398

TRANSIT

F.B.176

176

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

MICROFILMED DEC 8 1964

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.

Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links
°		°		°		°	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07

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

June 29 1903

Party = Foster Ed H. Transit & Level
Wilkinson F Valles Chain
Lambert Geo G. "

Check chaining of line

65+05.6	△ angle Pt		dif of .6 ft gain 415.3
62+18.1	△ angle Pt		dif : 1 ft gain
60+50.1	△ Angle Pt	(60+50)	dif of 1 ft gain on this Tangent intersect old line
43+00.75	△ Hub on line	Intersect other line	429.7
41 37+50	Hub on line		
17+54.4	△ A Pt		dif of 0.4 ft on this Tangent gain
	June 30		754.4
10-00	Angle Pt △		
7+00	Hub on line		626.
(3+74) 3+73.9	Hub △ angle Pt		dif. of 1 ft loss
			373.9

0 — △ is 89.95 ft Northerly from hub at gate at Station 44+61 of La Jolla - Miramir line

43+71 △ at gate on ___ line from La Jolla to Miramier

86+40	a. pt	✓	207
84+33	a. pt.	✓	71
83+62.4	a. pt	gain of .4 ft	
80+157.15	a pt	gain of .15 ft	
79+30.15	a pt	loss of 0.15 ft	231.85
76+98	a pt	✓	198
75+00.2	a. pt.	gain of .2 ft	100.2
74+00	a. pt.	✓	100
73+00	a. pt.	loss of .05	250
70+50	angle pt		130.
69+20.3	angle pt	gain of .3 ft	

102+20.2	Δ	a pt		gain of .2	230.2
99+90.1	Δ	a pt		gain .1 ft	195.1
97+95	Δ	a.pt.		✓	137 0
95+58.3	Δ	a.pt.		gain of .3 ft	177.3
93+81.3	Δ	a.pt.	?	gain of .3 ft	169.3
92+12.4	Δ	a pt		gain of .4 ft	171.4
90+41.2	Δ	a.pt.		gain 0.2 ft	99 2
89+45	Δ	a.pt		✓	61.0
88+81.2	Δ	a.pt.		gain of .2 ft	139.2
87+42.1	Δ	a.pt		gain of .1 ft	50 1
86+92.1	Δ	a.pt.		gain of .1 ft.	52.1

126+50.6	Δ	a Pt	gain .6 ft.	995.2
				230.6
124+20.3	Δ	a Pt	gain .3 ft.	
				535.3
118+85	Δ	a Pt	✓	
				267.0
116+18.5	Δ	a.Pt.	gain of .5 ft	
				153.5
114+65.1	Δ	a.Pt	gain .1 ft	
				77.1
113+88.1	Δ	a.Pt	gain of 3.1 ft	
				95.1
112+93.2	Δ	a Pt	gain .2 ft	
				327.2
109+65.1	Δ	a.Pt.	Gain .1 ft	
~~108+62~~	~~Hutson line~~		✓	120.1
108+45.1	Δ	a.Pt	gain .1 ft	
				245.1
106+00.4	Δ	a pt	gain .4 ft	
				380.4

Set flags on Spur to Torrey Pines at Heads of canyons to run line by

(166+35)	Δ Intersect Miramar line		
166+36.2	July 1st	Gain 1.2 ft.	586.2
160+49.6	Δ a Pt	loss of .4 ft	
153+50.3	Hub on line		799.6
(+50) 152+49.6	Δ a Pt	loss of .4 ft.	
(136+42) 136+45.2	Δ a Pt.	Gain of 3.2 ft.	1607.6

gain 14.6
loss 3
14.3
90
104.3

Var. 13°-20' E

	Station	Course	Angle R or L	Mag needle
Δ	24+35	N 74°-46'-30" W	55°-24'-30"	
ϕ	22+06.8			
Δ	21+35	N 19°-22'-00" W	7°-30'-00"	
ϕ	18+69			Hub on line
Δ	17+35	N 11°-52'-00" W	41°-46'-30"	14° 15'
	July 2nd			
Δ	12+50	N 29°-54'-30" E	54°-57'-00"	
Δ	7+85	N 25°-02'-30" W	18°-05'-30"	
	7+55			
	1+00			
Δ	0+00	N 7°-57' W	76°-09'-00"	

Δ N 68°-12 E Bearing of backsight

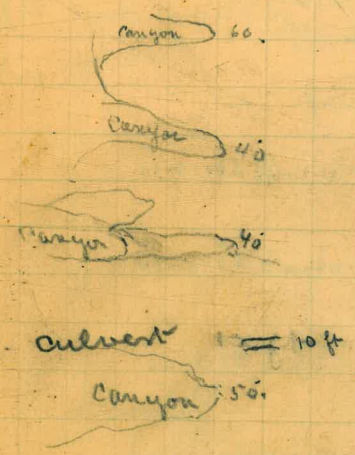
Beginning Δ 0+00 at Sta. 126+50 of line from La Jolla to Miramar.

July 1st 1903

Intersect a line N 90°-00' W of Cor of Pueblos lots 1311-1312-1313-1314-. and dist 316.5 from said Cor

Set over hub 22+06.8 for sight Sta 21+35

Turned angle to P.C. = 71°-15'



Backsight on Δ 124+20 Line

Course of backsight N 68°-12 E (assumed)

Var. Mag. needle assumed at 13°-20' E

	Station	Course	Angle R or L		
ϕ	74+35			Hub on line	
			July 6th		
△	70+00	N23-44-00E	54°-19'-00"		
△	64+50	N30°-35'-00"W	18°-25'-00"		
	61+67			Intersect	Line N 77°-24'. Needle Var 13°-15' E
ϕ	59+00				Hub on line
	58+94				
△	51+00	N12°-10'-00"W	50°-14'-00"		
△	46+40	N38°-04'-00"E	22°-31'-30"		
△	36+00	N15-33-30E	73°-51'-30"		
			July 3rd		
△	35+00	N58°-18'-00"W	64°-06'-30"		
△	31+00	S57°-35'-30"W	48°-08'-30"		
	30+00				
	28+50				
ϕ	27+00			Hub on line	

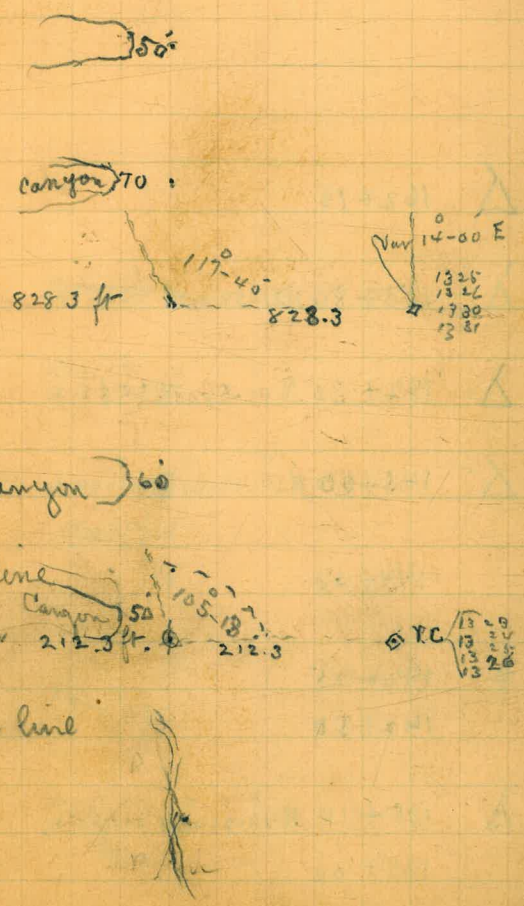
~~Wire~~ ~~fence~~

July 8th

Δ	131+57	N12-50-00W	19-24-00	
	131+00			
ϕ	123+20			Hub on line
Δ	119+10	N06-34-00E	35-43-30	
	117+46.3			Intersect
Δ	112+50	N29-09-30W	15-58-30	42.00 M N
	110+50			

July 7th

ϕ	104+50			
Δ	96+50	N13-11-00W	5-12-30	
	90+195		Intersect	line N 90-00 W
	88+50			
ϕ	88+00			
	85+50			
Δ	85+20	N05-58-30W	29-42-30	
	85+00			

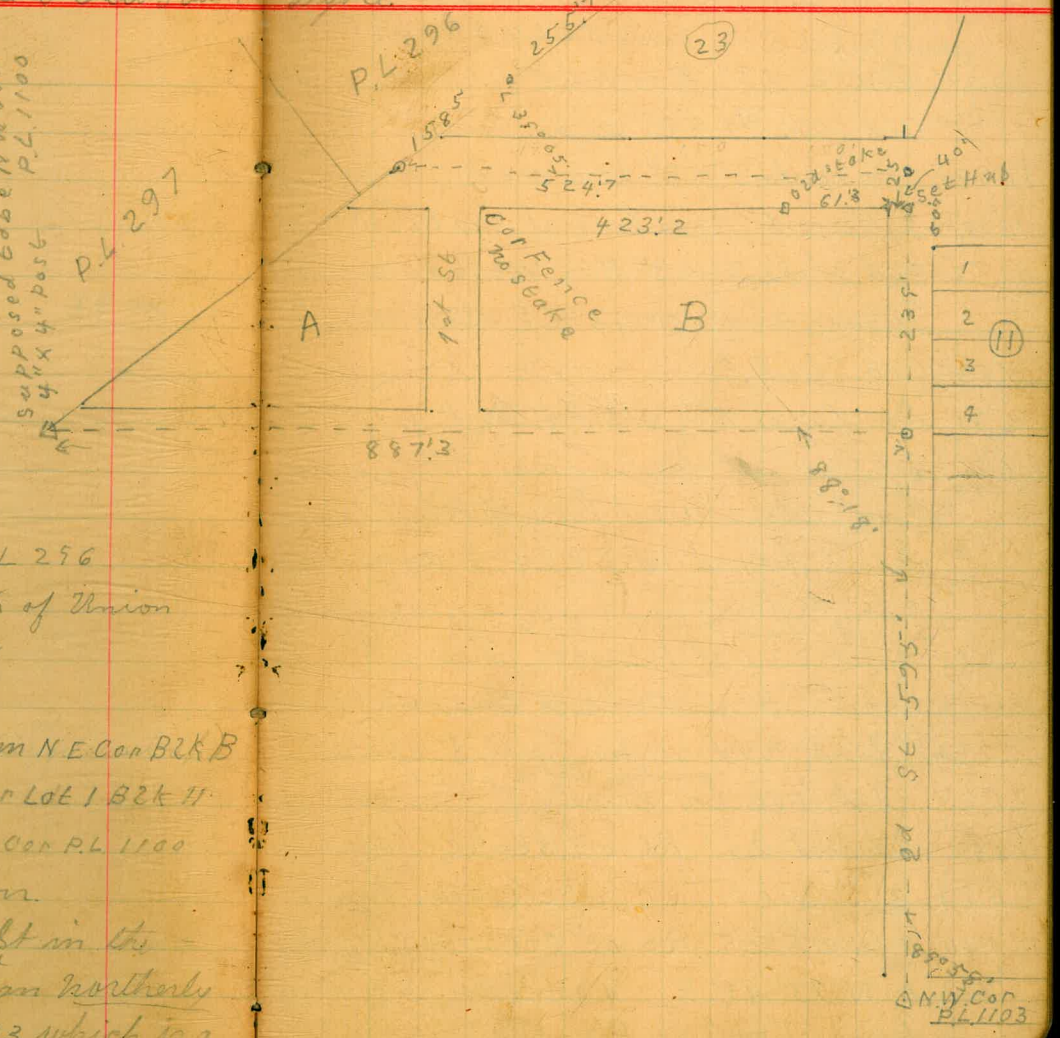


Δ	162+15		3 P m	
Δ	155+80	N21-54-00 W	20 58-00	
Δ	152+35	N 00-56-00 W	20 15-30	
Δ	145+20	N 19-19-30 E	62-40-30	
	144+50			
ϕ	142+25			
	142+50			
Δ	135+10	N 43-21-00 W	29-31-00	
	135+00			

Alverson
J. T. McAuliffe
J. E. Johnson

7/29/03

Field notes of the Western portion of Land Connections made with the the Road Survey (made by Rumsey in Mar 1903) from North Easterly Boundary of P.L. 1215 to the end of the Old Town Dyke.



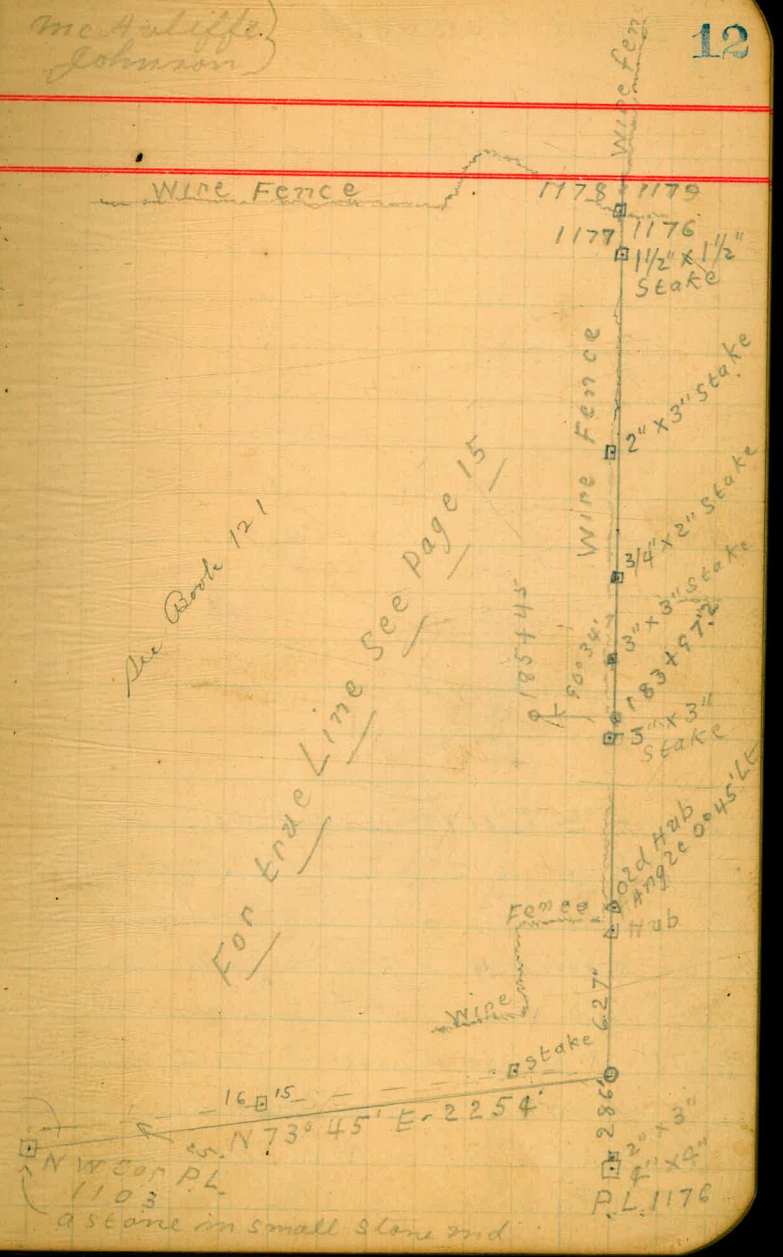
524.7 Intersect Southerly Bdy P.L. 296
Thence 90° Lt along center of Union
874 Set Spike Center Union St
8/8/03
834 Set Hub 25' Easterly from N.E. Cor Blk B
784 a point 25' Lt of N.W. Cor Lot 1 Blk 11
595' Set Temporary Cor for N.E. Cor P.L. 1100
Silver Terrace subdivision
along the center line of 2d St in the stone, about one ft square, stone md I ran northerly
From N.W. Cor of P.L. 1103 which is a

8/1/03

Land Connections
continued

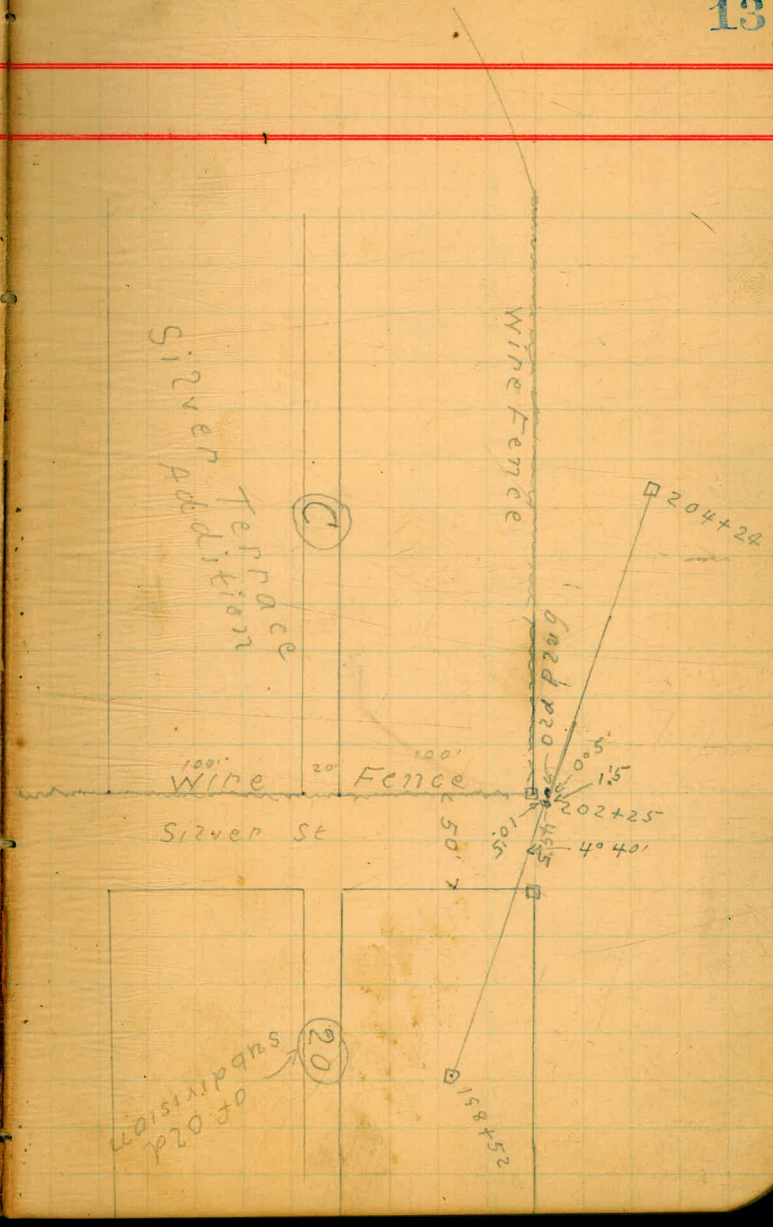
also set spike on line
and mkd 5 on South face & 4 North face
2309' Old 2" X 3" Brs West 3.8 dist
1975' Old stake 3/4" X 2" is on line
1648.5' Old stake 3" X 3" Brs West 1.2 dist
1315.6' Intersect Road line at Sta 183+97.2
1298' Old stake 3" X 3" Brs West 1.3 dist
Thence Angle 0° 45' Lt along fence
793.5' Old Hub.
631 Cor fence Brs West 6' dist.
627' To Hub set by Ramsey
North along West line of P.L. 1176
From point at 2254' I run
286' distant
point the Cor to P.L. 1176 Brs South
West line of P.L. 1176. From this
which I reestablish this point is on
2254' find Old stake pulled up (note)
corrected dist = 2258
2027 Set peg for line
1850' a point 25' Rt of stake 1 1/4" x 1 1/4"
Blk 3 Silver Terrace (stake mkd)
1040 a point 25' Rt of Cor Lots 15 & 16
thence N 73° 45' E Va 13° 30' E
From N W Cor P.L. 1103

Alverson
McAtliffe
Johnson

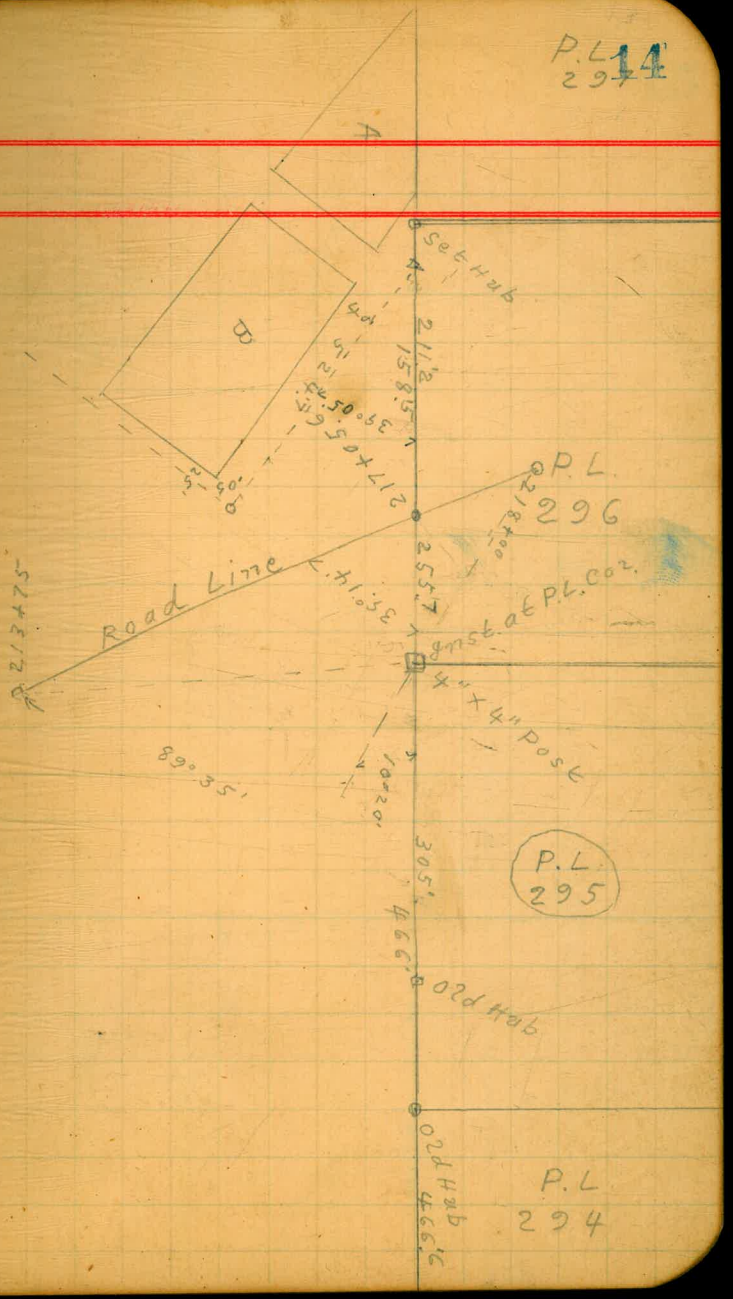


Land Connections
continued

P. Lots 1176-1177-1178 & 1179
I set a 2" x 2" Hub for Cor to
am satisfied this point is correct
when a 4" x 4" Post was there I
standing but previous examination
2971' at intersection of fences no cor
Grand on East face.
mkd B 36 on N W face &
2770' Old stake 1½" x 1½" on line



Land Connections
continued



8/4/03

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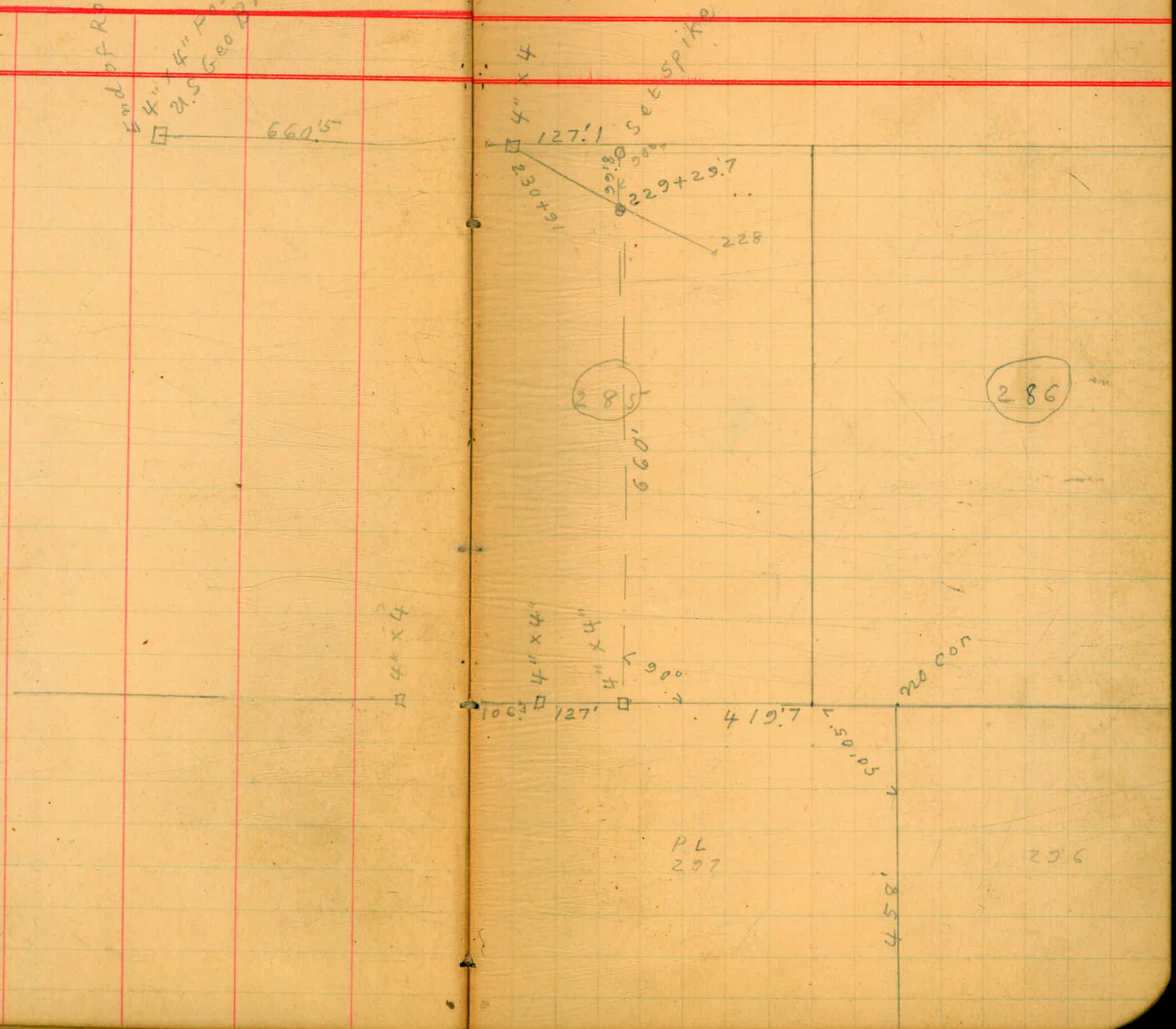
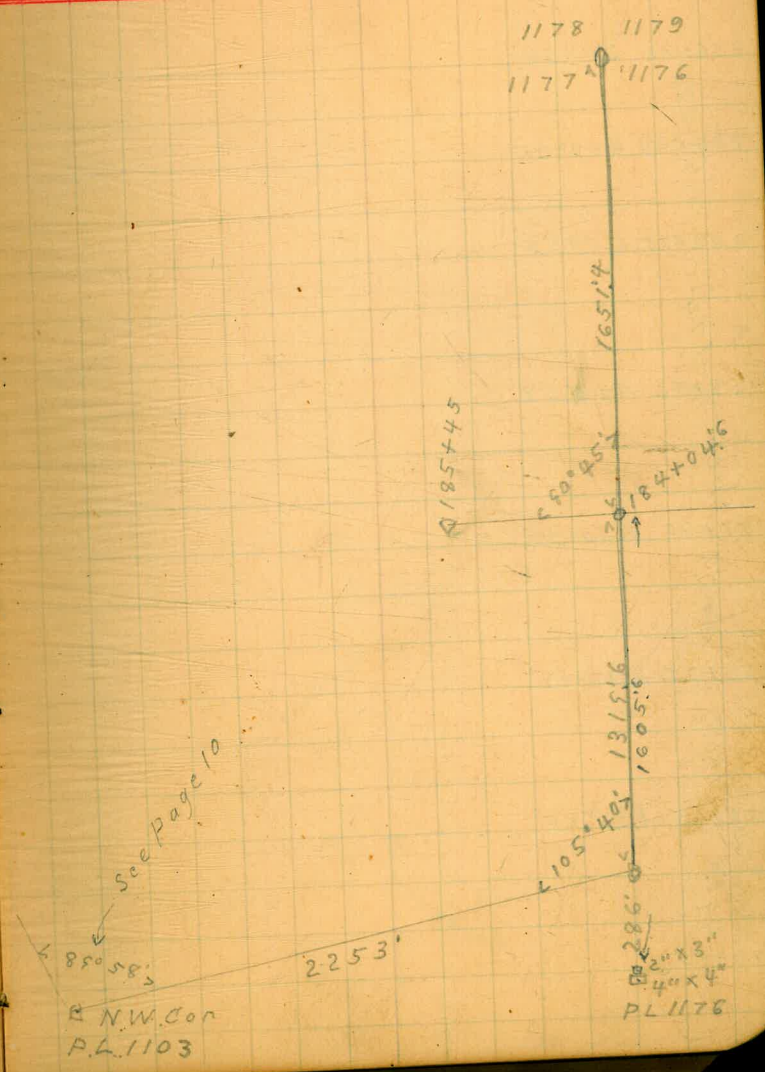


8/6/03

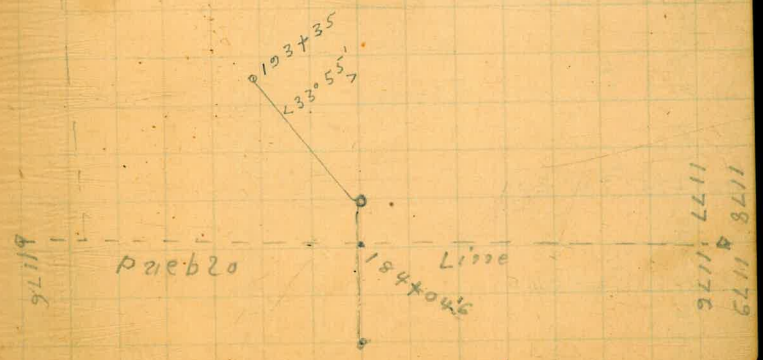

1178
1179
1177
1176
1651.4
185+45
50°45'
184+04.6
1315.6
1605.6
105°40'
see page 10
85°58'
2253'
286'
2" x 3"
4" x 4"
PL 1176
N.W. Cor
P.L. 1103

8/6/03

Checking Road Survey

Alverson
McAuliffe
Johnson

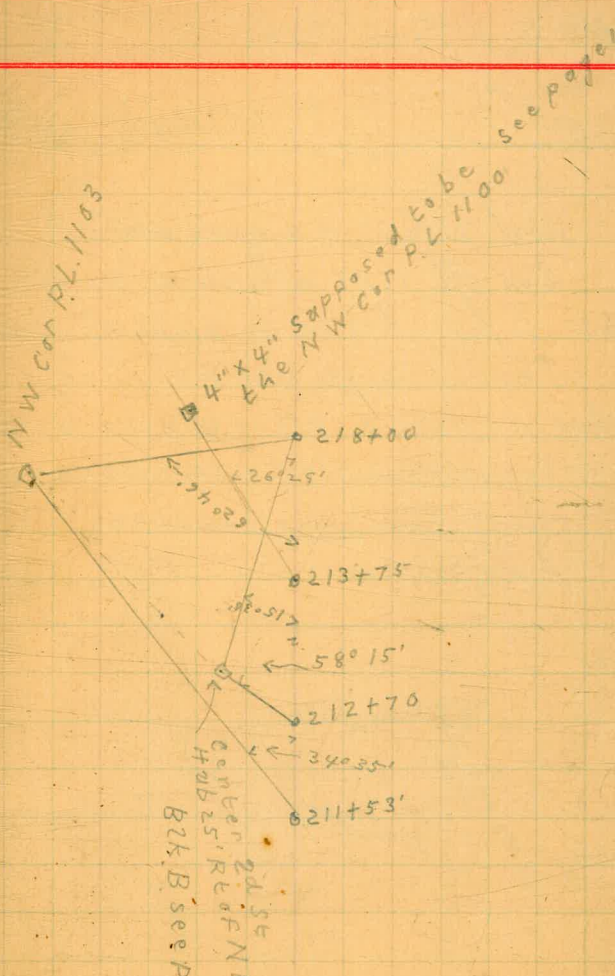
Sta	Angle
206+82	L 20° 08'
258'	
204+24	R 19° 01'
1554'	
202+25	L 7° 58'
174'	
198+52	R 12° 58'
112.2	
187+40	R 10° 30'
405.8	
193+35	R 12° 17'
750.7	
185+45	L 33° 55'
450.8	
180+95	



8/6/03

continued

225+39		
222+72		
220+17		
218+00		
425'		
213+75	R 23° 50'	
105'		
212+70	R 26° 39'	
1167'		
211+53	R 31° 30'	
178'		
209+75	L 74° 23'	
85'		
208+90	L 14° 54'	
207.8'		



8/15/03

Checking Road Survey

From Easterly R'dy of P.L. 1215 to the end of the Old Town Dyke

post 2" x 3" & a white stake 3" x 3"
Cor P.L. 1188 which is an old
2685' a point 220 ft Right of N W
Thence Angle 90° Rt
which is a post 2" x 3" + 4" x 4" & 2" x 3"
2709' To Cor P. Lots 1187-1188-1198-1199
+1199 Run South bet 1198+1199
From Cor P. Lots 1202-1203-1198

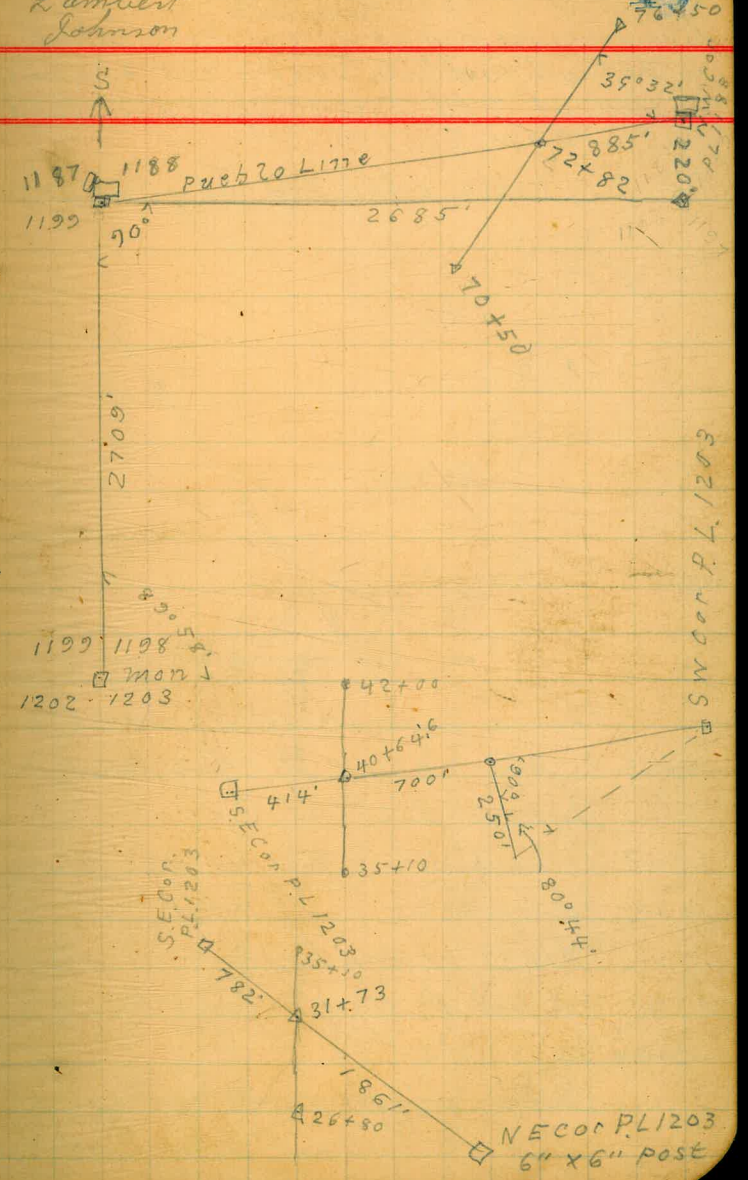
42+00

35+10

26+80

see Book 121

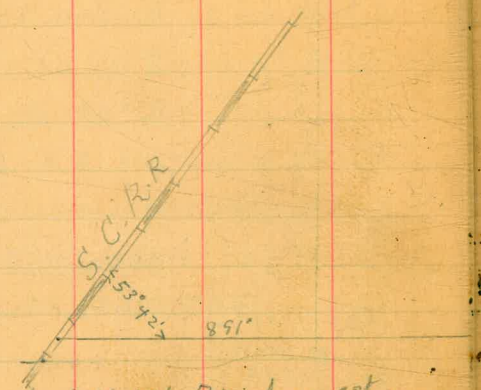
Alverson
McAuliffe
Lambert
Johnson



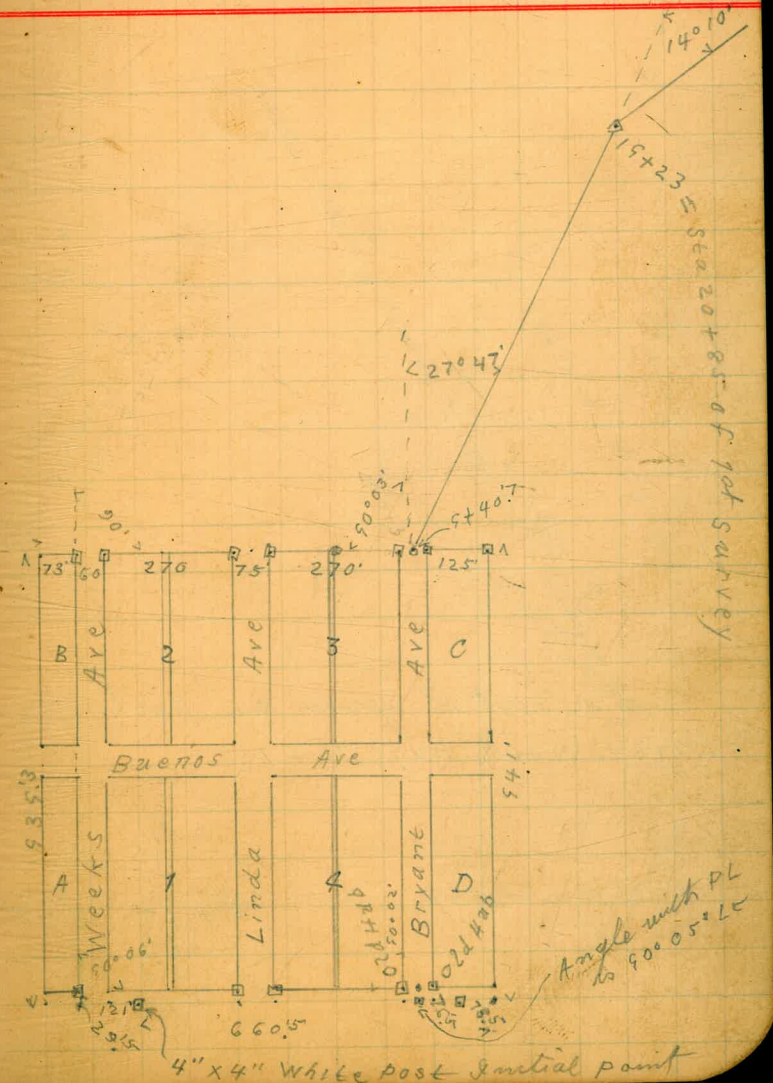
10/7/03 Alverson
McAuliffe
Lambert

Amended

Survey of Richert Wagon Road
Commencing at 4" x 4" Post which
is the South westerly Cor P.L. 285 & is near
N end of Old Town Dyke & is also
U.S. Geod Bm. Elev. 27'
Per City Datum. copper tack top of Post Elev. 23.24



Thence angle 14° 10' Rt along 1st survey
15+23 To Sta 20+85 of 1st survey
Thence angle 27° 47' Rt
5+40.7 To Northwesterly line Weeks Add
0+31 Set spike on line bet Old Hubs
Thence along center Bryant Ave
5 84' Set Hub. center of Bryant Ave
mag. va. N 21° 30' E
I run Northerly along the P.L. line of 285
from 4" x 4" white post Initial point



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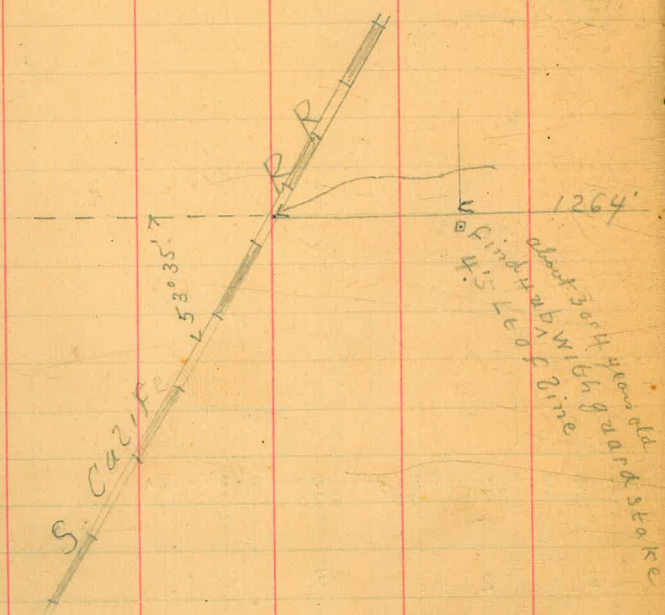
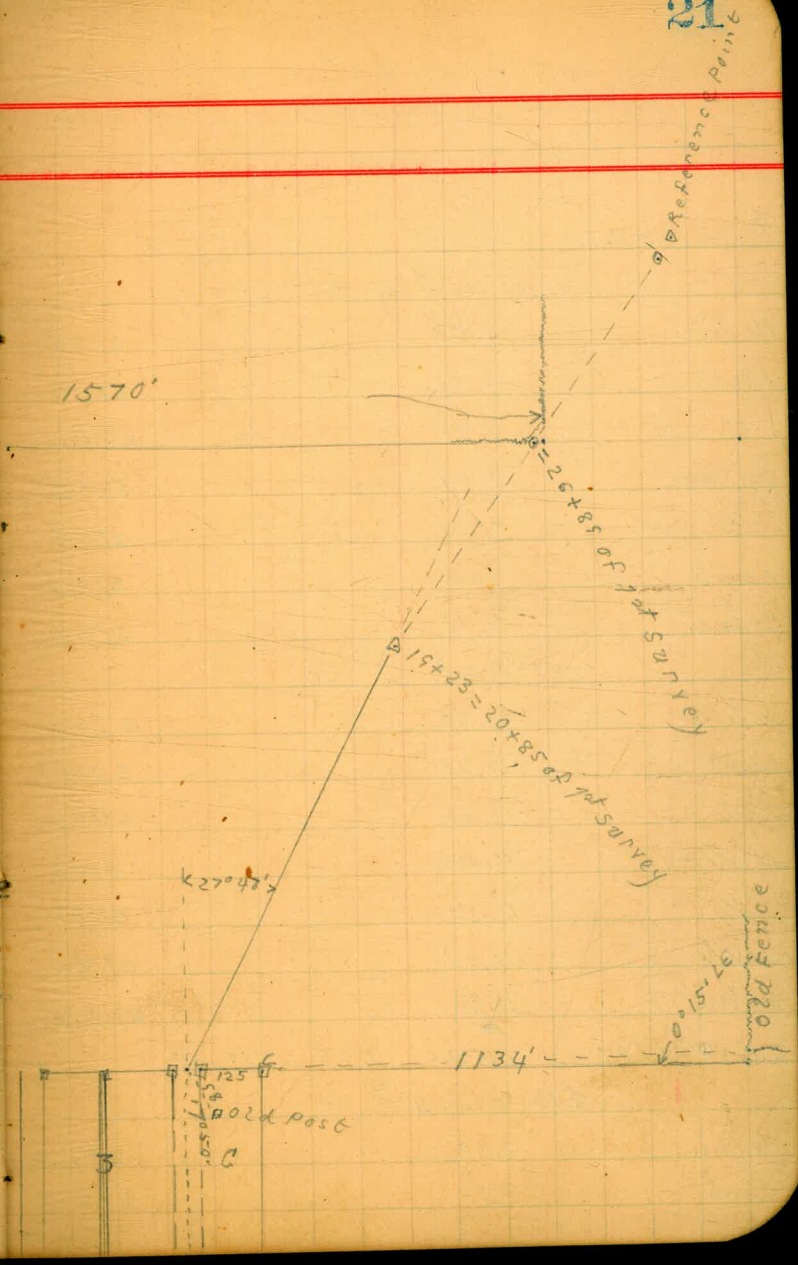


For rest of survey see Book
Misc. Work Page 70 & 75



Checked cross section at the following stations Brooklyn Ave West of 3rd St

B.M.	+0.76	284.98		284.22	
		100' West of 3rd St			
No line		8.90			276.1
curb		8.90			276.1
1/4		8.90			276.1
center		9.40			275.6
1/4		9.20			275.8
curb		9.10			275.9
So line		8.70			276.3
		150' West 3rd St			
So line		10.30			274.7
curb		10.30			274.7
1/4		10.80			274.2
center		11.05			274.0
1/4		11.30			273.7
curb		10.90			274.1
No line		11.80			273.2
T.P. ©	+1.67	275.20	-11.45	273.53	
		210' West 3rd St			
No line		3.80			271.4
curb		2.40			272.8

Cross section notes continued

		275.20			
1/4		2.90			272.3
center		3.00			272.2
1/4		2.80			272.4
curb		2.80			272.4
So line		2.90			272.3
		260' West 3rd St			
So line		6.50			268.7
curb		6.60			268.6
1/4		6.10			269.1
center		6.30			268.9
1/4		6.50			268.7
curb		7.10			268.1
No line		7.10			268.1
		275.20			
T.P. ⊙	+1.07	264.54	-11.73	263.47	

Checked cross Section Brookes ave West from 2nd st. as follows.

		0			
		264.57			
	145' West of 2nd St.				
So line		1.40			263.2
curb		2.40			262.2
1/4		2.90			261.7
center		3.80			260.8
1/4		4.50			260.1
curb		5.50			259.1
No line		6.20			258.4
	175' West 2nd St				
No line		5.30			259.3
curb		5.20			259.4
1/4		4.10			260.5
center		3.60			261.0
1/4		3.30			261.3
curb		3.20			261.4
So line		2.90			261.7

Granger Block Sewer
6/8/04 Hutchison

.035
12.96
.175
12.785

3677
3485
1.92

5.75
7.26
13.01

1296
35
1261

19
.35
950
57
.6650

653
722
13.75
66
13.11
394
9.17

	1.34	47.865		46.525
0			12.96 ~~13.015~~	34.905 ~~34.85~~
			11.095	36.77
410			12.925	
20			12.89	
30			12.855	
40			12.82	
50			12.785	
60			12.75	
70			12.715	
80			12.68	
90			12.645	
100			12.61	
110			12.575	
120			12.54	
130			12.505	
140			12.47	
150			12.435	
160			12.40	
170			12.365	

5.74 = 7.22 cut.

Bottom of Sewer 50'S of D on 4th

5.58 =	7.34 Cut.
5.33	7.56
5.12	7.73
5.02	7.80
4.90	7.88
4.74	8.01
4.78	7.93
4.65	8.03
4.48	8.16
4.41	8.20
4.24	8.33
4.02	8.52
3.875	8.63
3.74	8.73
3.585	8.85
3.42	8.98
3.255	9.11

1309
1190
1.19

.35
.06
.20
13.09
3.475
9.62

1.92
.70
1.22
3

12) 100 (83
96
40

180			12.33		3.15	9.18	
190 196 200			12.295 12.275 12.26		3.13	9.16 9.62	

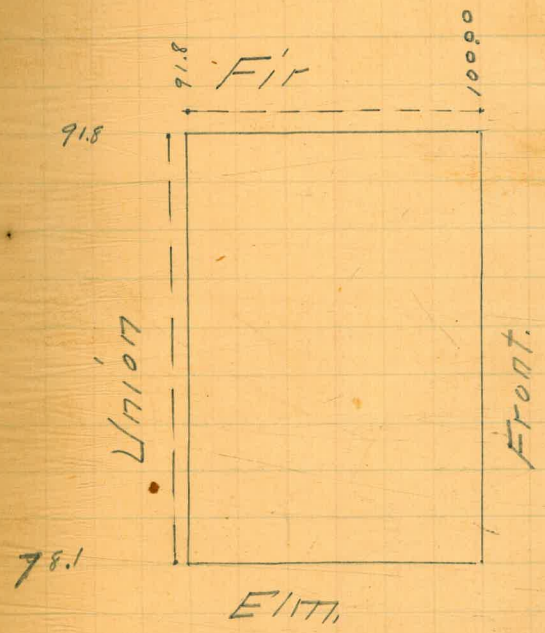
Levels on Curb Line of So side of Fir bet Front & Union

Hutchison } 6/9/04

	3.27	103.34		100.07
West Line of front.			3.34	100.00
50' West of Front			5.5	97.8
100			7.6	95.7
150			9.7	93.6
200. East Line Union			11.5	91.8
	0.65	92.38	11.61	91.73

Levels ~~of~~ on Curb Line of East side of Union bet Fir and Elm.

So Line of Fir	92.38	0.6	91.8
50' So. of "		3.1	89.3
100. " " "		5.4	87.0
150		7.6	84.8
200		9.9	82.5
250		12.2	80.2
No Line Elm		14.3	78.1



New
627' = 7.8 ft west

105° 40'
90° 45' at 184+046

180+95

2571
1315.6
1651.4

1315.6
286
1605.5

13 15
29 9
42 24

42

14+75
5+35.7
9.39.3

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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