1003

Duplicate

FIELD BOOK

360

KEUFFEL & ESSER CO.

DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

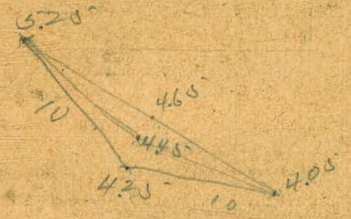
TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

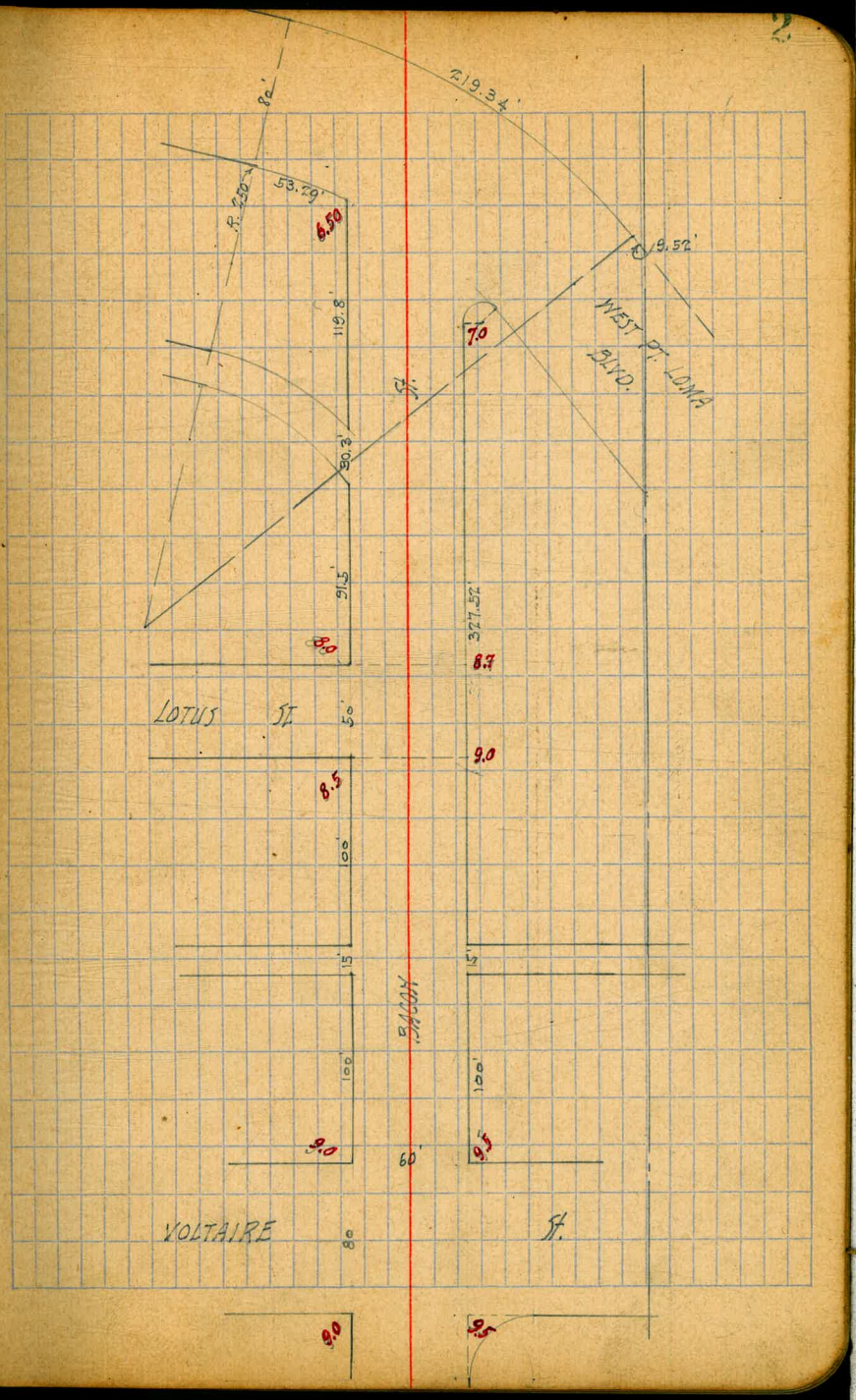
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

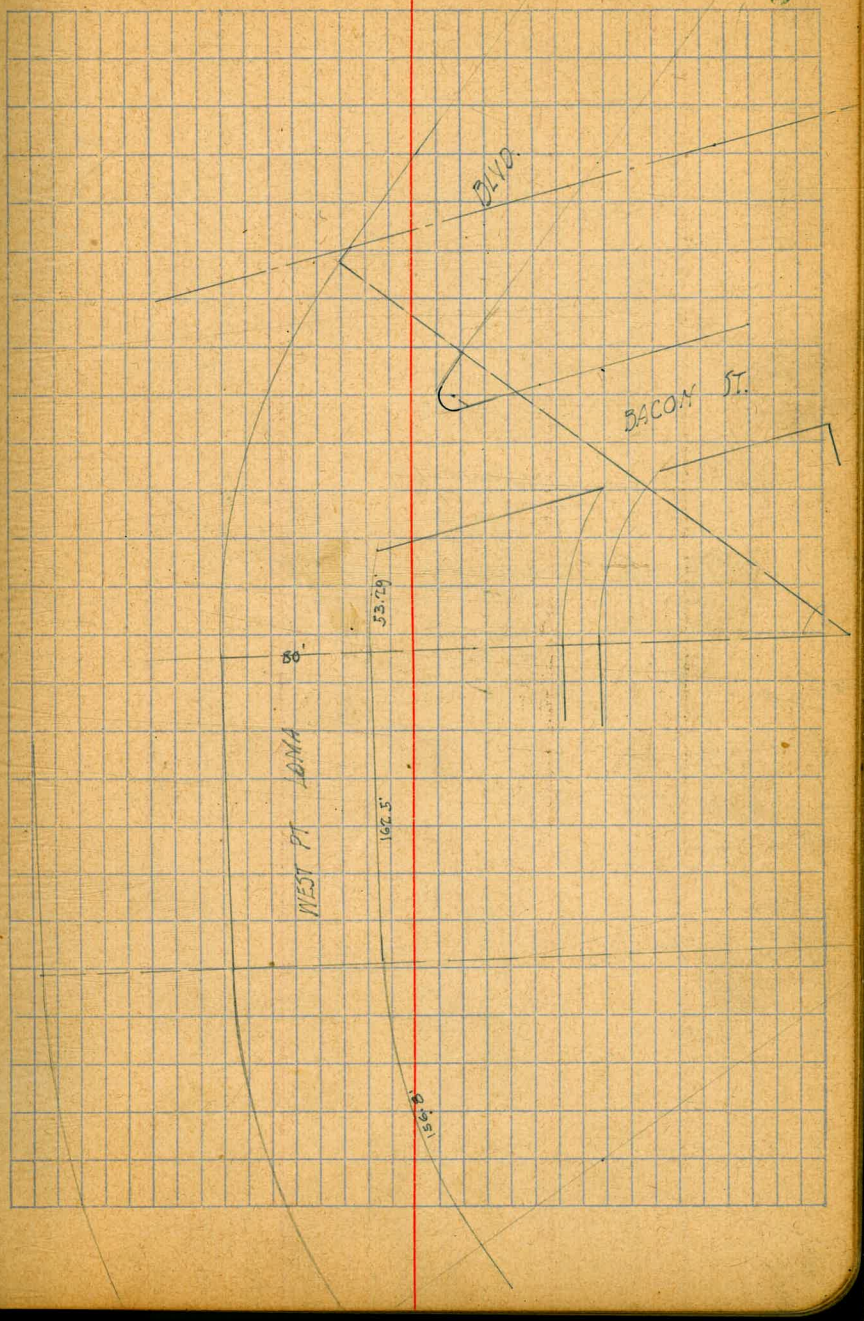
Calculated by Julien A. Hall, M. Am. Soc. C. E.

For Keith's Railroad Curve Tabels see end of book.



2 Book 1003


R. 1934'
82'
53.29'
R. 250'
6.50
119.8'
9.52'
WEST PT. LOMA BLVD.
7.0
30.3'
327.52'
91.5'
8.0
8.7
LOTUS ST.
50'
9.0
8.5
100'
15'
BALBOA
100'
9.0
9.5
60'
VOLTAIRE
80'
ST.
9.0
9.5


BLVD.
BACON ST.
53.79'
80.
WEST PT. LOMA
162.5'
154.8'

Jarvis Sw. R.R. Spk 4.64
Hugo " " 2.16
Goethe " Pg Ch 1.14

Rosecrans St.

Macaulay St.

Lowell St.

Keats St.

Jarvis St.

Ingelow St.

Hugo St.

Goethe St.

Fenelon St.

Emerson St.

Rosecrans St.

Emerson St.

Dickens St.

Carleton St.

Byron St.

Addison St.

Rosecrans

Talbot – magnetic N 8° W

Addison St.

Canon St.

Change to 20.5 – Sidewalk 13 in at 20.50

Upshur St.

Talbot St.

Talbot

Rosecrans.

21.38 Mon NE Magnet

28.05 Pig ct NW Bessemer.

BESSEMER.

PL 177

PL 178

Curb

5.1.51 Pig W Ct at N.L PL 177

41.24 Mon 235' W of W.L, Rosecrans on N.Line PL 175

Rogers St.

Quaithrough St.

Perry St.

38.135 McCall Plg Ch. N. 1/4 Cor
64154 - Perry NE Plg.

62.07 Plg S.E. Qualtrough
79.0
69.97 M1
12.07
57.10 TP
0.17
57.7 M1
11.92
45.35 TP
0.99
46.3 M1.
38
35.05
4.80
39.85 M1
33.60
6.27
39.87 M1
33.60
6.85
40.45 M1.
38.1
4.27
42.36 M1.

PERRY
OWEN
NICHOLS
McCALL
LAWRENCE
KELLOG
U.S.M. Reservation.

ST.

Reservation Line SE Ch: 35.05.1
Kellog NE 33.596
Lawrence 35.092

9

+	M1	—	Flor.	Mon under No fence 25 & W of N-S fence 100'E of N.W. Corner
15.72	21.44		8.72	Granite Mon
10.81	29.32	3.03	18.41	
17.42	41.34	0.30	28.92	
6.22	46.31	0.25	41.09	
		5.18	41.18	

41.13 - 6.12 = 35.01 city datum Check on SE Ch of Reservation
Copper plug Elev given as 35.05

1.07 65.22 64.15

59.60 / 6.42 — 57.10 / 8.12 — 44.60 / 10.62.

0.76 54.88 10.60 54.62

52.10 / 5.78 — 49.60 / 5.28 — 48.80 / 4.78 — 47.52 / 7.36 — 44.43 / 8.45.

0.11 46.54 8.48 46.43

44.35 / .19 — 44.27 / 2.27 — 43.18 / 3.36 — 42.10 / 4.44 — 41.60 / 4.94 — 40.93 / 5.61 — 40.27 / 4.27 — 39.60 / 4.94 — 39.93 / 7.61 — 38.27 / 8.27 — 37.60 / 8.94

8.39 38.15

Levels over Ctr Line of Roscrans St. Canon to Macaulay St

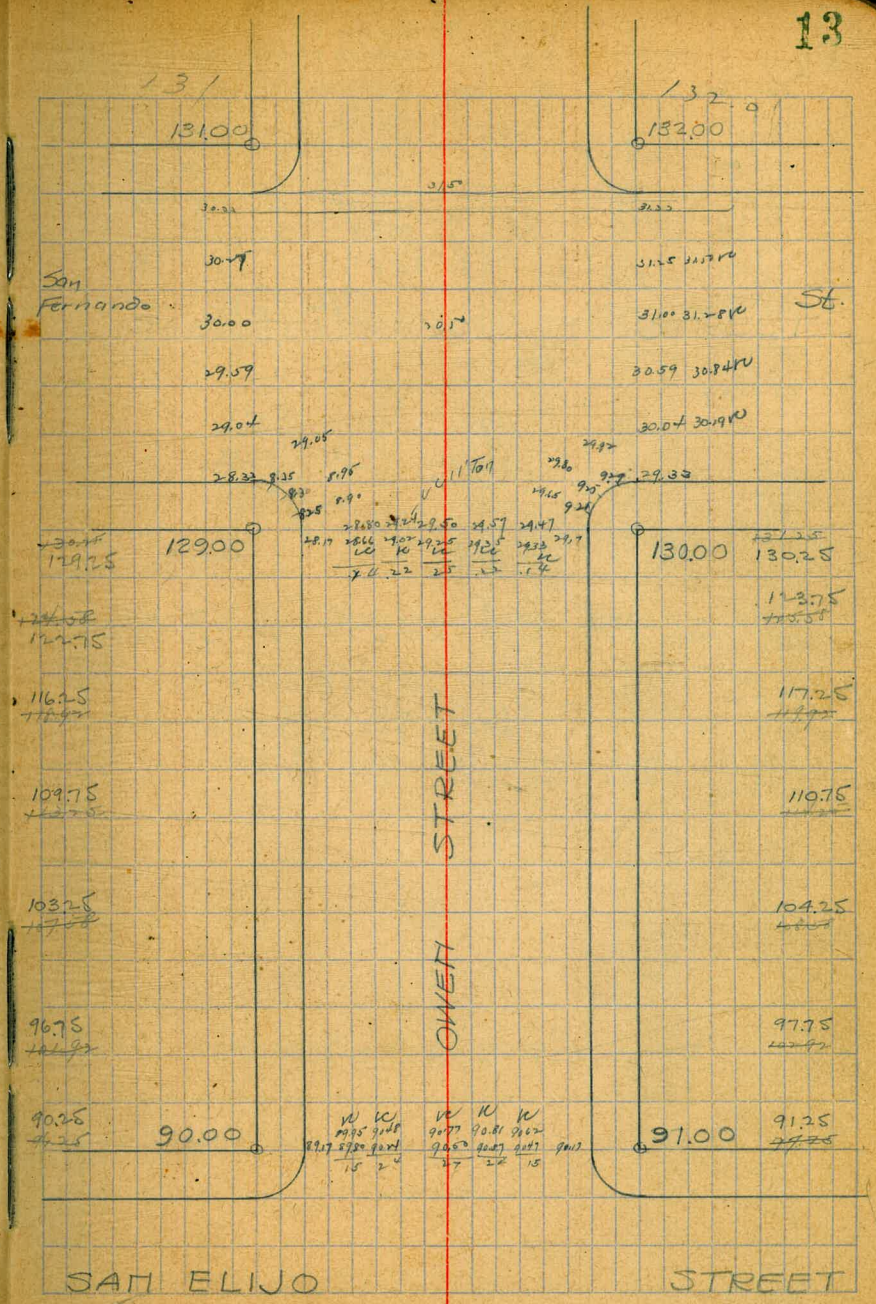
Sta	+	HI	−	Elev.	Dig in Ch.
	3.67	24.34		20.67 Bm. Canon & Roscrans	
Rt. Canon			4.5	19.8	
+41 - 100' S. Addison			4.7	19.6	
50' So	"		4.9	19.4	
S.L.	Addison		5.1	19.2	
N.L.	"		5.3	19.0	
+50			5.3	19.0	
1			5.6	18.7	
+50			5.8	18.5	
2 - S.L.	Byron		6.3	18.0	
N.L.	Byron		7.1	17.2	
+50			7.6	16.7	
1			8.3	16.0	
T.P.	0.75	17.36	7.73	16.61	
+50			2.4	15.0	
2 - S.L.	Carleton		3.2	14.2	
N.L.	"		4.5	12.9	
+50			5.2	12.2	
1			6.1	11.3	
+50			7.0	10.4	
2 - S.L.	Dickens		7.8	9.6	
N.L.	"		9.0	8.4	
+50			10.0	7.4	
T.P.	1.55	8.88	10.03	7.33	
1			2.6	6.3	

888

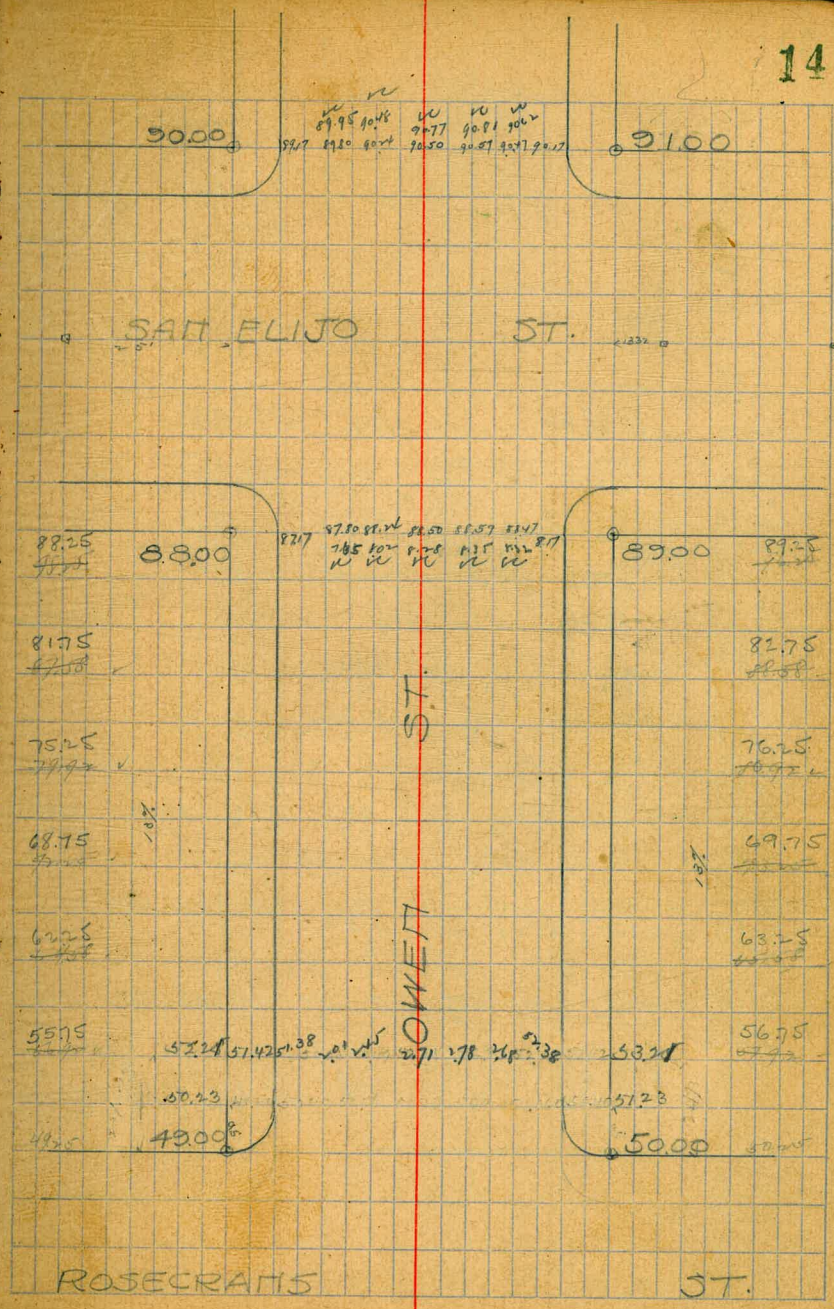
1+50	3.3		5.6
2 - S.L. Emerson	4.3		4.6
N.L. "	5.1		3.8
+50	5.7		3.2
1	6.2		2.7
+50	7.0		1.9
2 - S.L. Faraday	7.2		1.7
N.L. "	7.5		1.4
+50	7.7		1.2
T.P. 5.44	6.81	7.51	1.37
1	5.8		1.0
+50	5.8		1.0
2 - S.L. Goethe	5.7		1.1
N.L. "	5.6		1.2
+50	5.5		1.3
1	5.4		1.4
+50	5.2		1.6
2 - S.L. Hugo	5.2		1.6
N.L. "	5.2		1.6
T.P. 5.69	7.71	4.79	2.92
+50	6.1		1.6
1	6.1		1.6
+50	5.9		1.8
2 - S.L. Ingelow	5.9		1.8

Sta	+	7.71 N1	−	Elev.	
N.L. Ingalow			5.7	2.0	
+50			5.2	2.5	
1			4.8	2.9	
+50			4.3	3.4	
2 = SL. Jarvis			3.7	4.0	
R BM Jarvis Spk pole			3.06	4.65	4.64 Brg
N.L. Jarvis			2.9	4.8	
+50			2.3	5.4	
T.P.	8.65	12.78	3.58	4.13	
1			7.2	5.4	
+50			7.2	5.6	
2 = S.L. Keats			7.0	5.8	
N.L. "			6.0	6.8	
+50			5.7	7.1	
1			5.3	7.5	
+50			5.1	7.7	
2 = S.L. Lowell			4.8	8.0	
N.L. "			4.1	8.7	
+50			3.7	9.1	
1			3.7	9.1	
+50			3.4	9.4	
2 = S.L. Macaulay			3.2	9.6	

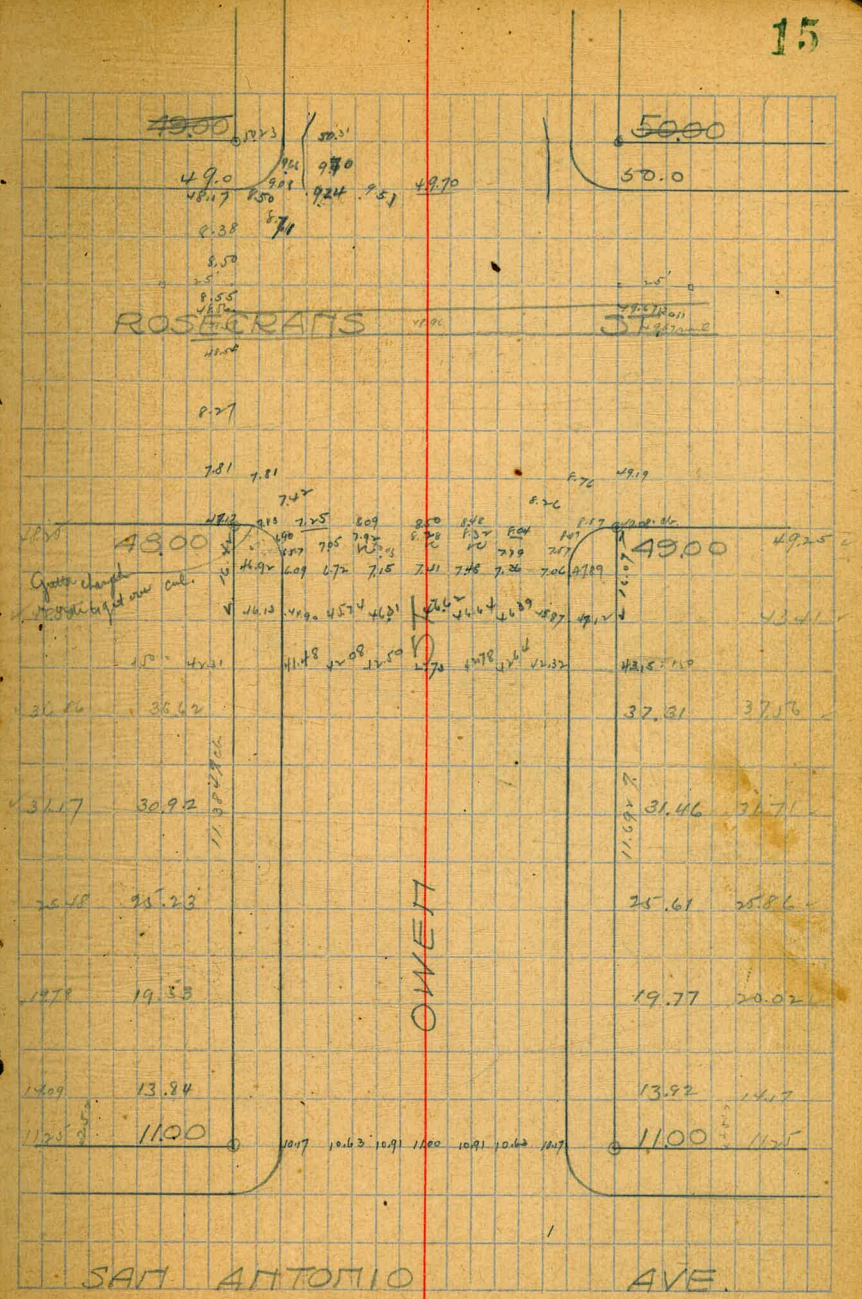
132.22 S W. Owen + San Fernando



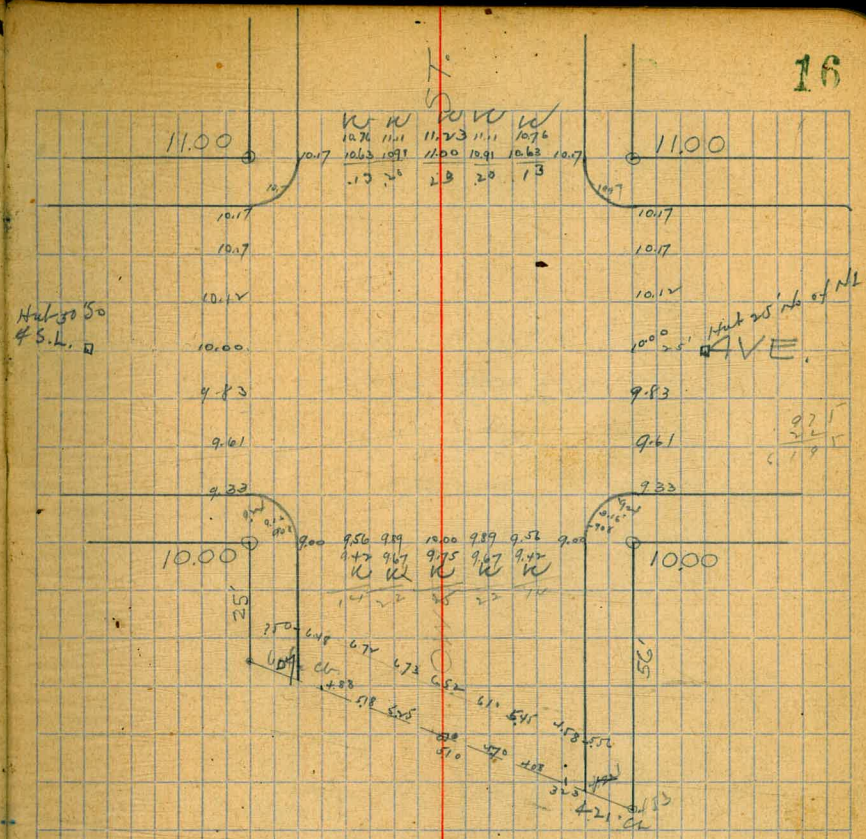
48.07 S.E. Rosecrans & Owen. Pigrt
88.22 - No.1 pole N.E San Elijo & Owen.

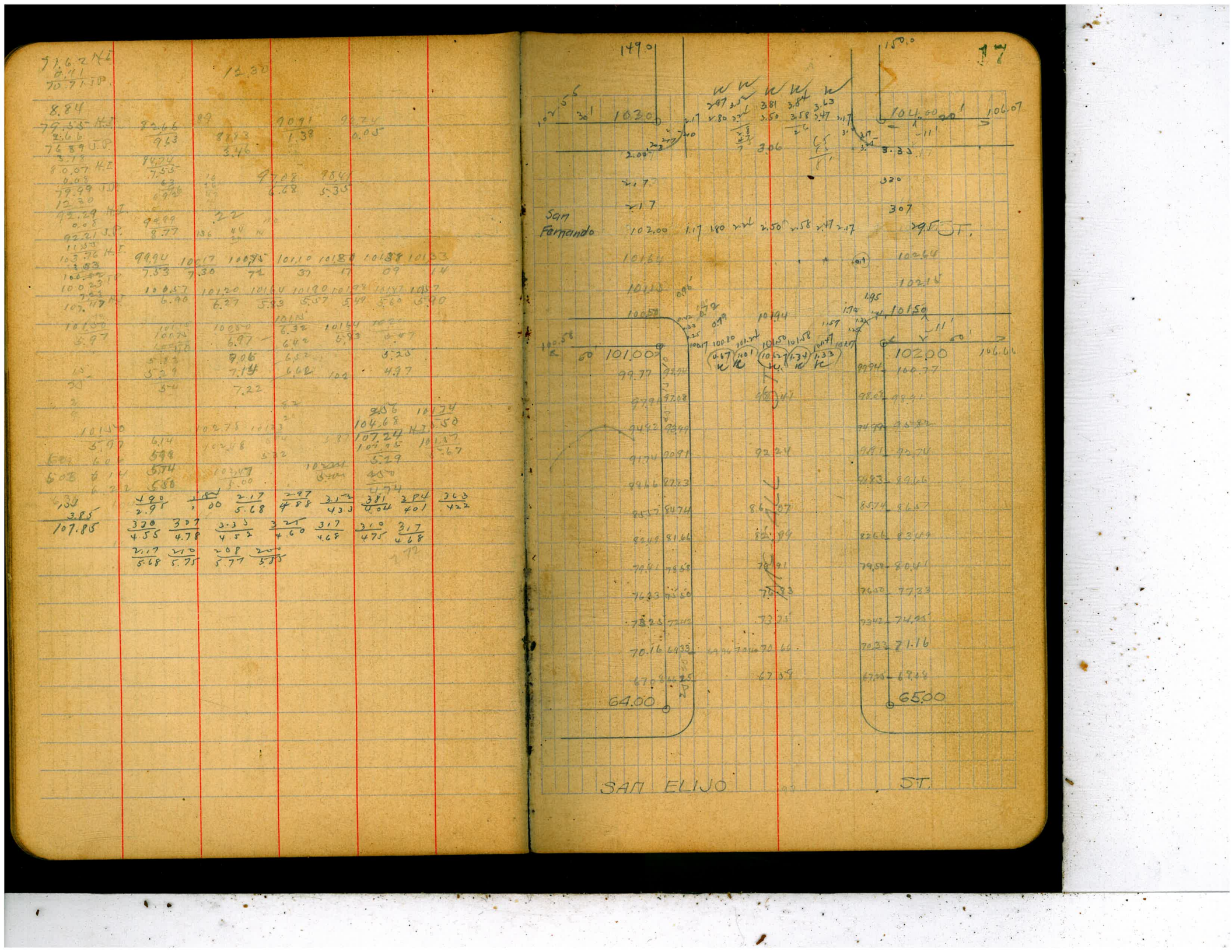


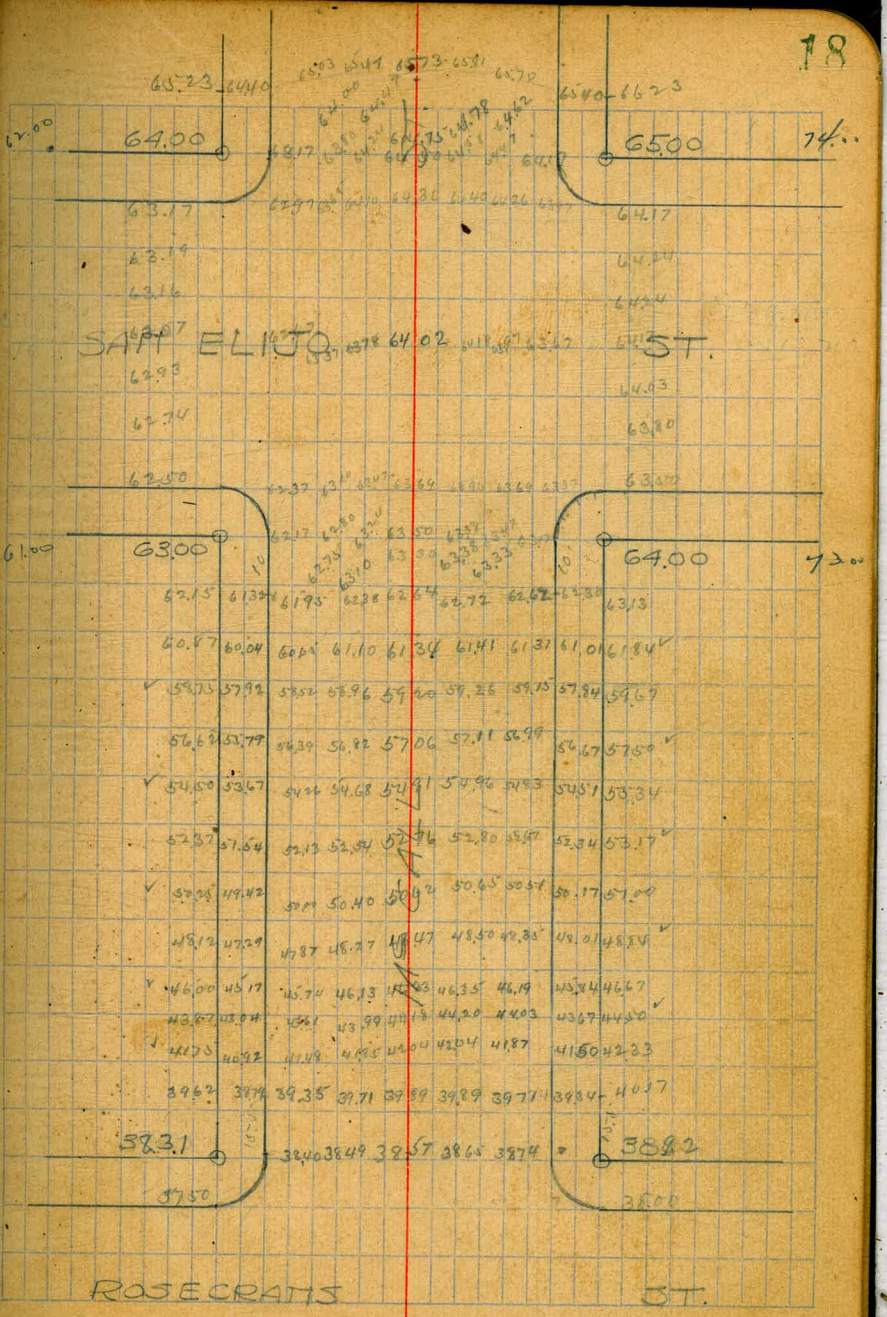
64.15 N.E Party.

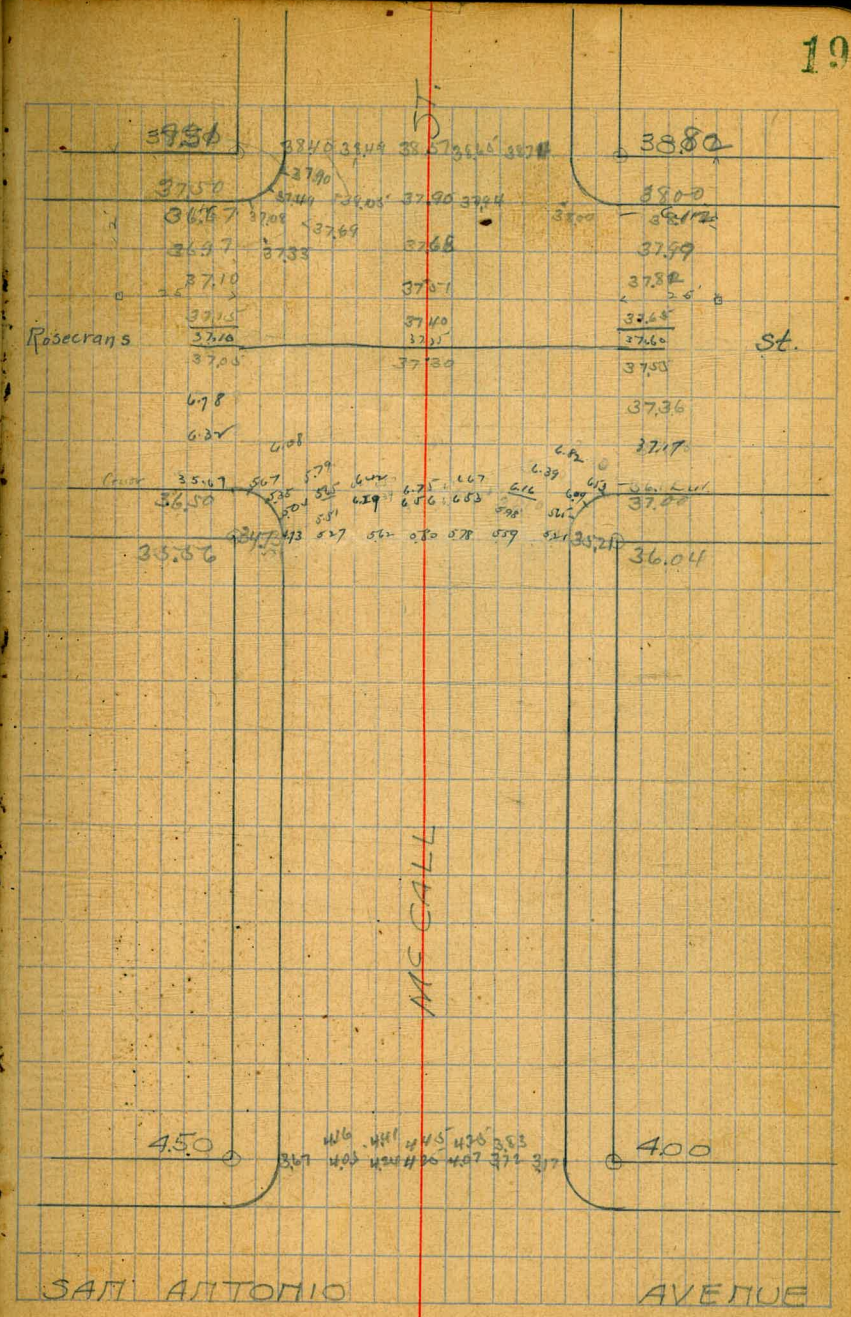


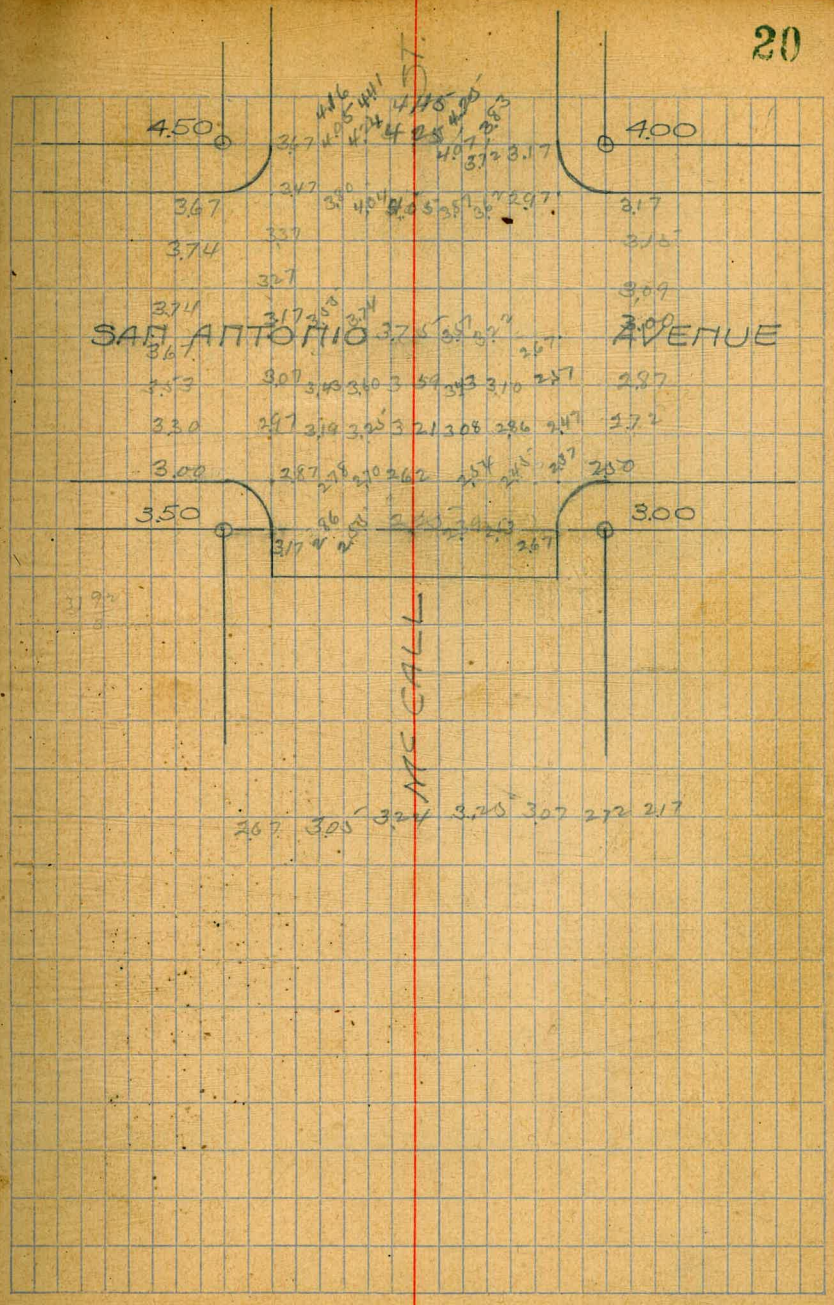
Bm 15.95 Hub 25 N. of N.L. Owen & San Antonio



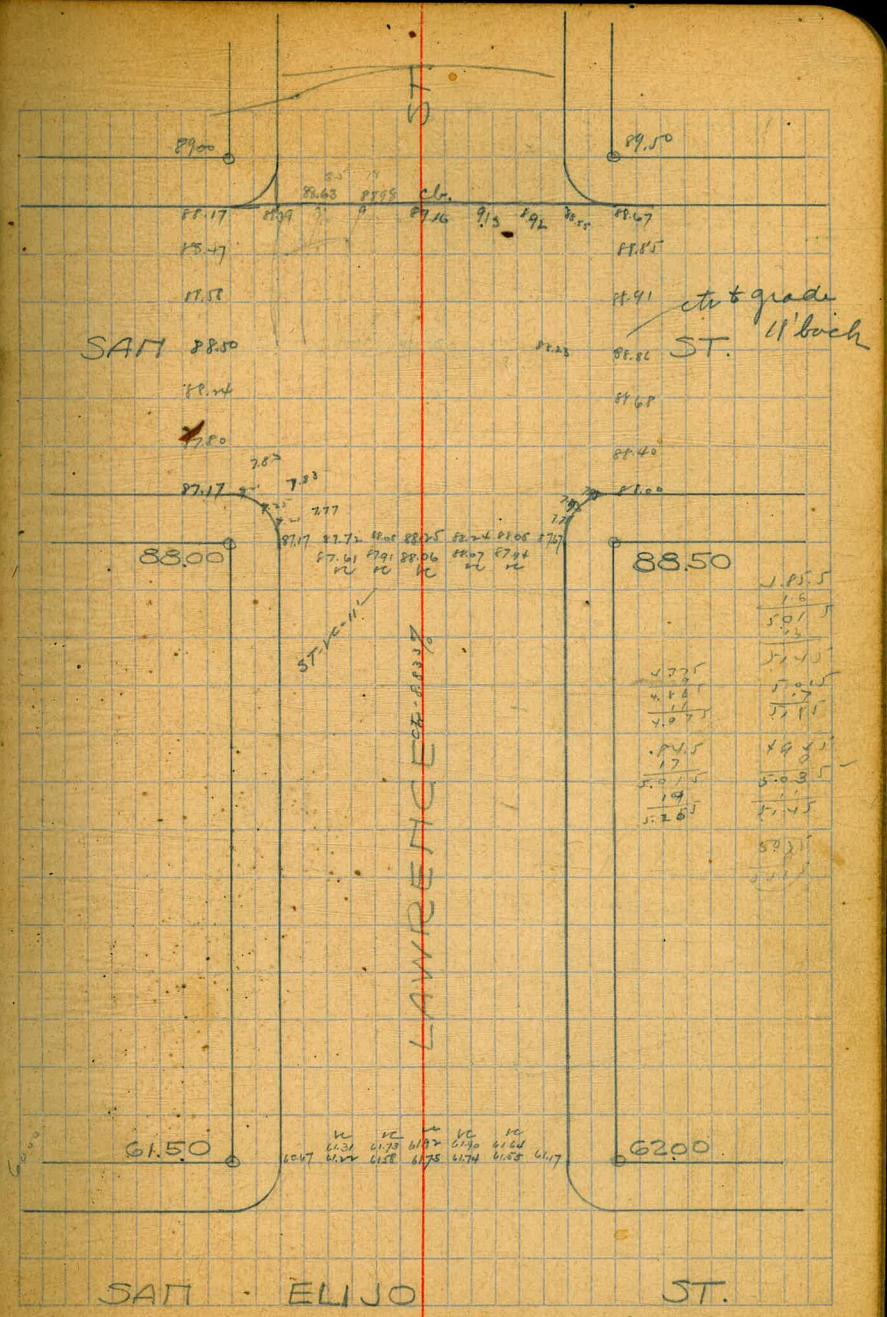

17
San Fernando
SAN ELIJO ST.
64.00
65.00


64.00
65.00
SAN ELIJO ST.
63.00
64.00
ROSECRANS ST.

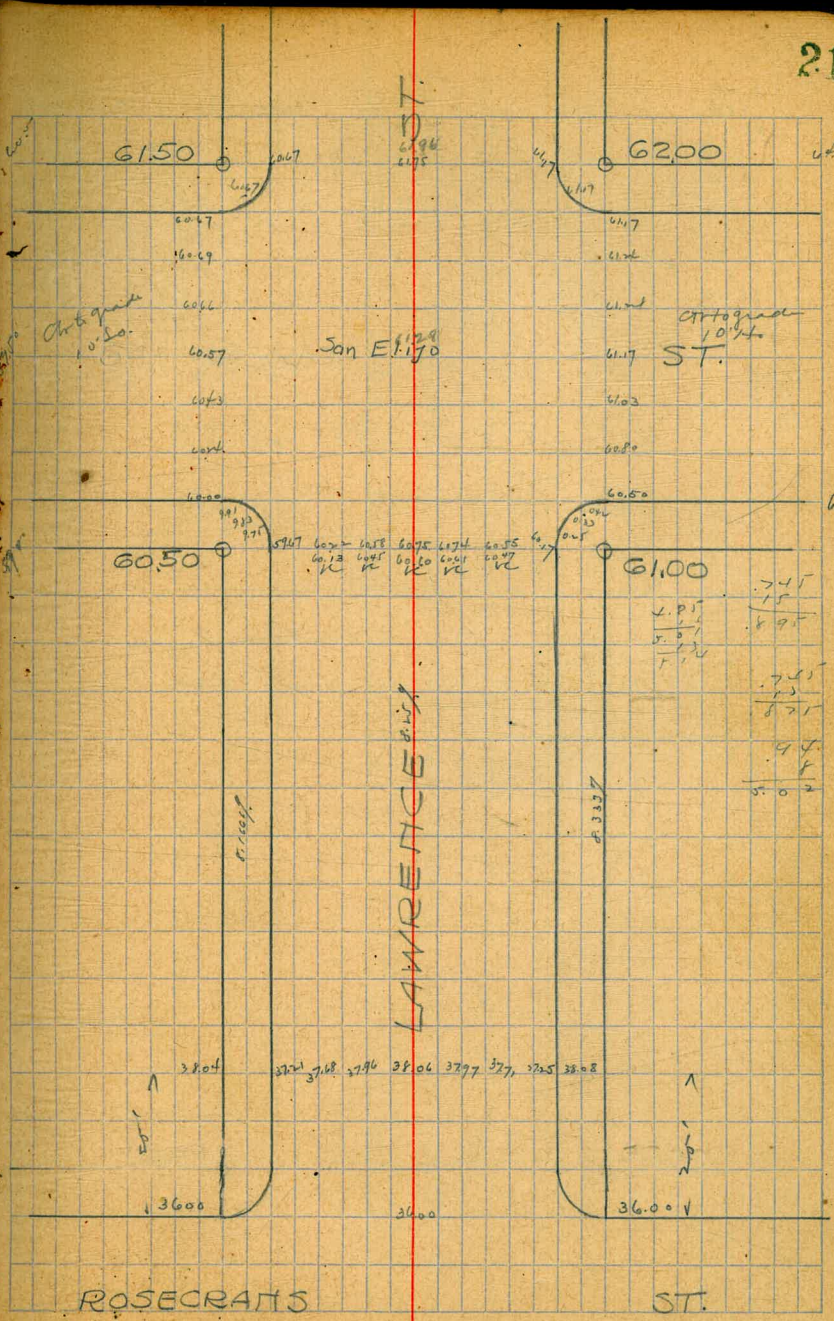

Rosecrans St.
MC CALL
SAM ANTONIO AVENUE
4.50
4.00

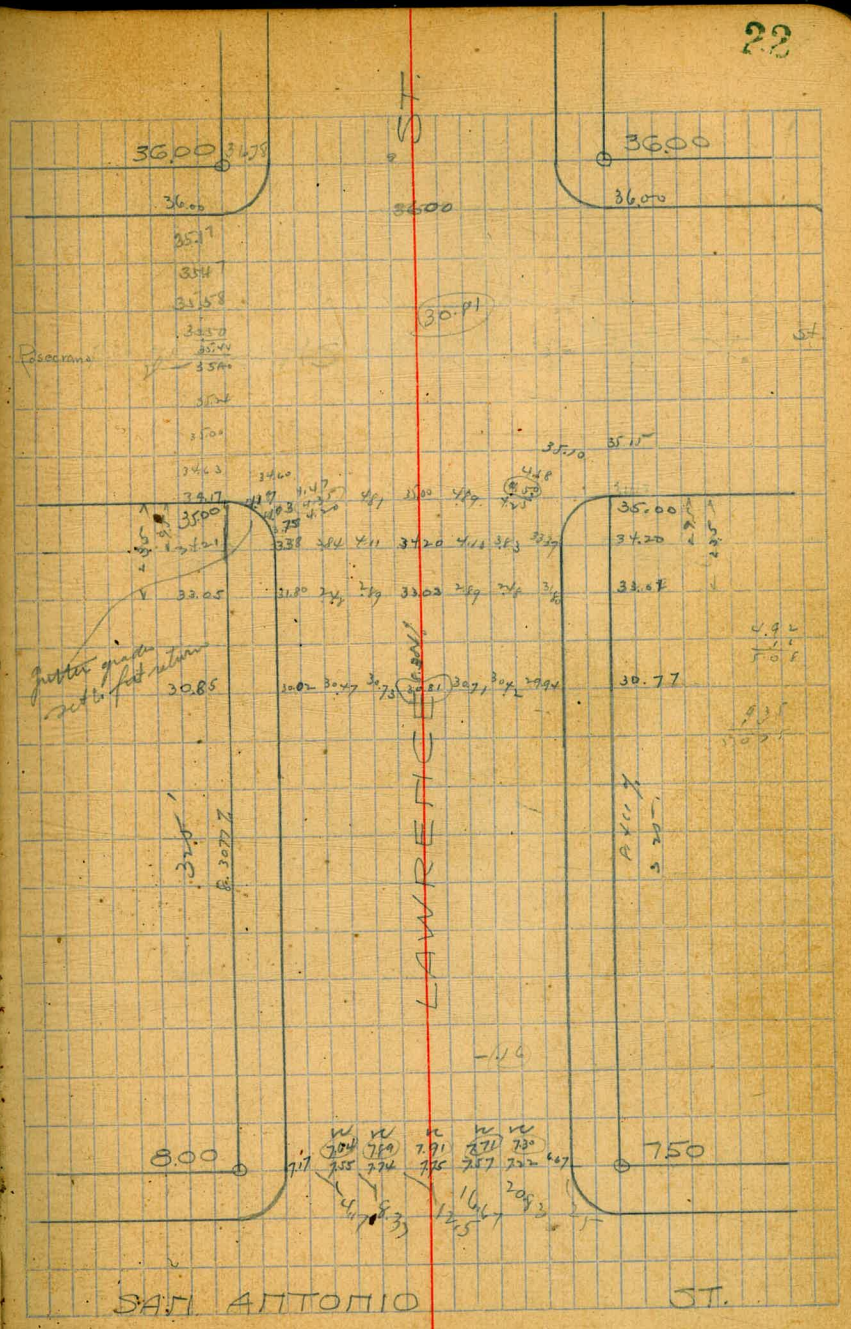

4.50
4.00
SAN ANTONIO AVENUE
3.50
3.00
MC CALL

90.07 Nail Pole SW Lawrence & ST

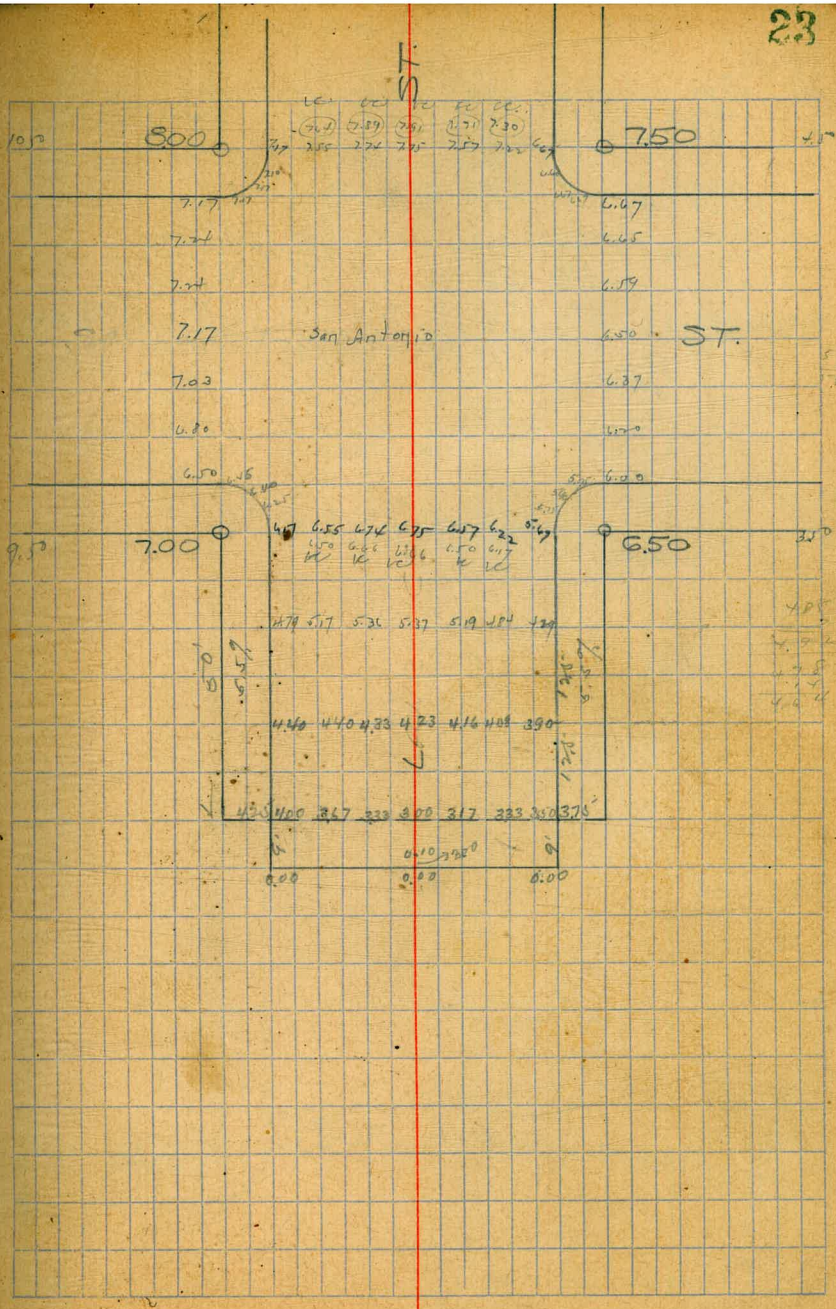


36.28 Spkpole 3 W Lawrence Rd

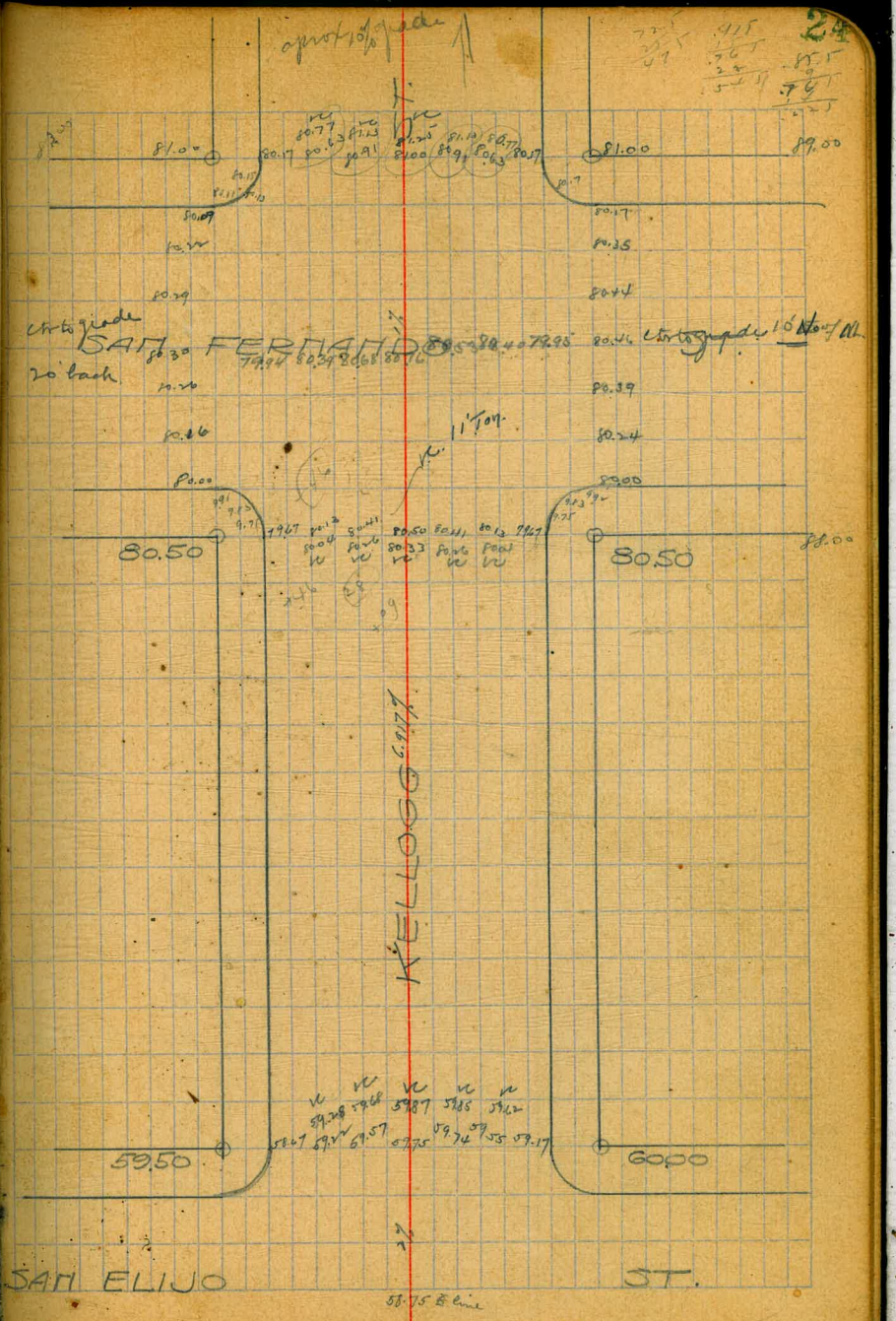



36.00
36.00
36.00
35.00
35.00
8.00
7.50
SAN ANTONIO ST.
Escarana
gutter grade set to flat return

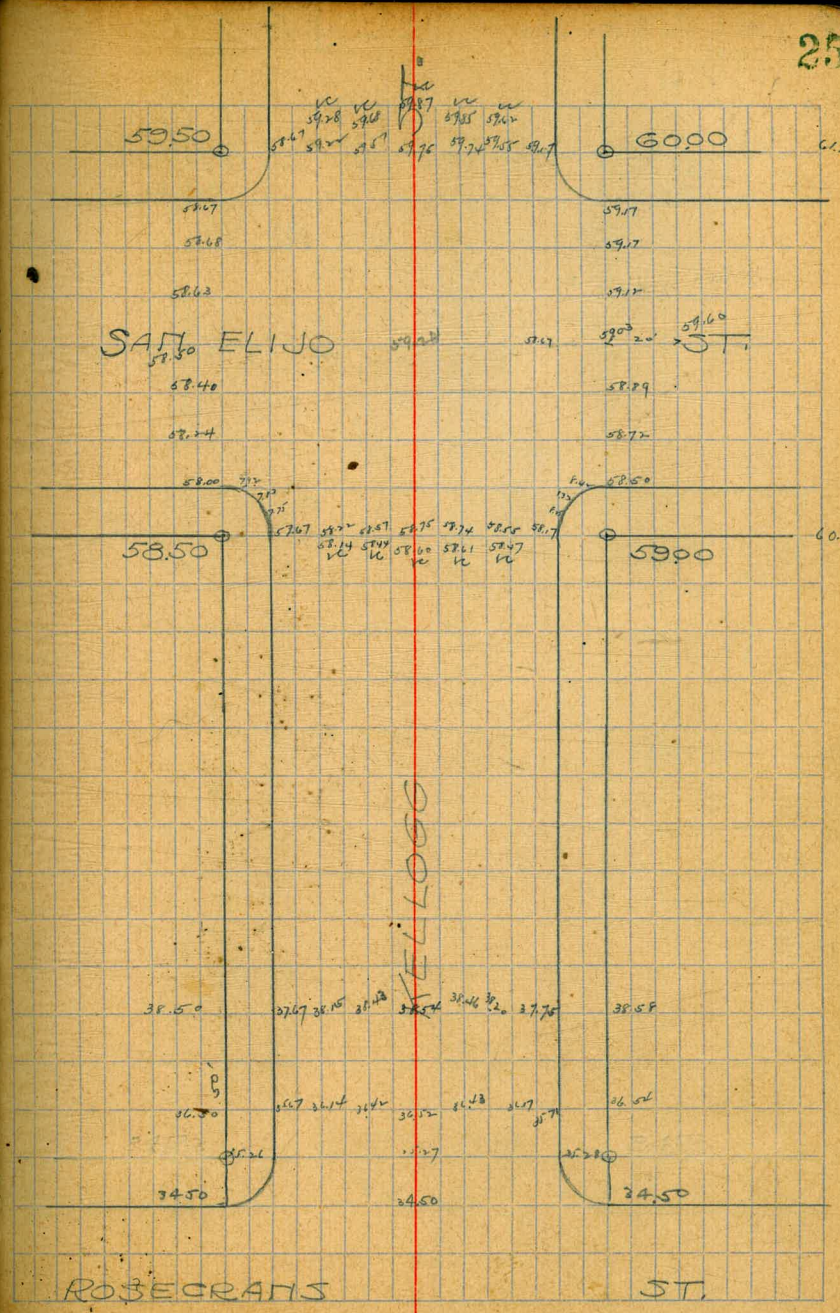
4.17


ST.
8.00
7.50
7.17
7.17
San Antonio
ST.
7.00
6.50
6.00
6.00
6.00

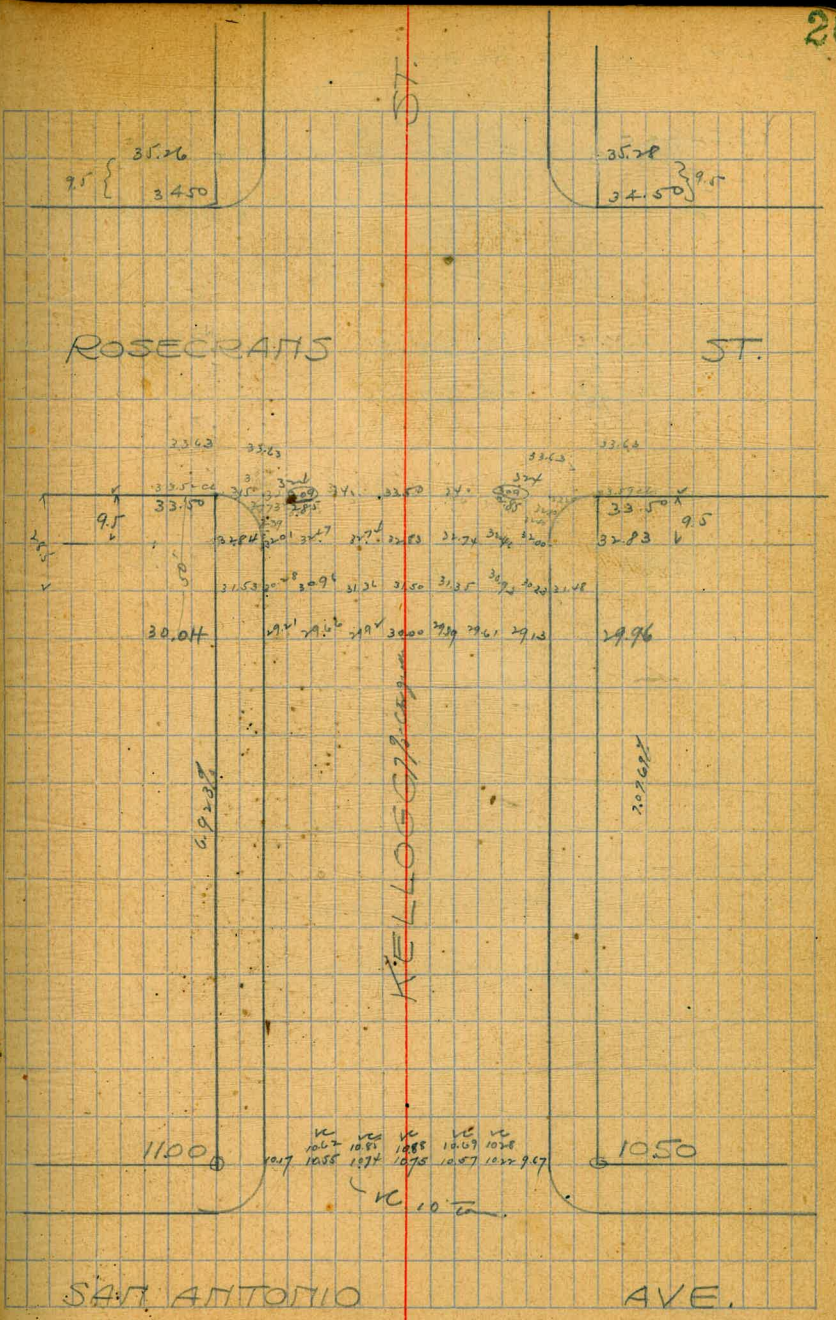
82.45 Bm Hydt Bolt x NE 5 Ft / along.



33.60 Kellogg & Rancho NE pg 14



33.60 NE Kellog & Rosecrans Pgrd



15.07 Nail pole N.W. San Antonio.

15.07 / 1.15 / 15.22 Ad

10.26 / 4.96 — 10.27 / 4.95 — 10.20 / 5.02 — 10.05 / 5.17 — 9.82 / 5.40 — 9.49 / 5.70 — 9.46 / 5.73 — 9.67 / 5.52

9.49 / 5.72 — 9.16 / 6.06 — 9.22 / 5.96 — 9.76 / 5.42 — 9.60 / 5.62 — 9.68 / 5.54 — 9.71 / 5.51

9.67 / 5.55 — 10.17 / 5.05 — 9.72 / 5.00 — 9.42 / 5.30 — 9.33 / 5.39 — 9.25 / 5.47 — 9.17 / 5.55

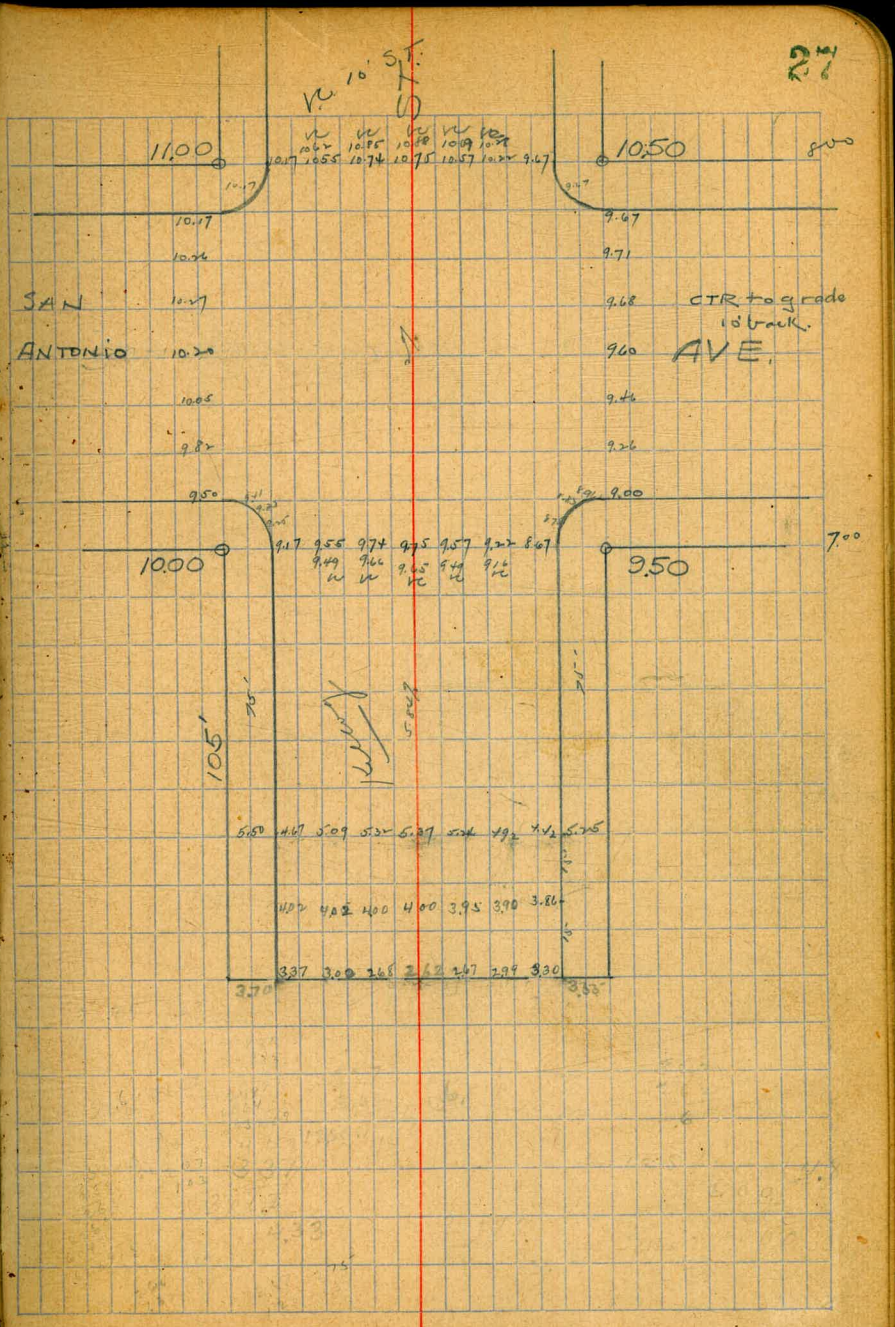
F.07 / 6.47 — 8.75 / 6.39 — 8.83 / 6.31 — 8.91 / 6.23 — 9.00 / 6.14

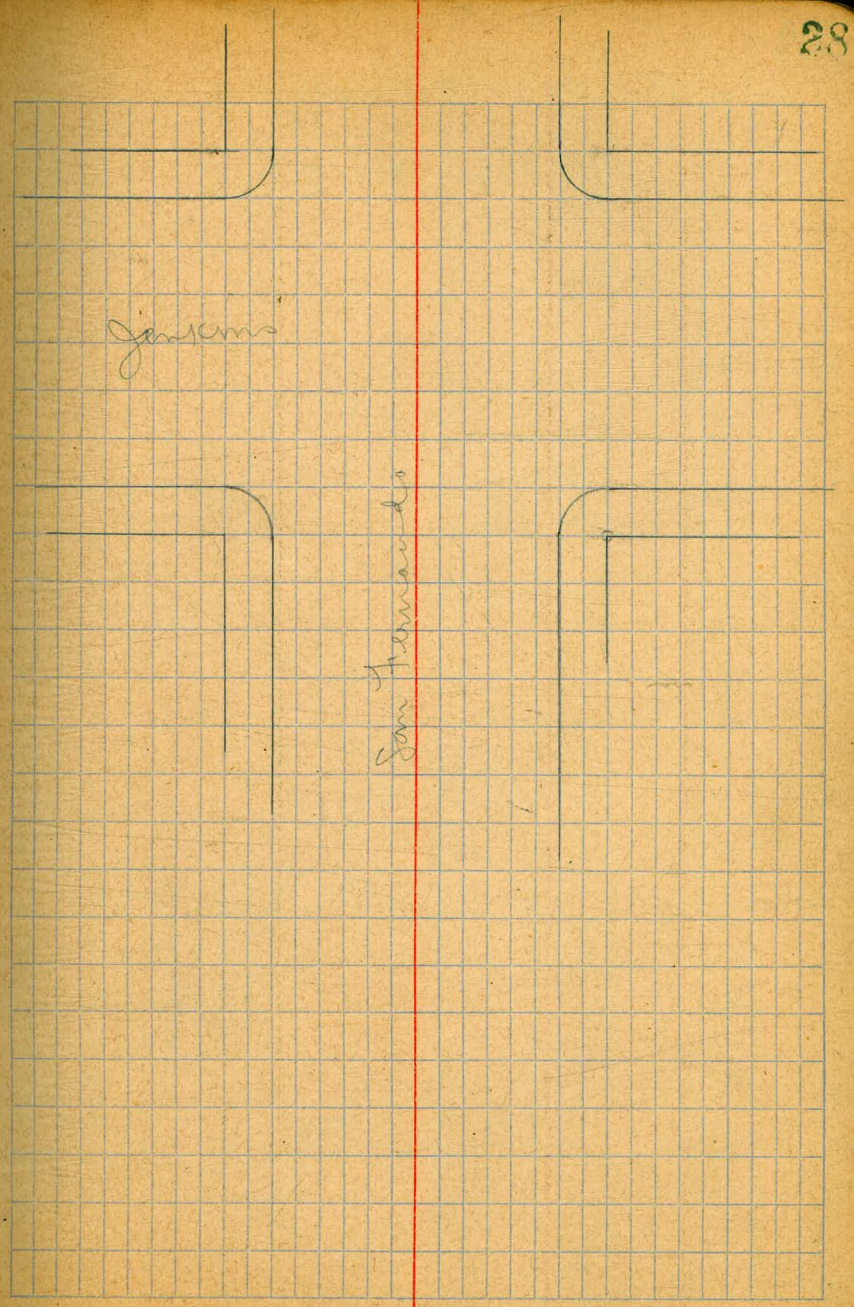
4.42 / 10.80 — 4.92 / 10.30 — 5.24 / 9.98 — 5.27 / 9.95 — 5.32 / 9.90 — 5.09 / 10.13 — 4.67 / 10.55

15.07 R.M. / -.02 / 15.05 K.I. / 4.02 / 11.03

4.00 / 11.05 — 3.90 / 11.15 — 3.86 / 11.19 — 2.99 / 12.06 — 2.62 / 12.43 — 3.00 / 12.05

3.95 / 11.10 — 3.30 / 11.75 — 2.67 / 12.38 — 2.68 / 12.37 — 3.37 / 11.68




Janeiro
Fevereiro

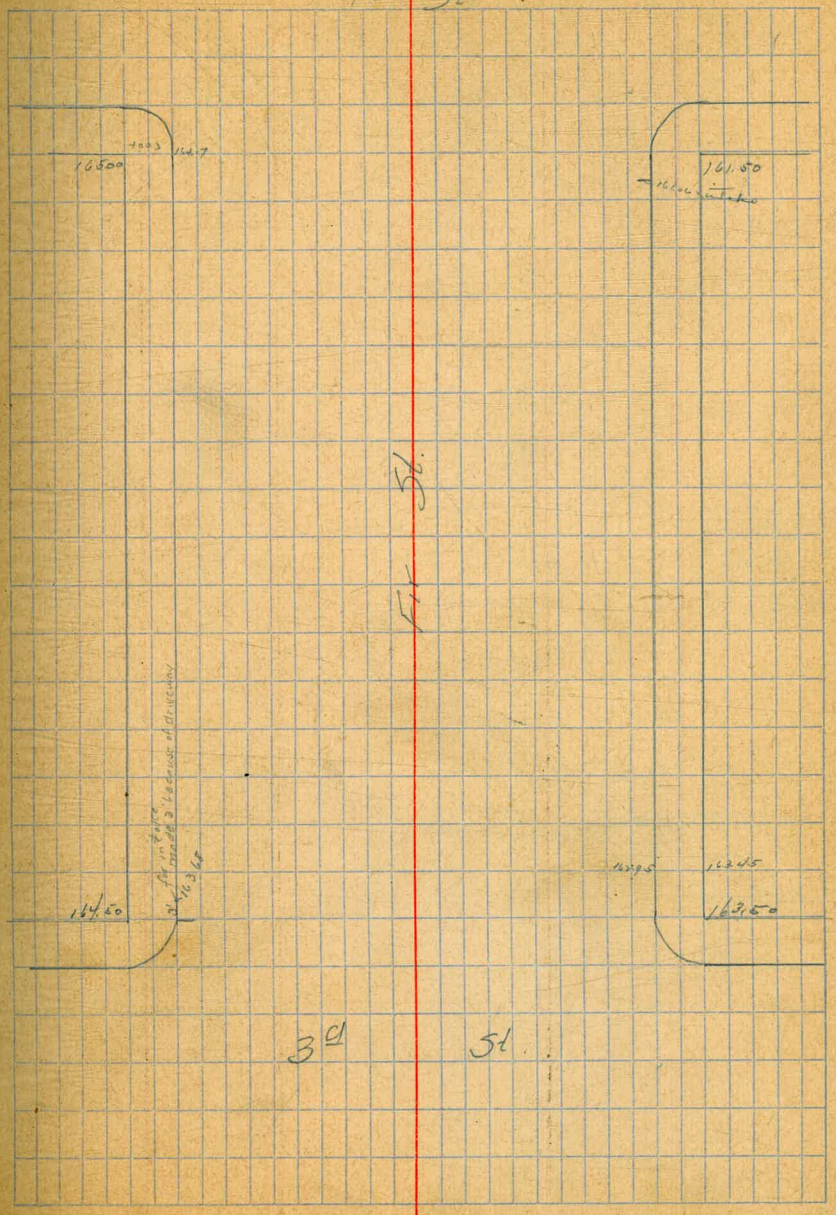
16301 N.W. 3rd & Fir Plug in ck.

5.84
168.85

4.40 5.36 7.52 3.97 4.65 7.79
164.45 163.49 161.42 164.93 164.20 161.06

163.68 164.95 5.86 163.68
5.17 5.90 168.87 5.19

Fir St Paving – 3rd to 4th St.



48.07 S.E. Rosecrans & Outer Pkg. rd

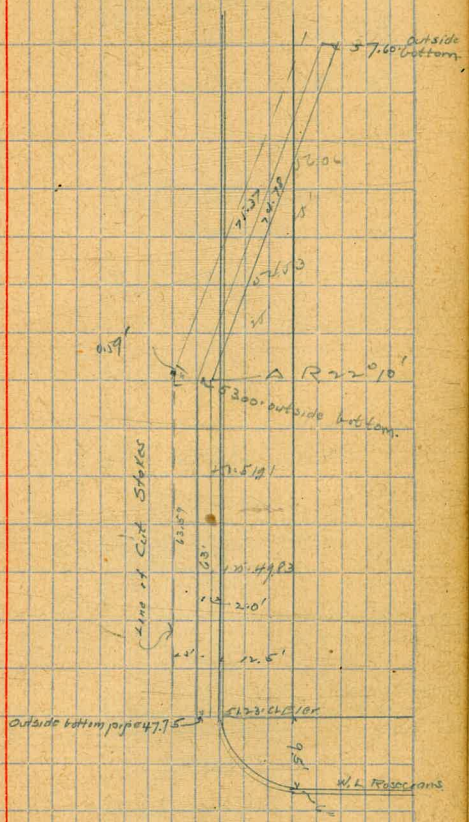
17.63 | 9.45 | 7.55 | 2.14

60.70 bk | 51.45 | 53.24 Δ 57.86 End.

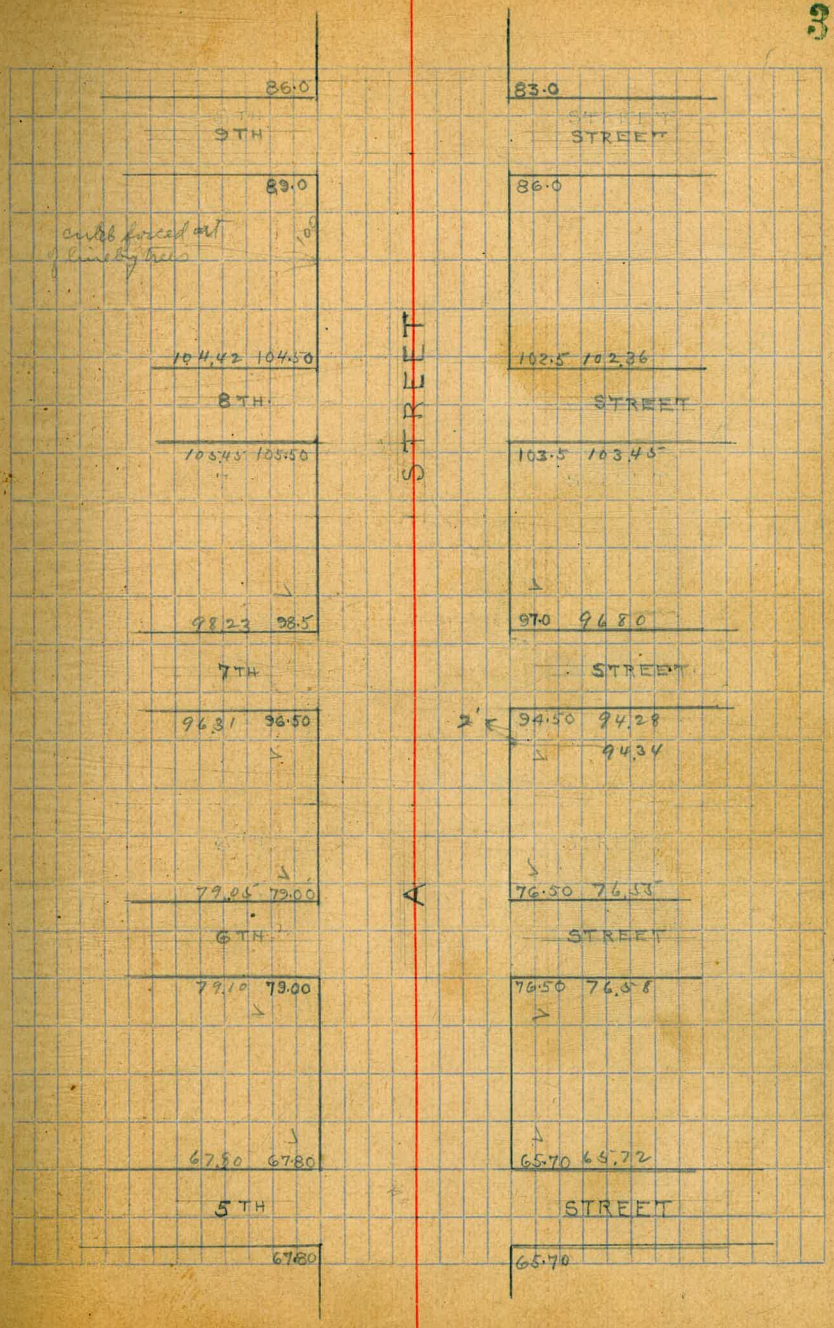
47.75

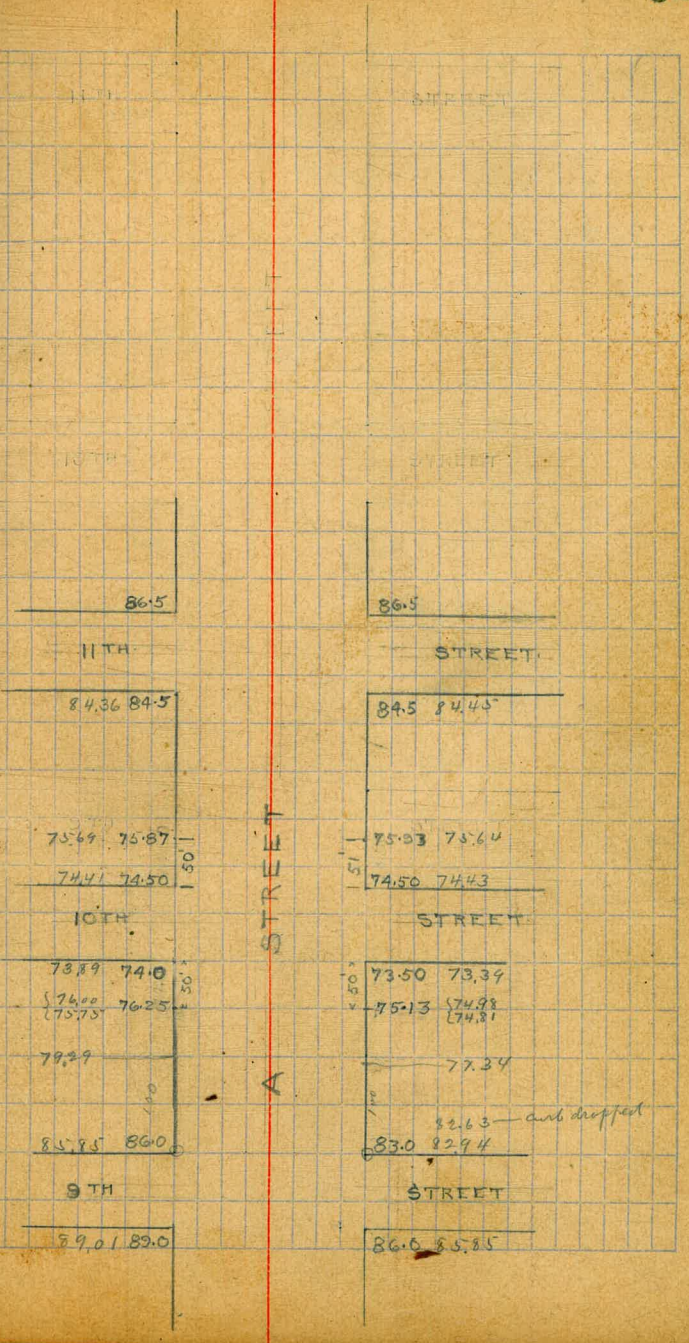
3.70

57.60	52.06	54.53	53.00	51.91	49.83
3.10	4.64	6.17	7.70	8.77	10.87
2.37	3.05	2.53	2.50	2.27	2.77
+0.78	+1.59	+0.64	+0.20	+0.57	+1.10
9.45	10.57				
51.45	50.13				

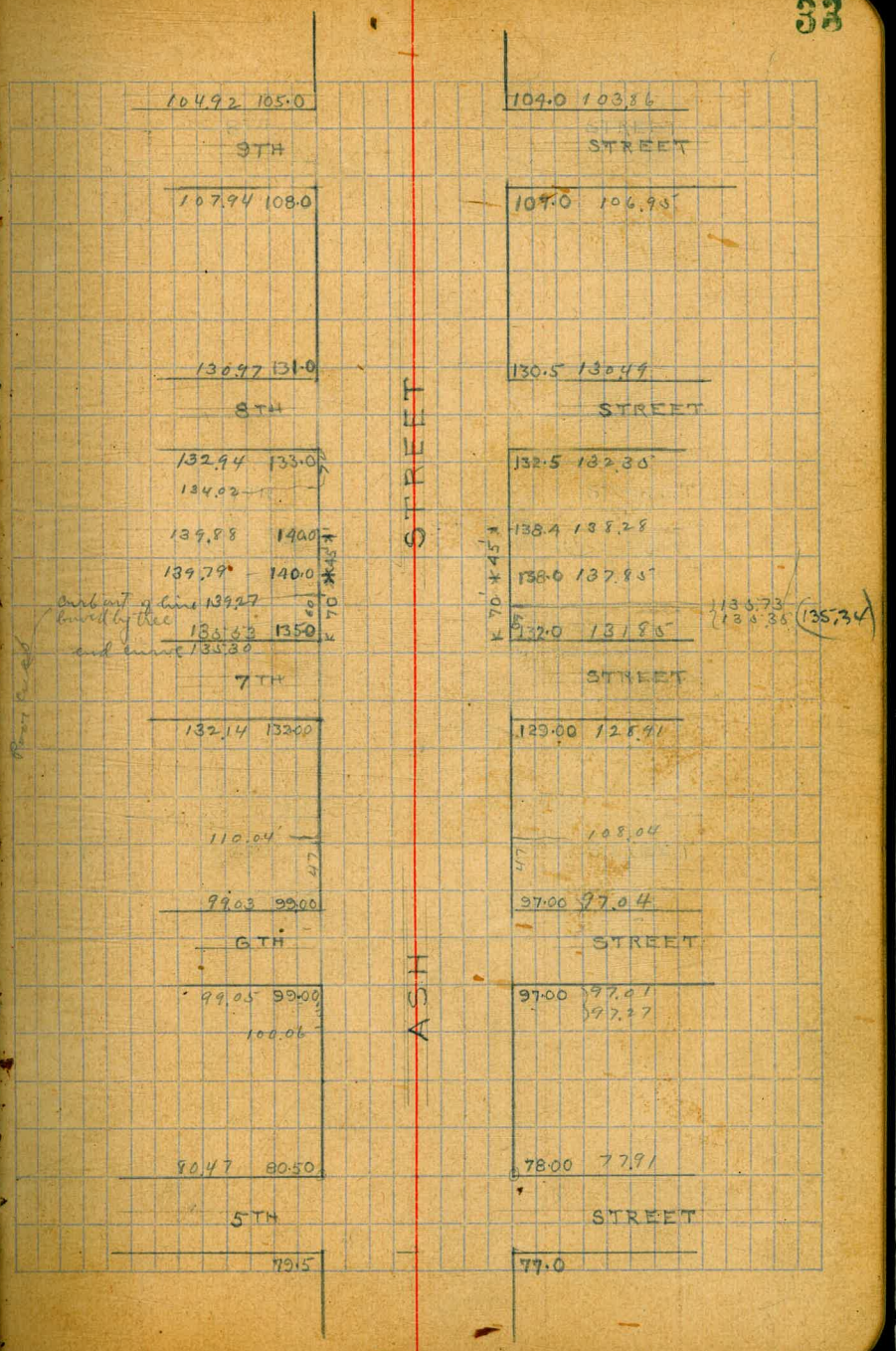


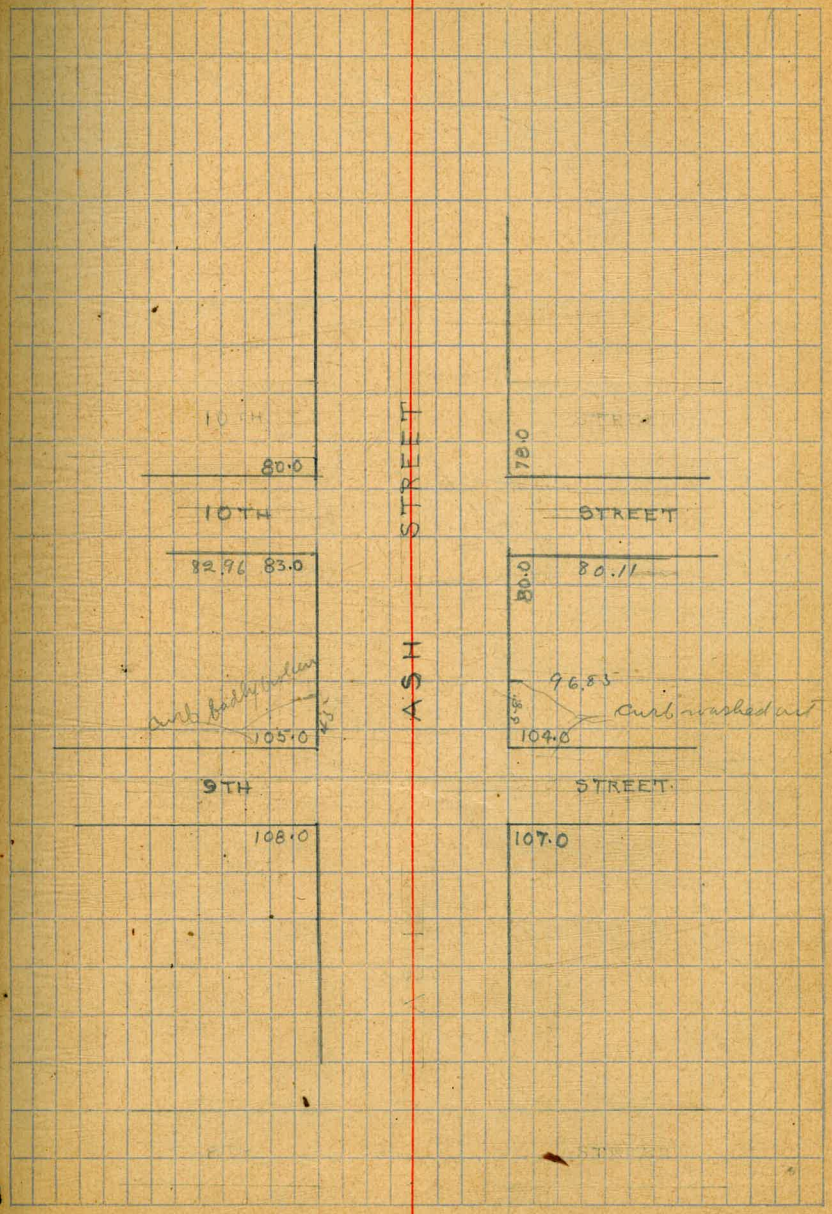
~~67.82~~	N.W	Cor	5th and A.		plug
~~81.44~~	N.W.	Cor.	6th and A		plug
98.27	N.E.	"	7th "	"	"
105.45	N.W	"	8th "	"	"
89.01	"	"	9th "	"	"
~~72.94~~	"	"	10th "	"	"



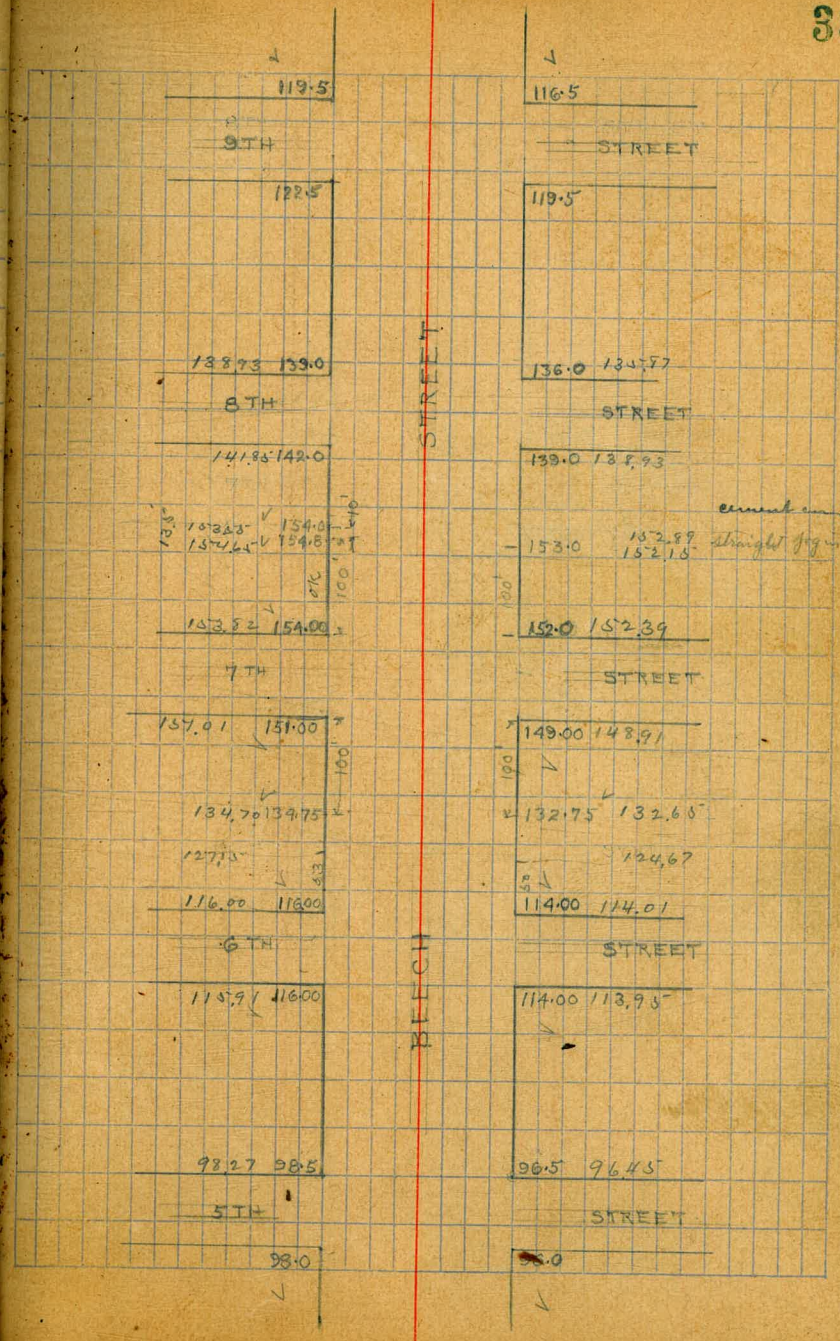

86.5
11TH
STREET
84.36 84.5
84.5 84.45
75.69 75.87
74.41 74.50
50'
75.03 75.64
74.50 74.43
51'
10TH
STREET
73.89 74.0
76.00
75.75 76.25
50'
73.50 73.39
75.13 74.98
74.81
50'
79.29
77.34
82.63 — curb dropped
83.0 82.94
85.85 86.0
9TH
STREET
89.01 89.0
86.6 85.85
STREET

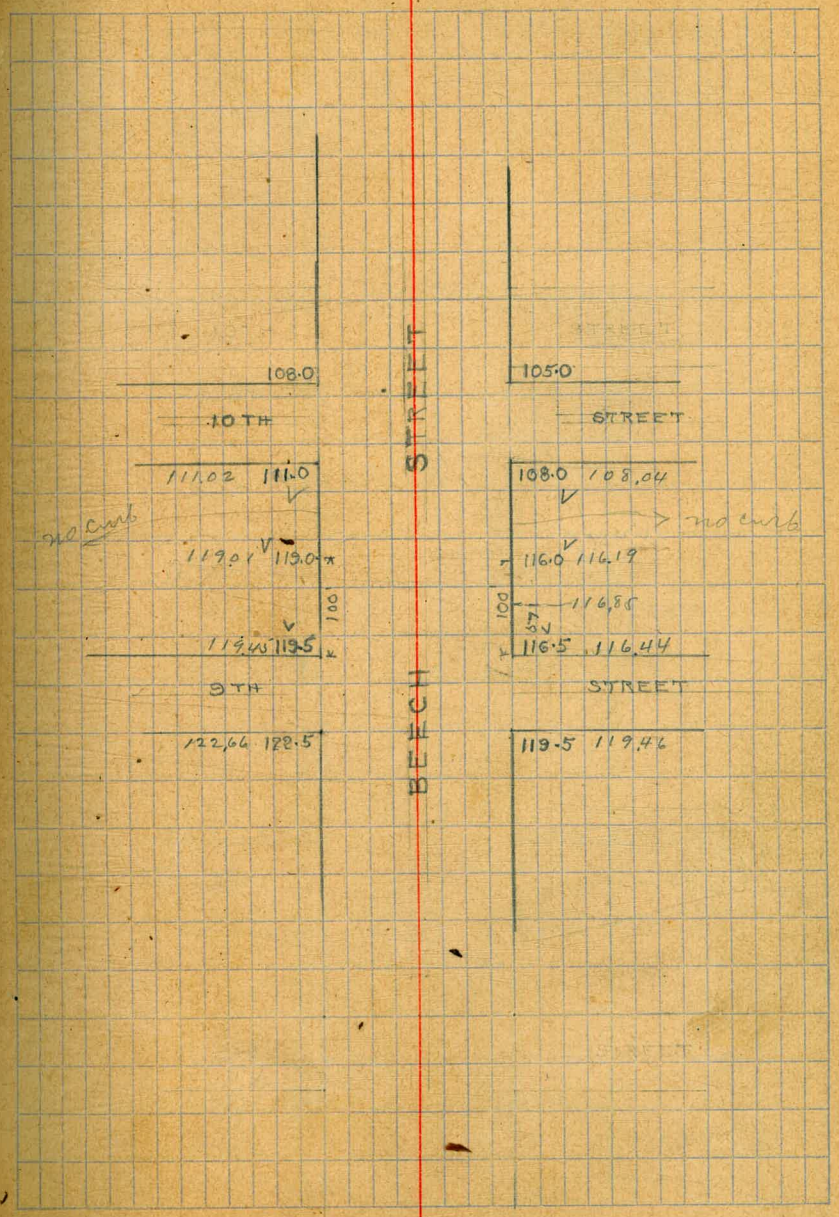
79.47	N.W.	cor	5th	+ ash	brass plug.	
103.48	N.E.	cor	6th	+ ash	brass plug.	
135.53	"	"	7th	"	"	"
130.97	"	"	8th	"	"	"
107.95	N.W.	"	9th	"	"	"
82.96	"	"	10th	"	"	"



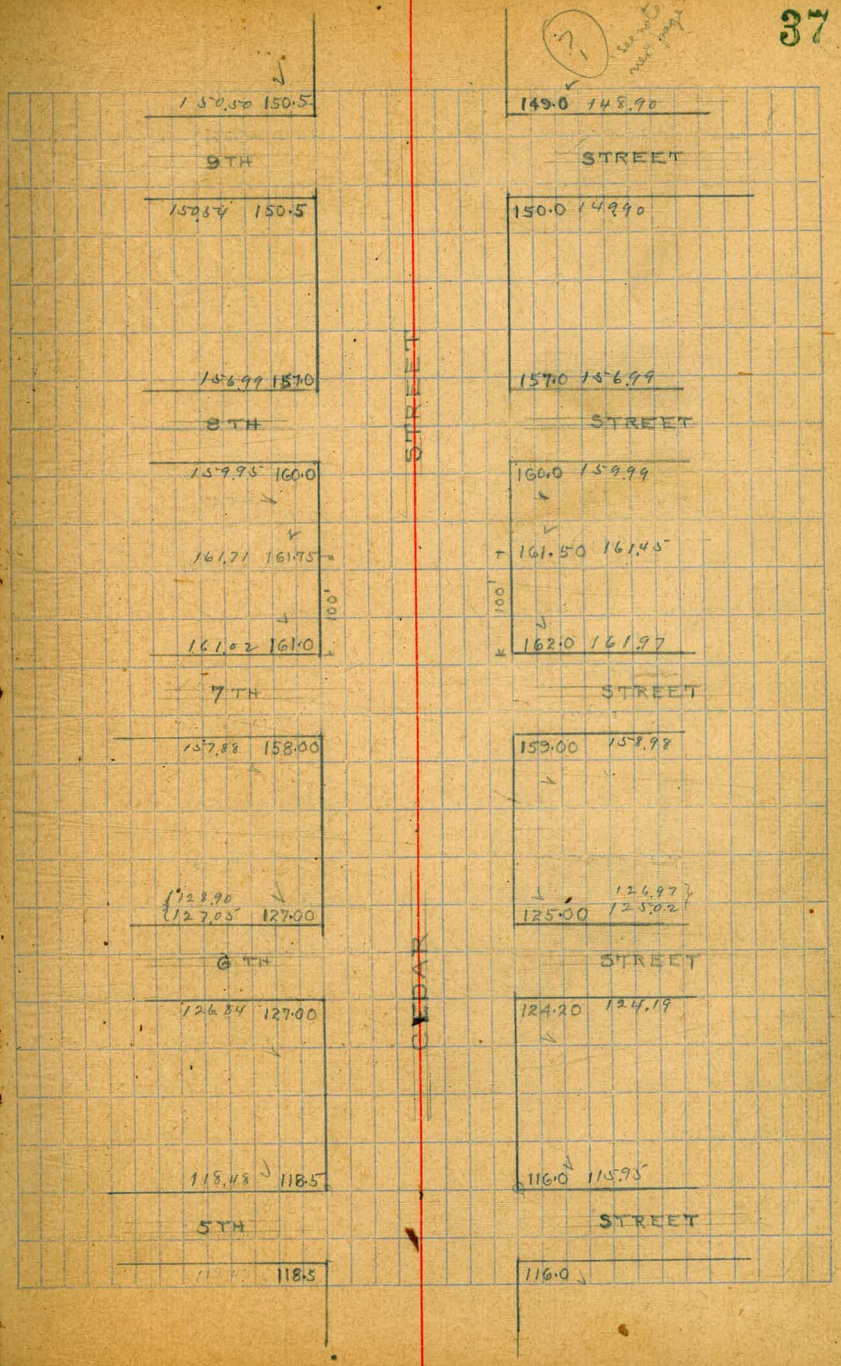

10TH
80.0
10TH
82.96 83.0
curb bad by garden
105.0
9TH
108.0
ASH STREET
78.0
STREET
80.0 80.11
96.83
curb washed out
104.0
STREET
107.0

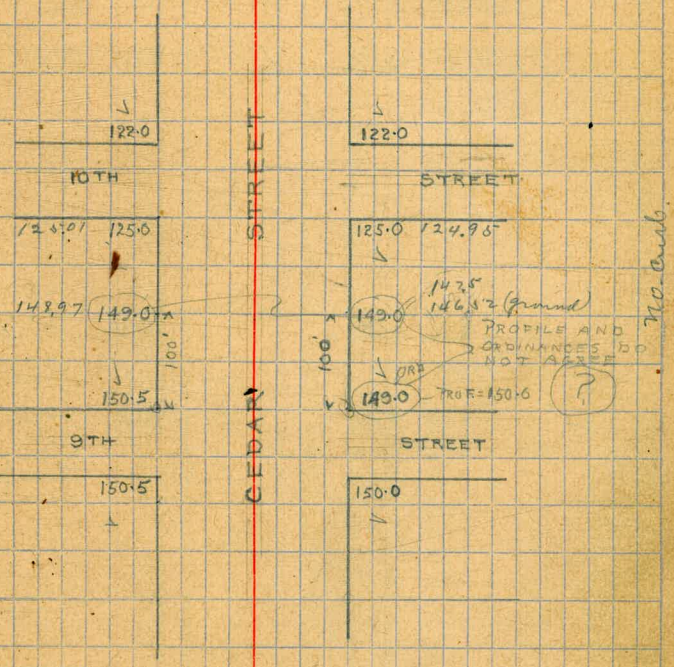
113.94	S.W. Cor.		6th	and Beech	pkg
148.91	"	"	7th	"	"
138.92	"	"	8th	"	"
119.46	"	"	9th	"	"

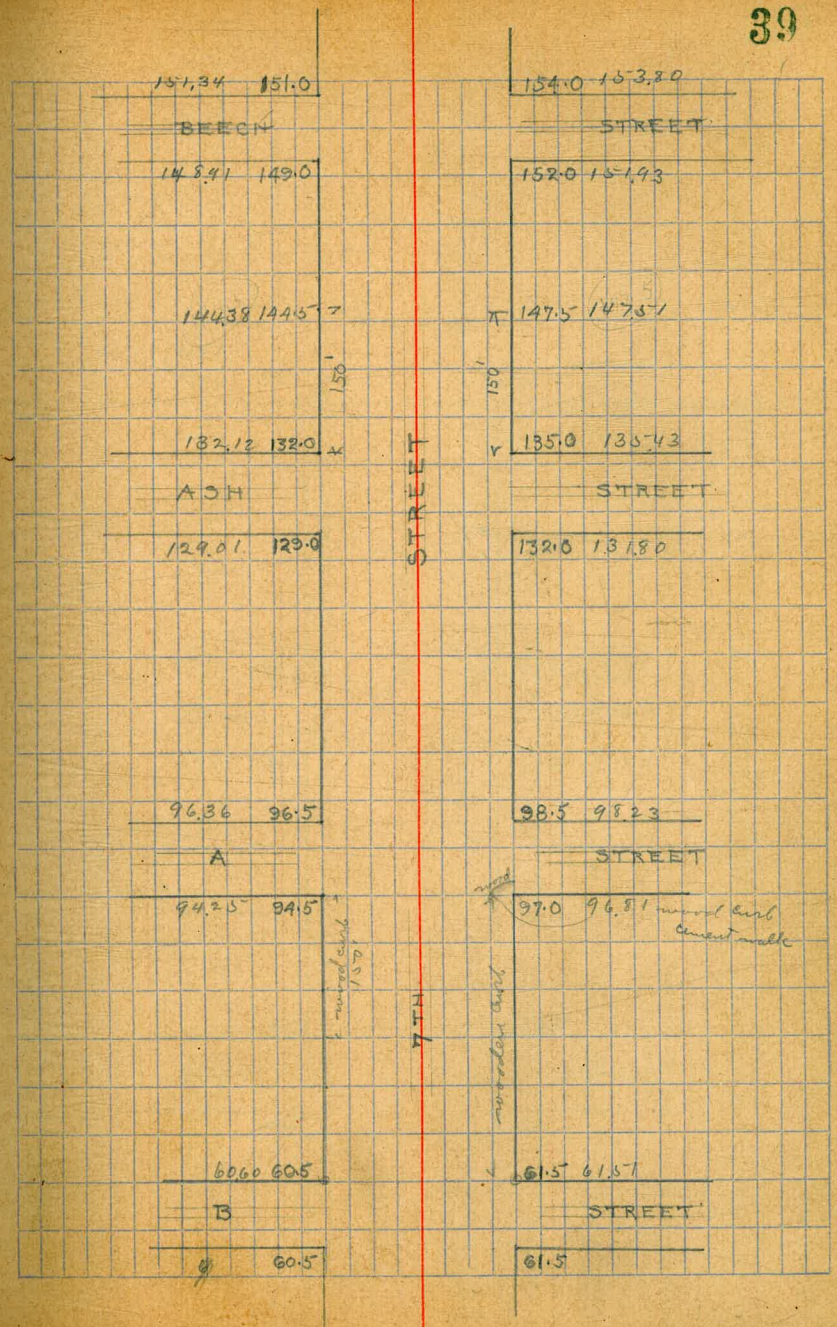


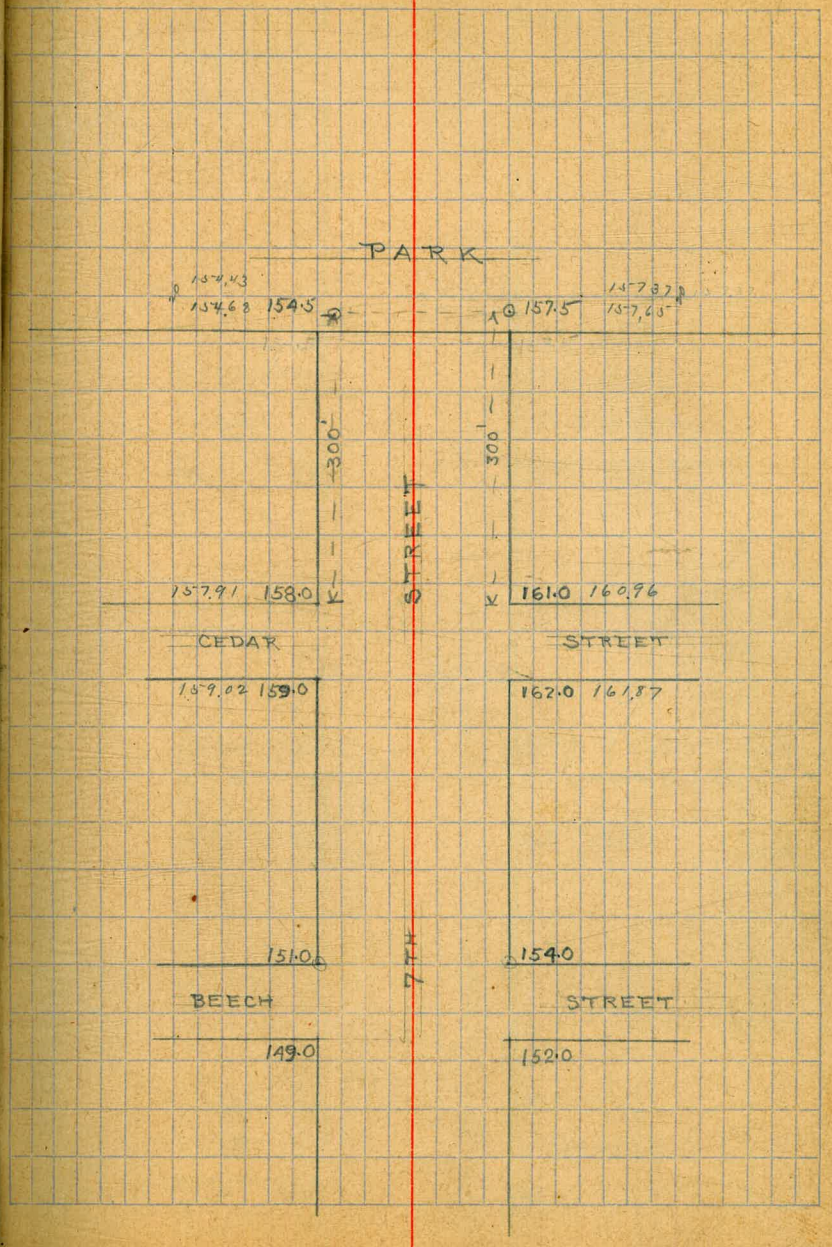

108.0
10TH
111.02
111.0
no curb
119.01
119.0
119.45
119.5
100'
9TH
122.64
122.5
BEECH STREET
105.0
STREET
108.0
108.04
no curb
116.0
116.19
116.85
100'
116.5
116.44
STREET
119.5
119.46

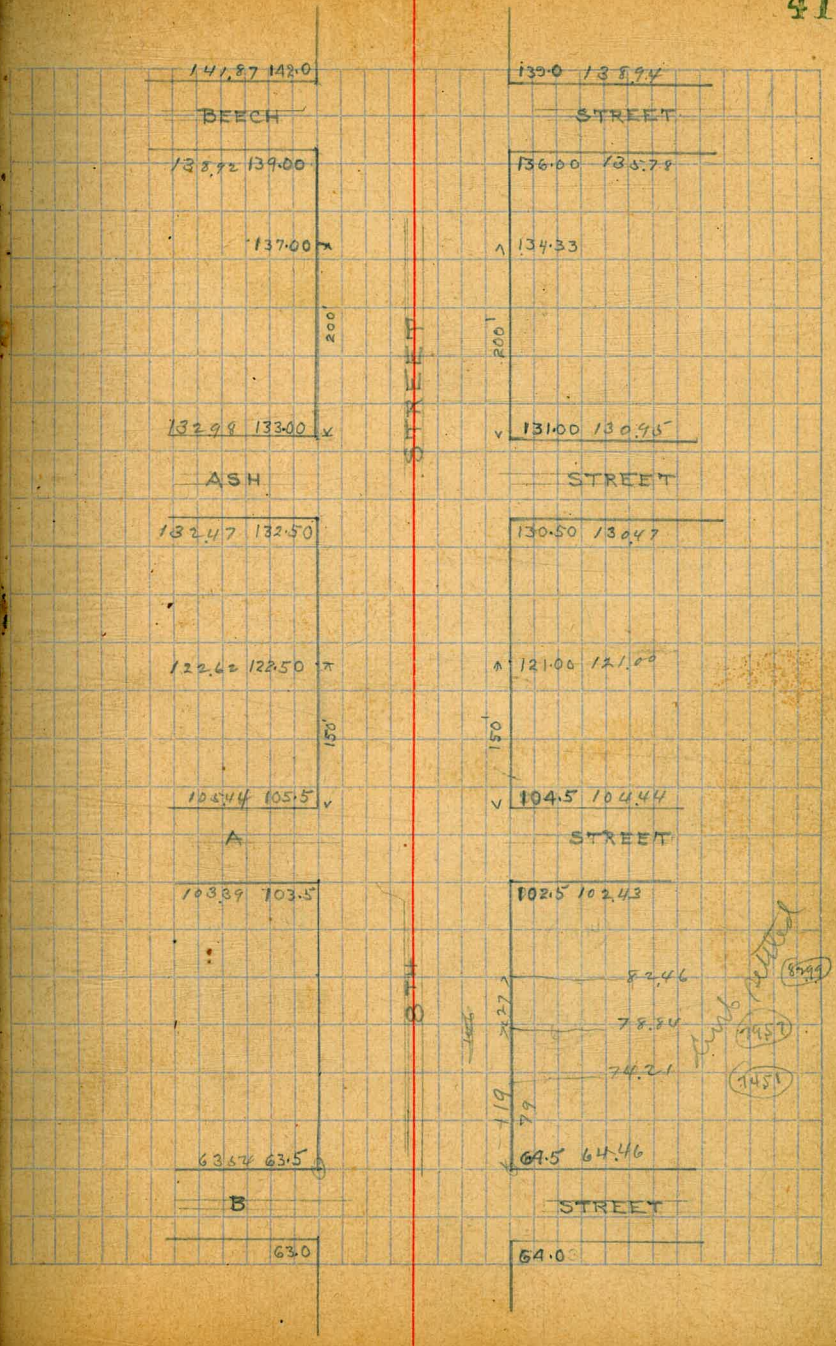
124.11	S.W. cor	6th	and Cedar plug
161.87	S.E.	7th	" " "
159.98	S.W.	8th	" " "
149.91	"	9th	" " "

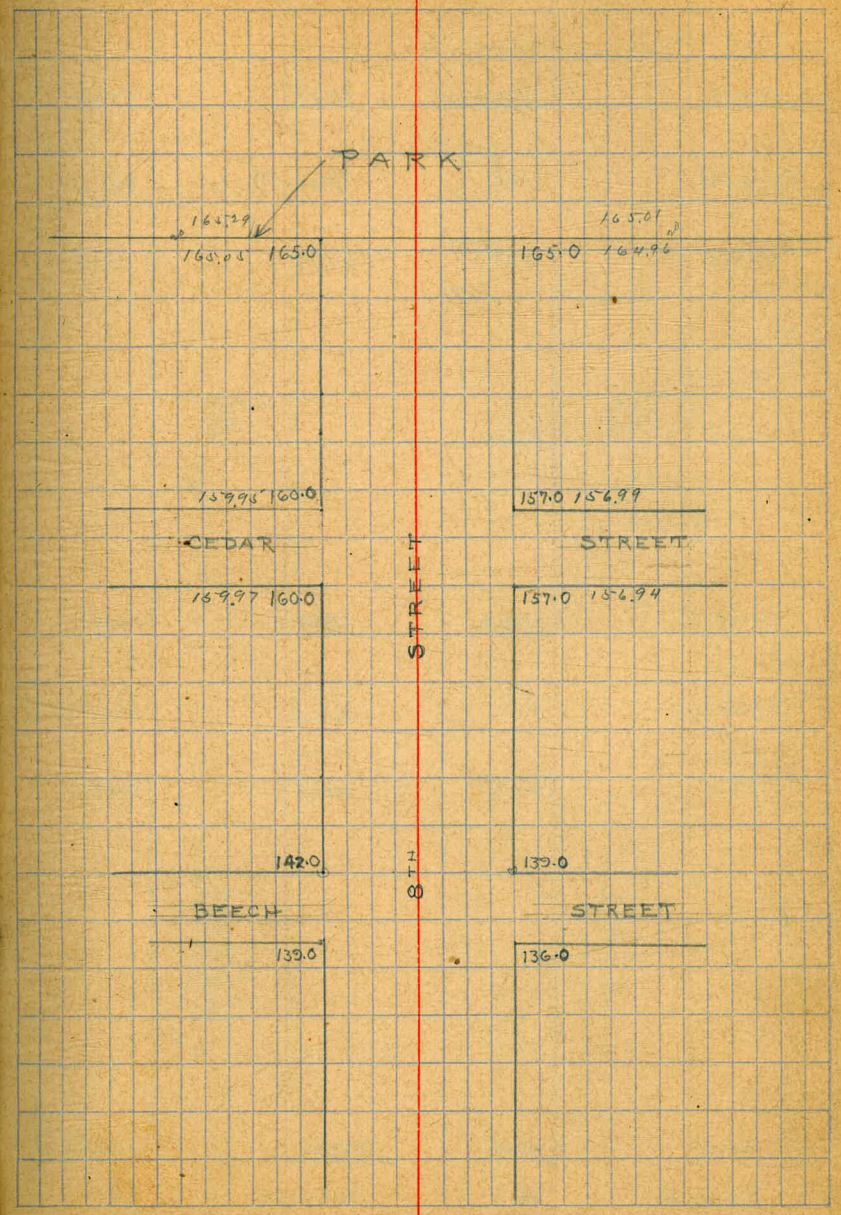


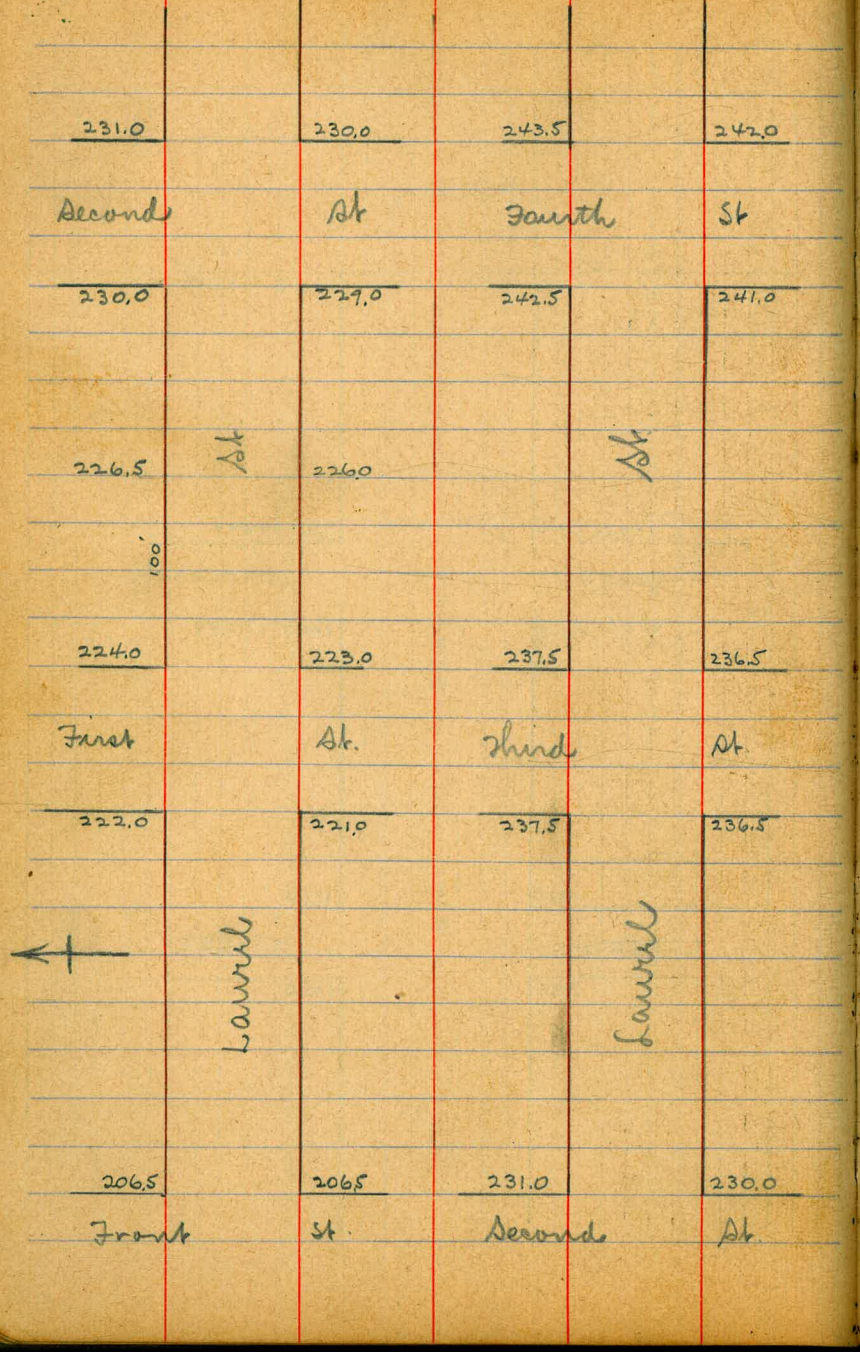

122.0
10TH
STREET
125.0
124.97
148.97
149.0
100'
150.5
9TH
STREET
CEDAR
122.0
STREET
125.0
124.96
143.5
146.5'2 (ground)
149.0
100'
PROFILE AND
ORDINANCES DO
NOT AGREE
?
ORF
149.0
PROF=150.6
STREET
150.0
Maple

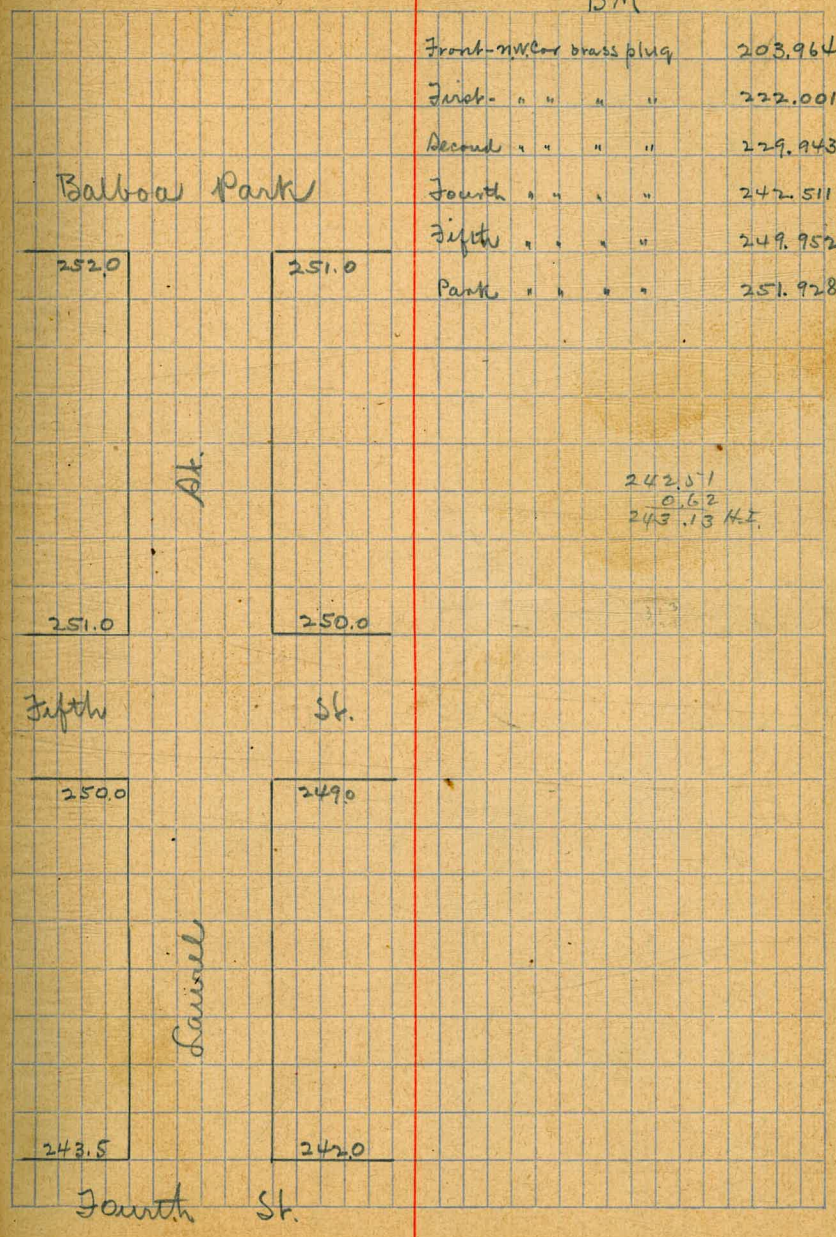

151.34 151.0
BEECH
148.91 149.0
144.38 144.5
150'
182.12 132.0
ASH
129.01 129.0
96.36 96.5
A
94.25 94.5
mixed curb
150'
60.60 60.5
B
60.5
STREET
7TH
154.0 153.80
STREET
152.0 151.93
147.5 147.51
150'
135.0 135.43
STREET
132.0 131.80
98.5 98.23
STREET
mixed
97.0 96.51 mixed curb
cement walk
mixed curb
61.5 61.51
STREET
61.5


PARK
154.43
154.68
154.5
157.5
157.87
157.65
300'
300'
STREET
157.91
158.0
161.0
160.96
CEDAR
STREET
159.02
159.0
162.0
161.87
151.0
154.0
BEECH
STREET
149.0
152.0


141.87 142.0
BEECH
138.92 139.00
137.00
200'
132.98 133.00
ASH
132.47 132.50
122.62 122.50
150'
105.44 105.5
A
103.39 103.5
63.54 63.5
B
63.0
STREET
8TH
139.0 138.94
STREET
136.00 135.78
134.33
200'
131.00 130.95
STREET
130.50 130.47
121.00 121.00
150'
104.5 104.44
STREET
102.5 102.43
82.46
78.54
74.21
227'
79'
64.5 64.46
STREET
64.0


PARK
164.79
165.0
165.0
165.01
164.96
159.96
160.0
157.0
156.99
CEDAR
STREET
STREET
159.97
160.0
157.0
156.94
142.0
139.0
BEECH
STREET
139.0
136.0





BM

Front-N.W.Cor brass plug	203.964
First- " " " "	222.001
Second " " " "	229.943
Fourth " " " "	242.511
Fifth " " " "	249.952
Park " " " "	251.928

242.51
0.62
243.13 Ht.

6+54.57 = 0+00 "A" Line

5+86.7±

1+88±1 E.C

1+60.9± PI R 10°32'

1+33.2± PC

0+00 - End existing wood pipe drain

Location of proposed Storm drain in Canon St. Roseville

from W. Line Cabrillo Terrace to Bay.

Harris
Hancock
Bellamy.

61°42½'

92°18½' → P.C. 0+00 "A" Line

℄ Willow St

10°32'

Hubs, inside edge of walk
10°32'
R 300'
T 27.65
L 55.15

PI

16.90

16.93

Canon Street

18'

W. ℄ Cabrillo Terrace

WJ↓

Existing wing walls & 24" Wood pipe

19.92

Iron pin

+23 37
17+02 37

16+71 66

9+90 16 EC

9+59 52 PI L 14°05'

9+28 71 PC

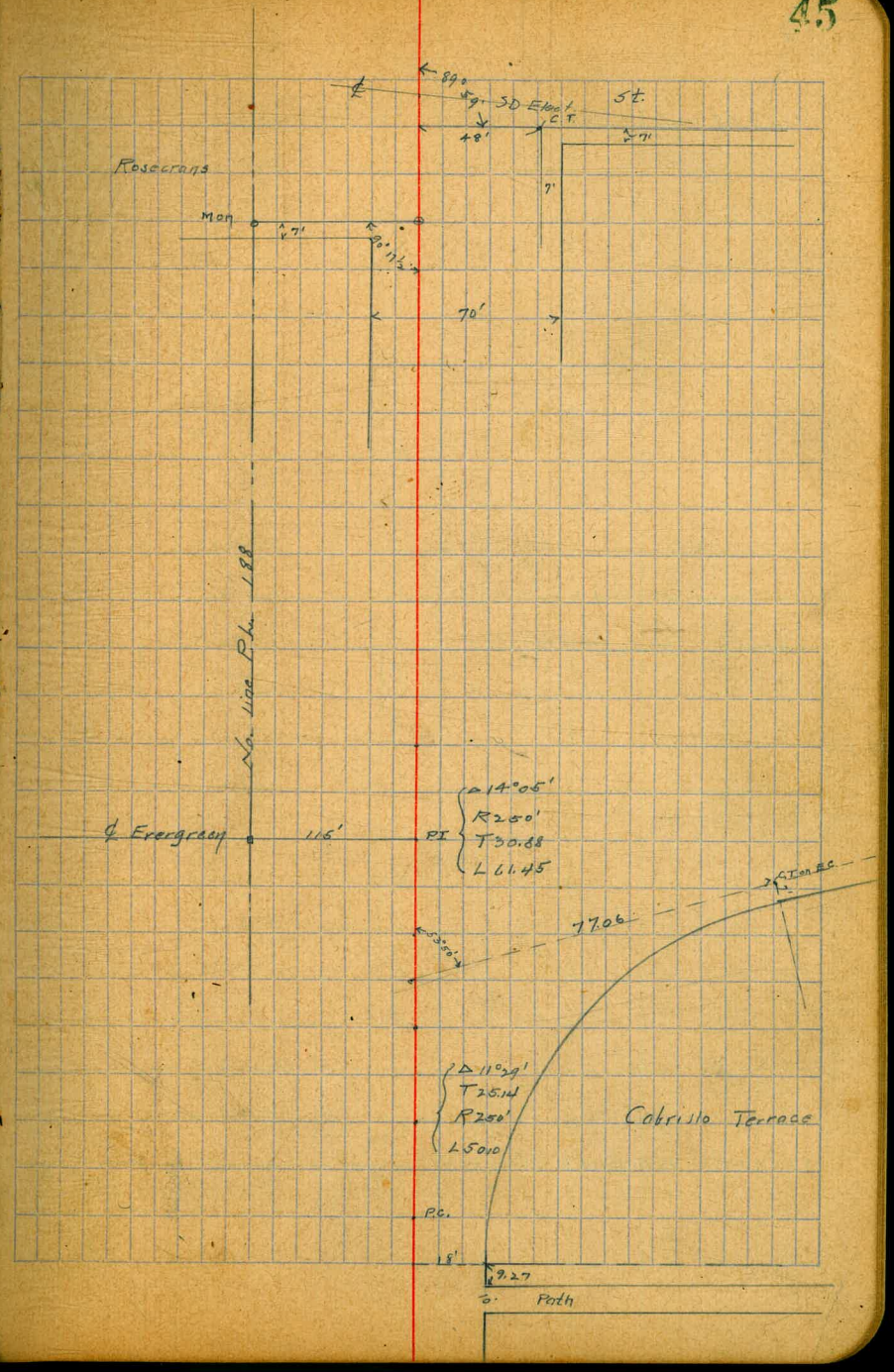
9+06 49

8+89 96 EC

8+65 PI R 11°29'

8+39 86 PC

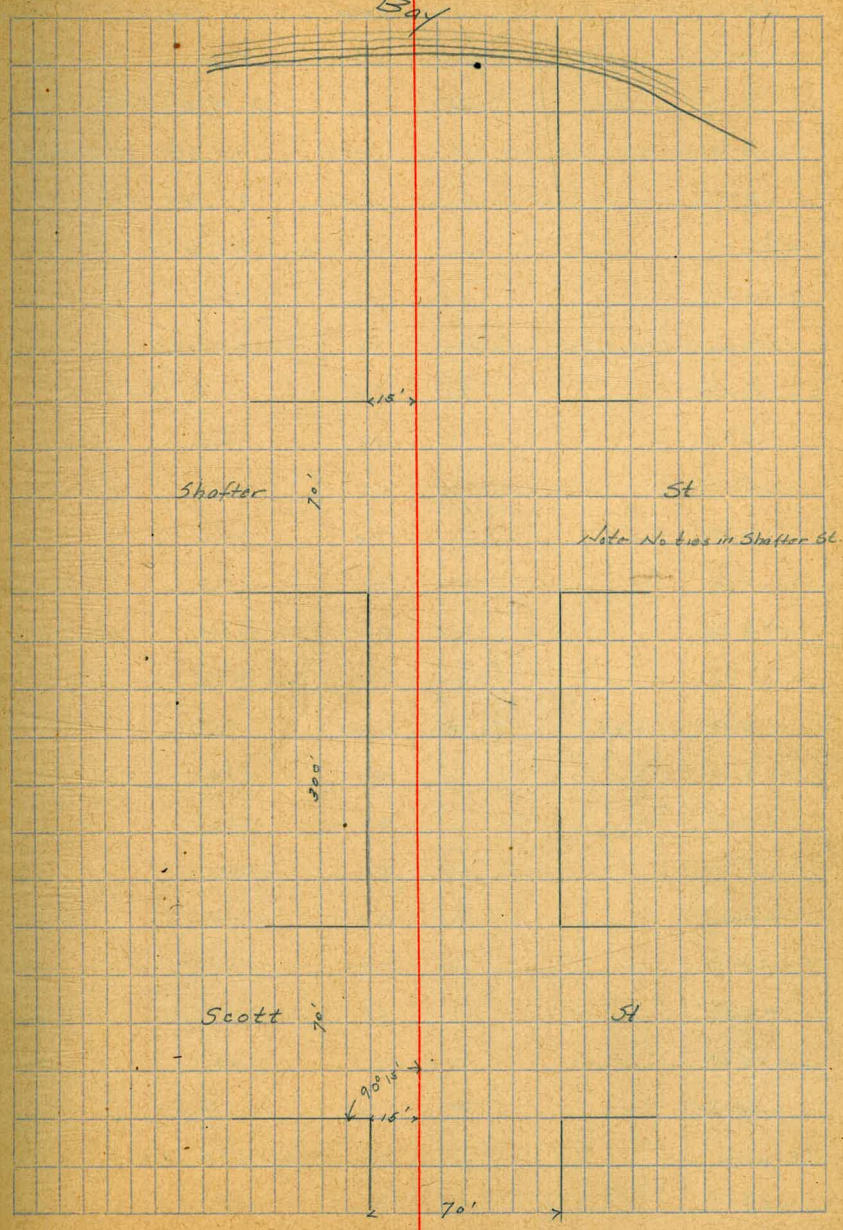
8+26 92



26+88

24+35.4 W.L Shafter St

20+65.1 W.L. Scott St



Levels over ℄ Proposed Storm drain in Cañon St. (1X Davis, 2X Hancock, 3X Bellamy)

Sta	+	H.I.	−	Elev	
	1.35	81.94		80.59	B.M. Cross on Ck. W.L.
0+00 Bottm 26" Wood pipe			8.55	73.39	Cabrillo Terrace
0+00 Top concrete Collar			4.50	77.44	
+03			1.7	80.7	
+50			3.2	78.7	
+81 Inside edge cement sidewalls			4.6	77.3	
1+00			5.4	76.5	
+12 20° Curb			5.9	76.0	
+17 20° Gutr			6.7	75.2	
+33 26 P.C.			7.3	74.6	
+50			7.6	74.3	
+88 44 E.C.			8.9	73.0	
2+00			9.4	72.5	
+50 T.P.	0.23	70.74′	11.43	70.51′	
3+00			2.1	68.6	
+50			3.7	67.0	
4+00			5.1	65.6	
+50			6.3	64.4	
5+00			7.7	63.0	
+50			9.0	61.7	
6+00			10.1	60.6	
+50 T.P.	0.47	59.59′	11.62	59.12′	
7+00			2.0	57.6	
+50			4.0	55.6	
8			6.3	53.3	
+39 23 P.C.			8.1	51.5	
+50			8.7	50.9	
+89 23 E.C.			10.9	48.7	
B.M. Pig in Ck. S.W. Cañon & Evergreen			10.08	49.51	49.51′
9			11.3	48.3	
T.P.	0.52	48.55′	11.56	48.03′	
+28 21 P.C.			1.8	46.8	
+50			3.0	45.6	
+90 44 E.C.			5.7	42.9	
10			6.3	42.3	
+50			9.2	39.4	
11			11.8	36.8	
T.P.	0.51	37.63′	11.43	37.72′	
+45			2.0	35.6	
+47			1.0	36.6	
+50			1.3	36.3	
12			3.3	34.3	
+50			4.7	32.9	
13			6.2	31.4	
+50			7.6	30.0	
14			9.3	28.3	
+50			10.9	26.7	
T.P.	1.58	27.58′	11.63	26.00′	
15			2.1	25.5	

Stg	+	27.58 HI	−	Elev.	
15+50			3.7	23.9	
16			5.2	22.4	
+15			6.4	22.2	
+50			6.7	20.9	
17			6.9	20.7	
+23.32 = ℄ S.D Elect Rd			7.5	20.1	
B.M. Pigrt S.W. Posecrnns.			6.90	20.68	20.67
+50			9.0	18.6	
+56			9.1	18.5	
+60			8.5	19.1	
+65			9.1	18.5	
18			10.1	17.5	
+50			11.1	16.5	
T.P	0.87	17.48	10.97	16.61	
19			2.4	15.1	
+35			3.6	13.9	
+37			4.6	12.9	
+60			5.0	12.5	
+55			3.8	13.7	
20			5.8	11.7	
+50			6.8	10.7	
21			7.3	10.2	
+50			8.2	9.3	
22			9.9	7.6	
+50			10.8	6.7	

	+	17.48 HI	−	Elev.
T.P	0.23	7.38	10.38	7.15
22+75			2.2	5.2
+94			2.9	4.5
23			2.4	5.0
for			3.0	4.4
+50			3.7	3.7
24			4.2	3.2
+50			5.1	2.3
25			5.6	1.8
+20			6.3	1.1
+30			5.9	1.5
+50			6.4	1.0
26			7.4	0.0
+22			7.9	−0.5
		26+50		
10' N6			6.6	0.8
6 "			8.8	−1.4
℄			8.8	−1.4
150			7.4	0.0
5"			7.1	0.3
		26+62		
15' N6			6.8	0.6
12			9.1	−1.7
8			9.2	−1.8
C			7.9	−0.5
250			7.1	0.3
5			7.1	0.3

		7.38 26+85			
14' No			7.1	0.3	
10 "			9.3	-1.9	
C			9.7	-2.3	
4 "			9.8	-2.4	
3 "			9.1	-1.7	
11 "			7.3	0.1	
15'			7.3	0.1	
		26+88			
15' No			9.5	-2.1	
C			9.8	-2.4	
15 50			9.2	-1.8	
27+00			9.8	-2.4	
+50			13.0	-5.6	

"A" Line

Location Proposed Storm drain from Cañon St to Emerson St to Bay.

12/17/17 Doris Hancock

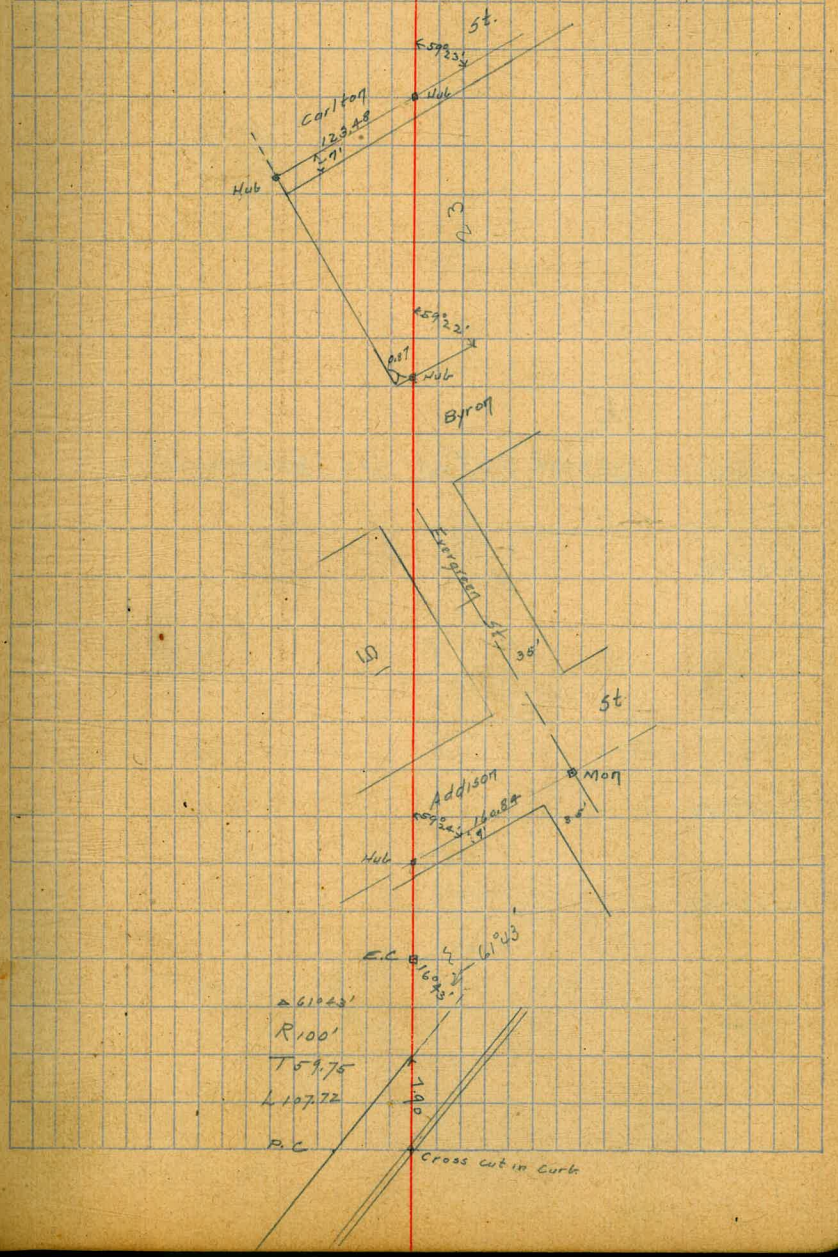
8+35.84

5+95.30

2+08.69

1+07.72 EC

0+00 P.C. = 1+54.57 Cotton St Line



14+45.25 PI See book 1065-41 for continuation

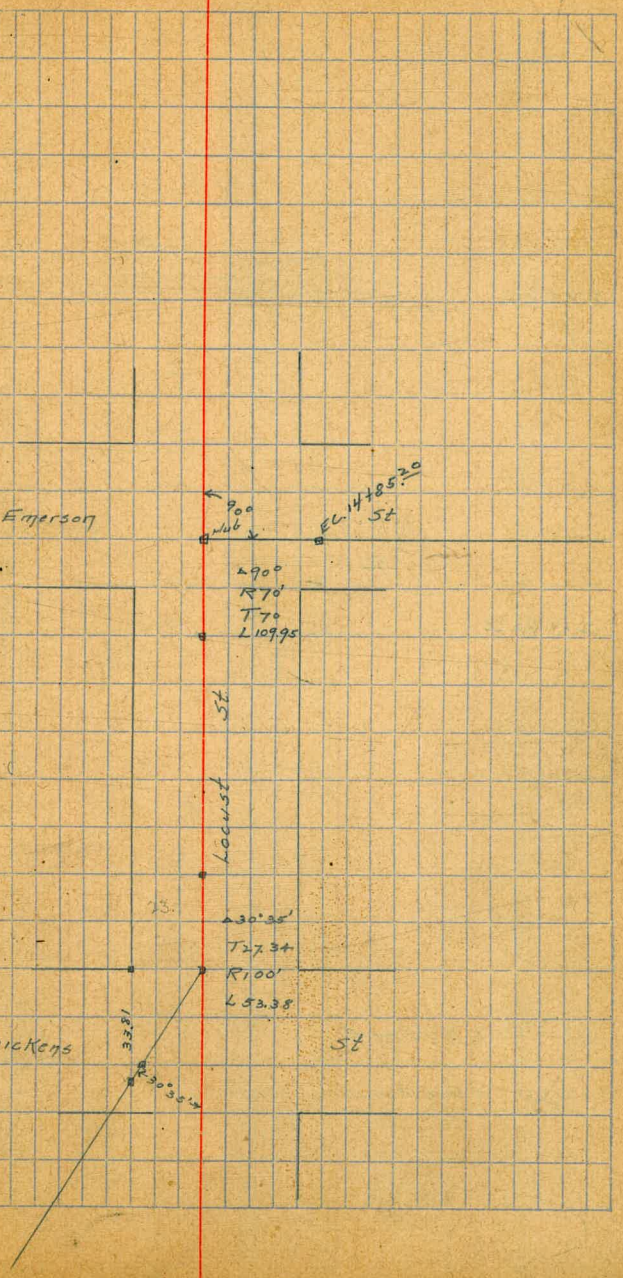
13+75.25 PC

12+54.73 EC

12+28.69 PI

12+01.35

11+83.48

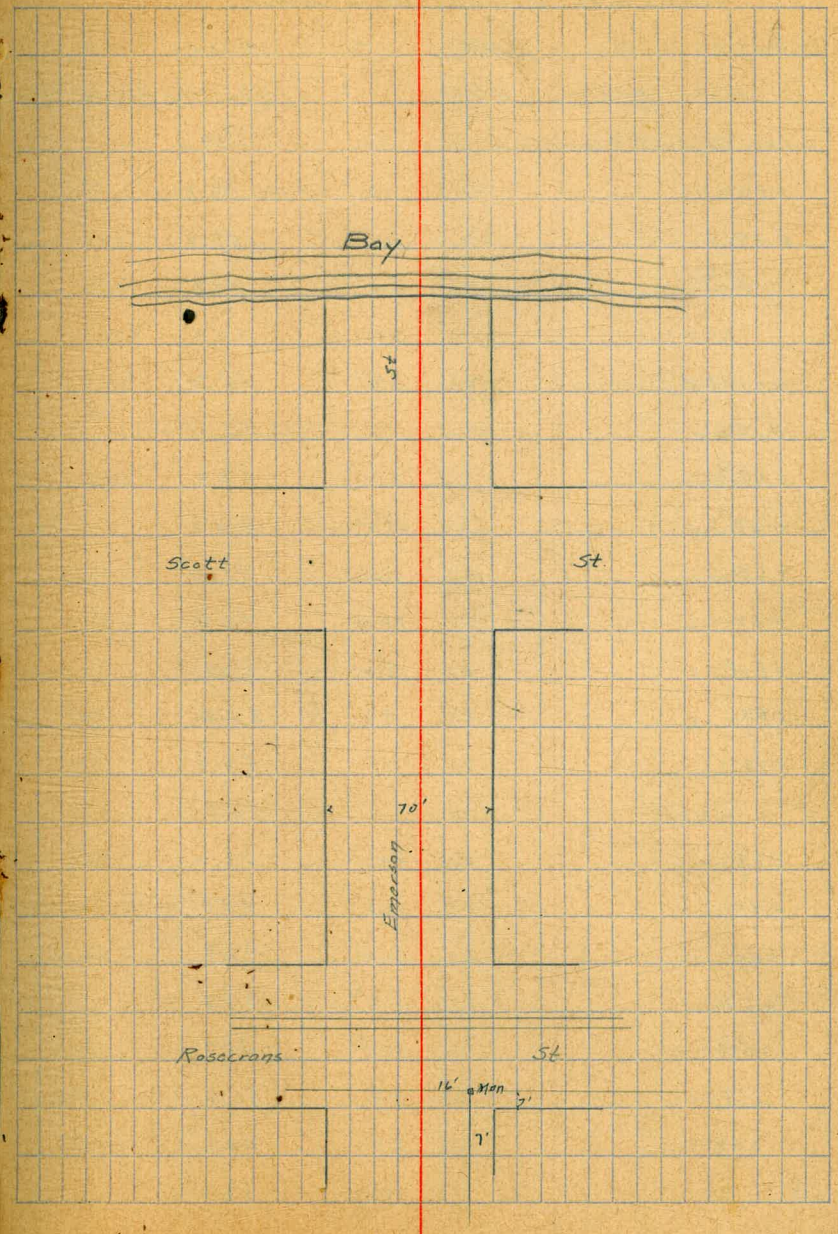


xx+83

21+62 16

18+20 Lo = ℄ SD Electric

17+69 16 = 7' Line Rosecrans



Levels over "A" Line Storm Drain

Sta	+	HI	−	Elev
	9.58	5909		49.51 - Plg Ch. Cement Encg Pipe
0+00. PC. 6+50 ST Canon Line			0.1	59.0
+25			0.6	58.5
+50			1.3	57.8
+75			2.3	56.6
1			3.8	55.3
+072.22 E.C.			3.9	55.2
+50			5.6	53.5
+59			6.1	53.0
+61			15.2	43.9
+66			17.4	41.7
+80			18.2	40.9
+81.7			8.2	50.9
+87			7.7	51.4
+89			6.6	52.5
2			6.8	52.3
+37			9.9	49.2
+43			16.3	42.8
+45			12.2	46.9
+50			11.6	47.5
+52			10	48.7
+58			8.9	50.2
+95			11.0	48.1
3			9.8	49.3

5909

	+12		9.9	49.2
	+15		10.8	48.3
	+20		10.0	49.1
T.P.	0.23	47.74	11.58	47.51
	+34		14	46.3
	+50		26	45.1
	+76.5		6.0	41.7
	+84		13.1	34.6
T.P.	0.84	37.70	10.88	36.86
	+97		6.8	30.9
4			6.9	30.8
	+21		7.3	30.4
	+25		5.6	32.1
	+27		5.6	32.1
	+27		6.9	30.8
	+50		7.7	30.0
5			8.5	29.2
	+50		9.3	28.4
6			9.9	27.8
	+50		10.6	27.1
7			11.5	26.2
	+35		11.8	25.9
	+40		10.0	27.7
	+50		10.2	27.5
8			11.8	25.9

		HI 37.70		
T.P	1.66	37.88	11.48	26.22
8+30			37	24.2
+50			36	24.3
9			46	23.3
+08			47	23.2
+13			2.0	24.9
+25			2.9	25.0
+50			5.3	22.6
10			7.2	20.7
+05			8.1	19.8
+50			8.7	19.2
+66			9.6	18.3
11			10.2	17.7
+50			10.8	17.1
T.P	1.26	18.32	10.82	17.06
12			2.1	16.2
+01.35 P.C.			2.1	16.2
+25			2.7	15.6
+54.73 E.C.			3.0	15.3
13			3.4	14.9
+50			4.3	14.0
+75.55 P.C.			4.9	13.4
14			5.3	13.0
+25			5.8	12.5
+50			6.4	11.9

See Book 1065 for notes

		18.32	
+75	6.7	11.6	
+85.20 E.C.	7.1	11.2	
15	7.4	10.9	
+50	8.1	9.9	
16	10.0	8.3	
T.P 2.11	10.68	9.75	8.57
+50	3.5	7.2	
+55	4.1	6.6	
17	4.2	6.5	
+20	3.3	7.4	
+50	3.6	7.1	
+70	5.6	5.1	
+76	5.7	5.0	
+82	7.0	3.7	
18	6.0	4.7	
Hole K.R.	6.0	4.7	
+28	6.5	4.2	
+33	3.7	7.0	
+40	5.1	5.6	
+50	5.3	5.4	
+55	5.9	4.8	
+82	5.1	5.6	
19	6.1	4.6	
+21	7.2	3.5	
+50	7.4	3.3	

		14 10.68		
20			7.9	2.8
+50			8.3	2.4
T.P	330	5.86	8.1 r	2.56
x1			3.6	2.3
+50			4.4	1.5
+8 r			5.1	0.8
+8 l			5.8	0.1
x r			5.3	+0.6
+13			6.0	-0.1
+14			5.5	+0.4
+50			6.2	-0.3
+80			6.8	-0.9
83			7.5	-1.6
x3			9.9	-4.0
+25			11.2	-5.3
+50			12.0	-6.1

328 book 1065.4

3/20/85 Gregory

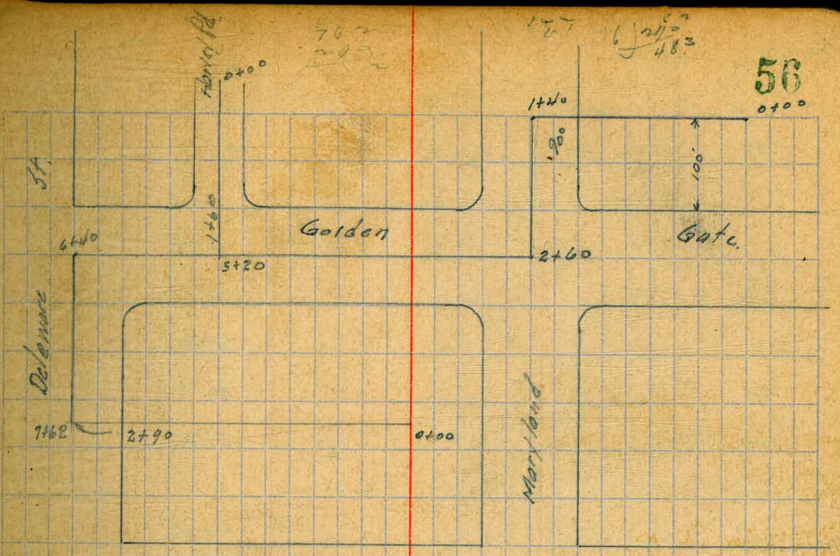
Sewer Construction
In Blks B-G-D
N. of Madison E. & W. of Maryland

				SW Maryland & Madison
140' E of ℄ of Maryland ℄ 4+78	351.76		346.98	
& 100' N. of N.L Golden Gate = 0+00		3.32	348.44	344.0
0+46.67		3.53	348.23	
0+93.33		4.30	347.46	
1+40 = M.H. & Maryland Δ 90° L Drop		6.15	346.61	341.5 340.66
1+00		5.70	346.06	
1+60 = M.H. & Golden Gate Δ 90° R		5.17	346.59	340.0
3+12		4.25	347.51	
3+64		4.42	347.34	
4+16		5.18	346.58	
4+68		5.43	346.33	
5+20 = M.H. & Harvey Rd.		5.68	346.08	338.56
5+80		6.83	344.93	
6+40 = M.H. & Delaware Δ 90° L Drop		7.83	343.93	337.9 338.2
7+01		7.48	344.28	
7+62 = 8" S. of ℄ of BLK.		7.62	344.14	339.66

Sewer Construction 8" S. of ℄ of BLK.

Det. Madison & Golden Gate E. of Delaware.

50' W. of W.L. Maryland & 98' N. of N.L Madison = 0+00		3.61	348.15	343.5
0+48.33		4.66	347.10	
0+96.67		5.04	346.72	
1+45.		6.08	345.68	
1+93.33		5.17	346.59	
2+41.67		6.36	345.40	
2+90 = ℄ Delaware = 7+62 above		7.62	344.14	340.0



Sewer Construction ℄ of Harvey Rd.

From ℄ of Golden Gate to 160' N.

	351.76		6.64	
℄ Harvey Rd. + 160' N. of ℄ Golden Gate = 0+00			6.60	345.16	340.12
0+53.33			6.52	345.24	
1+06.67			6.36	345.40	
1+60 = ℄ Golden Gate on Main Line = 5+20			5.68	346.08	339.0

CROSS SECTION OF WELLBORN

EL LINWOOD EAST

50' wide
12.5 chs
6.25 1/4s

ANDREWS
to
LINWOOD

Sw spike	11.69	141.09		129.40	
TP	12.59	152.50 ✓	11.8	139.91	
	EL Linwood = 0+00				
S			6.3	46.4	
+0.5			3.0	49.5	
+5			4.6	47.9	
ch			6.1	46.4	
1/4			7.1	45.4	
+5			8.0	44.5	
C			13.0	39.5	
1/4			13.5	39.0	
ch			13.7	38.8	
+7			14.6	379	
N			14.1	38.4	
	11' E				
N			13.1	39.4	
+7			14.1	38.4	
ch			13.1	39.4	
1/4			13.0	39.5	
C			12.7	39.8	
+1			6.2	46.3	
+3			5.3	47.7	
1/4			5.1	47.4	
ch			4.8	47.7	
S			3.6	48.9	

152.50

12/2/25

Moore

57

14' E

S			1.5	51.0	
+5			3.6	48.9	
ch			4.6	47.9	
1/4			4.9	47.6	
C			6.4	46.1	
+2			12.4	40.1	
1/4			13.0	39.5	
ch			13.1	39.4	
+4			14.0	38.5	
N			13.2	39.3	
+0.5' Residence					
	20 E				
N			13.0	39.5	
+8			13.6	38.9	
ch			13.0	39.5	
1/4			12.9	39.6	
+4			12.4	40.1	
C			6.2	46.3	
1/4			4.8	47.7	
ch			4.2	48.3	
+3			3.9	48.6	
+5			2.7	49.8	
+7			0.7	51.8	
S			0.0	52.5	
TP	10.52	161.79 ✓	1.23	151.27	

22'E

S		9.1	√47.7
+7		9.8	√47.0
+9		11.7	√0.1
Cb		13.1	48.7
1/4		14.1	47.7
+6		15.1	46.7
C		20.5	41.3
+2		21.7	40.1
1/2		22.1	39.7
Cb		22.2	39.6
+2		22.6	39.2
N		22.2	39.6

40'E

NL −0.5	Rear of Residence	21.8	40.0
+7		22.5	39.3
Cb		22.0	39.8
1/4		21.7	40.1
C		21.8	40.0
+2		14.6	47.1
1/2		13.6	48.2
Cb		11.2	√0.6
+2		10.6	√1.2
+7		10.2	√1.4
+8		8.6	√3.2
S		7.5	√4.7

60'E

S	5.2	√6.6
+3	6.1	√5.7
+5	8.5	√3.3
+7	9.3	√2.5
Cb	10.0	√1.8
+2	12.9	48.9
1/2	15.7	46.1
C	20.0	41.8
1/2	21.3	40.5
Cb	21.5	40.3
+2	22.2	39.6
N	21.3	40.5
+10	21.3	40.5

67'E

+10	21.1	40.7
N	21.0	40.8
+2	22.2	39.6
Cb	21.6	40.4
1/2	21.2	40.6
C	20.6	41.2
+1	20.2	41.6
+2	17.8	44.0
+3	14.9	46.9
1/2	13.0	48.8
Cb	9.6	√2.2

		161.79			
Ck +2			8.5	√3.3	
+6			8.3	√3.5	
+7			√.3	√6.5	
S			4.6	√7.4	
	80'E				
S			2.7	√9.1	
+6			3.9	√7.9	
+5			6.7	√5.1	
+9			7.6	√4.4	
Ck			9.6	√1.4	
1/2			13.6	48.4	
+2			14.6	47.4	
+3			18.7	43+	
C			20.5	41.3.	
1/4			21.0	40.8	
Ck			21.2	40.6	
+8			22.0	39.8	
+11.5	Wedge of 10' Garage		21.5	40.3.	dirt floor
N			21.4	40.4	
+10			21.3	40.5	
	100'E				
-10			20.5	41.3.	
N			20.6	41.4	
+8			20.5	41.3	
Ck			21.5	40.3	
+2			20.8	41.0	

1/4		20.7	41.1
C		20.0	41.8
+5		18.5	43.3
1/2		13.0	48.8
+2		10.8	√1.0
Ck		9.0	√2.8
+5		6.6	√√.4
+7		6.7	√√.1
+9		3.3	√8.√
S		2.3	√9.√
	120'E		
S		2.7	√9.1
+3		3.8	√8.0
+5		7.1	√4.7
+8		7.2	√4.6
Ck		9.2	√2.6
+3		11.0	√0.8
1/2		11.5	√0.3
+3		12.1	49.7
+4		17.5	44.3
C		17.7	44.1
	113'E		
S		2.7	√9.1
+3		4.3	√7.√
+6		7.3	√4.√
+9		7.3	√4.√

		1/6/79		
Cb			9.0	S4.8
+3			10.9	S0.9
1/4			11.5	S0.3
C			14.8	47.5
+2			19.4	44.4
1/4			20.0	41.8
+3			20.8	41.0
Cb			20.4	41.4
N			20.5	41.3
+10			20.3	41.5
	128'E			
-10			19.5	44.3
N			20.0	41.8
Cb			19.6	44.4
1/4			19.8	44.0
+5			18.5	43.3
C			13.6	48.4
1/4			11.2	S0.6
Cb			9.6	S2.2
+4			7.5	S4.3
+8			7.1	S4.7
+9			5.0	S6.8
S			3.9	S7.9
	152'E			
S			6.1	S5.7
Cb			10.1	S1.7

		1/6/79		
1/4			11.7	S0.1
+6			15.0	46.8
C			17.6	44.2
1/4			18.2	43.6
Cb			18.3	43.5
N			18.3	43.5
+10			18.0	43.8
	180'E			
-10			15.6	46.2
N			16.6	45.2
Cb			17.1	44.7
1/4			16.3	45.5
+3			16.0	45.8
C			14.4	47.4
1/4			10.9	S0.9
Cb			7.7	S4.1
S			3.5	S8.3
	200'E = W/4 GUY ST = 50' WIDE			12.5 Cb 6.25 1/4 E
S			1.4	60.4
+6			3.0	S8.8
Cb			7.2	S4.6
1/4			10.6	S1.4
C			13.4	48.4
+5			14.2	47.6
1/4			15.7	46.1
+1			14.5	47.3

		161.79		
ch			15.2	146.6
+5			14.3	45.5
N			14.9	46.9
+10			14.8	47.0
	w ch			
-10			14.5	47.3
N			14.5	47.3
ch			13.5	48.3
+5			13.5	48.3
1/4			15.1	46.7
+3			13.0	48.8
C			12.5	49.3
1/4			13.5	48.3
ch			7.5	S4.3
+1			5.7	S6.1
S			0.5	61.4
TP	3.83	165.36	✓0.26	161.53
	w 1/4			
S			5.4	60.0
ch			10.4	S5.0
1/4			13.3	S2.1
+2			14.7	S0.7
C			16.1	49.3
+3			16.2	49.2
+4			18.6	46.8
1/4			16.2	49.2

	165.36	Wellborn	
ch	16.5	48.9	
N	17.3	48.1	
+10	16.8	48.6	
	℄ OF GUY		
+10	16.2	49.2	
N	16.7	48.7	
ch	15.6	49.8	
1/4	15.4	S0.0	
C SEWER MH.	15.3	S0.1	
+4	14.6	S0.8	
1/4	12.7	S2.7	
ch	9.5	S5.9	
+4	6.8	S8.6	
S	3.6	61.8	
	E. 1/4		
S	3.1	64.3	
ch	9.2	S6.4	
1/4	13.1	S2.3	
C	14.9	S0.5	
1/4	15.2	S0.4	
ch	15.6	49.8	
N	16.2	49.2	
+10	15.9	49.5	
	E ch		
+10	15.3	S0.1	
N	15.3	S0.1	

16536

cb	14.6	√0.8
1/4	14.4	√1.0
c	14.1	√1.3
1/4	11.8	√3.7
cb	9.1	√6.3
S	2.8	64.6
EL Guy = 0+00		
S	1.8	63.6
cb	7.5	√7.9
1/4	10.3	√5.0
c	12.9	√2.5
1/4	13.6	√1.8
cb	13.7	√1.7
N	14.7	√0.66
+10	14.9	√0.5
25' E		
-10	12.7	√2.7
N	12.9	√2.5
cb	11.8	√3.7
1/4	11.5	√3.9
c	11.3	√4.0
+4	11.0	√4.4
1/4	8.8	√6.6
cb	6.3	√9.1
S	0.8	64.6

16536 Wellborn 62

50' E

S	2.0	63.4
cb	8.2	√7.4
1/4	9.5	√5.9
c	9.4	√6.0
1/4	10.1	√5.3
cb	10.6	√4.8
N	10.5	√4.9
+10	10.3	√5.1
75' E		
-10	5.5	√9.9
N	8.2	√7.4
cb	7.9	√7.5
1/4	8.4	√7.0
+3	8.9	√6.5
c	7.9	√7.5
1/4	7.4	√8.0
cb	7.2	√8.4
+9	6.3	√9.1
S	5.0	60.4

T.P.	2.98	156.20	12.1 ✓	153.22
T.P.	1.24	144.84	12.60	143.60
T.P.	0.02	132.21	12.65	132.19
T.P.	0.06	119.94	12.33	119.88
T.P.	0.32	107.43	12.83	107.11
T.P.	0.34	94.95	12.79	94.61
T.P.	1.61	82.42	12.35	82.03
Check to B.M.			7.28	76.99 77.00 Sinclair

Indra + Winder

WINDER ST. X sec.
INDIA to HANCOCK

80' wide
12' S/W
18' 1/2 S

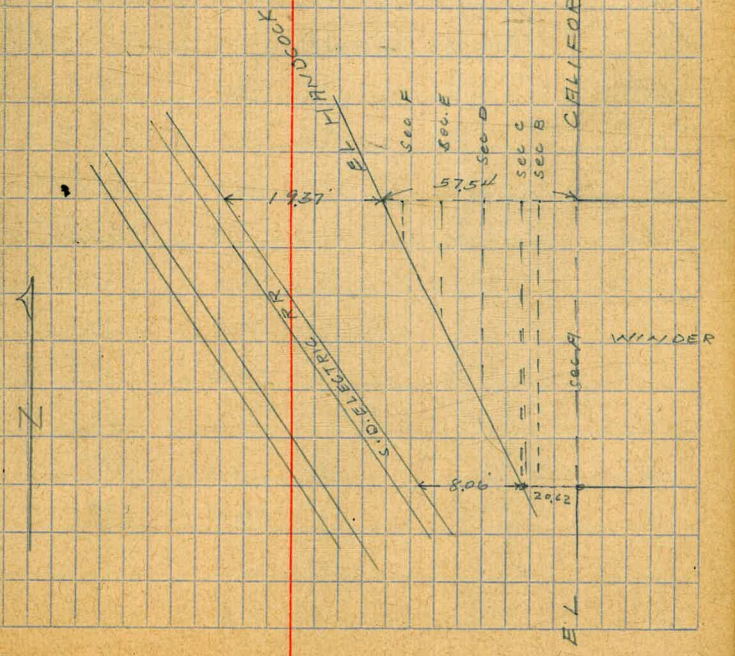
SWDR	2.3 ↓	79.3 ↓		77.00	Winder & India
	WL INDIA = 0+00		79.3		
W			1.8	77.5 ✓	
±			2.1	77.2 ✓	
ov conc ck			2.3 ✓	77.0 ✓	
gut			2.9	76.4 ✓	
1/4			2.4	76.9 ✓	
℄			2.5	76.8 ✓	
1/4			2.6	76.7 ✓	
gut			3.0	76.3 ✓	
ov conc ck			2.3 ✓	77.0 ✓	
S			2.0	77.3 ✓	
	50' W				
S			5.0	74.3 ✓	
+5			6.3	73.0 ✓	
ck			6.4	73.1 ✓	
+1			7.1	72.4 ✓	
1/4			7.4	72.1 ✓	
℄			6.7	72.8 ✓	
1/4			5.9	73.6 ✓	
+11			6.3	73.0 ✓	
ck			5.7	73.6 ✓	
+9			5.9	73.4 ✓	
W			4.8	74.5 ✓	
	100' W				
W			9.1	70.4 ✓	

12/2/25
Moore

79.3 ✓

79.3

± ↓		9.5	69.8 ✓	
ck		10.0	69.3 ✓	
+4		10.6	68.7 ✓	
1/4		9.7	69.6 ✓	
℄		10.3	69.0 ✓	
1/4		11.2	68.1 ✓	
+3		11.5	67.8 ✓	
ck		10.6	68.7 ✓	
+3		10.0	69.3 ✓	
+10		10.0	69.3 ✓	
S		9.4 ✓	69.9 ✓	
T.P.	2.61	69.34	12.6 ✓	66.73



69.3 J

150' W

S	3.5	658 ✓
+13	3.9	654 ✓
cb	4.2	651 ✓
+1	4.7	646 ✓
+9	4.8	645 ✓
1/4	4.5	648 ✓
C	3.6	657 ✓
1/4	3.5	658 ✓
+9	4.0	653 ✓
cb	3.5	658 ✓
+8	3.1	662 ✓
N'	1.0	683 ✓

199.2 = EL Kettner = 75' wide 12' cb to 123' 1/4 S

N'	4.5	648 ✓
+4	6.1	632 ✓
cb	6.4	629 ✓
+3	7.2	621 ✓
1/4	6.8	625 ✓
C	6.8	625 ✓
1/4	7.4	619 ✓
+6	7.6	617 ✓
cb	7.3	640 ✓
S	6.4	629 ✓

E cb

S	6.8	625 ✓

69.3 J

WINDER

64

69 3

cb	7.8	615 ✓
+1	8.3	610 ✓
1/4	7.9	614 ✓
e	7.3	640 ✓
1/4	7.2	641 ✓
+8	7.8	615 ✓
cb	7.4	619 ✓
N'	5.6	637 ✓

E 1/4

N'	6.9	624 ✓
cb	7.6	617 ✓
1/4	7.7	616 ✓
C	7.7	616 ✓
1/4	8.2	611 ✓
cb	8.1	612 ✓
S	7.7	616 ✓

E

S	8.0	613 ✓
cb	8.8	605 ✓
+5	9.0	603 ✓
1/4	8.5	608 ✓
C	8.0	613 ✓
1/4	7.8	615 ✓
+7	8.2	611 ✓
cb	8.2	611 ✓
N'	7.1	624 ✓

69.3↓

69.3

W 1/4

N	7.8	61.5 ✓
Cb	8.3	61.0 ✓
+3	8.6	60.7 ✓
1/4	8.N	61.1 ✓
C	8.3	61.0 ✓
1/4	8.9	60.4 ✓
Cb	9.6	59.7 ✓
S	8.9	60.4 ✓

W Cb

S	9.0	60.3 ✓
+13	9.4	59.9 ✓
Cb	9.8	59.5 ✓
1/4	9.7	59.6 ✓
C	8.8	60.5 ✓
1/4	8.7	60.6 ✓
Cb	8.7	60.6 ✓
N	8.1	61.4 ✓

W1 Kettner - area

N	8.N	61.1 ✓
+13	8.9	60.4 ✓
Cb	9.6	59.7 ✓
1/4	9.4	59.9 ✓
C	9.6	59.7 ✓
1/4	10.1	59.N ✓
Cb	10.8	58.5 ✓

69.3↓

69.3 WINDER

+1	9.7	59.6	✓
S	9.3	60.0	✓
TP 2.25	59.37	12.7.2	56.6N
50' W			
	59.4		
S	3.3	56.1	✓
Cb	3.5	55.9	✓
+N	5.N	54.N	✓
1/4	4.6	54.8	✓
C	3.9	55.5	✓
1/4	3.5	55.9	✓
Cb	3.6	55.8	✓
+1	2.9	56.5	✓
N	2.N	57.N	✓
98' W			
N	5.9	53.5	✓
Cb	6.7	52.7	✓
+1	7.6	51.8	✓
1/4	7.7	51.7	✓
C	7.7	51.7	✓
1/4	8.0	51.4	✓
Cb	8.N	51.N	✓
+8	7.4	52.0	✓
S	6.4	53.0	✓
100' W			
S	9.0	50.4	✓
+6	8.4	51.0	✓
Cb	8.0	51.4	✓

		59.37			
	113'W		59.4		
S			9.4	500	✓
cb			9.6	498	✓
	116'W				
S			7.9	515	✓
+7			9.0	504	✓
cb			9.7	497	✓
	125'W				
S			9.1	503	✓
cb			9.6	498	✓
1/4			9.7	497	✓
C			9.5	500	✓
1/4			8.8	506	✓
cb			9.0	504	✓
N			8.6	508	✓
T.P.	243	49.11	12.69	46.68	
	175'W		49.1		
N			1.6	475	✓
+2			2.4	467	✓
cb			2.5	466	✓
1/4			2.7	464	✓
C			3.0	461	✓
1/4			3.1	460	✓
cb			3.5	456	✓
+1			3.0	461	✓
S			3.0	461	✓

4911

199.70'W = EL Coal f = 75'wide 12.75 lbs = Sec A

S	3.4
+11	4.3
cb	4.5
1/4	4.4
C	4.5
1/4	4.6
cb	4.6
N	3.9

E cb = Sec B

N	5.0
cb	5.2
+2	5.7
1/4	4.9
C	4.7
1/4	4.9
cb	4.8
S	5.2

20.6'W W of EL Coal f = Sec C

S	5.6
cb	4.9
1/4	5.2
C	5.1
1/4	5.1
cb	5.5
N = INTERSECTION of EL Hancock +56 in Winder	5.6

49.11

E 1/4 of Coll E. = Sec D.

N'	5.7
Ch	5.7
1/4	5.4
C	5.3
1/4	5.3
Ch	4.9
+5 = EL Handcock	5.0

E of Coll E = Sec E

N'	6.0
Ch	6.1
1/4	5.9
C	5.5
+3.4 = EL Handcock	5.6

N' 1/4 = Sec F

N'	6.3
Ch	6.2
+2.2 = EL Handcock	6.1

1937' W of EL Handcock

E rail of E Track on NL Winder 6.79

8.06' W of EL Handcock

E rail of E Track on SL Winder 5.56

check to DB Hyd Nut Harosthy Handcock 10.40 38.71 38.72

Levels for Proposed Culvert
Redwood + 10ft STs

NW BP	0.36	265.89		265.53	Redwood 2nd
T.P.	0.71	5369	11.91	252.98	
T.P.	2.90	4399	12.60	241.09	
encerch NL Redwood			2.53	241.46	
" " SL "			2.99	241.00	
	0+00 = WCB 10ft ST				
℄ Culvert			2.9	241.1	
2' RT			2.8	41.2	
2' LT = ℄ of Redwood			2.9	241.1	
	0+14 = WL 10ft ST				
℄			3.1	40.9	
2' RT			3.1	40.9	
2'			3.2	40.8	
	0+19				
℄			6.1	37.9	
2' RT			5.9	38.1	
2' LT			5.9	38.1	
	0+24				
℄			9.5	34.5	
2' RT			9.5	34.5	
2' LT			9.4	34.6	
TP	0.71	2333.31 ✓	11.39	232.60	
	0+39 = N edge of Eucalyptus tree			12" diam. on ℄ Culv	
℄			6.1	27.2	
2' RT			6.7	26.6	
2' LT			5.7	27.6	

12/12/25
Moore
2333.31

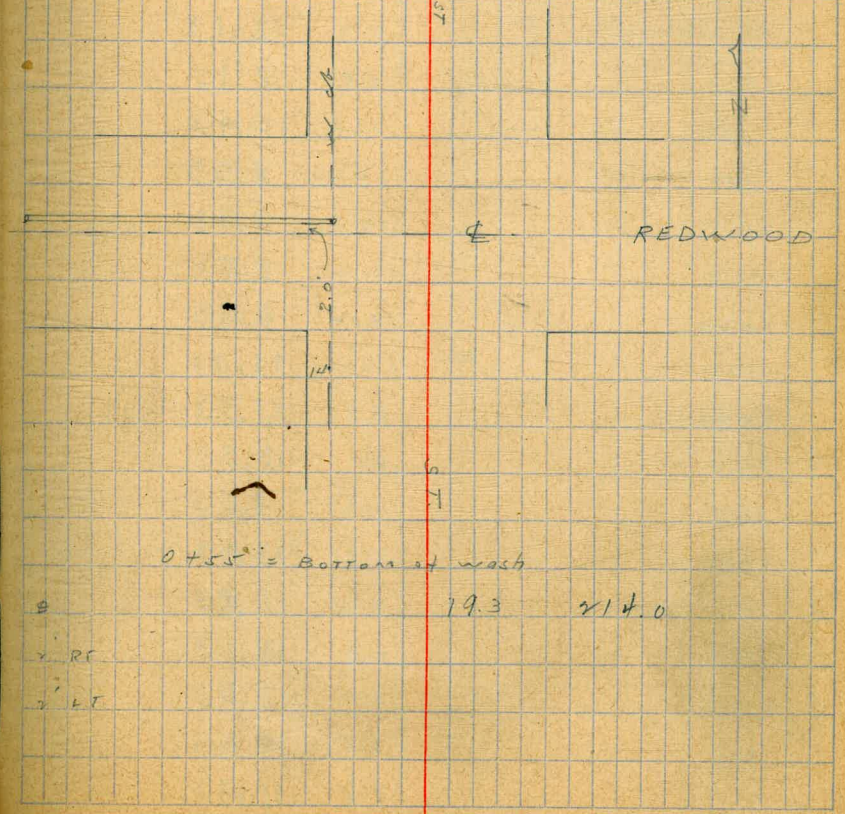
68

0+43

℄	7.4	25.9
2' RT	7.9	25.4
2' LT	7.1	26.2

0+24

℄	16.2	17.1
2' RT	16.2	17.1
2' LT	16.2	17.1



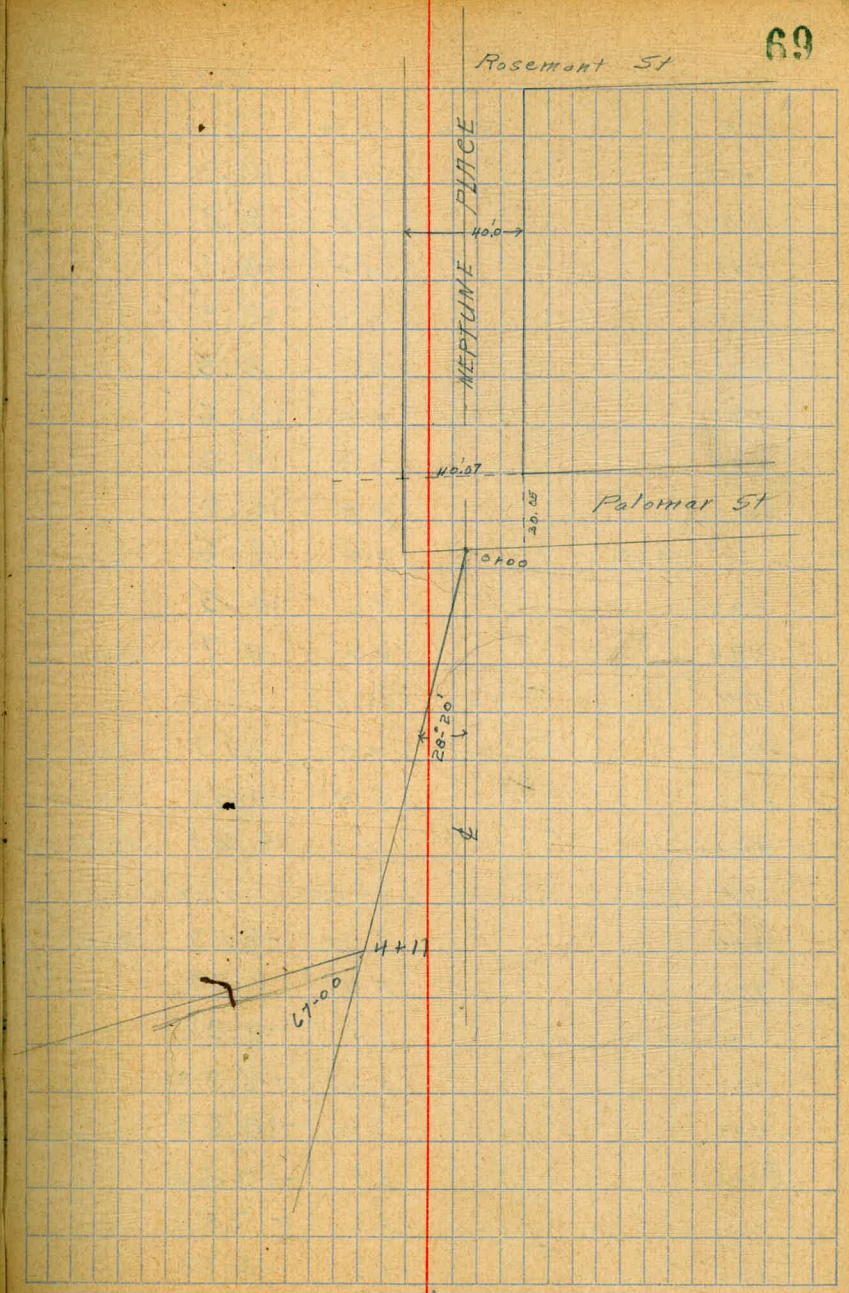
℄	19.3	14.0
2' RT		
2' LT		

Sewer Levels for New Outfall from Neptune Place & Palomar S.W.

1/15/26

S.E. Kolmar Vista Del Mar

	BM.	2.53	32.95		30.42
0+00 = S. line Palomar & Neptune Place (∠ 28° 20' R of ℄ Neptune)				7.2	25.75
0+44				7.6	25.35
0+70				12.0	20.95
+75				12.6	20.35
T.P.		0.37	21.03	12.29	20.66
+82				6.4	15.63
1+23				8.6	12.43
1+30				10.7	10.33
1+42				8.9	12.13
1+58				8.9	12.13
1+86				10.6	10.43
1+95				12.5	8.53
2+08				13.1	7.93
2+12				12.2	8.83
2+23				12.4	8.63
2+38				10.0	11.03
2+60				9.7	11.33
2+70				8.1	12.93
2+75				13.0	8.03
2+85				7.6	13.43
+90				9.2	11.83
2+95				6.9	14.13
3+00				8.5	12.53
+10				6.4	14.63
+25				9.4	11.23



		21.03			
+30			12.3	8.73	
T.P.	6.40	15.10	12.33	8.70	
+45			4.8	10.3	
+50			9.8	5.3	
+55			4.9	10.2	
+65			3.8	11.3	
+70			5.6	9.5	
+80			4.5	10.6	
+90			0.5	14.6	
4+00			3.9	11.2	
4+11 ∠ 67° 00' R.			2.5	12.6	
+28			4.6	10.5	
+34			6.4	8.7	Rock
T.P.	0.27	2.77	12.60	2.50	
+38			5.9	-3.13	sand
+70			8.4	-5.63	sand
5+35			11.4	-8.63	on Rock from M
TP	6.05	-2.63	11.45	-8.68	
6+00			6.20	-8.83	Rock
7+00			5.40	-8.03	"
+40			5.4	-8.03	"
+90			5.4	-8.03	"
+92			8.00	-10.63	"
8+05			8.0	-10.63	"
+15			5.2	-7.83	"
+45			4.3	-6.93	"
+70			7.5	-10.13	"

Limit Breakers

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P.=23° 20′ to the R. at Station 542+72.

Ext. in Tab. IV opposite 23° 20′=120.87
120.87÷12=10.07. Say a 10° Curve.

Tan. in Tab. IV opp. 23° 20′=1183.1
1183.1÷10=118.31.

Tab. V. correction for A. 23° 20′ for a 10° Cur.=0.16
118.31+0.16=118.47=corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20′=23.33°÷10=2.3333=L. C.

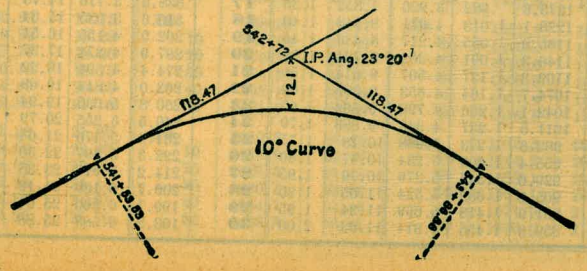
2° 19½′=def. for sta.	542	I. P.=sta.	542+72
4° 49½′= " " "	+50	Tan.=	1.18.47
7° 19½′= " " "	543	B. C.=sta.	541+53.53
9° 49½′= " " "	+50	L. C.=	2.33.33
11° 40′= " " "	543+	E. C.=sta.	543+86.86
	86.86		

100—53.53=46.47×3′(def. for 1 ft. of 10° Cur.)=139.41′=2° 19½″=def. for sta. 542.

Def. for 50 ft.=2° 30′ for a 10° Curve.

Def. for 36.86 ft.=1° 50½′ for a 10° Curve

(These tables are published in Field Books of KEUFFEL & ESSER Co., New York, N. Y.)



Natural Tangents

deg.	0′	10′	20′	30′	40′	50′	deg.	deg.	0′	10′	20′	30′	40′	50′	deg.
0	0000	0029	0058	0087	0116	0145	89	40	8391	8441	8491	8541	8591	8642	49
1	0175	0204	0233	0262	0291	0320	88	41	8693	8744	8796	8847	8899	8952	48
2	0349	0378	0407	0437	0466	0495	87	42	9004	9057	9110	9163	9217	9271	47
3	0524	0553	0582	0612	0641	0670	86	43	9325	9380	9435	9490	9545	9601	46
4	0699	0729	0758	0787	0816	0846	85	44	9657	9713	9770	9827	9884	9942	45
5	0875	0904	0934	0963	0992	1022	84	45	1.0000	1.0058	1.0117	1.0176	1.0235	1.0295	44
6	1051	1080	1110	1139	1169	1198	83	46	1.0355	1.0416	1.0477	1.0533	1.0599	1.0661	43
7	1228	1257	1287	1317	1346	1376	82	47	1.0724	1.0786	1.0850	1.0913	1.0977	1 1041	42
8	1405	1435	1465	1495	1524	1554	81	48	1.1106	1.1171	1.1237	1.1303	1.1369	1.1436	41
9	1584	1614	1644	1673	1703	1733	80	49	1.1504	1.1571	1.1640	1.1708	1.1778	1.1847	40
10	1763	1793	1823	1853	1883	1914	79	50	1.1918	1 1988	1.2059	1.2131	1.2203	1.2276	39
11	1944	1974	2004	2035	2065	2095	78	51	1.2349	1.2423	1.2497	1.2572	1.2647	1.2723	38
12	2126	2156	2186	2217	2247	2278	77	52	1.2799	1.2876	1.2954	1.3032	1.3111	1.3190	37
13	2309	2339	2370	2401	2432	2462	76	53	1.3270	1.3351	1.3452	1.3514	1.3597	1 3680	36
14	2493	2524	2555	2586	2617	2648	75	54	1.3764	1.3848	1.3934	1.4019	1.4106	1.4193	35
15	2679	2711	2742	2773	2805	2836	74	55	1.4281	1.4370	1.4460	1.4550	1.4641	1.4733	34
16	2867	2899	2931	2962	2994	3026	73	56	1.4826	1.4919	1.5013	1.5108	1.5204	1.5301	33
17	3057	3089	3121	3153	3185	3217	72	57	1.5399	1.5497	1.5597	1 5697	1 5798	1.5900	32
18	3249	3281	3314	3346	3378	3411	71	58	1.6003	1.6107	1.6212	1.6319	1.6426	1.6534	31
19	3443	3476	3508	3541	3574	3607	70	59	1.6643	1 6753	1.6864	1.6977	1.7090	1 7205	30
20	3640	3673	3706	3739	3772	3805	69	60	1.7321	1.7437	1.7556	1.7675	1.7797	1.7917	29
21	3839	3872	3906	3939	3973	4006	68	61	1.8040	1.8165	1.8291	1.8418	1.8546	1.8676	28
22	4040	4074	4108	4142	4176	4210	67	62	1.8807	1.8940	1.9074	1.9210	1.9347	1.9486	27
23	4245	4279	4314	4348	4383	4417	66	63	1.9626	1.9768	1.9912	2.0057	2.0204	2.0353	26
24	4452	4487	4522	4557	4592	4628	65	64	2.0503	2.0655	2.0809	2.0965	2.1123	2.1283	25
25	4663	4699	4734	4770	4806	4841	64	65	2.1445	2.1609	2.1775	2.1943	2.2113	2.2286	24
26	4877	4913	4950	4986	5022	5059	63	66	2.2460	2.2637	2.2817	2.2998	2.3183	2.3369	23
27	5095	5132	5169	5206	5243	5280	62	67	2.3559	2.3750	2.3945	2.4142	2.4342	2.4545	22
28	5317	5354	5392	5430	5467	5505	61	68	2.4751	2.4960	2.5172	2.5386	2.5605	2.5826	21
29	5543	5581	5619	5658	5696	5735	60	69	2.6051	2 6279	2.6511	2.6746	2.6985	2.7228	20
30	5774	5812	5851	5890	5930	5969	59	70	2.7475	2.7725	2.7980	2.8239	2.8502	2.8770	19
31	6009	6048	6088	6128	6168	6208	58	71	2.9042	2.9319	2.9600	2.9887	3.0178	3.0475	18
32	6249	6289	6330	6371	6412	6453	57	72	3.0777	3 1084	3.1397	3.1716	3.2041	3.2371	17
33	6494	6536	6577	6619	6661	6703	56	73	3.2709	3.3052	3.3402	3.3759	3.4124	3.4495	16
34	6745	6787	6830	6873	6916	6959	55	74	3.4874	3.5261	3.5656	3.6059	3.6470	3.6891	15
35	7002	7046	7089	7133	7177	7221	54	75	3.7321	3.7760	3.8208	3.8657	3.9136	3.9617	14
36	7265	7310	7355	7400	7445	7490	53	76	4.0108	4.0611	4.1126	4.1653	4.2193	4.2747	13
37	7536	7581	7627	7673	7720	7766	52	77	4.3315	4.3897	4.4494	4.5107	4.5736	4.6382	12
38	7813	7860	7907	7954	8002	8050	51	78	4.7046	4.7729	4.8430	4.9152	4.9894	5.0658	11
39	8098	8146	8195	8243	8292	8342	50	79	5.1446	5.2257	5,3093	5.3955	5.4845	5.5764	10
deg.	60′	50′	40′	30	20′	10′	deg.	deg.	60′	50′	40′	30′	20′	10′	deg.

deg.	0′	10′	20′	30′	40′	50′	deg.
80	5.6713	5 7694	5.8708	5 9758	6.0844	6.1970	9
81	6.3138	6.4348	6 5606	6.6912	6.8269	6.9682	8
82	7.1154	7.2687	7.4287	7.5958	7.7704	7.9530	7
83	8.1443	8 3450	8.5555	8.7769	9.0098	9.2553	6
84	9.5144	9.7882	10.078	10.385	10.711	11.059	5
85	11.430	11.826	12.250	12.706	13.197	13.727	4
86	14.300	14.924	15.605	16.350	17.169	18.075	3
87	19.081	20.206	21.470	22.903	24.542	26.432	2
88	28.636	31.242	34.368	38.189	42.964	49.104	1
89	57.290	68.750	85.940	114.588	171.885	343.77	0
deg.	60′	50′	40′	30′	20′	10′	deg.

Natural Cotangents

1st + Redwood

2' N of & Redwood to Lemon

RETURN TO CITY ENGINEER'S OFFICE
CITY HALL, SAN DIEGO, CAL.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.