56					
55					
105	47°	16'	Right	N12°43'W	N0°43'E
54					
53					
52					
51					
50					
49					
48	56°	55'	Left.	N55°55'W	N46°24'W
47					

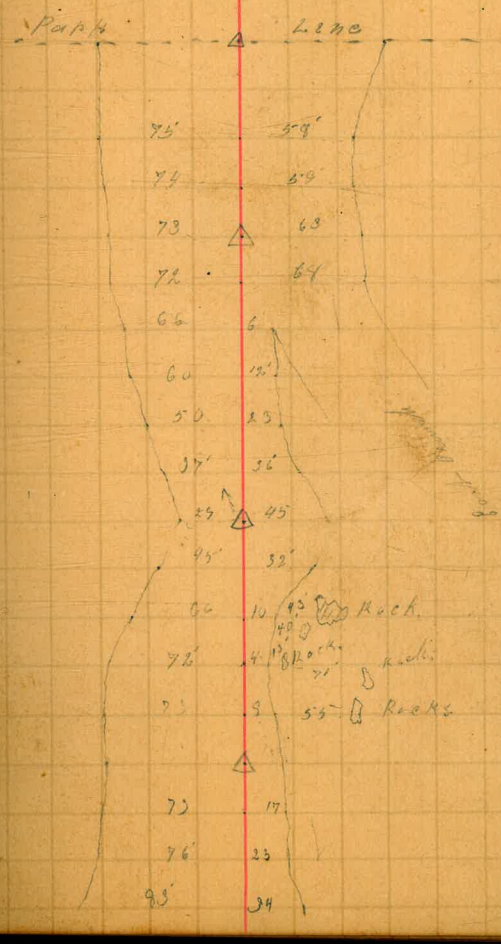
line



Jan 30 1888

Park Boulevard Traverse

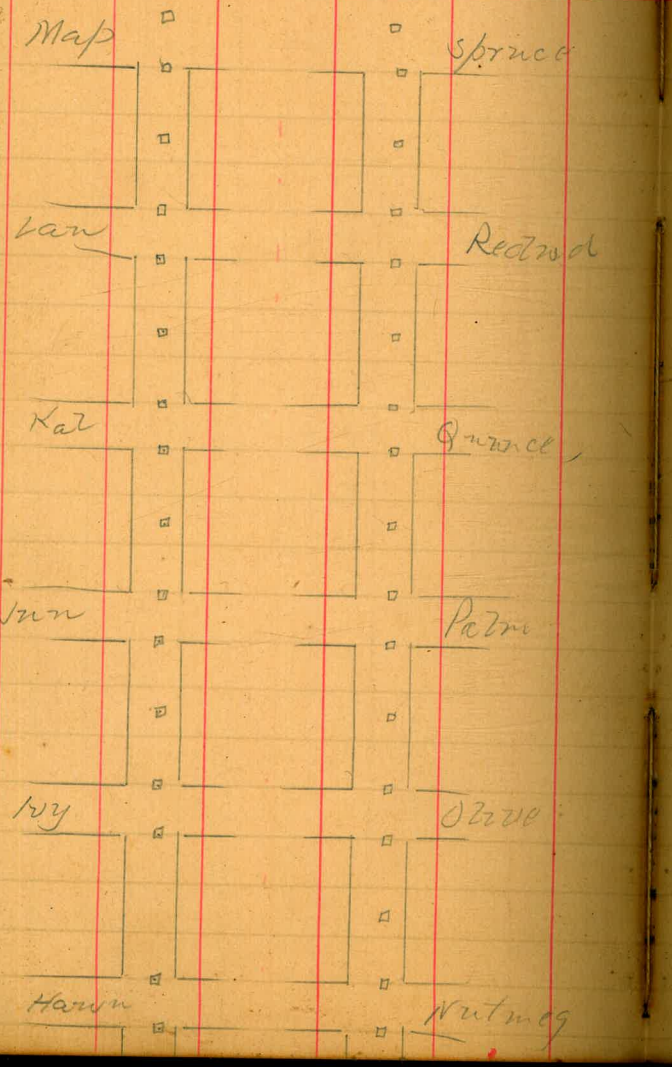
Sta.	Angle			A.B.	Line Bears
+82.3					
80					
79					
78					
77	1° 53'	Right	N 4° 05' E		
76					
75					
74					
73					
72					
+50	27° 25'	Right	N 2° 12 E		
71					
70					
69					
68					
+50					
67					
66					
65					

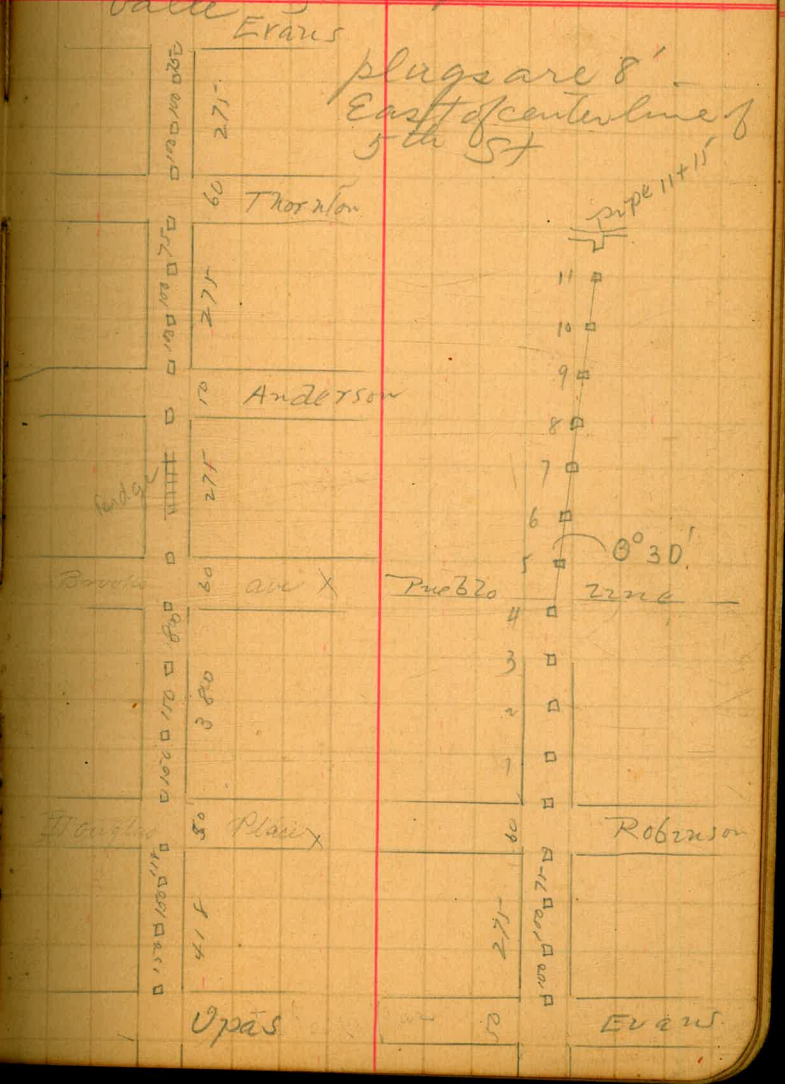


Survey for pipe line 5th St

Dec 11 & 12 1888

wheeler
woodruff
williams } 1½ days
Hall





275
1050

Sta	Def.	Ver.	Tan.			
0 △	0	0.	0		78825 650 85325	
+50	1.	1.				
1	1.	2				
+50	1	3				
2 △	1	4	8.-			
+50	1	9			58	
3	1	10		59 13	30	
+50	1	11				
4	1	12				
+50 △	1	13	18°			
+80 △	0 36	18°36	19°12'			

418 feet
60
400
600
275 bridge old
50. 100' grafton line anderson P
275
60 thornton
275
50 Evans P

80

608
326.4
381.6
7500.9
7882.5

P.C. 4° L.

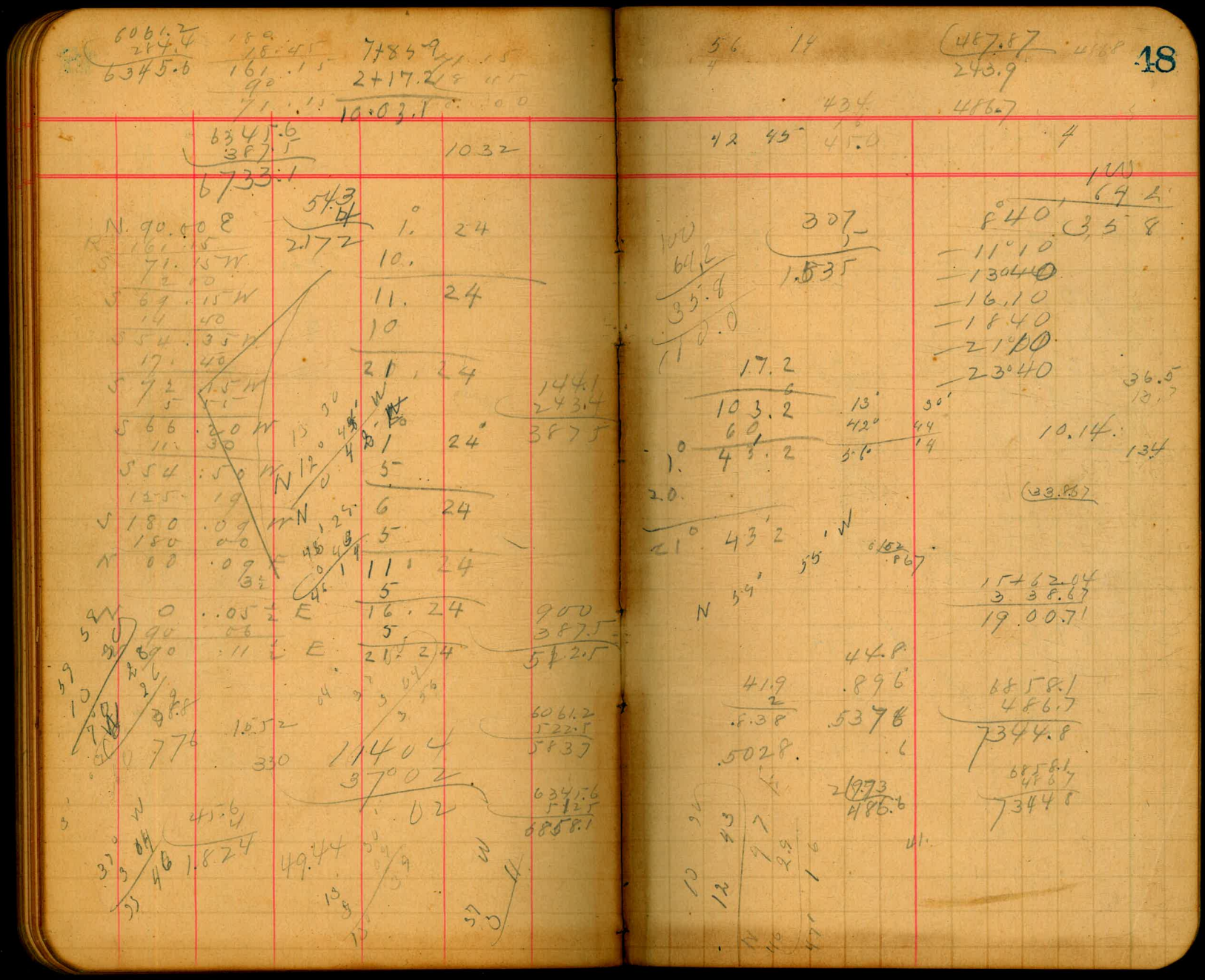
8	1° 39' 30"
	5
8+50	6 39. 30
	5
9	11 39 30
	5
9+50	16. 39 30
	5
10	21. 39 30

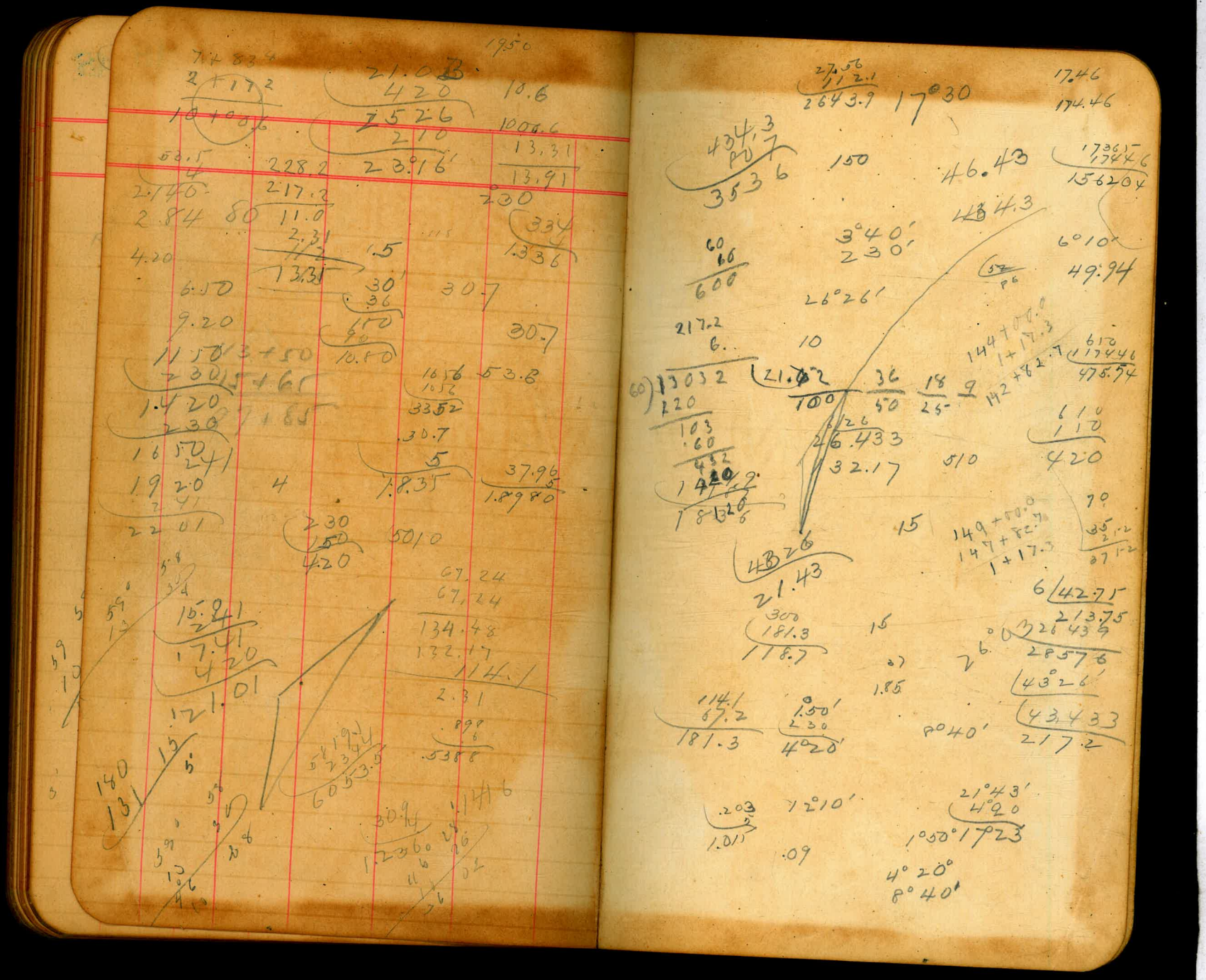
18°

608.4
326.4
381.6
7500.9

P.T.

275
60 Robinson Av
Sta 4 30' R
11 45 End of pipe





TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98.16	19.08	98.08	19.51	97.99	19 94	97.90	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91 18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67 88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		

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