Sections
urth
whall
kinson

F.B.3

2

3

MICROFILMED

DEC 1964

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

Minutes.	Lks.	Minutes.	Lks.	Minutes.	Lks.
1	2⅓	21	49	41	95⅔
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100⅓
4	9⅓	24	56	44	102⅔
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107⅓
7	16⅓	27	63	47	109⅔
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114⅓
10	23⅓	30	70	50	116⅔
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121⅓
13	30⅓	33	77	53	123⅔
14	32⅔	34	79⅓	54	126
15	35	35	81⅔	55	128⅓
16	37⅓	36	84	56	130⅓
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135⅓
19	44⅓	39	91	59	137⅔
20	46⅔	40	93⅓	60	140

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Table for Running on Slopes.

In the following table the first column shows the angle, the second, the num 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
°		°		°		°	
4	0·24	11	1·88	18	5·14	25	10·
5	0·38	12	2·24	19	5·76	26	11·
6	0·55	13	2·63	20	6·42	27	12·
7	0·76	14	3·06	21	7·11	28	13·
8	0·98	15	3·53	22	7·85	29	14·
9	1·24	16	4·02	23	8·64	30	15·
10	1·55	17	4·56	24	9·47	35	22·

3

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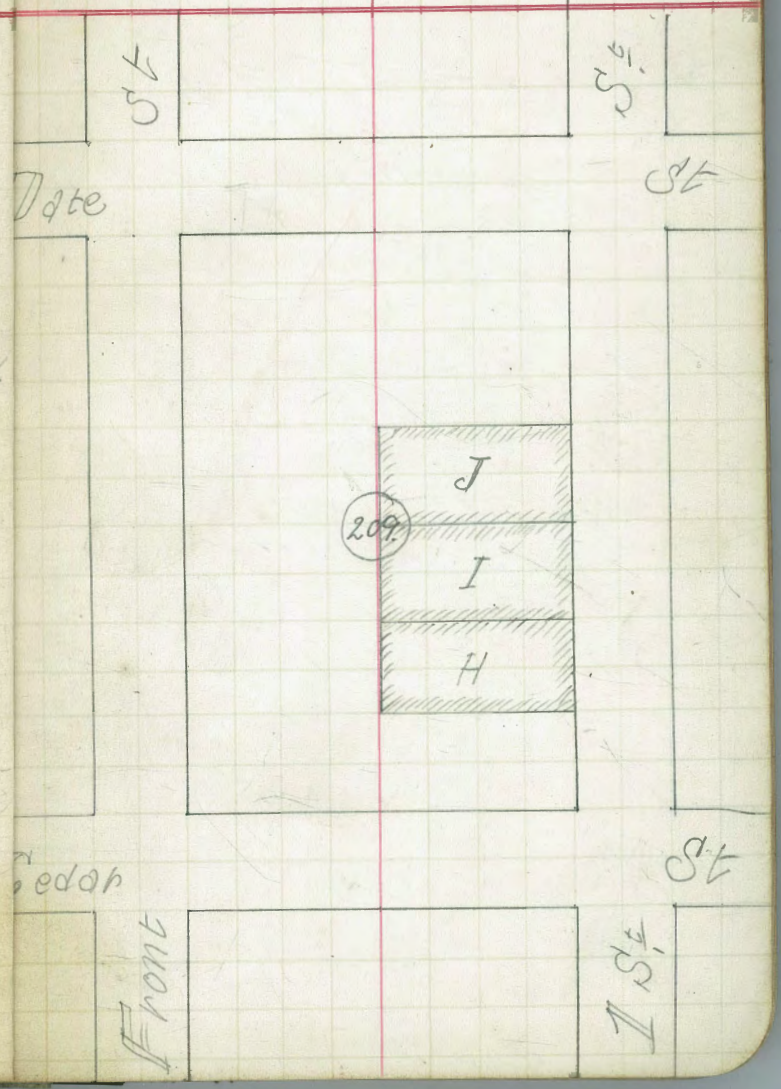
Curb lines & grades Lots H, I & J Blk 209 H.A.

BM	+	HI	Grade	Rod	−	Elev
71.91	10.64	82.55				
BM 1st & Cedar.						
			40.42	12.13		
			72.83	9.72		
			75.25	7.30		
			77.66	4.89		
	9.15				0.90	81.
88.21	BM Date & 1st				2.59	

Completed June 27 / 1889.

Hamlin Book
Artm's Level
Williams Rod
Hensley.



Survey of Lots 3 & 4 Blk 64 Atts Add.

Owner Moriarty (?)

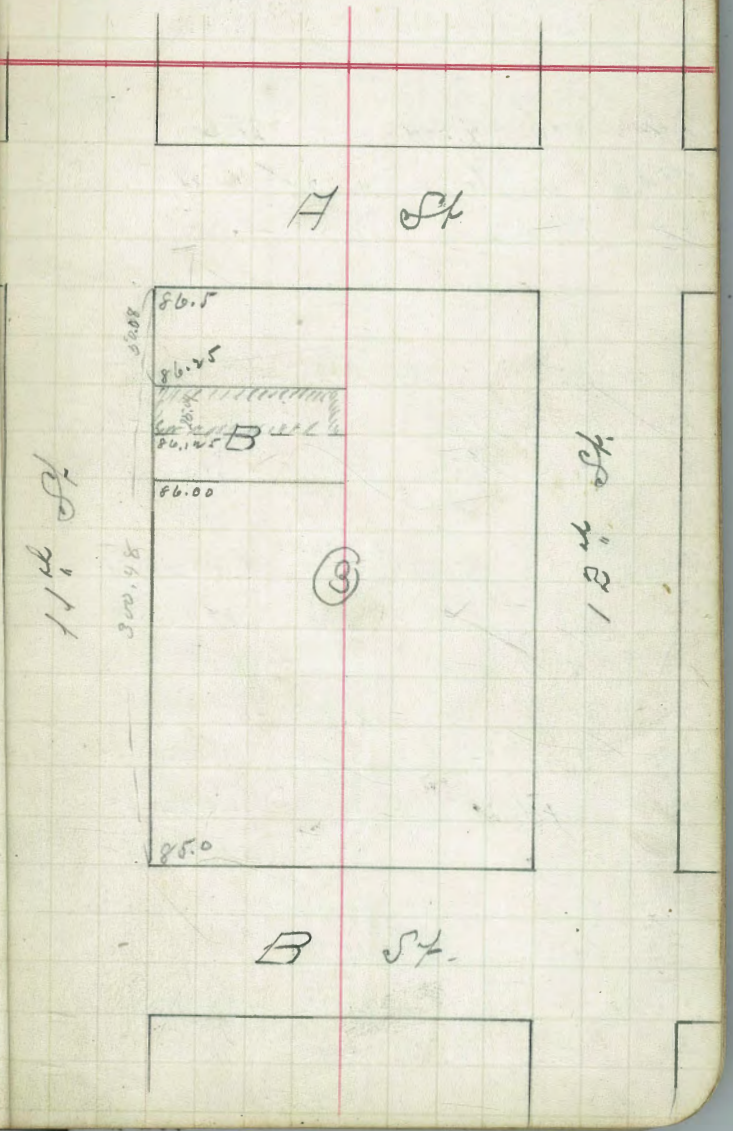
Survey completed June 27/1889
def. points as indicated in
diagram.

Hamlin Transit
Alton Chain
Williams "
Hensley "

POSTED

B.M.	+	H.I.	−	Elev.	Grade
Survey for John Alonso of N½ of Lot 13. Blk 3 HA					
Grades also given.					
84.49	4.61	93.10			
			3.19	89.91	86.25
			3.68	89.42	86.15
				2.65	90.45

Completed July 1 1889
Hamlin Transit
Alton Level
Williams Rod
Hensley Chain



Elev top & bottom of manhole at India & H Sts

Sta	+	HI	−	Elev	
BM	3.70	5.806		2.106	
Top of manhole			4.77	1.036	
Bottom of manhole			12.83	−7.024	
			5.00	0.794	BM H & India
BM	6.18	5.244		−0.936	
BM Atl & H Sts			5.635	−0.391	−0.364
BM Atl & G Sts			5.40	−0.156	
			240		
BM	3.32	5.426		2.106	H & India
BM			4.64	0.786	H & Aug
			4.40	1.026	Top of manhole India & H
			12.46	−7.034	Bottom " " "
BM	2.44	3.726		0.786	H & India .793
H	6.04	5.126	4.64	−0.934	H & Aug 56
			5.52	−0.394	H & Atl
			2.63	2.596	Top of manhole Atl & H
			13.34	−8.214	Bottom " " "
			12.83	−7.704	Top of Weir.
H	5.24	6.536	3.83	1.296	
			6.72	−0.184	BM G. & Atl.

21
11.13
13.23

Sta	+	H.I.	−	Elev	
#		6.536			
#	4.85	6.45 6.446	4.94	1.596	
B.M. #	6.48	6.00	7.93	− 1.48	
			11.13	−6.13	
			13.23	−8.23	
#	4.95	4.89	5.06	− 0.06	
			4.90	−0.01	
			12.70	7.81	
			15.30	10.41	
			4.92	−0.03	
B.M.	4.51	4.33		0.184	Atl &
			4.56	−0.23	
			10.58	−6.25	
			4.92	−0.59	
			11.09	−6.76	
B.M.	4.18	3.23		−0.95	Cal & H
			1.60	1.63	Top gasket seat at Barracks
#	4.10	4.25	3.08	0.15	
			3.00	1.25	Top upper closet seat

Top of	6.17 4.92 11.09	6.02 4.56 10.58
— of Reservoir		
Top of Pipe inlet to Tank.		
Bottom " " " "		
Top of Wall to gate chamber		
Top of above outlet to Res		
Top of Out Set Pipe to Res		
Bottom " " Pipe " "		
Top of wall at 30' Pipe outlet		
Top of manhole Atl & T		
Bottom " " "		
Top of manhole Atl & G		
Bottom " " "		

BM	4.70	2.75		-0.95	Col & H	
			1.70	2.05		of closed seat
BM	3.74	12.37		8.63		Tule & H Sts
			5.08	7.29		of of man hole Stule & H
			18.49	-6.12		Bottom of man-hole " "
				-11.77		Flow of cattle pipe

July 9 1883

Orton Levell
Williams
Hensley

Check of grades for Star track on H St

Sta:	+	H.I	−	Elev:		B	
0	0.91	33.06				32	
Ent 0+37.5			2.78	30.28			
Centre			3.01	30.05			
0 2			3.28	29.78			
+50			3.90	29.16			
1			4.53	28.53			Front to Union.
+50			5.17	27.89			
~~2~~ − 0			5.72	27.34	27.25	.0	
+37			6.12	26.94	26.88	.0	
0			6.52	26.54			
	2.38	29.394				27	
0			2.88	26.51			
+50			3.60	25.79			
1			4.32	25.07			
+50			5.13	24.26			
2			5.90	23.49	23.50		Union to State
+37			6.76	22.63	22.65		
0			7.40	21.99	2.80		

Check of Grades for the new track on 18 St

Sta	+	H.I.	−	Elev.		B.
	1.79	24.87				23
0			2.86	22.01		
+50			3.96	20.91		
1			4.85	20.02		
+50			5.73	19.14		
2			6.62	18.25		
			5.23	19.64	C&K	19

State to Columbia.

6/12/89

July 12 1889

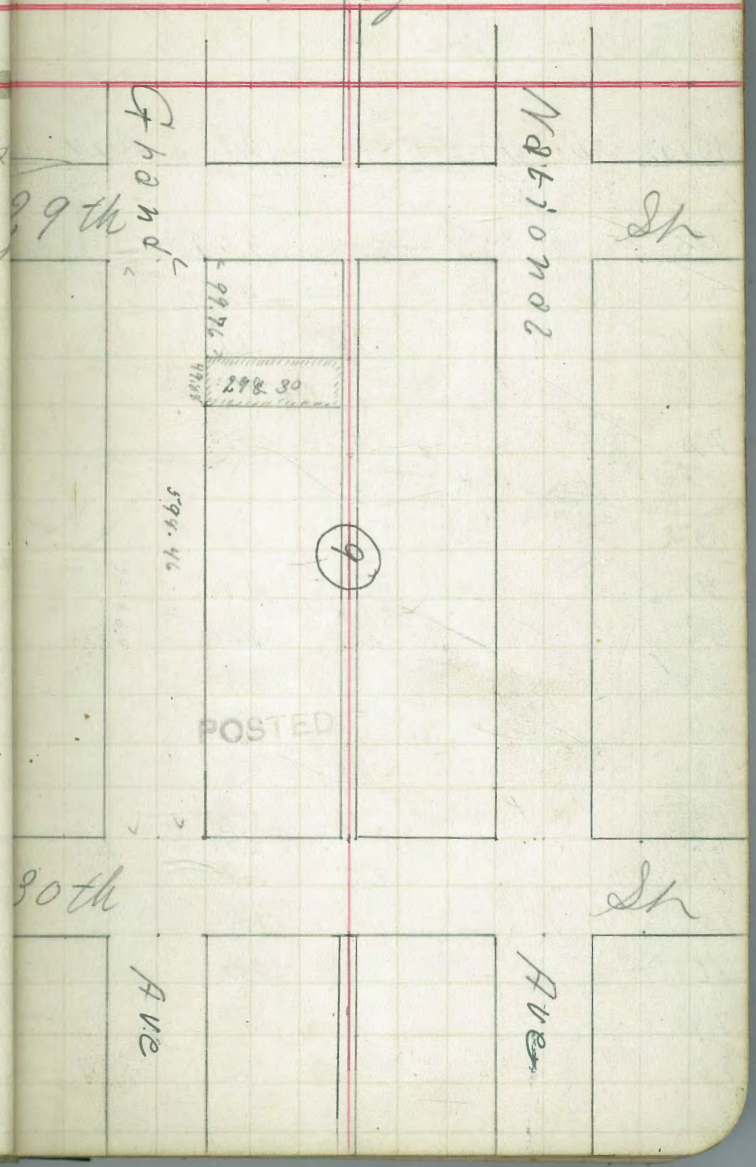
Hamlin Transit
Williams chain
Orton "
Henseley "

Survey of Lots 29 & 30 Blk 9 K &
Add. for Baptist Church
By order of Board of Public Works

Ordered by
Board Public Works
July 11/89

No charge

POSTED



Stn	+	BM	−	Elev	
50+07	Riley St			2.1 ✓	Riley
53				4.07	
63				4.64	
74				1.1	
76				1.0	
52				1.0 ✓	
54				2.3 ✓	
56				3.4 ✓	
58				3.4 ✓	
60				4.7 ✓	
64				4.6 ✓	
64				3.0 ✓	
66				2.7 ✓	
68				1.9 ✓	
70				1.6 ✓	
72				0.9 ✓	
74				1.1 ✓	
76				0.2 ✓	

Top of stake new Stn 53
" " " " Stn 63

July 16th/89.

Sta	+	H.I.	−	Elev	
From Sta 50 measured to the left					
	5.0	7.1			
1			4.6	2.5	on R.R. Grade.
2			5.6	1.5	
3			5.9	1.2	
4			5.8	1.3	Station 50+07½ West
5			5.9	1.2	
6			5.8	1.3	
7			6.7	0.4	
8			6.6	0.5	
	6.1	7.1			
1			5.5	1.6	
2			5.2	1.9	
3			5.6	1.5	Sta 52. 6 West
4			5.8	1.3	
5			5.8	1.3	
6			6.0	1.1	
7			6.2	0.9	
8			6.3	0.8	

St. Sta	+	H. I	-	Elev	
	5.3	7.6			
1			5.4	2.2 x	
2			5.6	2.0 x	
3			5.9	1.7 x	
4			6.0	1.6 x	Sta 54 to West
5			6.0	1.6 x	
6			6.3	1.3 x	
7			6.2	1.4 x	
8			6.5	1.1 x	
	4.2	7.6			
1			4.9	2.7 x	
2			5.2	2.4 x	
3			5.0	2.6 x	
4			5.3	2.3 x	
5			5.6	2.0 x	Sta 56 to West
6			5.8	1.8 x	
7			6.1	1.5 x	
8			6.1	1.5 x	

Sta	+	N.S.	−	Elev	
	4.2	7.6			
1			4.5	3.1 x	
2			4.8	2.8 x	
3			4.8	2.8 x	
4			4.9	2.7 x	
5			5.2	2.4 x	Sta 58 4. West.
6			5.4	2.2 x	
7			5.5	2.1 x	
8			5.5	2.1 x	
	3.0	7.7			
1			3.3	4.4 x	
2			4.5	3.2 x	
3			4.6	3.1 x	
4			4.7	3.0 x	
5			5.0	2.7 x	Sta 60
6			4.8	2.9 x	
7			4.7	3.0 x	
8			5.0	2.7 x	

	+	H.I.	−	Elev	
	3.5	8.1			
1			3.5	4.6	x
2			4.1	4.0	x
3			4.7	3.4	x
4			6.6	1.5	x
5			3.8	4.3	x
6			4.3	3.8	x
7			4.7	3.4	x
8			4.7	3.4	x
	4.6	7.9			
1			4.6	3.3	x
2			4.7	3.2	x
3			4.8	3.1	x
4			4.4	3.5	x
5			5.2	2.7	x
6			5.8	2.1	x
7			6.4	1.5	x
8			4.5	3.4	x

Station 62 4 West

Sta 64

Sta	+	H.I.	-	Elev	
	5.3	8.0			
1			5.1	2.9	
2			5.1	2.9	
3			5.2	2.8	
4			5.2	2.8	
5			5.1	2.9	Station 66 & West.
6			4.6	3.4	
7			4.7	3.3	
8			4.4	3.6	
	4.7	6.6			
1			4.5	2.1	
2			4.0	2.6	
3			4.3	2.3	
4			4.1	2.5	Sta 68 " "
5			3.9	2.7	
6			4.1	2.5	
7			3.9	2.7	
8			3.8	2.8	

Sta	+	H.I	−	Elev.	
	4.9	6.5			
1			5.4	1.1	
2			5.2	1.3	
3			4.7	1.8	
4			4.6	1.9	Station 70 to West.
5			4.7	1.8	
6			4.6	1.9	
7			4.4	2.1	
8			4.4	2.1	
	4.8	5.7			
1			4.5	1.2	
2			4.8	0.9	
3			4.4	1.3	
4			4.2	1.5	Sta 72
5			4.0	1.7	
6			4.1	1.6	
7			3.8	1.9	
8			3.7	2.0	

Stā	+	H.I.	−	Elev	
	4.6	5.7			
1			5.1	0.6 ✓	
2			4.9	0.8 ✓	
3			4.7	1.0 ✓	
4			4.5	1.2 ✓	Stā 74 to West-
5			4.4	1.3 ✓	
6			4.3	1.4 ✓	
7			4.2	1.5 ✓	
8			4.2	1.5 ✓	
	5.3	5.6			
1			5.1	0.5 ✓	
2			5.0	0.6 ✓	
3			4.8	0.8 ✓	
4			4.7	0.9 ✓	Stā 76 " "
5			4.8	0.8 ✓	
6			4.6	1.0 ✓	
7			4.7	0.9 ✓	
8			4.6	1.0 ✓	

Sta	+	H.I.	−	Elev	
	5.3	5.6			
1			5.4	0.2	
2			5.2	0.4	
3			4.9	0.7	
4			4.8	0.8	Station 77 to West
5			4.8	0.8	
6			4.7	0.9	
7			4.9	0.7	
8			4.9	0.7	

Military Road

S 44° 10' W

+17 Δ 10° 58½' Right

8

9

6

5

4

S 73° 05' W

+12 Δ 15° 51' Right

3

2

1

0

S 57° 15' W

Begining at the middle line of 1106 Run

(40 at 13,0)

(18 - 5.4) (34 - 10.8)

23 lower

2'

21 out 5.4

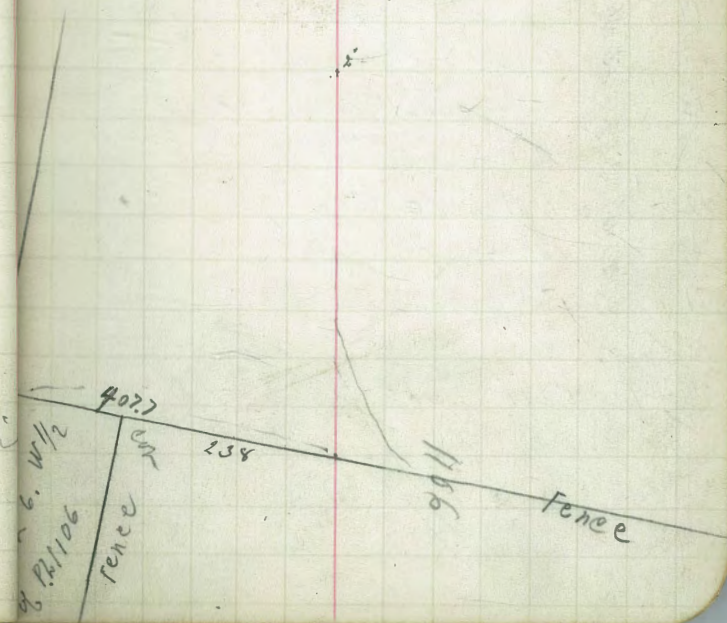
20'

25 out 3.5'

24'

12'

2'



Military Road

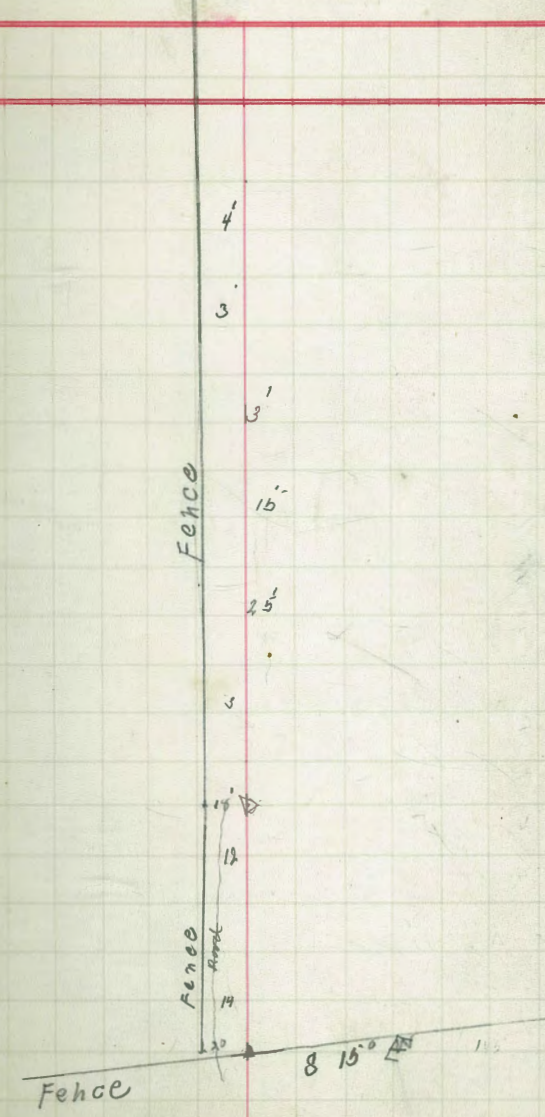
18	S 66° 30 W									
17										
+20		Δ 1° 28½ Left								
16										
15							3	10/60	20/75	
14						2'				
13	S 67° 55' W					4'		5.4/15	10.8/45	16.2/60
12		Δ 8° 17' Left				3'		5.4/18	10.8/38	16.4/60
11	S 76 20 W						3'	5.4/30	11.0/47	15.6/65
+09		8° 04' Left								
10						3'		5.4/30	10.8/45	17.0/60
9						7'		5.4/30	10.8/45	16.2/60

N 28° 45' W

145

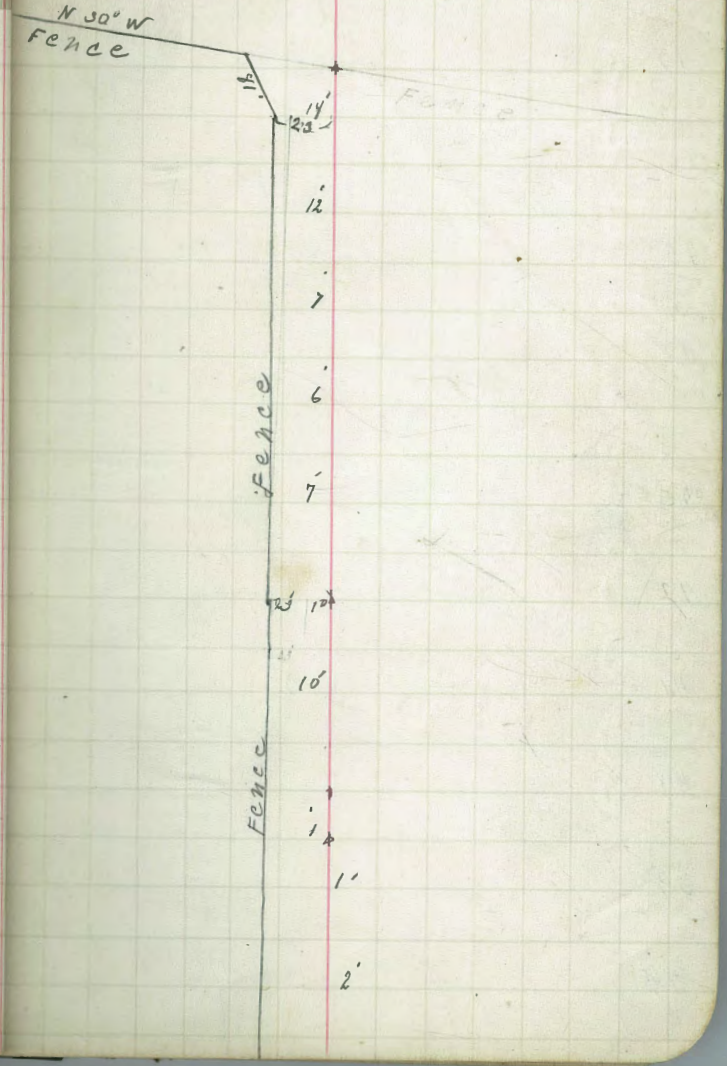
Military Road

27		
26		
25		
24		
23	S 54 15' W	
22		
21	S 77° 05' W	Δ 22° 45 Left
20		
19		
+90		Δ 10° 34' Right
N+33		



Military Road

+74	fence	
37		
36		
35		
34		
33	S 51° 25' W	
32	Δ 1° 29½ Right	
31	S 50° W	
30		
+60	Δ 4° 10' Left	
29		
24		



Military Road

47

46

45

44

43

42

41

40

39

38

Military Road

57

56 S 69 W

55 Δ 14° Right

54

53

52

51

50

49 S 5½° W

48 Δ 4° ó Right

Military Road

67

+92

66

65

64

63

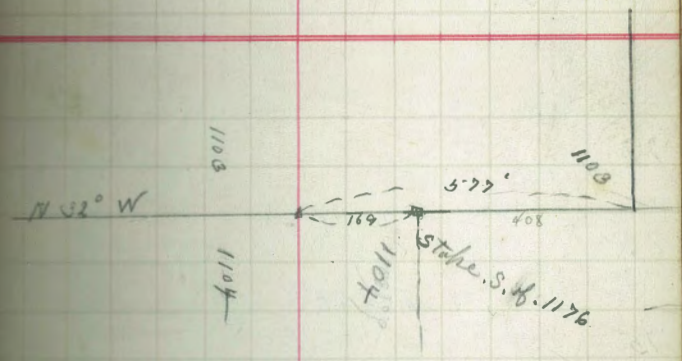
62

61

60

59

58



Military Road

	N. 15° W.			
77	S 78°	431		0
76				3
+30	Δ 9° 24 Right			6
75				1
74			15	
73			36	
72			44 Δ	
		838		
71			44	
70			30	
69			11	
68			4	

Military Road.

N 68° W.

40'

+40 Δ 33° 27' Right

87

86

85

84

83

82

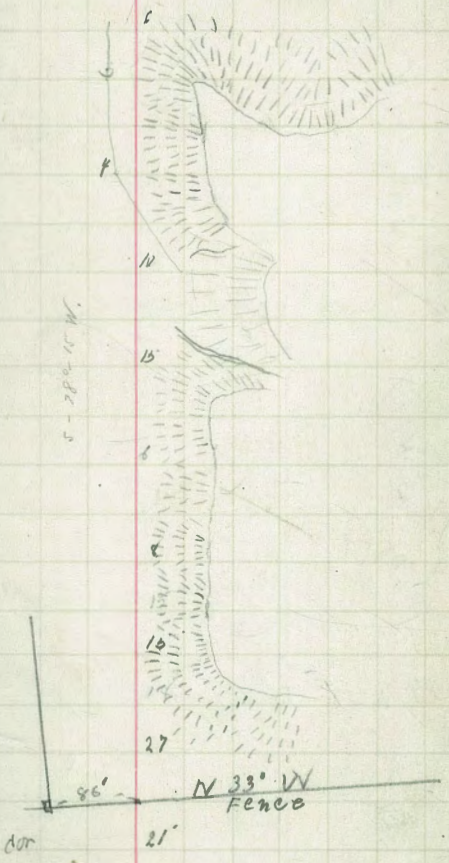
81

80

+61

79

78



Military Road

97.

96 S 60 55 W 464

95

+16 Δ 89° 23½ Left St Centre (Riley St + 3rd St.

94

93 N 29° 45 W 362

92

91

+54 Δ 38° 35' Right Up a st not no stake (Gaines 3rd)

90

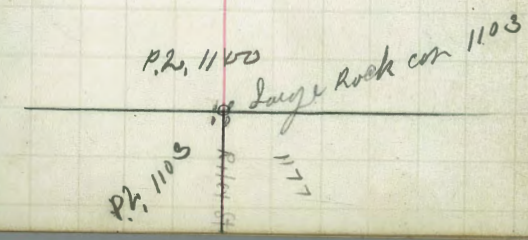
89

264 314

88

Military Road

+93	Δ 90	Right			
106					
105	829° 30' E	347			
104					
+46	90° 34'	Left		St Center	
103					
102					
101		466			
100					
99					
+80					
98					



Military Road

+92 St centr In Old Town Gaines St + NE Boundary

115

114

113

112

+60 Δ 42° 30'. Left

111

110 +46

109

108

107

S 17° 55' W

432

467

111.60
106.93
477

101.93
103.46
347

933.3
347
586.3

July 24th/89.

Grades on Property Lines B St Schoolhouse.

Sta	+	H.I	−	Elev		B.	
	10.16	70.84				60	
0			8.4	62.44			
+10			7.8	63.04			
+30			7.0	63.8			
+50			6.4	64.4			From Cor 7th & B up 7th St
+70			5.3	65.5			
+90			4.5	66.3			
1+10			3.1	67.7			
+30			2.4	68.4			
+50			2.0	68.8			
+70			3.2	63.6			
+40			3.5	63.3			
+60			2.2	62.6			
+80			2.3	62.5			Cor 7th & B & Cor 6th & B
1			2.4	62.4			
+20			2.3	62.5			
+40			2.8	62.0			
+60			2.9	61.9			
+80			3.2	61.6			
2			3.5	61.3			

Grades on Property Line B. & L. Schoolhouse.

July 24th

Sta	+	H.I.	−	Elev		B.M.
		70.84				
0	9.90	69.28	11.46	59.38		
+ 10			8.0	61.3		
+ 30			7.7	61.4		
+ 50			7.4	61.9		
+ 70			7.1	62.2		
+ 90			6.8	62.5		
1 + 10			5.0	64.3		
+ 30			3.7	65.6		
+ 50			2.7	66.6		
						B.M.
			10.84	58.44		58.4

Cor 6.4 + B up 6.4 Stone

July 25th/89.

Check of Bench on Atlantic & California.

+	H.I.	−	Elev	B.M.		
5.180	4.244			−0.93	Cal + H.	
		4.620		−0.37	Atl + H.	
6.180	4.859	5.565	−1.321			
4.475	4.304	5.030		−0.17	Atl + G	
5.285	5.764	3.825		0.47	Atl + F	
6.690	6.434	6.020		−0.25	Atl + E	
3.400	6.394	3.440		2.99	Atl + D	
3.020	7.634	1.780		4.61	Atl + C	N.E cor Coal yard Fence (Spike)
7.780	9.714	5.700		1.93	Atl + B	S.W cor Flume (Spike)
		4.050		5.66	Cal + B	
5.090	4.154			−0.93	Cal + H	
5.860	6.854	3.160	0.994			
		5.930		0.92	Cal + G	N.E cor Spk in Tel Post
4.490	8.084	3.260	3.594			
		4.760		3.32	Cal + F	S.E " " " "
4.410	10.459	2.035	6.049			
		4.840		5.61	" + E	Centre " " "
4.900	11.479	3.930	6.529			
		5.725		7.70	+ D	

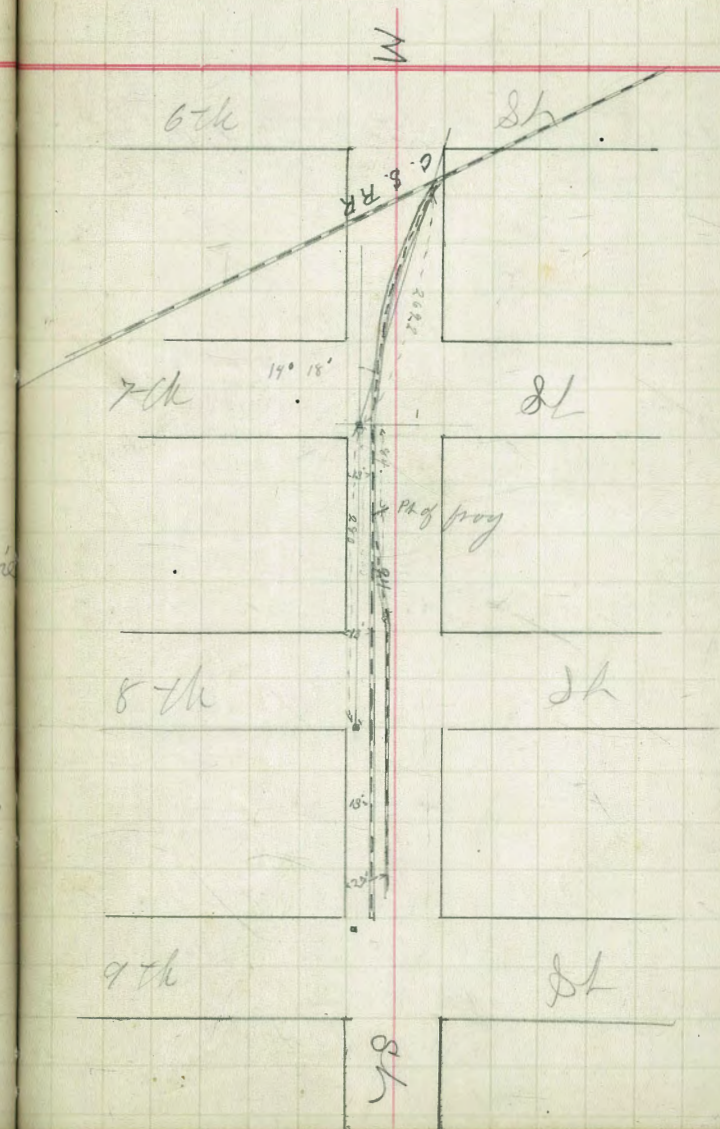
Aug 2 1889 Hamlin
Hensley

Location of switch at foot of Sixth St

From 7' point on SE cor of Seventh & M. B.S. to Mon. at 9th & M
∠ 14° 18' Right. dist 262.2 to point of frog.

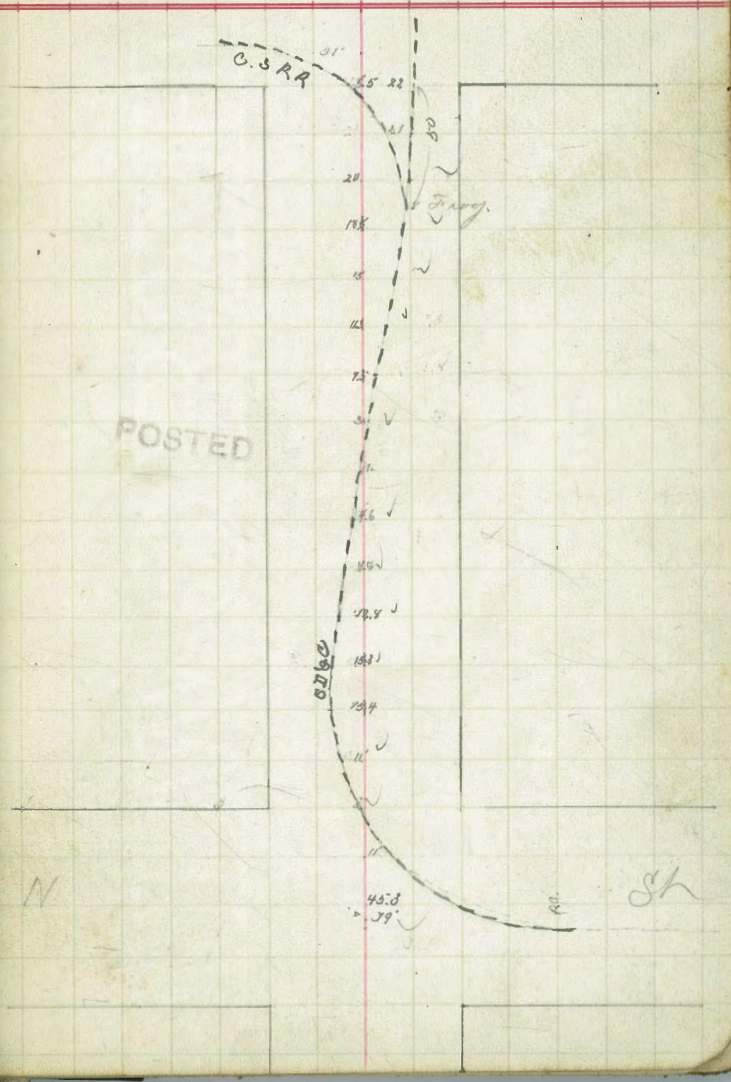
Main switch is 13' north of S line of M St.

Second switch is 27' from S line of M St and the frog is 77' East of East line of 7th St



Location of S.F. & C AR
from N St to 9th St

POSTED



Sta	+					

+13.8 E.C.

2

+50

1

+50

Semi tang 112.5

0 B.C. 20° Curve Right Δ 42° 45'

88.8 from B.C. of curve to main track

Location of picketwork to warehouse at 9th & N St

July 6 1889 Hamlin Williams Otten Hensley

Sta	Rist	Ref.	Index	Tang.	
+86.3	36.3	2° 10'	8° 55'	17° 51'	Same Tang 75'
+50	50	3° 0'	6° 45'		
3	50	3° 0'	3° 45'		
+50	12.5	0° 45'	0° 45'		
+37.5	37.5				
+10	10	0° 30	4° 30	9° 0'	Same Tang 45.1'
2	50	2° 30'	4° 00		
+50	30	1° 30	1° 30'		
+20	20	0° 45'	4° 30'	9° 0'	Same Tang 60'
1	50	1° 52½	3° 45'		
+50	50	1° 52½	1° 52½		
0	B.C. 7° 30' Curve Left L 9° 0'				
	at switch near 7th St				

E.C. about 9' W of W side of Warehouse

O.O. 12° Curve Right L 17° 51' Left

F.C.

P.C.C 10° Curve Left L 9° 0' Left

Aug 14 1889

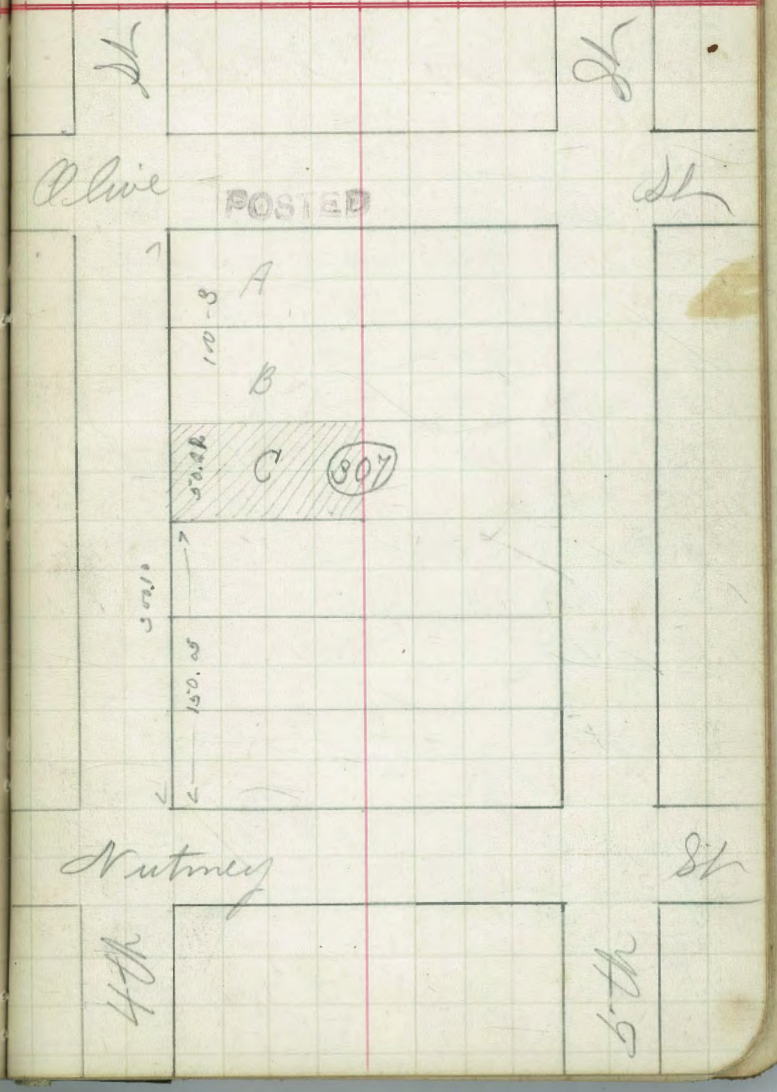
Hamlin
Orton
Williams
Hemsley

Survey of Lot 6 Blk 307
Horton's Add.

Completed Aug 15 – 1889

F of J b Johnson

POSTED



Cross-sections of 4th St N of Olive

Aug 16 1883 41

West		Centre		East		Sta	+	HO	-	Elev
Rod	Elev	Rod	Elev	Rod	Elev					
		(276.1)								269.04
8.2	267.9	7.2	268.9	6.6	269.5	+40	7.03	276.07		
7.9	268.2	7.0	269.1	6.1	270.0	0	N Line Olive			
7.4	268.7	6.5	269.6	5.3	270.8	+50				
7.9	268.2	6.2	269.9	4.7	271.4	1				
8.4	267.7	6.0	270.1	4.4	271.7	+5				
6.3	269.8	5.5	270.6	4.3	271.8	2				
4.7	271.4	4.8	271.3	3.7	272.4	+5				
7.8	268.3	4.0	272.1	3.0	273.1	3	S Line of Palm			
8.0	268.1	6.0	270.1	3.6	272.5	+40	Palm St			
8.0	268.1	6.8	269.3	5.7	270.4	0	N Line of Palm			
9.4	266.7	8.9	267.2			+15				
				7.2	268.9	+30				
						BM			7.29	268.78
	(256.2)			(265.2)		#	0.17	265.12	11.12	264.95
14.0	242.2	11.7	244.5	4.1	261.1	+50	2.75	256.15	11.72	253.40
(223.6)	(245.2)						0.66	245.18	11.63	244.52
				(265.2)			0.54	233.74	11.98	233.20
4.6	219.0	5.4	239.8	1.7	264.5	1	1.34	223.63	11.45	222.29

Carried to next page

Cross Sections of 4th St

Aug 16 1888
Hamlin
Williams
Hennsley

West		Center		East		Sta	+	H O	Williams	Elev
Rod	Elev	Rod	Elev	Rod	Elev					
(271.8)		(245.2)		(245.2)				245.15	0.98	244.17
4.4	267.4	8.6	236.6	+0.5	244.7	1				
		(271.8)				BM	S Palm 3.00	271.78		268.78
14.9	256.9	3.9	267.9	1.2	270.6	2			7.30	264.48
						BM				
(260.8)			(271.8)							
8.1	252.7	3.4	268.4	1.3	270.5	+50				
(251.0)		(260.8)			(271.8)					
12.0	239.0	9.9	250.9	7.2	264.6	3	S Line of Quince St			
(242.7)		(251.0)			(271.8)					
11.4	231.3	7.5	243.5	9.6	262.2	+40	Quince			
(260.8)		(271.8)								
13.8	247.0	10.3	261.5	1.7	270.1	0	N Line Quince			
(260.8)			(271.8)							
5.1	255.7	5.7	266.1	1.6	270.2	+50				
						*	0.90	260.75	11.93	259.85
(260.8)			(271.8)				1.86	250.89	11.72	249.03
15.4	245.4	4.3	267.5	0.2	271.6	1	3.33	242.72	11.50	239.39
						#				

carried to next page

Cross Sections of 4th St

Aug 16 1889 · Hamlin
Atom
Williams
Hemsley

West Rod	West Elev	Centre Rod	Centre Elev	East Rod	East Elev		+	H I	−	Elev
(262.4)			(272.0)							
11.3	251.1	2.4	269.6	0.3	271.7	1+5	2.31	262.16		259.85
						#	11.40	271.95	1.61	260.55
(262.4)			(272.0)							
5.9	256.5	9.1	262.9	3.0	269.0	2+0				
(272.0) 9.5	262.5	3.6	268.4	0.8	271.2	+5				
				(275.6)		#	4.87	275.64	1.18	270.77
14.1	257.9	2.6	269.4	1.9	273.7	3	S Line of Redwood St			
17.0	258.6	6.2	(275.6) 269.4	1.7	270.3	+40				
			(275.6)			BM			9.42	266.22
10.0	265.6	5.5	270.1	2.6	273.0	0	N Line Redwood			
10.0	265.6	4.7	270.9	2.2	273.4	+5				
5.5	270.1	4.2	271.4	2.3	273.3	1				
6.4	269.2	4.2	271.4	2.6	273.0	+5				
(267.8)										
11.7	256.1	6.0	269.6	3.0	272.6	2				
10.4	255.2	5.2	270.4	2.7	272.9	+55				
(267.8)										
						BM			1.71	273.93
9.3	258.5	3.8	271.8	2.1	273.5	3	S Line of Spruce St			
(259.5) 12.6	246.9					+16	3.38	267.83	11.19	264.45
14.0	261.6	12.0	263.6	2.2	273.4	+4	Spruce St			

Cross section of 4th St

Aug 17 1889 Hamlin Arton Hemsley

West Rod	West Elev	Centre Rod	Centre Elev	East Rod	East Elev	Sta	+	HI	−	Elev
		(278.3)								
6.9	271.4	11.8	266.5	4.8	273.5	0	4.37	278.30		273.93
5.6	272.7	7.2	271.1	4.9	273.4	+5				
4.2	274.1	5.4	272.9	5.4	272.9	1				
3.0	275.3	4.3	274.0	4.6	273.7	+5				
2.0	276.3	2.9	275.4	3.4	274.9	2				
0.3	278.0	0.9	277.4	2.4	275.9	+5				
		(286.4)				#	9.34	286.36	1.28	277.02
7.3	279.1	8.3	278.1	9.5	276.9	3	m Thun & 4th		9.23	277.13
5.8	280.6	7.7	278.7	9.0	277.4	+40	Tchon St			
5.3	281.1	7.0	279.4	8.5	277.9	0				
5.5	280.9	6.0	280.4	7.8	279.1	+5				
4.7	281.7	6.1	280.3	6.0	280.4	1				
4.1	282.3	4.8	281.6	4.7	281.7	+5				
3.5	282.9	3.7	282.7	3.8	282.6	2				
2.7	283.7	3.2	283.2	3.1	283.3	+5				
0.9	285.5	2.3	284.1	2.4	284.0	3				
		(292.5)				BM	6.96	292.29	1.03	285.33
6.0	286.0	7.1	285.2	7.6	284.7	+40	Wfas St			
5.4	286.7	5.8	286.5	7.0	285.3	0				
4.8 +45.8	287.5	5.0	287.3	6.0	286.3	+44	N line Hostons Add			
4.9	287.4	5.0	287.3	5.8	286.5	+5				

Cross Sections of 4th St — Aug 17 1889 — Hamlin, Orton, Hemsley

West Rod	West Elev	Centre Rod	Centre Elev	East Rod	East Elev	St	+	HI	−	Elev
			(292.3)							
4.7	287.6	4.6	287.7	4.9	287.4	1		292.29		
4.5	288.8	4.2	288.1	4.2	288.1	+5				
4.4	287.9	4.1	288.2	4.1	288.2	+6	S Line of Ferry St		Fourth St from H.A. is carried through to Ferry St in N. & B. Add	
3.7	288.6	3.9	288.4	3.9	288.4	2+0	Centre Line of Ferry St			
3.8	288.5	3.8	288.5	3.0	289.3	+4	N Line of Ferry St			
			(292.3)							
4.5	287.8	4.2	288.1	3.9	288.4	0	N Line of Ferry St in Nut & Brooks Add			
4.2	288.1	4.1	288.2	3.7	288.6	+5	BM NW cor 4th & Ferry.		4.54	287.75
4.1	288.2	3.8	288.5	3.4	288.9	1	Stk of Blk cor			
3.8	288.5	3.4	288.9	3.3	289.0	+5				
3.4	288.9	3.1	289.2	2.9	289.4	2				
2.9	289.4	2.9	289.4	2.5	289.8	+5				
			(293.1)			#	2.86	293.11	2.04	290.25
3.0	290.1	3.3	289.8	3.5	289.6	3				
2.9	290.2	3.0	290.1	3.4	289.7	+5				
2.7	290.4	2.8	290.3	3.3	289.8	4				
2.8	290.3	2.6	290.5	2.8	290.3	+5				
2.9	290.2	2.8	290.3	3.2	289.9	5				
6.7	286.4	6.9	286.2	6.9	285.2	+5				
10.1	283.0	8.6	284.5	8.9	284.2	6	S Line of Brook St			

248
168
80

Cross Section of 4th St

Aug 17 1889 Hamlin Alton Hemsley

West Rod	West Elev	Center Rod	Center Elev	East Rod	East Elev	
			293.1			
10.3	282.8	9.7	283.4	8.9	284.2	+5
9.7	283.4	9.6	283.5	9.1	284.0	0
			288.2			BM
4.7	283.5	4.3	283.9	2.6	285.6	+5
4.8	283.4	3.8	284.4	3.6	284.6	1
4.3	283.9	4.1	284.1	3.8	284.4	+2
4.7	283.5	4.4	283.8	4.0	284.2	2
4.1	284.1	4.2	284.0	4.5	283.7	+5
4.7	283.5	4.6	283.6	4.6	283.6	3
3.9	284.3	4.2	284.0	4.5	283.7	+5
3.6	284.6	3.1	285.1	3.4	284.8	4
3.1	285.1	3.1	285.1	2.8	285.4	+5
2.9	285.3	2.4	285.8	2.5	285.7	5
2.0	286.2	2.9	285.3	2.8	286.0	+5
2.6	285.6	2.4	285.8	3.5	284.7	6
~~1.9~~	285.6	3.0	285.2	3.3	284.9	+5
			291.9			BM #
6.7	285.2	~~6.7~~	285.6	6.1	285.8	0
6.1	285.8	5.8	286.1	6.2	285.7	+5
5.9	286.0	4.6	287.3	4.7	287.2	1
5.7	286.2	5.2	286.7	4.2	287.7	+5

+	H I	−	Elev
	293.11		
Center of Brooks St			
N line of Brook St			
4.73	288.15	9.69	283.42
W 4th cor of Blk.			
S line of Thornton St			
Center of Thornton St			
6.73	291.89	2.99	285.16
N line Thornton St			

Cross Section of 4th St

Aug 17 1884 Hamlin Acton Hemsley

West Rod	West Elev	Center Rod	Center Elev	East Rod	East Elev		+	H I	−	Elev
		(291.9)								
6.4	285.5	5.7	286.2	5.4	286.5	2		291.89		
6.0	285.9	4.5	287.4	5.2	286.7	+5				
5.1	286.8	5.3	286.6	5.1	286.8	3				
5.0	286.9	4.5	287.4	4.4	287.5	+5				
4.7	287.2	4.3	287.6	4.2	287.7	4				
3.7	288.2	3.1	288.8	3.6	288.3	+5				
3.9	288.0	3.5	288.4	3.3	288.6	5				
3.5	288.4	3.5	288.4	3.2	288.7	+5				
3.4	288.5 ✓	3.3	288.6 ✓	3.0	288.9 ✓	6	S Line of Robinson St			
1.5	290.4 ✓	3.0	288.9 ✓	1.8	290.1 ✓	+3	Center of Robinson St			
		(292.4)				B M	1.69	292.38	1.20	290.69
1.7	290.7 ✓	3.5	288.9 ✓	3.3	289.1 ✓	0	N Line of Robinson St			
3.5	288.9	3.4	289.0	2.1	290.3	+5				
3.6	288.8	3.4	289.0	3.6	288.8	1				
3.6	288.8	3.4	289.0	3.8	288.6	+5				
4.0	288.4	4.2	288.2	3.3	289.1	2				
4.5	287.9	4.2	288.2	3.5	288.9	+5				
2.9	289.5	4.7	287.7	4.4	288.0	3				
5.2	287.2	4.6	287.8	4.4	288.0	+5				
5.0	287.4	4.7	287.7	4.6	287.8	4				
4.8 ✓	287.6	3.6 ✓	288.8	4.8 ✓	287.6	+1	New hall St S Line			

Cross Section of 4th St — Aug 17 1889 — Hamlin, Orton, Hemsley

48

West Rod	West Elev	Center Rod	Center Elev	East Rod	East Elev		+	HI	−	Elev
								292.38		
		(292.4)								
5.4	287.0	5.0	287.4	4.9	287.5	+4	33 feet N of S line of New-hall St			
						BM	3 W sph at blk cor		4.78	287.60
	286.9		287.1		287.3		North Newhall			
		Center			South					

Cross Sections of New hall St

		(293.1)				BM	5.48	293.08		287.60
8.0		8.2	284.9	8.0	285.1	0	East line of 3rd St			
		6.6	286.5	7.5	285.6	+50				
		5.5	287.6	5.9	287.2	1				
		6.5	286.6	6.6	286.5	+5				
		6.3	286.8	5.7	287.4	2				
		5.9	287.2	4.5	288.6	+5				
		6.1	287.0	5.5	287.6	+85	West line of 4th St			
		5.7	287.4	4.8	288.8	3+2	Center of 4th St.			
		5.6	287.5	5.6	287.5	0	East line of 4th St			
		5.4	287.7	4.9	288.2	+5				
		4.1	289.0	5.0	288.1	1				
		4.3	288.8	3.8	289.3	+5				
		3.9	289.2	3.1	290.0	2				
		3.6	289.5	2.1	291.0	+50	West line 5th St			
		3.1	290.0	3.1	290.0	+85				

Cross Section of Robinson St Aug 17. 1889 Hamlin
Acton
Hemsley

North		Center		South						
Rod	Elev	Rod	Elev	Rod	Elev	Sta	+	HO	−	Elev
		(291.4)								
						BM	0.71	291.40		290.69
7.1	284.3	6,4	285,0	6.2	285.2	0	BM NE cor sp k at blk cor of Robinson & 4th		7.07	284.33
5.3	286.1	5,0	286.4	5.5	285.9	+5				
4.5	286.9	4.6	286.8	3,7	287.7	1				
3.6	287.8	3.8	287.6	4,0	~~288.8~~ 287.4	+5				
2.9	288.5	3.7	287.7	3,6	287.8	2				
2,6	288.8	2.3	289.1	3.2	288.2	+5				
0.7	290.7	1.1	290.3	2.9	288.5	+85	est line 4th St			
2.5	288.9	2,5	288.9	2,8	288.6	3+2	4th St			
2.2	289.2	1.3	290.1	2,5	288.9	0	est line 4th St			
		(293.9)				BM	3.18	293.87	0.71	291.69
4.9	289.0	4,9	289.0	4,9	289.0	+50				
5,1	288.8	4,9	289,0	4,8	289,1	1				
5,2	288.7	4,9	289.0	4,6	289,5	+5				
5,2	288.7	5.0	288,9	3,7	290.2	2				
5.2	288.7	5,1	288.8	5,1	288.8	+50				
5,0	288.9	4,5	289,4	5.2	288.7	+85	West line 5th St			

13.41
5.08
18.49
12.37
6.12

7.29
6.12
13,41

1.530 9.174
6.180
2.994

7.644

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

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

ERSE TABLE FOR TRANSIT BOOK,

From 1° to 90° for a distance of 100.

REES.	¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees
Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
	100.00	0.44	100.00	0.87	99.99	1.31	89
1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
19.08	98.08	19.51	97.99	19 94	97.90	20.36	78
20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
40.67	91 18	41.07	91.00	41.47	90.81	41.87	65
42.26	90.45	42.66	90 26	43.05	90.07	43.44	64
43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
46.95	88.09	47.49	87.88	47.72	87.67	48.10	61
48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
54.46	83.63	54.86	83.39	55.19	83.15	55.56	56
55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
66.91	74.02	67.24	73.73	67.56	73.43	67 88	47
68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
70.71							
Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
EGREES.	¾ DEGREE.		½ DEGREE.		¼ DEGREE.		

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