Field Notes of
Plane Table Survey
City Park.
1903

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

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TRANSIT

F.B. 163

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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
°		°		°		°	
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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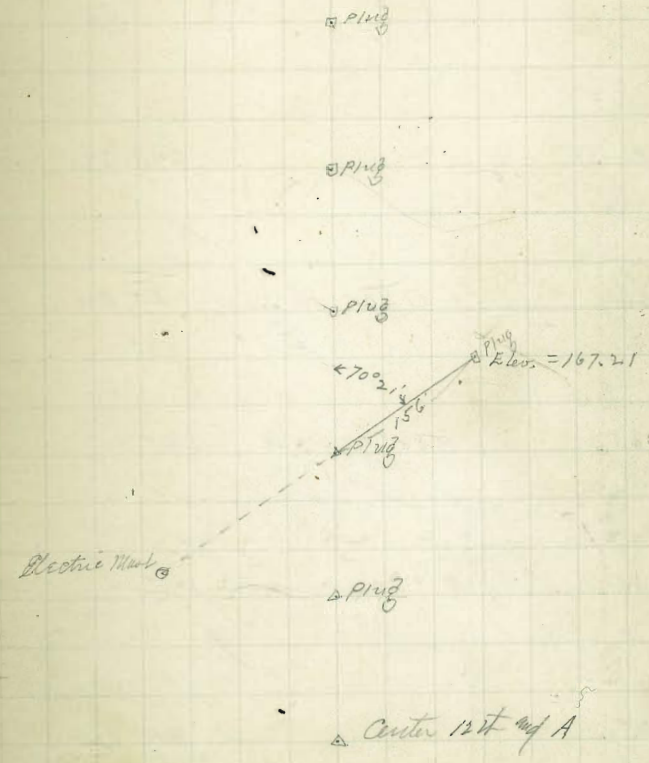
Sta.	Dist	Ang.	Calc. Course	Elev.
43+70				248.53
580'				
37+90		R93°20'	S73°40'E	245.64
1300'				
24+90		R29°00'	N13°00'E	207.67
700'				
17+90		L36°00'	N16°00'W	189.33
635'				
11+55		R20°00'	N20°00'E	147.30
555'				
6				126.00
600'				
0				

Set up at the center 12th and A sts, Back sight at 12th and B; thence North through City Park. Center & 12th St. produced



Sta.	Dist	Ang	Calc. Course	Elev.	
70+01				240.39	⊡ plug
575'					
64+26 ⊙		L 11° 00'	S 4.40 W	253.30	⊡ plug
761'					
56+65 ⊙		R 88° 00'	S 15.40 W	255.05	⊡ plug
530'					
51+35 ⊙		R 1° 20'	S 72.20 E	245.69	⊡ plug
570'					
45+65 ▲				241.61	⊡ plug
195'					

Sta	Dist	Angle	Cal. Course	Elev.
52+00	700'			
43+00	900'			
38+00	1000'			
26+00	700'			
15+00	1100'			
6+00	900'			
0+00	600'	90°00' R.	True E.	
Course on 12th St.			True N.	

Base line for topographic sheets.
Set up on trav. hub 600' from int.
12th & A. sts, hub being on tang
of 12th st. produced northward,
with B.S. south on 12th st. & turned 90°00' R.

Sta	Dist	Angle	Cal. Course	Elev.
20+00				
9+00	1100'			
0+00	900'	90°00'L	True N	
Course bet. sta's. 43+52			True E.	

Set up on sta. 52+00 with B.S. W
on 43+00 I turned 90°00' L.
Sta. 52+00 = Sta. 0+00

59+00

Sta.	Dist	Ang	Cal. Course	Elev.
16+00	600			
9+00	700			
35 = 0.	900	90° L	W	
35+00				
28+00	700			
20+00	800			
9+00	1100			
0+00	900	90° 00' L	TRUE N. TRUE E.	

Course bet Stas. 10 & 26 TRUE E

Set up on sta. 26 of base line = to and 450' N. of south line of park boundary, with B.S. W. on sta. 10 & turned 90° 00' L.

Sta. 26+00 = Sta. 0

Sta.	Dist	Ang	Cal. Course	Elev.
39+00	700			
32+00	800			
24+00	800			
16+00	800			
0	800			
Course bet stas. 0 & 16			W.	

Set up on sta. 16 with B.S. E on sta. 0 & turned 90°00' R. sta. 16 = sta. 0.

2200

3/23/03

Sta.	+	⊖	−	Rod	Elev.	
17+55	12.54	159.83			147.29	Plug
Peg	10.14	169.09	0.88		158.95	
				1.88	167.21	Plug Marked 1+56
Peg	12.82	180.82	1.09		168.00	
Stone	10.51	190.43	0.90		179.92	
17+90				1.10	189.33	Plug
Peg	12.86	201.86	1.43		189.00	
Stone	12.69	213.73	0.82		201.04	
24+90				6.06	207.67	Plug
Stone	12.36	223.07	3.02		210.71	
Peg	12.85	234.85	1.07		222.00	
Stone	12.33	246.15	1.03		233.82	
37+90				0.51	245.64	Plug
Stone	5.73	250.81	1.07		245.08	
43+70				2.28	248.53	Plug
45+65				9.20	241.61	Plug
Stone	12.67	251.26	12.22		238.59	
51+35				5.57	245.69	Plug
Stone	9.94	260.49	0.71		250.55	
56+65				5.44	255.05	Plug
Stone	1.91	254.75	7.65		252.84	
	139.35		31.89			

Sta.	+	⊙	−	Rod	Elev.	
64+26				1.45	253.30	Plug
Stow	1.53	243.28	13.00		241.75	
70+01				2.89	240.39	Plug
Stow	0.64	231.17	12.75		230.53	
Peg	0.55	219.55	12.17		219.00	
Peg	0.38	207.02	12.91		206.64	
Peg	2.56	197.56	12.02		195.00	
Stow	0.63	186.33	11.86		185.70	
"	0.45	173.91	12.86		173.46	
1+56			6.64		167.27	Plug
					(167.21)	

Levels for sheet No 2

Sta.	B.S	H.I.	F.S.	Int	Elev	
B.M.	1.62	256.67			255.05	
23+50				12.88	243.79	Boundary bet. sheets 1 & 4.
⊙	0.98	246.69	10.76		245.91	
20+00				5.04	241.65	" " " " "
X				13.99	232.70	
B.M	12.45	267.50			255.05	
28+00				2.99	264.51	" " " " "
⊙	11.09	277.84	0.75		266.75	
32+00				6.6	271.24	" " " " "
35+00				8.05	269.79	" " " " "
X				8.39	269.45	
⊙	5.82	283.54	0.12		277.72	
X				3.95	279.59	
B.M.	2.05	272.89	12.70		270.84	
9+00				13.98	258.91	South boundary - sheet no. 2 - Running westward.
⊙	6.64	267.53	12.00		260.89	
16+80				10.49	257.04	" " " " "
B.M.				7.42	260.11	
⊙	12.82	279.03	1.82		266.21	
8+00				11.90	267.13	Northward from (sta. 16+00. South boundary - No 2)

Sta	B.S.	H.I.	F.S.	Int.	Elev	
		279.03				
8+00 ⊙	12.91	287.59	4.35		274.68	center
16+00				13.52	274.05	west
⊙	11.43	295.59	3.43		284.16	
16+00				8.92	286.67	center
24+00				3.04	292.55	center
⊙	4.46	287.08	12.97		282.62	
24+00				9.67	277.41	west
⊙ 32+00	4.52	286.48	5.12		281.96	west
32+00				10.89	275.61	500' w of sta. 32+00 west
B.M.	13.19	296.93	2.74		283.74	
32+00				2.60	294.33	center
39+00				3.77	293.16	center
B.M.	0.50	284.50	12.93		284.00	
⊙	12.23	283.75	12.98		271.52	
39+00				12.93	270.82	East
×				3.90	279.85	East line
⊙	7.85	288.48	3.12		280.63	
×				2.73	285.75	East line
⊙	7.55	293.13	2.90		285.58	

Sta.	B.S.	H.I.	F.S.	Int.	Elev.	
		290.13				
X				12.86	280.27	
8+00				6.23	286.90	East line

Levels for Sheets Nos 3 + 4

Sta.	B.S.	H.I.	F.S.	Int.	Elev.	
B.M.	6.52	186.77			180.25	S.W. Cor. 24th & B. Spike in telegraph pole.
⊙	12.16	198.15	0.78		185.99	
⊙	11.54	209.60	0.09		198.06	
⊙	10.91	220.29	0.22		209.38	
0+00 C.				5.25	215.04	Sheet No 4
⊙	8.85	226.04	3.10		217.19	
0+00 D.				7.19	218.85	Sheet No 4
⊙	4.43	228.50	1.97		224.07	
9+00 D.				2.91	225.59	Sheet No 4
9+00 E.				9.54	218.96	Sheet No 4
⊙	10.55	236.50	2.55		225.95	
20+00 E				5.60	230.90	Sheet No 4
B.M.	1.00	228.98	8.52		227.98	
⊙	0.33	217.34	11.97		217.01	
⊙	0.05	205.72	11.67		205.67	
⊙	0.10	193.98	11.84		193.88	
⊙	0.30	182.29	11.99		181.99	
⊙	1.99	172.39	11.89		170.40	
28+50 E.				5.39	167.00	Sheet No 4
B.M.	5.00	175.40			170.40	
28+50 D.				3.10	172.30	Sheet No 4

Levels on sheet Nos 3+4 Cont'd.

Sta.	B.S.	H.I.	F.S.	Int.	Elev.	
B.M.	5.71	222.72			217.01	
35+00 E				11.60	211.12	On Boundary bet. sheets 3+4.
⊙	12.11	234.56	0.27		222.45	
⊙	10.78	245.21	0.13		234.43	
3+00 E				10.81	235.40	Sheet No 3.
⊙	11.20	256.11	0.30		244.91	
10+83 E				12.51	243.60	Sheet No 3.
8+00 D	10.75	258.66	8.20		247.91	Sheet No 3
15+00 D	1.44	247.88	12.22		246.44	Sheet No 3
⊙	1.17	237.19	11.86		236.02	
⊙	0.62	226.34	11.47		225.72	
23+00 D.				8.77	217.55	Sheet No 3.
⊙	11.80	238.13	0.01		226.33	
⊙	12.09	250.15	0.07		238.06	
24+35 N D.				8.81	241.34	Sheet No 3.
⊙	9.00	259.04	0.11		250.04	
31+00 D.				5.52	253.52	sheet No 3
⊙	11.78	270.53	0.29	[illegible]	258.75	
23+00 E				1.95	268.58	Hub 35' west of Sta.
⊙	12.23	282.68		0.08	270.45	

Levels on sheets 3 & 4 Cont'd.

Sta	B.S.	H.I.	F.S.	Int.	Elev	
⊙	11.95	294.38	0.25		282.43	
31+00E.				5.16	289.22	Sheet No 3
⊙	11.92	306.11	0.19		294.19	
⊙	11.65	317.66	0.10		306.01	
⊙	8.81	326.35	0.12		317.54	
38+00E				5.45	320.90	Sheet No 3
B.M.	8.58	262.10			253.52	
38+00 D.				6.30	255.8	Sheet No 3
⊙	10.77	272.52	0.35		261.75	
⊙	11.55	283.68	10.39		272.13	
39+00C.				5.58	278.10	Sheet No 3
⊙	1.99	274.26	11.41		272.27	
32+00C.				8.92	265.34	Sheet No 3
	9.23	271.49	12.00		262.26	
24+00C				3.20	268.29	Sheet No 3
16+00C.	2.39	267.14	6.74		264.75	Sheet No 3
⊙	4.93	260.29	11.78		255.36	
8+00C				7.17	253.12	Sheet No 3
B+(8+34.5)				9.64	250.85	Sheet No 3.
B.M.	2.90	169.90			167.00	

Levels on sheets 3 + 4 Cont'd

Sta.	B.S.	H.I.	F.S.	Int.	Elev.	
B.M.			11.95		158.15	
B.M.			0.07		169.83	
B.M.	0.11	158.26			158.15	
X ⊙ line.				6.72	151.54	Sheet No 4
⊙	0.61	146.87	12.00		146.26	
⊙	2.49	137.72	11.64		135.23	
20+00 ⊡				4.50	133.19	Sheet No 4
B.M.			12.00		125.72	
B.M.	2.41	172.24			169.83	
20+00 C.				3.72	168.51	Sheet No 4
B.M.	0.23	125.95			125.72	
⊙	2.71	116.90	11.96		113.99	
14+00 C				10.20	106.50	Sheet No 4
⊙	8.48	124.68	0.50		116.20	
8+70 C.				0.47	124.21	Sheet No 4
⊙	0.0	112.77	11.91		112.77	
0+00 B.				12.21	100.56	Sheet No 4
X E of 9+00 B.				4.57	108.30	Sheet No 4.
⊙	0.52	101.69	11.60		101.17	
⊙	2.87	92.97	11.59		90.10	
9+00 B.				6.95	86.02	Sheet No 4

Levels on Sheets 3 & 4. Contd.

Sta.	B.S.	H.I.	F.S.	Int.	Elev	
B.M.	1.92	110.22			108.30	
⊙	8.46	106.72	11.96		98.26	
20+00.B.	11.25	113.22	4.75	4.95	101.97	Sheet No 4
⊙	12.07	124.07	1.22	1.	112.00	
28+00.B.				9.16	114.91	Sheet No 4
⊙	10.88	134.64	0.31		123.76	
35+00.B.				7.07	127.57	On boundary bet. sheets. 3 & 4.
⊙	11.65	144.32	1.97		132.67	
⊙	11.55	154.10	1.77		142.55	
8+00B				7.83	146.27	Sheet No 3
⊙	12.06	165.73	0.43		153.67	
⊙	12.09	176.60	1.22		164.51	
16+00B.				3.54	173.06	Sheet No 3
⊙	11.82	188.24	0.18		176.42	
⊙	11.78	200.02	0.0		188.24	
24+00B				8.93	191.09	Sheet No 3.
⊙	11.93	211.09	0.86		199.16	
⊙	11.69	222.33	0.45		210.64	
⊙	6.50	228.57	0.26		222.07	
31+60B				4.82	223.75	Sheet No 3
39+00B.				9.31	219.26	Sheet No 3

Levels for sheets 3+4 cont'd.

Sta.	B.S.	H.I.	F.S.	Int.	Elev.	
⊙	11.63	240.00	0.20		228.37	
⊙	11.60	251.54	0.06		239.94	
⊙	11.87	262.99	0.42		251.12	
⊙	11.68	274.11	0.56		262.43	
	10.12	283.06	1.17		272.94	
(39+00 C. by check)				4.97	278.09	
(39+00 C. originally)					278.10	
		Error in levels			0.01	
B.M.	3.61	251.52			247.91	
35+00 C.	0.64	249.72		2.44	249.08	On boundary bet. sheets 3+4
⊙	8.19	246.46	11.45		238.27	
28+00 C				11.14	235.32	Sheet No. 4
35+00 D				12.90	233.56	On boundary bet sheets 3+4

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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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