Office: Notes & References.

9

TRANSIT

F.B. 65

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

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

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

PUBLISHED BY
EDWARD DENNY & CO.
DRAWING PAPER & MATERIAL, MATHEMATICAL INSTRUMENTS, ETC.,
STATIONERS AND PRINTERS,
SAN FRANCISCO, CAL.

MICROFILMED
OCT 1964

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	11·28
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

65

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

City of San Diego 1st party
C. Norton 2 party

Together with all and singular the tenements and appurtenances thereunto in anywise appertaining, To have and to hold all and singular the above described premises unto the said party of the second part, his heirs and assigns forevers as fully and absolutely as we the said Pres. & Trustees may or can, by virtue of the power in us vested, convey the same.

To the Hon. Board of Supervisors
of San Diego County.

We the undersigned viewers appointed to view, locate and survey a road from the East line of Sherman's Addn. to the Cemetry; would report as follows.

We have decided on the following route.

Starting at a point where M St crosses the East line of Sherman's addition thence East along M St to the west line of the Railroad Homestead, thence East along the prolongation of M St to a stake marked 0 said Stake being 500 feet west of the Railroad Homestead (this point may have to be moved either East or West a short distance so as to coincide with a cross street) thence by actual survey.

N. 37° 50' E	219'	to stake	2+19
S 83° 10' E	81	" "	3
S 64° 10' E	100	" "	4

N. 87° 50' E	100'	to Stake		5
S 71° 50' E	150'	"	"	6+50
N 64° 20' E	100	"	"	7+50

being a point 20' south of Camps North line, thence E. on a parallel line to said North line and being distant 20', to a point in the boundary line between Camp and the Dan Dicks homestead Union, thence by Streets as laid out to the west line of the Cemetery

A distance of about 1.5 miles

From Stake marked 1 to 7+50 a distance of 650 feet there will have to be a grade of 14" to the rod

The cost of grading this road will be about $7.50 do

As some of the owners are not residents we will not be able to ascertain who will give the R of W and we wanted advise to have the preliminary steps taking: a day set for the hearing, and notice sent to the owners or posted as required by law. Mr Camp from whom we take about an acre will sell for $100.00 per acre.

We strongly urge and recommend the building of this Road by the County as there is at present only a round about way and even that is through private land where the road can be shut up at any time: delay only increase the Expense, and at some future time the road will have to be built. The proposed road is nearly Straight and follows streets as laid out or as they will be if the Contours of the Ground be taken into account

Signed

W. W. Stewart
J. D. Mannasee
C. N. Sanford.

Henry J. Camp to San Diego County

Book 47 Page 6.

Comm. at a point 10 ch 4 ft N from S.E. cor P.C 1152 and running thence West 15 chains thence North 40 feet, East 15 chains South 40 ft to pt of beginning

Hays Farm D-180

Beg. at the N.W. cor of a lot, at the point of intersection of a ditch separating said lot from the main lands and a "bayou" or slough leading to S.D. River, running thence in a general direction Easterly and following the middle of the Channel of said "bayou" to a point where a ditch intersects the continuation of said bayou, said point being 2000' in a direct line Easterly of the point of starting, thence turning and running by said ditch on a course S 11°10' E to the low water line of San Diego Bay

Book 41 p 217

Partition of P. L. 1168

1st That the said City of San Diego shall have share & proportion of said P. L. the following-

Blocks 108, 109, 115, Lots 1 to 11 inc 38 to 48 inc in Blk 114, lots 9, 10 & 11 Blk 156

That the said A. H. Julian shall have Lots 5 to 13 inc and 36 to 44 inc in Blk 110

Measurements of Bitumen on 5th Street

Intersection of J Street

		Sqft
.64	x 9.30	5.95 ✓
1.38	x 19.57	27.00 ✓
.64	x 10.75	6.88 ✓
1.38	x 40.30	55.89 ✓
.69	x 80.0	55.20 ✓
.69	x 33.20	22.90 ✓
.66	x 41.35	27.29 ✓
.66	x 12.0	7.92 ✓
.69	x 62.6	43.20 ✓
.69	x 1.5	1.03 ✓
		753.76

5th St bet J & K

	Sqft		Sqft
.69 x 16.40	11.22 ✓	.66 x 4.30	2.84 ✓
.68 x 30.9	20.91 ✓	1.31 x 33	43.23 ✓
.65 x 6.70	4.35 ✓	.66 x 9.5	6.27 ✓
.68 x 30.30	20.60 ✓	1.30 x 1.36	1.77 ✓
.68 x 10.15	6.90 ✓	.66 x 1.50	.99 ✓
.71 x 8.0	5.68 ✓	1.26 x 5.30	6.68 ✓
.68 x 3.70	25.16 ✓	.66 x 8.0	5.28 ✓
.66 x 19	12.54	1.26 x 72.30	91.10 ✓
.66 x 6.10	4.03 ✓	.66 x 4.0	2.64 ✓
.66 x 16.40	10.82 ✓	1.26 x 111.80	140.87 ✓
.66 x 6.10	4.03 ✓		301.65
.66 x 24.45	16.14 ✓		
.66 x 5.70	3.76 ✓		
.66 x 24.60	16.24 ✓		
.66 x 15.0	9.90 ✓		
.66 x 265.5	175.23 ✓		
1.26 x 33.40	42.08 ✓		
.66 x 4.40	2.90 ✓		
1.25 x 4.80	6.00 ✓		
	398.49		

398.49
301.65
700 x 14

Intersection of K & Sp

		Sq ft.	
1.26	x 48.0	60.48	✓
.66	x 4.0	2.64	✓
1.30	x 3.50	4.55	✓
1.30	x 1.60	2.08	✓
1.26	x 7.0	8.82	✓
.66	x 57.0	37.60	✓
.66	x 2.80	1.84	✓
.66	x 2.20	1.45	✓
.66	x 33.40	22.04	✓
.66	x 46.70	30.82	✓
.66	x 19.60	12.94	✓
.66	5.60	3.69	✓
.66	8.60	5.68	✓
.66	17.0	11.21	✓
		705.84	

Between K & L Sp

		Sq. ft.			Sq ft.	
1.26	x 8.60	10.83	✓	.66 x 37.60	24.80	✓
2.0	x 1.0	2.00	✓	.75 x 37.8	28.35	✓
.66	x 26.1	18.535	✓	.75 x 87.8	65.85	✓
.66	x 24.40	16.10	✓	.66 x 15.40	10.16	✓
.66	x 27.60	18.22	✓	.66 x 9	5.94	✓
.66	x 2.0	1.32	✓	.61 x 9.30	5.67	✓
1.25	x 4.0	5.00	✓	.66 x 10.0	6.60	✓
4.66	x 5.9	(3) 27.49	✓	.61 x 23.30	14.21	✓
.60	x 4.20	2.52	✓	.66 x 5.80	3.83	✓
.66	x 2.0	1.32	✓	.61 x 4.50	(4) 2.75	
.66	x 2.0	1.32	✓	.61 x 3	1.83	✓
.66	x 17.50	✓ 11.55	✓	.66 x 7.50	4.95	✓
.61	x 27.50	✓ 16.76	✓	.66 x 6.0	3.96	✓
1.1	x 8.60 tri.	✓ 9.45	✓	.66 x 4.0	2.64	✓
.66	x 13.50	✓ 8.91	✓	.86 x 7.25	6.23	✓
.66	x 7.9	✓ 5.22	✓	.66 x 4.90	3.24	✓
.66	x 5.0	✓ 3.30	✓	.71 x 2.35	1.67	✓
.66	x 28.40	✓ 18.73	✓	.66 x 13.0	8.58	✓
.60	x 8.60	✓ 5.15	✓	.66 x 7.50	4.95	✓
.66	x 12.70	✓ 8.38	✓	.66 x 11.60	7.65	✓
.66	x 31.0	✓ 20.43	✓	.66 x 18.25	12.05	✓
		217.55			275.91	

5th St bet K & L

		sq ft				sq ft
1.70	x 3.0	5.10 ✓	.66	x 11.60		7.66 ✓
.66	x 15.20	10.02 ✓	1.0	x 1.0		1.00 ✓
.66	x 15.50	10.23 ✓	.60	x 3.40		2.04 ✓
1.0	x 8.0	8.00 ✓	.66	x 3.70		2.44 ✓
.66	x 12.50	8.25 ✓	.66	x 1.5		0.99 ✓
.80	x 5.5	4.40 ✓	.66	x 27.40		18.08 ✓
.66	x 12.6	8.32 ✓	.60	x 3.0		1.80 ✓
.66	x 13.0	8.58 ✓	.66	x 5.30		3.50 ✓
.66	x 13.8	9.12 ✓	.66	x 4.00		2.64 ✓
.90	x 7.0	6.30 ✓	.66	x 26.0		17.15 ✓
.90	x 7.0	6.30 ✓	.66	x 29.0		19.12 ✓
.60	x 7.0	4.20 ✓	.90	x 7.0		6.30 ✓
.56	x 8.6	3.69 ✓	.66	x 10.40		6.87 ✓
.56	x 17.40	9.75 ✓	.66	x 11.40		7.54 ✓
.56	x 8.40	4.70 ✓	.80	x 5.5		4.40 ✓
.66	x 5.20	3.43 ✓	.60	x 4.50		2.70 ✓
.66	x 42.0	27.72 ✓	.58	x 11.70		6.78 ✓
.66	x 6.40	4.24 ✓	.66	x 21.70		14.32 ✓
.66	x 7.80	5.15 ✓	.66	x 54.60		36.08 ✓
.61	x 59.60	36.36 ✓	.66	x 95.0		62.70 ✓
.66	x 20.50	13.53 ✓	.66	x 12.8		8.45 ✓
		197.39				232.51

5th St bet K & L

8

.66	x 25.40	16.76 ✓
.61	x 16.20	9.89 ✓
.66	x 5.40	3.56 ✓
		30.21

5th Street bet I & J

Jan 8 1891

1.61	x 141.5	227.81 ✓
.75	x 13.8	10.35 ✓
1.42	123.8	175.80 ✓
.70	x 5.5	3.85 ✓
.75	281.0	210.75 ✓
1.42	x 15.7	22.29 ✓
1.42	x 24.0	34.08 ✓
.75	x 6.30	4.73 ✓
1.42	x 133.20	189.14 ✓
.75	x 50.20	37.65 ✓
1.42	21.3	30.25 ✓
.95	18.5	13.88 ✓
1.42	47.20	67.02 ✓
.75	x 300.	225.00 ✓
		1246.60

Intersection of 5th & I St.

Jan 8 1891

1.42 x 28	39 76 ✓
.75 x 10.8	8.10 ✓
.75 x 80.0	60 00 ✓
1.42 x 41.5	58 93 ✓
.75 x 80	60 00 ✓
1.42 x 80	113.60 ✓
	340.39

6th St H to J Hamlin & Party
Jan 21 1891

		Sq ft			Sq ft
2.	x .5 ✓	1.0 ✓	7.0	x .5	3.5 ✓
(4.0	x 1.5)	6.0 ✓ not finished	1.2	x 2.7	3.2 ✓
300.	x .7	210.0 ✓	1.2	x 7.0	8.4 ✓
2.	x .8	1.6 ✓	1.8	x 3.3	5.95 ✓
4.	x 1.5	6.0 ✓	4.0	x .7	2.8 ✓
250	x 1.42	358.5 ✓	2.5	x .7	1.8 ✓
300	x .7	210.0 ✓	7.5	x .7	5.3 ✓
2.5	x .7	1.8 ✓	20.0	x .7	14.0 ✓
2.5	x .7	1.8 ✓	2.8	x .6	1.68 ✓
50.	x .7	35.0 ✓	4.7	x 1.1	5.17 ✓
300	x 1.42	426.0 ✓	4.7	x .7	3.29 ✓
300	x .7	210.0 ✓	140.0	x 1	1.4 ✓
		1464.7			
42.4	x .7	29.6 ✓	10.0	x 1	10.0 ✓
2.6	x .7	1.8 ✓	11.5	x 1	11.5 ✓
42.8	x .7	30.0 ✓	6.0	x 1	6.0 ✓
21.	x .7	14.7 ✓	8.0	x .75	6.0 ✓
42.8	x .7	30.0 ✓	8.	x .7	5.6 ✓
42.8	x 1.42	60.8 ✓			218.3
9	x .75	6.8 ✓		Error 136-	126.0
		173.2			92.3
	Error	.5 +			
		173.7			

Below this in middle of Sheet

584 St - Intersection of H

	Sq ft	Squares left		Squares left
2.0 x 3.5	7.0 ✓	4.7 x 4.7	22.1	✓
34 x 1.42	48.4 ✓	4.7 x 4.7	11	✓
42.8 x .75	32.2 ✓	4.7 x 4.7	11	✓
42.8 x 1.42	60.8 ✓	4.7 x 47	11	✓
42.8 x .7	30.0 ✓	4.7 x 47	11	✓
2.7 x .7	1.9 ✓	4.7 x 47	11	✓
2.7 x .7	1.9 ✓	4.7 x 47	11	✓
			154.7	
8 x .7	5.6 ✓	4.7 x .7	3.3	✓
8.6 x .7	6.0 ✓	4.7 x .7	3.3	✓
3. x 1	3.0 ✓	1.3 x 3.3	4.3	✓
.8 x 3	2.4 ✓	4.7 x .6	2.8	✓
18.0 x .8	14.4 ✓	4.7 x .6	2.8	✓
			171.2	✓
4.7 x 13	61.1 ✓		332.6	✓
6.0 x 1.0	6.0 ✓		218.3	✓
			173.2	✓
10 x 2.5	25.0 ✓		897.3	
6 x .7	4.2 ✓			
4.7 x .7	3.3 ✓		171.2	
4 x 1.	4.0 ✓		332.6	
4.7 x .6	2.8 ✓		92.3	
9.0 x 1.4	12.6 ✓		173.7	
	332.8		769.8	
Error -	.2			
	332.6			

Sq ft in Section of H.7

2.3	x .7	1.6 ✓	1.8 x 146.0	263.0 ✓
46	x .7	32.2 ✓	2.3 x .7	1.6 ✓
254	x 1.4	355.5 ✓	2.4 x .7	1.7 ✓
14.4	x 1.4	20.4 ✓	2.6 x .7	1.8 ✓
58	x .7	40.6 ✓	2.5 x .7	1.8 ✓
2.3	x .7	16.1 ✓	154 x 1.42	218.7 ✓
33	x 1.5	49.5 ✓	300 x .7	210.0 ✓
51	x .7	35.7 ✓	1.2 x .9	1.08 ✓
2.5	x .7	1.8 ✓	2.4 x .7	1.7 ✓
45.0	1.5	67.5 ✓		701.4
2.3	x .7	16.1 ✓		722.6
2.5	x .7	1.8 ✓	701.4	1424.0
100	x .7	70.0 ✓	724.6	
3.0	x .7	2.1 ✓	1426.0	
5.0	.7	3.5 ✓		
2.5	x .7	1.8 ✓		
2.5	x .7	1.8 ✓		
2.5	x .7	1.8 ✓		
2.5	x .7	1.8 ✓		
2.2	x .7	1.5 ✓		
1.5	x 1.0	1.5 ✓		
		724.6		

Jan 22 1891

Measurement of Bitumen laid after the rest of track was finished.

12 x .7		8.4	
4' x .7		2.8	bet H & I St
3' x 1.6		4.8	
1.5 x .7		1.05	
2.5 x .7		1.75	
		18.80	
17' x .7		11.9	bet I and J.
36 x .7		25.2	
14.4 x .7		10.08	
5.0 x .7		3.5	
		50.68	
138.0 x .7		96.6	bet J & K St
20.0 x .7		14.0	
3.0 x .7		2.1	
		112.7	
	112.7		
	50.68		
	18.8		
	182.2		

on 5th St bet G & H.

Extra work at joints

Bet H and J.

2 x 2.8 x .7	= 3.9
2 x 2.8 x .7	= 3.9
2 x 2.6 x .7	= 3.6
2 x 2.7 x .7	= 3.8
2 x 2.7 x 7	= 3.8
2 x 3.3 x 7	= 3.2
2 x 2.8 x .7	= 3.9
2 x 2.8 x .7	= 3.9
2 x 2.5 x .7	= 3.5
2 x 2.7 x .7	= 3.8
2 x 2.8 x .7	= 3.9
2 x 2.6 x 7	= 3.6
2 x 3. x .7	= 4.2
2 x 2.6 x .7	= 3.6
2 x 2.8 x 7	= 3.9
2 x 3.9 x .7	= 4.1
2 x 2.9 x 7	= 4.1
	64.7

G to F Extra

1.4 x 4.8	= 6.7
1 x 4.8	= 4.8
1.3 x 2.8	= 3.6
.7 x 4.8	= 3.4
1.3 x 4.8	= 6.2
.9 x 4.8	= 4.3
.7 x 4.8	= 3.4
	37.4

37.4
64.7
97.1

Intersection of G St. & 5th

Measure		Sq ft	
1.9	x 80'	152.00	✓
2.8	x .7	1.96	✓
.7	x 18	12.60	✓
1.5	x 80	120.00	✓
.7	x 80	56.00	✓
.7	x 80'	56.00	✓
.7	x 3	2.10	✓
.7	x 3	2.10	✓
.8	x 2.6	2.08	✓
		404.84	✓

5th St bet. F & G

13

Measure		Sq ft			
1.5	x 58.9	88.35	✓	42 x .6	2.52 ✓
.8	x 57.7	46.16	✓	.8 x 12	9.60 ✓
1.5	x 62.6	93.90	✓	.9 x 8.1	7.29 ✓
.8	x 33'	26.00	✓	1.7 x 9.3	15.81 ✓
1.5	x 86.7	130.05	✓		35.22 ✓
1.5	x 38'	57.00	✓		
.7	x 3.	2.10	✓		
.8	x 2.6	2.08	✓		1435.32 ✓
.8	x 153.3	122.64	✓		35.22 ✓
1.5	x 11.2	16.80	✓		1470.54 ✓
.75	x 3.	2.25	✓		
.8	x 13.2	10.56	✓		
1.5	x 30.0	45.00	✓		
.8	x 5.0	4.00	✓		
.7	x 70.8	49.56	✓		
1.9	x 81.5	154.85	✓		
.8	x 2.7	2.16	✓		
1.5	x 218.7	328.05	✓		
.8	x 300	240.00	✓		
.8	x 2.5	2.00	✓		
.9	x 10.9	9.81	✓		
		1435.32	✓		

Intersection of 5th & F St.

Measure		Sq ft			
1.7	x 47.8	81.26	4.7	x 3.6	16.92
1.9	x 54	102.60	1.5	x 33.8	50.70
.8	x 29.1	23.28	3.6	x .8	2.88
.8	x 35.3	28.24	4.7	x .7	3.29
.8	x 37.8	30.24	33.8	x .8	27.04
1.5	x 37.7	56.55	4.7	x .7	3.29
1.5	x 37.7	56.55	1.5	x 37.7	56.55
1.5	x 9.4	14.10	.8	x 37.7	30.16
.6	x 4	2.40			190.83
.7	x 4.6	3.22			
4.7	x 4.7	22.09	617.88		
4.7	4.4	20.68	190.83		
4.7	x 4.7	22.09	808.71		
1.5	x 33.3	49.95			
1.	x 4.5	4.50			
1.	x 34.8	34.80			
.75	x 29.3	21.97			
.8	x 10	8.00			
.8	x 9.2	7.36			
.8	x 9.5	7.60			
.8	x 25.5	20.40			
		617.88			

5th St bet F & G.

Measure		Sq ft
.8	x 43	34.40
.8	x 2.8	2.24
.8	x 3.0	2.40
.8	x 2.5	2.00
.8	x 28.7	22.96
.8	x 16.8	13.44
.8	x 15.6	12.48
.7	x 2.4	1.68
.8	x 290.2	232.16
.8	x 300	240.00
.8	x 3.5	2.80
.8	x 2.8	2.24
.8	x 300	240.00
.8	x 300	240.00
.8	x 60.2	48.16
		1096.96

5th Street – Intersection of R St
Mar 6. 91

Measurement			Sq ft
.7	X	80	56.00
.7	X	80	56,00
.7	X	80	56,00
1.4	X	9.3	13.02
.7	X	14	9.80
.7	X	2.3	1.61
.7	X	2.0	1.40
.7	X	2.2	1.54
.7	X	2.2	1.54
.7	X	51.7	36.19
			233.10

5th Street – bet. R & E
Mar 6. 91

Measurement			Sq ft
.7	X	2.1	141.47
.7	X	2.1	141.47
.7	X	21.5	15.05
.7	X	1.6	1.12
.7	X	3.5	2.45
.7	X	3.3	2.31
.7	X	300	210.0
.7	X	300	210.0
.7	X	300	210.0
.7	X	300	210.0
			863.87

5th Street Intersection of H St — 5th St between C & H.

Mars, 1891

Measurement	Sq ft	Measurement	Sq ft	Measurement	Sq ft	Measurement	Sq ft
.7 x 4.7	3.29 ✓	4.7 x 4.7	22.1 ✓	2.0 x 1.0	52.00 ✓	33.5 x .7	23.4 ✓
.7 x 34	23.80 ✓	4.7 x 4.7	22.1 ✓	.7 x 79.5	55.65 ✓	.7 x 300	210.0 ✓
.8 x 6.4	5.12	.7 x 9.5	6.65 ✓	1.8 x 1.5	2.7 ✓		233.4
.7 x 34	23.80 ✓	.7 x 4.7	3.29 ✓	1.2 x 3.0	3.6 ✓		
.7 x 3.4	2.38 ✓	.7 x 27.4	19.18 ✓	.7 x 32.5	22.75 ✓		
1.3 5.0	6.50 ✓	.7 x 23.1	16.17 ✓	.7 x 22.1	15.47 ✓		
1.0 8.2	8.20 ✓	.7 x 6.4	4.48 ✓	.7 x 14.3	10.01 ✓		
.7 4.7	3.29 ✓	5.9 x 4.7	27.7 ✓	.7 x 121	84.7 ✓		
.7 x 34	23.80 ✓	4.7 x 4.7	22.1 ✓	.7 x 300	210.00 ✓		
.7 x 34	23.80 ✓	4.7 x 4.7	22.1 ✓	.7 x 4.5	3.15 ✓		
.7 x 3.3	2.31 ✓	.8 x 11.0	8.8 ✓	.7 x 13.8	9.7 ✓		
.9 x 7.1	6.39 ✓	.7 x 4.0	2.80 ✓	.7 x 19.0	13.30 ✓		
.7 x 9.6	6.72 ✓	5.5 x 4.7	25.8 ✓	.7 x 40.0	28.00 ✓		
32.5 x .7	22.75 ✓	2.0 x 1.6	3.2 ✓	.7 x 14.7	10.29 ✓		
32.7 x .7	22.89 ✓	.7 x 25.9	18.13 ✓	.7 x 17.6	12.32 ✓		
.5 x 2.0	1.00 ✓	.7 x 27.5	19.25 ✓	3.0 x 1.2	3.6 ✓		
3.0 .7	2.10 ✓	4.0 x 4.7	18.8 ✓	.7 x 101.5	71.05 ✓		
4.7 x 4.7	22.1 ✓	.8 x 32.5	26.0 ✓	1.0 x 2.0	2.0 ✓		
4.7 x 4.7	22.1 ✓	.7 x 32.5	22.75 ✓	.7 x 3.0	2.10 ✓		
.7 x 4.7	3.29 ✓	.5 x 1.0	0.5 ✓	.7 x 7.6	5.32 ✓		
.7 x 4.7	3.29 ✓			.7 x 7.8	5.46 ✓		
	238.92		311.90		573.17		

233.4
573.2
311.9
238.92
1357.42

5th Street Intersection of C Street

Measurement	Sq ft	Measurement	
.7 x 33.5	23.4		
.7 x 10.9	7.6	.7 x 11.0	7.7
.7 x 11.6	8.1	.7 x 31.5	22.0
.7 x 33.3	23.3	.7 x 14.0	9.8
.7 x 33.3	23.3	.7 x 9.4	6.6
			46.1
.7 x 9.7	6.8		
.4 x 4.7	1.9		
1.0 x 1.0	1.0		
.7 x 1.2	.8		
.3 x 1.0	.3		
.7 x 1.6	1.1		
.40 x .70	.3		
.6 x .6	.4		
.7 x 1.6	1.1		
.7 x 1.6	1.1		
1.0 1.6	1.6		
.5 x 1.6	.8		
.7 x 7.4	5.2		
.7 x 15.6	10.9		
.7 x 14.6	10.2		
.7 x 21.6	179.2		

3th St between B & C

Measurement	Sq ft	
.7 x 12.6	8.8	3740 x .3 = 1122
.7 x 21.6	15.2	
.8 x 63.7	51.0	
.8 x 67.7	54.2	
.8 x 25.4	20.4	
.8 x 14.6	11.7	
.7 x 46.5	32.6	
.8 x 82.4	65.9	
.8 x 114.2	91.4	
.8 x 13.5	10.8	
.9 x 13.0	11.7	
.7 x 45.8	32.1	
.7 x 71.5	50.1	
.7 x 38.0	26.6	
.8 x 120.5	96.4	
.8 x 55.0	45.0	
.8 x 134.5	107.6	
.9 x 11.0	9.9	
.9 x 7.8	7.0	
.8 x 40.5	32.4	
.8 x 19.2	15.4	
	796.2	

Fifth Street Grading.

Material to bring "D" to St. to grade may be taken to make embankment on 5th bet. cedar & Beech —
Earth between Ivy and Juniper goes between to Fill
Maple St some may be taken out between 5th Str. and Park.
Nutmeg: material between 4th and 5: on Palm.
Cutting between Palm & Spruce be taken south.

Grade of D Street
beginning at east side of 15th ~~rise~~ falls eastward .5 per 100' ft. to west line 16th. Level across 16th. Street thence rises at 4 ft in 100 to 17th. Str.
Grade East side 16th 56.
" West end of Bridge

D. Street Bridge.

Load on floor.
6.0 ft depth by 15 × 100 = 9000 lbs for each foot of length.

Strength of joist 3" by 16". 15 ft. l. for distributed load.
Load $\left(\frac{\cancel{2} \times \cancel{3} \times 16 \times 16}{\cancel{3} \cdot \cancel{6} \times 15 \times \cancel{12}_{6}}\right) 5000 = 15000$ lbs.

Load of earth per foot lin.

15 × 6.6 × 100 = 10,000 lbs

∴ I just per foot will support the load without injurious deflection.

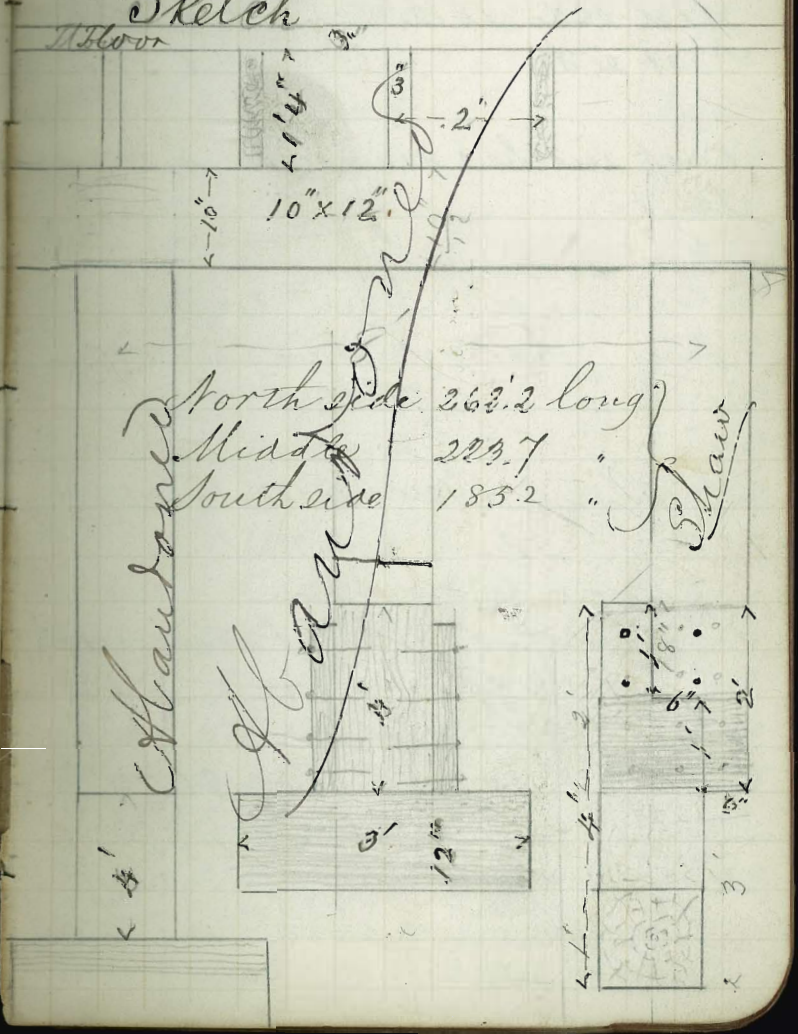
For $\frac{2}{3}\left(\frac{b \cdot d^2}{l}\right) S.$
b = width. d = depth. l = length - inches

"D" street Bridge Culvert December 5. 1892.

To strengthen foundations; and floor to carry earth.

Floor 3" thick
Joists 3 by 1'4" (16")
" ⊙ 2'0" ⊙
Cap 10" by 12" flat.
Posts 12" by 12"
" ⊙ 8'0" ⊙
Mud sills 12" by 4' long.
North wall 262 long South wall 185' l.
Place reenforcing posts
oblique width at east end 17'.0
Midrib same as sidewalls 12"x12".
34 34 posts on north side
24 24 " " south side.
29 Oblique joist 27 from at west end
87 Width of for beams over all 30" ft.
29 posts in midrib.
at east 6 short joists 30'.0".
Should be new outside 34' long.
Square width of floor 31 feet.
Oblique beam at west end 68' long.
Should be about 10" by 16" for end.

Sketch



"C" Street culvert

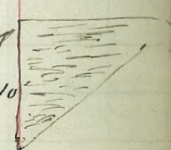
West side 18th	grade ε	56.00
East side " "	" ε	57.00
East end bed drainage	ε	51.7
West " "	"	48.7

Placing sills 3 feet deep
gives grades East end ε 48.7
" " West " ε 45.7

Hights: Sill to grade East 11.8 ft.
" " " West 10.3 ft.

Strength of Backing

Load = $\frac{b'' \times d''^2}{l''}$



" $\frac{12 \times 2 \times 2}{8} \times 400 = 2400$
$\times$ 1.6 dis - 2400
1440
6240

"C" and 18th Streets.

Bill of Material

2 Sills 192' l. 10"x10"		3200
1 " 25' l. 10"x10"		208
2 Caps 192' l. 10"x10"		3200
1 " 25' l. 10"x10"		208
1 piece 24' l. 9"x12"		216
50 posts 7' l. 10"x10"		2920
4 posts 7' l. 10"x10"		233
88 Joists 20' l. 3"x12"		5280
Floor 192'x20'x3"		11520
" 25'x20'x3" (½)		750
Backing 192'x10'x2x3"		11520
" 25x10x3"		750
Nails 8 Keys	$3.00	
Rail 20' l. 3"x4"		20
Posts 9. 5' l. 3"x4"		45
Chests 54 2' l 3"x10"		270
Wheel guard 2,50' l. 6"x4"		200
Snub plank 50', 2"x12"		100
		40640

192 ft
18
205

1352.00
626.00
726.00

As 205:95 - 1352:

40600 $20 = $ 812.00
Labor say c.y. 150.00
Excavation 1300 c 30 390.00
Total Cost $ 1352.00

16th and "D" Street notes.

To grade 16th street between "C" and "E" to the new grade of "D" Street will require 3100 C. Yds.

Were the new grade of "D" begun at east side of 16th. the grade to 17th would be increased from 4% to 7%. and there would be saved 3000 C.Y.

To make approaches to "D" Street Bride on 16th for 6 p.c. Grade

$$\frac{80 \times 6 \times 100}{2 \times 3 \times 9} = 900 \text{ C. Yds}$$

each side.

From culvert on "C" Street

$$\frac{190 \times 24 \times 7}{2 \times 9} = 1180 \text{ C. Yds.}$$

More than needed to make one approach to "D" Str. Bridge.

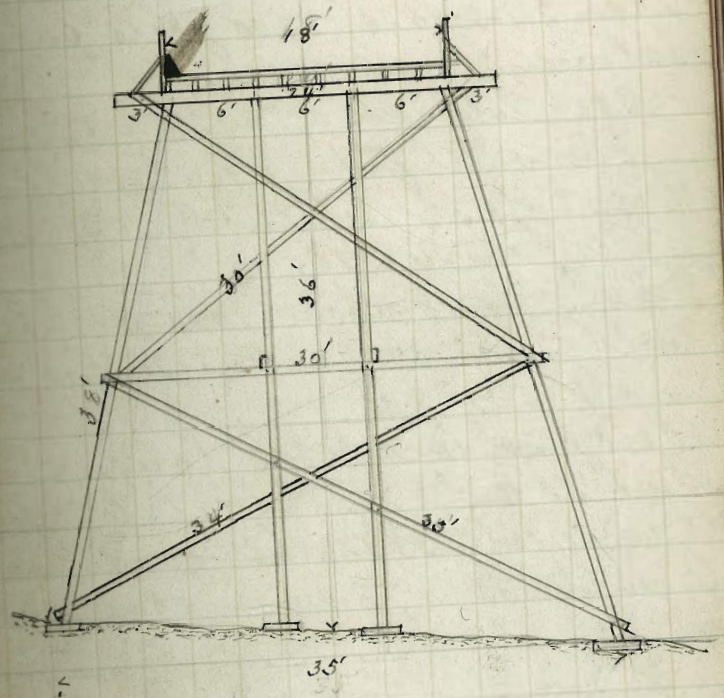
January 11. 1893 B. Street.

Inspection for provisional grade & work.

Ravine between 27th & 28 Sts. can be accommodated with a a trestle bridge of 35' maxim hight and about 200 feet long cutting 6 feet on 27th. and 8 ft on 28th. street.

And the ravine near 29th can be crossed by the north half width at same expense by a similar structure.

Cut 27th say 6 ft.
28th say 8 ft.



Joist 16' l. 3' by 12." Load $\frac{2bd^2}{3l'} = \frac{2}{3} \left| \frac{3 \times 12 \times 12}{16 \times 12} \right.$

R. Street

Jany 12 th

Beginning at 30th Street
Station 20 to 23 cut say
1000 Yds to fill from 26 to 24.50
From 24+50 to 26. 1200 Yds to cut
between 23 and 24+50
Box culvert 22" by 36" and 40' l.
under water pipe 8" Kalamein.
From 28 to 32 Cut enough say 2500
to fill from 26 to 28.
From 32 to 48 about 1050 Yds. to
Bridge, and at east end of Bridge
about 500 Yds.
Bridge 20' wide & 140' long.
Bent 20' center & joists 16" to 20" ft
Ravine entre 55 & 56 th St 55 & 56, 1500 Yds.
From Sta 63 to 78 move about 2000 Yds

January 28th.

County Road 6th & Univ. Ave.

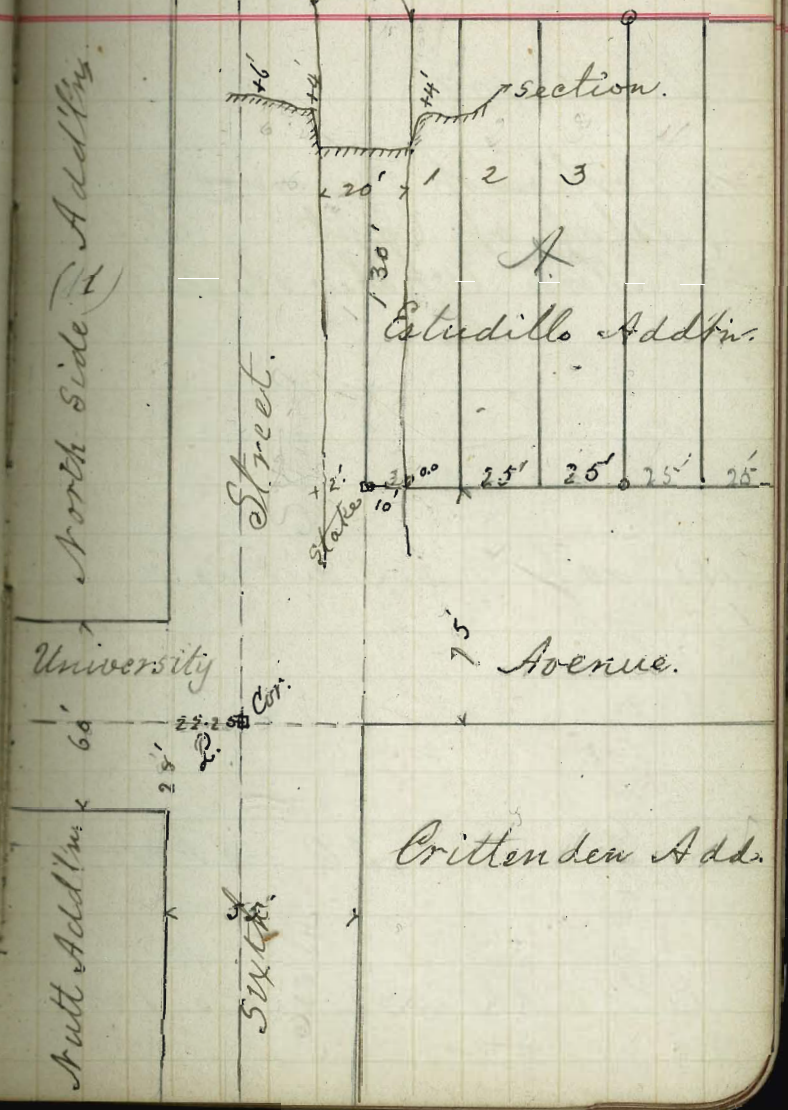
To clear lot road would be moved 12½ feet by depth of 4 feet for 130 feet = 270 Yds.

In the matter of occupancy of lot 1. Block A. Estudillo tract subdivision.

The road about 20 feet wide has its middle along the west side of lot for its length 130 feet, being a cut way about 4 feet deep. From the north end of lot the road bears off westward. To true the lot the road could be excavated from 10 to 12½ ft. westward, and the dirt cast to the east side.

This work would require the moving of 270 Yds @ 20¢ 54.00 or may be less.

Encroachment on Lots 1 2 & 3 of Block A.



February 8th. 1893

Examinations of occupancy

Block 409.

Portion of claimed by Estate of Capt. Fitch (Morse, Whaley & Dalton Lots)

411 Lots 1. 2. 3 and 4.

Block 436 Lot 4.

Block 454. Lots 1 & 4.

City Property in Old Town.

Lots 1 & 2 fenced. Lot 3 has old house on n. w. Corner unoccupyed.

Lot 4 is occupyed by a nursery. and is claimed by James McCoy under a quieting title of Superior Court. Case

Has old vines and trees, and fenced. Occupyed by Lyons. who claims to have title chain

Occupyed by School House, and The House of J. B. Stewart. (estate) on the s. w. Corner and fenced. Claims 2/3 of Lot.

Fenced and occupy by house on north line. partly in street.

March 30th. "C" Street.

Notes of work done in improvement.

Curb begins with east line of 6th street. Curb has 33 post to block
Return at 7th Street has 7 post. Return measure 27'10".
Between 7 & 8th Streets Curb has 32+34 posts.
Between 8th & 9th Streets Curb has 25 post on each side.
Between 9 & 10 Streets Curb has 23 post on each side.
Between 10th & 14. streets
Between 14th & Alley. Curb. n. side 26 post. & 24 to 15th.
Between 14 & 15th. Curb 51 post of which 3 are opposite.
Curb has not return to alley.
From east line of 20th east to 21st Curb. gutters & side walks done.
" " Grade not out in middle of Str.
Between 21 & 22nd Streets not fully finished.
From 21 to 22 side walks curb & return gutters finished but street no X m.
From 23 to 24 Side walks. curb & gutter done. but intersection none.

H. Street Petition to Grade and Curb.
April 8th.

On north side of H 100 feet
On South side all of block
Between 7th & 8th Kew & Burnham
South side all.
Corner H & 9th Asphalt side walk
Thence to 12th Street all to be curbed
Corner H & 5th. N.W.L. Alter ends

Notes.

cost from 6th
6th to 7th.
have 50 feet of side walk. N.

See Bohler & Brown.
and side walked.
side walk (should be exapted).

India Street Trestle.

Bents & Posts

	middle	side		total
1	2×11'	2×12'	2	46
2	2×22	2×24		92
3	2×23	2×24		94
4	2×18	2×20		76
5	2×7'	2×8'		30
5	Caps of 32' ft.			160
5	Sills 30, 30, 32, 34, 34			160
				658

Posts 658' lin. 10" by 10" =	5484
52 Joists 22' long 3" by 12".	3432
H.R. posts 34, 5' l. 4" by 4".	227
" " Braces 10, 5' l. 4" by 4"	67
" " Blocks 24, 1½' by 3".	108
" " Str. 8, 20' l. 4" × 4"	214
Floor 80' by 24' × 3"	5760
Sub flr. 8, 20' l. 1½ by 10"	200
Backing 10' by 26' by 3/2,	1560
Total ft. b. m. timber	17052
Reducing sills to 8" by 10" saves	1100
" " Hand rail	632
	17732
1" in floor increases	1920.

Estimate of Material.

Cost.

Timber 17684 ft. @ $20 p M.		$353.68
Nails 5 kegs @ $3.00		15.00
Total.		$368.68

Timber 15952 ft. @ $20 =		$319.04
Nails 5 Kegs @ $3.00		15.00
Increas floor 1920 @ $20		38.60
		372.64

"D" Street extension

Trestle estimates.

			b. m.
One bent 40' high.			
1	Cap. 22' l.	10 by 10 =	185
4	Post. 38' l.	10" " 10"	1265
4	Sills 4' l.	10 " 10"	135
2	Ties 28' l.	8" x 6"	85
	For bent.		1670
	Difference for 1' 35⅓ feet.		
	1 span of floor etc		
10	Joists 22' l.	3" by 14"	770
	Floor 18' x 20' x 3"		1080
Long. Sills 2.	22' l.	4" x 8"	176
Hand rail 20' l		3" by 4".	20
" Post. 3.	3' l.	3" " 4".	15
" Brace 3.	4' l.	3" x 4"	12
Joints 2,	20' l.	1½" " 8"	40
	For 20 feet		2113
	" 100 feet		10565.

Memoranda of Quantities.

Cut at 27th Street	C.Y.	1500
" 28 & 29 "	"	1000
" 30th Street	"	2000.
" by 31st Street	"	400
" " 32nd Street	"	6000
Total	C. Yds.	10900

Trestle 26th Street		$ 1750
" 28th "		" 1125
" Entre 29 & 30		" 1350
" 31st Str.		" 1125
		$ 5350
10900 Yds Excavat. .50		5450
Making		$10800

March 3rd 1893.

Jany 18th 1893
In 1871? C.T. Fox ran in
Centers on "H" Street east wd
to Pueblo Line, or "36th St.
and south on 36th to the
line of National City.

"D" Street extension.

Quantitys in post. sill & Caps.

Cap. 24'l 10" by 10"
H.S. 2. 5'l " " 4"
Br 2. 4'l " " 4"

D Street extension

Trestle 26th Str 63360

63360 x 22.50 $1295

Carpentry & Raising etc 305

$1600

Trestle 28 Street 43400

43400 x 22.50 $1000

Carpentry + c 250

$1250

Between 29th & 30th 51000

51000 x 22.50 = 1150.00

Carpentry & c 275.00

$1425.00

31st Street Same as 28th $1250

Total ~~$1675~~

1600
1000
1425
1250
$5275.

Greatest height & length 400'.
Including drayage.

Greatest h 33.5 l. 275 ft.

Greatest light 38½ l. 300. ft.

Excav
1500
1000
2000
400
6000
10900
5400

Greatest height

New
1550
1000
1350
1125
$5350
5400
10750

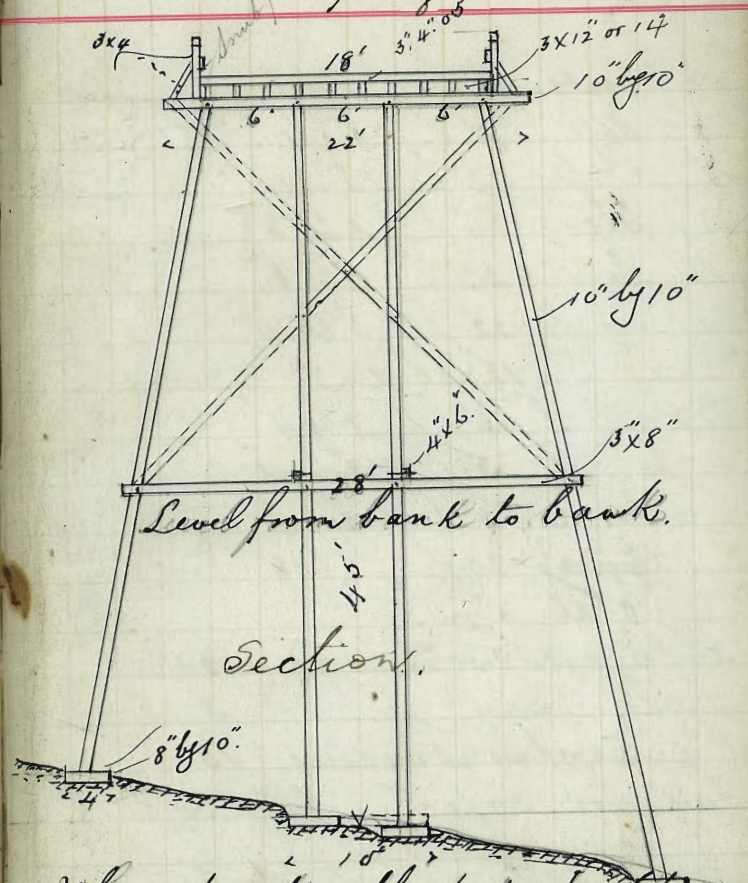
Excavation
8400 yds
50 ¢
$4200.
5330
$9530.

Trestle Quantitys.

For each bent & one span.

H.	Posts	B.M.
50		4167
48		4100
45		4000
42		3904
40		3837
38		3770
35		3670
32		3570
30		3510
28		3445
25		3350
22		3250
20	Drop ties	3140
17		3030
15		2965
12		2865
10		2765
8		2665
5		2485
2½	Sill, no posts.	2290

See next page



When practicable put upright posts on same sill.

Diference for 1 foot 33⅓ ft.

See next page for details

Estimate: 1 Bent of Trestle

18 feet wide 35' high @ 20¢ ℳ.

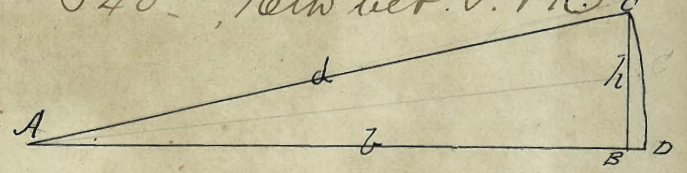
				B.M.
4	Posts	35' l.	10" by 10"	1168
4	Sill	4' l.	8" by 10"	106
1	Cap.	22' l.	10" by 10"	184
2	Ties	26' l.	8" by 8"	108
2	Longties	22' l.	4" by 8"	110
10	Joists	22' l.	3" by 14"	770
Roof		18×20'	× 3"	1080
Hd. Rail	2	16' l	3" by 4"	32
" P.	6	5' l	3" by 4"	30
" " Br.	6	5' l	3" by 4"	30
2	Snubg	20' l	2" by 8"	53
	Total b.m.			3670

3670 @ $22.30 delivered $80.92
Nails say 3.00
Carpentry & raising, 15.00
Say for 20 feet $100.92

An embankment of 12½ height
= Area 446×20' = 8920 C ft.
323 C. Yds. @ 33⅓¢ = $107.66
Trestle 35' h. = Embk 14' d 18' w.

H. Hamlin.

340 ', 16th bet. J. & K.



Having measured an inclined distance AC = d, knowing the sine CB = h of ∠ CAB. = the difference BD = δ. of the distance d and the horizontal distance AB. sought may be put.

$$\delta = \frac{h^2}{2d}, \text{ or } b = d - \delta.$$

Useful to find true distance by measuring the slope length of blocks in City surveying.

An embankment of 9 or 12½ feet at 50- or 30 ¢s a yard, will cost as much as a trestle 35' high. (18' wide)

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

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a Distance of 100.

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

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	75.75	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.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		

Published by Edward Denny & Co., Stationers, Drawing Materials, Mathematical Instruments, Etc., San Francisco.