Brooklyn Hts.

Return to City Engineer's Office
City Hall, San Diego, Cal.

400 LEVEL

F.B. 446

Return to City Engineer's Office
City Hall, San Diego, Cal.

Cooke's Industry

Published by H. S. CROCKER COMPANY, Stationers, Drawing Materials, and Mathematical Instruments, San Francisco.

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

446

MINUTES.	LKS.	MINUTES.	LKS.		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

MICROFILMED
Oct 10 1964

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

Crocker Quality

LEVEL BOOK

No. 400

COMMUNI CONSENSUS TRADE MARK PRIMO

FROM
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MANUFACTURED BY

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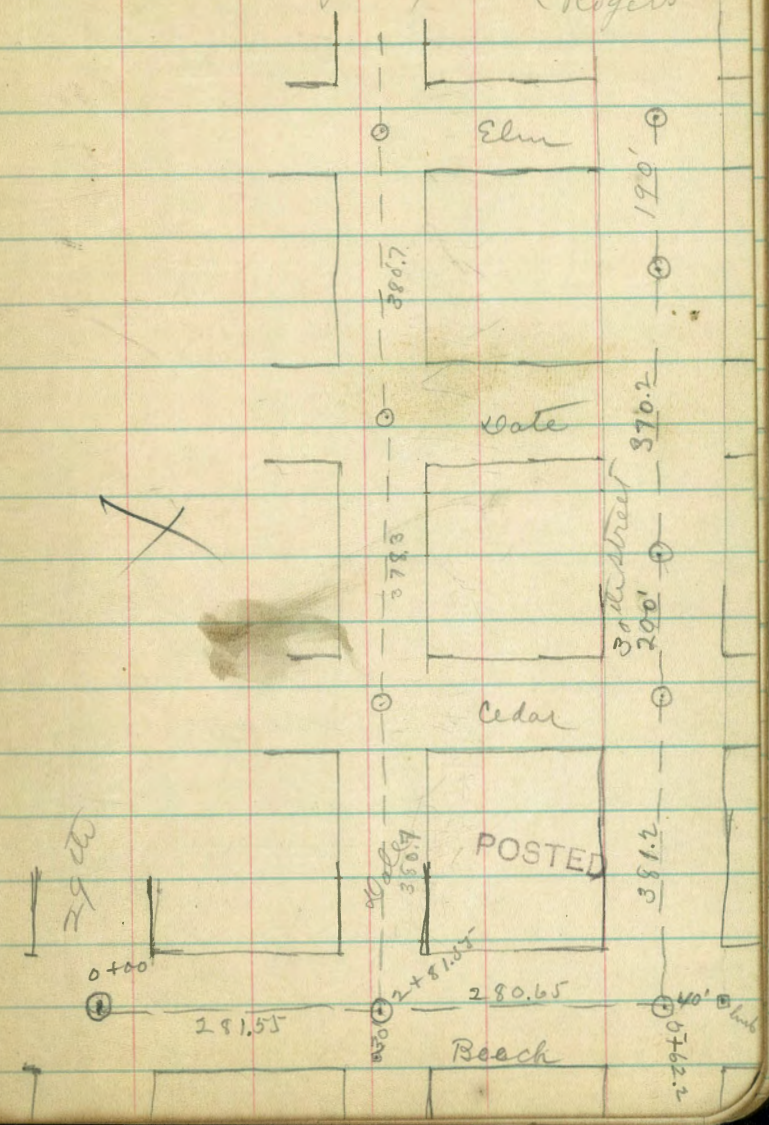
SAN FRANCISCO
and
SACRAMENTO

285.734 Jumper 30th NW Noon
286.241 Try " NE RR Spk Pole

Brooklin Hts. Sewer

Jan. 4/09 {Childs, Barber, Rogers

1



Jan 4/09 { Schields
Barber
Rogers

X Beach Street line

Jan 4/09 { Childs, Barber, Rogers

Sta.		H.I.	Rod	Ground	Grade	Cut		
0+00	M.H. center Beech + 29th	217.01	11.6	205.4	✓200.5	4.9	215.59 / 9.01 / 224.60	207.21 B.M. 29th + Beech / 9.80 / 217.01
+50			10.4	206.6	✓201.74	4.9	207.21 / 6.32 / 213.53 ✓	207.21 / 7.41 / ~~214.62~~ ✓ 200.5
1+00			8.7	208.3	✓202.98	5.3	200.60 / 12.93 ✓	201.74 / 11.79 ✓
+50	1½%		7.2	209.8	✓204.22	5.6	202.98 / 10.55 ✓	204.22 / 9.31 ✓
2+00			5.4	211.6	✓205.47	6.1	205.47 / 8.06 ✓	206.71 / 6.82 ✓
+50			3.8	213.2	✓206.71	6.5	207.50 / 6.03	213.23 B.M. / 6.17 / 219.40 ✓
+81.55	M.H. center Dale + Beech		3.3	213.7	✓207.5	6.2		207.95 / 11.45 ✓
3+00			2.8	214.2	✓207.95	6.3		209.20 / 10.20 ✓ T.P.
+50	1½%		1.42	215.59	✓209.20	6.4		
4+00		224.60	7.3	217.3	✓210.45	6.9	223.29 / 1.28 / 224.57 ✓	212.95 / 11.62 ✓
+50			5.6	219.0	✓211.70	7.3	214.5 / 10.07 ✓	211.70 / 12.87 ✓
5+00			4.0	220.6	✓212.95	7.7	214.03 / 10.54 ✓	
+50			2.7	221.9	✓214.20	7.7		
+62.2	M.H. center Beech + 30th		2.4	222.2	✓214.5	7.7		

POSTED

30th Street line

Jan 5/09 — Childs, Barber, Rogers — 4

Sta.		H.I.	Rod	Ground	Grade	cut
6+00		236.26	14.0	222.3	✓214.88	7.4
+50			13.9	222.4	✓215.38	7.0
7+00			13.6	222.7	✓215.88	6.8
+50	1% G.		13.3	223.0	✓216.38	6.6
8+00			13.3	223.0	✓216.88	6.1
+50			12.9	223.4	✓217.38	6.0
9+00			12.9	223.4	✓217.88	5.5
+43.4	M.H. center 30th + cedar		12.6	223.7	✓218.3	5.4
+50			12.9	223.4	✓218.38	5.0
10+00	1 1/4%		12.4	223.9	✓219.00	4.9
+50			12.3	224.0	✓219.63	4.4
11+00			11.2	225.1	✓220.25	4.9
+43.4	M.H. bet. cedar + Dute	230.14	3.4	226.7	✓220.80	5.9
+50		236.26	9.2	227.1	✓221.20	5.9
12+00	6% G.		6.1	230.2	✓224.20	6.0
+50			2.2	234.1	✓227.20	6.9

224.07
12.19
236.26
223.29
3.67
226.96
214.99
11.97

224.07
4.68
228.75
215.38
13.37
215.88
12.87
216.38
12.37
212.88
11.87

219.63
10.89
220.25
10.27
220.80
9.72
221.20
9.32
3.37
240.23
227.20
13.03

30th + Cedar B.M.

6.07
224.07
230.14

224.07
4.72
228.79
218.3
10.49
218.38
10.41
217.88
10.91
217.38
11.41

224.07
6.45
230.52 H.I.
218.38
12.14
219.0
11.52
224.20
6.32
236.86
5.42
242.28
227.20

30th Street

Jan 5/09 { Childs, Barber, Rogers

Sta.		H.I.	Rod	Ground	Grade	cut
13+00		248.87	11.6	237.3	230.20	7.1
+50			10.5	238.4	233.20	5.2
14+00	6% g.		7.6	241.3	236.20	5.1
+50			3.8	245.1	239.20	5.9
15+00			0.2	248.7	242.20	6.5
+13.6	M.H. bet. Doate & Elm	257.51	7.6	249.9	243.00	6.9
+50			6.1	251.4	244.46	6.9
16+00			4.5	253.0	246.46	6.5
+50	4%		2.8	254.7	248.46	6.2
17+03.6	M.H. center 30th & Elm.		1.6	255.9	250.6	5.3
+50		270.28	13.8	256.5	252.20	4.3
18+00			12.0	258.3	253.94	4.4
+50	3½%		10.2	260.1	255.69	4.4
19+00			8.2	262.1	257.44	4.7
+50			6.5	263.8	259.19	4.6
20+00			4.5	265.8	260.94	4.9

240.23
230.20
10.03

233.20
7.03

236.86 B.M.
10.46
247.32
236.20
11.12

257.23 B.M.
10.16
267.39
260.94
6.45

259.19
8.20

257.44
9.95

255.69
11.70

236.86 B.M. Doate & 30th
1.01
248.87

257.23 B.M. Elm
0.28
257.51

13.65
270.28

239.20
8.12

7.13
250.91
3.83
253.74
244.46
9.28
243.0
10.74
242.20
11.54

257.23
0.81
259.04
248.46
9.58

246.46
11.58

250.6
7.44

252.20
5.84

253.94
4.10

30th Street

Jan 8/09 { Childs, Barber, Rogers

Sta.		H.I.	Rod	Ground	Grade	
20+50	3½%	270.28	3.1	267.2	262.69	4.5
+84.5	M.H. center 30th + Fir		2.6	267.7	263.90	3.8
21+00			2.3	268.0	264.21	3.8
+50			1.4	268.9	265.22	3.7
22+00	2%		0.1	270.2	266.22	4.0
+50		278.20	7.0	271.2	267.23	4.0
23+00		284.63	12.2	272.4	268.23	4.2
+50			11.2	273.4	269.24	4.2
24+00			10.2	274.4	270.24	4.2
+50			9.1	275.5	271.25	4.3
+62.2	M.H. center 30th + Grape		9.0	275.6	271.50	4.1
25+00			8.6	276.0	271.88	4.1
+50			8.0	276.6	272.38	4.2
26+00	1%		7.4	277.2	272.88	4.3
+50			6.9	277.7	273.38	4.3
27+00			6.2	278.4	273.88	4.5

268.08 B.M. 30th + Fir

267.39 / 262.69 / 4.70 — 10.12 / 278.20

276.61 B.M. Grape

268.08 / 7.00 / 275.08 — 8.02 / 284.63

mar 6/09

263.90 / 11.18 — 264.21 / 10.87 — 265.22 / 9.86

266.22 / 8.86 — 267.23 / 7.85 — 268.23 / 6.85

269.24 / 5.84 — 270.24 / 4.84

276.61 / 4.55 / 281.16 — 271.50 / 9.66 — 271.88 / 9.28 — 272.38 / 8.78

271.25 / 9.91

272.88 / 8.28 — 273.38 / 7.78

POSTED

30th Street

Jan. 8/09 { Childs, Barber, Rogers

Sta.		H.I.	Rod	Ground	Grade	cut
27+50	1%	284.63	5.5	279.1	✓274.39	4.7
28+00			5.0	279.6	✓274.89	4.7
+40	M.H. center 30th + Hawthorne		4.4	280.2	✓275.30	4.9
+50			4.3	280.3	✓275.40	4.9
29+00			3.6	281.0	✓275.90	5.1
+50			3.0	281.6	✓276.40	5.2
30+00	1%		2.4	282.2	✓276.90	5.3
+50			1.8	282.8	✓277.40	5.4
31+00			1.3	283.3	✓277.90	5.4
+50			0.6	284.0	✓278.40	5.6
32+00			0.16	284.47	278.90	5.6
+19.8	M.H. center 30th + Ivy.	290.03	5.2	284.8	279.10	5.7
+50			4.7	285.3	279.31	6.0
33+00	1%		4.4	285.6	279.81	5.8
+50			3.9	286.1	280.31	5.8
34+00			3.1	286.9	280.81	6.1

284.47
5.56
290.03

280.10
5.21
285.31 ✓

274.89
10.42 ✓

273.88
11.43 ✓

275.30
10.01 ✓

274.39
10.92 ✓

275.40
9.91 ✓

275.90
9.41 ✓

5.41
285.51 ✓

276.40
9.11 ✓

275.90
9.61 ✓

276.90
8.61 ✓

277.40
8.11 ✓

277.90
7.61 ✓

278.40
7.11 ✓

278.90
12.26 ✓

279.10
12.06

286.24
492
291.16 HI

279.31
11.85 ✓

279.81
11.35 ✓

280.31
10.85 ✓

280.81
10.35 ✓

POSTED

Grade Stakes Ivy + Juniper
3/16/09 Hatch, Moore, Deziel,

30th Street

Jan. 9/09 Childs Barber Rogers 8

Sta		H.I.	Rod	Ground	Grade	Cut
34+50		290.03	2.6	287.4	281.31	6.1
35+00			2.0	288.0	281.81	6.2
+50		293.56	4.9	288.7	282.31	6.4
36+00.9	F.T. center juniper		4.5	289.1	282.81	6.3

291.16 HI

281.31 / 9.85 ✓ 281.81 / 9.35 ✓

282.31 / 8.85 ✓ 282.83 / 8.33 ✓

POSTED

X Dale Street Sewer

Jan 11/09

Childs
Barber
Rogers

9

Sta.		H.I.	Rod	Ground	Grade	Cut
0+00	M.H. center Dale + Beech	219.24		213.7	207.5	6.2
+50			4.7	214.5	208.0	6.5
1+00			5.3	213.9	208.5	5.4
+50			4.4	214.8	209.0	5.8
2+00	1%		4.6	214.6	209.5	5.1
+50			4.5	214.7	210.0	4.7
3+00			4.3	214.9	210.5	4.4
+50			3.3	215.9	211.0	4.9
+80.7	M.H. center Dale + Cedar.		3.2	216.0	211.3	4.7
4+00			3.3	215.9	212.17	3.7
+50			1.1	218.1	214.43	3.7
5+00	4½%	227.20	6.8	220.4	216.69	3.7
+50			5.2	222.0	218.95	3.1
6+00			1.6	225.6	221.21	4.4
+50		240.40	11.6	228.84	223.47	5.3
7+00			7.6	232.8	225.73	7.1

207.21
12.03
219.24

5.38
213.23
218.61
208.0
0.61

213.23 B.M.
6.68
219.91
210.0
9.91
209.5
10.41

209.0
10.91
208.5
11.41

211.30
11.34

211.0
11.64

210.5
12.14

217.04
10.16
227.20 H.I.
0.05
227.15
13.25
240.40
217.04
5.60
222.64
212.17
10.47
218.95
3.69
216.69
5.95
214.43
8.21
221.21
1.43
0.23
222.41 TP
8.45
220.86
223.47
7.39
221.21
9.65
202
228.84

TP

POSTED

Dale street

Jan. 11/09 { Shields, Barber, Rogers

Sta.		H.I.	Rod	Ground	Grade	cut
7+50		240.40	5.7	234.7	227.99	6.7
7+59	M.H. center Dale & Date		5.3	235.1	228.4	6.7
8+00			3.9	236.5	229.63	6.9
+50			2.4	238.0	231.13	6.9
9+00			0.9	239.5	232.63	6.9
+50	3%	252.55	11.8	240.8	234.13	6.7
10+00			10.6	242.0	235.63	6.4
+50			9.0	243.6	337.13	6.3
11+00			7.9	244.78	338.63	6.1
+39.7'	M.H. center Dale & elm.		7.0	245.6	239.8	5.8
+50			7.0	245.6	239.95	5.7
12+00			6.3	246.3	240.70	5.6
+50	1½%		5.4	247.2	241.45	5.8
13+00			4.2	248.4	242.20	6.2
+50			3.6	249.0	242.95	6.1
14+00			3.2	249.4	243.70	5.7

228.84 10.10 238.94 ✓ 225.73 13.21 ✓ 227.99 10.95 ✓ 228.40 10.54 ✓ 229.63 9.31 ✓ 235.63 9.81 ✓ 337.13 8.31 ✓ 238.63 6.81 ✓ 242.95 10.74 ✓ 243.70 9.99 ✓

240.40 0.21 240.19 J.P. 12.36 252.55 ✓ 231.13 7.81 ✓ 236.86 BM. dale 8.58 245.44 ✓ 232.63 12.81 ✓ 234.13 11.31 ✓ 239.8 5.64 ✓ 239.95 5.49 ✓ 242.95 10.74 ✓ 243.70 9.99 ✓

0.66 244.78 8.91 253.69 ✓ 240.70 12.99 ✓ 244.45 J.P. 12.24 ✓ 242.20 11.49 ✓

.45 9 405

.63 1.91

.03 .01.5 .51.5 .13 .15 .45

POST 3

Dale Street

Jan 16/09 { Childs, Barbe, Rogers. 11

Sta.		H.I.	Rod	Ground	Grade	cut
14+50		252.55	2.5	250.1	✓244.45	5.7
15+00			1.7	250.9	✓245.20	5.7
+20.6	M.H. center Dale & Fir.		1.4	251.2	✓245.5	5.7
+50			1.3	251.34	✓246.83	4.5
16+00		265.21	11.6	253.6	✓249.09	4.5
+50	4½%		9.0	256.2	✓251.35	4.7
17+00			6.4	258.8	✓253.61	5.2
+50			3.9	261.47	✓255.87	5.4
18+00			1.2	264.0	✓258.13	5.9
+50		277.65	11.18	266.47	✓260.39	6.1
+98.7	M.H. center Dale & Grape	281.96	14.2	267.8	✓262.6	5.2
19+50			13.6	268.4	✓263.63	4.8
20+00	2%		12.6	269.4	✓264.63	4.8
+50			11.4	270.6	✓265.64	5.0
21+00			10.4	271.6	✓266.65	5.0
+50			8.9	273.1	✓267.66	5.5

252.55
0.54
252.01 T.P.
13.20
265.21 ✓
0.10
265.11 T.P.
12.46
277.57 ✓
11.18
266.39

276.61
1.04
277.65
T.P.

280.10 Hawthorne
1.86
281.96 ✓

Feb 24/09
1470
1176
13230

48.7
.045
2435
1948
21915

253.6.9 ✓
244.45
9.24 ✓
245.20
8.49 ✓
245.50
8.19 ✓
246.79
6.90 ✓
266.47
3.37
262.84 ✓
8.44
261.40
255.87
4

51.3
.62
251.34 1.026
10.85
262.19 ✓
249.09
13.10 ✓
251.35
10.84 ✓
253.61
8.58 ✓
255.87
6.32 ✓
263.63
11.61 ✓
264.63
10.61 ✓
265.64
9.60 ✓
266.65
8.59 ✓

T.P.
Feb 26/09
T.P.
268.08
0.82
268.90 ✓
255.87
13.03
743
258.13
10.77 ✓
260.39
8.57 ✓

1.07
267.83 T.P.
7.41 ✓
275.24
262.6
12.64 ✓
267.66
7.58 ✓

Dale Street

Jan 18/09 { Childs, Barber, Rogers

Sta.		H.I.	Rod	Ground	Grade	cut
22+00		281.96	7.7	274.3	268.67	5.6
		282.0				
+50			6.4	275.6	269.68	5.9
+76.2	N.H. center Dale + Hawthorn		5.5	276.5	270.20	6.3
23+00			5.2	276.8	270.68	6.1
+50			4.3	277.7	271.68	6.0
24+00			3.5	278.5	272.68	5.8
+50			2.7	279.3	273.68	5.6
25+00	2%		1.8	280.2	274.68	5.5
+50			0.78	281.18	275.68	5.5
26+00		288.20	6.1	282.1	276.68	5.4
+50			5.2	283.0	277.68	5.3
+56.0	N.H. center Dale + Guy.		5.2	283.0	277.80	5.2
27+00			4.5	283.7	278.24	5.5
+50			4.0	284.2	278.74	5.5
28+00	1%		3.5	284.7	279.24	5.5
+50			2.8	285.4	279.74	5.7

275.24
268.67
6.57
281.18
702
269.68
5.56
288.20
270.20
5.04
270.68
4.56
Mar. 3/09
276.68
7.52
277.68
6.52
277.80
6.40
278.24
5.96
278.74
5.46
279.24
4.96
279.74
4.46

286.24
0.40
286.64
9.30
277.34
6.86
284.20
271.68
12.52
272.68
11.52
273.68
10.52
274.68
9.52
275.68
8.52

J.O.

Dale Street

Jan. 18/09 { Childs, Barber, Rogers

13

Sta.		H.I.	Rod	Ground	Grade	cut		
29+00		288.20	2.2	286.0	280.24	5.8	Mar. 6/09	
+50	1%		1.3	286.9	280.74	6.2		
30+00		293.56	6.0	287.6	281.24	6.4		
+36.35	F.P.	Center Juniper	5.3	288.3	281.42	6.9		

289.20 B.M. 30th & Juniper
4.36
293.56
289.20
3.38
292.58
280.24
12.34
4.19
289.20
293.39
281.42
11.97

280.74
11.84
281.24
11.34

X

POSTED

Brooklin Hts. School Sewer 30th Street

Sta.		H.I.	Rod	Ground	Grade	cut
0+00	N.H. center Beech	229.05			✓214.5	
+50			6.6	222.5	✓214.75	7.8
1+00			6.4	222.7	✓215.00	7.7
+50			5.7	223.4	✓215.25	8.2
2+00			5.2	223.9	✓215.50	8.4
+50			4.7	224.4	✓215.75	8.7
3+00			4.1	225.0	✓216.00	9.0
+50			3.6	225.5	✓216.25	9.3
3+80.85	center ash		3.3	225.8	✓216.40	9.4
4+00			3.4	225.7	✓216.50	9.2
+50			4.1	225.0	✓216.75	8.3
5+00			4.5	224.6	✓217.00	7.6
+50			5.1	224.0	✓217.25	6.8
+70.85			5.1	224.0	✓217.35	6.7
6+20.85	1.90	228.67	5.3	226.77 BM 223.4	mid cor ash 217.60	5.8
+70.85			5.92	222.75	217.85	4.9
+90.85			6.1	222.6	217.95	4.7

223.29 B.M. Beech
5.76
229.05 ✓

4.54
227.83 ✓
214.75
13.08 ✓
215.00
12.83 ✓

215.25
12.58 ✓

215.50
12.33 ✓

223.29
6.08
229.37
215.75
13.62

5.29
228.58 ✓
215.75
12.83 ✓
216.00
12.58 ✓
217.00
11.58 ✓
217.25
11.33 ✓
217.35
11.23 ✓

216.25
12.33 ✓
216.40
12.18 ✓
216.50
12.08 ✓
216.75
11.83 ✓

POSTED

12/10/09 Hatch Moore

Levels for drain from 30th L to Concrete Bridge on Cemetery Road.

	4.18	79.15 ✓		7497		+
0+00 = Intersection of Lines 25' S of N.L. "L" St and 8'-4" W. of EL 30th St			6.09	(66.22)	73.1	(11") 6.9
+25 Manhole No 1			6.51	66.12	72.7	(7") 6.6
50			6.38	66.02	72.8	(9") 6.8
75			6.20	65.92	73.0	(1") 7.1
1			6.11	65.82	73.0	(2") 7.2
25			6.01	65.72	73.1	(5") 7.4
50			5.86	65.62	73.3	(8") 7.7
75			5.78	65.52	73.4	(11") 7.9
2			5.63	65.42	73.6	(2") 8.2
25			5.56	65.32	73.6	(3½") 8.3
50	7295 / 6592 / 803		5.40	65.22	73.8	(7") 8.6
75			5.29	65.12	73.9	(9½") 8.8
3			5.18	65.02	74.0	9.0
25	Manhole No 2		5.14	64.92	74.0	9.1
50			5.20	64.82	74.0	(2") 9.2
75	841	82.41	5.15	64.72 / 7400	74.0	(3½") 9.3

		8241 ✓				
4			8.15	64.62	74.3	+ (8") 9.7
25			8.05	64.52	74.4	(11") 9.9
50			8.00	64.42	74.4	10.0
75			7.82	64.32	74.6	(3½") 10.3
5			7.58	64.22	74.8	(7") 10.6
25			7.30	64.12	75.1	11.0
50			7.27	64.02	75.1	11.1
75			7.27	63.92	75.1	(2") 11.2
6			7.14	63.82	75.3	(6") 11.5
25			6.40	63.72	76.0	(3½") 12.3
43.5	∠ 90° Right. Manhole No 3	63.63	6.29	63.63	76.1	(6") 12.5
50			6.27	63.62	76.1	(6") 12.5
75			6.33	63.52	76.1	(7") 12.6
7			6.12	63.42	76.3	(11") 12.9
25			5.57	63.32	76.8	(6") 13.5
50			5.14	63.22	77.3	14.1
75			5.01	63.12	77.4	(3½") 14.3

		✓ 5247				+
8			5.14	63.02	77.3	(3½") 14.3
25			5.02	62.92	77.4	(6") 14.5
50			5.01	62.82	77.4	(7") 14.6
75			4.77	62.72	77.6	(11") 14.9
9			5.19	62.62	77.2	(7") 14.6
25			5.19	62.52	77.2	(8") 14.7
50			5.47	62.42	76.9	(6") 14.5
75	omitted			62.32		
10			5.35	62.22	77.1	(11") 14.9
24	∠ 90° left 1.42	(62.11) ✓ 7808	5.75	G=62.11 76.66	2.11	(7") 14.6
50	Manhole No 4		1.60	62.02	76.5	(6") 14.5
75			2.07	61.92	76.0	14.1
11			2.37	61.82	75.6	(9½") 13.8
25			2.74	61.72	75.3	(7") 13.6
50			3.04	61.62	75.0	(5") 13.4
75			3.50	61.52	74.6	13.1
12			3.91	61.42	74.2	(9½") 12.8

		7808				+
25			4.25	61.32	73.8	(6") 12.5
50			4.74	61.22	73.3	12.1
75			5.23	61.12	72.8	(8½") 11.7
13			5.57	61.02	72.4	(5") 11.4
25			6.00	60.92	72.1	(2") 11.2
50	Manhole No 5		6.45	60.82	71.6	(9½") 10.8
75			6.84	60.72	71.2	(6") 10.5
14			7.45	60.62	70.6	10.0
25			7.88	60.52	70.2	(8½") 9.7
50			8.44	60.42	69.7	(3½") 9.3
75			8.76	60.32	69.3	9.0
15			9.14	60.22	68.9	(8½") 8.7
25			9.57	60.12	68.5	(5") 8.4
50			10.11	60.02	68.0	8.0
75			10.55	59.92	67.6	(8½") 7.7
16			11.00	59.82	67.1	(3½") 7.3
25			11.21	59.72	66.9	(2") 7.2

			78.08							
						G 59.67				
80		0.18	66.75	11.51		66.57		+ 7.0		
			59.52					(7")		
75		< 14°30'	6 ft = {26.5 ft West line	32.8	0.61	59.52	66.1	6.6		
17				1.47		58.68	65.3	(6") 6.6		
17+20						⊙ 58.00		6.1		
25				2.99		57.75	63.8	6.0		
								(6")		
50				4.80		56.50	62.0	6.5		
+ 60						⊙ 56.00		5.3		
75				6.62		54.95	60.1	5.1		
								(11")		
18				8.63		⊙ 53.20	58.1	4.9		
25				10.41		51.29	56.3	5.0		
						G = 49.37		(11")		
50		1.52	55.60	12.17		54.28		4.9		
								(11")		
75				3.19		47.46	52.4	4.9		
								(6")		
9				5.40		45.54	50.2	4.7		
+ 20						⊙ 44.00		4.6		
25				7.25		43.86	48.3	(5") 4.4		
							47.4			
50				9.66		43.13	46.0	(11") 2.9		
								(5")		
75				10.50		42.41	44.8	2.4		
						G 41.69				
20		1.75	44.89	12.46		43.14		(5") 1.4		
25				2.95		40.97	42.0	1.0		
59	Station indicated by			4.02		⊙ 40.00	40.9	(11") 0.9		
	Nr Caps as end of Pipe									

			20.89					
30+68.6	< 14°43' Right				4.8			40.7
31					4.9			40.0
50					6.2			38.7
32					7.8			37.1
50					9.3			35.4
33					10.8			34.1
50					12.4			32.5
79	1.67		33.46		13.10		31.79	
34					2.3			31.2
50					3.7			29.8
35					5.4			28.1
50					6.6			26.9
36					6.8			26.7
50					6.7			26.8
37					6.6			26.9
50					6.6			26.9
38					6.3			27.2
50					5.6			27.9
39.5	West end of Concrete				4.7			28.8

12/13 Watch
1.09 Moore
Thomas

Check Levels 30 B.M. L.
To Cholla Valley - 30" K" at Drain

	4.16	H.I. 79.13		B.M. 74.97			Grade of Pipe
0+0	Manhole No 1.		6.09	73.04	66.22	6.82	10"
+25			6.51	72.62	66.12	6.50	6"
+50			6.40	72.73	66.02	6.71	8½"
+75			6.21	72.92	65.92	7.00	00
1+00			6.13	73.00	65.82	7.18	2"
25			6.02	73.11	65.72	7.39	4¾
50			5.87	73.26	65.62	7.64	7¾
75			5.80	73.33	65.52	7.81	9¾
2+00			5.63	73.50	65.42	8.08	1"
25			5.57	73.56	65.32	8.24	8"
50			5.38	73.75	65.22	8.53	6½
75			5.30	73.83	65.12	8.71	8½
3+00			5.17	73.96	65.02	8.94	11¼
25	Manhole No 2		5.13	74.00	64.92	9.08	1"
50			5.18	73.95	64.82	9.13	1½"
75			5.15	73.98	64.72	9.26	3"

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		79.13				
4+00	7.75	72.03	4.88	74.25	64.62	9.63 7½"
25			7.67	74.36	64.52	9.84 10"
50			7.64	74.39	64.42	9.97 11¾
75			7.44	74.59	64.32	10.27 3¼
5+00			7.31	74.82	64.22	10.60 7¼
25			6.94	75.09	64.12	10.97 11¾
50			6.92	75.11	64.02	11.09 1"
75			6.91	75.13	63.92	11.20 2¼
6+00			6.78	75.25	63.82	11.48 5"
25			6.64	75.99	63.72	12.27 3¼
43.5 <	Manhole No 3		5.93	76.10	63.62	12.47 6"
50			5.90	76.13	63.62	12.51 6"
75			5.97	76.06	63.52	12.54 6½
7+00			5.77	76.26	63.42	12.84 10"
25			5.23	76.50	63.32	13.48 6"
50			4.79	77.24	63.22	14.02 00
75			4.63	77.40	63.12	14.28 3½

30th R. drain to Cholla Valley

		82.03				
8+00			4.78	77.25	63.02	14.23 (3")
25			4.67	77.36	62.92	14.44 (5 1/4)
50			4.64	77.39	62.82	14.57 (7")
75			4.42	77.61	62.72	14.89 (10 3/4)
9+00			4.86	77.17	62.62	14.55 (6 1/2)
25			4.83	77.20	62.52	14.68 (8 1/4)
50			5.12	76.91	62.42	14.49 (6")
75					62.32	
10+00			5.0	77.03	62.22	14.81 (9 3/4)
25	1.10	77.73	5.40	76.63	62.12	14.51 (6")
50		manhole No 4	1.27	76.46	62.02	14.44 (5 1/4)
75			1.76	75.97	61.92	14.05 (1 1/2")
11+00			2.06	75.67	61.82	13.85 (10 1/4)
25			2.41	75.32	61.72	13.60 (7 1/5)
50			2.73	75.00	61.62	13.38 (4 1/2)
75			3.18	74.55	61.52	13.03 (1/4)
12+00			3.60	74.13	61.42	12.71 (8 1/2")

		77.73				
25			3.94	73.79	61.32	12.47 (5 1/2")
50			4.43	73.30	61.22	12.08 (1")
75			4.92	72.81	61.12	11.69 (8 1/4")
13+00			5.26	72.47	61.02	11.45 (5 1/2")
25			5.69	72.04	60.92	11.12 (1 1/2)
50	Manhole No 5		6.15	71.58	60.82	10.76 (9")
75			6.53	71.20	60.72	10.48 (6")
14+00			7.13	70.60	60.62	9.98
25			7.56	70.17	60.52	9.65
50			8.13	69.60	60.42	9.18
1.75			8.45	69.28	60.32	8.96
14+99			8.83	68.90	60.22	8.68
26			9.26	68.47	60.12	8.34 (5)
50			9.77	67.96	60.02	7.94
75			10.23	67.50	59.92	7.58
16+00			10.66	67.07	59.82	7.25
+25			10.90	66.83	59.72	7.11

		77.73				
50	2.03	68.57	11.19	66.54	59.62	6.92
75	L 14°20' L.		2.45	66.12	59.52	6.60
17+00			3.33	65.24		
+25			4.86	63.71		
50			6.64	61.93		
75			8.47	60.10		
18+00			10.49	58.08		
25	2.40	58.71	12.26	56.31		
50			4.45	54.26		
75			6.32	52.39		
19+00			8.48	50.23		
25			10.38	48.33		
50	3.24	49.18	12.77	45.94		

$\frac{1}{15}$ Hatch
$\frac{1}{10}$ Moore Thomas

Levels on Line 5' East of Cr. Line of Drain from K to L on 30th Street

B.M.	4.70	79.67		74.97	Grade	Cut
N Line L	3.25 Street	76.36	6.56	73.11	66.30	9¾" 6.81
25			3.41	72.95	66.40	6½" 6.55
50			3.83	72.53	66.50	10½" 6.03
75			3.91	72.45	66.60	10" 5.85
1			4.34	72.02	66.70	4" 5.32
25			4.37	71.99	66.80	2½" 5.19
50			4.66	71.70	66.90	9½" 4.80
75			4.95	71.41	67.0	5" 4.41
2			5.14	71.22	67.10	1½" 4.12
25			5.35	71.01	67.20	9¾" 3.81
50			5.59	70.77	67.30	5½" 3.47
75			5.74	70.62	67.40	2½" 3.22
99.4 = SL. K.			6.00	70.36	67.50	10¼" 2.86

Nail driven in E. side of Phone pole at.
Elevation 70.17 or. 1 foot above Top of Catch basin

2 Hatch
8 Moore
10 Thomas

Levels for ditch from end of 30th St drain pipe to Cholla Creek.

Staked Line 4' N of Fence.
Profiled " 10 " " "

0.90	41.60		40.7	Stake
0.22				
BM top of fence post at 30.52	11.30		30.30	

Sta 0+00						
0+00						
+25						
+50						
+75						
1						
+25						
+50						
+75						
2						
+25						
+50						
+75						
3						
+25						
+50						

Staked Line — 6' North of Stake

Rod	Elev.	Grade	±	Rod	Elev.
2.89	27.63	24.50	C 3.13	3.9	26.6 +2.10
2.71	27.81	24.45	C 3.36	4.7	25.8 +1.35
3.82	26.70	24.40	C 2.30	5.8	24.7 +0.30
3.74	26.78	24.35	C 2.43	5.6	24.9 +0.55
5.20	25.32	24.30	C 1.02	6.7	23.7 −0.60
5.41	25.11	24.25	C 0.86	6.3	24.2 −0.05
5.75	24.77	24.20	C 0.57	6.4	24.1 −0.10
6.10	24.42	24.15	C 0.27	6.3	24.2 +0.05
5.70	24.82	24.10	C 0.72	6.1	24.4 +0.30
5.46	25.06	24.05	C 1.01	5.8	24.7 +0.65
5.90	24.62	24.00	C 0.62	5.9	24.6 +0.60
6.12	24.40	23.95	C 0.45	6.4	24.1 +0.15
6.46	24.06	23.90	C 0.16	6.7	23.8 −0.10
6.10	24.42	23.85	C 0.57	6.3	24.2 +0.35
5.96	24.56	23.80	C 0.76	6.2	24.3 +0.50

		20.52									
T.P.	5.42	29.98	5.96	24.56							
+75											
4											
+25											
+50											
+75											
5											
+25											
+50											
+75											
6											
+25											
+50											
+75											
7											
+75											
+50											
+75											

Staked hub

6' North

Rod	Elev	Grade	#	Rod	Elev.
5.35	24.63	23.75	+0.88	5.6	+0.65 24.4
4.82	25.16	23.70	+1.46	5.3	+1.00 24.7
4.61	25.37	23.65	+1.71	5.0	+1.35 25.0
4.90	25.08	23.60	+1.48	4.8	+1.60 25.2
4.80	25.18	23.55	+1.63	5.0	+1.45 25.0
4.86	25.12	23.50	+1.62	5.0	+1.50 25.0
4.87	25.11	23.45	+1.66	4.8	+1.75 25.2
4.42	25.56	23.40	+2.16	5.0	+1.60 25.0
5.20	24.78	23.35	+1.43	5.6	+1.05 24.4
5.05	24.93	23.30	+1.63	5.2	+1.50 24.8
5.15	24.83	23.25	+1.58	5.4	+1.35 24.6
5.25	24.73	23.20	+1.53	5.3	+1.50 24.7
6.76	23.22	23.15	+0.07	6.9	-.05 23.1
6.90	23.08	23.10	0000	6.4	+0.50 23.6
5.90	24.08	23.05	+1.03	6.1	+0.85 23.9
5.20	24.78	23.00	+1.78	5.5	+1.50 24.5
9.64	20.34			9.0	21.0

Preliminary Line & Levels for sewers for University Place, beginning ℄ Essex 35' west of Herbert thence W on Essex to ℄ Richmond thence S to ℄ Alley thence W on Alley to F.T. 21' W of W.L. Richmond

B.M. B.P. N.W. Univ. Ave & Blvd				301.73
B.M.	2.69	304.42		
0+0 = 35' W of W.L. Herbert			6.9	297.5
0+25			7.2	297.2
50			7.3	297.1
75			7.6	296.8
1+0			7.8	296.6
1+25			8.0	296.4
1+50			8.3	296.1
75			8.6	295.8
2+0			8.8	295.6
25			9.0	295.4
50			9.3	295.1
75			9.6	294.8
3+0			9.9	294.5
25			10.00	294.4
50			10.3	294.1
75			10.5	293.9
4+0			10.7	293.7
25			10.7	293.7
50			10.6	293.8
75			9.7	294.7
5+0			9.5	294.9
5+31.7 = ℄ Richmond			9.0	295.4
5+50			9.1	295.3
5+75			304.4	8.7	295.7
6+0			9.0	295.4
25			9.1	295.3
50			9.2	295.2
75			8.8	295.6
7+0			9.0	295.4
7+24 = ℄ Alley & Richmond			8.5	295.9
7+50			9.2	295.2
7+85 = F.T. 21' W. of W.L. Richmond			9.4	295.0
7+85 Grade of sewer =				290.0

Preliminary Line & Levels for sewer in University place Add. beginning - ℄ Alley in blk 2 35' west of W.L. (Essex) Thence W. to F.T. ℄ Alley 21' W of W.L. Richmond → bet. Essex & Robinson

B.M. = B.P. N.W. Univ Ave & Blvd				301.73
B.M.	2.69	304.42		
0+0			6.1	298.3
25			6.1	298.3
50			6.6	297.8
75			7.1	297.3
1+0			7.4	297.0
25			8.2	296.2
50			8.5	295.9
75			9.1	295.3
2+0			9.7	294.7
25			10.3	294.1
50			11.2	293.2
75			12.0	292.4
T.P.	1.53	294.34	11.61	292.81
2+95			3.6	290.7
3+0			4.9	289.4
25			10.2	284.1
3+41			14.3	280.0
50			13.5	280.8
75			7.1	287.2
4+0			2.9	291.4
T.P.	8.25	300.02	2.57	291.77

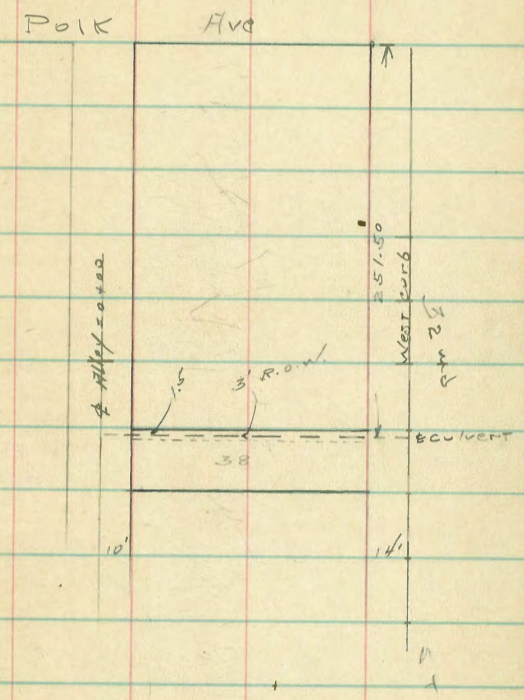
4+25	300.0	5.5	294.5
4+50		4.7	295.3
4+75		4.1	295.9
5+0		4.6	295.4
5+33 7 = ℄ Richmond		4.1	295.9
5+60		4.8	295.2
5+94 7 = F.T. 21' W. of W.L. Richmond		5.0	295.0
5+94 7 Grade of sewer			290.0

Levels for proposed Culvert
Blk 161 U.H.

Moore
Preston
McHugh

7/13/26

SEBP	335	356.39	353.0	Blk +32 mid
			356.4	
℄ Alley = 0+00		5.5	350.9	
+10 = ℄ Alley		6.4	350.0	
+25		5.9	350.5	
+60		6.0	350.4	
1+00		5.7	351.7	
+30		5.7	351.7	
+50		5.6	350.8	
+57.5 = wedge sidewalk		6.77	350.7	
+59.5 E.		6.35	350.0	
+64 top com. curb		6.51	349.9	
+64 = gutter on paving		7.10	349.3	



#400

9.85

11.45

11.85

10.60

10.90

11.10

11.65

301.73
2.69
304.42 H.

304.42
3.80
300.62 Alley & Herbert N

304.42
8.80
395.62 Alley & Herbert S

297.16
6.86
290.30

304.42
6.30
~~298.12~~
298.12 W. 25' on Alley

304.42
6.86
297.56
4.70
302.26
4.20
398.06

304.42
7.50
296.90 bot. N.H. N of Herbert

297.56
3.70
301.26
4.20
297.06

304.42
7.7
296.7 W. End of 13th Alley S of University

297.16
4.20
~~[illegible]~~
301.36

304.42
11.10
393.3

Published by H. S. CROCKER COMPANY, Stationers, Drawing Materials, Mathematical Instruments, etc., San Francisco.

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.		