Level Notes, City Park

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TRANSIT

F.B. 161

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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.

MICROFILMED
OCT 7 1964

Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links
0		0		0		0	
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

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Level Notes of the City Park Contour Survey by Benj. McLeran

For Index of Benches see p. 78.

B.M 5th + Date Es 133.68
11.5
145.18

1 Lerce
Angusola
McKeran
Alverson

B.M.	11.50		145.18	133.68	
T.P.	10.54	0.85	154.87	144.33	
		2.82		152.02	
	+	In	—	El.	
B.M.	9.59			133.68	134.48
T.P.	11.37	143.27	2.52	140.75	141.55
" "	11.14	152.12	0.16	151.96	152.76
		163.10	8.10	155.00	155.80
			"	"	
			"		
			"		
			"		
			"		
			"		
			"		
			"		
			"	"	
			"	"	
			"	"	
			"	"	
			3.10	160.00	160.80
			"		
			"		
			"		
			"		
			"		
			"		
			"		
			"		
			"		
			"		

B.M. Hyd. N.E. Cor. Date & 5th

do Jan 23 1903 do Friday

S.E. Corner Date & ___ Sts.

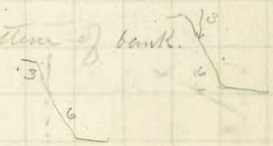
Top of Nozzle of hydrant N.E. corner of 5th & Date sts, By mistake the Nut on top of hydrant was taken just 0.80 foot above nozzle - requiring a correction of 8 tenths of a foot to all elevations.

Alverson
McLeran
Luce
Anghisola

St	+	In	−	El.		
						Jan. 23 1908
T.P.	11.15			160.80	160.80	On Contour 160.8 on S. side of Dote St.
		171.15	6.15	165.80	165.80	On S. side D. St.
			1.15	170.00	170.80	
T.P. (a)			0.75	170.40	171.20	
T.P. (b)	5.14		10.95	160.20	161.00	
		165.34				
			5.34	160.00	160.8	
			0.34	165.80	165.80	

McLeran
Anglivola

St	+S	Ir	−S	El.		
					add 0.80	Jan. 23 1903.
T.P.(a)	7.00			170.40		
		177.40	7.40	170.00	170.80	
		"	2.40	175.00	175.80	
T.P.(c)	10.94	177.40	1.10	176.30	177.10	Stone (cobble)
		186.34	6.34	180.00	180.80	At 1, Bell.
						3 ft to top & 6 ft to bottom of bank. Point of bank.
		"	1.34	185.00	185.80	
T.P.	11.57		0.68	185.66	186.46	
		197.23	7.23	190.00	190.80	
			2.23	195.00	195.80	
T.P.			2.02	195.21	196.01	At No 1 of 195



St	+	In	−	El		
					+0.80	Jan. 23 - 1903 -
		197.23	2.28	195.68 2		
T.P.			2.35	194.88 3	195.68	at No 3 on Contour 195.
T.P.	0.80			160.20	161.00	Turning Pt. on Contour 160. p 4 (b)
B.M.A		161.00	9.96	151.04	151.84	Plug 300 feet North of South line of Park on 6th
B.M. (848 marked)	5.47		1.95	159.05	159.85	Plug 848 feet North of S Line of Park on 6th St. Range Line
						→ Should be 158.25, by reason of error
						at starting pt. - B.M. 5th & Date.
BM	3.88			1.60 158.25	159.85	Corrected.
		162.13	2.13	1.60 160.	161.60	at 2 & 3 opposite pond
			7.13	155	156.60	
B.M. (b)	2.73		4.63	1.60 157.50	159.10	Hub N. side of Fir on line of Park
		160.23	5.23	155.	156.60	

St	+	In	—	El.		
		160.23				Jan. 23 1903
			10.23	150.00 1.60	151.60	Jan 24 1903
			"	"		
			"	"		
			"	"		
			"	"		
			"	"		
			"	"		
			"	"		
		"	0.23	160. 1.60	161.60	
J. P.	11.96	"	0.94	159.29	check. (160.92) 160.89 (a)	S Edge of "FIR" about 10 ft E. of Hub. No (848).
		171.25	6.25	165.00	166.60	
			"	"		
			"	"		
			1.25	170.00	171.60	
			"	"		
			"	"		
J.P. (a)			1.01	170.24	171.84	Close work Jan 23. 1903
B.M.	9.41			133.68	top of nut	Resume work Jan 24 1903. by reading from
		143.09	10.20	132.89	top of nozzle difference 0.8 133.68	top nut 8 tenths of a foot above top of nozzle
	6.52	"	0.27	142.82		of hydrant N.E. corner of 5th & Date sts. I check on plug
	10.77	149.34	0.27	149.07		300 ft N. of S. Line of Park. Correct.
B.M		159.84	8.82	151.02 8	151.82	Plug 300 feet north of S. Line of Park on 6th St.

St	+	In	−	El.		
						Jan. 24 1903
T.P.	11.61			170.24	171.84	
		181.85	6.85	175.00	176.60	
B5+25L = (a)		"	3.17	178.68	180.28	See (a) p 28
				1.60		
		"	6.85		1	
		"	"		2	
		"	"		3	
		"	"		4	
		"	"		5	
		"	"		6	
		"	"		7	
		"	"		8	
		"	"		9	
		"	1.85	180.00	1 181.60	
		"	"	"	2	
		"	"	"	3	
		"	"		4	
		"	"		5	
		"	"		6	
		"	"		7	
		"	"		8	
T.P.	11.40	"	0.45	181.40	183.00	
		192.80	7.80	185.00	186.60	
		"	"	"	1	
		"	"	"	2	
		"	"	"	3	
		"	"	"	4	
		"	2.80	190.00	191.60	
		"	"	"	2	
		"	"	"	3	
		"	"	"	4	
T.P.	11.91		1.71	191.09		
		203.00	8.00	195.00	196.60	
		"	"	"		
		"	"	"		
		"	"	"		
			3.00	208	1-2-3-4-5 6201.60	

North & South of C.

St	+	Ht	—	E.		
						Jan. 24 1903
J. P (A)		203.00	1.67	201.33		
	8.83		0.79	202.21		
		211.04	1.04	210.00	211.60	
B.M.	11.94			157.50 (1.60)	159.10	Plug on North side of FIR St on line of Park.
J. P.	11.06	169.44	3.51	165.93	167.53	
		176.99	11.99	165. (1.60)	ub down 166.60	
		"	6.99	170. (1.60)	171.60	
		"	1.99	173. (1.60)	176.60	
J. P.	9.94	"	0.34	176.65		
		186.63	6.63	180. (1.60)	181.60	

North & South of C.

St	+	In	−	E.		
						Jan. 24 1903
		186.63	1.63	185.1.60	186.60	
			"			
3 P	10.32	"	0.24	186.39		
		196.71	6.71	190.1.60	191.60	
C. 4. L.			5.70	191.01 1.60	192.61	Plug on slope East side of Canon.
		"	1.71	195.1.60	196.60	
	10.43	"	0.39	196.32		
		206.75	6.75	200.1.60	201.60	
C. 6. L.		"	7.38	199.37 1.60	200.97	Plug on West Summit
		"	6.75	200.1.60	201.60	

North & South of C.

St	+	In	−	E.		
		206.75	1.75	205 1.60	206.60	Jan 24. 1903. Jan 26 1903.
		"	"	"		
		"	"	"		
J.P	9.81		0.57	206 18		
		215.99	5.99	210 1.60	211.60	
J.P.(a)	10.00	"	0.87	215.12 1.60	216.72	Near C. 3+35. L.
		225.12	10.12	215. —	216.60	
C 3+35. L			5.90	219.22 1.60	220.82	Plug on East summit Close, work Jan. 24 1903 Sat.
						Bet C or D
J.P.	9.51			216.72	216.72	Begin at 1 pm. Jan 26 1903 Monday
		226.23				
		"	6.20	220 —		Back of Gay's Mansion
		"	1.20	225 —		
BM	11.63		1.60	224.63		B. M. near Gum Tree
		236.26	6.26	230. —		

Apply Correction of 1.60 pm Jan. 23
2 pm till close of Jan 24 1903.

St	+	In	—	E	
		236.26	1.26	235.00	
D H+87	L. ?	"	5.95	230.31	
D 4	L (O.K) = B.M.	"	3.37	232.89	
A. (a)	11.24			151.84	
		163.08	3.08	160.—	
J. P.	7.71		0.28	162.80	
		170.51	10.51	160.—	
		"	5.51	165.—	
		"	0.51	170.—	
A 2. L.		"	1.33	169.18	
J. P. = (b)		"	9.70	160.81	
J. P	2.45			160.81	
		163.26	3.26	160.—	
			8.26	155	
	11.93			160.81	—
		172.74	2.74	170.—	
Spike = (a)			7.74	165.—	

Jan 26 1903.

Jan. 26 1903.

300 ft from S. Bdy Line of Park North on 6th St. Range line

This contour at S. end of Park Head of 8th St. Begins at top of East incline and circles westerly

Near S. Bdy of Park E. of 8th St. (See b p27)

Close work Jan. 26. 1903

Jan. 27 1903.

On 8th St Range Line produced Northerly from S. side of Cedar 400 ft. (See a p 27)

St	+	In	−	E.	
		172.74	12.74	160 —	
A 2 R		"	2.69	170.05	
	2.66	"	11.75	160.99	
A 4 R		163.65	5.54	158.11	
	3.33	"	11.82	151.63	
A 4+94 R=(a)		154.96	6.62	148.34	
	11.96			170.05	
		182.01	7.01	175 —	
		"	2.00	180 —	
A.O		"	9.18	172.83 ?	
J.P.	10.68	"	0.87	181.14	
		191.82	6.82	185 —	
		"	1.82	190 —	
B.M(a)	10.49	"	0.64	191.18	
		201.67	6.67	195 —	
			1.67	200 —	
check J.P			5.57	196.10	
	11.27		1.05	200.62	
		211.89	6.89	205	

Jan 27 1903

= a

8.0 ft S E of B.O

St	+	In.	—	E	
		211.89	6.89	205—	
B.M.		"	5.00	206.89	
		"	1.89	210	
		"			
B.2.L		"	5.91	205.98	
J.P.	10.87	"	1.00	210.89	
		221.76	6.76	215—	
			1.76	220—	
	1.85		10.08	211.68	
		213.53	3.53	210—	
C.B. St Line		"	10.45	203.08	
8th Range Line			8.53	205—	
J.P.	11.76	"	0.17	213.36	
		225.12	10.12	215—	
			5.12	220	
J.P.(a)	11.42		0.74	224.38	
		235.80	10.80	225	
C.2.L.			10.58	~~225.22~~ 226.38	
		"	5.80	230	
BM Reg. (b)			7.85	227.95	
J.P.		"	11.73	224.67 (224.63)	

Jan 27 1903. Tuesday

Mist Longitude Pillar of Bdy Commission
Top of Pillar +

C-0-8th St. Range Line

corrected

St D-0-
Close work Jan. 27 1903.

Sta	+	Sr	—	E	
		235.80	0.80	235 —	
C-O	0.20			203.08	?
		203.28	3.28	200 —	
			8.28	195 —	
J. C.	0.88		11.80	191.48	
		192.36	2.36	190 —	
		"	7.36	185 —	
		"	Rod	180 —	
D. O	9.52			227.95	
		237.47	2.47	235 —	
B.M.		"	4.47	233.00	
		"	7.47	230 —	
			2.47	235 —	
B.M. (c)			11.33	226.14	
J. C.	11.41		1.16	256.31	
		247.72	7.72	240 —	
			2.72	245 —	
J. C.	2.43		11.03	236.69	
J. C.		239.12	4.12	235	
		4.12	9.12	230 —	
Plug			2.67	236.45	

Jan 29 1903 Thursday

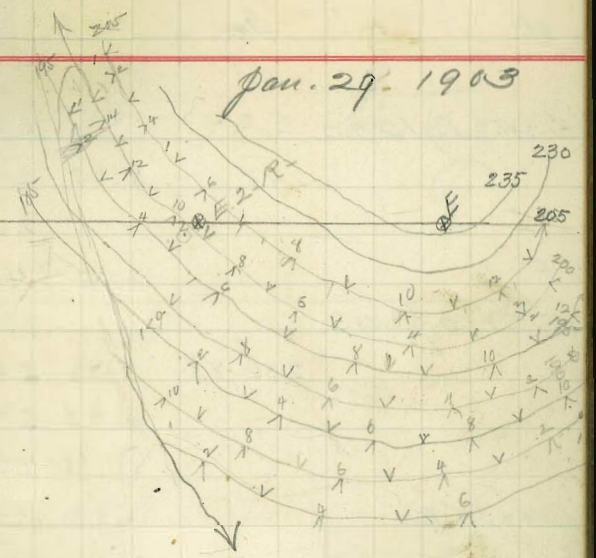
Plug

Plug in Range Line 8th St. 158.6 ft Northerly from D. O

(near old stone)

E 3+50 R. 236.45

St	+	In	—	E	
J.P.	1.16			226.14	
		227.30	2.30	225 —	
			7.30	220 —	
			12.30	215 —	
	0.93		11.65	215.65	
		216.58	6.58	210 —	
			11.58	205 —	
J.P.	1.82		11.57	205.01	
		206.83	6.83	200 —	
E 2 R			8.51	198.32	
			11.83	195 —	
J.P.	1.23		11.64	195.19	
		196.42	6.42	190 —	
		"	11.42	185 —	
J.P.	1.09	"	11.15	185.27	
		186.36	6.30	180 —	
			11.36	175 —	
J.P. (a)	11.44			226.14	(a)
		237.58	7.58	230	
E.O —			10.61	226.97	
			2.58	235 —	



Close work Jan 29 1903

St	+	In	—	E	
(E 3+50 R)	12.00			236.45	
		248.45	8.45	240 —	
				245	
F. O			2.94	245.51	
(E 3+50 R)	0.43			236.45	
		236.88	1.88	235 —	
			6.88	230 —	
			11.88	225 —	
E 4+35 R.			11.32	225.56	
	0.23		11.61	225.27	
		225.50	5.50	220 —	
			10.50	215 —	
J. P.	0.74		11.61	213.89	
		214.63	4.63	210 —	
			9.63	205 —	
J. P.	2.01			226.14	
		228.15	3.15	225 —	
			8.15	220 —	
	0.41		11.80	216.35	
		216.76	1.76	215 —	
			6.76	210 —	

Jan 30th 1903 Friday

Plug, —
Stub

Plug.

St	+	In	—	E.
		216.76	11.76	205.00
J. P.	0.46		11.36	205.40
		205.86	5.86	200.—
		5.86	10.86	195.—
J. P.	0.99	"	11.85	194.01
		195.00	5.00	190.—
		"	10.00	185.—
J. P.	1.75		11.84	183.16
		184.91	4.91	180.—
			9.91	175.—
J. P. @		"	10.53	174.38
D. 4 L	12.00			232.89
		244.89	4.89	240.—
J. P.	9.91	"	0.92	243.97
		253.88	8.88	245.—
		"	3.88	250.—
Spike in E = E. 2		"	5.23	248.65
mid road E-4 L		"	5.21	248.67
J. P.		"	3.61	250.27

Jan 30th 1903 Friday.

Spike

St	+	I	—	E.
B.M.	9.81			215.81
	11.24	228.65	0.22	225.40
	8.17	236.65	0.56	236.09
D.4.L		244.26	11.41	232.85
				232.89
				250.27
				.04
				250.23
J.P.	10.00			
		260.23	5.23	255.00
F.2.L (a)			3.19	257.04
J.P.	2.48		11.81	248.42
		250.90	0.90	250. —
F.0.			5.41	245.49
				(245.51)
			5.90	245. —
			10.90	240. —
F.2.R			10.23	240.67
B.M.			0.45	250.45
B.M.	11.63			250.45
		262.08	2.08	260. —
			7.08	255
				250 —

Feb. 3d 1903 Tuesday.

Flat part of hinge - N. part
S.E. 5th and Ivy (Inv) E. 215.81
N. hinge of hydrant.

.04 by error in levels.
Last J.P. of Jan. 30 1903.

E. 245.51 on Jan 30. 1903

About 100 ft N.W. of Target Shed. N 35° W. Bing.

St.	+	I	−	E	
T. P.	7.92	262.08	0.87	261.21	
		269.13	9.13	260.	
			14.13	265.	
T. P.	1.67			250.45	
		252.12	7.12	245.	
Plug			4.95	247.17?	F. O North 5+50 — R 2+30
Plug			6.73	245.39	F. O. 5+50 N
			12.12	240.	
T. P.	0.95			250.45	Feb 3 1903. Begin work 1 p.m. — Rainy —
		251.40	1.40	250.	
			6.40	245	
			11.40	240	
T. P.	2.58		11.72	239.68	Close work Feb 3 Tuesday.
		242.26	7.26	235.	Begin work Feb 4 1 p.m. Wednesday Interrupted by rain
			12.26	230	
	0.63			239.68	Feb. 5. 1903. Scattered clouds
Plug	0.46	240.31	12.50	227.81?	G. O
T. P		228.27	3.27	225.	
		"	8.27	220.	
	1.44		11.10	217.17	
		218.61			

St	+	I	−	E
		218.61	3.61	215.—
T. P.	1.67			261.21
		262.88	12.88	250.—
		"	7.88	255
Plug		"	7.22	255.66
		"	2.88	260.—
T. P. (a)	11.30	"	0.95	261.93
		273.23	8.23	265 —
Plug Hub		"	7.54	265.69
		"	3.23	270.—
T. P. d	8.48	"	0.98	272.25
		280.73	5.73	275.—
			0.73	280.—
			10.73	270.—
T. P. near plug F. O.	8.72			261.21
		269.93	5.01	264.92
			4.93	265.00

Feb. 5th 1903 Thursday

H. O

H. O North 300 ft.

St	+	I	−	E	
B.M.	11.65			265.69	Feb 5 – 1903. Thursday.
		277.34	12.34	265.—	H.O. – 300 ft. North.
			7.34	270.—	
			2.34	275.—	
Plug			2.05	275.29	I.O. – 200 L
B.M.	10.57			265.69	H.O. + 300 ft North
T.P.(a)	10.58	276.26	0.81	275.45 ✓	
		286.03	6.03	280	
T.P.	1.28			265.69	H.O. + 300 ft North.
		266.97	6.97	260.—	Feb 6th 1903. Friday.
T.P.	1.72			265.69	H.O. + 300 ft North
		267.41	12.40	255.—	
T.P.	0.13		11.27	256.14	
		256.27	6.27	250.—	
		11.27		245.—	
T.P.	10.05			275.45	
		285.50		280.—	
T.P.(c)	2.77		3.90	281.60	S.pt in palmetoes on 280 contour.
		284.37	9.37	275.—	

McLeran
Anglesola

St	+	I	—	E.
J. P	1.21	284.37	11.51	272.86
		274.07	4.07	270.—
	12.00	"	9.07	265—
	1.30	"	12.00	262.07
		263.37	3.37	260.
Hub		"	2.76	260.61
		"	8.37	255.
Cp20	4.72			281.60
	7.07	286.32	3.65	282.67
		289.74	4.74	285.
		"	9.74	280.
Hub (1)		"	6.81	282.93
Hub		"	4.92	284.82
	3.49		0.99	288.75
		294.24	4.24	290—
		"	3.09	291.15
		"	5.12	289.12
		"	5.60	288.64
Hub (1)		"	6.67	287.57
	1.24	284.17	9.17	282.93 275—

1-0+400 North Some rain
Close work Feb. 6 1903.

Feb. 7th 1903 Sat Cloudy & cold

1-0-8+70 N — L. 2+75.
" " — L 4+25.

Good reading Corner of park North Line of Park N W cor. of Kate Session fence
S E cor Bowen's fence at W. Line of Park.
El. N W cor. Park monument, stone
N. E cor. Doolittle Hedge W Line of Park

St	+	J	—	E.	
	1.49	284.17	10.83	273.34	
		274.83	4.83	270.—	
			9.83	265.—	
Hub			10.49	264.34	J 3+70 – 0
J.P.			0.67	274.16	100 ft N. of (J 3+70)
Hub	0.32			264.34	J.-3+70.—
		264.66	4.66	260.—	
			9.66	255.	
J.P.	0.00			274.16	
		274.16	4.16	270.	
Hub			3.84	270.32	K 1+92
			9.16	265.	
B.M	0.80	"	11.42	262.74	N of Hub
		263.54	3.54	260.—	
			8.54	255.	
J.P	1.45		11.21	252.33	
		253.78	3.78	250.	
			8.78	245.	Close work Sat. night

McLeran
Anguisola

Hub.	11.76			270.32
		282.08	7.08	275.—
		"	3.68	278.40
T. P.	5.95	"	1.44	280.64
		286.59	6.59	280.
T. P.	10.21		1.78	284.81
		295.02	10.02	285.
			5.02	
Hub			4.61	290.41
B.M.	5.97			288.64
		294.61	4.61	290.—
Hub.			3.37	291.24
			9.61	285.
T. P.	0.50		10.94	283.67
		284.17	4.17	280.—
B.M.			5.44	278.73
			9.75	275.—
	0.51		11.60	272.57
		273.08	3.08	270.—
			8.08	265.—

Monday Feb. 9th 1903. Clear

K – 1+92.

K – 100. L 1+60

3+27 L – K – 100. N.

Cor. Monument of Park N. W.
E from St Monument 2+62 –
N. W. cor K. Bessons (N. Line Park at St. C.
E from St Monument (3+06 N Line of Park at Sta

E from St. Monument (N. W) cor park. 4+08 N Line of Park.
Hub at 4+20 E. from Cor Park Monument.
E from St Monument 4+61 (275 contour)

E. from St. Monument. Cor Park 5+20 (270 contour)

Run East on N. Line of Park

St	+	S	—	E
		27308		
Hub.			8.25	264.83
Hub.			8.86	264.22

List of Benches

(10th & A St) Spike in fence N.W. cor 72.970 E.

(10th & B) North End hydrant hinge at S.E. Cor. 76.85.2 E

(11th & A) N.W. point of Coping stone at the S.E. Cor. 89.87 E.

(At N W cor 11th & B) Spike & Telegraph pole 89.87 E.

Feb. 10 1903
at 5790 East from NW cr Park.
At 600 East " " " "

Sx	+	J	—	E.
B.M.T.	0.10			76.852
	8.62	76.95	2.40	74.55
	5.98	83.17	2.28	80.89
	11.08	86.87	1.63	85.24
	11.69	96.32	1.66	94.66
B.M. (a)		106.35	9.43	96.92
I P.	9.51		0.15	106.20
I P.	10.08	115.71	0.77	114.94
	11.67	125.02	1.88	123.14
		134.81	4.81	130 —
	11.60		1.47	133.34
		144.94	9.94	135
			4.94	140
I P	11.40		0.99	143.95
		155.35	10.35	145
4+94 AR			6.95	148.40
				148.34 Incl.
			5.35	150
3+40.5 (b)			3.89	151.46
			0.35	155
	0.52		11.81	143.54
		144.06	4.06	140 —
			8.06	135

Friday Feb. 10th 1903 _ Clear _

N. End of Hydrant Hinge N.E. Cor. 10th & B

— In Pound Canton —

"Hub" at fence Cor. (N.E)

See (R) p. 11 A 4+94.

Hub Line N 59° 10' W.

St	+	J	−	E
	1.09	144.06	12.00	132.06
		133.15	3.15	130.
J. P. stone	11.50		1.45	131.70
		143.20	8.20	135.
			3.20	140.
J. P. St.	11.92			131.70.
J. P. stone	1.26	143.62	0.75	142.87
		154.13	9.13	145.0
			4.13	150.
J. P. stone	11.52		1.15	152.98
		164.50	9.50	155.
			4.50	160
J. P. stone	11.32		0.74	163.76
		175.08	10.08	165.
			5.08	170.
			0.08	175.
J. P.	1.02		11.90	163.18
		164.20	4.20	160.
J. P.	11.06		1.15	163.05
		174.11	9.11	165.
			4.11	170
			0.11	174.00

Feb. 10 + 11 - 1903

At sta. 24 or near Wed. Feb 11 1903.

St	+	I	−	E.
		174.11		
J. P.	11.66		0.11	174.00
		185.66	10.66	175.
			5.66	180
J. P.	1.09		11.70	173.96
		175.05	5.05	170.
			10.05	165
J. P.	11.55			151.84
" "	7.27	163.39	1.25	162.14
spike @		169.41	4.47	164.94 (165.50)
(b)		"	8.60	160.81 (160.81)
			4.41	165.
			9.41	160.
J. P.	11.77			151.84
		163.61		
	2.81			151.84
		154.65	19.65	145.00
		"	4.65	150.0
	12.00		0.17	154.18
		166.18	11.18	155.

Feb. 11 & 12 1903.

Close work at 1 p.m.

A L Feb. 12th 1903 Thursday

300 N cedar st Range Line

See (a) p. 10.

" (b) p. 10

A-L on 6th St Line.

St.	+	J	—	E.
		166.18	8.68	157.50
			6.18	160.00
			3.68	162.50 c
			1.18	165. c
	11.56		0.37	165.81
		177.37	9.87	167.50 c
			7.37	170 c
			4.87	172.50 c
			2.37	175 c
	10.68		0.22	177.15
		187.83	10.33	177.50
			7.83	180 c
			5.33	182.50
			2.83	185 c
			0.33	187.50
	6.01		1.32	186.51
		192.52	2.52	190. c
			7.52	185 c
			"	180 c
	1.90		11.03	181.49
Hub = a		183.39	8.39	175.
			3.07	180.32 ?
				180.28

Feb. 12. 1903.

B 6×25 L
See (a) p 6)

St	+	J	−	E.	
		183.39	10.89	172.50	c
	0.22		11.78	171.61	
		171.83	1.83	170	c
		"	4.33	167.50	
		"	6.83	165.	c
		"	9.33	162.50	
		"	11.83	160.	c
T. P.		"	10.91	160.92	(a)
Spike		"	11.97	159.86	(b)
T. P.	0.05			160.92 (160.89) check.	
		160.97	10.97	150.	c
			8.47	152.50	c
			5.97	155	c
			0.97	160	c
	11.14			160.92	
		172.06	12.06	160.	c
			7.06	165.	c
T. P.	2.62			151.84	
		154.46	6.96	147.50	
			1.96	152.50	

Feb. 12 1903

(a). p. 5

Mer N. Extension of Elm in Park. 600' N of S. Line of Park.

(b). p. 5.

Close work Feb. 12 1903

Feb. 13. 1903 Saturday.

St	+	J	−	E.
Z. P	9.73			171.84
		181.57	10.57	170 c
			6.57	175 c
			1.57	180 c
	11.09		0.50	181.07
		192.16	7.16	185.
Hub. on B.			11.90	180.26 180.32
			2.16	190. c
J. P	11.75		0.46	191.70
		203.45	8.45	195. c
			3.45	200 c
J. P.	9.36		0.68	202.77
		212.13	7.13	205. c
	3.65		3.64	208.49
		212.14	7.14	205.
			2.14	210
J. P.	2.04			216.72
		218.76	3.76	215

Feb. 14 1903 Saturday

See a p 5

B 5+25

See (a) p 9.

12440

1.40			192.61
	194.01	~~1.40~~	~~194.01~~
0.58		11.82	182.19
	182.77	12.77	170 c
		7.77	175 c
		2.77	180.
7.60		0.33	182.44
	190.04	10.04	180 c
		5.04	185
		.04	190
11.82		1.62	188.42
	200.24	5.24	195 c
		0.24	200 c
11.48		0.78	199.46
	210.94	5.94	205 c
3.53			210 c
3.53			192.61
	196.14	1.14	195
		6.14	190
0.22			225.22
	225.44	6.90 5.44	218.54

h Gulah below
Gays House

Alverson
McLeran
Anglesola Anglesola
Luce

St	+	I	−	E.
	1.98			192.61
		194.59	9.59	185 c
			4.59	190 c
	7.76		0.32	194.27
		202.03	12.02	190 c
			7.03	195 c
			2.03	200 c
	10.03		0.47	201.56
		211.59	6.59	205 c
			1.59	210 c
	10.61		0.60	210.99
		221.60	6.60	215 c
			1.60	220 c
	3.32		1.26	220.34
		223.66	3.66	220 c
			8.66	215 c
	0.81		11.55	212.11
		212.92	2.92	210 c
			7.92	205 c
	1.26		11.39	201.53
		202.79	2.79	200 c
			7.79	195

Monday Feb. 16th 1903

In gulch below gay mansion

33 215 210

23 1471 6.4

224.38 210

St	+	d	−	E
	1.87			226.14
		228.01	3.00	225 c
			8.00	220 c
	0.34		11.65	216.36
		216.70	1.70	215 c
			6.70	210 c
	2.08			226.14
		228.22	3.22	225.00
			8.22	220 c
	1.01		10.95	217.27
		218.28	3.28	215 c
			8.28	210 c
J. P.	4.33			224.38
		228.71	2.26 3.49	224.45 225.22
			15.50	213.21
			15.	213.70

Monday Feb. 15, 1903.

(a) 14 p. Near E_0_

(a) 14 p.

(a) p. 12.

225.22 p. 12

141.54
0.58

St	+	In	−	E
T. P.	10.36			(d) 131.70
T. P.	11.32	142.06	0.51	141.55
T. P.	10.19	152.87	0.58	152.29
T.		162.48	2.48	160. c
			7.48	155 c
	2.44		11.98	150.50
		152.94	7.94	145.00 c
	0.72		11.40	141.54
		142.26	2.26	140. c
			7.26	135 c
	11.72		11.88	130.38
		142.10	7.10	135. c
			2.10	140 c
	10.80		0.88	141.22
		152.02	7.02	145. c
			2.02	150 c
	12.00		0.33	151.69
		163.69	8.69	155 c
			3.69	160.00 c
	7.30		2.83	160.86
		168.16	8.16	160. c

Feb 17 1903

N.W. of T. Pole

152.02 Red Bench

St	+	I	−	E
		168.16	2.23	165.93
B.M. (a)			4.72	163.44
	5.98			163.44
		169.42	9.42	160. c
	0.32			163.44
		163.76	8.76	155
T.P.	0.90		11.21	152.55
		153.45	3.45	150. c
			8.45	145
T.P.	1.60		11.35	142.10
		143.70	3.70	140 c
	1.		8.70	135 c
B.M.			11.15	132.55
B.M.	8.48			163.44
		171.92	11.92	160. c
			6.92	165
				170
T.P.	11.33		1.23	170.69
		182.24	12.24	170 c
			7.24	175 c

old bench W of sta 27. P. Cañon

B.M. (a)

Bench N. end 135 contour

Feb. 18 1903 Wednesday
See (a) - 36 p

Gulch on
- C Line -

7.24
203.08
7.70

Hab.		182.24	7.72	174.52
	10.21		0.85	181.39
		191.60		
	11.02		0.91	190.69
	9.58	201.71	3.64	198.07
		207.65	4.53	203.12
				203.08
B. M.	9.29			163.44
		172.73	12.73	160. c
			7.73	165 c
			2.73	170 c
	11.90		10.22	172.51
		184.41	9.41	175
			4.41	180
	11.47		1.55	182.86
		194.33	9.33	185 c
			4.33	190
	11.75		0.39	193.94
		205.69	10.69	195 c
			3.69	200 c
	11.79		1.01	204.68
		216.47	6.47	210

Feb. 18th Wednesday

C – R – 100 – 0 St st R. Line.

check p.

B. M

2.86

D 2+75 R		216.47	5.50	210.97?	
			6.47	210.0	
			1.47	215 c	
	9.40		1.03	215.44	
		224.44	4.44	220 c	
Hub (b)			3.90	220.54?	
Hub (a)	2.00			210.97	
		212.97	2.97	210	
			7.97	205	
	0.80		11.72	201.25	
		202.05	2.05	200.0	
			7	195	
			12.	190	
	0.68		11.10	190.95	
		191.63	6.63	185	
	0.92		11.72	179.91	
		180.83	5.83	175	
B.M	2.52		10.40	170.43	
		172.95	2.75	170	

Feb. 18 1903 Wednesday

D. 2 R

D 2+75 R.

slope of 3% in Pound Canon
on the slope W. side of canon & W. of
Sta. 31.

St	+	J.	−	E
		172.95	2.95	170.c
			7.95	165
	1.92		11.48	161.43
		163.39	3.39	160 c
			8.39	155 c
	0.87		11.57	151.82
		152.69	2.69	150
			7.69	145
	1.76		12.00	140.69
		142.45	2.45	140
	1.		7.45	135 c
B.M.			11.16	131.29
	11.39		0.72	141.73
		153.12	8.12	145 c
			1.12	152.00
	9.98			152.00
		161.98	11.98	150
	7.50	167.59	1.89	160.09
		167.59	12.59	155.00 c

Feb 19 1903 – (Hazy in afternoon)

Off Sta 35 Grand Canon 80 ft West –

B.M. up to date (B.M. 131.29)

E 4+35 225.56
E 3+50 236.45 10 15

		167.59	7.59	160.
	11.04		1.93	165.66
		176.70	6.70	170
			6.09	170.61
B.M.	0.69		6.21	170.49
B.M.	0.69			225.56
	7.72	226.25	11.52	214.73
		222.45	2.45	220.
	1.26		11.88	210.57
		211.83	6.83	205.
	1.08		11.82	200.01
		201.09	6.09	195
	0.74		11.33	189.76
		190.50	5.50	185
			10.50	180
	1.42		11.55	178.95
		180.37	5.37	175
			10.37	170
	1.43		11.40	168.97
		170.40	5.40	165

Feb. 19 1903. Thursday.

on Contour 170 – a rock, on S side of gulch
E 4+35 R

41 1.2
1.7
131.29
160.00

		170.40			
	2.58		10.40	160.00	
		162.58	7.58	155.	
	0.93		11.78	150.80	
	0.10	151.73	11.66	140.07	
		140.17	9.00	131.17	
			05.17	131.29 135.	
~~B.M.~~	4.54		0.71	139.46	
		151.00	11.00	140.	
B.M. (a)			11.23	145 139.77	100 feet W. sta. 38 in P. Canon
	11.85		1.02	149.98	
		161.83	11.83	150.	
	11.90		1.02	155 160.81	
		172.71	12.71	160. c	
			7.71	165 c	
			2.71	170 c	
	11.26		0.66	172.05	
		183.31	8.31	175. c	
			3.31	180 c	
	11.59		0.47	182.84	
		194.43	9.43	185. c	
	11.80		1.45	192.98	
		204.78			

Sx	+	S	−	E
		203.78	8.78	195.
			3.78	200
B.M.	11.46			139.77
	7.99	151.23	11.64	139.59
		147.58	12.58	135 c
			7.58	140 c
B.M.	11.23		9.73	137.85
	11.83	149.08	1.77	147.31
		159.14	9.14	150 c
			4.14	155
	11.61		0.74	158.40
		170.01	10.01	160 c
	7.46		1.02	168.99
	~~7.46~~			165
		176.45	6.45	170 c
			1.45	175 c
	10.04		0.59	175.86
		185.90	5.90	180 c
			0.90	185 c
	11.90		1.08	184.82
		196.72	0.72	190
			1.72	195

Feb 20 1903

Sat Feb 21 - 1903 -

(a) p (41)

100 feet W. of Sta 46 Pound Contour

2.64
1235 contour

St	+	I	−	E
	11.38	196.72	0.99	195.73
		207.06	7.06	200. c
			2.06	205 c
	11.05		0.60	206.46
		217.51	7.51	210. c
			2.51	215 c
	11.42		1.35	116.16
		227.58	7.58	220. c
			2.58	225
	11.66		0.93	226.65
		238.31	8.31	230.
B.M.			6.18	232.13
B.M.	3.96			137.85
		141.81	6.81	135.
		"	1.81	140.
St 48		"	5.37	136.44
	11.38		0.10	141.71
		153.09	8.09	145. c
			3.09	150 c
	11.35		0.62	152.47
		163.82		

Cobble on summit mesa

137.85
147.31
.54

P. Canon

247.17=(F 5+50 R 2+30)

Bk	+	In	−	E
		163.82	8.82	155 c
			3.82	160 c
	11.36		1.22	162.60
		173.96	8.96	165 c
B.M.			11.18	162.78
			3.96	170
	11.40		0.57	173.39
		184.79	9.79	175
T.P.	8.15		5.06	179.73
		187.88	7.88	180.
			2.88	185
	12.00		0.95	186.93
		198.93	8.93	190.
			3.93	195.
	11.73		0.35	198.58
		210.31	10.31	200. c
			5.31	205. c
				210 c
	11.54		11.27	179.73
		191.27	11.27	180
			6.27	185
			1.27	

Sat Feb 21 1903.

N.W. cor. platform Range Shooting House
Top of Post on N. end of Porch

B.M.

Tuesday 24th Feb 1903
Begin at B.M.

St	+	☉	−	E	
	11.83	191.27	1.51	189.76	
		201.59	11.59	190. c	
			6.59	195 c	
	8.56		5.71	195.88	
		204.44	9.44	195.	
			4.44	200 c	
	11.98		1.33	~~205.77~~ 203.11	
		215.09	10.09	205.	
			5.09	210	
	11.99		1.21	~~216.30~~ 213.88	
		225.87	10.87	215 c	
Hub a			9.97	215.90	F 5+40.
			5.87	220 c	
			6.39	~~225.~~ 225.48	
	11.94	237.42	12.42	225 c	
B.M.			5.33	232.09	on roads
	11.59		1.45	235.97	
	6.02	247.56	1.09	146.47	
B.M		252.49	2.01	250.48 250.45	Old B.M.
	7.63			232.09	
		239.72			

(1) 435 ft Stn — to Stn
(2) 422
46

St	+	i	−	E
		239.72	4.72	235
			9.72	230
B.M.	11.51			136.44
		147.95	7.95	140 c
			2.95	145 c
B.M.6.	(a)		4.12	143.83
	10.39		1.23	146.72
		157.11	7.11	150
			2.11	155 c
St 55.	10.50			143.82
	11.53	154.32	0.20	154.12
		165.65	10.65	155 c
	2.29		3.07	162.58
		164.87	9.87	155.
	10.86		1.32	160. 163.55
		174.41	9.41	165.
			4.41	170
	10.12		0.47	173.94
		184.06	9.06	175 c

Tuesday 24th Feb. 1903.

St 48

St 55.

Wed. 25th Feb 1903.

Sr.	+	I	−	E.
		184.06	4.06	180.
B.M.(a)			0.20	183.86
	3.46			169.18
		172.64	~~2.64~~	~~170~~
			7.64	165
				160
	2.22		0.20	172.44
		174.66	1.59	173.07
B.M.	0.96			191.18
	1.01	192.14	~~11.45~~ 11.37	180.77
		181.78	6.78	175.
			11.78	170
	1.62		11.29	170.49
		172.11	7.11	165
			12.11	160
				155

Lower spir of W slope Pound Canon near G Line

A 2. L

See (a²) p. 11.

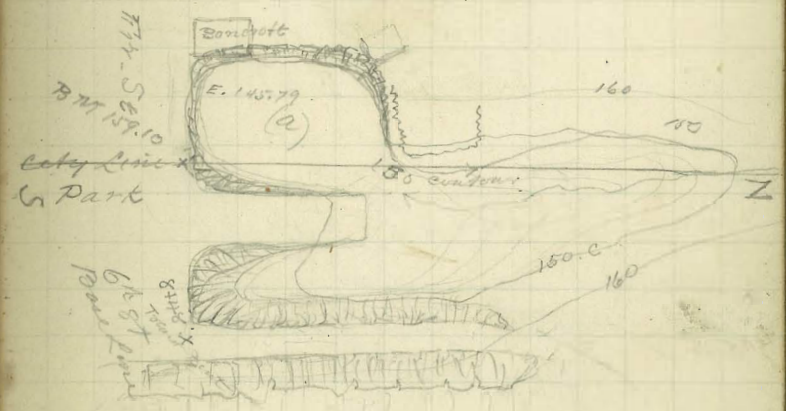
Feb 25 1903 Wednesday

	8.10			206.89		
		214.99	4.99	210.c		
			9.99	205		
	2.34		11.03	203.96		
			6.30	200		
		206.30	11.30	195		
C 3+35 L	10.74			220.82		
		231.56	7.27	224.29		
			11.56	220 c		
			6.56	225		
			1.56	230 c		
22.5.22 B M	spike	C. 2 L	5.18	226.38	C. 2 L.	corrected from previous record of 22.5.22
	11.80			224.63		
		236.43				
B.M.	9.23			227.95		~~B.-0~~
		237.08	12.18	225.c		
			7.18			

St.	+	I	—	E.
	0.69			159.10 (a)
		159.79	9.79	
			14.00	145.79
	11.49			159.10 = a
		170.59	10.59	160. c
B.M. (a) p47	11.92			183.86
		195.78	10.78	185. c
			5.78	190.
			0.78	195
	11.60		0.66	195.12
		206.72	6.72	200. c
			1.72	205. c
	11.08		0.97	205.75
		216.83	6.83	210. c
			1.83	215 c
	12.00		0.79	216.04
		228.04	8.04	220.
			3.04	225
	10.78			143.83
		154.61	4.61	150.
	11.42		1.04	153.57
		164.99	9.99	155. c
B.M.			4.99	160
			6.45	158.55

Feb 26th 1903. Thursday

Plug N side of Fir on Line of City Park. p4.
Elevation bottom cut a



@ p46. sta. 55.

Hub 210 ft Left Sta 55 ang 47° L.

196.42 BM

-165-
23.0
235

St.	+	I	−	E	
		164.99			
	11.67		1.86	163.13	
		174.80	9.80	165 c	
B.M (a)			0.00	174.80	
	11.66		4.80	170 c	
		186.46	11.46	175	
			6.46	180 c	
	11.26		0.81	185.65	
		196.91	6.91	190	
			1.91	195	=(2)
B.M.	11.50		0.49	196.42	
		207.92	7.92	200 c	
			2.92	205	
BM	11.52			196.42	
	10.98	207.94	1.77	206.17	
		217.15	~~10.9~~	210 c	
			7.15 t		
	11.78		2.15 t	215	
			0.17	216.98	
		228.76	8.76 r	220	
			r3.76 t	225	
B.M			0.93	227.83	
				227.81 check	
	11.91		0.58	228.18	
		240.09	r10.09 r	230	
			r5.09 t	235	
			10.09		
	0.48		11.82	228.27	
		228.75	r3.75	225	

B.M. 100 ft west of 300 yard target.

Feb 27 - 1903 - Friday

G - O - p. 18.

210
15
20
25
30

SX	+	I	−	E.
	2.22	228.75	4.68	224.07
		226.29	r1.29	225.
	4.43		1.18	225.11
		229.54	r4.54	225
			r9.54	220
	0.28		11.95	217.59
		217.87	r2.87	215
			r7.87	210
	2.32		11.48	206.39
		208.71	7.71	205
			8.71	200c
			13.71	195c
B.M.			10.83	197.88
	0.28			196.42
		196.70	tt6.70	190c
B.M.			6.77	189.93
			bt11.70	185.
	0.03		11.02	185.68
		185.71	bt5.71	180
			10.71	175
	10.22			196.42
	11.28	206.64	0.54	206.10
		217.38	tr7.38	210.
			2.38	215

7.74
2.71

G 0 + 200

B.M. near G+200.

B.M. c G 2+60

St	+	l	−	E	
	11.67	217.38	0.38	217.00	
		228.67	+8.67	220	
			3.67	225.	
	11.63		0.22	228.45	
		240.08	+10.08	230.0	
			+5.08	235.0	
B.M.	10.46			174.80	B.M. (a) p 50
		185.26	10.26	175.	
			5.26	180.0	
			+.26		
	12.00		0.11	185.15	
		197.15	+7.15	190.	
	12.00			185.15	Feb. 28 1903
		197.15	+2.15	195.	
	11.17		0.51	196.64	
		207.81	+7.81	200	
	8.96		1.25	206.56	
		215.52	+10.52	205	
			+5.52	210	
			+0.52	215	
			0.80	214.72	
	11.85				
		226.57	11.57	215.	
			+6.57	220	
			+1.57	225	
	11.77		0.62	225.95	
		237.72	+7.72	230.	
			+2.72	235	

1.97 2056
S 70 E

St	+	I	−	E
	11.78	237.72	1.66	236.06
		247.84	r 7.84	240.
			5.29	242.55
			2.84	245
	11.48			143.83
		155.31	r 10.31	145. c — Brook
			11.03	144.28
			t 5.31	150.
			r 0.31	151
	10.98		1.05	154.26
		165.24	t 5.24	160. c
			t 24	165
			r 0.24	155 ✓
			12.02	158.22
St. 61 @			11.97	153.27 ✓
	11.55		1.62	163.61
		175.16	t 0.16	165.
			5.16	170
			t 0.16	175
	11.35		0.11	175.05
		186.40	t 6.40	180
	10.96		1.40	185.00
		195.96	t 5.96	190
			0.96	195
	11.78		1.32	194.64
		206.42	t 6.42	200
			t 1.42	205

Feb. 28th Sat 1903.

0+80 R H-O- 8th St Range Line

spike No. 56 -

155 contour extends along W. side of road.
155 contour crosses road at 36 ft r.w. of Sta. 61 — 2nd time crosses — 60' NW of 500 yd shooting gallery end of Contour 155.

153.27 – 61

St	+	I	—	E.
	12.65	206.42	1.15	205.27
		216.92	t6.92	210. c
			t1.92	215 c
	11.62		1.87	215.05
		226.67	t6.67	220. c
B.M.			2.80	223.87
			1.67	225.
←	11.86			223.87
		235.73	t10.73 t	225
			5.73 t	230
	11.22		1.07	234.66
		245.88	t10.88	235.
			t5.88	240
			.88 t	245
	11.52		1.17	244.71
		256.23	t6.23	250 c
			t1.23	255 c
	9.77		0.82	255.91
		265.68	t5.68	260 c
	11.53			153.27
		164.80	4.80	160. c
B.M.? a			7.55	167.25?
	11.92		0.46	167.34
		176.26	t11.26	165.
			6.26	170 c
			t1.26	175 c
	11.89		1.06	175.20
		187.09	t7.09	180 c
			t2.09	185

Old B.M. re-vamped

Monday March 2nd 1903.

→ Sta 65 near mouth of gulch

202
1.82
153.27

St	+	I	−	E
	11.88	187.09	0.62	0.62
				186.47
		198.35	t8.35	190 C
			t3.35	195
	11.71		0.62	197.73
		209.44	t9.44	200 c
			t4.44	205
	11.84		0.22	209.22
		221.06	x11.06	210
			x6.06	215
			1.06	220
	11.79		0.46	220.60
		232.39	t12.39	220 c
			7.39	225
			t2.39	230
	11.78		0.59	231.80
		243.58	t8.58	235
			t3.58	240 c
B.M.			4.96	238.62
B.M.	11.37			153.27
		164.64	7.39	157.25
			0.57	
	11.78	175.85	x10.85	164.07
				165 c
			t5.85	170 c
			t0.85	175 c
B.M.	11.61		0.20	175.65
		187.26	7.26	180
				185
	11.68			175.65
		187.33	t2.33	185
	11.13	198.07	0.39	186.94
			t8.07	190
			3.07	195

Quince St.
Quince
238.62
8th St Line

Centre Quince & 8th St R Line

p. 53 @
st. 65 p 54 @.

B.M. 80 ft W. of Sta. 68 (about)

St	+	I	−	E
	11.41	198.07	0.22	197.85
		209.26	9.26	200.c
			4.26	205c
	11.11		1.16	208.10
		219.21	9.21	210c
			+4.21	215c
	11.85		0.80	218.41
		230.26	10.26	220
			5.26	225c
	11.53		0.71	229.55
		241.08	×11.08	230.
			+6.08	235.
			+1.08	240.
	11.85		0.95	240.13
		251.98	+6.98	245c
			+1.98	250c
			0.45	251.53
	11.80			
		263.33	×8.33	255c
			+3.33	260c
B.M.	0.38			175.65
		176.03	6.03	170c
			1.03	175c
B.M	11.97			175.65
		187.62	7.62	180.c
			0.~~77~~ 2.63	185c
	11.90			186.85
		198.75	8.75	190
			3.75	195

Tuesday March 3d 1903.

p. 55

St	+	J	−	E
		198.75		
	11.66		0.43	198.32
		209.98	9.98	200 c
			4.98	205 c
			000	210 c
	10.88		092	209.06
		219.94	4.94	215 c
	11.19		1.29	218.65
		229.84	+9.84	220
			4.84	225
	11.78		1.65	228.19
		239.97	+9.97	230 c
			4.97	235 c
	11.84		1.34	238.63
		250.47	+10.47	240 c
			5.47	245 c
			.47	250 c
B.M.	4.70			175.65
St. 72		180.35	8.73	171.62
" 73			5.81	175.34
B.M.	11.84		0.50	179.85
		191.69	+11.69	180
			+6.69	185
			1.69	190
	12.03		0.37	191.32
		203.35	8.35	195
			3.35	200

March 3 1903

p. 55
B.M. in Pound Canon
B.M. at mouth of gulch in Pound Canon
St. Telegraph Pole 50 ft W. of Sta. 73 in Pound Canon

Sx	+	I.	−	E	
		203.35			March 3, 1903.
B.M.			8.26	195.09	N 80° W 1+80 from Sta 73 P. Canon
	12.03		0.28	203.07	
		215.10	10.10	205 c	
			5.10	210	
	11.92		0.50	214.60	
		226.52	11.52	215.	
B.M (a)			0.75	225.77	Side of Gulch route Sta. 73 N. side
			6.52	220	
					March 4th + 5th no work
A-2.&	6.83			170.05	March 6th 1903.
		176.88	6.88		
			12.00	165.	
	2.45		10.82	166.06	
		168.51	8.51	160	
B.M	1.02			191.18	near B 1+50 R. S. N.
		192.20	2.20	190.	
			7.20	182	
B.M	11.94		7.20	185.00	B 1+50 – also contour 185

St	+	9	−	E	
	11.94			200.97	C 6 L
B.M.		212.91	7.91	185.	6 × 13 C L
			0.64	202.27	
			7.91	205	
			2.91	210	
	9.10		1.00	211.91	
		221.01	6.01	215	
B.M			6.91	214.10	-200-
			1.00	220	
B.M	3.26			192.61	C 4 L.
		195.87	5.87	190.0	
B.M (p 58)	11.58			225.77	
		237.35	12.35	125.	
			4.63	232.72	
	3.83	236.55	11.55	225	
			6.55	230	
			1.55	235	
	11.82		0.29	236.26	
		248.08	8.08	240	
			3.08	245	
			1.08	247.00	
	11.47				
		258.47	8.47	250.0	
			0.88	~~0.88~~ 257.12	
B.M	7.79				
		265.40	1.08	264.32	B.M
	1.11		1.	257.61	
		258.72	8.72	250.0	

60 180 175 0-7 ft.

179 85

St	+	I.	−	E
	0.15	258.72	11.17	247.55
		247.70 r	2.70	245
			t 7.70	240
			12.70	235
	1.23		11.57	236.13
		237.36	t 7.36	230
			12.36	225
	~~1.89~~ 1.89	~~.14~~	1.89	225.77
		227.66	7.66	220 oc
			12.76	215
	1.93		11.36	216.30
		218.23	8.23	210
	0.85		11.55	206.68
		207.53	2.53	205
			7.53	200
			12.53	195
	0.83		11.20	196.33
		197.16	7.16	190
	6.25			179.85
		186.10	1.10	185
			6.10	180
B.			11.10	175
B.M.			8.55	177.55
	11.64		0.54	185.56
		197.20	7.20	190
			2.20	195
	11.38	207.16	1.42	195.78

March 7th 1903 Sat. clear

No 76 P. Cañer Opposite gulch upper end of Session's nursery

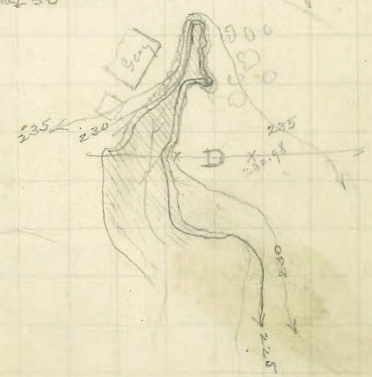
St	+	I	−	E	
		207.16	7.16	200.0	
			2.16	205.0	
	11.47		0.65	206.51	
		217.98	7.98	210.0	
			2.98	215.0	
	11.87		0.84	217.14	
		229.01	9.01	220.	
			4.01	225.	
	11.79		0.90	228.11	
		239.90	9.90	230.	
			4.90	235	
	11.87		1.12	238.78	
		250.65	10.65	240.	
B.M.			11.20	239.45	K-0-
			5.65	245.	
			.65	250.0	
	7.88		0.63	250.02	
		257.90	2.90	255.	
B.M.			5.52	252.38	
				252.33	
B.M.	11.89			177.55	St 76 P.60
		189.44	9.44	180.0	
			4.44	185.0	
B.M.			4.10	185.34	Sta 80 P. Corn
	11.88		0.41	189.03	
		200.91	10.91	190	
			5.91	195.0	
			.91	200	
	11.96		0.33	200.58	
		211.54			

St	+	I	−	E	
		211.54	6.54	205 c	
			1.54	210 c	
	11.10		1.10	210.44	
		221.54	6.54	215 c	
			1.54	220 c	
	11.24		0.94	220.60	
		231.84	6.84	225	
			1.84	230 c	
	11.14		0.20	231.64	
		242.78	7.78	235	
			2.78	240	
B.M.			3.36	239.42	

B.M.	4.82			232.89	
		237.71	2.71	235 c	11
			7.71	230 c	5/10
			12.71	225	
			11.19	226.52	
	2.23				
		228.75	8.75	220	
	3.27	220.89	11.13	217.62	
			5.89	215	
			10.89	210	
	3.20		11.10	209.79	
		212.99	7.99	205	
			12.99	200	

On Centre 80 ft East of church yard. 300 S. of N Bdy. C. park

D-4481.L. March 10 1903, Tuesday
Retrace of 235 and 230 Contour, back of Gaols.

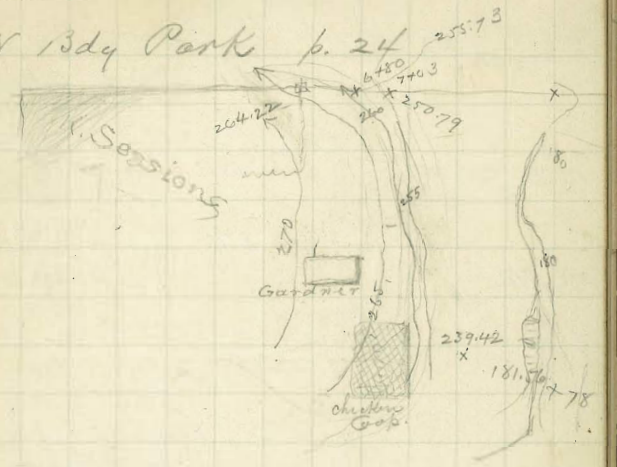


270
80-185.34

St	+	I	−	E
B. M	8.82			264.22
		273.04	r3.04	270 C
			8.04	265
	0.23		11.90	261.14
		261.37	1.37	260
			6.37	255
B. M.			5.64	255.73
B. M			10.58	250.79
			+11.37	250
	1.67		10.81	250.56
		252.23	+7.23	245
			12.27	240
	6.12			185.34
		191.46	11.46	180
78 St.			9.90	181.56
			6.46	185
			1.46	190
	11.04		0.52	190.94
		201.98	6.98	195
			1.98	200 C
	11.30		0.23	201.75
		213.05	8.05	205
			3.05	210
	11.96		0.70	212.35
		224.31	9.31	215
			4.31	220
			1.25	223.06
	11.99			
		235.05	10.05	225
			5.05	230

Sta 6 N 13dy Park p. 24

St. 6+80
St 7+03



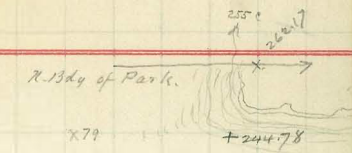
St 78

St	+	I	−	E
		235.05		
	11.02		1.06	233.99
		245.01	5.01	240.
	11.60		0.50	244.51
		256.11	6.11	250
B. M. (a)			11.33	244.78
			1.11	255
	11.44		0.68	255.43
		266.87	6.87	260 c
B. M.			4.70	262.17
B. M. (a)	3.10			244.78
		247.88	2.88	245.
			7.88	240
			12.88	235.
	0.58		11.20	236.68
		237.26	~~2.26~~	~~235~~
			7.26	230
			12.26	225
B. M.	0.40		10.35	226.91
		227.31	7.31	220
			12.31	215
	1.06		11.32	215.99
		217.05	7.05	210 c
			12.05	205
	0.43		11.83	205.22
I. P.		205.65	5.65	200
	10.19			226.91
		237.10	12.10	225.
			7.10	230
			2.1	235
	11.64		1.17	235.93
		247.57	7.57	240
			2.57	245

48

96°40' R
St 78 − 4+18
March 10 & 11th

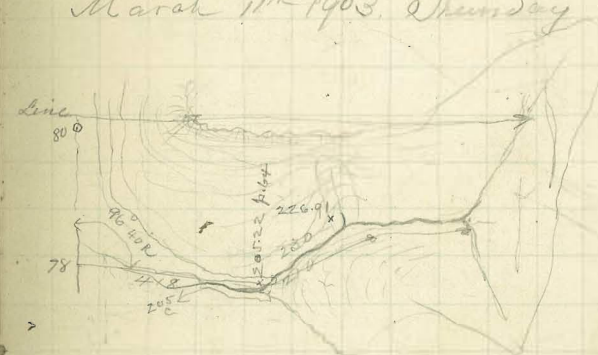
76



On or near summit about 400 E of Sta 79

St 13+04

March 11th 1903 Thursday



→ I. P.

St	+	l	−	E		
		247.57				March 11 1903
	11.99		0.69	246.88		
		258.87	8.87	250.0		
			3.87	255		
	9.05		1.28	257.59		
		266.64	6.64	260		
	0.32		11.64	255		
			10.68	255.96	—	
		256.28	6.28	250		
			11.28	245		
Hub			10.45	245.83		9+08 L of Sta 78
	6.36			255.96		
		262.32	2.32	260.		
			7.32	255		
			12.32	250		
	1.16		11.64	250.68		
		251.84	6.84	245.0		
			11.84	240		
			11.85	239.99		
	0.99	240.98	5.98	235.		
	0.18		10.76	230.22		
		230.40	5.40	225.		
	10.77		7.30	223.10		
				205.22		Hub. 6+28 L of 78
B.M		~~233.84~~				
		215.99	5.99	210.0		
			10.99	215.0		Hub. 4+18 L of 78 St
			3.54	212.45		
			0.70	215.29		

St	+	J	−	E	
	11.51			215.29	
		226.80	6.80	220	
			11.80	225	
	11.05		1.27	225.53	J. P.
		236.58	6.58	230.	
	11.33			225.53	
		236.86	1.86	235.	
			0.79	236.07	
	11.92				
		247.99	7.99	246.	
			2.99	245	
	11.52		0.76	247.23	
		258.75	8.75	250	
			3.75	255	
			0.83	257.92	
	11.91	269.83	9.83	260	
	11.91			262.17	
		274.08	9.08	265	
			4.58	270	
B.M.			3.58	270.50	
	5.74			181.56	
		187.30	12.30	175	
			7.30	180	
			2.30	185	
	11.53		0.57	186.73	
		198.26	8.26	190	
			3.26	195	
	11.01		0.27	197.99	
		209.00	9.00	200	
			4.00	205	
	11.65	219.34	1.26	207.74	

March 11 1903

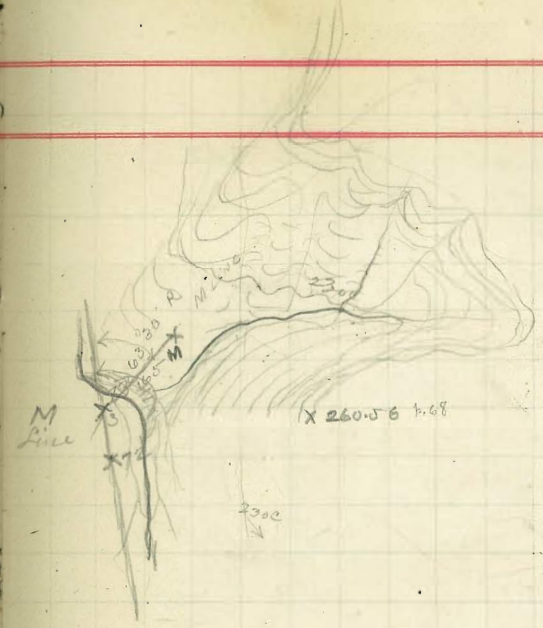
12th March Thursday 1903.

14+04 L on N line of Park.

Blasting

St	+	I	−	E
		219.39	9.39	210.C
			4.39	215.C
	11.78		1.30	218.09
		229.87	9.87	220 C
			4.87	225
			1.08	~~1.08~~
				228.79
	11.77	240.56	10.56	230
			5.56	235
			.56	240
			1.16	239.40
	10.99	250.39	5.39	245
			.39	250
	11.91		0.74	249.65
		261.56	6.56	255
			1.56	260
	9.74			171.62
		181.36	11.36	170
			6.36	175
			1.36	180 C
	11.68		0.59	180.77
		192.45	7.45	185
			2.45	190
	11.71			179.85
		191.56	1.56	190.00
	12.00		0.85	190.71
		202.71	7.71	195 C
			2.71	200

370 to 230 C in W. curve

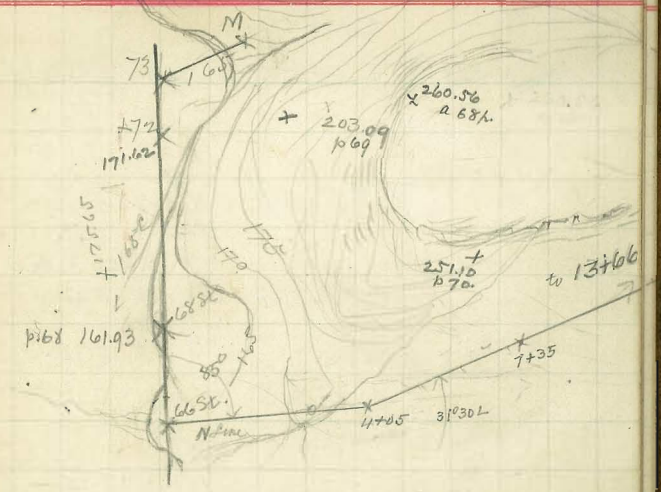


St 72 Pound Center

March 13th 1903 Friday

68 175.65 B.M.

St	+		—	E
	11.27	202.71	0.48	202.23
		213.50	8.50	205
			3.50	210 c
			1.55	211.95
	10.98			
		222.93	7.93	215
			2.93	220
	11.55		0.58	222.35
		233.90	8.00	225
			3.90	230
			0.86	233.04
	11.95			
		244.99	9.99	235
			4.99	240 c
			0.89	244.10
	11.35			
		255.45	10.45	245
			5.45	250 c
			0.44	255.01
	10.53			
		265.54	10.54	255
			5.54	260
B.M. (a)			4.96	260.56
	1.00			171.62
		172.62	10.69	161.93
			7.62	165
			2.62	170
			0.41	172.21
	11.73			
		183.94	8.94	175
			3.94	180
			0.56	183.38
	11.64			
		195.02	10.02	185
			5.02	190
			1.30	193.72
	10.57			
		204.29	9.29	195
			4.29	200



on top bluff on 260 contour
St 72
St 68

Sat. March 14 1903

St	+	I	−	E
		204.29		
B.M.	11.03		1.20	203.09
		214.12	9.12	205 c
			4.12	210 c
	11.92		0.95	213.17
		225.09	10.09	215
			5.09	220
	11.40		1.41	223.68
		235.08	10.08	225 c
			5.08	230
	11.88		0.71	234.37
		246.25	11.25	235 c
			6.25	240 c
			1.25	245 c
	12.00		1.16	245.09
		257.09	7.09	250 c
			2.09	255 c
	11.03		1.38	255.71
		266.74	6.74	260
	~~11.20~~ 10.05			161.93
		~~173.13~~ 171.98	11.11	160.87
	0		1.98	170.
	11.31		0.46	171.52
		182.83	7.83	175
			2.83	180
	11.86		1.33	181.50
		193.36	8.36	185.
Y.P.			3.36	190
			0.75	192.61

On 200 ft Contour near M. Line

St 68

St 66

192.61

St	+	S	−	E
				192.61
	0.89			
Hub		193.50	4.13	189.37
	10.94			192.61
		203.55	8.55	195 c
			3.55	200
	11.22		1.29	202.26
		213.48	8.48	205
			3.48	210
	11.44		1.22	212.26
		223.70	8.70	215
			3.70	220
	11.79		1.04	222.66
		234.45	9.45	225
			4.45	230
	11.48		1.03	233.42
		244.90	9.90	235
			4.90	240
	11.78		1.20	243.70
		255.48	10.48	245 c
			5.48	250
			.48	255 c
	11.90		0.10	255.38
		267.28	1.28	260
			12.28	255 c
	1.30		11.18	
		257.40	9.40	256.10
				250 c
J.C.	2.70		6.30	251.10
		253.80	8.80	245
			11.82	241.98

N 4+05

B.M. of N. 700
March 16 1903 Mo

March 16 1903 mo.

St	+	I	−	E	
	0.94			241.98	
		242.92	2.92	240	
			7.92	235	
	0.98		11.66	231.26	
		232.24	2.24	230	
			7.24	225	
			12.24	220 c	
	1.78		11.76	220.48	
		222.26	7.26	215 c	
			12.26	210 c	
	1.29		11.45	210.81	
		212.10	7.10	205 c	
			12.10	200 c	
	0.97		11.59	200.51	Rock by stream
		201.48	6.48	195	
			11.48	190	
Hub			0.89	200.59	St 7+35
			11.98	189.50	Fr 189.37
	11.98			189.37	
B.M.	11.80	201.35	0.89	200.46	
			~~11.80~~		
		212.26	2.26	210	
	11.76		0.89	211.37	
		223.13	8.13	215	
			3.13	220 c	
	11.50		0.08	223.05	
		234.55	9.55	225	
			4.55	230	
	11.64		1.01	233.54	
		245.18	10.18	235	

1-8° 9' 221.05 1-2² 1-1 2/2 4½

St	+	I	−	E	
		245.18	5.18	240 C.	
	11.39		0.63	244.55	
		255.94	10.94	245 C	
			5.94	250	
			94	255	
	11.07		2.44	253.50	
		264.57	4.57	260	
			9.57	255	
	0.69		11.43	253.14	
		253.83	3.83	250 C	
B.M. →			0.78	253.05	on rock
			8.83	245	
	0.89		11.45	242.38	
		243.27	3.27	240	
B.M.			2.22	241.05	
			8.27	235.	
	1.56		11.50	231.77	
		233.33	3.33	230	
			8.33	225	
			11.40	221.93	
	11.66			221.93	
		233.59	3.59	230.	
			8.59	225	
	11.41		0.52	233.07	
		244.48	9.48	235	
			4.48	240	
	11.81			241.05	
		252.86	7.86	245	
			2.86	250	
	11.28		0.33	252.53	
		263.81	8.81	255	
			3.81	260	

- 2-40

200 N. of St. 13+66.

N 13+66

St 11 + 35 ?

March 17th 1903 Tuesday

March 17 1903

St	+	I	−	E	
	0.93	263.81	11.77	252.04	
		252.97	2.97	250.	
			7.97	245	
	0.20		12.012	240.95	
		241.15	1.15	240	
			6.15	235	
			11.15	230	
	0.12		11.78	229.37	
		229.49	4.49	225	
			9.49	220	
B.M.			11.57	217.92	St 9+10.
	0.43		11.43	218.06	
		218.49	3.49	215.	
			8.49	210	
	0.32		11.81	206.60	
		206.92	1.92	205 c	
			6.92	200 c	
			6.48	200.44	check 200.46.
	0.79	196.63	11.08	195.84	
				195 c	
	12.02		0.12	196.51	
		208.53	8.53	200 c	
			3.53	205 c	
			0.91	207.62	
	11.78				
		219.40	9.40	210	
			4.40	215	
			1.67	217.73	
	10.65				
		228.38	8.38	220.	
			3.38	225	
			0.81	227.57	
	11.81				
		239.38	9.38	230	
			4.38	235.	

March 17 1903 Wednesday

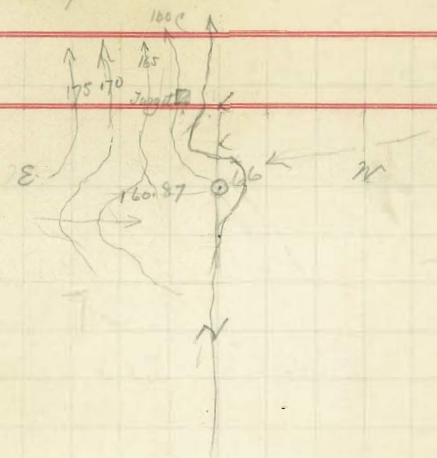
St	+	I.	−	E
		239.38	1	
	11.83		1.44	237.94
		249.77	9.77	240 c
			4.77	245 c
	11.53		0.29	249.48
		261.01	11.01	250
			6.01	255
			1.01	260
			6.01	255 c
			11.01	250 c
	1.12		11.47	249.54
		250.66	5.66	245
			11.66	240
	0.90		11.59	239.07
		239.97	4.97	235
			9.97	230
	0.57		11.20	228.77
		229.34	4.34	225
			9.34	220
	1.38		11.60	217.74
		219.12	4.12	215
			9.12	210
			11.05	208.07
	1.28	209.35	4.35	205
			9.35	200
			12.00	197.35
B.M.	2.37	199.72	10.30	189.42
	7.18			189.37
		196.55	1.55	195
			6.55	190 c
			11.55	185
	0.36		11.53	185.02
		186.38		

St 4+05 N.

March 18 1903

St	+	S	−	E.
		185.38		
			5.38	180.C
			10.38	175 C
	10.77			160.87
		171.64	11.64	160 C
			6.64	165
			~~1.64~~	~~170 C~~
			0.58	171.06
	11.83			
		182.89	12.89	170
			7.89	175
			2.89	180
			0.55	182.34
	11.27			
		193.61	8.61	185
			3.61	190 C
			4.20	189.41
			1.04	~~194.65~~
	11.77			192.57
		204.34	9.34	195
			4.34	200
	11.95		1.15	203.19
		215.14	10.14	205
			5.14	210 C
	11.73		2.02	213.12
		224.85	9.85	215
			4.85	220
	11.35		0.61	224.24
		235.59	10.59	225
			5.59	230
	11.95		0.90	234.60
		246.55	11.55	235
			6.55	240

Wednesday
March 18 - 1903



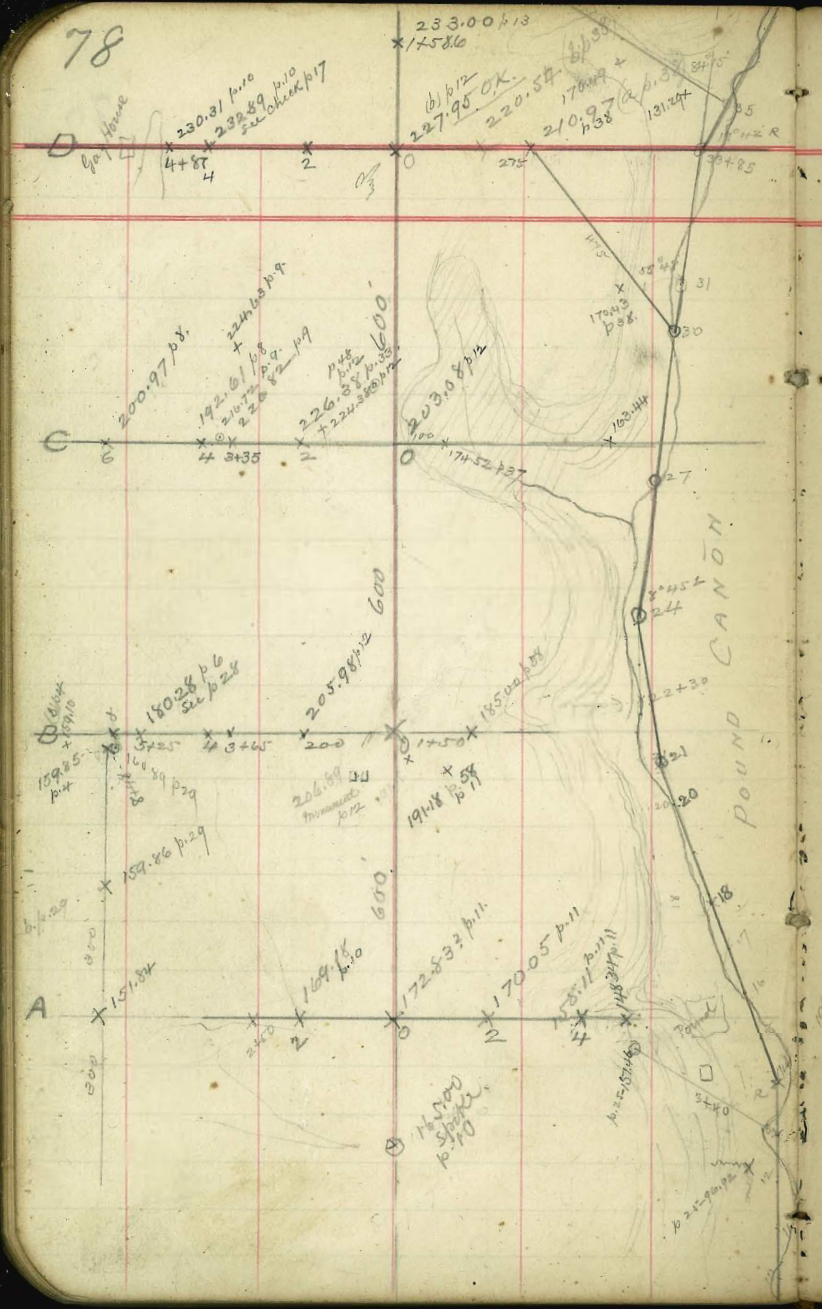
St 66.

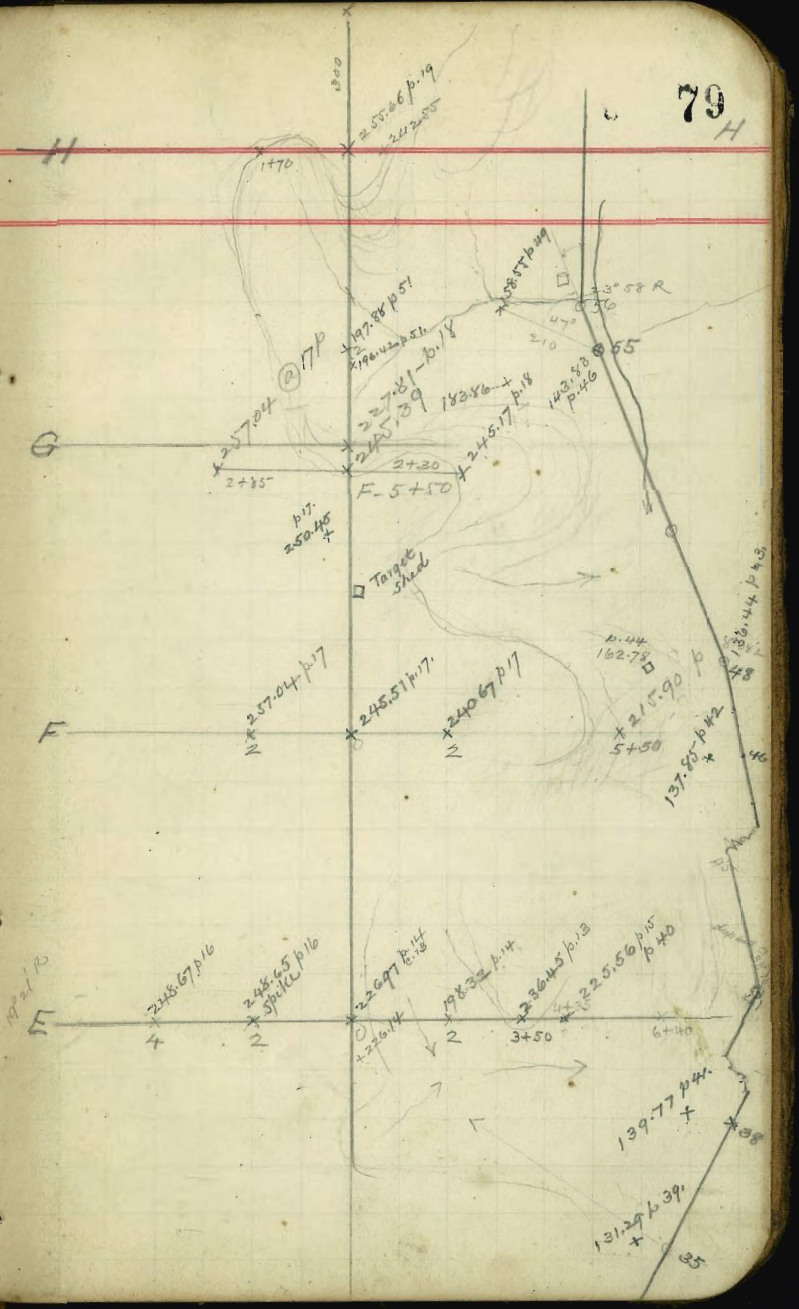
St	+	In	—	E	
		246.55			
	11.96		1.04	245.51	
		257.47	12.47	245	
			7.47	250	
			2.47	255	
	7.42		1.71	255.76	
		263.18	3.18	160	
B.M.	8.62			153.27	St 61.
		161.89	11.89	150	
			6.89	155	
			1.89	160	
	11.93		0.60	161.29	
		173.22	8.32	165	
			3.32	170	
	11.37		1.83	171.39	
		182.76	7.76	175	
			2.76	180	
	11.96		1.02	181.74	
		193.70	8.70	185	
			3.70	190	
	11.45		0.70	193.06	
		204.45	9.45	195	
			4.45	200	
	11.88		0.65	203.80	
		216.68	10.68	205	
			5.68	210	
			0.68	215	

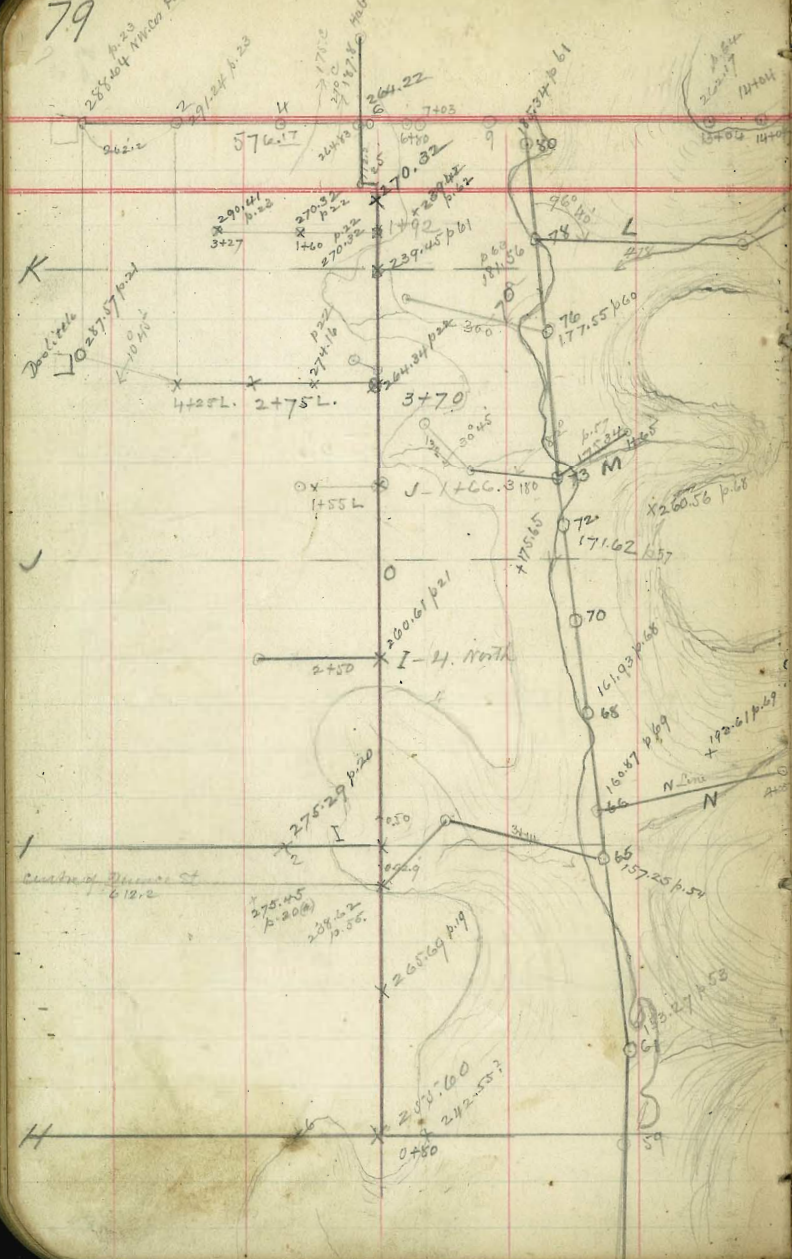
St	+	h	−	E.
		215.68		
	11.57		0.83	214.85
		226.42	6.42	220
			1.42	2.25

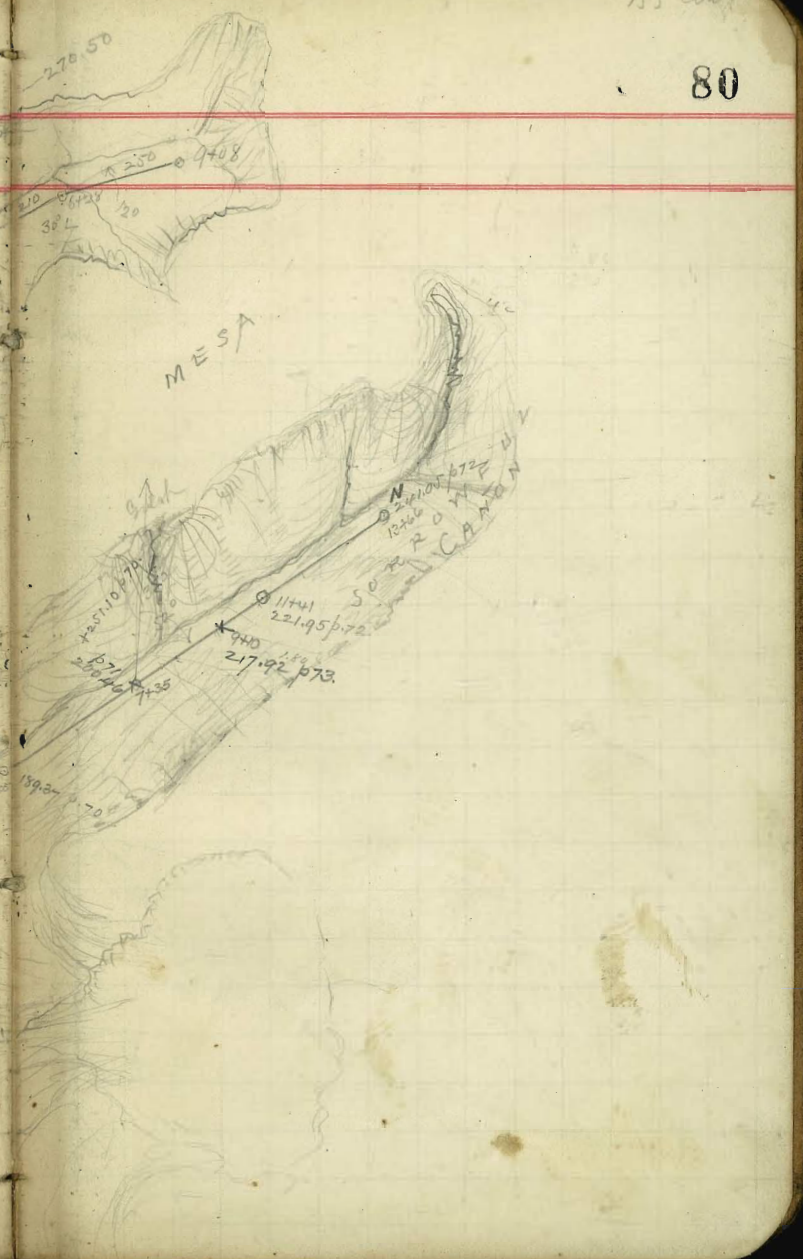
Close work about 5 o'clock
P. M. March 18 – 1903 –

Benj. McLeran
Cor L & 30th Sts.
San Diego Cal.


D
C
B
A
POUND CANON
600
Pound


H
G
F
E
Target shed


K
J
I
H
L
M
N
O
I-4. North
Centre of Quince St
612.2
4+25L.
2+75L.
3+70
1+55L
2+50
0+80
270.32
239.45 p61
177.55 p60
171.62 p57
161.93 p68
160.87 p69
157.25 p.54
260.61 p21
275.29 p.20
265.69 p.19
255.60
242.55?
Doolittle
287.57 p.21
264.34 p22
274.16
290.41 p.23
270.32 p.22
264.22
576.17
7+03
6+80
9+08
270.50
260.56 p.68
193.61 p.69
189.37 p.70
251.10 p.70
221.95 p.72
217.92 p73.
241.05 p72
7+35
11+41
13+66
N Line
155 acres


MESA
SORROWFUL CANON

Return to City Engineers Office
City Hall, San Diego, Cal.

161

Return to City Engineers Office
City Hall, San Diego, Cal.

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.		¾ DEGREE.		½ DEGREE.		¼ DEGREE.		

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