

9

TRANSIT

*F.B. 631*

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	2½	21	49	41	95½
2	4½	22	51½	42	98
3	7	23	53½	43	100½
4	9½	24	56	44	102½
5	11½	25	58½	45	105
6	14	26	60½	46	107½
7	16½	27	63	47	109½
8	18½	28	65½	48	112
9	21	29	67½	49	114½
10	23½	30	70	50	116½
11	25½	31	72½	51	119
12	28	32	74½	52	121½
13	30½	33	77	53	123½
14	32½	34	79½	54	126
15	35	35	81½	55	128½
16	37½	36	84	56	130½
17	39½	37	86½	57	133
18	42	38	88½	58	135½
19	44½	39	91	59	137½
20	46½	40	93½	60	140

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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.
0		0		0		0	
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	13-57
8	0-98	15	3-53	22	7-85	29	14-34
9	1-24	16	4-02	23	8-64	30	15-47
0	1-55	17	4-56	24	9-47	35	22-07

MICROFILMED

DEC 14 1964

5.47 29  
 50.66 +  
 36.13 H.O.  
 1.02 -  
 35.11 Elev.  
 6.26 +  
 61.87 - HI  
 3.20  
 58.17  
 B.P. 48 and A

Level grades on 4th St  
bet Beech and Cedar on

May 24 1890  
Hambin and Party  
West Side

Sta	+	HQ	Grade	Rod	B.M.
B.M.	11.63	106.30			94.67
0			96.00	10.30 <sup>v</sup>	
+25			97.04	1.04	✓
+50			98.09	7.26	✓
+75			99.13	1.05	✓
1			100.17	8.21	✓
+25			101.21	1.04	✓
+50			102.25	7.17	✓
#	7.24	112.55		1.04	=
+75			103.29	6.13	✓
2			104.34	1.04	✓
+25			105.38	8.21	✓
+50			106.42	1.04	✓
+75			107.46	7.17	✓
3			108.50	1.04	✓
			95.50	5.09 <sup>v</sup>	✓
			94.75	1.04	✓
			0.	4.05	✓
				5	
				10.80	
				11.55	
				0.12	112.43

Beech St up to cor.  
North line of Beech St

112.55  
108.75  
3.80

South line of Cedar St  
South of Beech St

Cont- grader on 4th St  
fromo Beech to Cedar on

May 24 1890  
East Side

Hawkins and Party

Sta	+	HQ	Grade	Rock	B.M.
B.M.	11.865	106.535			94.670
0			97.50	9.035	✓
+25			98.460	8.075	✓
+50			99.42	7.115	✓
+75			100.38	6.155	✓
1			101.33	5.205	✓
+25			102.29	4.245	✓
+50			103.25	3.285	✓
#	8.34	112.81	104.21	2.065	104.470
+75			104.21	8.60	✓
2			105.17	7.64	✓
+25			106.13	6.68	✓
+50			107.08	5.73	✓
+75			108.04	4.77	✓
3			109.00	3.81	✓
B.M.			0.39	112.42	

10.635  
9.035

Beech and 4th  
North line of Beech St

8.60  
98  
9.56

South line of Cedar St  
4th and Cedar St

Finishing Slates of 4th  
 West East

	Grade	Prod	Grade	Prod
			(270.56)	
M	269.50	6.06	270.00	5.56
		.50		.42
50	270.00	5.56	270.42	5.14
		.50		.41
	270.50	5.06	270.83	4.73
		.50		.42
50	271.00	4.56	271.25	4.31
		.50		.42
	271.50	4.06	271.67	3.89
		.50		.41
50	272.00	3.56	272.08	3.48
		.50		.42
	272.50	3.06	272.50	3.06
0	272.75		272.75	
	273.00		273.00	2.56

M Redwood and 5th  
 turn first was moved but replaced  
 as near as possible

and Redwood St

May 26 1890 Hamlin and Putz  
 9.35 275.56 266.21

Redwood and 4th St  
 North line of Redwood St  
 raised 6" and to correspond  
 to S of Spruce St

South line of Spruce St  
 Center of Spruce St  
 North line of Spruce St  
 9.82 284.70 0.68 274.88  
 2.63 282.07

Sta	x	NO	Grade	Red	B.M.
B.M.	7.41	38.46			31.05
"				0.05	38.41
			33.33	3.13	0.8 = 3.21
			35.66	2.80	
			35.33	3.13	0.8 3.21
			36.42	2.04	
			32.08	6.38	✓
			32.33	6.13	✓
			28.43	9.63	
			29.33	9.13	✓

B.M. 4th and 7th St

B.M. 4th and E St

Center of C.F. cor of E

Center of E St on South

Center on SW of E and 4th

Center of E St on North

Lev. grades on 4th St from O to C St.

Sta	+	HO	Grade	Red	BM
B.M.	3.360	52.625			49.265
0			48.100	4.125	✓
+25			48.170	4.455 <sup>.170</sup>	✓
+50			48.330	4.295 <sup>.160</sup>	✓
+75			48.50	4.125 <sup>.170</sup>	✓
1			48.670	3.955 <sup>.170</sup>	✓
+25			48.830	3.795 <sup>.160</sup>	✓
+50			49.100	3.625 <sup>.170</sup>	
+75	✓		49.170	3.455 <sup>.170</sup>	✓
2			49.33		
+25			49.50		
+50			49.67		
+75			49.83		
3			50.00		
			1.97		50.655

Pulled up

see next page

North line of C St

South line of B St

Sta	+	HD	Grade	Red	B.M.
B.M.	3.382	52.647			49.265
0			48.000		
+25			48.170		
+50			48.330		
+75			48.500		
1			48.670		
+25			48.830	3.817	✓
+50			49.000	3.647	✓
+75			49.170	3.477	✓
2			49.330	3.317	✓
+25			49.500	3.147	✓
+50			49.670	2.977	✓
+75			49.830	2.817	✓
3			50.000	2.647	✓
B.M.			1.985	52.662	

4th and C St  
North line of C St.

South line of B St  
4th and B St.



St	x	AS	-	Elev
0.9m	2.64	51.905		49.265
			8.20	43.67
0m	3.04	53.70		50.66
			9.97	43.73

4th and C St

bottom of ditch

4th and B St

bottom of flume on W side W of

4th and B St

Cont. grades on 6th St from H to I St on West

Sta	+	HO	Grade	Rod	B.M.
B.M.	7.58	26.93			19.35
0			19.000	7.93	✓
+25			19.46	7.47 <sup>.46</sup>	✓
+30			19.92	7.01 <sup>.46</sup>	✓
+75			20.38	6.55 <sup>.46</sup>	✓
1			20.83	6.10 <sup>.45</sup>	✓
+25			21.28	5.65 <sup>.45</sup>	✓
+30			21.74	5.19 <sup>.46</sup>	✓
+75			22.20	4.73 <sup>.46</sup>	✓
2			22.66	4.27 <sup>.46</sup>	✓
+25			23.12	3.81 <sup>.45</sup>	✓
+30			23.57	3.36 <sup>.46</sup>	✓
+75			24.03	2.90 <sup>.47</sup>	✓
3			24.50	2.43	✓
B.M.			0.88	26.05	S

North line of 6th St

South line of 4th St

26.93  
18.92  
8.01  
7.93  
0.08

Level grade on 6th St from J to H on East

Sta	+	H <sub>2</sub>	Grade	rod
B9m		20.93	see preceding page	
0			19.500	7.43
+25			19.96	6.97 ✓
+30			20.42	6.51 ✓
+75			20.88	6.05 ✓
1			21.33	5.60 ✓
+25			21.79	5.14 ✓
+50			22.25	4.68 ✓
+75			22.71	4.22 ✓
2			23.17	3.76 ✓
+25			23.63	3.30 ✓
+50			24.08	2.85 ✓
+75			24.54	2.39 ✓
3			25.00	1.93 ✓

North line of 8th

South line of H St

Lev. grades on East side

of 6th St bet J and I St  
 May 27 1890  
 Hamlin & Putz

Sta + HO Grade Rod Bm

Bm 20.185 see next page

0 13.500 6.665 ✓

+25 13.917 6.248 ✓

+50 14.333 5.832 ✓

+75 14.749 5.416 ✓  
416

1 15.166 4.999 ✓  
417

+25 15.583 4.582 +07 = 5.252 ✓  
416

+50 15.999 4.166 +07 = 4.833 ✓  
417

+75 16.416 3.749 +07 = 4.419 ✓  
416

2 16.832 3.333 ✓  
417

+25 17.249 2.916 ✓  
417

+50 17.666 2.499 ✓  
416

+75 18.082 2.083 ✓  
416

3 18.500 1.665 ✓

North line of J St

6.665  
 1.583  
 7.248

South line of I St

Levee grades on West side of 6th St bet J and J St  
 May 26, 1890

Sta	+	HO	Grade	rod	B.M.
B.M.	6.430	20.165			13.735
0			13.000	7.165	✓
+25			13.416	6.749 <sup>416</sup>	✓
+50			13.833	6.332 <sup>417</sup>	✓
+75			14.249	5.916 <sup>416</sup>	✓
1			14.666	5.499 <sup>417</sup>	✓
+25			15.083	5.082 <sup>417</sup>	✓
+50			15.499	4.666 <sup>416</sup>	✓
+75			15.916	4.249 <sup>417</sup>	✓
2			16.333	3.832 <sup>417</sup>	✓
+25			16.749	3.416 <sup>416</sup>	✓
+50			17.166	2.999 <sup>417</sup>	✓
+75			17.582	2.583 <sup>416</sup>	✓
3			18.000	2.165 <sup>417</sup>	✓
			0.850	19.315	

North line of J St.

South line of J St.

Level grades on East side

of 6th St bet J and K  
May 26 1890

Sta	+	H.O.	Grade	Rod	B.M.
B.M.		14.180	see next page		
0			8.000	6.180	
+25			8.375	5.805	✓
+50			8.750	5.430	✓
+75			9.125	5.055	✓
1			9.500	4.680	✓ 526
+25			9.875		✓
+50			10.250	3.930	✓
+75			10.625	3.555	✓
2			11.000	3.180	✓
+25			11.375	2.805	✓
+50			11.750	2.430	✓
+75			12.125	2.055	✓
3			12.500	1.680	✓

North line of H St

South line of J St

Least grader on West side  
of 6th St. bet J and K Sts

May 26, 1890. Hamlin & Party

Sta + H<sup>o</sup> Grade Rod B.M.

Sta	+	H <sup>o</sup>	Grade	Rod	B.M.
B.M.	0.44	14.180			13.74
0			7.500	6.680	
+25			7.875	6.305 <sup>.375</sup> ✓	
+50			8.250	5.930 <sup>.375</sup> ✓	
+75			8.625	5.555 <sup>.375</sup> ✓	
1			9.000	5.180 <sup>.375</sup> ✓	
+25			9.375	4.805 <sup>.375</sup> ✓	
+50			9.750	4.430 <sup>.375</sup> ✓	
+75			10.125	4.055 <sup>.375</sup> ✓	
2			10.500	3.680 <sup>.375</sup> ✓	
+25			10.875	3.305 <sup>.375</sup> ✓	
+50			11.250	2.930 <sup>.375</sup> ✓	
+75			11.625	2.555 <sup>.375</sup> ✓	
3			12.000	2.180 <sup>.375</sup>	
B.M.			5.86		8.32

B.M. 6th and J St.  
North line of R St

South line of J St  
6th and R St.

Center on H & St bet  
H and E St

Sta + HO Grade Prod Bm

Sta	+	HO	Grade	Prod	Bm
Bm	7.47	45.88			38.41
0			36.42	9.46 <sup>58</sup>	
+25			37.00	8.88 <sup>58</sup> ✓	
+50			37.58	8.30 <sup>58</sup> ✓	
+75			38.16	7.72 <sup>58</sup> ✓	
1			38.74	7.14 <sup>58</sup> ✓	
+25			39.31	6.57 <sup>58</sup> ✓	
+50			39.89	5.99 <sup>58</sup> ✓	
+75			40.47	5.41 <sup>58</sup> ✓	
2			41.05	4.83 <sup>58</sup> ✓	
+25			41.63	4.25 <sup>58</sup> ✓	
+50			42.21	3.67 <sup>58</sup> ✓	
+75			42.79	3.09 <sup>58</sup> ✓	
3			43.37	2.51 <sup>58</sup> ✓	
		40		40	
+40			43.77	2.11	
4			44.17	1.71	
#	3.14	46.81		2.21	43.67
Bm				0.29	46.52

North line of E St

South line of H St

North line of H St

H & E and East



Gutter gully on West  
side of Hte. bhp board est

Sta + H<sub>0</sub> Ewde Rod B<sub>9</sub>m

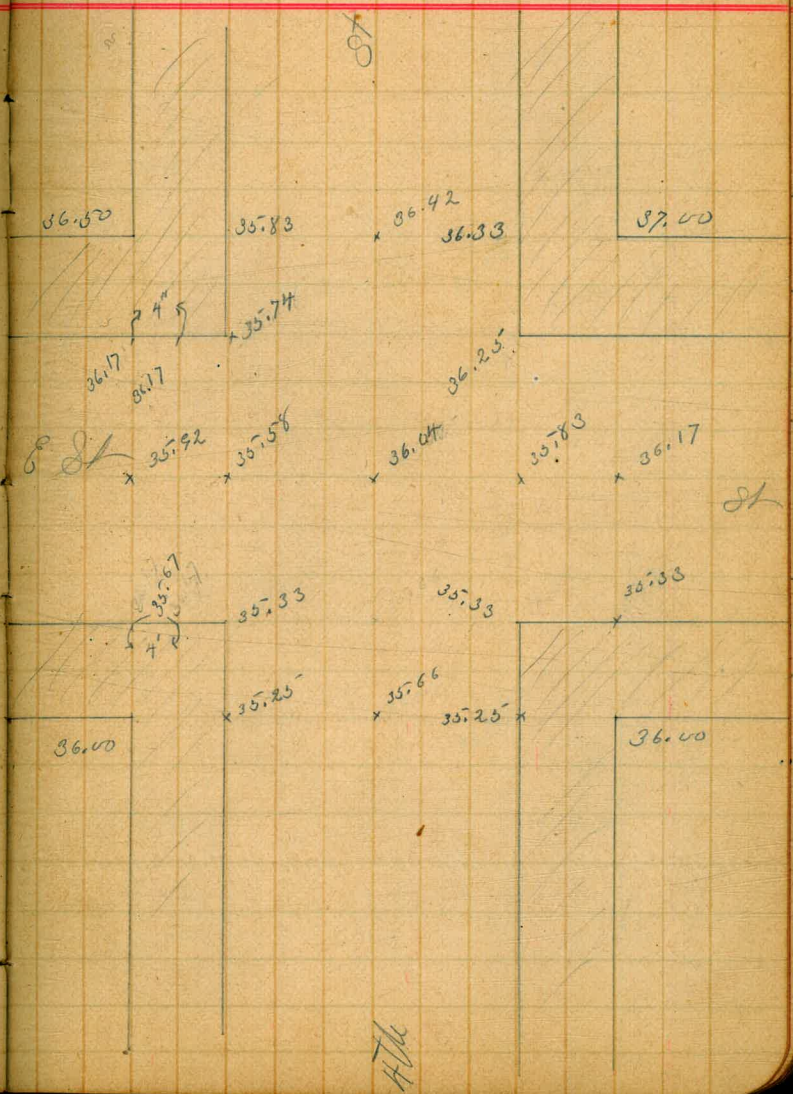
Sta	+	H <sub>0</sub>	Ewde Rod	B <sub>9</sub> m
		45.88		
0			35.83	
+25			36.47	
+50			37.11	
+75			37.74	8.14
1			38.38	7.50 ✓
+25			39.02	6.86
+50			39.66	6.22 ✓
+35			39.79	6.09 ✓
+75			40.24	5.64 ✓
2			40.80	5.08 ✓
+25			41.35	4.53 ✓
+50			41.91	3.97 ✓
+75			42.47	3.41 ✓
3			43.03	2.85 ✓

N line of est

South line of Hte. Est

Grades at intersection of  
4th and E St.

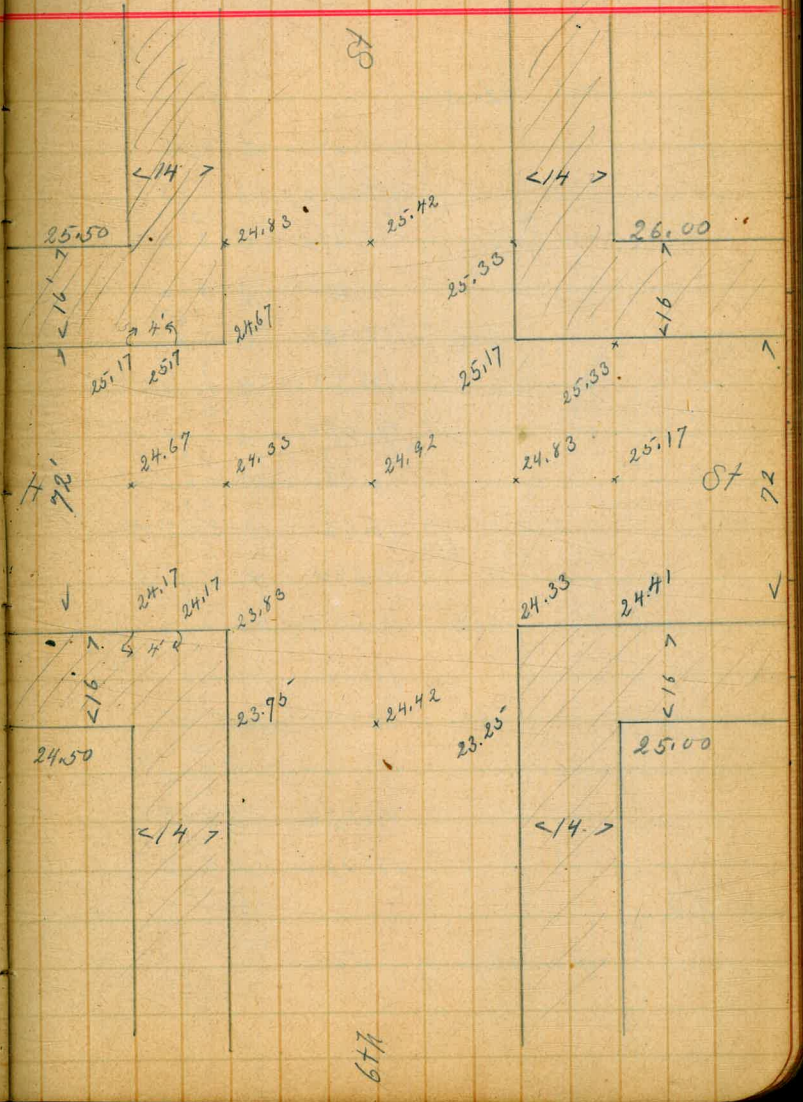
Sta	+	H.O	Grade	rod	Blor
B.M.	2.24	40.65			38.41
			36.00	4.65	
			35.25	5.40	
			35.33	5.32	✓
			35.80	4.82	✓
			36.17	4.48	✓
			35.66	4.99	✓
			35.25	5.40	✓
			35.33	5.32	✓
			35.67	4.98	✓
			35.58	5.07	✓
			35.92	4.73	✓
			36.17	4.48	✓
			35.83	4.82	✓
			35.74	4.91	✓
			36.42	4.23	✓
			36.04	4.61	✓



Checked on grade stakes for  
curb.

Grades at intersection of  
6th and H St.

Sta	+	HS	Grade	Rod	Elev
-----	---	----	-------	-----	------

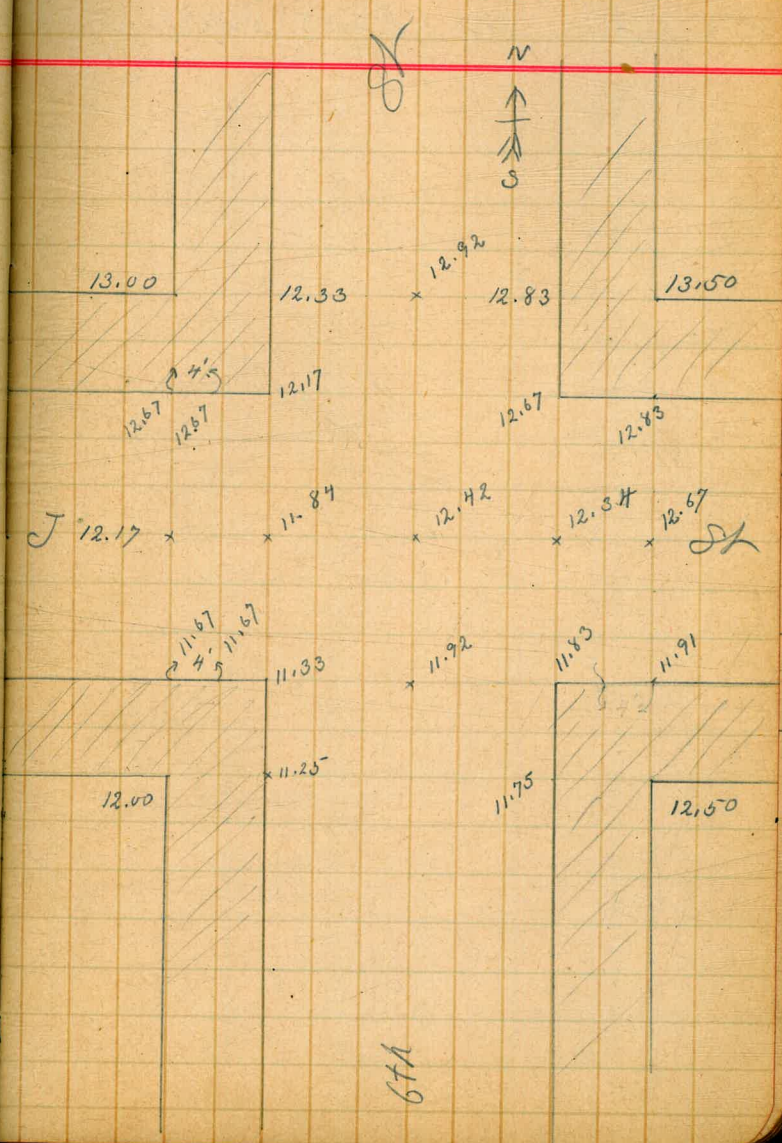




Grades at intersection of 6th  
and J St

Sta	+	H.S.	Grade Rod	Elev.
-----	---	------	-----------	-------

B.M.



Sta + No Grade and Elev.

80

K

81

677

Sta. 1 A.P. Double Rod

B.M.	0.60	26.650		26.05
1		18.917	7.733 ✓	
+25		19.375	7.275 ✓	
+50		19.833	6.817 ✓	
+75		20.292	6.358 ✓	
1		20.750	5.900 ✓	
+25		21.208	5.442 ✓	
+50		21.666	4.984 ✓	
+75		22.125	4.525 ✓	
2		22.583	4.067 ✓	
+25		23.041	3.609 ✓	
+50		23.498	3.152 ✓	
+75		23.957	2.693 ✓	
3		24.417	2.233 ✓	
B.M.		7130	19.35	

B.M. 670 and 1481

2.73  
 58  
 1.65

2.15

B.M. 670 and 1481

Grade for Manhole on D line  
of C and 4th

Sta	+	HO	Grade	rod
B.M.	4.885	57.415		46.525
+75			46.92	4.495
3			47.170	4.245
B.M.			2.165	49.250
Center stake on east bet 4th and 5th				
B.M.	3.885	50.410		46.525
0			43.77	6.64 ✓
1			45.34	5.07 ✓
2			46.92	3.49 ✓
B.M.			1.64	48.77
Center on N. side of 4th and E				
	1.99	40.40		38.41
+30			37.58	2.82 ✓
+25			37.00	3.40
0			36.42	3.58 ✓

4th and B.M.

South of 4th  
4th and 4th

East of 4th St

West of 5th St

B.M. 5th and 10th

4.495

25

4.245

25

4.995



Center grades on B St for  
North track between 3rd and 4th

Sta	+	H9	Grade	rod	B.M.
-----	---	----	-------	-----	------

B.M.	6.835	46.835			40.000
------	-------	--------	--	--	--------

0			41.750	5	6.085L
---	--	--	--------	---	--------

+50			42.340		4.495L
-----	--	--	--------	--	--------

1			42.930		3.905L
---	--	--	--------	--	--------

+50			43.350		3.485L
-----	--	--	--------	--	--------

2			43.770		3.065L
---	--	--	--------	--	--------

0.32 46.515

Center grades on B St bet 4th

B.M.	3.740	50.285			46.525
------	-------	--------	--	--	--------

2+14			43.43	W track	6.835L 6.935
------	--	--	-------	---------	--------------

0			43.770		6.495 6.595
---	--	--	--------	--	-------------

+25			44.160		6.105 6.205
-----	--	--	--------	--	-------------

+50			44.550		5.715 5.815
-----	--	--	--------	--	-------------

+75			44.950		5.315 5.415
-----	--	--	--------	--	-------------

1			45.340		4.925 5.025
---	--	--	--------	--	-------------

+25			45.740		4.525 4.625
-----	--	--	--------	--	-------------

+50			46.130		4.135 4.235
-----	--	--	--------	--	-------------

+75			46.520		3.745 3.845
-----	--	--	--------	--	-------------

2			46.920		3.345 3.445
---	--	--	--------	--	-------------

B.M.			1.490		48.775
------	--	--	-------	--	--------

3rd and B St.

East of 3rd St.

West line of 4th St.

and 5th

4th and B St.

Center grade  
East of 4th St.

West of 5th St

5th and B St

Leant grades on West line  
of 4th St from E to F St

Sta	+	H <sub>3</sub>	Grade	Prod	B <sub>9m</sub>
B <sub>9m</sub>	0.24	38.65			38.41
0			29.50	9.15	✓
+25			30.04	8.61	✓
+50			30.58	8.07	✓
+75			31.12	7.53	✓
1			31.67	6.98	✓
+25			32.21	6.44	✓
+50			32.75	5.90	✓
+75			33.29	5.36	✓
2			33.83	4.82	✓
+25			34.37	4.28	✓
+50			34.92	3.73	✓
+75			35.46	3.19	✓
3			36.00	2.65	✓
				7.60	31.05
#	509	41.09		2.65	36.00
				2.68	38.41
			36.00	5.09	

North line of F St

41.09  
36.5  
4.59

South line of E St

South of E St

Letter grade at intersection  
of 4th and 18 St

Sta	+	H <sub>2</sub>	Grade	rod	Elev
B <sub>1</sub> m	7.210	47.210			40.000
2+14			43.43	3.78	✓
" "			43.33	3.88	✓
			43.77	3.44	
			44.17	3.04	
			43.87	3.84 <sup>80</sup>	
			42.79	4.42 <sup>58</sup>	✓
			42.21	5.00	✓
B <sub>2</sub> m				0.69	46.52

2nd and 18 St.  
Grade of North track  
" " South "  
center of 18 St.  
center N of 18  
center S of 18  
2+25 center of 18 St.  
2+30 " " "  
4th and 18 St.

Curb grades on East side  
of 4th St bet C and F St

7235  
6905  
1414  
7.41  
6.79

Sta	+	HO	Grade	Rod	Elv
B.M.	0.495	38.905			38.410
0			30.000	8.905	
+25			30.500	8.405 ✓	
+50			31.000	7.905 ✓	
+75			31.500	7.405 ✓	
1			32.000	6.905 ✓	
+25			32.500	6.405 ✓	
+50			33.000	5.905 ✓	
+75			33.500	5.405 ✓	
2			34.000	4.905 ✓	
+25			34.500	4.405 ✓	
+50			35.000	3.905 ✓	
+75			35.500	3.405 ✓	
3			36.000	2.905	
			7.845		31.060

10 M. 4th and E St  
North line of F St

South line of E St

8.805  
 5405

Sta	+	HS	Grade	Roll	BM
		38.905	see preceding page		
0			29.420	9.485	✓
+50			30.46	8.475	✓
1			31.50	7.405	✓
+50			32.540	6.365	✓
2			33.580	5.325	✓
+50			34.62	4.285	✓
3			35.66	3.245	✓

North line of Est

South line of Est

Center grades on 4th St from  
3rd to East line of 4th St

May 30 1890

Hamlin }  
Willie }  
Hemlock }

Sta	+	HO	Grade	Mod	rod on S side
B.M.	6.81	46.81			
0			41.75	5.06	5.16 ✓
+25			42.04	4.77	4.87 ✓
+50			42.34	4.47	4.57 ✓
+75			42.63	4.18	4.28 ✓
1			42.93	3.88	3.98 ✓
+25			43.14	3.67	3.77 ✓
+50			43.35	3.46	3.57 ✓
+75			43.56	3.25	3.35 ✓
2			43.77	3.04	3.14 ✓
+14			43.43	3.38	3.48 ✓
+40			43.77	3.04	3.14 ✓
+66			43.43	3.38	3.48 ✓
30			43.77	3.04	3.14 ✓
				0.29	
			43.37	3.44	

40.000 3rd and 4th St  
East line of 3rd St.

West line of 4th St  
Center  
Center of 4th St  
Center  
East line of 4th St.  
46.52

Curb grades on East side  
of 4th St from E to D St

Sta	+	HO	Grade	rod	elev.
B.M.	0.29	31.84			31.05
0			23.00	8.34	✓
+25			23.50	7.84 <sup>.50</sup>	✓
+50			24.00	7.34 <sup>.50</sup>	✓
+75			24.50	6.84 <sup>.50</sup>	✓
1			25.00	6.34 <sup>.50</sup>	✓
+25			25.50	5.84 <sup>.50</sup>	✓
+50			26.00	5.34 <sup>.50</sup>	✓
+75			26.50	4.84 <sup>.50</sup>	✓
2			27.00	4.34 <sup>.50</sup>	✓
+25			27.50	3.84 <sup>.50</sup>	✓
+50			28.00	3.34 <sup>.50</sup>	✓
+75			28.50	2.84 <sup>.50</sup>	✓
3			29.00	2.34 <sup>.50</sup>	✓
			6.865	24.475	

North line of E St

South line of D St

curb grades on West  
 side of 14th St bet Canal & Fish

Sta	+	HS	Grade	Foot	Elev.
BM		31.34			
0			23.00	8.34	
+25			23.50	7.84	
+50			24.00	7.34	
+75			24.50	6.80	
1			25.00	6.34	
+25			25.50	5.84	
+50			26.00	5.34	✓
+75			26.50	4.84	✓
2			27.00	4.34	✓
+25			27.50	3.84	✓
+50			28.00	3.34	✓
+75			28.50	2.84	✓
3			29.00	2.34	✓

see Appendix page

North line of 14th

South line of Fish



Center grades on 4th St bet  
F and E St

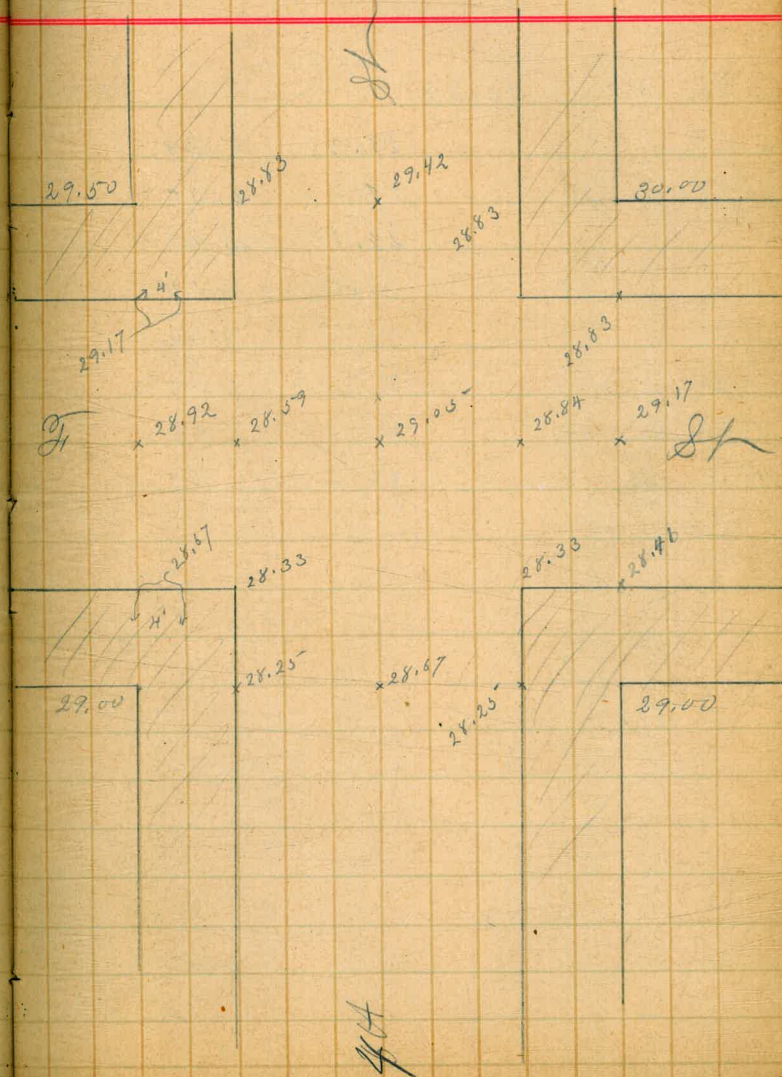
Sta	F	HO	Grade	Moel
09m		31.34	see preceding page	
0			22.67	8.67 ✓
+50			23.67	7.67 ✓
1			24.67	6.67 ✓
+50			25.67	5.67
2			26.67	4.67
+50			27.67	3.67
3		not	28.67	2.67

North line of E St

South line of F St

Grades at intersection of  
4th and B St.

Sta	+	AD	Grade	Rock	Elev
09m	0.22	31.27			31.05
			29.50	1.77	✓
			28.83	2.44	✓
			29.17	2.10	✓
			28.67	2.60	
			28.25	3.02	
				6.79	24.48



Gutter grades bet 4<sup>th</sup> and 5<sup>th</sup>  
St on 4<sup>th</sup>

Sta	f	HD	Grade	rod
B.M.	0.22	31.27		31.05
2+30			27.33	3.94 <sup>50</sup>
+75			27.83	3.44 <sup>42</sup> ✓
3			28.25	3.02 ✓
0			22.33	8.94 ✓
+25			22.83	8.44 <sup>50</sup> ✓
+50			23.33	7.94 <sup>50</sup> ✓
+75			23.83	7.44 <sup>50</sup> ✓
1			24.33	6.94 <sup>50</sup>

4<sup>th</sup> and 5<sup>th</sup>

South of 4<sup>th</sup>  
South of 5<sup>th</sup>

6.79 24.48

Gutter grades on 6th and H St.  
bet 3th elev.

Sta	+	H.O	Grade	Prod	Elev.
-----	---	-----	-------	------	-------

West - side

B.M.	7.505	33.535			26.05
0			24.830	8.725	✓
+25			25.291	8.234	✓
+50			25.750	7.805	✓
+75			26.209	7.346	✓

North line of H St.

East side

0			25.33	8.225	✓
+25			25.79	7.763	✓
+50			26.25	7.305	✓
+75			26.71	6.845	
				67	
				6.175	

North of H St.

B.M.

1.34

32.215

6th ramp 3th

Level grades on east side  
of 6th St bet fund K St

Sts + HO Grade Rod elev.

Sts	+	HO	Grade	Rod elev.
B.M.	1.30	15.04		13.74
0			8.00	7.04 ✓
+25			8.38	6.66 ✓
+50			8.75	6.29 ✓
+75			9.13	5.91 ✓
1			9.50	5.54 ✓
+25			9.88	5.16 <sup>38</sup> ✓
+50			10.25	4.79 <sup>37</sup> ✓
+75			10.63	4.41 <sup>38</sup> ✓
2			11.00	4.04 <sup>37</sup> ✓
+25			11.38	3.66 <sup>38</sup> ✓
+50			11.75	3.29 <sup>37</sup> ✓
+75			12.13	2.91 ✓
3			12.50	2.54
			6.72	8.32

B.M. 6th and 2nd  
N of K St

South of J St

X sec of Ditch May 31. 90  
 Hazard Lot Hamilton Party

Sta	+	H <sub>2</sub>	-	Elev	Inch grade	Set grade	Diff bet 1 <sup>st</sup> and 2 <sup>nd</sup> grade	1 <sup>st</sup> grade + 2 <sup>nd</sup> grade = Diff. in feet.	
B <sub>9m</sub>	0.93	25.41			24.48	B <sub>9m</sub>	0.93	25.41	24.48
0			5.32	20.09	20.25	20.25	0		
+ 1/6			5.40	20.01	20.73	20.59	.14		
"			5.10	20.31	20.73	20.59	.14		
+ 4 4			5.10	20.31	21.57	21.20	.37		
"			4.9	20.5	21.57	21.20	.37		
+ 5 8			4.8	20.6	21.99	21.50	.49		
"			4.5	20.9	21.99	21.50	.49		
+ 6 8			4.6	20.8	22.29	21.71	.54		
"			4.4	21.0	22.29	21.71	.54		
+ 7 8			4.3	21.1	22.59	21.93	.66		
"			3.9	21.5	22.59	21.93	.66		
+ 10 8			2.9	22.3	23.35	22.57	.78		
B <sub>9m</sub>			8.35	17.06					

average width of ditch 4.0

0<sup>th</sup> ~~20.25~~ <sup>0</sup> ~~line of 4th~~ <sup>8m</sup>

B<sub>9m</sub> H and 1/4

8.35 - 17.06

Center grade on 1884 at  
intersection of 3rd St & 3rd St

Sta	+	HO	Grade	rod	rod	Blow
-----	---	----	-------	-----	-----	------

B.M.						40.000
2			40.500			West of 3rd St
+40			41.125			
0			41.750			East of 3rd St

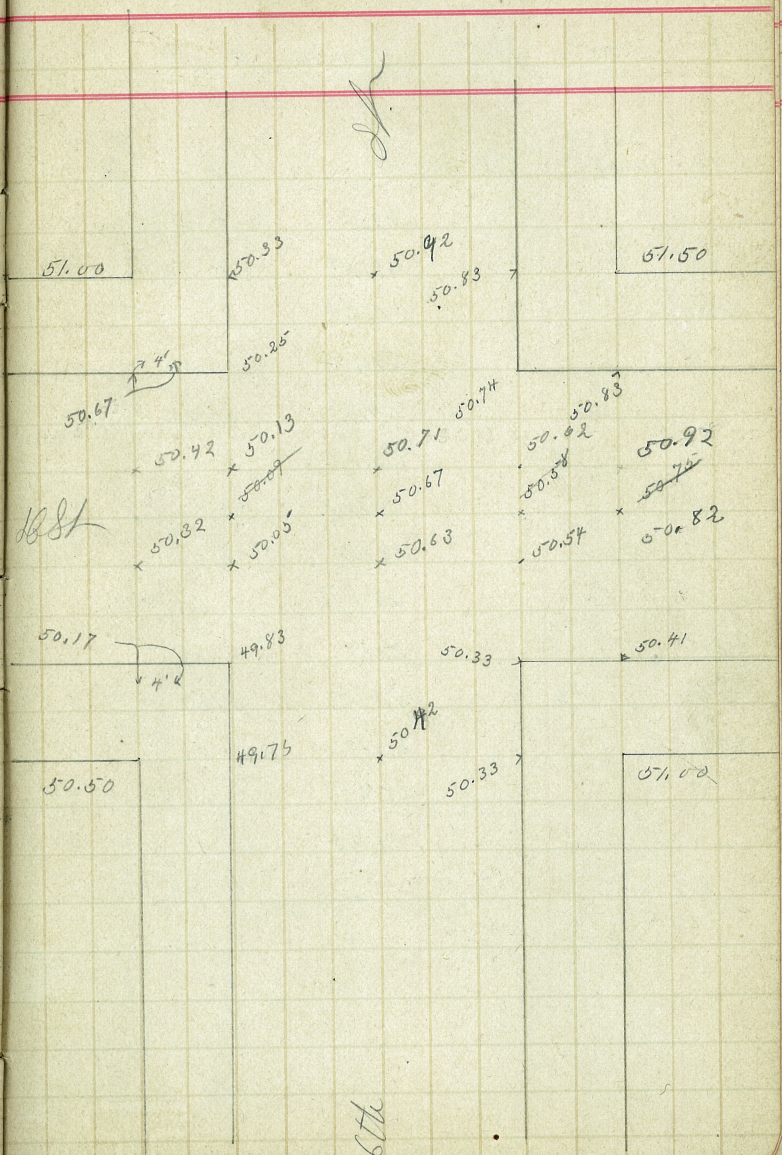
West line of 3rd St

center of 1884

Grades at intersection of  
6th and 28th St.

Sta	+	NO	Grade	Mod	Elev.
B.M.	5.61	54.39			48.78
			50.41	3.98	
			50.33	4.06	
			50.83	3.56	
			50.74	3.65	
			50.33	4.06	
			50.67	3.73	
			50.23	4.14	
			50.17	4.22	
			49.83	4.56	
			49.75	4.64	
			50.32	4.07	
			50.42	3.97	
			50.13	4.26	
			50.05	4.34	
			50.63	3.76	
			50.71	3.68	
			50.82	3.57	
			50.92	3.47	

B.M. 6th and 28th 2.32 52.07





Center grades on 4th St  
bet F and E St.

Sta + HD Grade Rod Elev

Sta	+	HD	Grade	Rod	Elev
B.M.	0.18	31.23			31.05
0			22.67	8.56	33 8.23
+25			23.17	8.06	✓
+50			23.67	7.56	✓
+75			24.17	7.06	✓
1			24.67	6.56	✓
+25			25.17	6.06	✓
+50			25.67	5.56	✓
+75			26.17	5.06	✓
2			26.67	4.56	✓
+25			27.17	4.06	✓
+50			27.67	3.56	✓
+75			28.17	3.06	✓
3			28.67	2.56	2.23
			29.05	2.18	
0			29.42	1.81	

B.M. 4th and F St  
North line of E St.

South line of F St.

North line of F St.

B.M. 6.76 24.47

4th and E St

center grade on 4th St

from 4th Beech St  
June 4 1890

Sta	+ 100	Grade	rod elev
B.M.	11.31	69.47	58.16
0		60.50	8.97 ✓
+50		63.54	<sup>3.04</sup> 5.93 ✓
1		66.58	<sup>3.04</sup> 2.89 ✓
#	11.33	79.42	1.38 68.09
+50		69.62	9.80 ✓
2		72.66	<sup>3.04</sup> 6.76 ✓
+50		75.70	<sup>3.04</sup> 3.72 ✓
3		78.75	<sup>3.05</sup> 0.67 ✓
B.M.	11.75	90.86	0.31 79.11
+40		79.75	11.11 ✓
0		80.75	10.11 ✓
+50		83.08	<sup>2.33</sup> 7.78 ✓
1		85.41	<sup>2.33</sup> 5.43 ✓
#	7.31	97.39	0.78 90.08
+50		87.74	<sup>2.33</sup> 3.12 ✓
2		90.08	<sup>2.34</sup> 0.78 ✓
+50		92.41	4.98 ✓
B.M.		94.75	<sup>2.34</sup> 2.64 ✓
B.M.			2.71 94.68

4th and 4th St  
North of 4th St

South of 4th St

4th Street

North of 4th St

South of Beech St

Level grade on West side  
of 4th St bet 3 and 14th

Sta	+ HO	Grade	Prod
Bm	0.40	24.875	24.475
0		16.50	8.375 ✓
1		18.33	6.575 ✓
2		20.17	4.705 ✓
3		22.00	2.875
Bm			7.830 17.045

4th and 8th  
North of 14th

South of 8th  
4th and 14th

Level grade on east of 4th bet  
4 and 8th

0		15.83	9.045 ✓
1		17.66	7.215 ✓

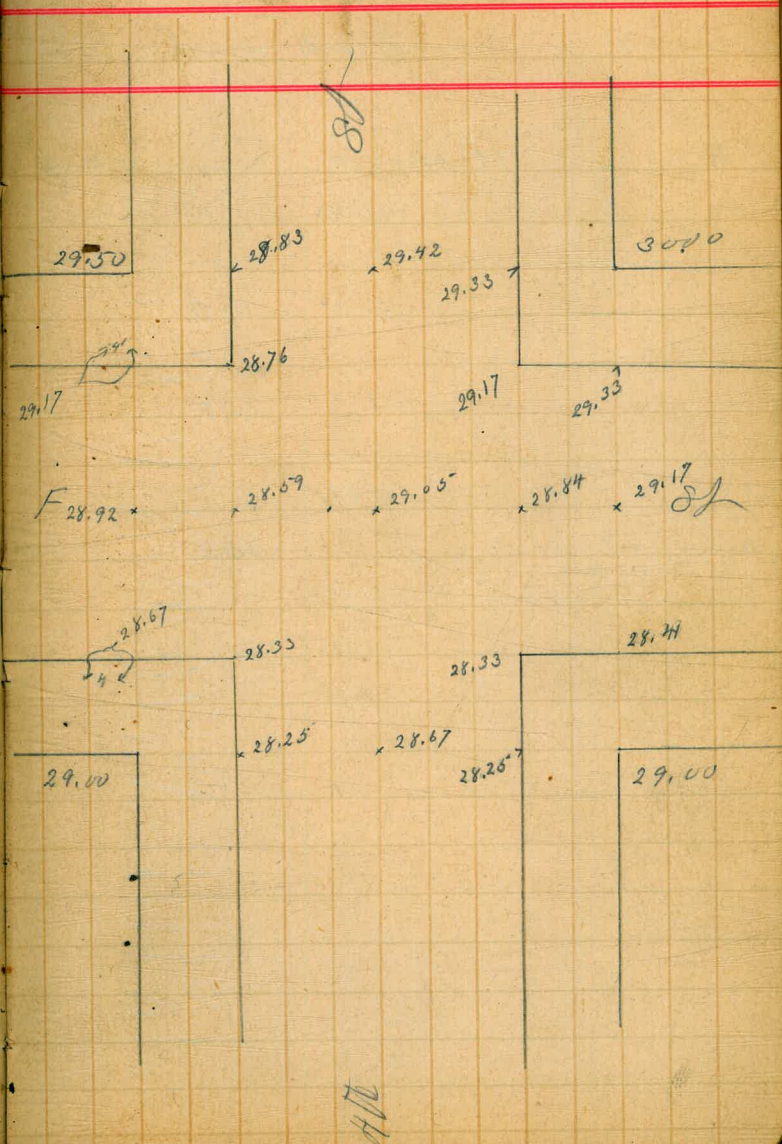
North of 14th

9.045  
8.375  
-----  
0.670  
7.215  
6.545  
-----  
0.670

Grades at intersection of  
4th and H St

Sta	+	HO	Grade	rod	blev
B.M.	1.17	32.22			31.05
			28.25	3.97	✓
			28.33	3.89 <sup>.08</sup>	✓
			28.44	3.81 <sup>.08</sup>	✓
			28.67	3.55 <sup>.39</sup>	✓
			28.92	3.30 <sup>.33</sup>	✓
			28.59	3.63	✓
			29.05	3.17	✓
			28.84	3.38 <sup>.33</sup>	✓
			29.17	3.05 <sup>.71</sup>	✓
			28.76	3.46	✓
			28.83	3.39	✓
			29.17	3.05	✓

checked on curb stakes



Levelling grade over 4th St bet  
H and I St

Sta	+	HI	Grade	rod	Ells
Bm	1.63	18.68			17.05
0			11.00	7.68	
				1.50	
1			12.50	6.18	✓
				1.50	
2			14.00	4.68	✓
				1.50	
3			15.50	3.18	✓
Bm, H-H and I St			7.88		1080

4th and H St  
North line of I St

South line of H St

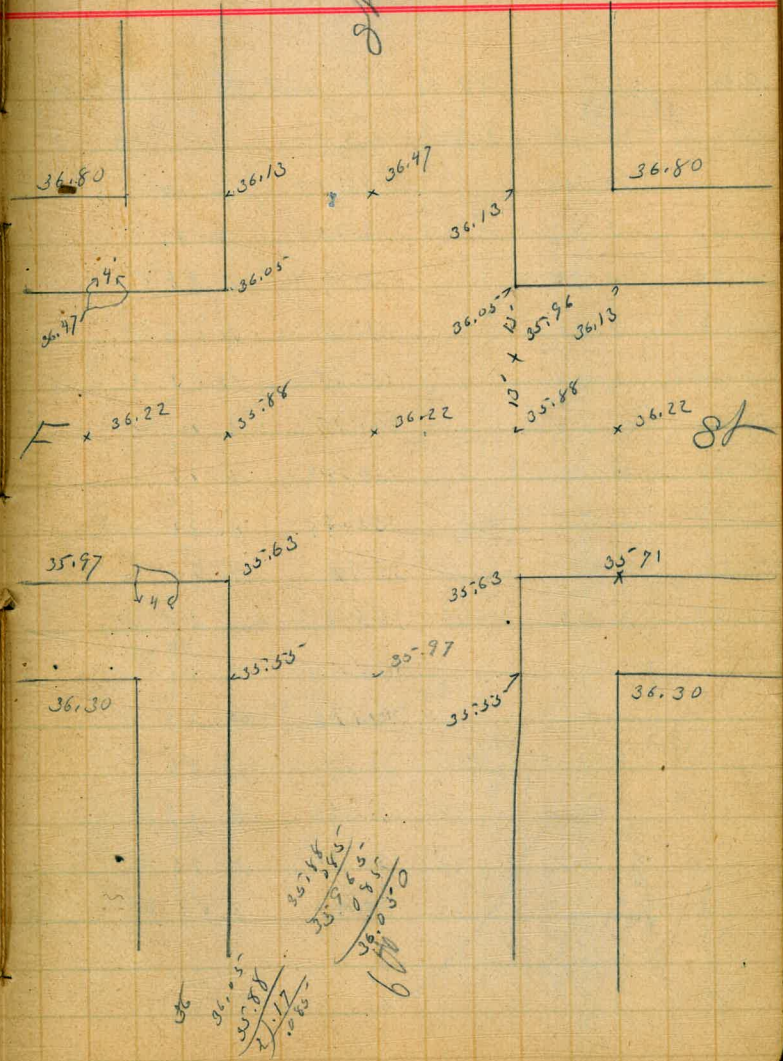
Sta + HO Guide Rod Elev.

B.M. 2.08 39.68 37.60

36.47	3.21 ✓
36.05	3.63 ✓
36.22	3.76 ✓
35.88	3.80 ✓
35.71	3.97 ✓
35.63	4.05 ✓
35.97	3.71 ✓
35.55	4.13 ✓
35.63	4.05 ✓
35.97	3.71 ✓
36.05	3.63 ✓
36.13	3.55 ✓
36.47	3.21 ✓

Checked on curb stakes

35.56	3.72
36.05	3.63





Little grades on H St bet  
B and C St

June 9 1890

Humboldt and nearby

Sta	+	HS	Grade	and	blew
B.M.	3.205	52.470			49.265
0			47.33	5.14	✓ 4.81
+25			47.50	4.97 <sup>.17</sup>	✓
+50			47.66	4.81 <sup>.16</sup>	✓
+75			47.83	4.64 <sup>.17</sup>	✓
1			48.00	4.47 <sup>.17</sup>	✓
+25			48.16	4.31 <sup>.16</sup>	✓
+50			48.33	4.14 <sup>.17</sup>	✓
+75			48.50	3.97 <sup>.16</sup>	✓
2			48.66	3.81 <sup>.17</sup>	✓
+25			48.83	3.64 <sup>.16</sup>	✓
+50			49.00	3.47 <sup>.17</sup>	✓
+75			49.16 <sup>.16</sup>	3.31 <sup>.18</sup>	✓
3			49.29	3.18	lowered
B.M.	4th and	B St		1.81	50.66
3			49.33	3.14	

Alt and C St  
North line of C St

South line of B St



center grade on 4A St bet  
B and C St

Sta	+	HS	Grade	rod	
Bm	3.205	52.47			49.265
0			47.60	4.87	✓
+25		27.18	47.84	4.63	set to read
+50			48.00	4.47	is. 57
+75			48.17	4.30	✓
1			48.04	4.43	✓
+25			48.50	3.97	✓
+50			48.67	3.80	✓
+75			48.84	3.63	✓
2			49.00	3.47	✓
+25			49.17	3.30	✓
+50			49.34	3.13	✓
+75			49.50		
3			49.67		

North of C St

grade of curb road.

South of B St

B.M. in 0087

Sta	+	AD	-	Bliv.
B.M.	5.070	12.447		7.377
B.M.	6.215	15.892	2.177	9.677
B.M.	5.070	16.503		11.433
B.M.	6.215	19.948	2.770	13.733
			0.650	19.298 ✓
B.M.	5.860	14.181		8.321
B.M.	6.20	19.941	0.444	13.741
B.M.			0.64	19.301 ✓
B.M.	4.250	21.334		17.084
B.M.			2.02	19.314 ✓
			19.00	2.33

50.20  
29.83  
6.433  
6.10

42.53  
40.00  
42.16

50.26  
48.00  
22.14  
6.10

56.40  
36.30  
278.10  
36.33  
33  
36.22

08  
33  
41  
491  
5.32

4.91  
17  
3.08

top to Hyndt  
S.F. Wizzle to Hyndt  
top of Hyndt  
S.F.  
6th and RSt  
6th and JSt  
6th and JSt  
5th and JSt

7.25  
2.35  
4.90

28.67  
29.92  
258.09  
2.233

6.805  
2.33  
29.17  
28.92  
23

29.92  
175  
29.045  
1.55  
3.170

12.15  
4.75  
7.40

B Mz on 4th St  $\frac{29.50}{33}$   
29.17

Sta	+	KO	-	Elev.
B.M.	3.838	53.103		49.265 B.M.
B.M.			2.450	50.653
#	9.690	67.333	1.46	51.643
B.M.			3.170	58.163
#	10.805	72.810	0.358	50.975
#	10.960	81.895	0.875	70.935
B.M.			2.785	79.110
#	11.040	92.155	0.780	81.115
#	9.840	101.570	0.385	91.770
B.M.			6.91	94.660
#	11.835	112.410	0.995	100.575
B.M.			112.41	
B.M.			5.57	106.90

$\frac{2.71}{1.89} = .82$   
 $\frac{38.51}{57.33} = .67$   
 $\frac{33.52}{36.00} = .93$   
 $\frac{31.67}{32.00} = .99$   
 $\frac{31.67}{31.83} = .99$   
 $\frac{31.50}{31.50} = 1.00$

4th of Powerhouse

$\frac{58}{33}$   
91

4th and C St	4.72	57.50
4th and B St	2.36	$\frac{57.25}{33}$ 55.92
	4.74	
4th and H St	2.37	
4th and Ash St	6.905	
4th and Ash St	7.255	
	$\frac{7.07}{33}$	
	6.79	
4th and Beech St		
4th and Cedar		
3rd and Cedar		

$\frac{38.905}{31.570} = 1.23$   
 $\frac{6.905}{1.17} = 5.90$   
 $\frac{6.835}{6.805} = 1.00$   
 $\frac{7.405}{7.405} = 1.00$

