South Park Sewers

231

Returned to City Engineers Office
[illegible] San Diego, Cal.

400

LEVEL

F.B. 231

231

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

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

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
DEC 8 1964

Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links
o		o		o		o	
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

231

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

Table shov
runnin

MINUTES
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Retu
C
T

In the follow
number
chain,

Angle	COR IN LINE
0	
4	0.2
5	0.3
6	0.5
7	0.7
8	0.9
9	1.2
10	1.55

394.4) 4.5000 (1.141
3944
5560
3944
16160
15776
3840

201.141
1141
202.282
1141
3423
.57

1.141
44.4
4564
4564
4564
.506604

2805) 4000 (1.426
2805
11950
11220
7300
5610
16900
16830

.01426
97.5
7130
9982
12834
1.390350

19739
1.426
198.816

.01426
83
4278
11408
1.18358
198.816
199.999

14
44.4

12

.713

0,78
202,64
203,42 ✓
12,99
190,43 T.P.
0,23
190,66 ✓
12,57
178,09 T.P.
0,35
178,44 ✓

7,51
197,94 ✓
0,93
197,01 T.P.
6,62
203,63 ✓

4,70
190,43
195,13 ✓
0,40
194,73 T.P.
7,68
202,41 ✓

439,2) 40000 (91,07
39528
4720
4392
3280

.009107
39,2
18214
81963
27321
.3569944

009107
39,7
63749
81963
27321
36,15479

9,83
205,18
215,01 ✓
5,27
220,28
213,35
5,27
218,62 ✓

14,40
439,2
1000,8) 5000000 (4996
40032
99680
90072
96080
90072
60080

10,8
5
,0540

90
,5
450

19,9
,005
,0995

7,57
215,65
223,22 ✓

202.64
1,00
203.64
184.9
18.74
5.3
12.9
3.0
15.7
185.9
17.7
1.7
16.0
4.1
13.6
15.6
34.3
15.6
12.9
28.5
5.8
34.3

184.44
169.34
15.1
1.2

184.9
185.9
206.0
11.17
217.17
206.05
-11.12
206.30
-10.87
206.55
-10.62
206.80
-10.37
207.05
-10.12
207.30
-9.87
207.55
9.62
207.80
9.37

2036
343
169.34

12.71
190.93
2.22
193.15
169.34
3.81
12.18
180.97
3.47
184.44

12.38
207.55
219.93
207.80
-12.13
208.04
-11.89
208.30
+11.63

12.78
208.30
221.08
208.55
-12.53
208.80
-12.28
209.05
-12.03
209.30
-11.78
209.55
-11.53
209.80
-11.28
210.05
-11.03
12.88
222.93
210.30
-12.63
210.55
-12.38
210.80
-12.13
211.0
-11.93

6,25
193.88
200.13
1.21
194.92
3.63
196.55
195.87
4,26
195.36
4.77

196.38
.49
195.87
.51
195.36

B.M. 205.18 sp. in fencepost S.W. cor 28th & A.

205.35 S.E. cor Fern & Harvard sp. in fencepost

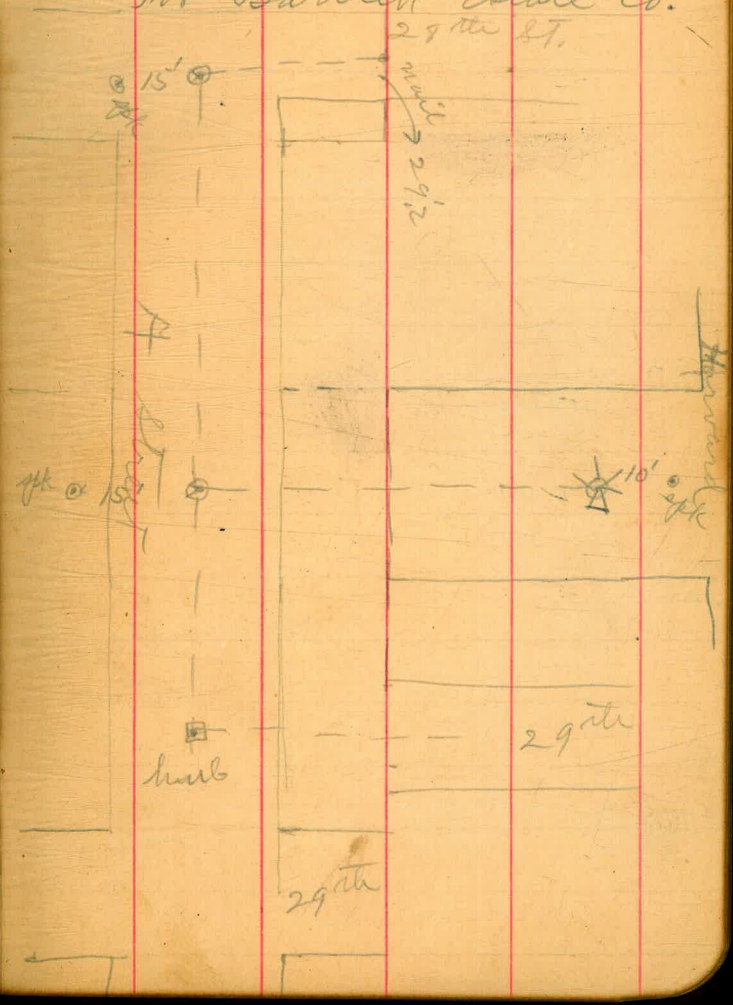
B.M. So. line A about 100' west 29th spk. in 2nd post from fence cor. 193.88

B.M. 225.98 S.E. cor 30th & Amherst sp. in fencepost.

1

So. Park Sewers.

For Bartlett Estate Co.



A. St. line

Feb. 14 1906

Childs
Haslam
Hawkins

2

Sta		Grade	H.I.	Rod	Elev.	cut	
0+00	M.H. No. 1	202.0	213.72	7.4	206.3	4.3	
+50		201.62		7.4	206.3	4.7	
1		201.25		4.5	209.2	8.0	
+50		200.87		5.5	208.2	7.3	
2		200.50		5.9	207.8	7.3	
+50		200.13		6.1	207.6	7.5	
+67	M.H. No. 5 & Bean St.	200.0		6.4	207.3	7.3	
3		199.53		7.0	206.7	7.2	
+50		198.82		8.0	205.7	6.9	
4		198.10		11.08	202.64	4.5	
+35		197.60					
+50		197.39	205.45	11.8	193.6	3.8	Fill
5							
+47.5	Center 29th Trestle	196.0					

Leveles for Trestle on A Street (center)

Sta.	H.I.	Rod	Elev.
4+42	203.42	7.4	196.0
+47		8.6	194.8
+52		10.4	193.0
+57		12.2	191.2
+62		13.1	190.3
+67	190.66	1.5	189.2
+72		3.9	186.8
+77		6.3	184.4
+82		9.1	181.6
+87		11.5	179.2
+92	178.44	1.7	176.7
+97		3.8	174.6
5+02		5.3	173.1
+07		6.7	171.7
+12		6.6	171.8
+17		6.5	171.9

Sta.	H.I.		Rod	Elev.
+22			5.6	172.8
+27			4.8	173.6
+32			3.9	174.5
+37			2.7	175.7
+42			1.4	177.0
+47.5	190.66 Center	29th + A	11.9	178.8

Feb. 14, 1906 Schields Hawkins Hawkins

Beam St. from A to Harvard

Sta		Grade	H.I.	Rod	Elev.	cut
0+00	M.H. No. 5	200.0	213.72	6.4	207.3	7.3
+50		200.57		7.3	206.4	5.8
1		201.14		7.4	206.3	5.2
+50		201.71		7.0	206.7	5.0
2		202.28		6.2	207.5	5.2
+50		202.85		5.9	207.8	5.0
3		203.42		5.3	208.4	5.0
+50		203.99		4.4	209.3	5.3
94.4	J J No. 13	204.5		3.9	209.8	5.3

Levels on center line A from center of 29th (So. Park add) East.

Sta	H.I.	Rod	Elev.
	190.66	11.9	
0+00 = 5+47.5 (2nd page back)			178.8
+05	190.66	9.5	181.2
+10		7.6	183.1
+15		6.9	183.8
+20		6.8	183.9
+25		6.9	183.8
+30		6.1	184.6
+35		4.7	186.0
+40		3.2	187.5
+45		2.6	188.1
+50		1.8	188.9
+55		1.4	189.3
+60		0.8	189.9
+65	197.94	0.3	190.4
+70	197.94	6.9	191.0
+75		5.6	192.3
+80		4.8	193.1

Childs Brook Haslam

Sta	H.I.	Rod	Elev
+85	197.94	4.3	193.6
+90		3.6	194.3
~~+~~95		3.1	194.8
1+00		2.7	195.2
+05		2.5	195.4
+10		2.4	195.5
+15		2.6	195.3
+20		2.5	195.4
+25		2.4	195.5
+30		2.1	195.8
+35		1.9	196.0
+40		2.1	195.8
+45		2.2	195.7
+50		2.4	195.5
+55		2.8	195.1
+60		3.1	194.8
+65		3.1	194.8

Sta	H.I.	Rod	Elev.
+70	197.94	3.2	194.7
+75		3.5	194.4
+80		3.8	194.1
+85		5.7	192.2
+90		5.6	192.3
+95		4.1	193.8
2+00		2.8	195.1
+05		2.3	195.6
+10		2.1	195.8
+15		2.0	195.9
+20		2.9	195.0
+25		4.1	193.8
+30		3.8	194.1
+35		5.8	192.1
+40		6.0	191.9
+45		6.7	191.2

Sta	H.I.	Rod	Elev.
+50	197.94	7.0	190.9
+55		7.9	190.0
+60		7.2	190.7
+65		7.6	190.4
+70		7.4	190.5
+75		7.6	190.4
+80		7.2	190.7
+85		7.8	190.1
+90		7.9	190.0
+95		8.7	189.2
+98		9.0	188.9
3+00		10.2	187.7
+05		10.2	187.7
+07		8.7	189.2
+10		7.9	190.0
+15		6.5	191.4

Sta	H.I.	Rod	Elev.
+20	197.94	5.1	192.8
+25		3.4	194.5
+30		1.91	196.0
+35	203.63	6.0	197.6
+40	203.63	4.3	199.3
+45		2.7	200.9

Levels for Trestle on 29th North of A St.

Sta	H.I.	Rod	Elev.
0+00=5+47.5 on A St.			
+05	195.13	15.0	180.1
+10		13.9	181.2
+15		13.1	182.0
+20		12.3	182.8
+25		11.9	183.2
+30		11.4	183.7
+35		11.2	183.9
+40		10.8	184.3
+45		10.3	184.8
+50		9.9	185.2
+55		9.7	185.4
+60		9.3	185.8
+65		9.0	186.1
+70		8.6	186.5
+75		8.4	186.7

Sta	H.I.	Rod	Elev.
+80	195.13	8.0	187.1
+85		7.7	187.4
+90		7.5	187.6
+95		7.1	188.0
1+00		6.9	188.2
+05		6.5	188.6
+10		6.2	188.9
+15		5.8	189.3
+20		5.6	189.5
+25		5.4	189.7
+30		5.2	189.9
+35		4.8	190.3
+40		4.8	190.3
+45		4.6	190.5
+50		4.2	190.9
+55		4.0	191.1

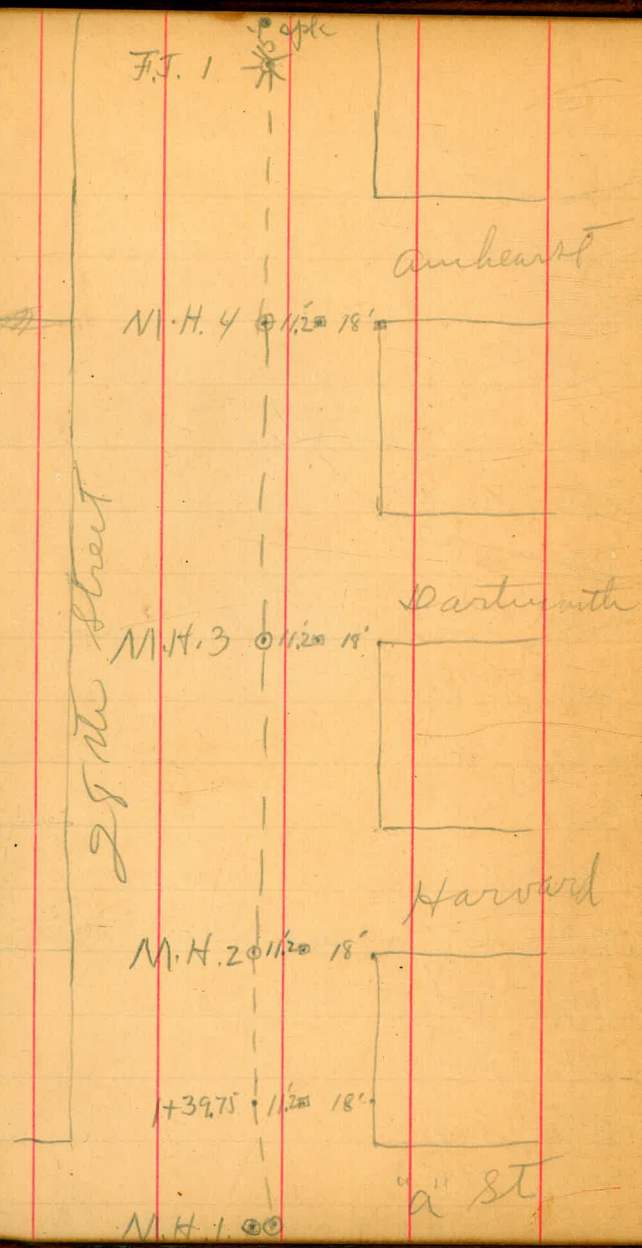
Sta	H.I.	Rod	Elev.
+60	195.13	3.9	191.2
+65		4.5	190.6
+70		4.6	190.5
+75		5.3	189.8
+80		5.4	189.7
+85		5.9	189.2
+90		5.8	189.3
+95		6.6	188.5
2+00		7.1	188.0
+05		8.0	187.1
+10		8.5	187.6
+15		9.4	185.7
+20		10.2	184.9
+25		11.2	183.9
+30		11.8	183.3
+35		13.0	182.1

Sta	H.I.	Rod	Elev.	
+40	195.13	14.3		180.8
+45		12.7		182.4
+50		10.4		184.7
+55		7.9		187.2
+60		5.7		189.4
+65		4.2		190.9
+70		3.0		192.1
+75		2.0		193.1
+80		1.4		193.7
+85		1.0		194.1
+90		0.4		194.7
+95	202.41	7.4		195.0
3+00		7.0		195.4

28th Street line — Feb 19 1906 — Childs, Hawkins, Butler

Sta		Grade	H.I.	Rod	Elev.	Cut	
0+00	M.H. No.1.	202.0	215.01	~~8.1~~	206.3	4.3	center A Street
+50		202.45		8.1	206.9	4.5	
1		202.91		7.4	207.6	4.7	
+39.75		203.27		7.0	208.0	4.7	
+50		203.36		6.7	208.3	4.9	
2		203.82		6.1	208.9	5.1	
+50		204.27		5.2	209.8	5.5	
3		204.73		4.9	210.1	5.4	
+50		205.18		4.2	210.8	5.6	
4		205.64		3.5	211.5	5.9	
+39.2	M.H. No.2.	206.0		3.1	211.9	5.9	So. line Harvard
+50		206.05		2.8	212.2	6.2	
5		206.30		2.3	212.7	6.4	
+50		206.55		1.66	213.35	6.8	
6		206.80	218.62	4.9	213.7	6.9	
+50		207.05		4.4	214.2	7.2	

Sta.		Grade	H.I.	Rod	Elev.	cut	
7+00		207.30	218.62	4.0	214.6	7.3	
+50		207.55		3.6	215.0	7.5	
8		207.80		2.97	215.65	7.8	
+09.9	M.H. No. 3	207.85		3.0	215.6	7.7	10"S. So. line Dartmouth
+50		208.05	223.22	6.8	216.4	8.4	
9		208.30		6.9	216.3	8.0	
+50		208.55		6.7	216.5	8.0	
10		208.80		6.1	217.1	8.3	
+50		209.05		5.8	217.4	8.4	
11		209.30		4.8	218.4	9.1	
+50		209.55		4.8	218.4	8.9	
12+00.6	M.H. No. 4	209.80		4.3	218.9	9.1	So. line Amherst
+50		210.05		4.1	219.1	9.1	
13		210.30		4.3	218.9	8.6	
+50		210.55		5.4	217.8	7.3	
14		210.80		6.9	216.3	5.5	
+40	F.T. No. 1.	211.0		7.2	216.0	5.0	


F.T. 1
Amherst
M.H. 4
11.2
18'
Dartmouth
M.H. 3
11.2
18'
28th Street
Harvard
M.H. 2
11.2
18'
1+39.75
11.2
18'
"a" St
M.H. 1

A St. Trestle

Bent. 1

10' 10'

Sta. 4+50

No. 2

10' 10'

No. 3

10' 10'

No. 4

10' 10'

No. 5

10' 10'

Mar. 2 1906. Childs
Hawkins
Hawkins

14

No. 6

10' 10'

No. 7

10' 10'

No. 8

10' 10'

No. 9

Sta. 5+47.5

Center 29th & "A"

"A" St. Trestle from Sta 4+50 to center 29th Childs
Mar. 2, 1906 Haslett
Hawkins

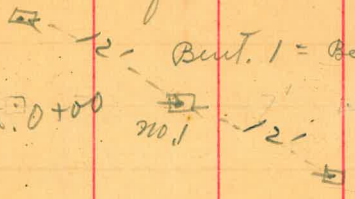
Bent.	Sta	Grade	H.I.	Rod	elev. 10' So. C
No.1	4+50	197.39	203.26	9.2	194.1
No.2	+62	197.21		13.0	190.3
No.3	+74	197.04	191.16	4.7	186.5
No.4	+86	196.87		10.2	181.0
No.5	+98	196.70	182.95	7.4	175.5
No.6	5+10	196.53		11.4	171.5
No.7	+22	196.36		10.8	172.1
No.8	+34	196.19		9.7	173.2
No.9	5+47.5	196.0	191.16	14.3	176.9

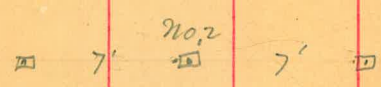
Rod	elev. center	Rod	elev. 10' No. C
9.44	193.82	9.4	193.9
12.93	190.33	12.5	190.8
5.22	185.94	6.3	184.9
11.59	179.57	12.5	178.7
8.61	174.34	9.1	173.8
11.10	171.85	10.8	172.1
10.10	172.85	9.4	173.5
8.13	174.82	6.4	176.5
12.42	178.74	10.0	181.2

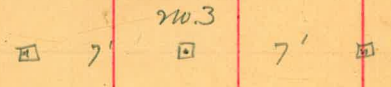
29th Street Trestle

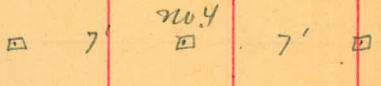
North from center of A. St.

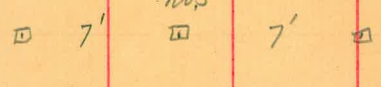
Mar. 5, 1906 Childs / Haslam / Hawkins

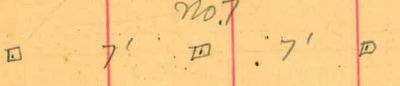


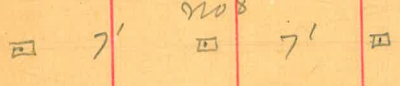


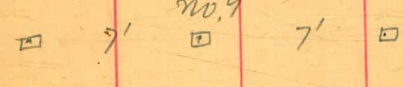


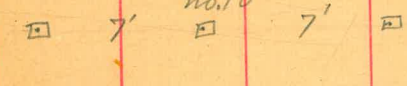


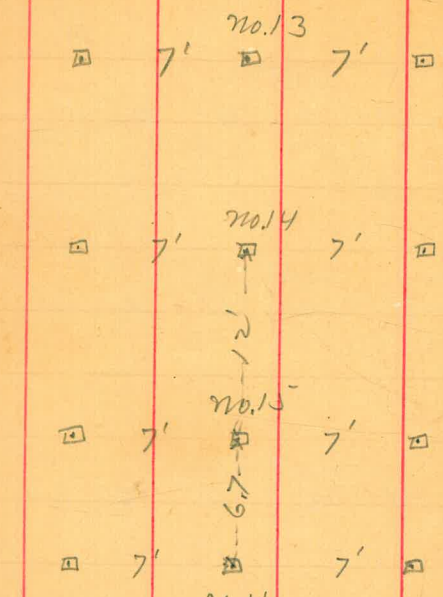












Sta 1+76.2 M.H.

Mar. 5, 1906

Childs
Haslam
Hawkins

29th Street Trestle

Bent	Sta.	Grade	H.F.	Rod	Elev. 7' East	Rod	Elev. Center	Rod	Elev. 7' West
No. 1 = No. 9 on A	St. 0+00	196.0	193.95	11.9	182.0	15.21	178.74	17.4	176.5
No. 2	0+13.5	195.92		10.1	183.8	12.19	181.76	14.7	179.2
No. 3	0+25.5	195.85		9.0	184.9	10.68	183.27	12.8	181.1
No. 4	0+37.5	195.79		8.5	185.4	9.89	184.06	11.7	182.2
No. 5	0+49.5	195.72		7.8	186.1	8.72	185.23	10.1	183.8
No. 6	0+61.5	195.65		6.8	187.1	8.00	185.95	9.1	184.8
No. 7	0+73.5	195.59		5.5	188.4	7.25	186.70	8.5	185.4
No. 8	0+85.5	195.52		4.9	189.0	6.50	187.45	7.7	186.2
No. 9	0+97.5	195.45		4.4	189.5	5.91	188.04	7.0	186.9
No. 10	1+09.5	195.38		3.5	190.4	5.10	188.85	6.3	187.6
No. 11	1+21.5	195.31		2.8	191.1	4.25	189.70	6.2	187.7
No. 12	1+33.5	195.24		2.3	191.6	3.76	190.19	6.3	187.6
No. 13	1+45.5	195.18		1.2	192.7	3.34	190.61	7.3	186.6
No. 14	1+57.5	195.11		0.4	193.5	2.74	191.21	7.4	186.5
No. 15	1+69.5	195.04		0.9	193.0	3.35	190.60	7.7	186.2
M.H.	1+76.2	195.0		1.5	192.4	4.40	189.55	7.6	186.3

	H.I.			BM NE 28 Hvd.
3.05	217.09			214.04
0.05	218.75			218.70
4.36	213.10	10.01	208.74	
202.29 / 10.81	202.03 / 11.07	202.42 / 10.68	202.83 / 10.27	203.25 / 9.85
203.67 / 9.43	204.08 / 9.02	204.50 / 8.60		

213.42
1.41
214.83

202.59
12.24

202.88
11.95

203.18
11.65

203.47
11.36

203.76
11.07

204.0
10.83

204.42
10.41

H.I.
215.39

204.42
10.97

204.00
11.39

204.83
10.56

Sewer in Bean St - Hvd to N.L.S.P. Add

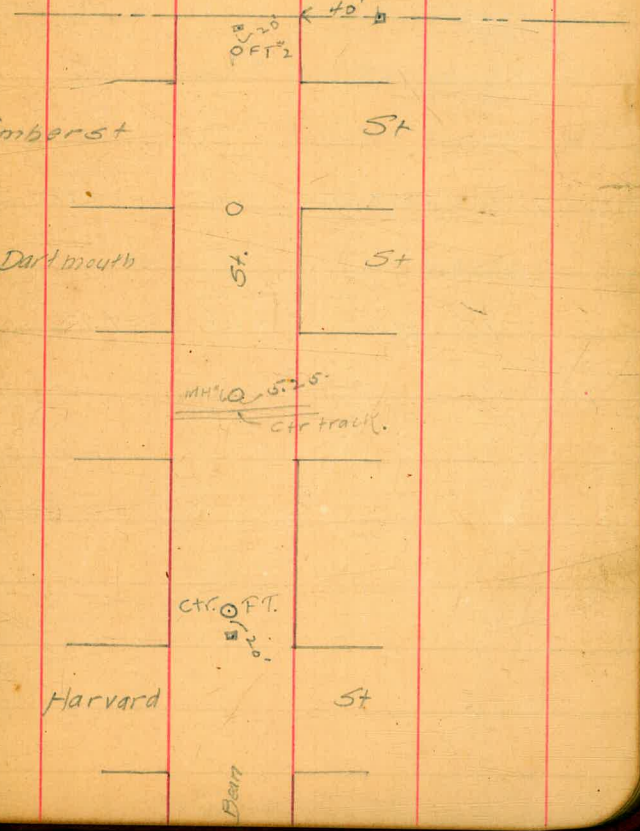
20

4/16/06 { Davis, Brooks, Thomas

Sta	Rod	Ground	Grade	±
	217.09			
0 = F.T.# 12-40'-No. Hvd	7.70	209.39	204.50	+4.89
+50	7.94	209.15	204.08	+5.07
1	7.76	209.33	203.67	+5.66
+50	8.30	208.79	203.25	+5.54
2	8.93	208.16	202.83	+5.33
+50	9.14	207.95	202.42	+5.53
3 = N.H.# 6 - Ctr Dtmh (Beech)	8.82	208.27	202.00	+6.27
+50	9.20	207.89	202.29	+5.61
1	8.63	208.46	202.59	+5.87
+50	7.94	209.15	202.88	+6.27
2	7.65	209.44	203.18	+6.26
+50	6.85	210.24	203.47	+6.77
3	6.47	210.62	203.76	+6.86
00 = +40 - N.H.# 7 S.L. Amh St (Cedar)	5.80	211.29	204.0	+7.29
+50	5.50	211.59	204.42	+7.19
1	5.20	211.89	204.83	+7.06

HH.
215.39 | 205.25 / 10.14 | 205.67 / 9.72 | 206.00 / 9.39

Sta	Rod	Ground	Grade	±
	HI 217.09			
1+60	5.04	212.05	205.25	+6.80
2	5.30	211.79	205.67	+6.12
+40 F.T. # 2	5.46	211.63	206.00	+5.63

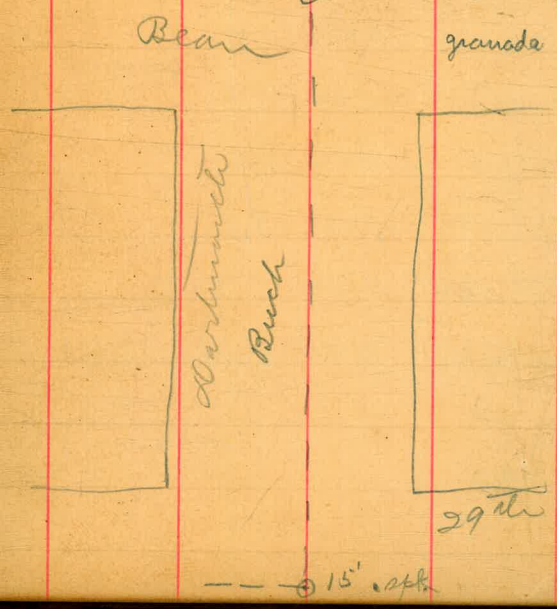


279.6 / 1.500 / 13.98 / 1.04	.536			H
	H.I.			21328
0.39	219.09			218.70
2.51	209.73	11.87	207.22	
201.73 / 8.00	201.46 / 8.27	201.19 / 8.54	200.92 / 8.81	200.65 / 9.08
200.50 / 9.23	H.I.			
0.49	219.19			218.70
2.41	209.68	11.92	207.27	
202.00 / 7.68	201.73 / 7.95	201.46 / 8.22		
5.97	215.39	0.26	209.42	

Dartmouth Street Childs
April 18. 1906

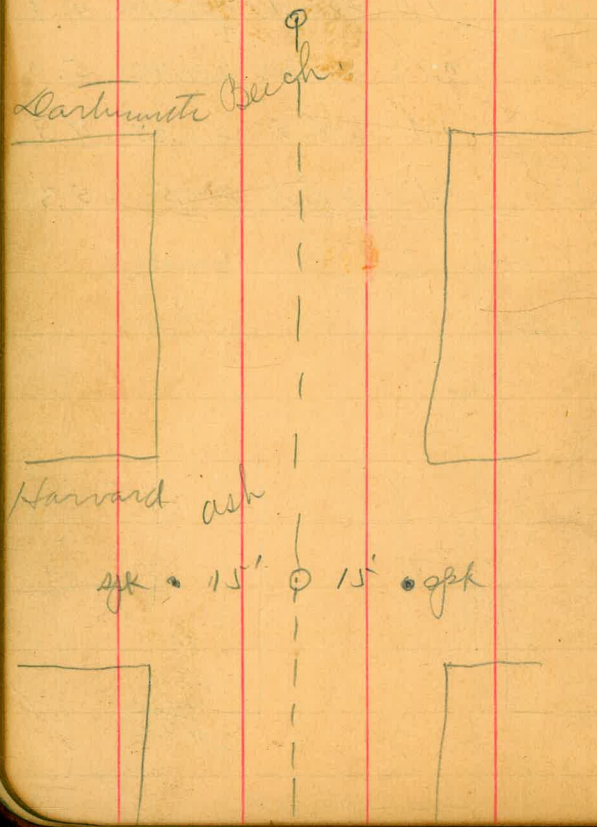
22

Sta		Rod	Ground	Grade	Cut
10+00	M.H. Center Beam	5.1	208.2	202.0	6.2
+50		6.6	206.7	201.73	5.0
1+00		6.8	206.5	201.46	5.0
+50		7.4	205.9	201.19	4.7
2+00		0.93	205.93	200.92	5.0
+50		1.4	205.5	200.65	4.9
+79.6	Cut. 29th M.H.	1.1	205.8	200.5	5.3



193.88
12.98
206.86

		H.I.		B.M.	H.I.
	0.71	206.80		206.09	
200.50	200.17	199.84	199.51	199.18	206.86
6.30	6.63	6.96	7.29	7.62	
198.86	198.53	198.20	198.00	197.80	
7.94	8.27	8.60	8.80	9.00	
197.29	196.78	196.38			
9.51	10.02	10.42			



29th Street

Childs
Hasson
Hawkins

April 18, 1906

	Sta	Rod	Ground	Grade	Cut
0+00	29th + Dart. M.H.	1.1	205.8	200.5	5.3
+50		1.6	205.3	200.17	5.1
1+00		2.2	204.7	199.84	4.9
+50		3.1	203.8	199.51	4.3
2+00		2.7	204.2	199.18	5.0
+50		2.9	204.0	198.86	5.1
3+00		4.5	202.4	198.53	3.9
+50		4.1	202.8	198.20	4.6
+80.5	Cen. Harvard M.H.	4.5	202.4	198.0	4.4
4+00		5.3	201.6	197.80	3.8
+50		6.8	200.1	197.29	2.8
5+00		8.1	198.8	196.78	2.0
+39	203.94	7.4	196.5	196.38	0.1
6+73.6				195.0	

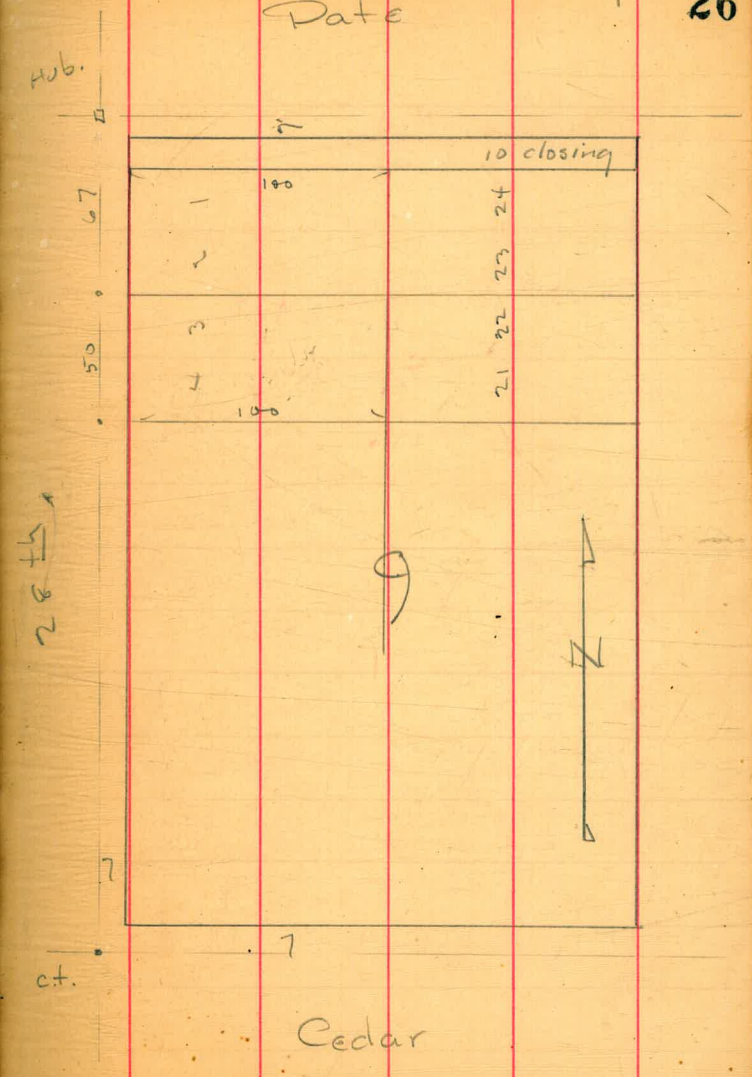
Sta	Rod	Ground	Grade	±

Elev. of Lots 3+4 in Block 9
for Prop. Sewer. #760
W.O. 210

B.M.	9.57	217.52		207.95	S.W. B.P. Granada + Date
N.W. Cor. Lot			3.5	214.0	
S.W. Cor.			2.2	215.3	
S.E. Cor.			6.6	210.9	
N.E. Cor.			8.3	209.2	
℄ 28th st. opp. N.L. Lots			1.31	216.21	
No signs on surface					
℄ 28th opp. S.L. Lots			1.39	216.13	
T.P.	9.22	224.41	2.33	215.19	
℄ 28th + Cedar			4.78	219.63	
M.H. Covered.					

indexed
C.S.K.

1-30-47
7.0.



	~~H1.~~	
7.82	201.70	193.88
194.75	194.65	
6.95	7.05	

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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